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Redistricting Report
New York State
January 17, 2022

I. Introduction

The enclosed report details two congressional redistricting plans for New York state, each motivated by different goals. The first plan prioritizes good government principles, using the enacted map as a starting point to draw districts that respect political subdivision lines. The second plan emphasizes political competition, aiming to draw the maximum number of politically competitive districts.

Creating these maps came with numerous challenges. First, New York is losing a district this cycle, requiring a new map to reorganize much of the state. Moreover, New York City's large and diverse minority populations require mapmakers to navigate the conflicting mandates of the Voting Rights Act and the constitutional prohibition on racial gerrymandering. At the same time, New York City's geography — the city consists of five counties on four separate landmasses — complicates efforts to make districts contiguous over land. The city's incredibly high population density also leaves little room to maneuver, as adding or subtracting a few blocks can make a dramatic difference in a district's size and demographics.

This report details how each plan approached these challenges and the tradeoffs that come with them. The remainder of the paper is organized into two sections, one for each plan. Within each section, the report discusses the proposal's legality under state, federal, and constitutional provisions before explaining precisely how the plan was constructed. Each section also compares the relevant plan to the proposals released by the New York State Independent Redistricting Commission (NYIRC), the state body tasked with drafting plans for the legislature's consideration.

Each of the following two sections is designed to be a stand-alone report, meaning some information is presented twice. For example, both sections include a discussion of the requirements of the Voting Rights Act when assessing the relevant plan's legal compliance. For readers interested in only one plan, there is no need to look at the section for the other plan to understand any acronyms, jargon, or legal analysis. The section for the good government plan starts on page 2, and the discussion of the max competition plan begins on page 49.

II. Good Government Plan

This proposal is a good government plan based on the enacted congressional districts. The plan prioritizes keeping political subdivisions intact while minimizing deviations from the previous districts. After focusing on good government considerations, the plan considers the traditional redistricting principles of compactness and contiguity. At the same time, the map preserves the enacted plan's high levels of minority representation, creating opportunity districts for African-Americans, Hispanics, and Asian-Americans. As in the enacted congressional map, districts 13 and 15 are majority Latino by voting age population (VAP), and districts 5 and 8 are majority Black by VAP. The plan conserves Latino opportunity districts 7 and 14, Asian opportunity district 6, and Black opportunity district 9, maintaining comparable VAP percentages of the relevant minority groups in each district. During the map's construction, partisanship data and citizen voting age population (CVAP) estimates were not available, and the plan did not consider that information. However, independent analyses suggest the plan moderately favors Democrats.

The remainder of the report is organized as follows. Section A discusses the plan's legality under the Constitution, federal law, and state law. Section B provides a more detailed explanation of the plan's considerations and how the plan navigated various tradeoffs that emerged during the redistricting process. Section C then examines how this proposal compares to the two proposals released by the New York State Independent Redistricting Commission (NYIRC). Section D concludes.

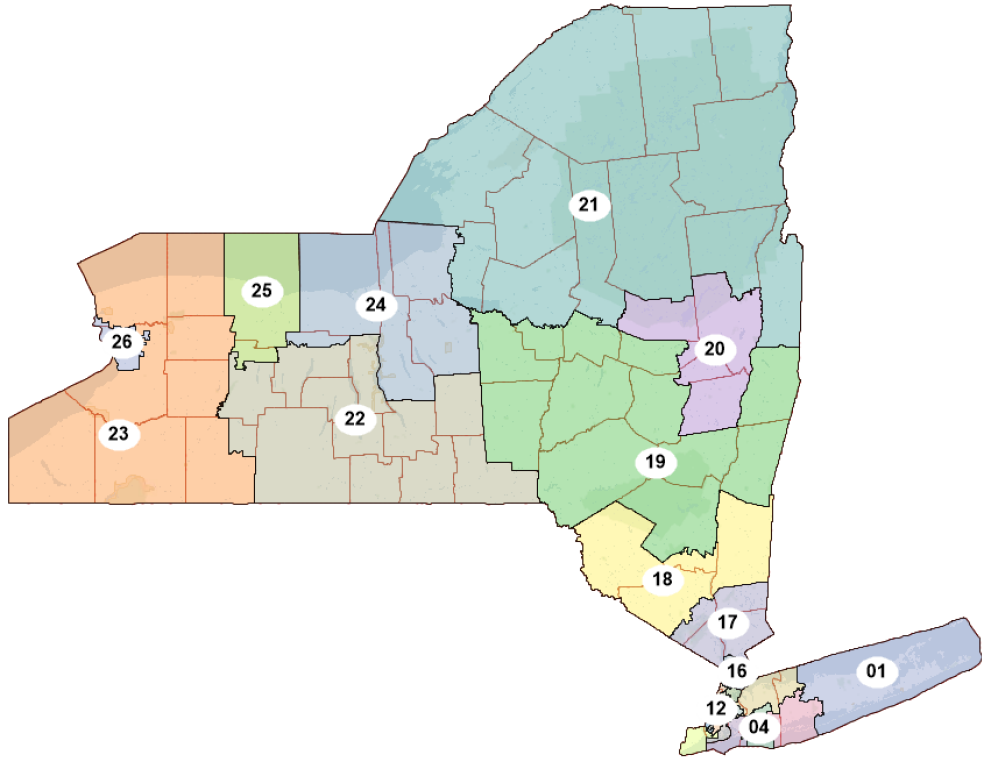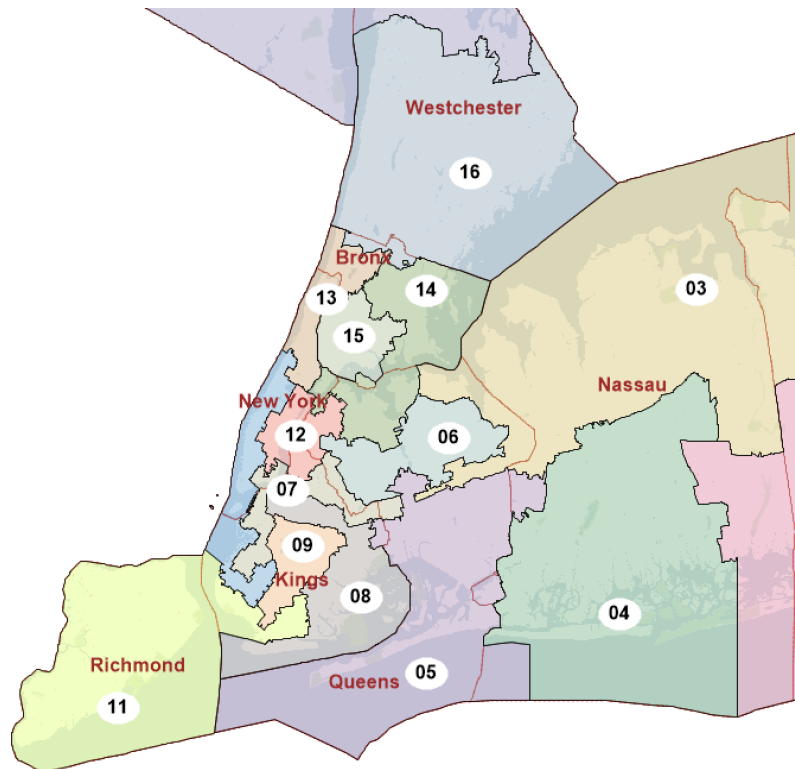Figure GG.1: Good Government Proposal, New York State

Figure GG.2: Good Government Proposal, New York City Area

A. Compliance with Legal Requirements

This map complies with all constitutional, federal, and state requirements for redistricting plans. Under the Constitution, plans must satisfy one person, one vote requirements and they may not gerrymander on the basis of race. Under federal law, section 2 of the Voting Rights Act imposes requirements designed to ensure a minority group's opportunity to elect candidates of their choice. The only New York state requirements that go beyond these provisions mandate that districts are compact, contiguous, and not drawn to favor a political party or to discourage competition.[1] The next four sections examine each set of requirements in turn, concluding that the plan is legal.

1. Constitutional Requirements: One Person, One Vote

The one person, one vote principle requires that all districts have equal population, with every deviation justified by consistently applied, legitimate interests.[2] These legitimate interests include respect for political subdivisions, minimizing population shifts between districts, or preventing incumbents from competing against one another.[3] The Court has recognized that using registered voters or total population as the basis for equal population districts is legal.[4]

This plan satisfies one person, one vote requirements, using P.L. 94-171 total population data. Using this data, the ideal district would have 776,971 people. There are only three districts that deviate from this ideal: district 1 (776,970 people), district 13 (776,974 people), and district 25 (776,972 people). Therefore, the difference between the smallest and largest districts is just four people. Correcting this difference would have required slightly increased population shifts relative to the previous plan, especially around district 13 in New York City. As minimizing these shifts was recognized as a legitimate justification for small deviations under *Tennant v. Jefferson County*, the plan should withstand a one person, one vote challenge. Either way, small adjustments to the map would remove any deviation, ensuring the map's legality under one person, one vote requirements.

2. Voting Rights Act, Section 2

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[1] N.Y. CONST. art. III, §§ 4(c)(3)-(5)
[2] Karcher v. Daggett, 462 US 725 (1983)
[3] Tennant v. Jefferson County, 567 U.S. 758 (2012)
[4] Burns v. Richardson, 384 U.S. 73 (1966); Evenwel v. Abbott, 578 U.S. ___ (2016)

Section 2 of the Voting Rights Act ensures that "the political processes leading to nomination or election in the State" are equally open to racial minorities and majorities. Specifically, violations occur when a minority group's "members have less opportunity than other members of the electorate to participate in the political process and to elect representatives of their choice."[5] In determining whether a state has violated Section 2 with respect to a particular minority community, courts first require that challenges satisfy three threshold conditions. First, the minority group in question must be large and compact enough to form a majority of a single member district. Second, the minority community must be politically cohesive. Third, racially polarized voting must ordinarily lead majorities to defeat minority candidates of choice.[6] After meeting these so-called *Gingles* prongs, challengers must then satisfy the "totality of the circumstances" test, proving that some of the Senate factors are present. Proving these factors requires plaintiffs to illustrate how past and present discrimination and racial polarization conspire to harm minority groups and their electoral chances.[7]

In subsequent cases, the Court has expounded on how to determine when particular minority groups satisfy the *Gingles* prongs. On the first prong, the Court determined that minority groups must be able to form a strict majority of a single member district to bring a Section 2 claim.[8] When evaluating whether a minority group forms a majority, lower courts often use citizen voting age population (CVAP) as the denominator. In addition, the Court has attached a cultural compactness strand to the first prong, requiring that a group must be culturally cohesive to bring a Section 2 claim.[9]

When weighing the "totality of the circumstances," the Court has ruled that achieving proportionality (where a minority group controls a share of districts comparable to their share of the state's population) is not a safe harbor, though it does weigh in favor of the plan.[10]

If the *Gingles* prongs and Senate factors are present, the Court clarified the state's obligations in *Johnson v. DeGrandy*, holding that a state is not required to draw the maximum possible number of majority minority districts.[11] However, a state may not trade one group's majority minority district for another, unless the state cannot accommodate both groups' claims.[12]

New York has three racial minority groups that may be able to bring Section 2 claims: African-Americans, Hispanics, and Asian-Americans. Within each racial group, there are different communities that could challenge the map under Section 2. Without racially polarized voting analyses

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[5] 52 U.S.C. § 10301(b)

[6] Thornburg v. Gingles, 478 U.S. 30 (1986)

[7] *See* Senate Judiciary Committee Report on the Voting Rights Act Amendments of 1982, S. Rep. No. 97–417, 97th Cong, 2d Sess. (1982)

[8] Bartlett v. Strickland, 556 US 1 (2009)

[9] League of United Latin American Citizens v. Perry, 548 US 399 (2006)

[10] Johnson v. De Grandy, 512 U.S. 997 (1994)

[11] Johnson v. De Grandy, 512 U.S. 997 (1994)

[12] League of United Latin American Citizens v. Perry, 548 US 399 (2006)

to assess the second and third *Gingles* prongs, I drew majority minority districts for each community that satisfied the first *Gingles* prong. The next four subsections discuss each community of each racial minority in turn, concluding that the map would withstand a Section 2 challenge.
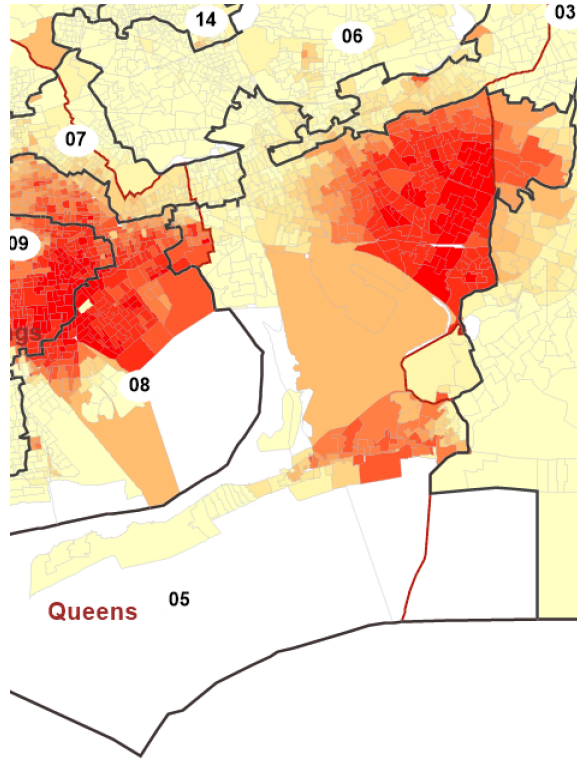
a. African-Americans

Figure GG.3: African-American Population Density, New York City Area
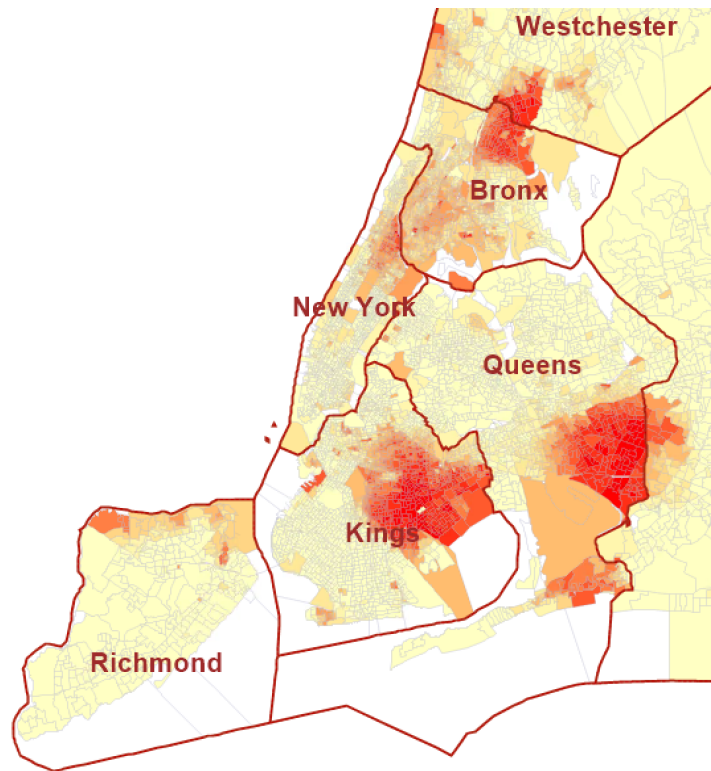
The only African-American communities that may be large and compact enough to bring a Section 2 claim reside in New York City. The map above shows the population density of African-Americans across the New York City area, where darker red indicates higher concentrations of African-Americans (by VAP), and lighter yellow indicates lower concentrations. The maroon lines indicate county boundaries.

As the map above shows, there are four geographically distinct African-American communities in New York City: (1) southern Queens, (2) eastern Brooklyn, (3) Harlem, and (4) the Bronx-Westchester border.

Figure GG.4: African-American Community in Southern Queens

In southern Queens, African-Americans certainly satisfy the first *Gingles* prong since they are large and compact enough to form a majority in a single member district. The map above shows the African-American community in southern Queens with black lines to indicate the surrounding districts. As the map illustrates, this African-American community is nearly entirely contained in district 5, which is majority African-American by both VAP and CVAP. This district should perform as a Black opportunity district, since the enacted district 5 appears to perform (electing Gregory Meeks, ostensibly the African-American candidate of choice) with similar demographics. However, this community is not large enough to form a majority in more than one single member district. Thus, this plan contains the maximum possible number of majority minority districts for the African-American community in southern Queens, satisfying any Section 2 concerns.

The following table shows the demographics of my proposed district 5 (PR5) and the enacted district 5 (EN5). In the table's headings, NH and H refer to Non-Hispanic and Hispanic, while BLK and ASN refer to Black and Asian respectively. All demographic data are presented in percentages. Note that VAP numbers are from the Census data, while CVAP numbers come from survey data estimates.

Table GG.1: Demographics of District 5

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR5	51.5%	50.15%	11.7%	14.89%	17.0%	18.98%
EN5	53.48%	51.32%	14.65%	17.37%	16.5%	18.55%

Figure GG.5: African-American Community in Eastern Brooklyn
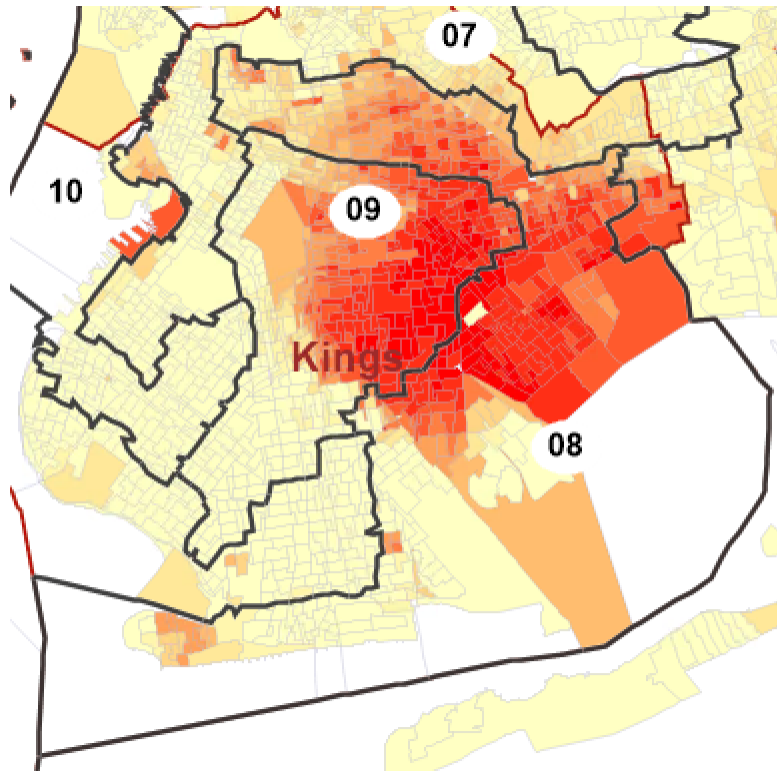
In eastern Brooklyn, African-Americans also satisfy the first *Gingles* prong. As shown above, the community is divided into districts 8 and 9, forming a majority in district 8 by both VAP and CVAP. As the demographic table below shows, African-Americans form more than 45% of the CVAP population in either district. This likely means that districts 8 and 9 will both perform as Black opportunity districts, especially since the enacted districts 8 and 9 appear to perform (electing Hakeem Jeffries and Yvette Clarke respectively, ostensibly African-American candidates of choice) under similar demographics.
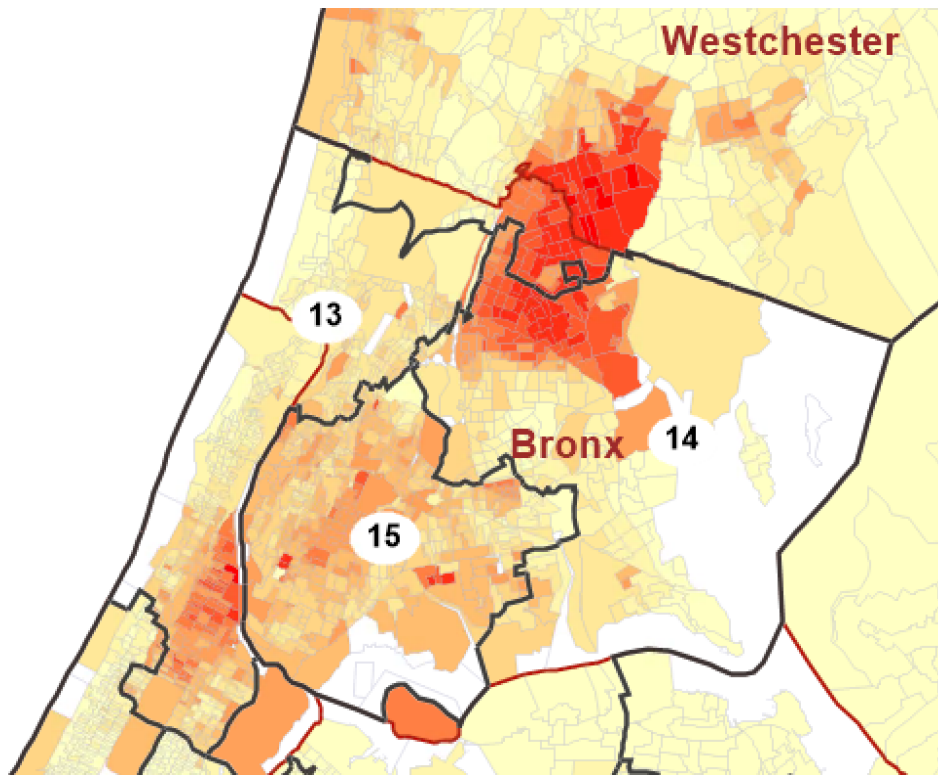
Table GG.2: Demographics of Districts 8 and 9

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP

PR8	50.9%	51.05%	5.1%	8.29%	13.7%	15.32%
EN8	50.95%	50.63%	5.06%	8.96%	15.28%	17.15%
PR9	45.6%	47.09%	9.5%	12.9%	10.4%	12.29%
EN9	46.88%	49.5%	6.9%	9.51%	10.32%	11.38%

The only potential Section 2 issue with this community's representation would arise if they allege they are entitled to two majority African-American districts. However, this suit would likely fail: the community is not large and compact enough to form a majority in two single member districts, so the challenge does not satisfy the first *Gingles* prong. Even if the community could form a majority in two districts, challengers would have a hard time illustrating that they lack the ability to elect candidates of their choice in district 9, since the district will likely perform as a Black opportunity district. Since the state is under no obligation to maximize the number of majority minority districts for a particular community, such a challenge is unlikely to succeed.

Figure GG.6: African-American Communities in Harlem and on the Bronx-Westchester Border

The African-American communities in Harlem and on the Bronx-Westchester border are not individually large and compact enough to form a majority in a single member district, so they both fail the first *Gingles* prong. As such, none of the proposed districts containing these communities (districts 13, 14, and 16) are majority or plurality Black, by VAP or CVAP.

However, these communities could sue, arguing they have a Section 2 entitlement for a majority Black district containing both communities. Such a district is possible, demonstrated in the example district 15 (EX15) pictured below. The table below shows the demographics of this example district compared to my proposed districts 13-16 and the enacted districts 13-16.

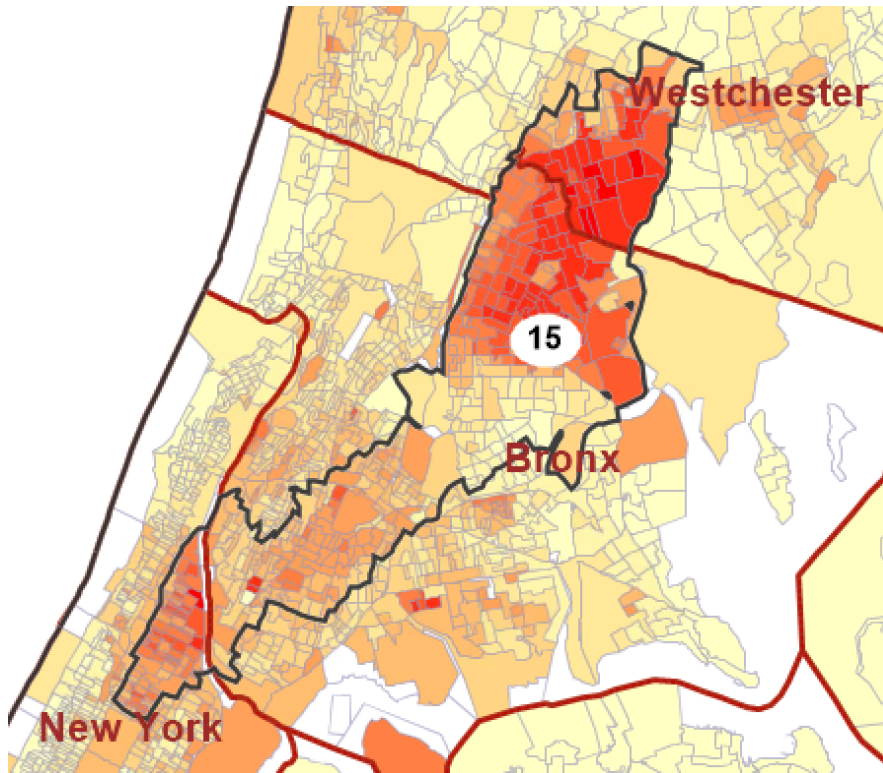Figure GG.7: Example District 15, Majority Black District from Harlem to Southern Westchester

Table GG.3: Demographics of Districts 13-16

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
EX15	50.2%	55.9%	2.7%	3.85%	37.0%	39.14%
PR13	27.5%	32.96%	4.2%	6.19%	46.9%	50.74%
EN13	28.92%	24.37%	4.29%	6.48%	47.7%	50.99%

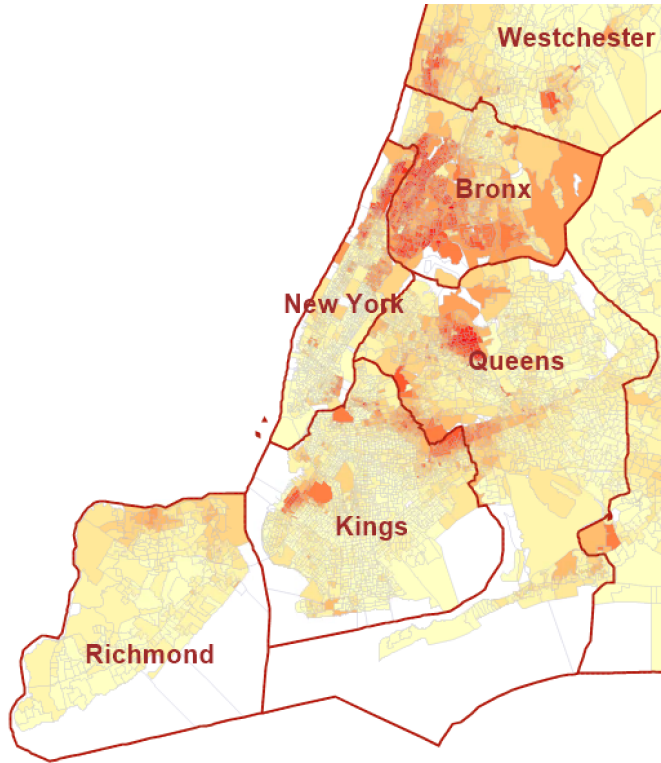|						
PR14	24.4%	24.09%	11.2%	15.45%	41.8%	46.84%
EN14	12.54%	12.45%	15.51%	20.36%	41.16%	46.64%
PR15	32.9%	40.39%	2.7%	4.65%	60.0%	61.82%
EN15	31.93%	39.81%	1.96%	3.31%	61.96%	64.14%
PR16	22.4%	23.93%	5.5%	7.61%	19.9%	26.76%
EN16	32.05%	35.49%	4.8%	6.25%	2.16%	26.29%

As the table shows, this example district is majority Black by VAP and CVAP. As such, if one considers the African-American communities in Harlem and on the Bronx-Westchester border to be one community, they would satisfy the first *Gingles* prong in a Section 2 lawsuit. However, classifying these groups as a single community is suspect, since they are geographically separated by almost the entirety of the Bronx.

Even if a court were to classify these communities as a single community, such a challenge would likely fail: this example district 15, or any other similar district containing these communities, trades off with majority Hispanic districts 13 (by VAP) and 15 (by VAP and CVAP) in my proposed plan. The Hispanic community in northern Manhattan and the Bronx likely has a stronger Section 2 claim than the African-American community in EX15 since this Hispanic community is more geographically compact. Since New York cannot accommodate all three majority minority districts, the state is under no obligation to create EX15.

Moreover, the enacted plan and my proposed plan have a similar configuration of majority minority districts in the area: in both cases, districts 13 and 15 are majority Hispanic (by VAP) and together contain much of the Hispanic community in northern Manhattan and the Bronx. Assuming the enacted map is legal implies that the African-American communities in Harlem and on the Bronx-Westchester border do not have a strong Section 2 claim against my proposal.
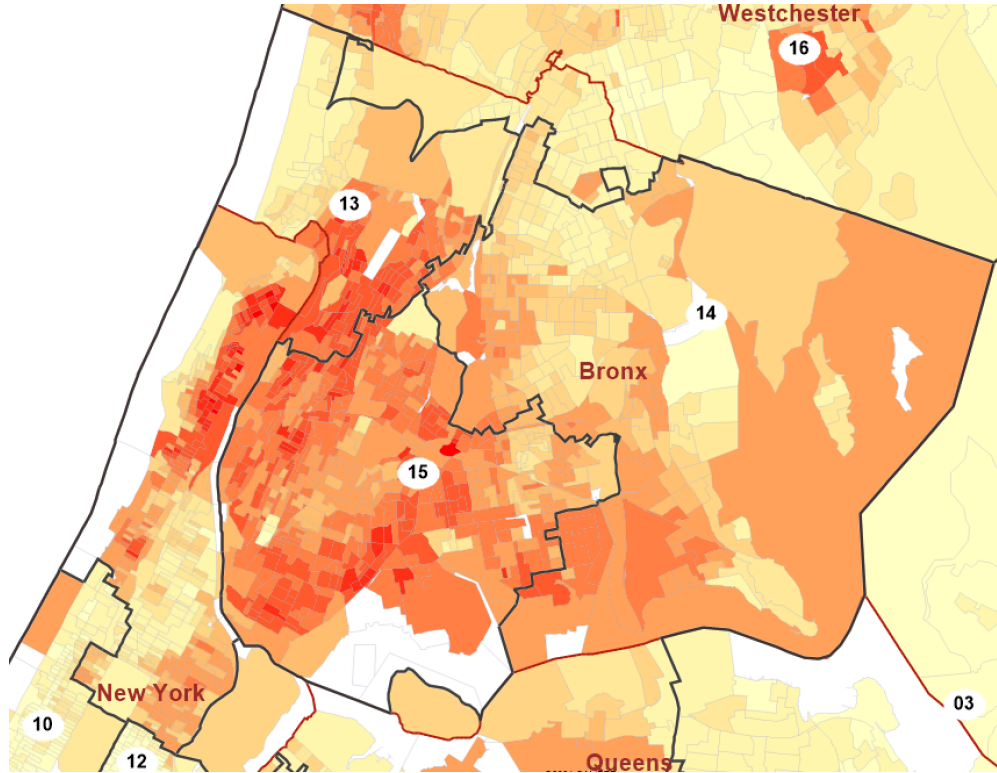
b. Hispanics

Figure GG.8: Hispanic Population Density, New York City Area

The only Hispanic communities that may be large and compact enough to bring a Section 2 claim reside in New York City. The map above shows the population density of Hispanics across the New York City area, measured by VAP.

As the map above shows, there are three geographically distinct Hispanic communities in New York City: (1) northern Manhattan and the Bronx, (2) northern Queens, and (3) the Brooklyn-Queens border.

Figure GG.9: Hispanic Community in Northern Manhattan and the Bronx

In northern Manhattan and the Bronx, Hispanics certainly satisfy the first *Gingles* prong since they are large and compact enough to form a majority in two single member districts. The map above shows the Hispanic community in northern Manhattan and the Bronx along with the surrounding districts. As the map illustrates, districts 13 and 15 contain much of this Hispanic community. District 13 is majority Hispanic by VAP, and district 15 is majority Hispanic by VAP and CVAP. Both districts should perform as Hispanic opportunity districts, since both EN13 and EN15 appear to perform (district 13 elected Adriano Espaillat and Charles Rangel, while district 15 elected José E. Serrano and Ritchie Torres, all of whom are ostensibly Hispanic candidates of choice) with similar demographics. The following table shows the demographics of PR13 and PR15, compared to EN13 and EN15.

Table GG.4: Demographics of Districts 13 and 15

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR13	27.5%	32.96%	4.2%	6.19%	46.9%	50.74%
EN13	28.92%	24.37%	4.29%	6.48%	47.7%	50.99%
PR15	32.9%	40.39%	2.7%	4.65%	60.0%	61.82%

| EN15 | 31.93% | 39.81% | 1.96% | 3.31% | 61.96% | 64.14% |

While this community is quite large, it cannot form a majority in more than two single member districts. Thus, this plan contains the maximum possible number of majority minority districts for the Hispanic community in northern Manhattan and the Bronx, satisfying any Section 2 concerns.

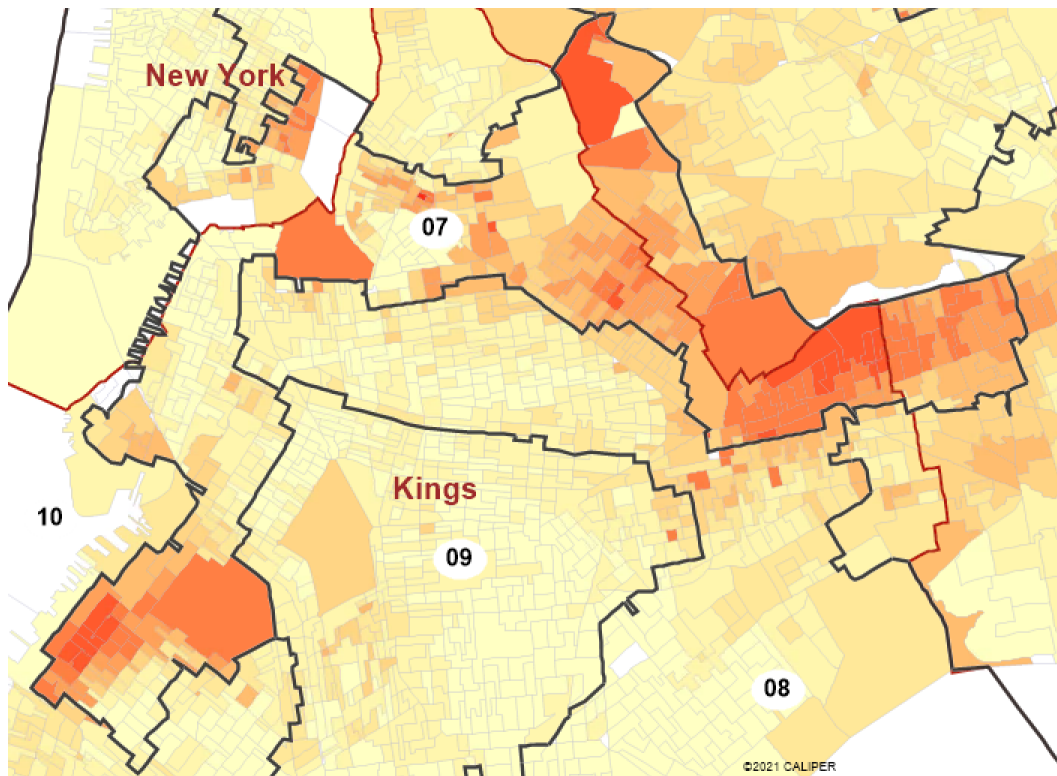Figure GG.10: Hispanic Community in Northern Queens
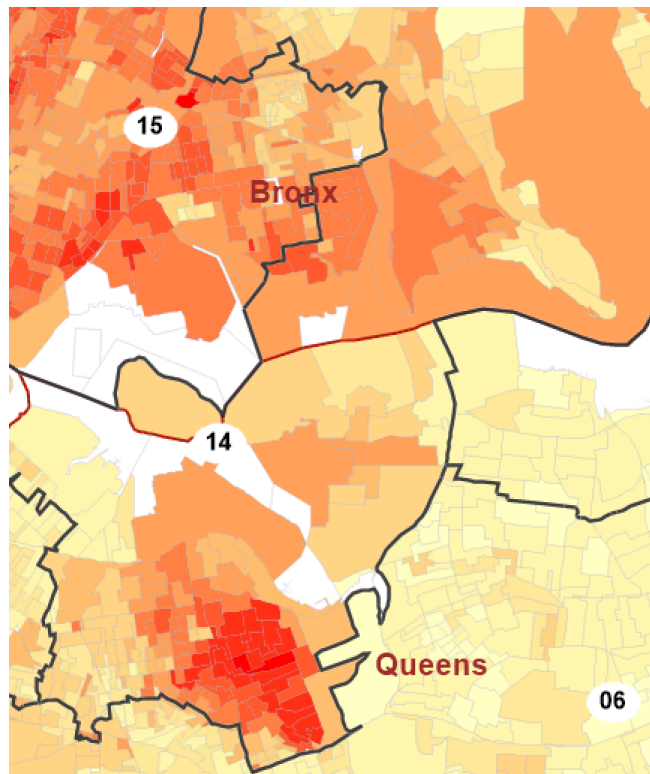
In northern Queens, the Hispanic community is not large and compact enough to form a majority of a single member district. However, the enacted district 14 — where this community is located — is plurality Hispanic and appears to be a performing Hispanic opportunity district (electing Alexandria Ocasio-Cortez, ostensibly the Hispanic candidate of choice). Since the proposed district 14 has similar demographics (described in the table below) and also contains this community, it should also perform. Because of the community's small size and existing opportunity to elect candidates of their choice, it is unlikely the community can bring a successful Section 2 claim.

Table GG.5: Demographics of District 14

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR14	24.4%	24.09%	11.2%	15.45%	41.8%	46.84%
EN14	12.54%	12.45%	15.51%	20.36%	41.16%	46.64%

Figure GG.11: Hispanic Community on the Brooklyn-Queens Border

On the Brooklyn-Queens border, the Hispanic community is not large and compact enough to form a majority of a single member district. However, the enacted district 7 — where this community is located — is plurality Hispanic and appears to be a performing Hispanic opportunity district (electing Nydia Velázquez, ostensibly the Hispanic candidate of choice). Since the proposed district 7 has similar demographics (described in the table below) and also contains this community, it should also perform.

Table GG.6: Demographics of District 7

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP

| PR7 | 10.7% | 12.47% | 16.3% | 21.43% | 36.0% | 37.21% |
| EN7 | 10.63% | 12.33% | 16.28% | 21.58% | 35.96% | 37.14% |

However, a majority Hispanic district is possible if a plan combines the Hispanic community on the Brooklyn-Queens border and the community in northern Queens, as shown in example district 7 below. The demographics table below indicates that example district 7 is majority Hispanic by VAP, though not by CVAP.

Figure GG.12: Example District 7, Majority Hispanic District in Brooklyn and Queens

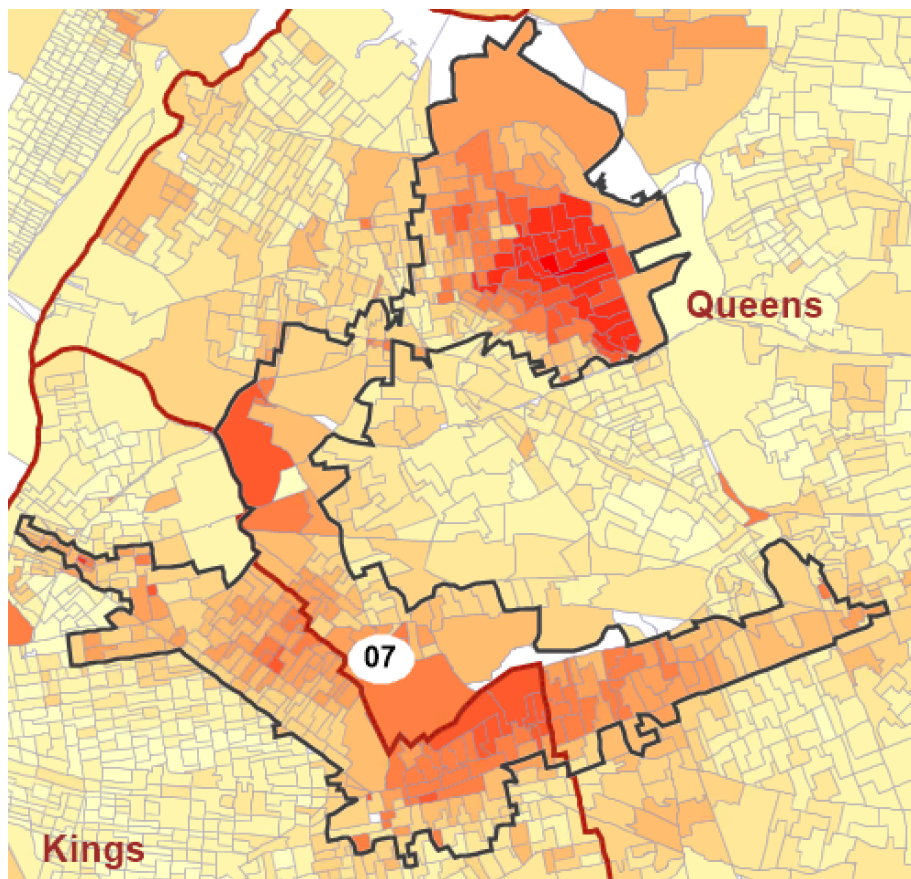Table GG.7: Demographics of Example District 7

| District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
EX7	15.4%	14.93%	15.1%	18.25%	47.4%	53.0%

Thus, if one considers the Hispanic communities on the Brooklyn-Queens border and the community in northern Queens to be one community, challengers could bring a suit urging a majority minority district for this community. The community would satisfy the first *Gingles* prong in a Section 2 lawsuit under VAP. However, a district like EX7 with a CVAP majority does not appear possible, so a challenge may fail under those grounds.

If this challenge satisfied the first *Gingles* prong, the suit would still have to prove that Hispanics in these communities would otherwise be unable to elect their candidates of choice. Since my proposed districts 7 and 14 are likely to perform as Hispanic opportunity districts, such a challenge would likely fall.

Moreover, the enacted plan and my proposed plan have a similar configuration of Hispanic opportunity districts in the area: in both cases, districts 7 and 14 are plurality Hispanic and contain the communities on the Brooklyn-Queens border and in northern Queens, respectively. Assuming the enacted map is legal implies that the Hispanic community defined in EX7 does not have a strong Section 2 claim against my proposal.
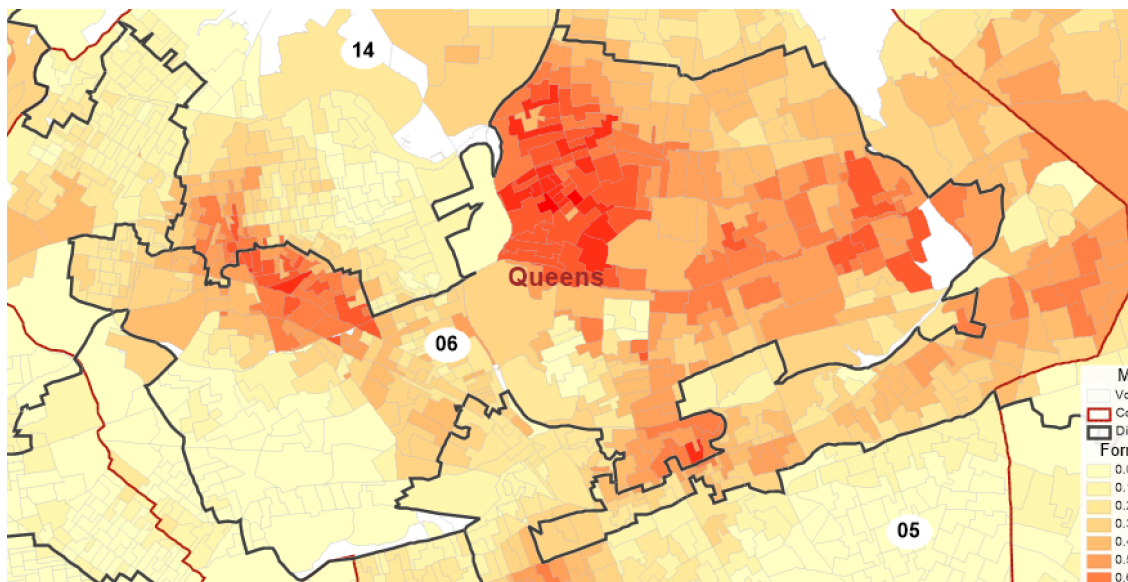
c. Asian-Americans

Figure GG.13: Asian-American Population Density, New York City Area
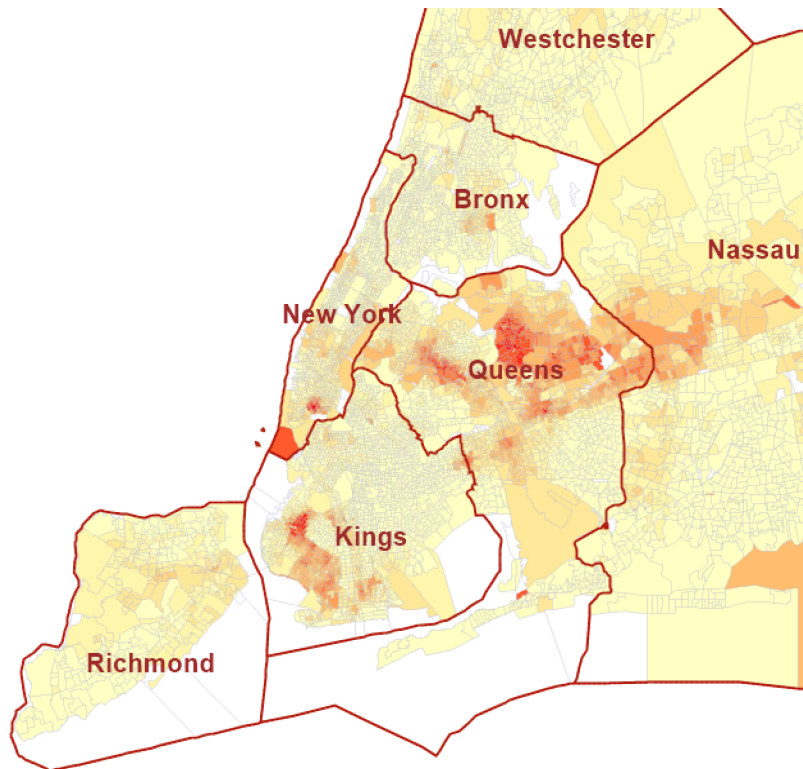
The only Asian-American communities that may be large and compact enough to bring a Section 2 claim reside in New York City. The map above shows the population density of Asian-Americans across the New York City area, measured by VAP.

As the map above shows, there are two geographically distinct Asian-American communities in New York City: (1) Queens and (2) southern Brooklyn. Neither community is large or compact enough to form a majority in a single member district, but the community in Queens comes close (measured by VAP).

Figure GG.14: Asian-American Community in Queens

As shown in the image above, the Asian-American community in Queens is largely contained in proposed district 6, where they constitute a plurality by VAP (though not by CVAP). A CVAP majority district for this community is not possible given relatively low citizenship rates of Asian-Americans in the area. If this community brought a Section 2 challenge against this proposal, the suit would likely fail, even if the community satisfied the first *Gingles* prong. The reason is that such a challenge would be unable to prove that the Asian-American community in Queens lacks the ability to elect candidates of their choice. Under the current plan, this community resides in enacted district 6, which appears to perform (electing Grace Meng, ostensibly the Asian-American candidate of choice) as an Asian-American opportunity district. Since the proposed district 6 contains the same community and has similar demographics (shown in the table below), PR6 will likely continue to

perform as an Asian-American opportunity district. Therefore, the map would likely withstand a Section 2 challenge by the Asian-American community in Queens.

Table GG.8: Demographics of District 6

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR6	4.4%	4.81%	33.8%	45.84%	19.0%	19.6%
EN6	4.87%	5.37%	33.22%	45.26%	18.69%	18.91%

d. Conclusion: Section 2 of the Voting Rights Act

Overall, each minority community with an opportunity district in the enacted plan maintains that opportunity district in the proposed plan. For African-Americans, that means a majority Black district in Queens (PR5), another in Brooklyn (PR8), and an opportunity district in Brooklyn (PR9). For Hispanics, the plan maintains two majority Latino districts in the Bronx and northern Manhattan (PR13 and PR15), as well as an opportunity district in northern Queens (PR14) and another on the Brooklyn-Queens border (PR7). In addition, district 6 remains an opportunity district for the Asian-American community in Queens. Since the current map was not struck down under Section 2, there are likely no other communities with compelling Section 2 claims.

3. Constitutional Requirements: Racial Gerrymandering

Each minority opportunity district described above could be challenged under *Shaw v. Reno*. In *Shaw*, the Court ruled that if race is the predominant factor in the construction of a particular district, then the map is subject to strict scrutiny.[13] To show race predominated, courts often assess whether the district violated traditional redistricting criteria like compactness and contiguity in service of race-motivated goals such as creating a majority minority district. If race predominated, defendants can show the district in question was narrowly tailored to avoid a Voting Rights Act violation, in which case the plan would be legal.[14] Compliance with the Voting Rights Act is the only compelling interest the Court has recognized to justify racial predominance. Since *Shelby County*, this interest is limited to compliance with Section 2.[15]
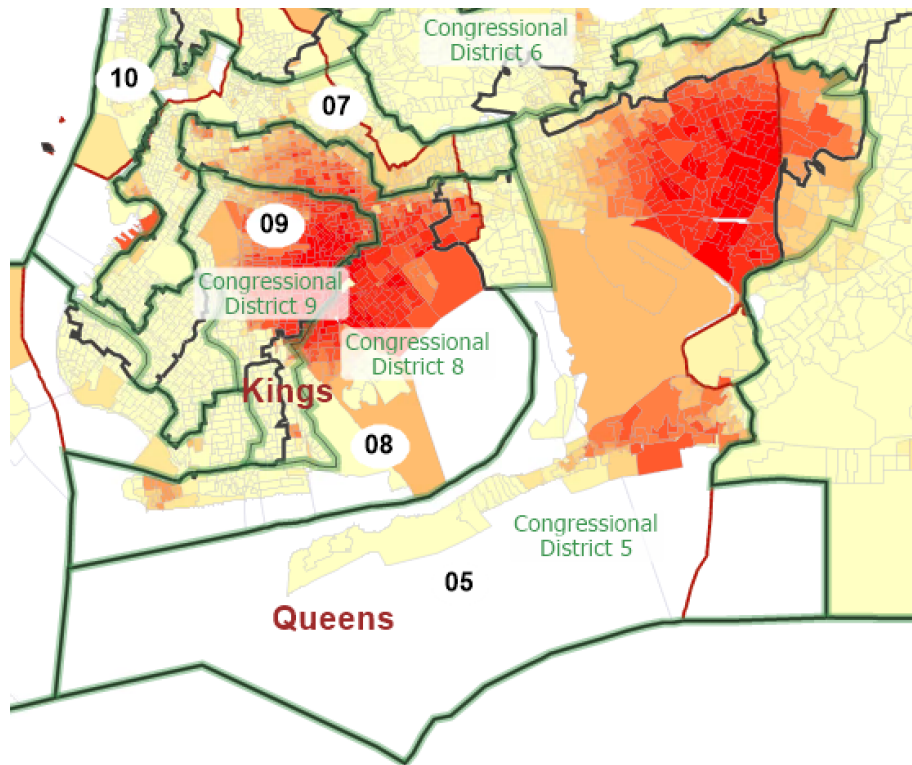
[13] Shaw v. Reno, 509 US 630 (1993)
[14] Bush v. Vera, 517 US 952 (1996)
[15] Shelby County v. Holder, 570 US 529 (2013)

The next eight sections discuss each minority opportunity district, explaining why it would withstand a *Shaw* claim. Each of these districts considered race, aiming to give minority groups substantial representation in the plan. However, race was not the predominant factor. In each case, traditional redistricting criteria such as compactness, contiguity, respect for political subdivisions, and minimizing population shifts from the previous districts dominated my considerations. Lacking the racially polarized voting analyses necessary to establish the *Gingles* prongs, this report does not prove that any particular district was narrowly tailored to avoid a Voting Rights Act violation.

a. District 5

Figure GG.15: African-American Population Density in PR5 and EN5

District 5 is a majority Black district in Queens, starting in Jamaica and extending south until the Rockaways. The map above shows the population density of African-Americans in and around district 5, measured by VAP. As before, the maroon lines indicate county boundaries, and the black lines indicate the boundaries of the proposed districts. The green highlighted lines show the boundaries of the enacted districts. Since the proposed district 5 overlaps with much of the enacted district 5, it is likely legal. Since the demographics of the two districts are similar, as shown in the table
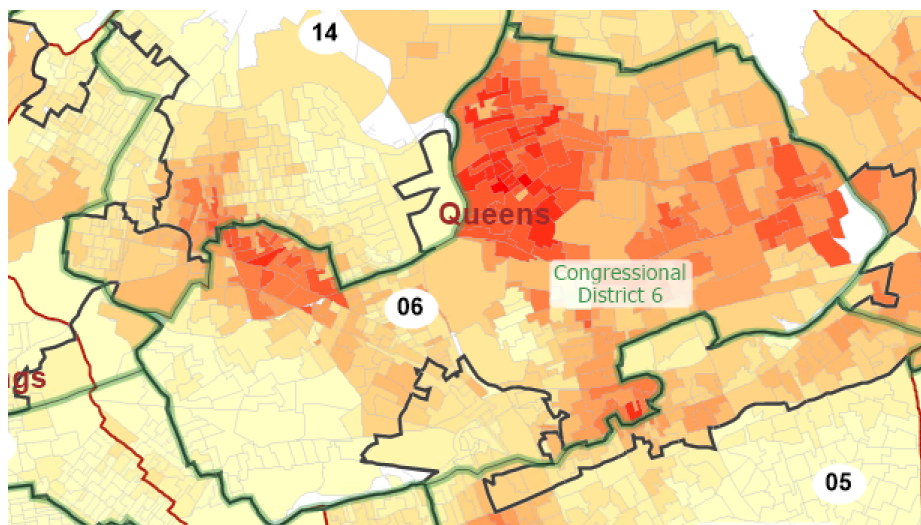
below, the deviations from the enacted district were not racially motivated. The table also shows that PR5 and EN5 have similar compactness scores, meaning that PR5 did not subordinate compactness considerations any more than EN5.[16] Moreover, PR5's emphasis on contiguity illustrates how traditional redistricting criteria dominated racial considerations: the district would have higher concentrations of African-Americans if it lost the Inwood neighborhood of Nassau County (the yellow colored area in the southeast of PR5). However, PR5 maintains this neighborhood to keep the district more clearly contiguous over land. Similarly, as the image above shows, PR5 would have higher concentrations of African-Americans if it lost the western part of the Rockaways (the yellow region in the southwest of the district), but since the Rockaways are likely a community of interest, I opted to keep them intact.

Table GG.9: Demographics and Compactness of District 5

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR5	51.5%	50.15%	11.7%	14.89%	17.0%	18.98%	0.29	0.20	0.20
EN5	53.48%	51.32%	14.65%	17.37%	16.5%	18.55%	0.30	0.27	0.17

b. District 6

Figure GG.16: Asian-American Population Density in PR6 and EN6

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[16] Note on interpreting compactness scores: on the Reock, Polsby-Popper, and Ehrenburg measures, higher numbers indicate greater degrees of compactness.

District 6 is a plurality Asian-American district in Queens, stretching from Elmhurst to Bayside. Since the proposed district 6 overlaps with much of the enacted district 6, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR6 is less compact than EN6 on the Reock and Polsby-Popper metrics but slightly more compact on the Ehrenburg metric. Therefore, PR6 is not dramatically less compact than its predecessor, showing that the proposed district's deviations from EN6 did not sacrifice compactness too much. Either way, district 6 is still fairly compact, much more so than the snake-shaped district in *Shaw*, making it difficult to prove that race subordinated traditional redistricting criteria.[17]
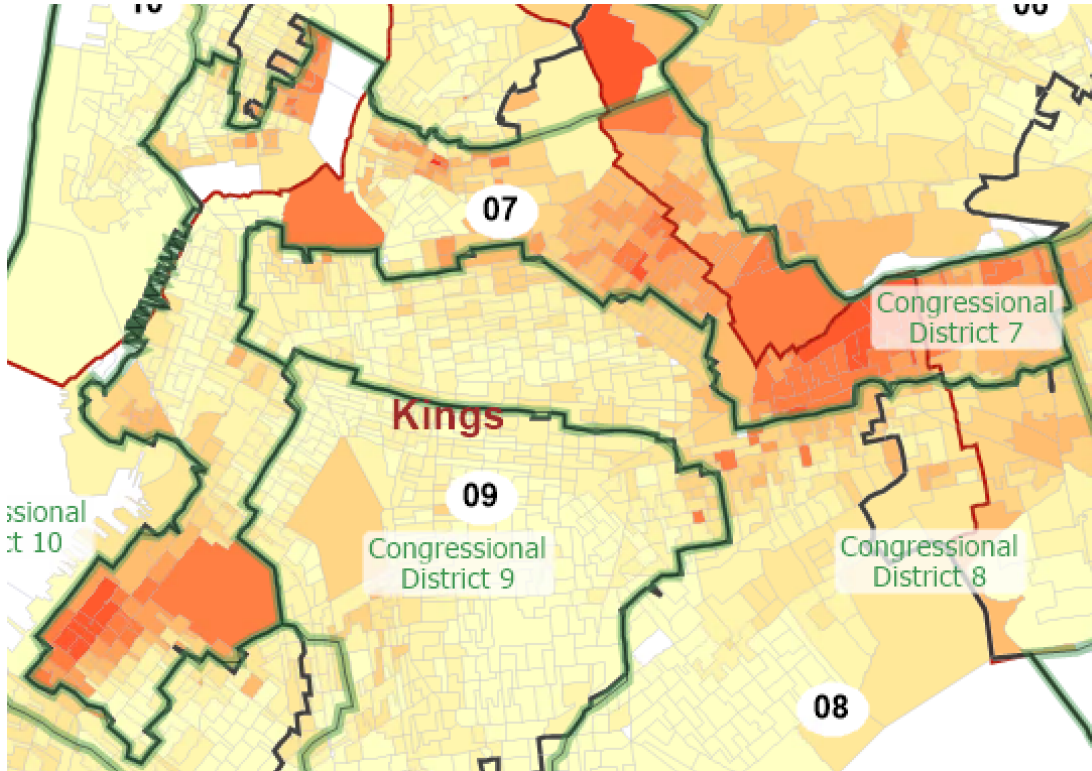
Table GG.10: Demographics and Compactness of District 6

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR6	4.4%	4.81%	33.8%	45.84%	19.0%	19.6%	0.35	0.18	0.31
EN6	4.87%	5.37%	33.22%	45.26%	18.69%	18.91%	0.42	0.35	0.30

c. District 7

Figure GG.17: Hispanic Population Density in PR7 and EN7

[17] *See* Shaw v. Reno, 509 US 630 (1993)

District 7 is a plurality Hispanic district on the Brooklyn-Queens border, traveling from Woodhaven to South Williamsburg, absorbing some of Manhattan's Chinatown, and re-entering Brooklyn until terminating at Sunset Park. The proposed district 7 tracks the enacted district 7 almost exactly, deviating by a few blocks in Chinatown and traveling slightly further north to achieve population equality. Presuming the enacted district is legal means the proposed district is likely also legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table also shows that PR7 and EN7 have similar compactness scores, meaning that PR7 did not subordinate compactness considerations any more than EN7.

Table GG.11: Demographics and Compactness of District 7

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR7	10.7%	12.47%	16.3%	21.43%	36.0%	37.21%	0.22	0.08	0.15
EN7	10.63%	12.33%	16.28%	21.58%	35.96%	37.14%	0.21	0.10	0.13

d. District 8

Figure GG.18: African-American Population Density in PR8 and EN8
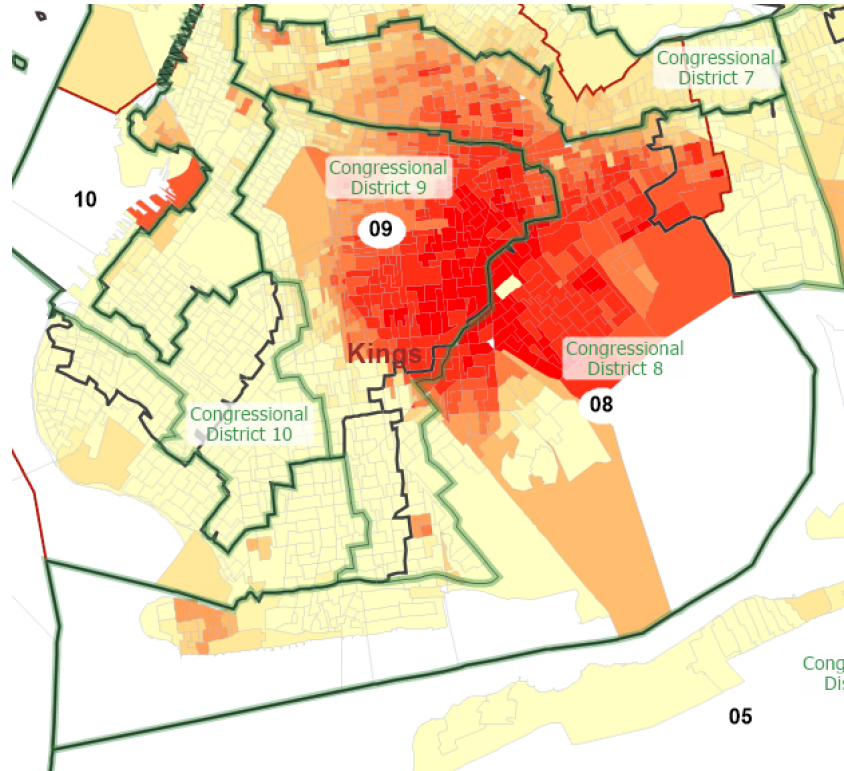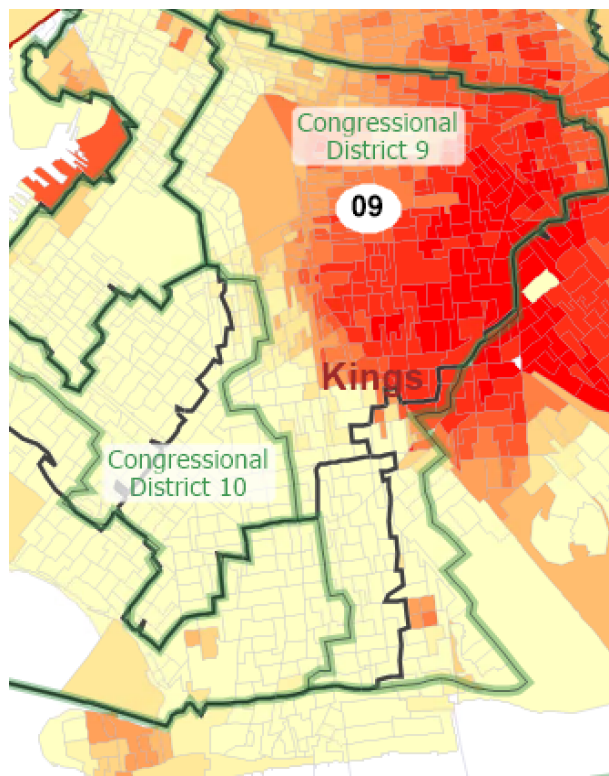

District 8 is a majority Black district in Brooklyn, traveling northeast from Coney Island to New Lots and then west toward Clinton Hill. Since the proposed district 8 overlaps with much of the enacted district 8, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR8 is more compact than EN8 on the Reock and Ehrenburg metrics but slightly less compact on the Polsby-Popper metric. Therefore, PR8 is probably more compact than EN8 and so would likely withstand a *Shaw* claim. Moreover, PR8's emphasis on preserving communities of interest illustrates how traditional redistricting criteria dominated racial considerations: the district would have higher concentrations of African-Americans if it lost parts of Coney Island (the yellow colored area in the southern part of PR8), but since Coney Island is likely a community of interest, I opted to keep it intact.

Table GG.12: Demographics and Compactness of District 8

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR8	50.9%	51.05%	5.1%	8.29%	13.7%	15.32%	0.36	0.19	0.46
EN8	50.95%	50.63%	5.06%	8.96%	15.28%	17.15%	0.32	0.20	0.41

e. District 9

Figure GG.19: African-American Population Density in PR9 and EN9

District 9 is a compact, majority Black district in Brooklyn centered around Flatbush and Crown Heights, but dipping South toward Mapleton. Since the proposed district 9 overlaps with much of the enacted district 9, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated, and in fact slightly decreased the African-American VAP and CVAP shares. The table below shows that PR9 is significantly more compact than EN9 on Ehrenburg measure, slightly more compact on the Reock measure, and slightly less compact on the Polsby-Popper measure. Overall PR9 is probably more

compact with a lower African-American population compared to EN9, making it difficult to show that race predominated in the district's construction.

Table GG.13: Demographics and Compactness of District 9

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR9	45.6%	47.09%	9.5%	12.9%	10.4%	12.29%	0.38	0.30	0.48
EN9	46.88%	49.5%	6.9%	9.51%	10.32%	11.38%	0.35	0.31	0.36

f. District 13

Figure GG.20: Hispanic Population Density in PR13 and EN13
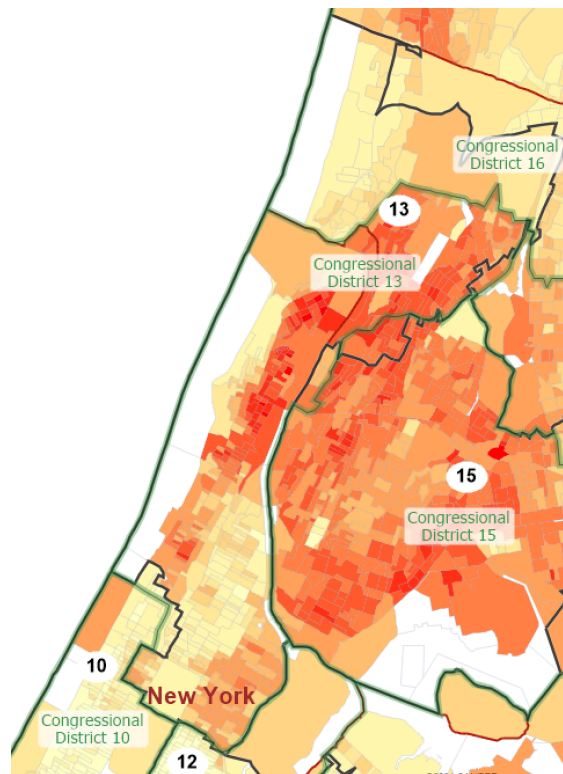
District 13 is a majority Hispanic district in Manhattan and the Bronx, stretching from Harlem to Riverdale, effectively following the northmost portion of New York City's 1 subway line. Since the proposed district 13 overlaps with much of the enacted district 13, it is likely legal. Since the
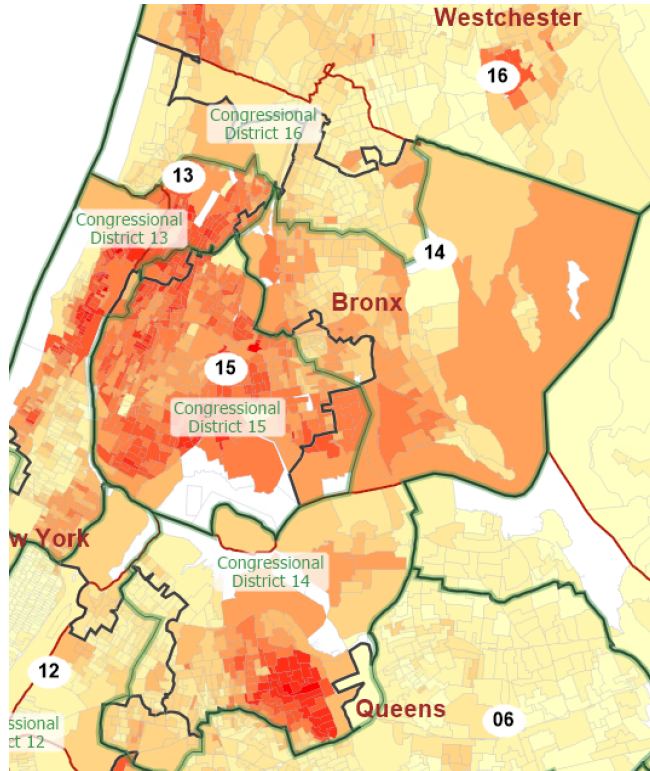
demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR13 is less compact than EN13 on Polsby-Popper measure, identically compact on the Reock measure, and more compact on the Ehrenburg metric. Therefore, PR13 and EN13 have similar compactness scores, meaning that PR13 did not subordinate compactness considerations any more than EN13. Moreover, district 13's emphasis on respecting political subdivisions illustrates how traditional redistricting criteria dominated racial considerations: the district could have increased its Hispanic VAP and CVAP numbers by extending north into Yonkers (the red and orange region just north of PR13), but since that would require crossing the Westchester County border, I decided against doing so.

Table GG.14: Demographics and Compactness of District 13

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR13	27.5%	32.96%	4.2%	6.19%	46.9%	50.74%	0.26	0.21	0.26
EN13	28.92%	24.37%	4.29%	6.48%	47.7%	50.99%	0.26	0.29	0.18

g. District 14

Figure GG.21: Hispanic Population Density in PR14 and EN14

District 14 is a plurality Hispanic district in the Bronx and Queens, stretching from Baychester to Jackson Heights. Since the proposed district 14 overlaps with much of the enacted district 14, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR14 is more compact than EN14 on the Reock and Ehrenburg metrics but less compact on the Polsby-Popper measure. Therefore, PR14 and EN14 have similar compactness scores, meaning that PR14 did not subordinate compactness considerations any more than EN14. Moreover, district 14's emphasis on respecting political subdivisions illustrates how traditional redistricting criteria dominated racial considerations: the district could have increased its Hispanic VAP and CVAP numbers by extending north into New Rochelle (the red and orange region at the northern edge of the image), but since that would require crossing the Westchester County border, I decided against doing so.
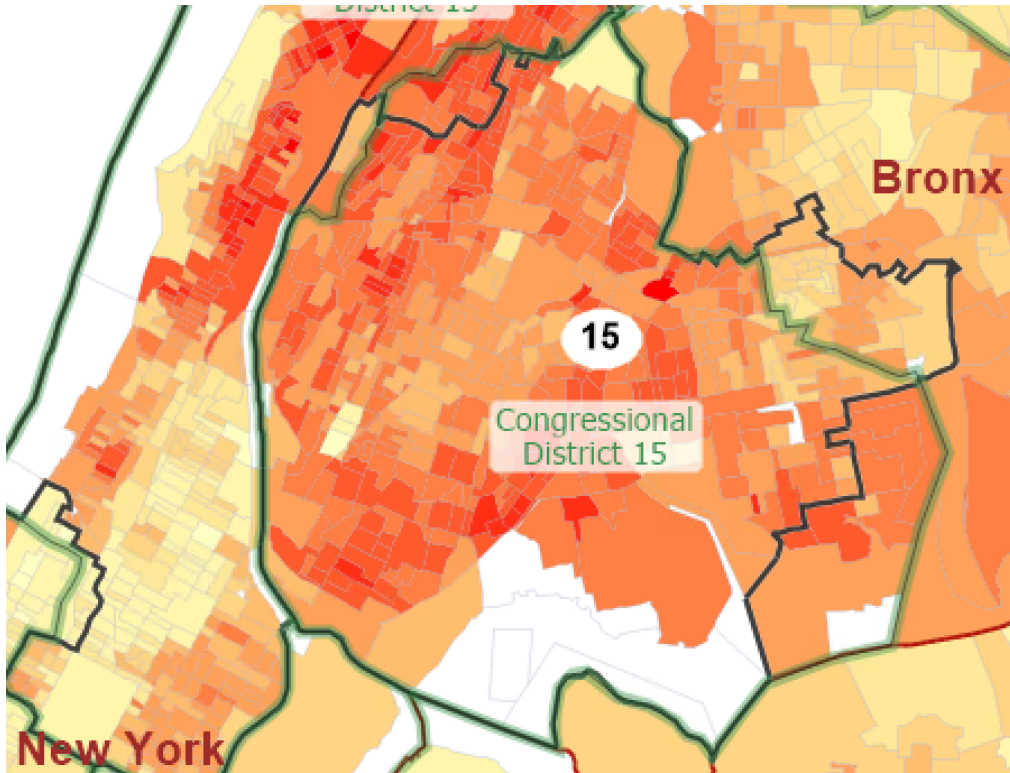
Table GG.15: Demographics and Compactness of District 14

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR14	24.4%	24.09%	11.2%	15.45%	41.8%	46.84%	0.38	0.16	0.27

| EN14 | 12.54% | 12.45% | 15.51% | 20.36% | 41.16% | 46.64% | 0.31 | 0.23 | 0.22 |

h. District 15

Figure GG.22: Hispanic Population Density in PR15 and EN15

District 15 is a compact, majority Hispanic district in the South Bronx. Since the proposed district 15 overlaps with much of the enacted district 15, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR15 is significantly less compact than EN15 on the Polsby-Popper measure, slightly less compact on the Reock measure, and slightly more compact on the Ehrenburg measure. Therefore, PR15 is not dramatically less compact than its predecessor, showing the proposed district's deviations from EN15 did not sacrifice compactness too much. Either way, district 15 is still quite compact, and its shape is unlikely to raise eyebrows.

Table GG.16: Demographics and Compactness of District 15

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR15	32.9%	40.39%	2.7%	4.65%	60.0%	61.82%	0.67	0.38	0.62
EN15	31.93%	39.81%	1.96%	3.31%	61.96%	64.14%	0.71	0.55	0.59

4. New York State Law

The New York State Constitution imposes only three additional requirements on congressional maps: districts must be contiguous, compact, and not drawn "to discourage competition or for the purpose of favoring or disfavoring incumbents or other particular candidates or political parties."[18] The next three sections detail how the plan complies with each requirement.

a. Contiguity

Each district is contiguous over land, so the map satisfies the state's contiguity requirement. The sole exception is district 10, which includes Liberty Island and Ellis Island, neither of which have a connection to other landmasses in the state. Since contiguity in this case is not possible (and is not present in the enacted map), this exception likely does not violate the state's requirement.

In other cases where a district connects two bodies of land over water, the district contains a bridge connecting these landmasses. For example, district 11 connects its Staten Island and Brooklyn parts by the Verrazzano-Narrows Bridge. Similarly, district 14 traverses the Whitestone Bridge to connect its territory in Queens to its population in the Bronx. The enacted plan similarly uses bridges to establish contiguity over land, granting credibility to this analysis. Overall, the proposal meets the state's contiguity mandate.

b. Compactness

The proposed districts are relatively compact and score similarly to the enacted plan. The table below displays the overall compactness measures for the proposed and enacted plans. In the table, SD means standard deviation, RK means Reock, PP means Polsby-Popper, and EH means Ehrenburg.

This table shows that the two plans fare similarly on these three measures of compactness. On the Polsby-Popper measure, the enacted plan outperforms the proposed plan, with higher maximum, minimum, and mean values. On the Reock measure, the plans appear quite similar: the enacted plan

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[18] N.Y. CONST. art. III, §§ 4(c)(3)-(5)

has a slightly higher maximum, slightly slower minimum, and nearly identical means and standard deviations. Using the Ehrenburg measure, the proposal slightly outperforms the enacted plan, with a slightly higher maximum and mean, and nearly identical minimum values and standard deviations. Combined, these measures show that the two plans have similar levels of compactness. Assuming the enacted plan satisfies New York's compactness requirement, the proposal likely does as well.

Table GG.17: Overall Compactness Measures Across Plans

Plan	RK Max	RK Min	RK Mean	RK SD	PP Max	PP Min	PP Mean	PP SD	EH Max	EH Min	EH Mean	EH SD
PR	0.67	0.13	0.43	0.12	0.48	0.08	0.29	0.11	0.62	0.13	0.40	0.14
EN	0.71	0.12	0.42	0.13	0.55	0.09	0.35	0.12	0.60	0.12	0.37	0.14

c. Political Bias

The construction of this plan did not use political data, so it would be nearly impossible for it to have been drawn "to discourage competition or for the purpose of favoring or disfavoring incumbents or other particular candidates or political parties." Examining the population density of Biden voters in 2020 across the state illustrates the lack of political bias in my map: no district contorts itself to absorb or avoid Democratic or Republican areas. The two images below show the density of Democratic voters in the 2020 presidential election, where darker blue indicates a higher proportion of Democrats. As usual, the black lines show the proposed districts and the maroon lines indicate county borders.

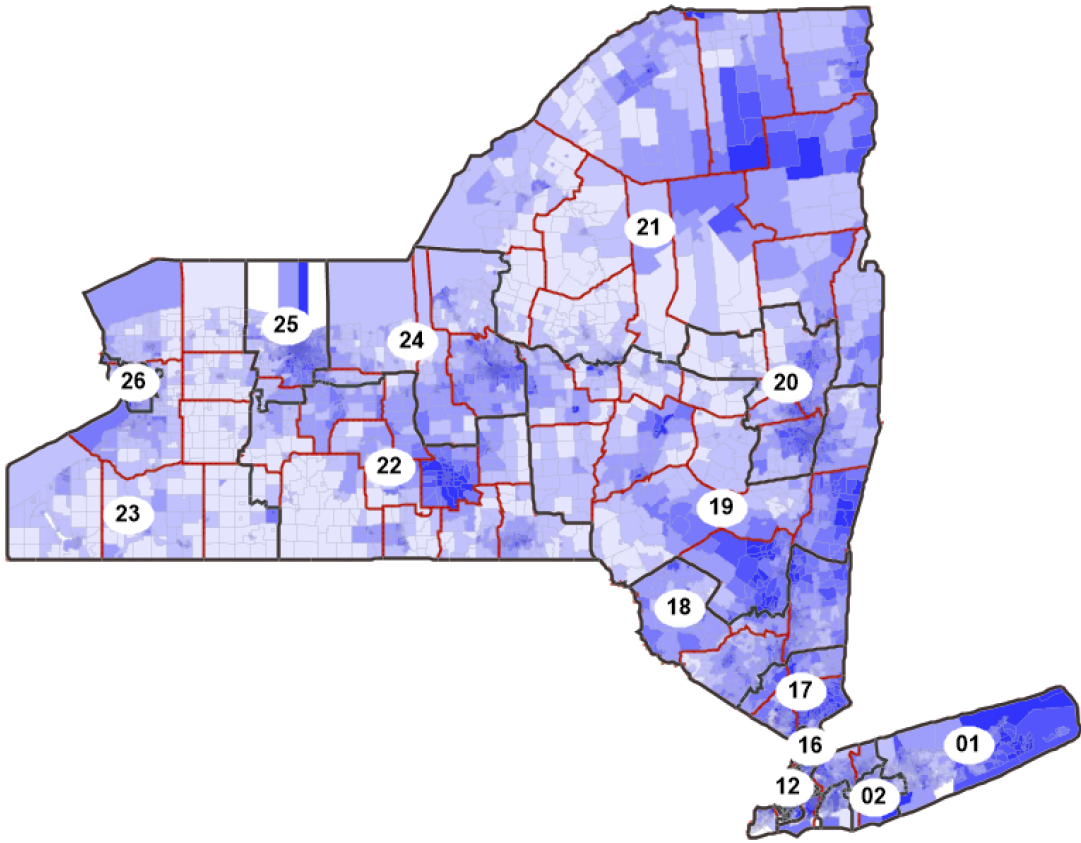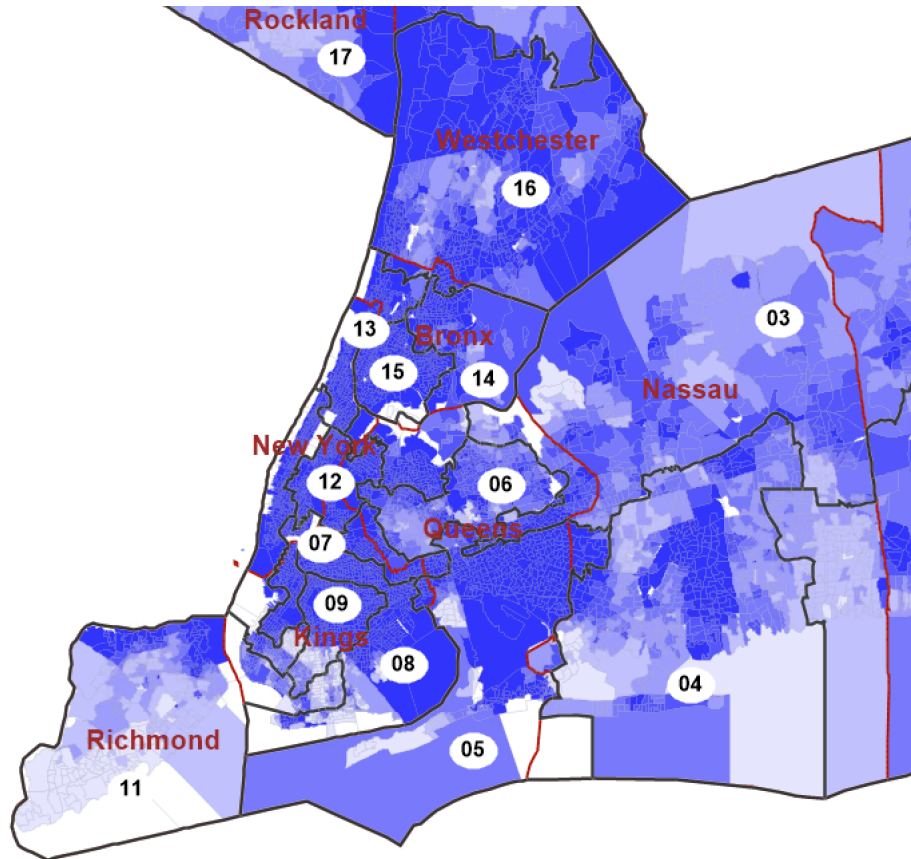Figure GG.23: Population Density of Democrats, New York State

Figure GG.24: Population Density of Democrats, New York City Area

An independent assessment of the proposal's political bias reveals that the map slightly favors Democrats. Across a set of scenarios, PlanScore predicts that Democrats would win 60% of votes statewide but 71% of the congressional seats. Conversely, Republicans would win 40% of votes statewide but form just 29% of the state's representatives. Running the same analysis on the enacted plan shows similar levels of bias: PlanScore predicts Democrats would win 70% of the congressional seats, with Republicans capturing the other 30%. Since the plan has similar partisan implications to the current plan, it will likely pass the state's political bias test.

On competition, the proposed plan outperforms the enacted plan. Defining a competitive district as a district where the difference between the Republican and Democratic vote shares in the 2020 presidential election was at most five percentage points, the enacted plan has three competitive districts (EN1, EN2, and EN19). In contrast, the proposed plan has five competitive districts (PR1, PR2, PR18, PR19, and PR22). Therefore, the proposal will likely pass the state's political competition test.

B. Plan Description

I started by removing a district in upstate New York, where population growth was slowest. As a result, the map substantially deviates from the enacted plan throughout the region. When making these deviations, I sought to minimize the number of county, town, and precinct splits. For example, when expanding district 20, I removed a split in Rensselaer and Saratoga counties. Similarly, I adjusted districts 17 and 18 to remove a county split from Westchester and Dutchess counties. However, to achieve population equality, I had to split some previously unsplit counties: Allegany, Orange, Livingston, and Oneida. Ultimately, I was only able to marginally improve the plan's county splits; the proposed plan has 18 split counties compared to the enacted plan's 19.

In some cases, preserving counties traded off with compactness. For example, when drawing districts 19 and 21, I had to choose whether to split Herkimer county (currently split between PR19 and PR21). If I placed the whole county in district 19, the county's long, rectangular shape would have made district 19 non-compact: the district would have had an arm extending from the middle of the state to St. Lawrence county, close to the northern border with Canada. In that case, the district would stretch across an incredibly large distance from its northern to southern end. However, placing Herkimer county in district 21 would cause similar compactness issues: to avoid another county split, district 19 would have to make up the population by extending further into Oneida county. The result would be that district 21 would appear to cut into district 19, creating a rectangular incision to keep Herkimer county. Instead, I opted to split Herkimer county, creating a more compact PR19 and PR21. As a result, PR19 has a relatively flat northeast border.

Figure GG.25: Northeast Border of District 19
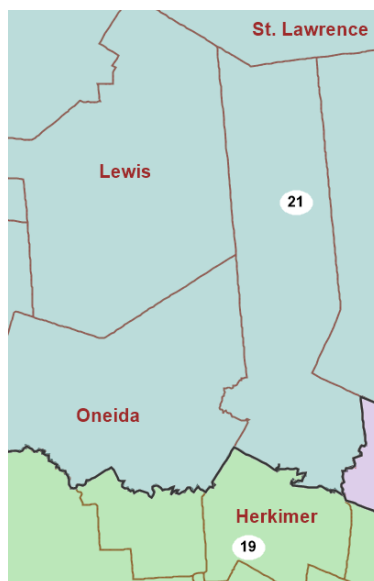
In other cases where I faced a similar decision — to split counties to increase compactness — I made the opposite call. For example, district 18 splits Ulster county to achieve population equality but keeps Sullivan and Dutchess counties intact. If district 18 split Dutchess and Sullivan counties, it could achieve a more even northern border. Instead, large parts of Dutchess and Sullivan counties stick out from district 18's core, reducing the district's compactness. However, the compactness gain to splitting Dutchess and Sullivan counties would be small, so in the interest of keeping counties together, I allowed district 18 to be slightly less compact.

Figure GG.26: Northern Border of District 18
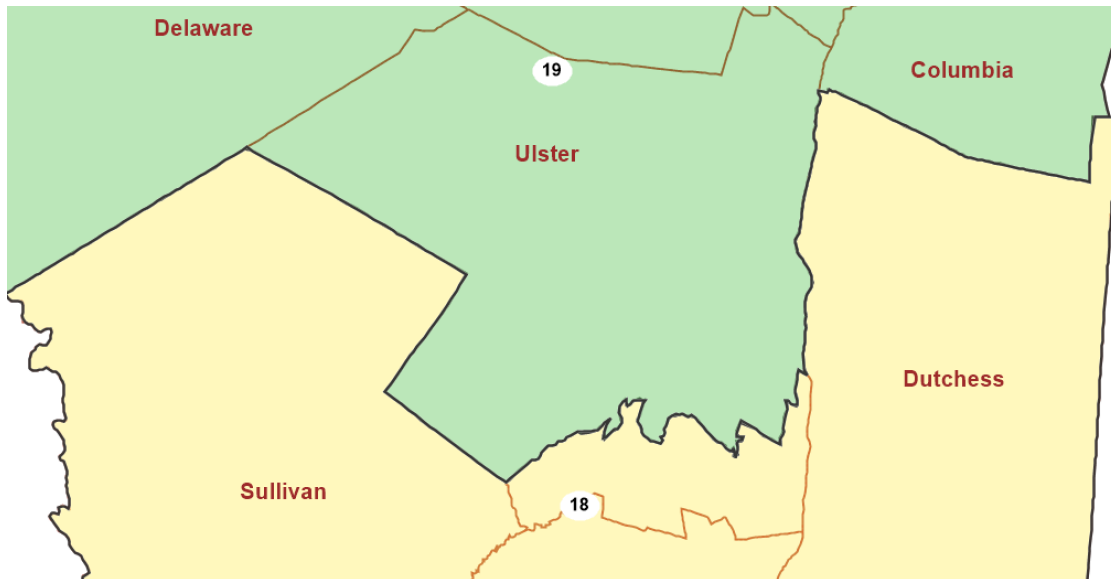
When I split counties, I attempted to keep towns and precincts together. This was particularly challenging since town borders often do not align with precinct borders. For example, in Livingston county, the towns of York, Wadsworth, and Greigsville are split between two precincts. As a result, when district 25 dips slightly into Livingston county to achieve population equality, the district must choose between splitting these towns and the precinct. Since towns are more likely to designate communities than precincts, I generally opted to preserve towns when this tradeoff emerged. The result is that district 25 splits a precinct in Livingston county to avoid splitting York, Wadsworth, and Greigsville.

Figure GG.27: Southern Border of District 25
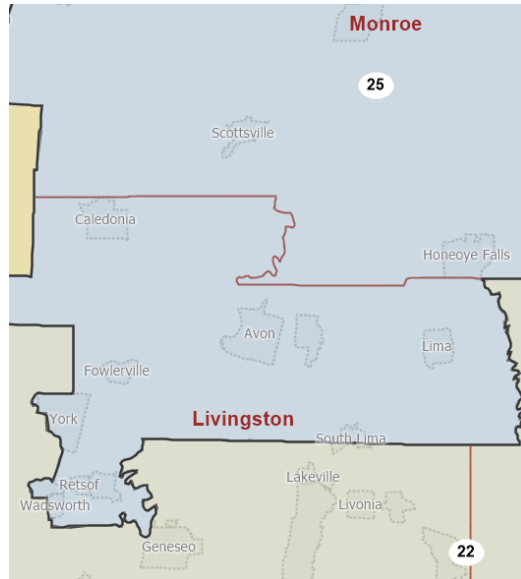
Oftentimes, keeping precincts and towns together traded off slightly with compactness. For example, some districts have small extensions to meet town or precinct boundaries. For example, district 26 cannot contain the entirety of Erie county, since the county's population is too large for a single district. When determining where to split the county, the district respects town boundaries. The result is a small protrusion from the main body of the district to absorb the town of Clarence Center. However, these protrusions are so small that they barely affect compactness measures, and they are often not visible from a state-level view of the districts. Therefore, I opted to preserve towns at the expense of compactness in similar scenarios.

Figure GG.28: District 26 in the Vicinity of Clarence Center
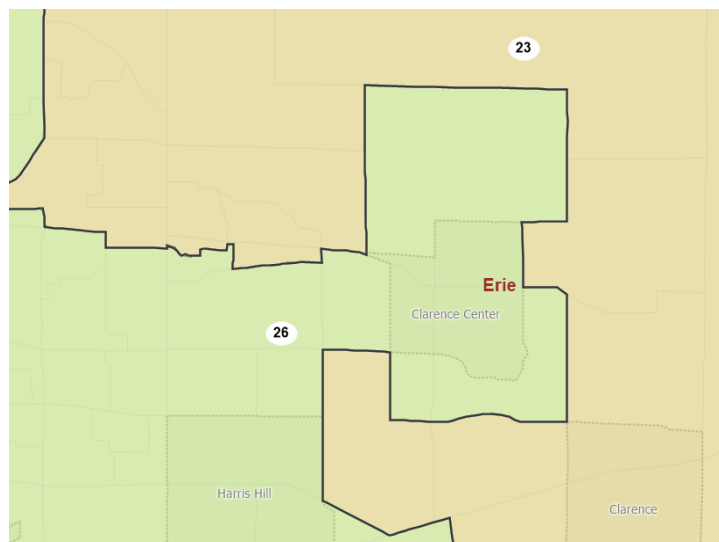
Overall, the map achieves its goal of keeping towns and precincts together. In total, the map splits only 24 precincts outside New York City and only 59 precincts in total. The map also splits only 50 cities/towns throughout the state. In comparison, the map keeps over 14,000 precincts intact and over 12,000 cities/towns intact. This is slightly worse than the enacted map, which splits only 40 towns and 22 precincts. However, as precincts are often redrawn between redistricting cycles, the number of current precinct splits in the enacted map is not informative.

Within New York City, without formal town boundaries to guide district lines, the plan still attempts to keep neighborhoods together, changing as little as possible from the previous districts. For example, the core of district 6 remains in Bayside and Flushing. Similarly, district 13 remains centered around Washington Heights and contains a similar set of neighborhoods in both the proposed and enacted plans.

One of the main challenges in New York City was preserving minority opportunity districts 5-9 and 13-15. In general, districts in the south of the state needed to shift north and west to achieve population equality, meaning they could not remain exactly where they were. Ensuring these shifts did not destroy opportunity districts while simultaneously seeking to make districts compact and contiguous presented a unique set of challenges.

Entering New York City, I started with district 5, a majority Black district in southern Queens. For population equality reasons, district 5 had to shift slightly west. I therefore pushed the western border of district 5 slightly into Brooklyn (for reference, see Figure GG.15). However, district 5 could not absorb too much of Brooklyn: if it did, district 8 and 9 would lose substantial parts of the African-American population in the county. Instead, district 5 pushed slightly north into the enacted district 6. Here, too, I had to be careful: to maintain similar concentrations of Asian-Americans in district 6, district 5 could not push too far north (for reference, see Figure GG.16). The plan therefore balances district 5's northern and eastern extensions to preserve Black opportunity districts 8 and 9 and Asian-American opportunity district 6.

At the same time, district 5 was limited on its southern side. My first draft of the plan transferred the Nassau county town of Inwood from enacted district 5 to proposed district 4. This move served to increase the concentration of African-Americans in district 5 by losing a town with relatively low Black population density. However, this transfer made district 5 barely contiguous by land, with only the Cross Bay Veterans Memorial Bridge connecting the Rockaways to the rest of the district. As a result, I opted not to make this transfer, keeping district 5 more clearly contiguous over land but losing an opportunity to bolster its African-American population.

Figure GG.29: Google Maps Overlaid on Proposed District 5

Queens
05

Similarly, I considered splitting the Rockaways. Splitting the Rockaways would have increased district 5's African-American population by losing some areas with low levels of Black population by VAP (see the density map in Figure GG.15). However, I considered the Rockaways to be a single community, since the region shares similar interests in cases such as the environment and hurricane protection.[19] As a result, I opted to keep the entirety of the Rockaways in district 5, losing another opportunity to increase the district's Black VAP numbers. In the end, district 5 barely retained its majority Black status (see Table GG.9) while remaining contiguous over land and preserving most of its neighborhoods.

After district 5, I shifted my focus to district 6, an Asian-American opportunity district in Queens (for reference, see Figure GG.16). Since district 6 had lost some population to the expanding districts 3 and 5, the district had to expand further west into Queens. While expanding into Queens, I had to be careful to avoid encroaching on Hispanic communities on the Brooklyn-Queens border and in northern Queens, as these communities formed the bulk of Hispanic opportunity districts 7 and 14 (see the density maps in Figures GG.17 and GG.21). At the same time, to maintain the district's status as an Asian-American opportunity district, I hoped to expand the district into neighborhoods with high levels of Asian-Americans. I also aimed to create a compact district and to avoid splitting

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[19] *See* Luis Ferré-Sadurní, *Could the Rockaways Survive Another Sandy?*, NEW YORK TIMES (July 13, 2017), https://www.nytimes.com/2017/07/13/nyregion/rockaways-beaches-hurricane-sandy.html

neighborhoods, meaning I could not surgically separate the Asian-American and Hispanic populations in places such as Jackson Heights.

The result was that district 6 expands into Sunnyside. It absorbs much of the neighborhood, avoiding unnecessary neighborhood splits and maintaining the district's compactness. Sunnyside also has relatively higher concentrations of Asian-Americans than the surrounding neighborhoods, though Asian-Americans are far from a majority in the neighborhood. Consequently, the proposed district 6 and the enacted district 6 have nearly identical levels of Asian-Americans by VAP and CVAP (see Table GG.10). At the same time, Sunnyside does not intrude on the Hispanic communities in districts 7 and 14, allowing those districts to retain their Hispanic opportunity status.

District 7 required little adjustment, since it was quite close to population equality. The proposal pushes district 7 slightly further into Queens, absorbing more of the Hispanic community on the Brooklyn-Queens border (for reference, see Figure GG.17). To reach population equality, the district loses a handful of blocks on the lower east side of Manhattan. With these changes, the proposed district 7 has nearly identical demographics to the enacted district 7; most notably, district 7 retains its Latino plurality and will likely continue to perform as a Hispanic opportunity district (see Table GG.11).

Adjusting districts 8 and 9 proved to be quite challenging. District 8 lost some population to district 5 and therefore needed to expand west (see Figure GG.18). When expanding west, I chose the precincts that would add to district 8's compactness, taking population from district 9. However, I also tried to avoid areas of high African-American population density to ensure that district 9 could remain plurality Black. Together, these considerations meant that district 8 pushed into the southeast portion of district 9, an area of relatively low African-American population density but still high enough to allow district 8 to remain majority Black (see Table GG.12).

When district 8 reached population equality, I moved on to district 9. District 9 has a round-shaped core with a stem extending south; however, district 8's expansion effectively removed district 9's stem. Wherever district 9 drew a new stem, it would have expanded into areas of low African-American population density (see Figure GG.19). As a result, compactness was the main consideration when expanding district 9, and I opted to rotate district 9's stem northeast. The new district 9 is therefore more compact than the previous district, as seen in Table GG.13. This shift also slightly increased the compactness of district 10 by reducing how far the district pushed into Brooklyn, though the difference is quite small.

The next main challenge in the New York City area was shifting districts 13-15. After I solidified those districts, I used districts 10-12 to fill in the remaining area while minimizing deviations from the enacted districts 10-12. The result is that districts 10-12 look quite similar to their predecessors: district 12 pushes slightly further into Queens, district 10 loses its farthest reaches of

Brooklyn and gains a few blocks in lower Manhattan, and district 11 trades small areas of southern Brooklyn.

Figure GG.30: New York City Area, Comparison to Previous Districts
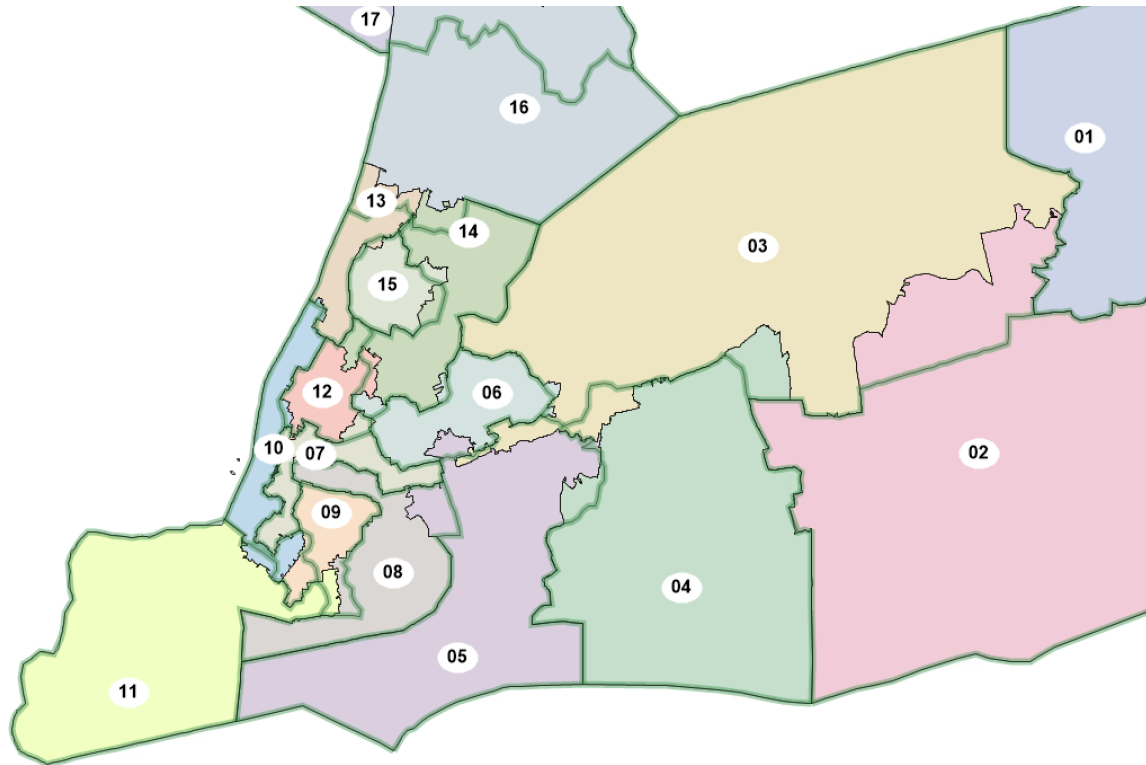
To achieve population equality, district 13 was forced further north. The result was that the district absorbed many areas of relatively low Hispanic population density in the north Bronx (see Figure GG.20). To maintain its status as a majority Hispanic district, PR13 had two options: expand north into areas with high Hispanic population density in Yonkers, or trade small areas of the Bronx with district 15. The second option allowed district 13 to remain more compact and prevented another split of Westchester county. Since district 15 had high concentrations of Hispanics by VAP, district 13 could take small segments of high Hispanic population density while allowing district 15 to remain majority Hispanic. I therefore chose the second option, ensuring that district 13 and 15 were both fairly compact and majority Hispanic (see Tables GG.14 and GG.16).

When drawing district 14, I faced a similar set of considerations as with district 13. The district was forced north, and the question was how far north to travel. Expanding district 14 into New Rochelle in Westchester county would have increased its Hispanic population but reduced its compactness, as well as further splitting Westchester county. As a result, I chose to expand district 14 to

the Bronx border and no further. As district 14 shifted up and lost parts of Queens, I chose areas of relatively low Hispanic population to lose (see Figure GG.21). I then used a similar strategy as with district 13 to shore up the Hispanic population in the district, trading small sections of the Bronx with district 15. In the end, district 14 maintained similar levels of Hispanics by VAP and CVAP (see Table GG.15), ensuring its status as a Latino opportunity district. Aside from the aforementioned interactions with districts 13 and 14, district 15 remained essentially the same (see Figure GG.22).

One consequence of my decision not to expand districts 13 and 14 into Westchester was that district 16 lost much of its territory in the Bronx, which the plan transferred into PR13 and PR14. As a result, district 16 cuts through the African-American community on the Bronx-Westchester border, which was formerly contained in EN16. Losing the African-American population in the north Bronx shifts the demographics of district 16: as the table below shows, EN16 is majority minority by both VAP and CVAP and plurality Black by VAP. In contrast, PR16 is majority minority by VAP but not by CVAP, and the district is no longer plurality Black.

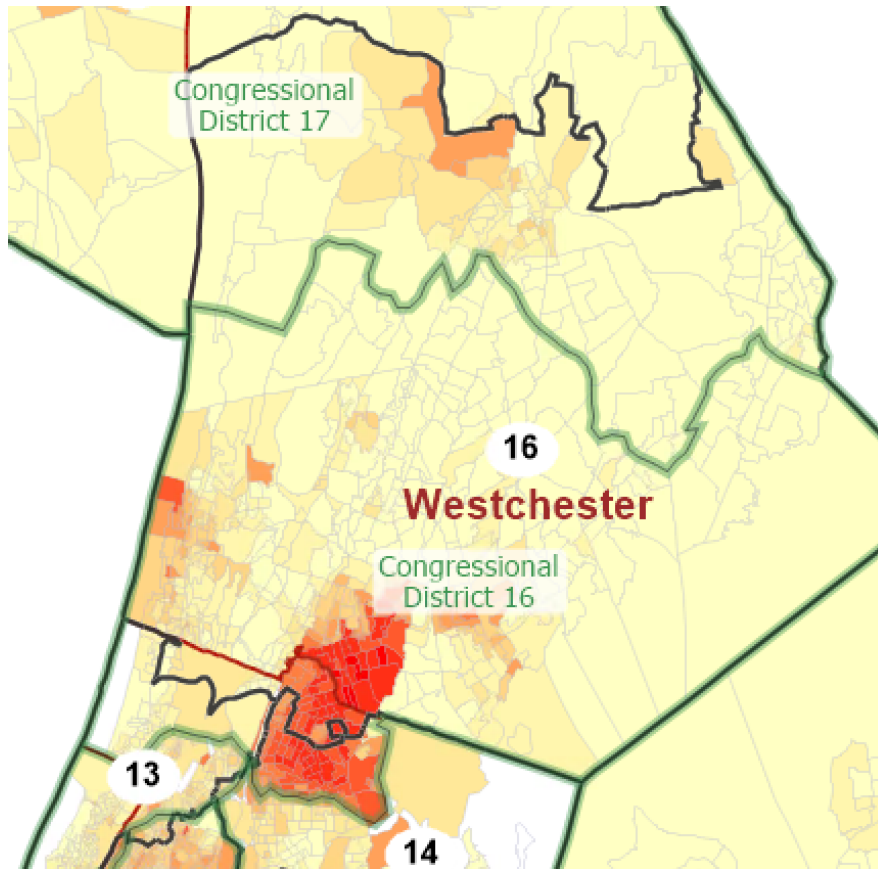Figure GG.31: African-American Population Density in District 16

Table GG.18: Demographics of District 16

District	NH_BLK _CVAP	BLK_VAP	NH_ASN_ CVAP	ASN_VAP	H_CVAP	H_VAP	NH_WHT _CVAP	NH_WHT _VAP
PR16	22.4%	23.93%	5.5%	7.61%	19.9%	26.76%	51.5%	42.68%
EN16	32.05%	35.49%	4.8%	6.25%	2.16%	26.29%	40.72%	34.23%

I ultimately accepted this consequence. The only remedy would have been to expand district 13 or 14 into Westchester, which would have connected urban areas of the Bronx, Manhattan, and/or Queens with suburban towns. For example, to connect district 14 with New Rochelle, the district would likely have to absorb parts of Pelham, a suburban area of Westchester. Moreover, the new district would have an unwieldy shape, weaving through at least three counties, starting in small Westchester towns before diving into the heart of the country's largest city. Judging that such a district sacrificed communities of interest and compactness considerations, I chose not to create it.

Overall, the plan balanced good government concerns with traditional redistricting principles and a desire to maintain minority voting power. The plan succeeded in striking that balance, forming contiguous, relatively compact districts that mostly kept towns, precincts, and counties together. At the same time, the plan ensured that minority opportunity districts in the previous plan maintained their status, allowing African-Americans, Hispanics, and Asian-Americans to have an equal opportunity to elect their candidates of choice.

C. Comparison to NYIRC Plans

On January 3, 2022, the New York State Independent Redistricting Commission (NYIRC) submitted two redistricting plans to the state legislature for consideration and approval: plan A and plan B. Both plans are quite similar, with only small adjustments to district lines between the two. I discuss them together as essentially one proposal.

The commission's proposals appear to be least change maps, minimizing deviations from the enacted districts. As a result, the commission's plans appear quite similar to this proposal in many ways. For example, all three maps have a similar set of minority opportunity districts, with majority Hispanic districts 13 and 15, majority Black district 5, Asian-American opportunity district 6, and Hispanic opportunity districts 7 and 14. The only difference is that in my proposal, district 8 is majority Black and district 9's African-American population is barely shy of a majority, whereas in the commission's proposals the opposite is true: district 9 is majority Black while district 8 is not. In each

minority opportunity district, the demographics of the commission's districts are quite similar to mine.

Since the commission's plans also start from the previous districts, many of the commission's districts bear surprising resemblance to mine. For example, the commission's proposed district 5 (pictured below) looks nearly identical to my proposed district 5 (shown in Figure GG.29). Both districts are centered around southern Queens, pushing slightly west into Brooklyn and east into Nassau county. Both districts then scoop up the Rockaways, taking care to keep them in one district. The image below shows district 5 from the commission's proposal A, and the district 5 in proposal B is almost exactly the same.

Figure GG.32: NYIRC Proposal A, District 5

One notable difference between the commission's proposals and my map is that the commission chose to exclude the Nassau county neighborhood of Inwood in their district 5, whereas my proposal includes it. The result is that the commission's district 5 is less obviously contiguous over land, with only a bridge connecting the Rockaways to the rest of the district.

Aside from slight differences in district boundaries between my plan and the commission's proposals, the commission makes one markedly different decision in drawing districts 14, 16, and 17.

As I discussed in the previous section, I chose not to extend district 14 into Westchester because it would create non-compact districts and connect suburban Westchester towns to urban areas of district 14. However, the commission made the opposite decision, extending district 14 into parts of Pelham, New Rochelle, Larchmont, and Mamaroneck. To make up for the population district 14 claimed in Westchester, district 16 pushes into the Bronx, absorbing the African-American community in the north Bronx and maintaining the district's majority minority status by VAP and CVAP. The table below shows the demographics of my proposed districts 14 (PR14) and 16 (PR16) compared to the commission's proposal A (CA14 and CA16) and proposal B (CB14 and CB16). The image below shows the relevant districts from proposal A, and the area looks nearly identical in the commission's proposal B.

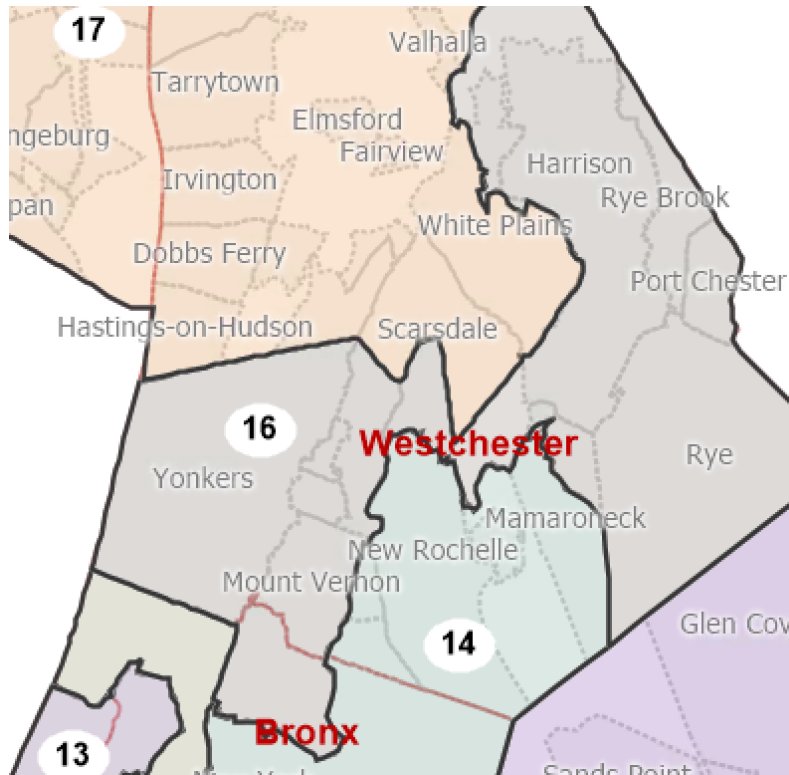Figure GG.33: NYIRC Proposal A, districts 14, 16, and 17

Table GG.19: Demographics of Districts 14 and 16

District	NH_BLK _CVAP	BLK_VAP	NH_ASN_ CVAP	ASN_VAP	H_CVAP	H_VAP	NH_WHT _CVAP	NH_WHT _VAP
PR14	24.4%	24.09%	11.2%	15.45%	41.8%	46.84%	21.7%	16.68%

CA14	15.99%	16.32%	10.7%	14.12%	39.38%	45.97%	33.3%	25.86%
CB14	15.91%	16.22%	11.12%	14.77%	39.69%	46.02%	32.68%	60.31%
PR16	22.4%	23.93%	5.5%	7.61%	19.9%	26.76%	51.5%	42.68%
CA16	27.87%	31.32%	3.79%	5.07%	19.84%	25.44%	47.7%	39.88%
CB16	28.98%	32.26%	4.07%	5.32%	20.52%	26.13%	45.55%	38.13%

While the commission's map preserves district 16's status as a majority minority district by CVAP, it does so at significant costs to compactness and preserving political subdivisions. For example, the commission's district 14 cuts through two towns that my district avoids: Mamaroneck and New Rochelle. At the same time, the commission's maps place parts of Westchester into district 17, splitting the county into three districts (my proposal splits Westchester county into only two districts). The result is that district 16 is highly non-compact: the district starts in the northeast of Westchester county, traveling south along the state's eastern border. The district then abruptly pivots west, weaving through the narrow passage between districts 14 and 17, slicing through New Rochelle on the way. Once on the western side of district 14, the district dives south into the Bronx, where it terminates. In contrast, my plan of the region better respects political subdivisions while ensuring district 16 is majority minority by VAP (though not by CVAP).

Overall, my proposal outperforms the commission's maps on good government metrics. The commission's proposal A splits 25 counties, 59 towns, and 274 precincts, and their proposal B splits 24 counties, 60 towns, and 312 precincts. In contrast, my proposal splits 18 counties, 50 towns, and 59 precincts, representing considerably more respect for political subdivisions. This difference stems in part from how the commission redrew upstate New York, where they introduced avoidable county splits. For example, the commission's district 25 splits both Wayne and Ontario counties, when the district needed to split only one county to achieve population equality. The map below shows district 25 from proposal A, though the district looks nearly identical in proposal B.

Figure GG.34: NYIRC Proposal A, District 25

On compactness, my map similarly performs better than the commission's proposal. The commission's proposal A earns mean Reock, Polsby-Popper, and Ehrenburg scores of 0.38, 0.28, and 0.34 respectively. Similarly, their proposal B earns mean Reock, Polsby-Popper, and Ehrenburg scores of 0.38, 0.28, and 0.32 respectively. My proposal scores higher than both maps on all three metrics, with mean Reock, Polsby-Popper, and Ehrenburg scores of 0.43, 0.29, and 0.40 respectively. Part of the reason for this difference in compactness has to do with the commission's relatively non-compact districts in upstate New York, where my map took care to draw compact districts.

Figure GG.35: NYIRC Proposal A, District 22
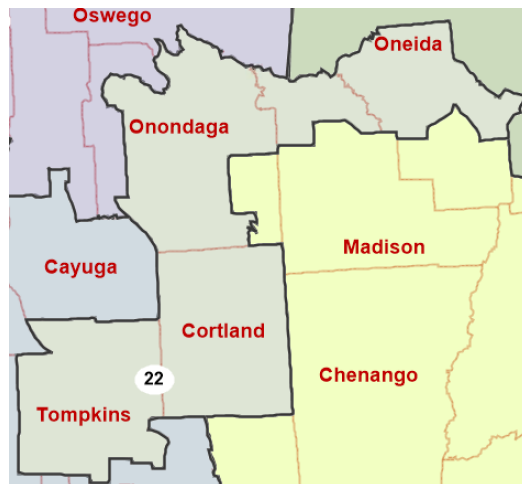
For example, as the image above shows, the commission drew a highly non compact district 22. While the image shows the district from proposal A, the district has the same shape in proposal B. In both cases, the district begins in Tomkins county and travels east into Cortland before suddenly curving north to cut through Onondaga county. The district then makes a sharp turn east to cut through parts of Madison and Oneida counties. On the Reock, Polsby-Popper, and Ehrenburg scores, this district earned 0.27, 0.15, and 0.17 respectively in proposal A. In proposal B, the district scored 0.3, 0.2, and 0.2 on the Reock, Polsby-Popper, and Ehrenburg metrics respectively. While these scores are not concerning on an absolute basis, they could have been much higher if the commission drew a district with fewer sharp turns.

On political considerations, my proposal also appears to perform better than either of the commission's maps. Defining a competitive district as a district where the difference between the Republican and Democratic vote shares in the 2020 presidential election was at most five percentage points, the commission's proposal A has only three competitive districts (districts 1, 18, and 19). Proposal B also has three competitive districts (districts 1, 2, and 18). In contrast, my proposal has five (districts 1, 2, 18, 19, and 22). Therefore, my plan encourages more political competition than the commission's maps.

When measuring political bias, I ran independent analyses from PlanScore on all three proposals. The analyses revealed similar levels of bias. Across a range of scenarios, PlanScore predicts that Republicans would win 40% of the votes statewide, while Democrats would win 60%. Under my proposal, PlanScore predicts that Democrats would win 71% of the congressional seats, and Republicans would take the remaining 29%. The commission's proposals yielded similar predictions. Under proposal A, Democrats would form 73% of the congressional delegation, and Republicans would form the other 27%. With proposal B, Democrats would win 72% of the districts, and Republicans would take the remaining 28%. Based on these predictions, it appears all three plans are slightly biased in favor of Democrats.

Overall, the commission's proposals and my map all started from the previous districts. When adjusting the enacted plan, the proposals therefore created some similar districts. However, my proposal outperformed the commission's maps on good government metrics, splitting far fewer counties, towns, and precincts. At the same time, my plan created more compact districts than the commission's maps, while also achieving greater levels of political competition. The maps achieve similar rates of minority representation, with a nearly identical set of majority minority and minority opportunity districts.

D. Conclusion

While New York presents unique challenges during the redistricting process, the proposed plan demonstrates one way to navigate the tradeoffs inherent in redistricting the state. The proposal generally succeeds in preserving counties, cities/towns, and precincts while also creating compact, contiguous districts. At the same time, the proposal took care to ensure that racial minorities have an equal opportunity to participate in the political process, maintaining the enacted map's high levels of minority opportunity districts. As the politics of redistricting play out in Albany, this proposal offers a non-partisan map with carefully explained decisions, representing an alternative to the partisan considerations that have come to dominate each redistricting cycle.

III. Max Competition Plan

This proposal is a max competition plan for New York, aiming to create the maximum number of politically competitive districts. I define a competitive district as a district where the difference between the Republican and Democratic vote shares in the 2020 presidential election was at most five percentage points. Under this definition, the plan has 11 competitive districts: eight in upstate New York (districts 18-25) and three on Long Island (districts 1-3), a substantial improvement over the enacted plan's three competitive districts (districts 1, 2, and 19). While the plan attempted to be nonpartisan, independent analyses suggest the plan moderately favors Democrats.

After prioritizing competitiveness, the plan aims to keep political subdivisions intact in compact, contiguous districts. At the same time, the map preserves the enacted plan's high levels of minority representation, creating opportunity districts for African-Americans, Hispanics, and Asian-Americans. Similar to the current plan, districts 13 and 15 are majority Hispanic by voting age population (VAP) and citizen voting age population (CVAP), and districts 5 and 8 are majority Black by CVAP. The plan conserves Latino opportunity districts 7 and 14, Asian opportunity district 6, and Black opportunity district 9, maintaining comparable VAP and CVAP percentages of the relevant minority groups in each district.

The remainder of the report is organized as follows. Section A discusses the plan's legality under the Constitution, federal law, and state law. Section B provides a more detailed explanation of the plan's considerations and how the plan navigates various tradeoffs that emerged during the redistricting process. Section C then examines how this proposal compares to the two proposals released by the New York State Independent Redistricting Commission (NYIRC). Section D concludes.

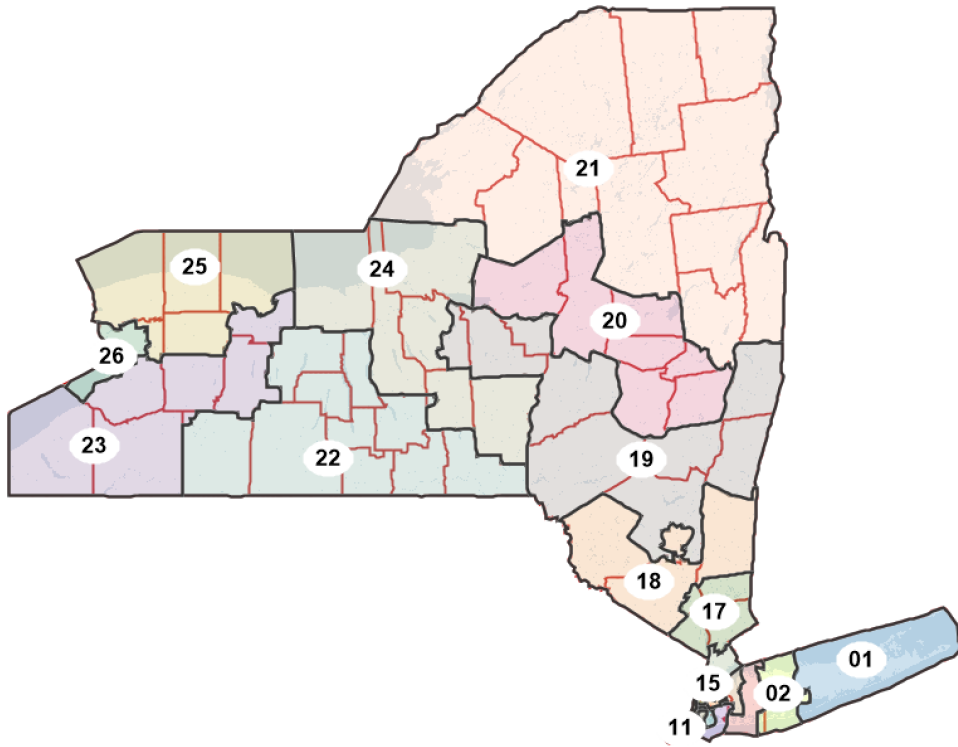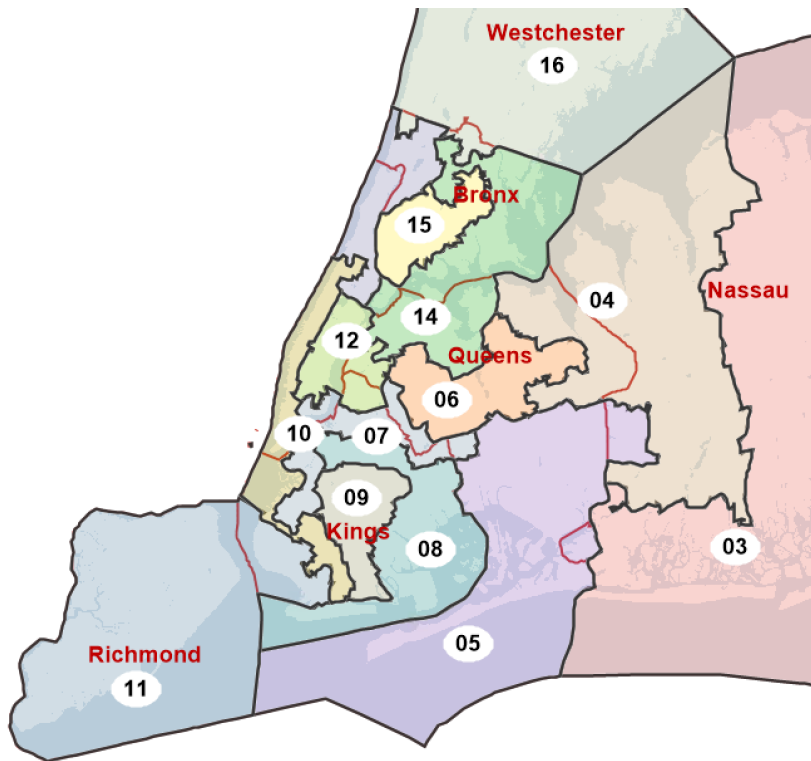Figure MC.1: Max Competition Proposal, New York State

Figure MC.2: Max Competition Proposal, New York City Area

A. Compliance with Legal Requirements

This map complies with all constitutional, federal, and state requirements for redistricting plans. Under the Constitution, plans must satisfy one person, one vote requirements and they may not gerrymander on the basis of race. Under federal law, section 2 of the Voting Rights Act imposes requirements designed to ensure a minority group's opportunity to elect candidates of their choice. The only New York state requirements that go beyond these provisions mandate that districts are compact, contiguous, and not drawn to favor a political party or to discourage competition.[20] The next four sections examine each set of requirements in turn. The report concludes that the plan is legal, aside from potential state law issues that may arise when using prisoner-adjusted population data for congressional maps.

1. Constitutional Requirements: One Person, One Vote

The one person, one vote principle requires that all districts have equal population, with every deviation justified by consistently applied, legitimate interests.[21] These legitimate interests include respect for political subdivisions, minimizing population shifts between districts, or preventing incumbents from competing against one another.[22] The Court has recognized that using registered voters or total population as the basis for equal population districts is legal.[23]

This plan satisfies one person, one vote requirements, using prisoner-adjusted population data from New York State. This data adjusts the P.L. 94-171 Census data to place prisoners at their last known address, rather than counting them toward the Census block(s) containing their prison. Prisoners without last known addresses are removed from the dataset.[24] Using this data, the ideal district would have 776,687 people. There are only three districts that deviate from this ideal: district 13 (776,686 people), district 19 (776,686 people), and district 23 (776,686 people). Therefore, the difference between the smallest and largest districts is just one person. Thus, the plan reaches perfect population equality.

The only remaining question is whether using prisoner-adjusted population data complies with the Court's one person, one vote standard. To my knowledge, the Court has not directly answered this question. However, a district court decision in *Fletcher v. Lamone* may shed light on the

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[20] N.Y. CONST. art. III, §§ 4(c)(3)-(5)
[21] Karcher v. Daggett, 462 US 725 (1983)
[22] Tennant v. Jefferson County, 567 U.S. 758 (2012)
[23] Burns v. Richardson, 384 U.S. 73 (1966); Evenwel v. Abbott, 578 U.S. ___ (2016)
[24] N.Y. Legis. L. § 83-M(13)(b)

issue. In that case, the judges heard a challenge to Maryland's law requiring that redistricting plans use prisoner-adjusted data, concluding that prisoner-adjusted population equality satisfies one person, one vote requirements.[25] The judges argue that *Karcher* did not mandate that one person, one vote analyses use unadjusted Census data, but instead required that a state carry out any adjustment to the Census data systematically. In *Karcher*, the Court wrote, "[i]f a State does attempt to use a measure other than total population or to 'correct' the census figures, it may not do so in a haphazard, inconsistent, or conjectural manner."[26] The justices rejected the map challenged in *Karcher* because their corrections fell short, writing, "[a]ttempts to explain population deviations on the basis of flaws in census data must be supported with a precision not achieved here."[27] In *Fletcher v. Lamone*, the judges used this rationale from *Karcher* to demonstrate that, "a State may choose to adjust the census data, so long as those adjustments are thoroughly documented and applied in a nonarbitrary fashion and they otherwise do not violate the Constitution."[28] The Supreme Court affirmed the judgement in *Fletcher v. Lamone*, but the justices did not directly answer the one person, one vote question.[29] However, the case's logic implies that using prisoner-adjusted data does not create any constitutional concerns, and the plan therefore complies with one person, one vote requirements.

2. Voting Rights Act, Section 2

Section 2 of the Voting Rights Act ensures that "the political processes leading to nomination or election in the State" are equally open to racial minorities and majorities. Specifically, violations occur when a minority group's "members have less opportunity than other members of the electorate to participate in the political process and to elect representatives of their choice."[30] In determining whether a state has violated Section 2 with respect to a particular minority community, courts first require that challenges satisfy three threshold conditions. First, the minority group in question must be large and compact enough to form a majority of a single member district. Second, the minority community must be politically cohesive. Third, racially polarized voting must ordinarily lead majorities to defeat minority candidates of choice.[31] After meeting these so-called *Gingles* prongs, challengers must then satisfy the "totality of the circumstances" test, proving that some of the Senate factors are

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[25] Fletcher v. Lamone, 831 F. Supp. 2d 887 (D. Md. 2011)
[26] Karcher v. Daggett, 462 US 725 (1983)
[27] Karcher v. Daggett, 462 US 725 (1983)
[28] Fletcher v. Lamone, 831 F. Supp. 2d 887 (D. Md. 2011)
[29] Fletcher v. Lamone, 133 S. Ct. 29 (2012)
[30] 52 U.S.C. § 10301(b)
[31] Thornburg v. Gingles, 478 U.S. 30 (1986)

present. Proving these factors requires plaintiffs to illustrate how past and present discrimination and racial polarization conspire to harm minority groups and their electoral chances.[32]

In subsequent cases, the Court has expounded on how to determine when particular minority groups satisfy the *Gingles* prongs. On the first prong, the Court determined that minority groups must be able to form a strict majority of a single member district to bring a Section 2 claim.[33] When evaluating whether a minority group forms a majority, lower courts often use citizen voting age population (CVAP) as the denominator. In addition, the Court has attached a cultural compactness strand to the first prong, requiring that a group must be culturally cohesive to bring a Section 2 claim.[34]

When weighing the "totality of the circumstances," the Court has ruled that achieving proportionality (where a minority group controls a share of districts comparable to their share of the state's population) is not a safe harbor, though it does weigh in favor of the plan.[35]

If the *Gingles* prongs and Senate factors are present, the Court clarified the state's obligations in *Johnson v. DeGrandy*, holding that a state is not required to draw the maximum possible number of majority minority districts.[36] However, a state may not trade one group's majority minority district for another, unless the state cannot accommodate both groups' claims.[37]

New York has three racial minority groups that may be able to bring Section 2 claims: African-Americans, Hispanics, and Asian-Americans. Within each racial group, there are different communities that could challenge the map under Section 2. Without racially polarized voting analyses to assess the second and third *Gingles* prongs, I drew majority minority districts for each community that satisfied the first *Gingles* prong. The next four subsections discuss each community of each racial minority in turn, concluding that the map would withstand a Section 2 challenge.

a. African-Americans

Figure MC.3: African-American Population Density, New York City Area

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[32] *See* Senate Judiciary Committee Report on the Voting Rights Act Amendments of 1982, S. Rep. No. 97–417, 97th Cong, 2d Sess. (1982)
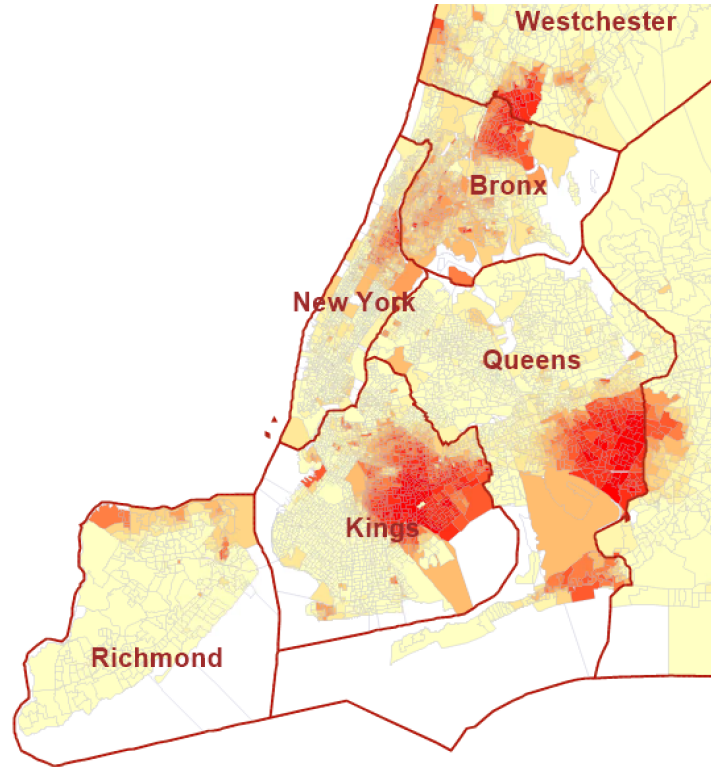
[33] Bartlett v. Strickland, 556 US 1 (2009)

[34] League of United Latin American Citizens v. Perry, 548 US 399 (2006)

[35] Johnson v. De Grandy, 512 U.S. 997 (1994)

[36] Johnson v. De Grandy, 512 U.S. 997 (1994)

[37] League of United Latin American Citizens v. Perry, 548 US 399 (2006)

The only African-American communities that may be large and compact enough to bring a Section 2 claim reside in New York City. The map above shows the population density of African-Americans across the New York City area, where darker red indicates higher concentrations of African-Americans (by VAP), and lighter yellow indicates lower concentrations. The maroon lines indicate county boundaries.

As the map above shows, there are four geographically distinct African-American communities in New York City: (1) southern Queens, (2) eastern Brooklyn, (3) Harlem, and (4) the Bronx-Westchester border.

Figure MC.4: African-American Community in Southern Queens
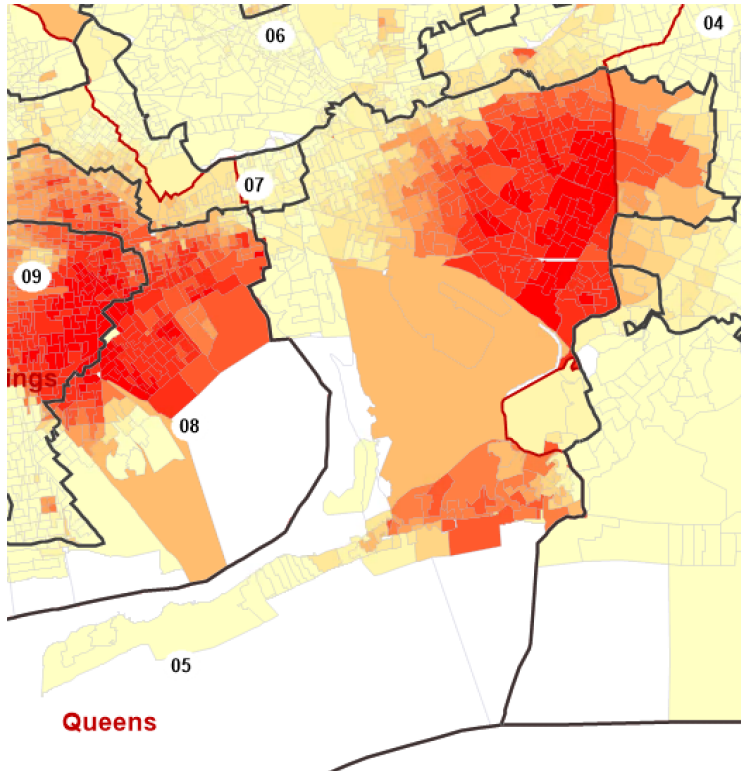
In southern Queens, African-Americans certainly satisfy the first *Gingles* prong since they are large and compact enough to form a majority in a single member district. The map above shows the African-American community in southern Queens with black lines to indicate the surrounding districts. As the map illustrates, this African-American community is nearly entirely contained in district 5, which is majority African-American by CVAP. This district should perform as a Black opportunity district, since the enacted district 5 appears to perform (electing Gregory Meeks, ostensibly the African-American candidate of choice) with similar demographics. However, this community is not large enough to form a majority in more than one single member district. Thus, this plan contains the maximum possible number of majority minority districts for the African-American community in southern Queens, satisfying any Section 2 concerns.

The following table shows the demographics of my proposed district 5 (PR5) and the enacted district 5 (EN5). In the table's headings, NH and H refer to Non-Hispanic and Hispanic, while BLK and ASN refer to Black and Asian respectively. All demographic data are presented in percentages. Note that VAP numbers are from the Census data, while CVAP numbers come from survey data estimates.

Table MC.1: Demographics of District 5

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR5	51.09%	49.47%	13.52%	16.21%	17.17%	19.55%
EN5	53.48%	51.32%	14.65%	17.37%	16.5%	18.55%

Figure MC.5: African-American Community in Eastern Brooklyn
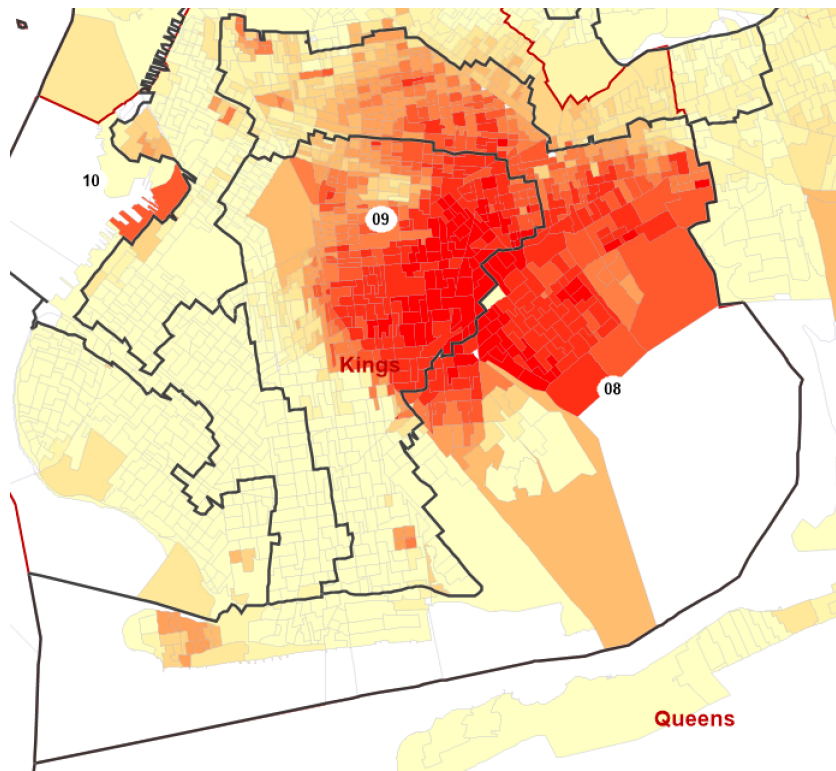
In eastern Brooklyn, African-Americans also satisfy the first *Gingles* prong. As shown above, the community is divided into districts 8 and 9, forming a majority in district 8 by both VAP and CVAP. As the demographic table below shows, African-Americans form more than 45% of the CVAP population in either district. This likely means that districts 8 and 9 will both perform as Black opportunity districts, especially since the enacted districts 8 and 9 appear to perform (electing Hakeem Jeffries and Yvette Clarke respectively, ostensibly African-American candidates of choice) under similar demographics.
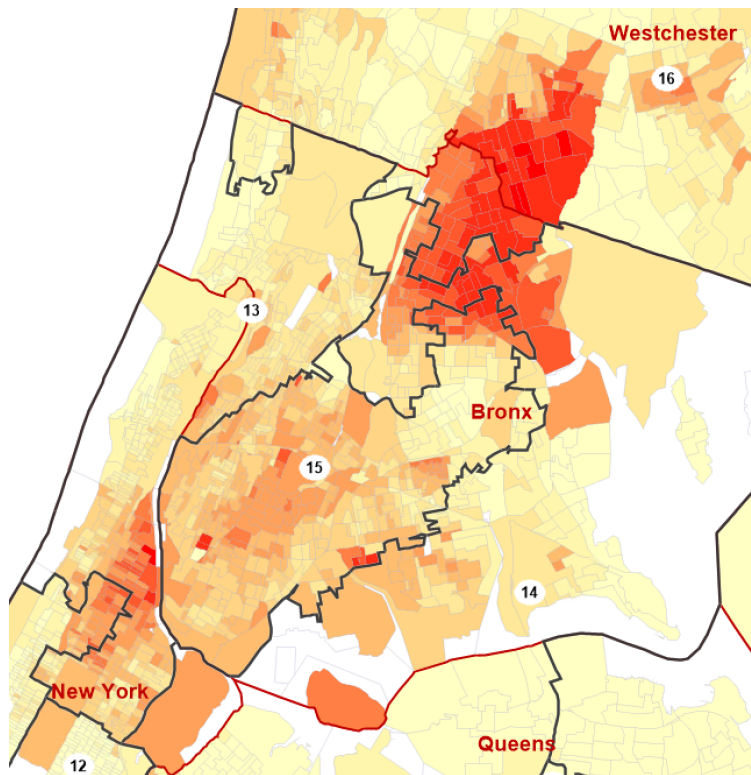
Table MC.2: Demographics of Districts 8 and 9

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP

PR8	52.37%	51.43%	4.77%	8.71%	14.29%	16.21%
EN8	50.95%	50.63%	5.06%	8.96%	15.28%	17.15%
PR9	47.24%	49.57%	7.4%	10.37%	10.48%	11.6%
EN9	46.88%	49.5%	6.9%	9.51%	10.32%	11.38%

The only potential Section 2 issue with this community's representation would arise if they allege they are entitled to two majority African-American districts. However, this suit would likely fail: the community is not large and compact enough to form a majority in two single member districts, so the challenge does not satisfy the first *Gingles* prong. Even if the community could form a majority in two districts, challengers would have a hard time illustrating that they lack the ability to elect candidates of their choice in district 9, since the district will likely perform as a Black opportunity district. Since the state is under no obligation to maximize the number of majority minority districts for a particular community, such a challenge is unlikely to succeed.

Figure MC.6: African-American Communities in Harlem and on the Bronx-Westchester Border

The African-American communities in Harlem and on the Bronx-Westchester border are not individually large and compact enough to form a majority in a single member district, so they both fail the first *Gingles* prong. As such, none of the proposed districts containing these communities (districts 13, 14, and 16) are majority or plurality Black, by VAP or CVAP.

However, these communities could sue, arguing they have a Section 2 entitlement for a majority Black district containing both communities. Such a district is possible, demonstrated in the example district 15 (EX15) pictured below. The table below shows the demographics of this example district compared to my proposed districts 13-16 and the enacted districts 13-16.

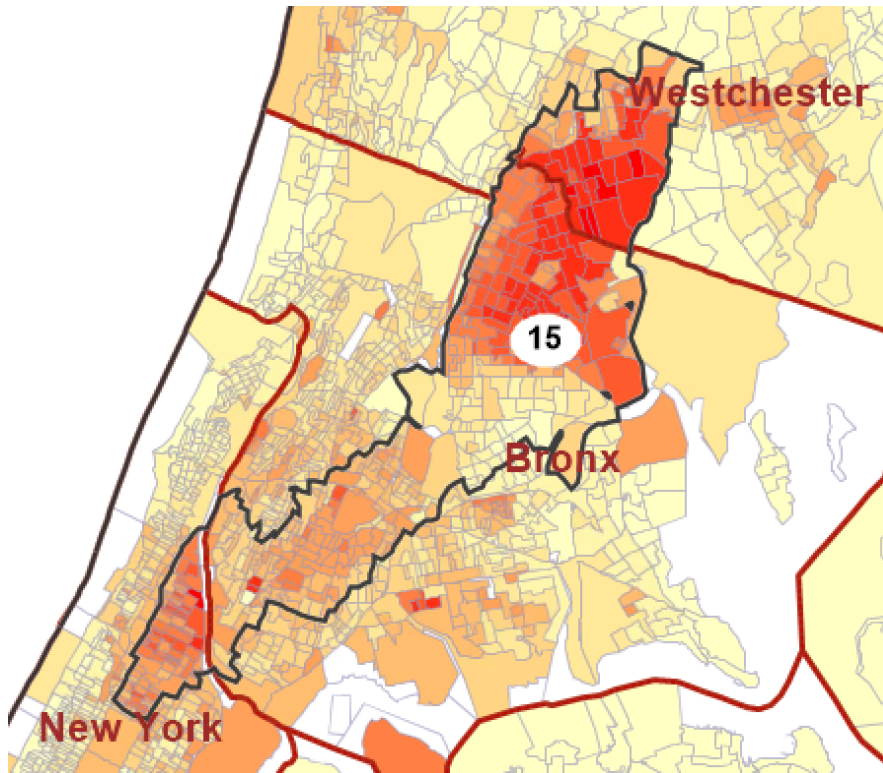Figure MC.7: Example District 15, Majority Black District from Harlem to Southern Westchester

Table MC.3: Demographics of Districts 13-16

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
EX15	50.2%	55.9%	2.7%	3.85%	37.0%	39.14%
PR13	25.94%	32.02%	4.11%	6.04%	50.12%	53.84%
EN13	28.92%	24.37%	4.29%	6.48%	47.7%	50.99%

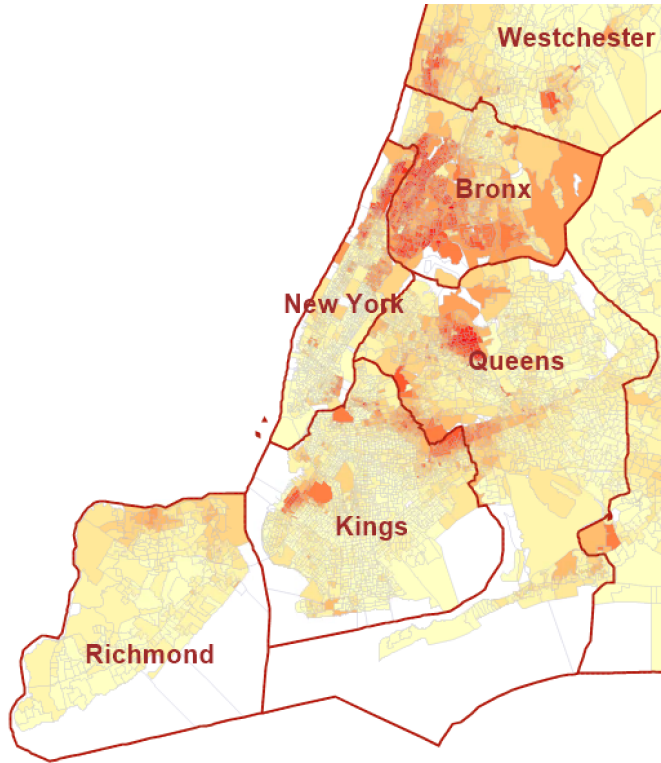|						
PR14	21.85%	22.32%	10.25%	13.28%	41.26%	46.44%
EN14	12.54%	12.45%	15.51%	20.36%	41.16%	46.64%
PR15	32.46%	39.5%	3.22%	5.12%	56.56%	58.64%
EN15	31.93%	39.81%	1.96%	3.31%	61.96%	64.14%
PR16	22.86%	24.5%	5.43%	7.44%	19.61%	26.35%
EN16	32.05%	35.49%	4.8%	6.25%	2.16%	26.29%

As the table shows, this example district is majority Black by VAP and CVAP. As such, if one considers the African-American communities in Harlem and on the Bronx-Westchester border to be one community, they would satisfy the first *Gingles* prong in a Section 2 lawsuit. However, classifying these groups as a single community is suspect, since they are geographically separated by almost the entirety of the Bronx.

Even if a court were to classify these communities as a single community, such a challenge would likely fail: this example district 15, or any other similar district containing these communities, trades off with majority Hispanic (by VAP and CVAP) districts 13 and 15 in my proposed plan. The Hispanic community in northern Manhattan and the Bronx likely has a stronger Section 2 claim than the African-American community in EX15 since this Hispanic community is more geographically compact. Since New York cannot accommodate all three majority minority districts, the state is under no obligation to create EX15.

Moreover, the enacted plan and my proposed plan have a similar configuration of majority minority districts in the area: in both cases, districts 13 and 15 are majority Hispanic (by VAP) and together contain much of the Hispanic community in northern Manhattan and the Bronx. Assuming the enacted map is legal implies that the African-American communities in Harlem and on the Bronx-Westchester border do not have a strong Section 2 claim against my proposal.
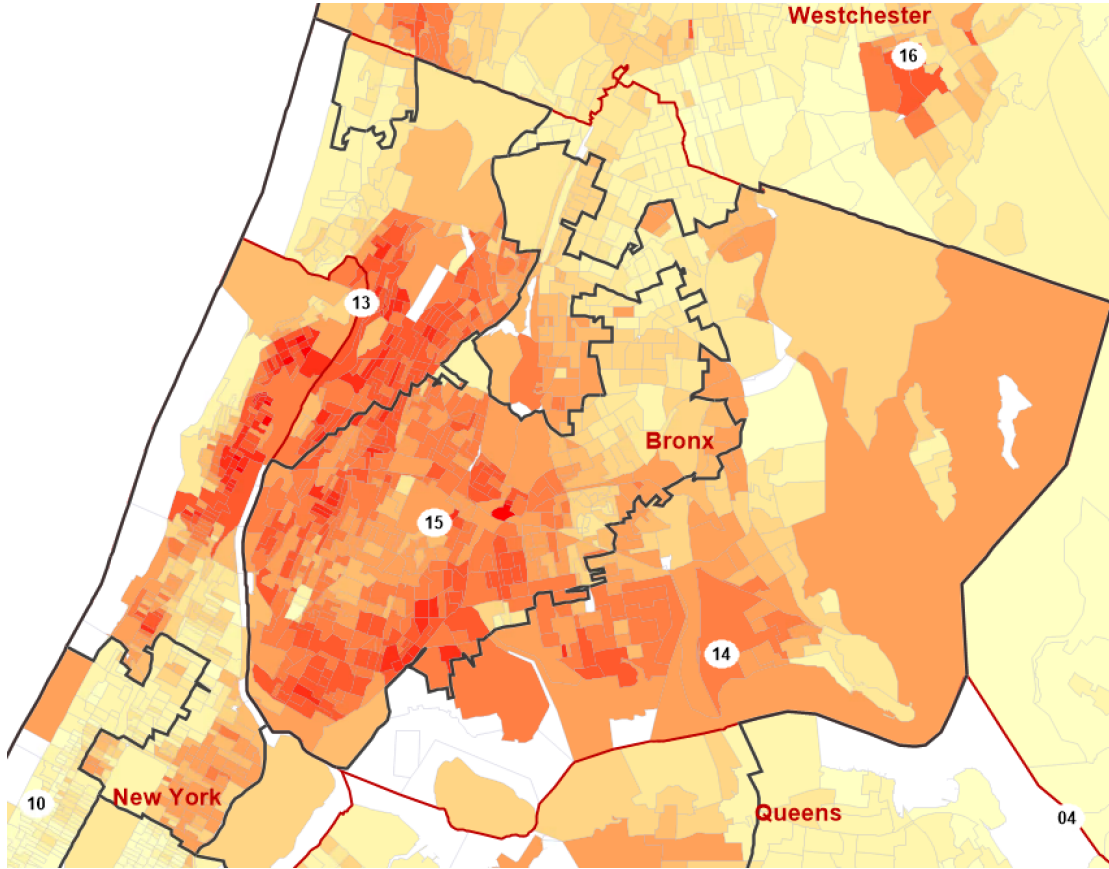
b. Hispanics

Figure MC.8: Hispanic Population Density, New York City Area

The only Hispanic communities that may be large and compact enough to bring a Section 2 claim reside in New York City. The map above shows the population density of Hispanics across the New York City area, measured by VAP.

As the map above shows, there are three geographically distinct Hispanic communities in New York City: (1) northern Manhattan and the Bronx, (2) northern Queens, and (3) the Brooklyn-Queens border.

Figure MC.9: Hispanic Community in Northern Manhattan and the Bronx

In northern Manhattan and the Bronx, Hispanics certainly satisfy the first *Gingles* prong since they are large and compact enough to form a majority in two single member districts. The map above shows the Hispanic community in northern Manhattan and the Bronx along with the surrounding districts. As the map illustrates, districts 13 and 15 contain much of this Hispanic community, and both districts are majority Hispanic by VAP and CVAP. Both districts should perform as Hispanic opportunity districts, since both EN13 and EN15 appear to perform (district 13 elected Adriano Espaillat and Charles Rangel, while district 15 elected José E. Serrano and Ritchie Torres, all of whom are ostensibly Hispanic candidates of choice) with similar demographics. The following table shows the demographics of PR13 and PR15, compared to EN13 and EN15.

Table MC.4: Demographics of Districts 13 and 15

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR13	25.94%	32.02%	4.11%	6.04%	50.12%	53.84%
EN13	28.92%	24.37%	4.29%	6.48%	47.7%	50.99%

PR15	32.46%	39.5%	3.22%	5.12%	56.56%	58.64%
EN15	31.93%	39.81%	1.96%	3.31%	61.96%	64.14%

While this community is quite large, it cannot form a majority in more than two single member districts. Thus, this plan contains the maximum possible number of majority minority districts for the Hispanic community in northern Manhattan and the Bronx, satisfying any Section 2 concerns.

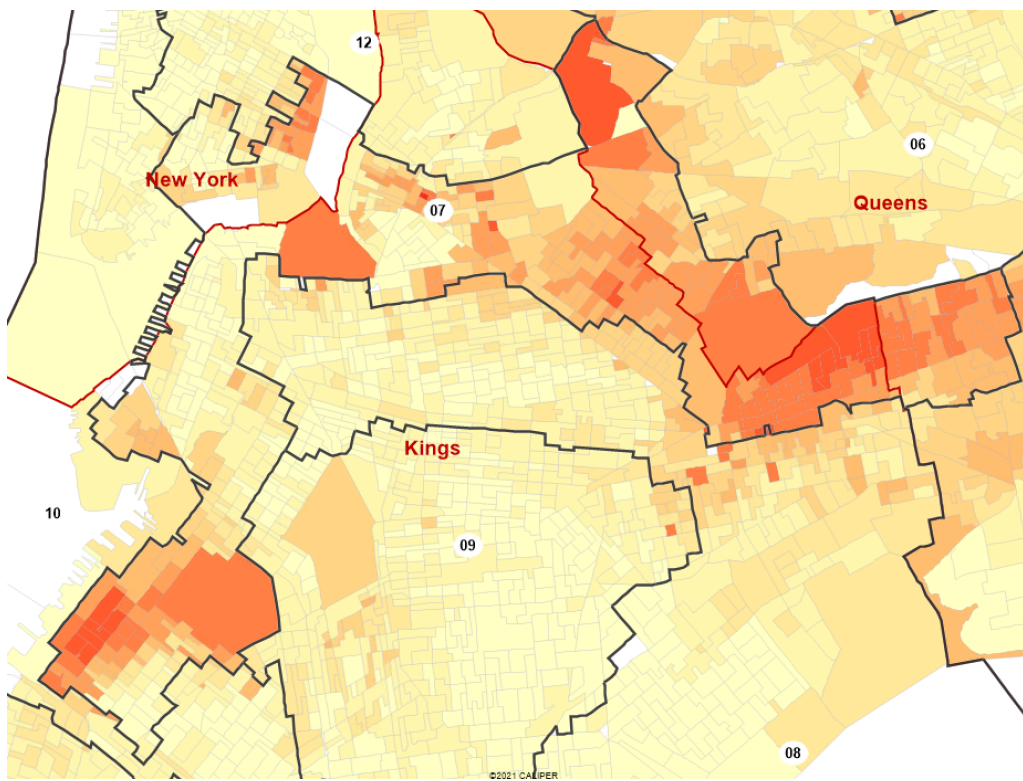Figure MC.10: Hispanic Community in Northern Queens
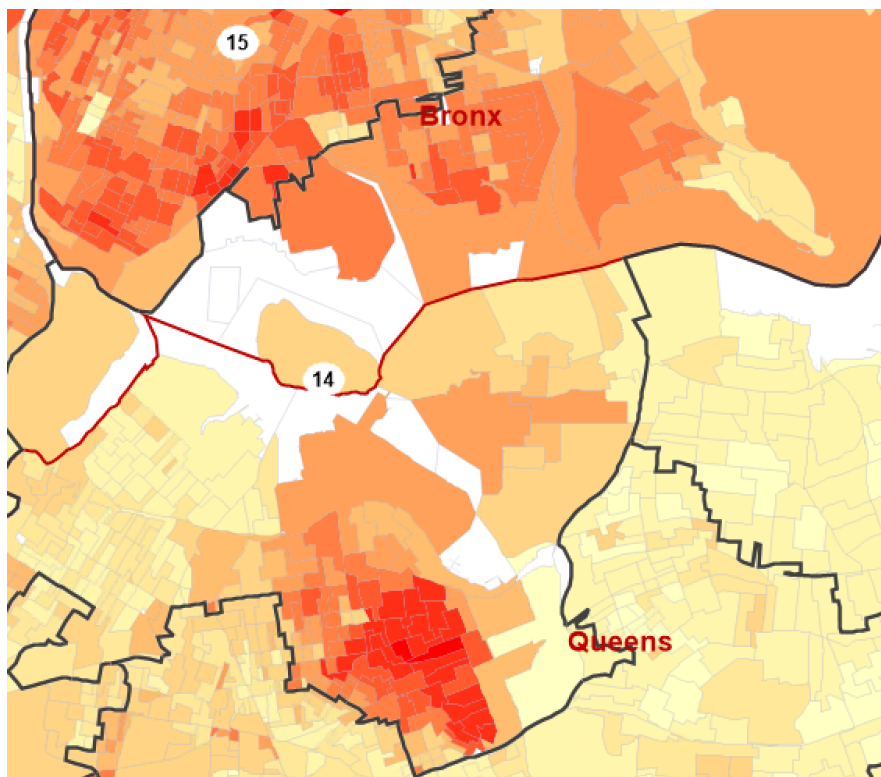
In northern Queens, the Hispanic community is not large and compact enough to form a majority of a single member district. However, the enacted district 14 — where this community is located — is plurality Hispanic and appears to be a performing Hispanic opportunity district (electing Alexandria Ocasio-Cortez, ostensibly the Hispanic candidate of choice). Since the proposed district 14 has similar demographics (described in the table below) and also contains this community, it should also perform. Because of the community's small size and existing opportunity to elect candidates of their choice, it is unlikely the community can bring a successful Section 2 claim.

Table MC.5: Demographics of District 14

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR14	21.85%	22.32%	10.25%	13.28%	41.26%	46.44%
EN14	12.54%	12.45%	15.51%	20.36%	41.16%	46.64%

Figure MC.11: Hispanic Community on the Brooklyn-Queens Border

On the Brooklyn-Queens border, the Hispanic community is not large and compact enough to form a majority of a single member district. However, the enacted district 7 — where this community is located — is plurality Hispanic and appears to be a performing Hispanic opportunity district (electing Nydia Velázquez, ostensibly the Hispanic candidate of choice). Since the proposed district 7 has similar demographics (described in the table below) and also contains this community, it should also perform.

Table MC.6: Demographics of District 7

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR7	10.56%	12.32%	16.2%	21.37%	36.06%	37.29%
EN7	10.63%	12.33%	16.28%	21.58%	35.96%	37.14%

However, a majority Hispanic district is possible if a plan combines the Hispanic community on the Brooklyn-Queens border and the community in northern Queens, as shown in example district 7 below. The demographics table below indicates that example district 7 is majority Hispanic by VAP, though not by CVAP.

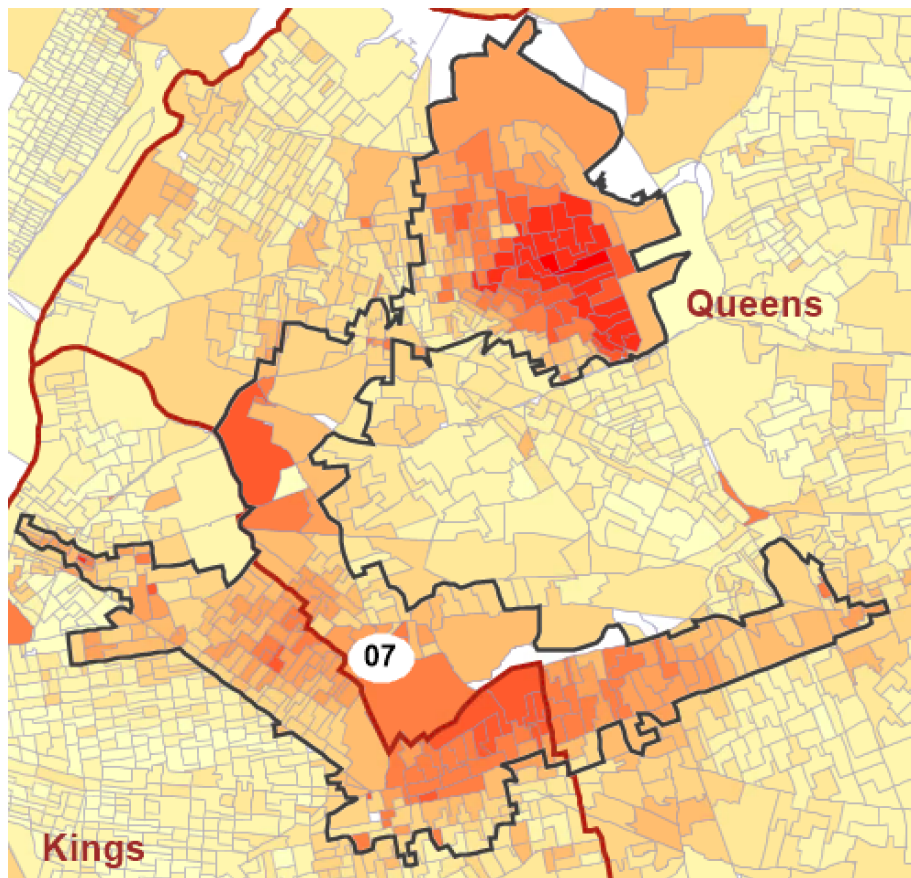Figure MC.12: Example District 7, Majority Hispanic District in Brooklyn and Queens

Table MC.7: Demographics of Example District 7

| District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
EX7	15.4%	14.93%	15.1%	18.25%	47.4%	53.0%

Thus, if one considers the Hispanic communities on the Brooklyn-Queens border and the community in northern Queens to be one community, challengers could bring a suit urging a majority minority district for this community. The community would satisfy the first *Gingles* prong in a Section 2 lawsuit under VAP. However, a district like EX7 with a CVAP majority does not appear possible, so a challenge may fail under those grounds.

If this challenge satisfied the first *Gingles* prong, the suit would still have to prove that Hispanics in these communities would otherwise be unable to elect their candidates of choice. Since my proposed districts 7 and 14 are likely to perform as Hispanic opportunity districts, such a challenge would likely fall.

Moreover, the enacted plan and my proposed plan have a similar configuration of Hispanic opportunity districts in the area: in both cases, districts 7 and 14 are plurality Hispanic and contain the communities on the Brooklyn-Queens border and in northern Queens, respectively. Assuming the enacted map is legal implies that the Hispanic community defined in EX7 does not have a strong Section 2 claim against my proposal.
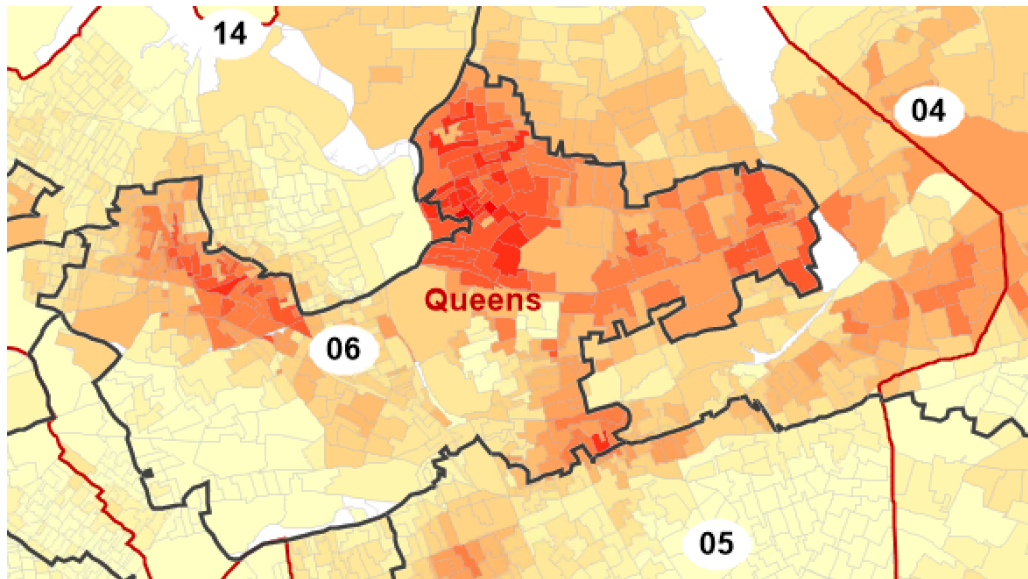
c. Asian-Americans

Figure MC.13: Asian-American Population Density, New York City Area
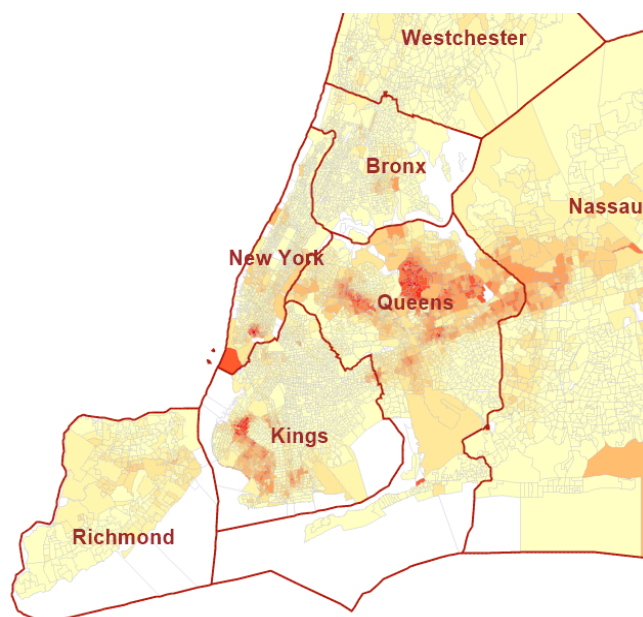
The only Asian-American communities that may be large and compact enough to bring a Section 2 claim reside in New York City. The map above shows the population density of Asian-Americans across the New York City area, measured by VAP.

As the map above shows, there are two geographically distinct Asian-American communities in New York City: (1) Queens and (2) southern Brooklyn. Neither community is large or compact enough to form a majority in a single member district, but the community in Queens comes close (measured by VAP).

Figure MC.14: Asian-American Community in Queens

As shown in the image above, the Asian-American community in Queens is largely contained in proposed district 6, where they constitute a plurality by VAP (though not by CVAP). A CVAP majority district for this community is not possible given relatively low citizenship rates of Asian-Americans in the area. If this community brought a Section 2 challenge against this proposal, the suit would likely fail, even if the community satisfied the first *Gingles* prong. The reason is that such a challenge would be unable to prove that the Asian-American community in Queens lacks the ability to elect candidates of their choice. Under the current plan, this community resides in enacted district 6, which appears to perform (electing Grace Meng, ostensibly the Asian-American candidate of choice) as an Asian-American opportunity district. Since the proposed district 6 contains the same community and has similar demographics (shown in the table below), PR6 will likely continue to

perform as an Asian-American opportunity district. Therefore, the map would likely withstand a Section 2 challenge by the Asian-American community in Queens.

Table MC.8: Demographics of District 6

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP
PR6	4.85%	5.07%	33.89%	46.43%	20.33%	20.91%
EN6	4.87%	5.37%	33.22%	45.26%	18.69%	18.91%

d. Conclusion: Section 2 of the Voting Rights Act

Overall, each minority community with an opportunity district in the enacted plan maintains that opportunity district in the proposed plan. For African-Americans, that means a majority Black district in Queens (PR5), another in Brooklyn (PR8), and an opportunity district in Brooklyn (PR9). For Hispanics, the plan maintains two majority Latino districts in the Bronx and northern Manhattan (PR13 and PR15), as well as an opportunity district in northern Queens (PR14) and another on the Brooklyn-Queens border (PR7). In addition, district 6 remains an opportunity district for the Asian-American community in Queens. Since the current map was not struck down under Section 2, there are likely no other communities with compelling Section 2 claims.

3. Constitutional Requirements: Racial Gerrymandering

Each minority opportunity district described above could be challenged under *Shaw v. Reno*. In *Shaw*, the Court ruled that if race is the predominant factor in the construction of a particular district, then the map is subject to strict scrutiny.[38] To show race predominated, courts often assess whether the district violated traditional redistricting criteria like compactness and contiguity in service of race-motivated goals such as creating a majority minority district. If race predominated, defendants can show the district in question was narrowly tailored to avoid a Voting Rights Act violation, in which case the plan would be legal.[39] Compliance with the Voting Rights Act is the only compelling interest the Court has recognized to justify racial predominance. Since *Shelby County*, this interest is limited to compliance with Section 2.[40]

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[38] Shaw v. Reno, 509 US 630 (1993)
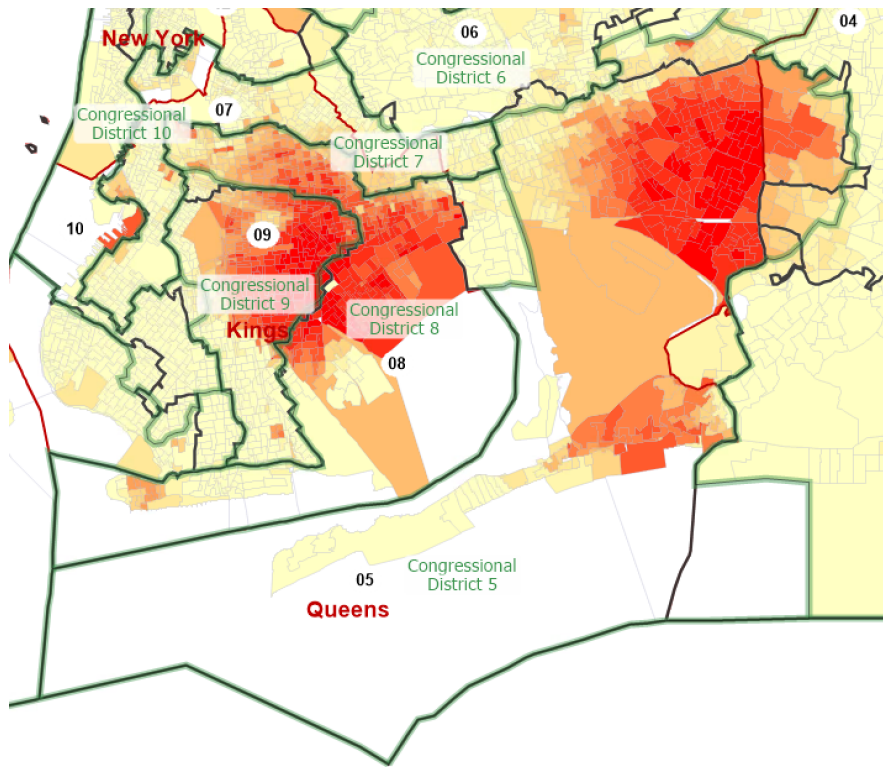[39] Bush v. Vera, 517 US 952 (1996)
[40] Shelby County v. Holder, 570 US 529 (2013)

The next eight sections discuss each minority opportunity district, explaining why it would withstand a *Shaw* claim. Each of these districts considered race, aiming to give minority groups substantial representation in the plan. However, race was not the predominant factor. In each case, traditional redistricting criteria such as compactness, contiguity, respect for political subdivisions, and minimizing population shifts from the previous districts dominated my considerations. Lacking the racially polarized voting analyses necessary to establish the *Gingles* prongs, this report does not prove that any particular district was narrowly tailored to avoid a Voting Rights Act violation.

a. District 5

Figure MC.15: African-American Population Density in PR5 and EN5

District 5 is a majority Black district in Queens, starting in Jamaica and extending south until the Rockaways. The map above shows the population density of African-Americans in and around district 5, measured by VAP. As before, the maroon lines indicate county boundaries, and the black lines indicate the boundaries of the proposed districts. The green highlighted lines show the boundaries of the enacted districts. Since the proposed district 5 overlaps with much of the enacted district 5, it is likely legal. Since the demographics of the two districts are similar, as shown in the table
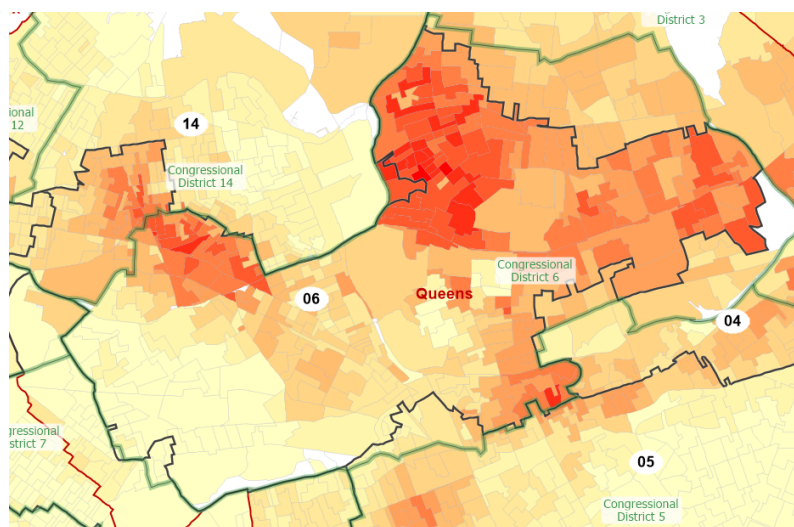
below, the deviations from the enacted district were not racially motivated. The table also shows that PR5 and EN5 have similar compactness scores, meaning that PR5 did not subordinate compactness considerations any more than EN5.[41] Moreover, PR5's emphasis on contiguity illustrates how traditional redistricting criteria dominated racial considerations: the district would have higher concentrations of African-Americans if it lost the Inwood neighborhood of Nassau County (the yellow colored area in the southeast of PR5). However, PR5 maintains this neighborhood to keep the district more clearly contiguous over land. Similarly, as the image above shows, PR5 would have higher concentrations of African-Americans if it lost the western part of the Rockaways (the yellow region in the southwest of the district), but since the Rockaways are likely a community of interest, I opted to keep them intact.

Table MC.9: Demographics and Compactness of District 5

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR5	51.09%	49.47%	13.52%	16.21%	17.17%	19.55%	0.27	0.29	0.22
EN5	53.48%	51.32%	14.65%	17.37%	16.5%	18.55%	0.30	0.27	0.17

b. District 6

Figure MC.16: Asian-American Population Density in PR6 and EN6

[41] Note on interpreting compactness scores: on the Reock, Polsby-Popper, and Ehrenburg measures, higher numbers indicate greater degrees of compactness.

District 6 is a plurality Asian-American district in Queens, stretching from Elmhurst to Bayside. Since the proposed district 6 overlaps with much of the enacted district 6, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR6 is less compact than EN6 on all three metrics. However, PR6 is not dramatically less compact than its predecessor, showing the proposed district's deviations from EN6 did not sacrifice compactness too much. Either way, district 6 is still fairly compact, much more so than the snake-shaped district in *Shaw*, making it difficult to prove that race subordinated traditional redistricting criteria.[42]
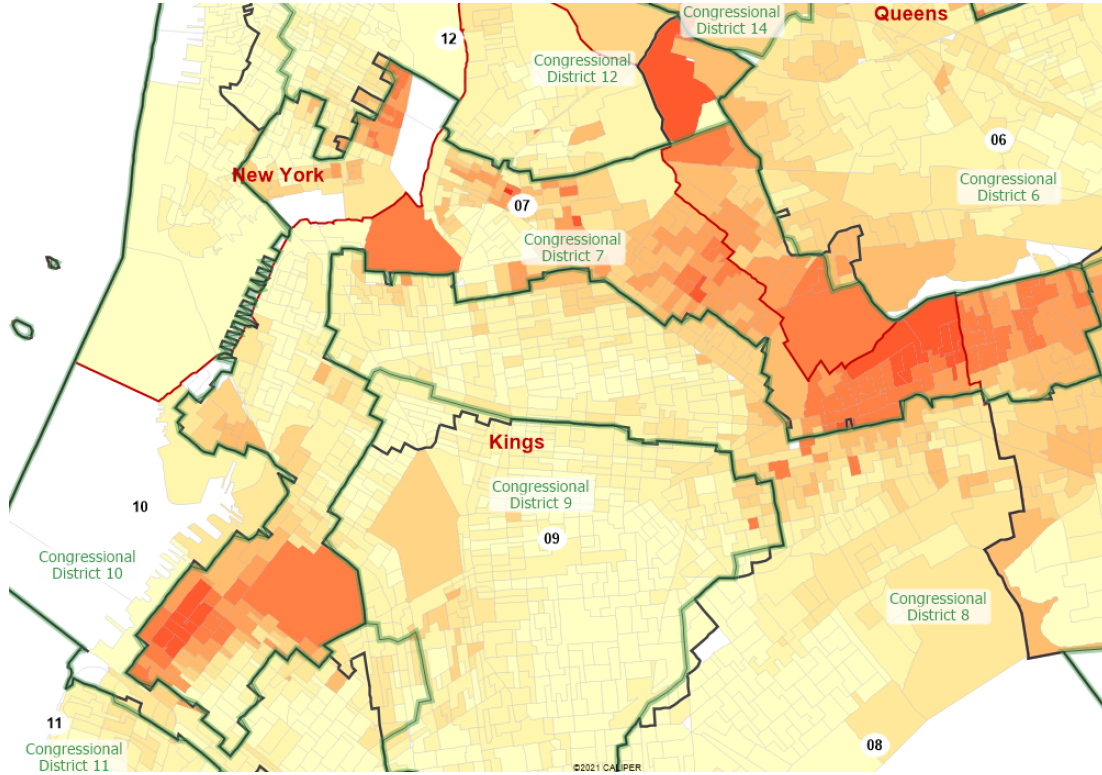
Table MC.10: Demographics and Compactness of District 6

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby- Popper	Ehrenburg
PR6	4.85%	5.07%	33.89%	46.43%	20.33%	20.91%	0.36	0.17	0.21
EN6	4.87%	5.37%	33.22%	45.26%	18.69%	18.91%	0.42	0.35	0.30

c. District 7

Figure MC.17: Hispanic Population Density in PR7 and EN7

[42] *See* Shaw v. Reno, 509 US 630 (1993)

District 7 is a plurality Hispanic district on the Brooklyn-Queens border, traveling from Woodhaven to South Williamsburg, absorbing some of Manhattan's Chinatown, and re-entering Brooklyn until terminating at Sunset Park. The proposed district 7 tracks the enacted district 7 almost exactly, deviating by a few blocks in Chinatown and traveling slightly further north to achieve population equality. Presuming the enacted district is legal means the proposed district is likely also legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table also shows that PR7 and EN7 have similar compactness scores, meaning that PR7 did not subordinate compactness considerations any more than EN7.

Table MC.11: Demographics and Compactness of District 7

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR7	10.56%	12.32%	16.2%	21.37%	36.06%	37.29%	0.22	0.08	0.12
EN7	10.63%	12.33%	16.28%	21.58%	35.96%	37.14%	0.21	0.10	0.13

d. District 8

Figure MC.18: African-American Population Density in PR8 and EN8
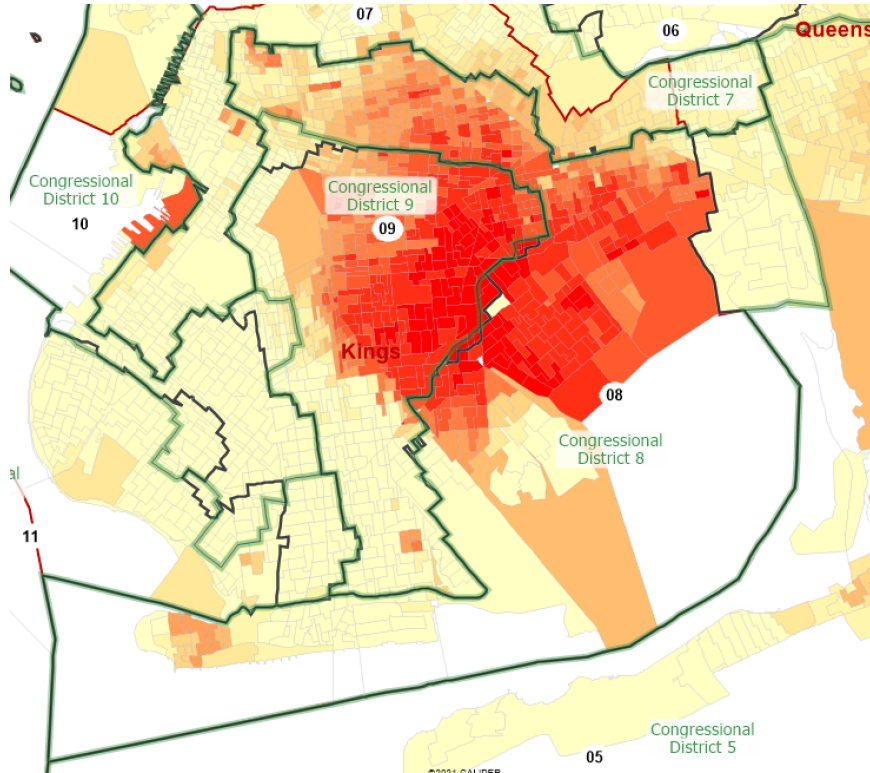
District 8 is a majority Black district in Brooklyn, traveling northeast from Coney Island to New Lots and then west toward Clinton Hill. Since the proposed district 8 overlaps with much of the enacted district 8, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table also shows that PR8 and EN8 have similar compactness scores, meaning that PR8 did not subordinate compactness considerations any more than EN8. Moreover, PR8's emphasis on preserving communities of interest illustrates how traditional redistricting criteria dominated racial considerations: the district would have higher concentrations of African-Americans if it lost parts of Coney Island (the yellow colored area in the southern part of PR8), but since Coney Island is likely a community of interest, I opted to keep it intact.
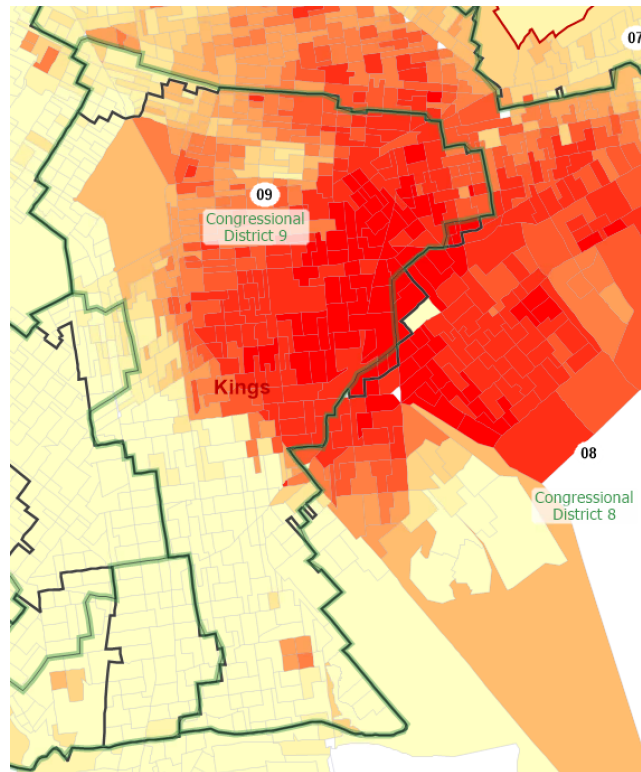
Table MC.12: Demographics and Compactness of District 8

District	NH_BLK	BLK_	NH_ASN	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-	Ehrenburg

	_CVAP	VAP	_CVAP					Popper	
PR8	52.37%	51.43%	4.77%	8.71%	14.29%	16.21%	0.34	0.18	0.40
EN8	50.95%	50.63%	5.06%	8.96%	15.28%	17.15%	0.32	0.20	0.41

e. District 9

Figure MC.19: African-American Population Density in PR9 and EN9

District 9 is a compact, majority Black district in Brooklyn centered around Flatbush and Crown Heights, but dipping South toward Sheepshead Bay. Since the proposed district 9 overlaps with much of the enacted district 9, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR9 is significantly more compact than EN9 on Reock and Ehrenburg measure and slightly less compact on the Polsby-Popper measure. Overall PR9 achieves greater compactness while maintaining similar demographics, making it difficult to show that race predominated in the district's construction.

Table MC.13: Demographics and Compactness of District 9

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR9	47.24%	49.57%	7.4%	10.37%	10.48%	11.6%	0.43	0.29	0.53
EN9	46.88%	49.5%	6.9%	9.51%	10.32%	11.38%	0.35	0.31	0.36

f. District 13

Figure MC.20: Hispanic Population Density in PR13 and EN13
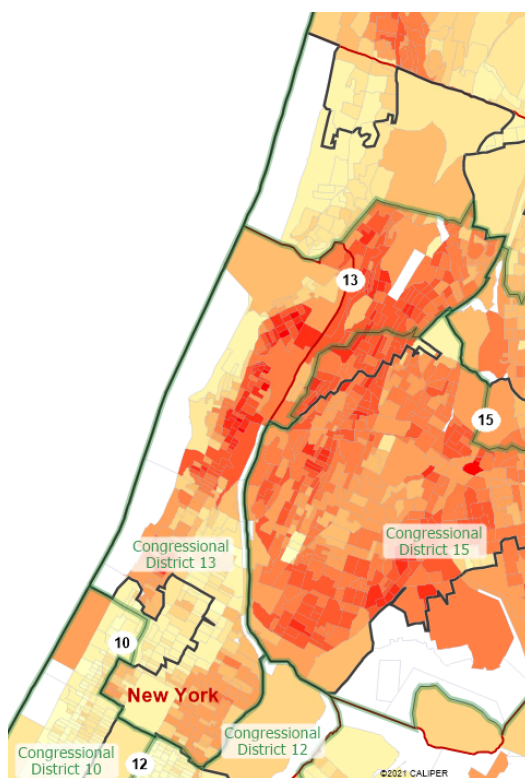
District 13 is a majority Hispanic district in Manhattan and the Bronx, stretching from Harlem to Riverdale, effectively following the northmost portion of New York City's 1 subway line. Since the proposed district 13 overlaps with much of the enacted district 13, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR13 is less compact than EN13 on Polsby-Popper measure, nearly identically compact on the Reock measure, and more
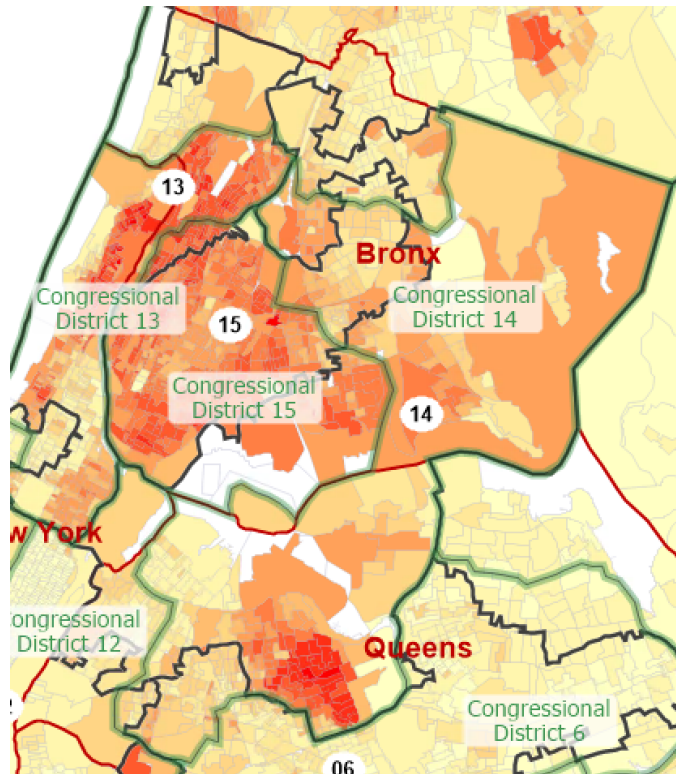
compact on the Ehrenburg metric. Therefore, PR13 and EN13 have similar compactness scores, meaning that PR13 did not subordinate compactness considerations any more than EN13. Moreover, district 13's emphasis on respecting political subdivisions illustrates how traditional redistricting criteria dominated racial considerations: the district could have increased its Hispanic VAP and CVAP numbers by extending north into Yonkers (the red and orange region just north of PR13), but since that would require crossing the Westchester County border, I decided against doing so.

Table MC.14: Demographics and Compactness of District 13

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR13	25.94%	32.02%	4.11%	6.04%	50.12%	53.84%	0.25	0.18	0.34
EN13	28.92%	24.37%	4.29%	6.48%	47.7%	50.99%	0.26	0.29	0.18

g. District 14

Figure MC.21: Hispanic Population Density in PR14 and EN14

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District 14 is a plurality Hispanic district in the Bronx and Queens, stretching from Baychester to Jackson Heights. Since the proposed district 14 overlaps with much of the enacted district 14, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR14 is more compact than EN14 on the Reock and Ehrenburg metrics but less compact on the Polsby-Popper measure. Therefore, PR14 and EN14 have similar compactness scores, meaning that PR14 did not subordinate compactness considerations any more than EN14. Moreover, district 14's emphasis on respecting political subdivisions illustrates how traditional redistricting criteria dominated racial considerations: the district could have increased its Hispanic VAP and CVAP numbers by extending north into New Rochelle (the red and orange region at the northern edge of the image), but since that would require crossing the Westchester County border, I decided against doing so.

Table MC.15: Demographics and Compactness of District 14

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR14	21.85%	22.32%	10.25%	13.28%	41.26%	46.44%	0.36	0.13	0.24
EN14	12.54%	12.45%	15.51%	20.36%	41.16%	46.64%	0.31	0.23	0.22

h. District 15

Figure MC.22: Hispanic Population Density in PR15 and EN15
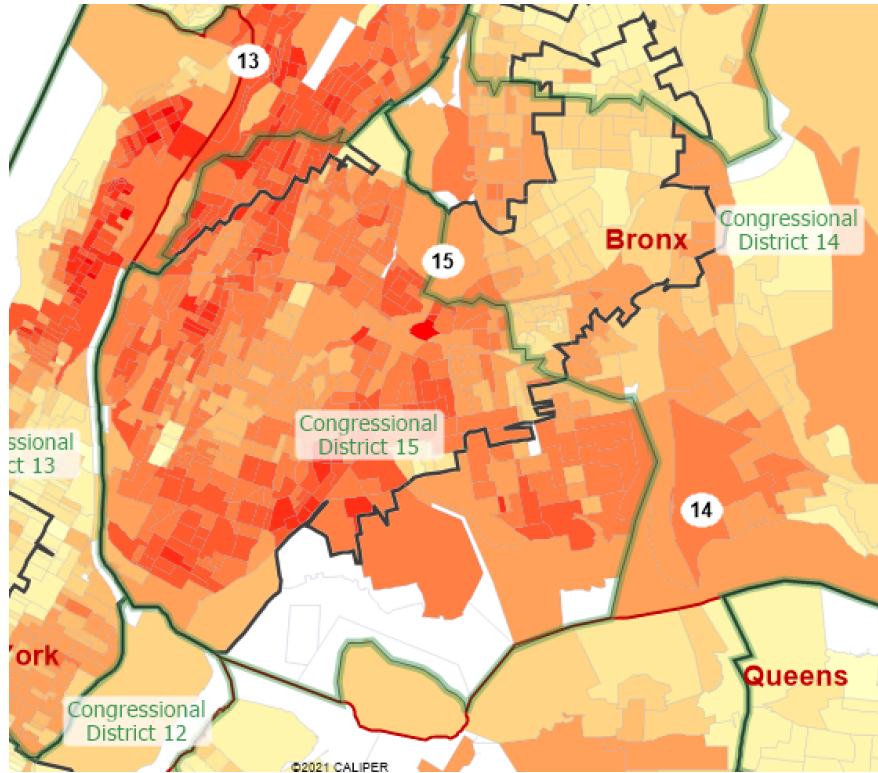
District 15 is a compact, majority Hispanic district in the South Bronx. Since the proposed district 15 overlaps with much of the enacted district 15, it is likely legal. Since the demographics of the two districts are similar, as shown in the table below, the deviations from the enacted district were not racially motivated. The table below shows that PR15 is less compact than EN15 on all three measures. However, district 15 is still quite compact, with relatively high Reock and Ehrenburg scores, and its shape is unlikely to raise eyebrows.

Table MC.16: Demographics and Compactness of District 15

District	NH_BLK _CVAP	BLK_ VAP	NH_ASN _CVAP	ASN_VAP	H_CVAP	H_VAP	Reock	Polsby-Popper	Ehrenburg
PR15	32.46%	39.5%	3.22%	5.12%	56.56%	58.64%	0.39	0.19	0.38
EN15	31.93%	39.81%	1.96%	3.31%	61.96%	64.14%	0.71	0.55	0.59

4. New York State Law

The New York State Constitution imposes only three additional requirements on congressional maps: districts must be contiguous, compact, and not drawn "to discourage competition or for the purpose of favoring or disfavoring incumbents or other particular candidates or political parties."[43] The only remaining state law question is whether drawing congressional plans with prisoner-adjusted population equality is legal. The next four sections discuss each provision of state law.

a. Contiguity

Each district is contiguous over land, so the map satisfies the state's contiguity requirement. The sole exception is district 10, which includes Liberty Island and Ellis Island, neither of which have a connection to other landmasses in the state. Since contiguity in this case is not possible (and is not present in the enacted map), this exception likely does not violate the state's requirement.

In other cases where a district connects two bodies of land over water, the district contains a bridge connecting these landmasses. For example, district 11 connects its Staten Island and Brooklyn parts by the Verrazzano-Narrows Bridge. Similarly, district 14 traverses the Whitestone Bridge to connect its territory in Queens to its population in the Bronx. The enacted plan similarly uses bridges to establish contiguity over land, granting credibility to this analysis. Overall, the proposal meets the state's contiguity mandate.

b. Compactness

The proposed districts are relatively compact, though they score lower than the enacted plan. The table below displays the overall compactness measures for the proposed and enacted plans. In the table, SD means standard deviation, RK means Reock, PP means Polsby-Popper, and EH means Ehrenburg.

The table shows that the proposed plan fares worse on all three measures of compactness, with lower mean scores on all three and lower maximum and minimum scores on the Reock and Polsby-Popper metrics. However, the difference is not dramatic: the differences between the proposed and enacted plan in their mean Reock, Polsby-Popper, and Ehrenburg scores are only 0.04, 0.09, and 0.04 respectively. Thus, assuming the enacted plan satisfies New York's compactness requirement, the proposal likely does as well.

Moreover, while the proposal scores worse than the enacted plan, the districts are still fairly compact. The map earns Reock scores of at least 0.27 in all but three districts (PR7, PR10, and PR13)

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[43] N.Y. CONST. art. III, §§ 4(c)(3)-(5)

and Ehrenburg scores of at least 0.20 in all but two districts (PR7 and PR10). Therefore, it's likely that the map meets the state's compactness requirements.

Table MC.17: Overall Compactness Measures Across Plans

Plan	RK Max	RK Min	RK Mean	RK SD	PP Max	PP Min	PP Mean	PP SD	EH Max	EH Min	EH Mean	EH SD
PR	0.60	0.11	0.38	0.11	0.49	0.07	0.26	0.11	0.61	0.12	0.33	0.13
EN	0.71	0.12	0.42	0.13	0.55	0.09	0.35	0.12	0.60	0.12	0.37	0.14

c. Political Bias

The plan used partisan data to encourage, rather than discourage, competition without intentionally favoring or disfavoring a political party. However, an independent assessment of the proposal's political bias reveals that the map slightly favors Democrats. Across a set of scenarios, PlanScore predicts that Democrats would win 60% of votes statewide but 71% of the congressional seats. Conversely, Republicans would win 40% of votes statewide but form just 29% of the state's representatives. Running the same analysis on the enacted plan shows similar levels of bias: PlanScore predicts Democrats would win 70% of the congressional seats, with Republicans capturing the other 30%. Since the plan has similar partisan implications to the current plan, it will likely pass the state's political bias test.

On competition, the proposed plan outperforms the enacted plan. Defining a competitive district as a district where the difference between the Republican and Democratic vote shares in the 2020 presidential election was at most five percentage points, the enacted plan has three competitive districts (EN1, EN2, and EN19). In contrast, the proposed plan has 11 competitive districts (PR1 through PR3, and PR18 through PR25). Therefore, the proposal will likely pass the state's political competition test.

d. Prisoner-Adjusted Population

The New York State Constitution mandates that "districts shall contain as nearly as may be an equal number of inhabitants."[44] In the past, congressional maps used P.L. 94-171 Census data to

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[44] N.Y. CONST. art. III, §§ 4(c)(2)

achieve total population equality across districts, meeting this standard. However, it remains unclear whether achieving population equality with prisoner-adjusted data is legal.

New York recently passed legislation mandating that state legislative maps use prisoner-adjusted data to achieve population equality, but the legislation in question does not mention congressional redistricting.[45] In compliance with this legislation, the state has released prisoner-adjusted data, which this proposal then used. However, there may be issues with state law when applying this data to congressional redistricting.

To my knowledge, New York state courts have yet to answer this question. However, the courts ruled that using prisoner-adjusted population in state legislative maps does not violate the state constitution.[46] Arguments from that case may be relevant in establishing the legality of prisoner-adjusted population equality under state law, though that question remains beyond the scope of this report.

B. Plan Description

This proposal seeks to maximize the number of competitive congressional districts. This map had only one source of data on partisanship: election returns from the 2020 presidential election. As a result, I use that dataset as the basis for determining how competitive each district is, defining a competitive district as one in which the difference between the Republican and Democratic vote shares in the 2020 elections was no more than five percentage points. The following table displays the partisan breakdown of each district, as well as a categorization of whether districts are competitive, safe Republican districts, or safe Democratic districts. In this classification, a safe district for either party is simply a non-competitive district which that party carried in the 2020 presidential election.

Table MC.18: Partisan Breakdown of Districts

District	Dem. Vote Share	Rep. Vote Share	Difference (Dem. minus Rep.)	Classification
PR1	49.78%	50.22%	-0.44%	Competitive
PR2	49.71%	50.29%	-0.58%	Competitive
PR3	51.84%	48.16%	3.68%	Competitive
PR4	59.12%	40.88%	18.24%	Safe Democratic

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[45] *See* N.Y. Legis. L. § 83-M(13)(b)
[46] Little v. New York State Task Force on Demographic Research, No. 2310-2011 (N.Y. SUP. CT. Dec. 1, 2011)

PR5	81.72%	18.28%	63.44%	Safe Democratic
PR6	64.59%	35.41%	29.18%	Safe Democratic
PR7	82.36%	17.64%	64.72%	Safe Democratic
PR8	86.29%	13.71%	72.58%	Safe Democratic
PR9	81.04%	18.96%	62.08%	Safe Democratic
PR10	75.65%	24.35%	51.3%	Safe Democratic
PR11	46.4%	53.6%	-7.2%	Safe Republican
PR12	85.48%	14.52%	70.96%	Safe Democratic
PR13	87.37%	12.63%	74.74%	Safe Democratic
PR14	78.37%	21.63%	56.74%	Safe Democratic
PR15	85.52%	14.48%	71.04%	Safe Democratic
PR16	71.84%	28.16%	43.68%	Safe Democratic
PR17	56.4%	43.6%	12.8%	Safe Democratic
PR18	52.23%	47.77%	4.46%	Competitive
PR19	52.37%	47.63%	4.74%	Competitive
PR20	52.46%	47.54%	4.92%	Competitive
PR21	48.02%	51.98%	-3.96%	Competitive
PR22	48.56%	51.44%	-2.88%	Competitive
PR23	48.39%	51.61%	-3.22%	Competitive
PR24	51.64%	48.36%	3.28%	Competitive
PR25	52.19%	47.81%	4.38%	Competitive
PR26	61.8%	38.2%	23.6%	Safe Democratic

Starting from this definition, I drew competitive districts in upstate New York and Long Island. Because I wanted to avoid splitting large cities when possible, the map connects urban and suburban Democratic hubs with Republican-leaning rural areas. One tradeoff to this approach is that the plan often separates cities from many of their suburbs; that means even if political subdivisions are generally intact, the plan may break up communities. Because this plan focuses on competition, I chose

to make that tradeoff throughout the map, in areas such as Syracuse, Buffalo, and Rochester. Overall, this tradeoff likely does not have a large impact on communities of interest, since many large metropolitan areas must split into multiple districts regardless; for example Buffalo's metropolitan area has over one million people, too large for an individual district.

Connecting rural regions to urban centers also reduces compactness to some extent. For example, this plan's mean Reock, Polsby-Popper, and Ehrenburg scores are 0.38, 0.26, and 0.33 respectively. In contrast, the enacted plan has mean Reock, Polsby-Popper, and Ehrenburg scores of 0.42, 0.35, and 0.37 respectively. However, this plan still contains fairly compact districts: the map earns Reock scores of at least 0.27 in all but three districts (PR7, PR10, and PR13) and Ehrenburg scores of at least 0.20 in all but two districts (PR7 and PR10). Therefore, while the desire for competitive districts trades off with compactness, it does not abandon compactness entirely.

In upstate New York, I started with district 26 in Buffalo, drawing a compact, safe Democratic district. Since Buffalo has such a large population, it was difficult to create a competitive district without splitting the city. I instead opted to keep the city intact and create a safe Democratic district, absorbing as much of the surrounding, largely Democratic suburbs as possible. When creating the district, I chose not to split counties, removing a split in Niagara county. The image below shows the population density of 2020 Democratic voters in and around district 26. The black lines indicate district boundaries, the maroon lines mark counties, and the darker blue areas are regions with higher densities of Democrats.

Figure MC.23: District 26 with Democrat Population Density
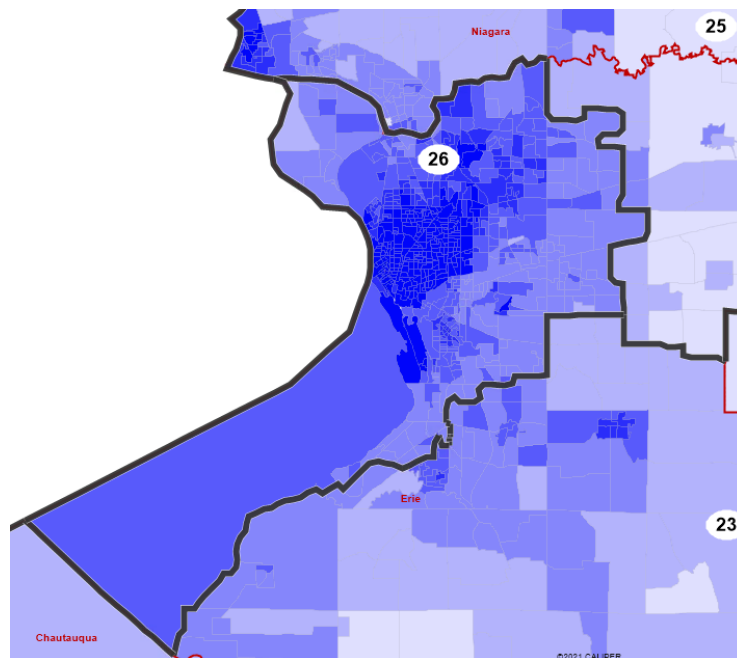
I then moved to district 25, starting in Rochester. By connecting the city with the more conservative Genesee, Orleans, and Niagara counties, I was able to prevent Rochester from creating an overwhelmingly Democratic district. To achieve population equality, district 25 also absorbed some of Erie county, opting to add a split to Erie county instead of splitting an otherwise unsplit county.

Figure MC.24: District 25 with Democrat Population Density
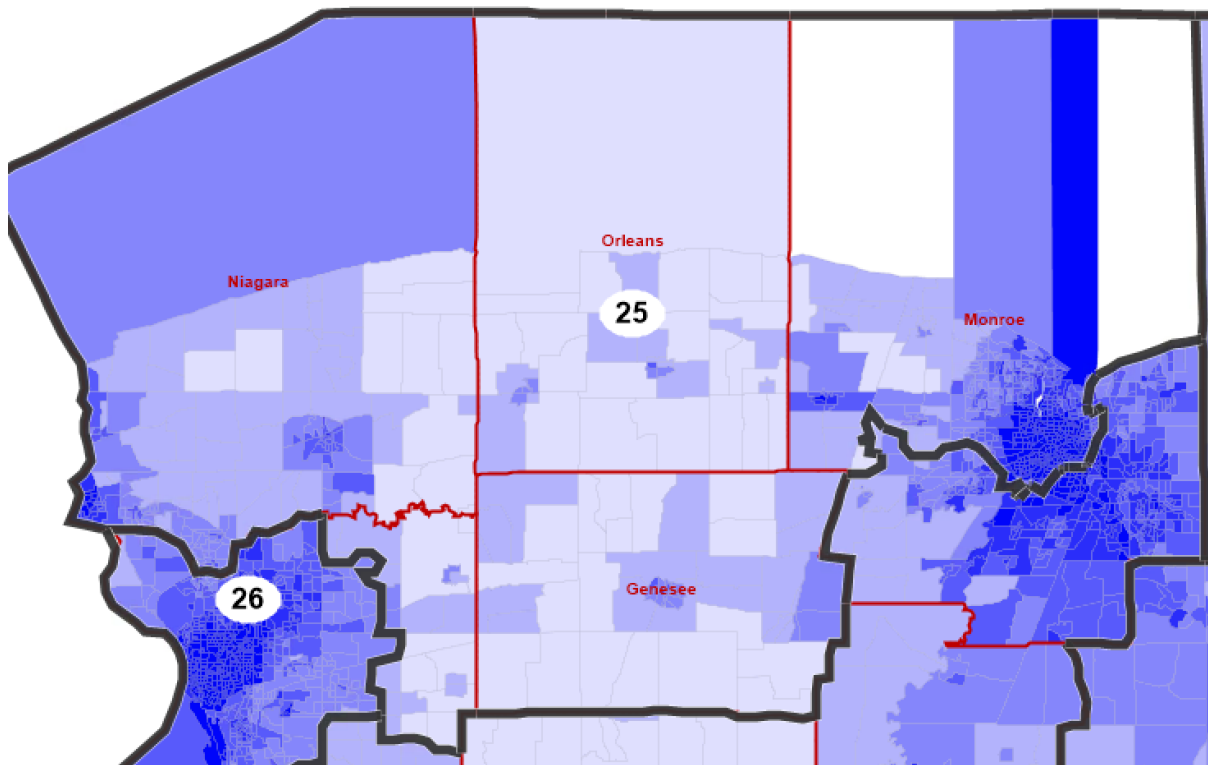
I drew district 23 to absorb the remainder of Erie and Monroe counties, taking on heavily Democratic suburbs of Buffalo and Rochester. To make the district competitive, I added the rural, Republican-leaning counties of Wyoming, Chautauqua, Cattaraugus, and Livingston. However, district 23 remained a few thousand people short of population equality. Unfortunately, equalizing the population required a county split, and district 23 dips into the northwest corner of Allegany county.

Figure MC.25: District 23 with Democrat Population Density
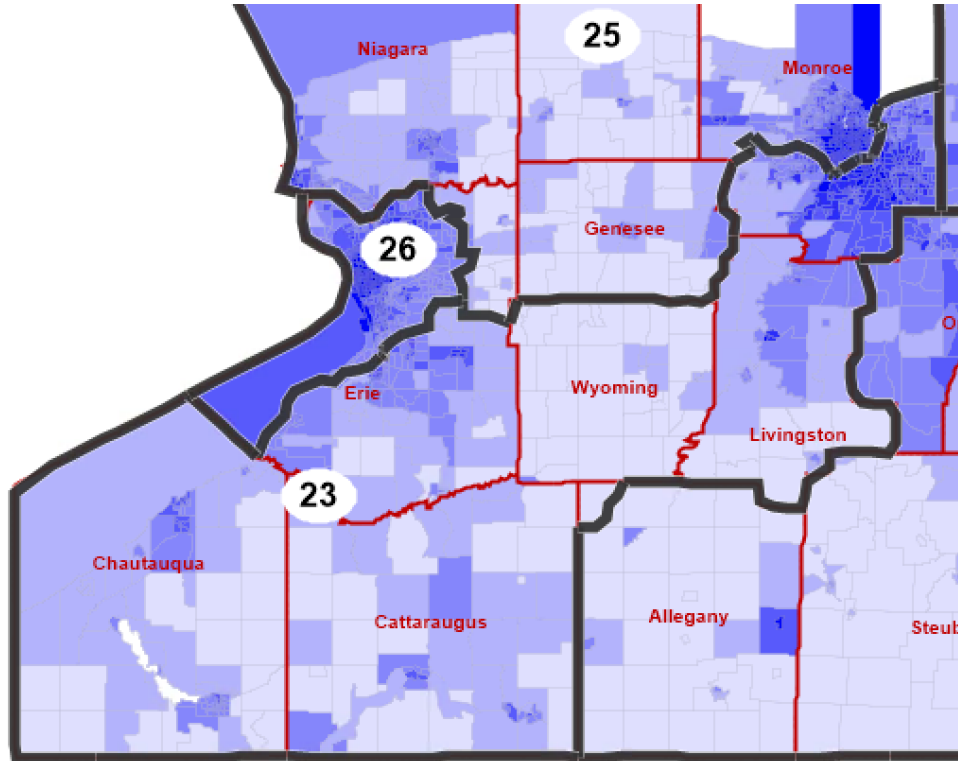
District 22 was able to achieve competitiveness without any complicated maneuvers or metropolitan area splits. Taking advantage of the fact that highly Democratic Tompkins county (home to the town of Ithaca and Cornell University) was surrounded by Republican-leaning rural counties, district 22 struck a balance of Democratic and Republican voters. The district takes the rest of Allegany county (split by district 23) and extends northeast toward Tompkins county, absorbing the surrounding region. After constructing district 22 of whole counties, the district remained a few thousand people short, necessitating another county split. District 22 therefore dips into the western side of Cortland county. To increase the district's competitiveness, the district swallowed the most Democrat-leaning segments of the county border, splitting the town of Cortland in the process.

Figure MC.26: District 22 with Democrat Population Density
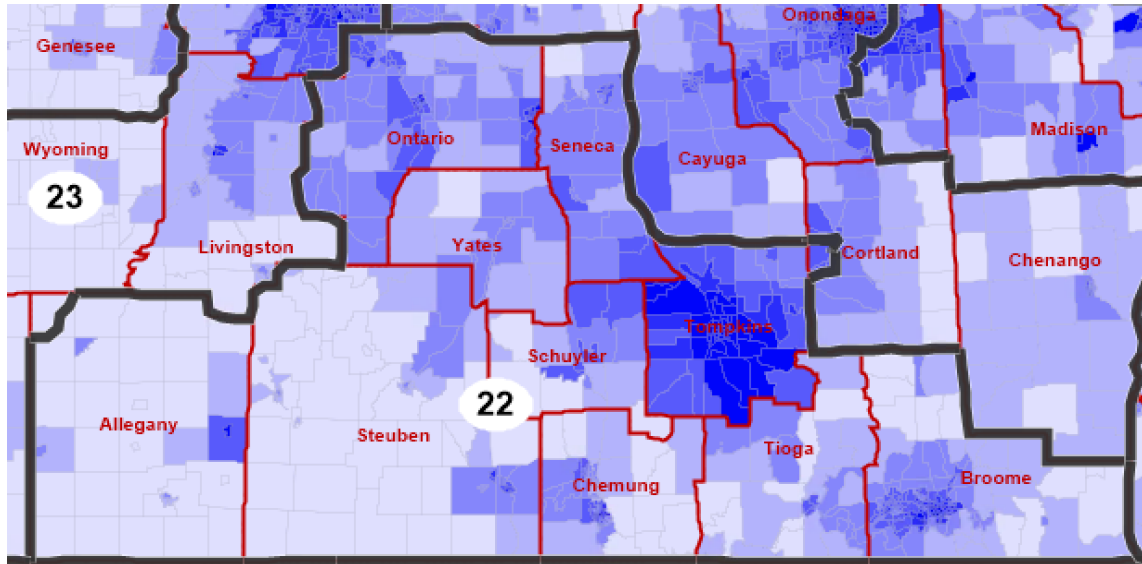
I then drew district 24 centered around Syracuse. To create a competitive district, I had to split Onondaga county, which contains the Syracuse metropolitan area. If Onondaga county and therefore the entire Syracuse metropolitan area were in a single district, the district would have too many Democratic voters to achieve competitiveness. Thus, district 24 severs Syracuse from its eastern suburbs and connects it with rural, Republican-leaning regions to the north and south. The result is a narrow-looking but highly competitive district stretching from Wayne to Chenango counties.

Figure MC.27: District 24 with Democrat Population Density
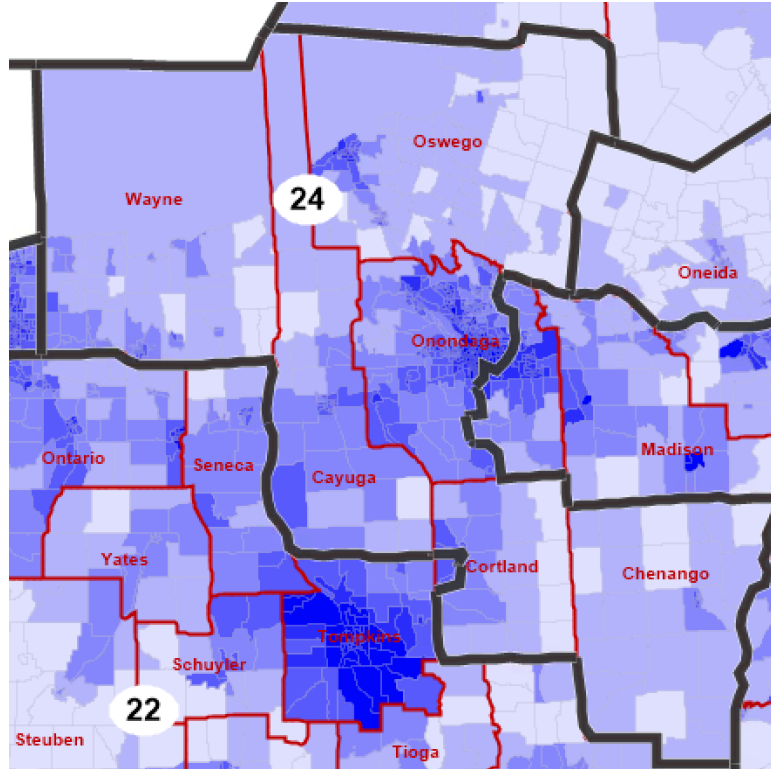
District 24 is a good example of how the plan generally prioritizes competitiveness over compactness. In the enacted plan, district 24 is much more compact, stretching only from Wayne county to the eastern end of Onondaga county. On the compactness measures, enacted district 24 earns a Reock score of 0.51, a Polsby-Popper score of 0.44, and an Ehrenburg score of 0.39. In comparison, the proposed district 24 scores a 0.35 on the Reock metric, a 0.27 on the Polsby-Popper measure, and a 0.26 using the Ehrenburg scale. While proposed district 24 is still quite compact, it is far less compact than alternatives. The tradeoff appears in how competitive the district is: the enacted district 24 is not competitive, with Democrats earning 54.64% of the district's presidential votes in 2020.

After drawing district 24, I moved northeast to the North Country region, creating district 21. In the enacted plan, North Country belongs to the Republican-leaning district 21. In this proposal, district 21 connects the conservative North Country to the liberal county of Sarataga, home to the city of Saratoga Springs. To achieve population equality, the district splits Herkimer county, leaving the southern half of the county behind. In the end, district 21 placed well within my predefined margin for competitiveness, with a less than four percentage point difference between the Democratic and Republican 2020 vote shares (for reference, see Table MC.18).

Figure MC.28: District 21 with Democrat Population Density
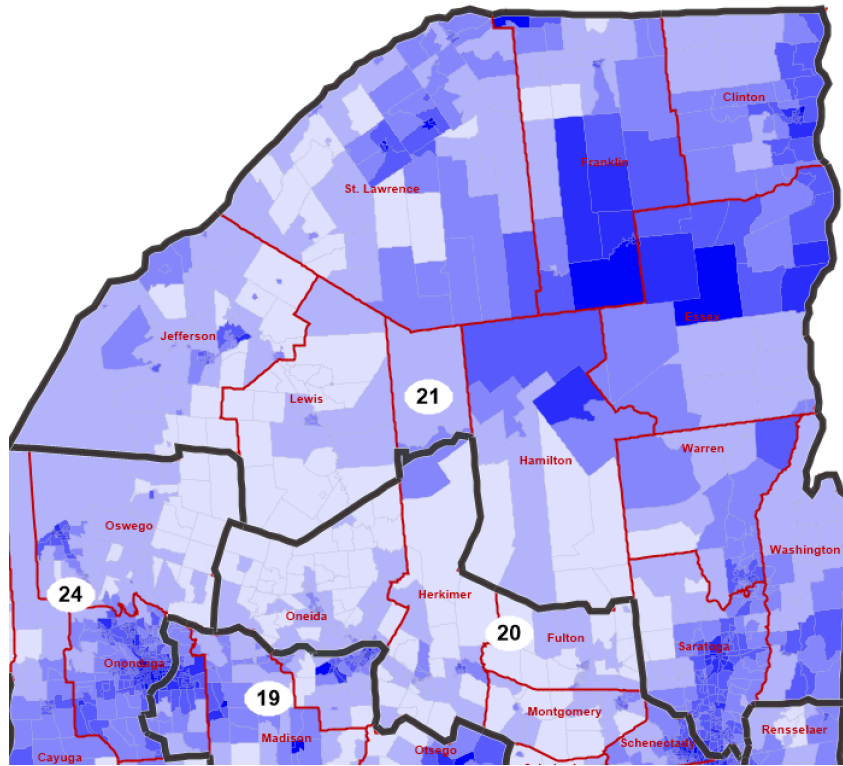
After making North Country competitive, I moved south toward Albany, the center of my proposed district 20. As Albany has a high density of Democrats, district 20's primary challenge was finding enough Republicans to make the district competitive. At first, I considered extending the district east into Rensselaer county. However, Rensselaer has a relatively high Democrat population density, which would have made the district non-competitive. I ruled out traveling south, since that would make the district below (what would become district 19) non-compact. Since district 21 lay to the north, the only option was to push westward, absorbing rural regions from Schoharie to Oneida counties.

Figure MC.29: District 20 with Democrat Population Density
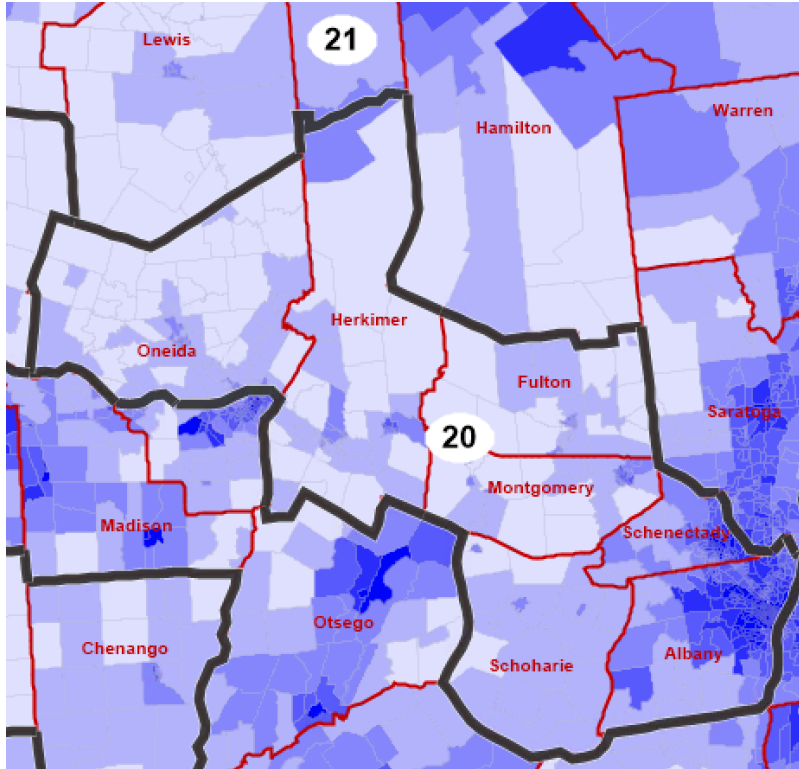
After ensuring district 20 would remain competitive, I turned to district 19. The district had to connect the Syracuse suburbs left behind from district 24 to Rensselaer county, which had been neglected by district 20. The result is a district centered in Greene and Delaware counties with two arms: one extending northwest to reach the Syracuse suburbs and another extending northeast toward Rensselaer county. To remain competitive, district 19 then had to achieve population equality without absorbing too many Democratic voters. The district therefore pushes south into Ulster county, carefully choosing Republican-leaning precincts. Ultimately, district 19 succeeded in achieving competitiveness, but it left behind a circular shaped part of Ulster county, only accessible by a thin sliver from the south.

Figure MC.30: District 19 with Democrat Population Density
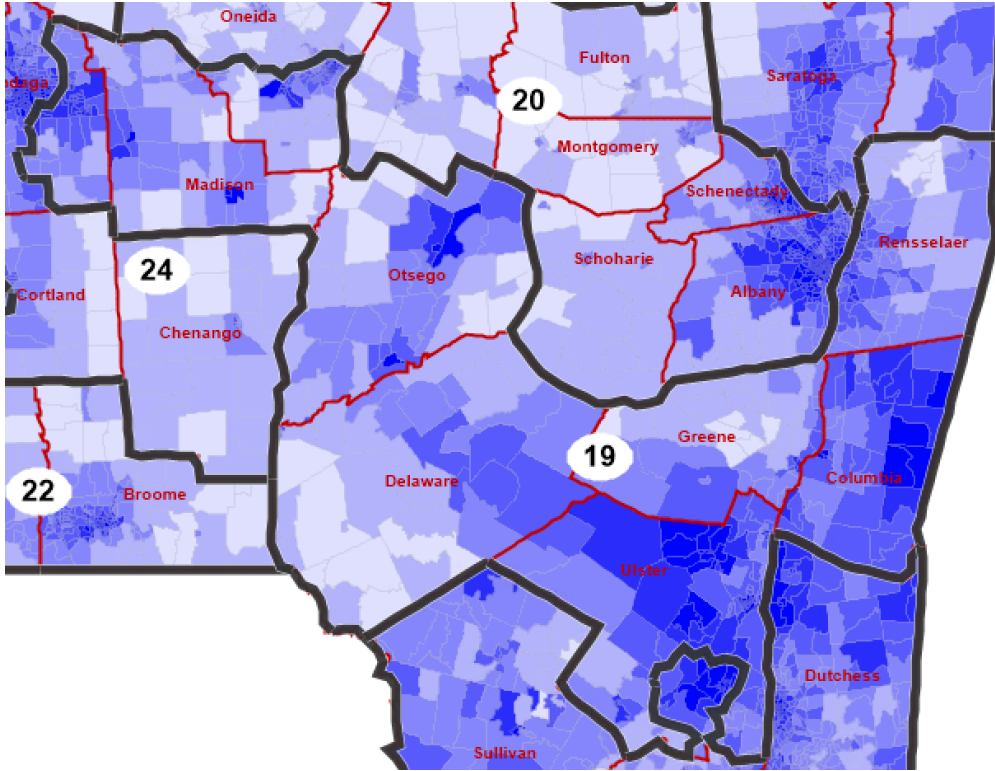
District 18 ended up absorbing these leftover parts of Ulster county, combining it with more centrist areas of Dutchess, Sullivan, and Orange counties. However, district 18 was overpopulated and leaned too far Democratic to be competitive. As a result, I removed the most liberal parts of southern Orange county, achieving population equality and competitiveness.

Figure MC.31: District 18 with Democrat Population Density
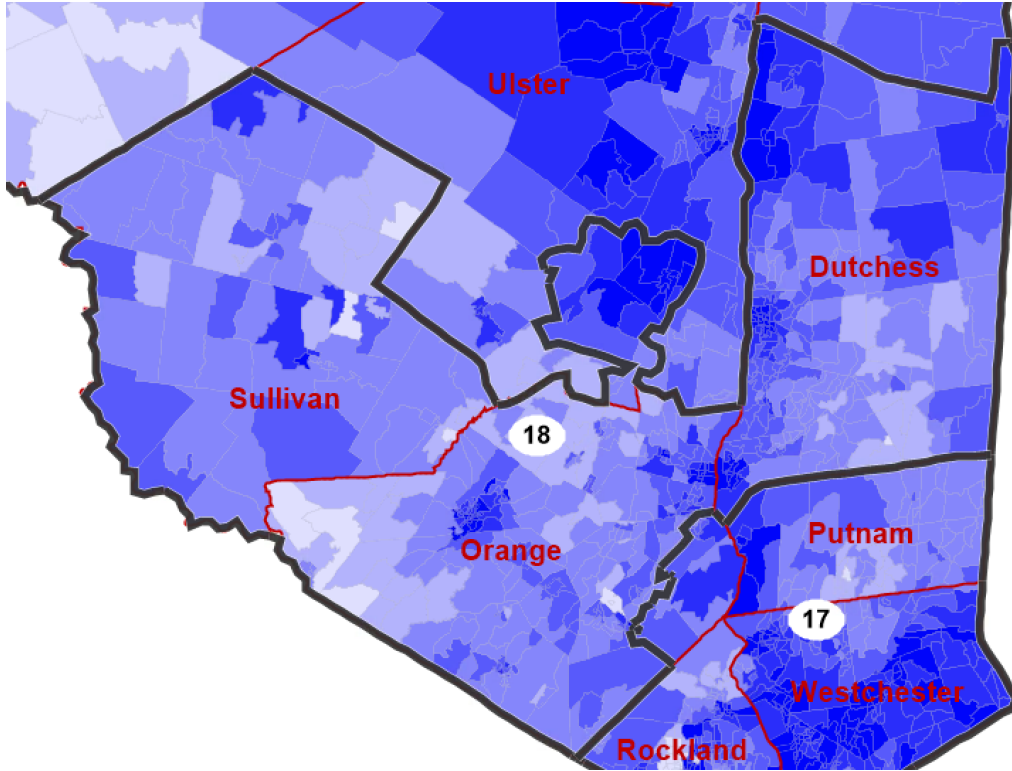
Since the area south of district 18 up until New York City was far too Democrat-leaning to form competitive districts, I turned my attention to Long Island. I started on the easternmost tip, drawing district 1. Since much of eastern Long Island is heavily Republican, the district needed to absorb more Democrat-leaning areas. To do that, district 1 dives into the center of the island, extending a small appendage to reach the town of Central Islip while avoiding Republican leaning areas such as Holbrook. The result is the proposal's most competitive district, with less than 0.5 percentage points between the Republican and Democratic 2020 vote shares.

Figure MC.32: District 1 with Democrat Population Density
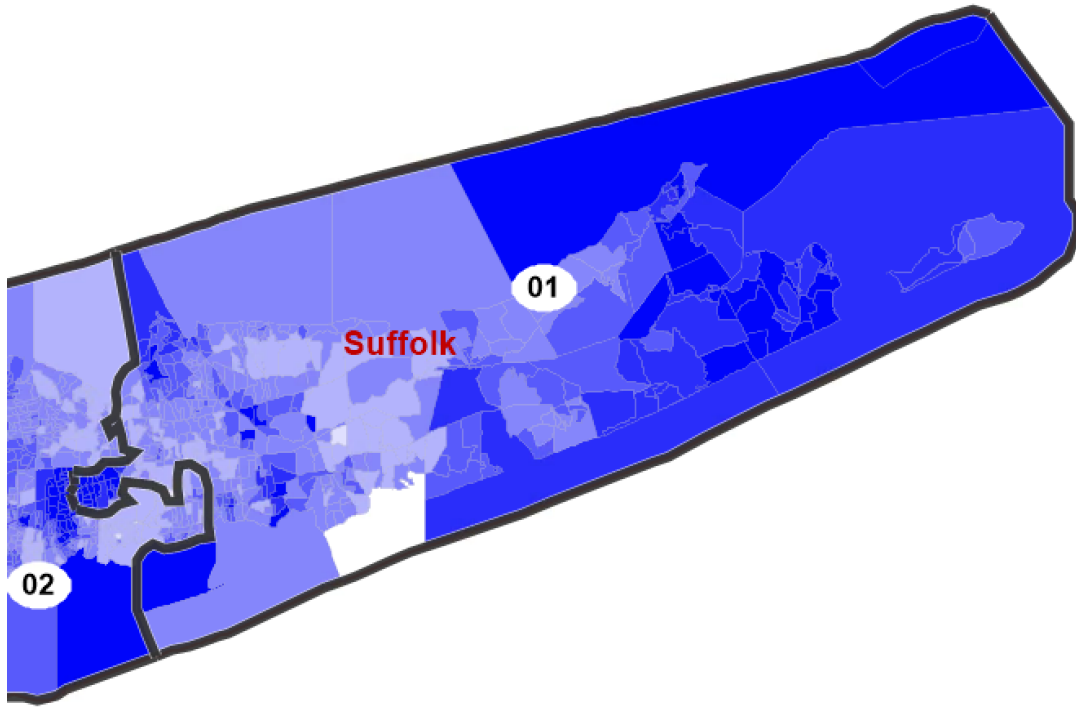
I then drew districts 2 and 3 in Suffolk and Nassau county. When the enacted map draws districts 2 and 3, it places them one on top of the other, each running from east to west. However, in that configuration, the enacted district 3 extends into Queens, absorbing too many Democrats to remain competitive. Instead, I placed district 2 and 3 next to each other, running north to south. This approach allows both districts to absorb relatively centrist areas in Long Island without extending into Queens, maintaining competitiveness. This approach also has the added benefit of removing a county split from Suffolk county.

Figure MC.33: Districts 2 and 3 with Democrat Population Density
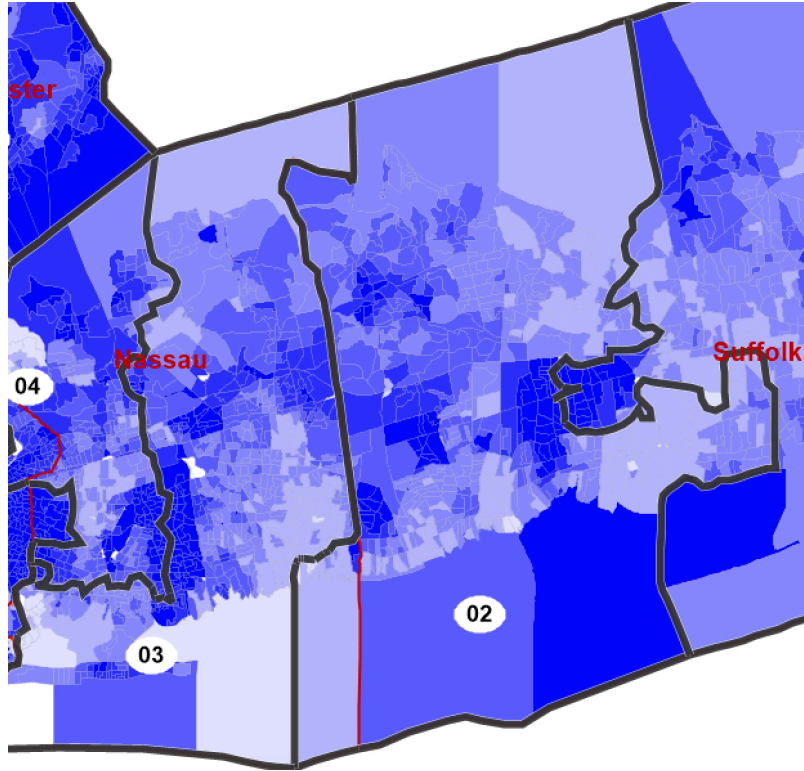
While both districts 2 and 3 consist of relatively centrist territory, district 3 strays much closer to New York City and so had to be careful of taking on heavily Democrat-leaning towns such as Hempstead. The result is that district 3 is slightly noncompact, departing from its otherwise vertical western border to extend along the south shore of Long Island. This approach allowed the district to remain competitive, creating the proposal's eleventh and final competitive district.

After drawing as many competitive districts as I could, I entered New York City. Since New York City and Westchester have overwhelmingly high Democratic population density, it was not possible to draw competitive districts in the region (districts 4 through 17) while maintaining any sense of compactness. As a result, competitiveness could not guide my decisions in the New York City area, and so I based these districts off of the previous districts.

Figure MC.34: New York City Area, Comparison to Previous Districts
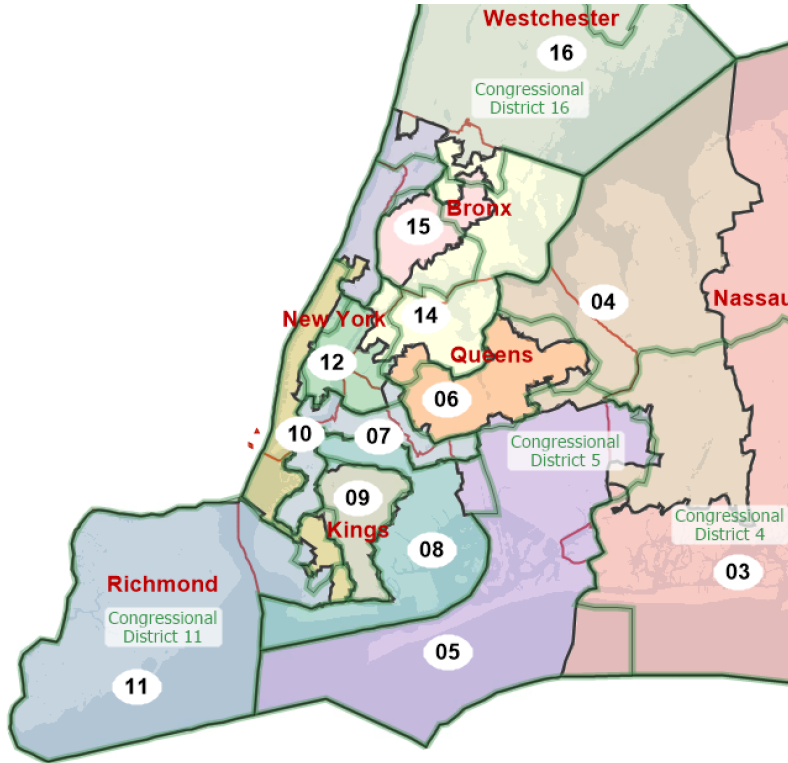
The sole competitiveness consideration in New York City arose when drawing district 11 in Staten Island. The island has a large Republican population, making district 11 a safe Republican seat. It wasn't possible to connect Staten Island with enough Brooklyn Democrats to make district 11 competitive without thoroughly disregarding compactness considerations. The only other way to make a competitive district on Staten Island would have been to split the island into multiple districts, one of which could be competitive. However, there is only one bridge connecting Staten Island to the rest of the state (the Verrazzano-Narrows Bridge, connecting Staten Island to Brooklyn); therefore, only one district on Staten Island could be contiguous by land, since each district without the Verrazzano-Narrows Bridge would lack a land connection between their territory in Staten Island and the rest of the district. Creating districts without contiguity over land could violate New York state provisions mandating contiguous districts, so I opted not to split Staten Island.

Figure MC.35: District 11 with Democrat Population Density
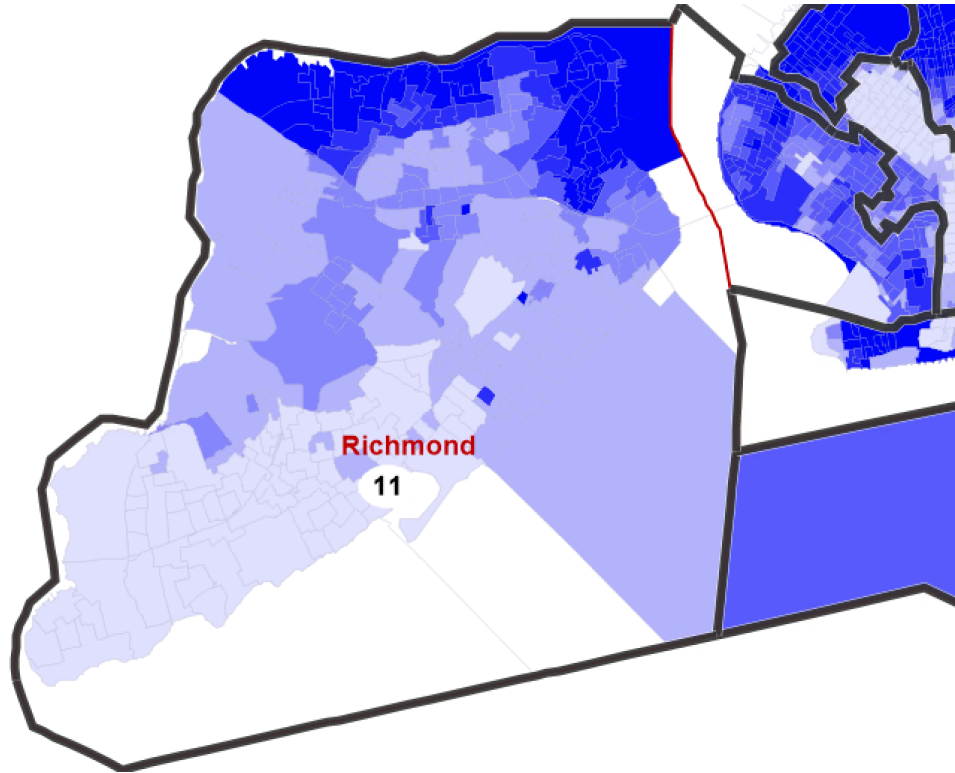
For the rest of New York City, I minorly adjusted districts to reach population equality, while maintaining each majority minority district or minority opportunity district. I started with district 5, a majority Black district in southern Queens. For population equality reasons, district 5 had to shift slightly west. I therefore pushed the district's western border to the county's border with Brooklyn, removing enacted district 8's incursion into Queens county (for reference, see Figure MC.15). However, district 5 could not travel too much further west: if it did, district 8 and 9 would lose substantial parts of the African-American population in eastern Brooklyn. Moreover, pushing west would unnecessarily add a split to Kings county. Instead, district 5 pushed slightly north into the enacted district 6. Here, too, I had to be careful: to maintain similar concentrations of Asian-Americans in district 6, district 5 could not push too far north (for reference, see Figure MC.16). The plan therefore balances district 5's northern and eastern extensions to preserve Black opportunity districts 8 and 9 and Asian-American opportunity district 6.

At the same time, district 5 was limited on its southern side. I considered transferring the Nassau county town of Inwood from enacted district 5 to proposed district 3, which would increase the concentration of African-Americans in district 5 by losing an area with relatively low Black population density. However, this transfer would make district 5 barely contiguous by land, with only the Cross Bay Veterans Memorial Bridge connecting the Rockaways to the rest of the district. As a

result, I opted not to make this transfer, keeping district 5 more clearly contiguous over land but losing an opportunity to bolster its African-American population.

Figure MC.36: Google Maps Overlaid on Proposed District 5

Similarly, I considered splitting the Rockaways. Splitting the Rockaways would have increased district 5's African-American population by losing some areas with low levels of Black population by VAP (see the density map in Figure MC.15). However, I considered the Rockaways to be a single community, since the community shares similar interests in cases such as the environment and hurricane protection.[47] As a result, I opted to keep the entirety of the Rockaways in district 5, losing another opportunity to increase the district's Black VAP numbers. In the end, district 5 barely retained its majority Black status (see Table MC.9) while remaining contiguous over land and preserving most of its neighborhoods.

After district 5, I shifted my focus to district 6, an Asian-American opportunity district in Queens (for reference, see Figure MC.16). Since district 6 had lost some population to the expanding districts 4 and 5, the district had to expand further west into Queens. While expanding into Queens, I

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[47] *See* Luis Ferré-Sadurní, *Could the Rockaways Survive Another Sandy?*, NEW YORK TIMES (July 13, 2017), https://www.nytimes.com/2017/07/13/nyregion/rockaways-beaches-hurricane-sandy.html

had to be careful to avoid encroaching on Hispanic communities on the Brooklyn-Queens border and in northern Queens, as these communities formed the bulk of Hispanic opportunity districts 7 and 14 (see the density maps in Figures MC.17 and MC.21). At the same time, to maintain the district's status as an Asian-American opportunity district, I hoped to expand the district into neighborhoods with high levels of Asian-Americans. I also aimed to create a compact district and to avoid splitting neighborhoods, meaning I could not surgically separate the Asian-American and Hispanic populations in places such as Jackson Heights.

The result was that district 6 expanded into parts of Woodside and Sunnyside, keeping district 6 relatively compact. These neighborhoods also have relatively higher concentrations of Asian-Americans than the surrounding neighborhoods, though Asian-Americans are far from a majority in the area. Consequently, the proposed district 6 and the enacted district 6 have nearly identical levels of Asian-Americans by VAP and CVAP (see Table MC.10). At the same time, this expansion does not intrude on the Hispanic communities in districts 7 and 14, allowing those districts to retain their Hispanic opportunity status.

District 7 required little adjustment, since it was quite close to population equality. The proposal pushes district 7 slightly further into Queens, absorbing more of the Hispanic community on the Brooklyn-Queens border (see Figure MC.17). To reach population equality, the district loses a handful of blocks on the lower east side of Manhattan. With these changes, the proposed district 7 has nearly identical demographics to the enacted district 7; most notably, district 7 retains its Latino plurality and will likely continue to perform as a Hispanic opportunity district (see Table MC.11).

District 8 required only slight adjustment. Since the district lost some population to district 5's westward expansion, the district needed more population (see Figure MC.18). Since district 5 had absorbed areas with relatively low densities of African-Americans, district 8 was not in danger of losing its majority Black status. To expand district 8 without sacrificing compactness or absorbing too much of district 9's African-American population, the district pushed slightly into Prospect Heights. To achieve population equality while maintaining compactness, district 9 took a few blocks of eastern Brooklyn from district 8, maintaining district 9's African-American population (see Figure MC.19).

The next main challenge in the New York City area was shifting districts 13-15. After I solidified those districts, I used districts 10-12 to fill in the remaining area while minimizing deviations from the enacted districts 10-12. The result is that districts 10-12 look quite similar to their predecessors: district 12 shifted slightly west, district 10 extended slightly further into Brooklyn, and district 11 trades small areas of southern Brooklyn.

To achieve population equality, district 13 was forced further north. The result was that the district absorbed many areas of relatively low Hispanic population density in the north Bronx (see Figure MC.20). To maintain its status as a majority Hispanic district, PR13 had two options: expand north into areas with high Hispanic population density in Yonkers, or trade small areas of the Bronx

with district 15. The second option allowed district 13 to remain more compact and prevented another split of Westchester county. Since district 15 had high concentrations of Hispanics by VAP, district 13 could take small segments of high Hispanic population density while allowing district 15 to remain majority Hispanic. I therefore chose the second option, ensuring that district 13 and 15 were both fairly compact and majority Hispanic (see Tables MC.14 and MC.16).

When drawing district 14, I faced a similar set of considerations as with district 13. The district was forced north, and the question was how far north to travel. Expanding district 14 into New Rochelle in Westchester county would have increased its Hispanic population but reduced its compactness, as well as further splitting Westchester county. As a result, I chose to expand district 14 to the Bronx border and no further. I then used a similar strategy as with district 13 to shore up the Hispanic population in the district, trading small sections of the Bronx with district 15 (see Figure MC.21). In the end, district 14 maintained similar levels of Hispanics by VAP and CVAP (see Table MC.15), ensuring its status as a Latino opportunity district. Aside from the aforementioned interactions with districts 13 and 14, district 15 remained similar (see Figure MC.22).

One consequence of my decision not to expand districts 13 and 14 into Westchester was that district 16 lost much of its territory in the Bronx, which the plan transferred into PR13 and PR14. As a result, district 16 cuts through the African-American community on the Bronx-Westchester border, which was formerly contained in EN16. Losing the African-American population in the north Bronx shifted the demographics of district 16: as the table below shows, EN16 is majority minority by both VAP and CVAP and plurality Black by VAP. In contrast, PR16 is majority minority by VAP but not by CVAP, and the district is no longer plurality Black.

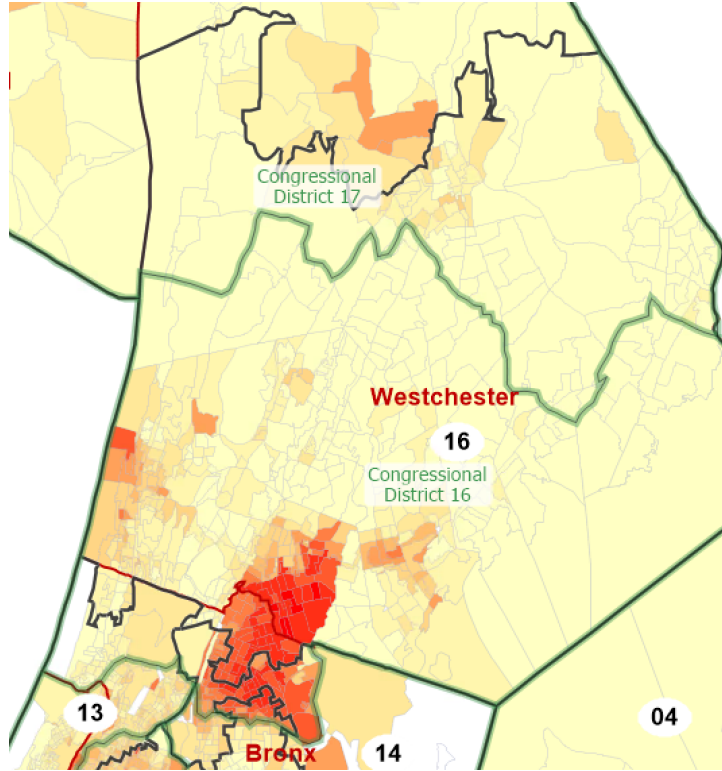Figure MC.37: African-American Population Density in District 16

Table MC.19: Demographics of District 16

District	NH_BLK _CVAP	BLK_VAP	NH_ASN_ CVAP	ASN_VAP	H_CVAP	H_VAP	NH_WHT _CVAP	NH_WHT _VAP
PR16	22.86%	24.5%	5.43%	7.44%	19.61%	26.35%	51.47%	42.69%
EN16	32.05%	35.49%	4.8%	6.25%	2.16%	26.29%	40.72%	34.23%

I ultimately accepted this consequence. The only remedy would have been to expand district 13 or 14 into Westchester, which would have connected urban areas of the Bronx, Manhattan, and/or Queens with suburban towns. For example, to connect district 14 with New Rochelle, the district would likely have to absorb parts of Pelham, a suburban area of Westchester. Moreover, the new district would have an unwieldy shape, weaving through at least three counties, starting in small Westchester towns before diving into the heart of the country's largest city. Judging that such a district sacrificed communities of interest and compactness considerations, I chose not to create it.

In summary, the map achieves its goals of forming a competitive map, more than tripling the enacted plan's number of competitive seats. While the plan sacrifices compactness to some extent, the plan fares well on other traditional redistricting criteria. Each district is contiguous over land, and the

map generally avoids splitting counties, precincts, and cities/towns. In total, the plan splits 16 counties, 48 precincts, and 50 towns meaning the map generally follows political subdivision lines. In contrast, the enacted plan splits 19 counties, 40 towns, and 22 precincts. However, as precincts are often redrawn between redistricting cycles, the number of current precinct splits in the enacted map is not informative. Overall, this proposal illustrates how a New York congressional plan can achieve competitiveness while also scoring highly on good government metrics.

C. Comparison to NYIRC Plans

On January 3, 2022, the New York State Independent Redistricting Commission (NYIRC) submitted two redistricting plans to the state legislature for consideration and approval: plan A and plan B. Both plans are quite similar, with only small adjustments to district lines between the two. I discuss them together as essentially one proposal.

The commission's proposals appear to be least change maps, minimizing deviations from the enacted districts. In New York City, where my map also starts from the enacted districts, my plan and the commission's plan look quite similar. For example, all three maps have a similar set of minority opportunity districts, with majority Hispanic districts 13 and 15, majority Black district 5, Asian-American opportunity district 6, and Hispanic opportunity districts 7 and 14. The only difference is that in my proposal, district 8 is majority Black and district 9's African-American population is barely shy of a majority, whereas in the commission's proposals the opposite is true: district 9 is majority Black while district 8 is not. In each minority opportunity district, the demographics of the commission's districts are quite similar to mine. The only important difference in the demographic numbers is that the commission's district 13 (in both proposals) is majority Hispanic by VAP but not CVAP, whereas my district 13 is majority Hispanic by both VAP and CVAP.

In New York City, many of the commission's districts bear surprising resemblance to mine. For example, the commission's proposed district 5 (pictured below) looks similar to my proposed district 5 (shown in Figure MC.36). Both districts are centered around southern Queens, pushing slightly west into Brooklyn and east into Nassau county. Both districts then scoop up the Rockaways, taking care to keep them in one district. The image below shows district 5 from the commission's proposal A, and the district 5 in proposal B is almost exactly the same.

Figure MC.38: NYIRC Proposal A, District 5

One notable difference between the commission's proposals and my map is that the commission chose to exclude the Nassau county neighborhood of Inwood in their district 5, whereas my proposal includes it. The result is that the commission's district 5 is less obviously contiguous over land, with only a bridge connecting the Rockaways to the rest of the district.

In the New York City area, the largest difference between my plan and the commission's proposals appears in how the commission drew districts 14, 16, and 17. As I discussed in the previous section, I chose not to extend district 14 into Westchester because it would create non-compact districts and connect suburban Westchester towns to urban areas of district 14. However, the commission made the opposite decision, extending district 14 into parts of Pelham, New Rochelle, Larchmont, and Mamaroneck. To make up for the population district 14 claimed in Westchester, district 16 pushes into the Bronx, absorbing the African-American community in the north Bronx and maintaining the district's majority minority status by VAP and CVAP. The table below shows the demographics of my proposed districts 14 (PR14) and 16 (PR16) compared to the commission's proposal A (CA14 and CA16) and proposal B (CB14 and CB16). The image below shows the relevant districts from proposal A, and the area looks nearly identical in the commission's proposal B.

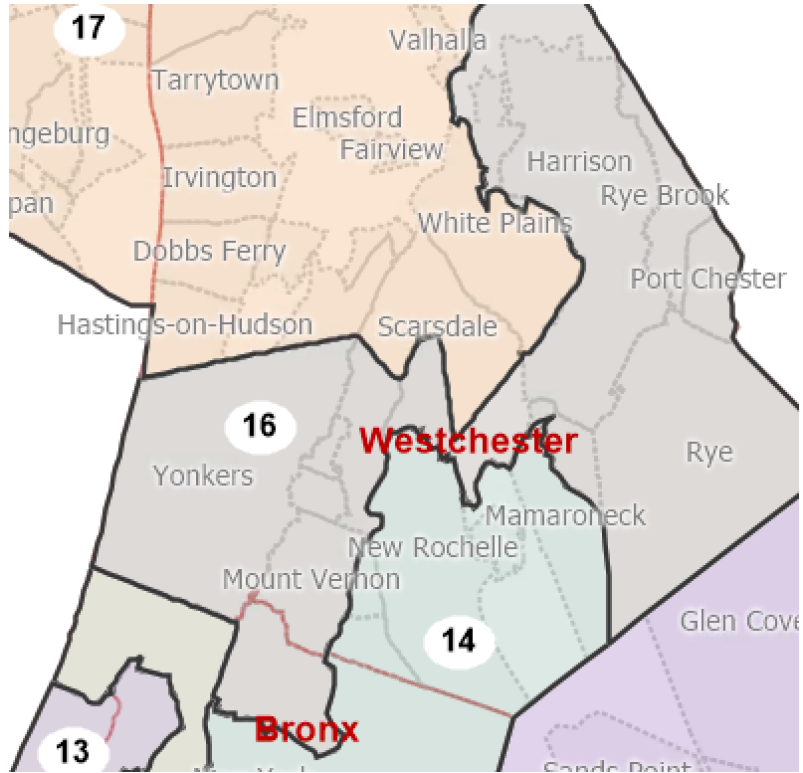Figure MC.39: NYIRC Proposal A, districts 14, 16, and 17

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Table MC.20: Demographics of Districts 14 and 16

District	NH_BLK_CVAP	BLK_VAP	NH_ASN_CVAP	ASN_VAP	H_CVAP	H_VAP	NH_WHT_CVAP	NH_WHT_VAP
PR14	21.85%	22.32%	10.25%	13.28%	41.26%	46.44%	25.88%	20.74%
CA14	15.99%	16.32%	10.7%	14.12%	39.38%	45.97%	33.3%	25.86%
CB14	15.91%	16.22%	11.12%	14.77%	39.69%	46.02%	32.68%	60.31%
PR16	22.86%	24.5%	5.43%	7.44%	19.61%	26.35%	51.47%	42.69%
CA16	27.87%	31.32%	3.79%	5.07%	19.84%	25.44%	47.7%	39.88%
CB16	28.98%	32.26%	4.07%	5.32%	20.52%	26.13%	45.55%	38.13%

While the commission's map preserves district 16's status as a majority minority district by CVAP, it does so at significant costs to compactness and preserving political subdivisions. For example, the commission's district 14 cuts through two towns that my district avoids: Mamaroneck and New Rochelle. At the same time, the commission's maps place parts of Westchester into district 17, splitting the county into three districts (my proposal splits Westchester county into only two districts). The

result is that district 16 is highly noncompact: the district starts in the northeast of Westchester county, traveling south along the state's eastern border. The district then abruptly pivots west, weaving through the narrow passage between districts 14 and 17, slicing through New Rochelle on the way. Once on the western side of district 14, the district dives south into the Bronx, where it terminates. In contrast, my plan of the region better respects political subdivisions while ensuring district 16 is majority minority by VAP (though not by CVAP).

Another main difference between my map and the commission's proposals lies in upstate New York. These differences illustrate how my search for competitive districts and the commission's prioritization of compactness led to varying districts. For example, both of the commission's proposals and my map all center district 20 around Albany, including the entirety of Albany county. As shown in Figure MC.29, my district then travels northwest toward rural areas of Herkimer and Fulton counties, searching for Republicans to balance my district. In contrast, the commission pushed north into Saratoga county and slightly east into Rensselaer, creating a compact, rectangular-shaped district. Without any special effort to make the district competitive, the commission's district 20 leans heavily Democratic, with a more than 20 percentage point difference between the Democratic and Republican 2020 vote shares in both proposals A and B. The image below shows the version of district 20 in the commission's proposal B, which is nearly identical to the version in proposal A.

Figure MC.40: NYIRC Proposal B, District 20
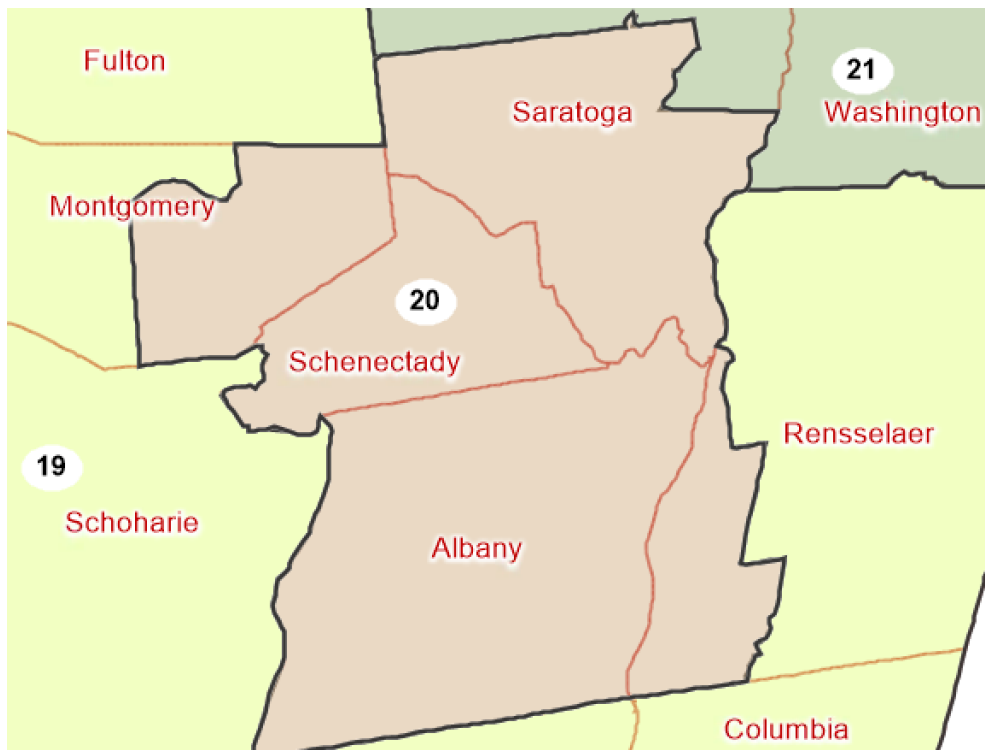
The differences in district 20 illustrate a wider trend in the partisan differences between my map and the commission's proposals: my map is far more competitive. Defining a competitive district as a district where the difference between the Republican and Democratic vote shares in the 2020 presidential election was at most five percentage points, the commission's proposal A has only three competitive districts (districts 1, 18, and 19). Proposal B also has three competitive districts (districts 1, 2, and 18). In contrast, my proposal has 11 (districts 1-3 and 18-25).

While the proposals differ in their competitiveness, they have similar degrees of partisan bias. To measure bias, I ran independent analyses from PlanScore on all three proposals. Across a range of scenarios, PlanScore predicts that Republicans would win 40% of the votes statewide, while Democrats would win 60%. Under my proposal, PlanScore predicts that Democrats would win 71% of the congressional seats, and Republicans would take the remaining 29%. The commission's proposals yielded similar predictions. Under proposal A, Democrats would form 73% of the congressional delegation, and Republicans would form the other 27%. With proposal B, Democrats would win 72% of the districts, and Republicans would take the remaining 28%. Based on these predictions, it appears all three plans are slightly biased in favor of Democrats.

Another area where the plans differ is on good government metrics, where my plan vastly outperforms the commission's proposals. The commission's proposal A splits 25 counties, 59 towns, and 274 precincts, and their proposal B splits 24 counties, 60 towns, and 312 precincts. In contrast, my proposal splits 16 counties, 50 towns, and 48 precincts, representing considerably more respect for political subdivisions. This difference stems in part from how the commission redrew upstate New York, where they introduced avoidable county splits. For example, the commission's district 25 splits both Wayne and Ontario counties when the district needed to split only one county to achieve population equality. The map below shows district 25 from proposal A, though the district looks nearly identical in proposal B.

Figure MC.41: NYIRC Proposal A, District 25

On compactness, my map performs similarly to the commission's proposal. The commission's proposal A earns mean Reock, Polsby-Popper, and Ehrenburg scores of 0.38, 0.28, and 0.34 respectively, and their proposal B earns mean Reock, Polsby-Popper, and Ehrenburg scores of 0.38, 0.28, and 0.32 respectively. My proposal scores similarly on all three metrics, with mean Reock, Polsby-Popper, and Ehrenburg scores of 0.38, 0.26, and 0.33 respectively. These numbers show that all three plans score worse than the enacted plan, which has mean Reock, Polsby-Popper, and Ehrenburg scores of 0.42, 0.35, and 0.37 respectively.

As discussed in the previous section, my proposal sacrifices compactness to draw more competitive districts, explaining why my proposal lacks the compactness of the enacted map. However, it remains unclear what prompted the commission to draw multiple relatively non-compact (but still non-competitive) districts in upstate New York, bringing down the map's average compactness measures. For example, the image below shows the commission's district 22 from proposal A, and the district has the same shape in proposal B. In both cases, the district begins in Tomkins county and travels east into Cortland before suddenly curving north to cut through Onondaga county. The district then makes a sharp turn east to cut through parts of Madison and Oneida counties. On the Reock, Polsby-Popper, and Ehrenburg scores, this district earned 0.27, 0.15, and 0.17 respectively in proposal A. In proposal B, the district scored 0.3, 0.2, and 0.2 on the Reock, Polsby-Popper, and Ehrenburg metrics respectively. While these scores are not concerning on an absolute basis, the scores could have been much higher if the commission drew a district with fewer sharp turns.

Figure MC.42: NYIRC Proposal A, District 22
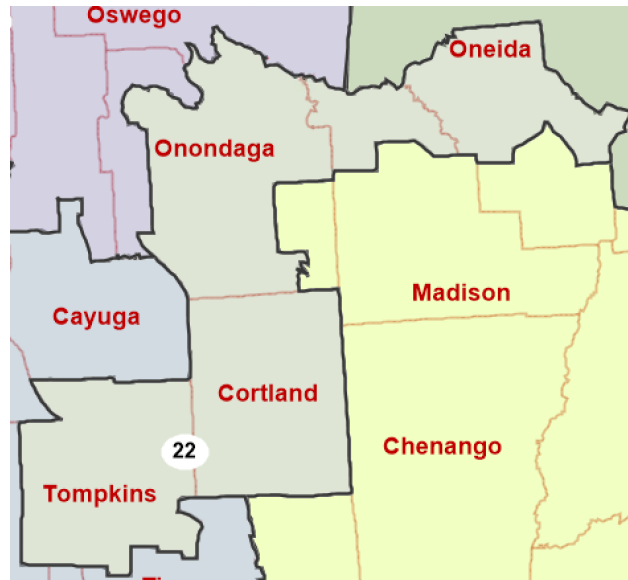
Overall, the commission appears to have drawn least change maps for the state's congressional redistricting. However, my proposal outperformed the commission's maps on good government metrics, splitting far fewer counties, towns, and precincts. At the same time, my plan achieved similar levels of compactness with far greater levels of political competition. The maps achieve similar rates of minority representation, with a nearly identical set of majority minority and minority opportunity districts.

D. Conclusion

While New York presents unique challenges during the redistricting process, the proposed plan demonstrates one way to navigate the tradeoffs inherent in redistricting the state. The proposal creates a highly competitive map with 11 competitive districts, more than triple the number in the enacted plan or in either of the two NYIRC proposals. Moreover, the map generally succeeds in preserving counties, cities/towns, and precincts while also creating compact, contiguous districts, illustrating that competitiveness does not require a complete sacrifice of traditional redistricting criteria. At the same time, the proposal took care to ensure that racial minorities have an equal opportunity to participate in the political process, maintaining the enacted map's high levels of minority opportunity districts. As the politics of redistricting play out in Albany, this proposal offers a non-partisan map with carefully explained decisions, representing an alternative to the partisan considerations that have come to dominate each redistricting cycle.