State Defendants' Response to Gonzales Plaintiffs' Motion for Preliminary Injunction

Exhibit CC

Dr. Sean Trende Report

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
EL PASO DIVISION

LEAGUE OF UNITED LATIN AMERICAN CITIZENS, Plaintiffs, **GREG ABBOTT, et al.**, Defendants.	Case No. 3:21-cv-00259 [Lead Case]

SUPPLEMENTAL EXPERT REPLY OF SEAN P. TRENDE, Ph.D.

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Pursuant to this Court's 3/19/2025 Scheduling Order, as modified with an extension of time agreed to by the parties, I am submitting the following Expert Report. This report reponds to the August 2025 Declaration of Dr. Matt A. Barreto and Michael B. Rios, MPP ("First Barreto/Rios Report"), the September 2025 Supplemental Declaration of Matt Barreto and Michael Rios ("Second Barreto/Rios Report"), and the Declaration and Expert Report of David Ely in Support of Brooks, LULAC, and MALC Plaintiffs' Joint Moton for Preliminary Injunction ("Ely Report.")

1 Response to First Barreto/Rios Report Analysis of Precinct Splits

The First Barreto/Rios Report claims that "[l]ooking to the comparison of the 2021 and 2025 boundary lines laid out in Appendix A, Maps 1 - 15 there is evidence that map drawers relied on the racial composition of neighborhoods, and not primarily partisan performance data in crafting the new maps in August 2025. In particular, map drawers decided to split VTDs more than 440 times and instead draw boundaries on census blocks, for which only racial data exists. Census blocks do not contain election results for such small pieces of neighborhoods and no map drawer can be certain of partisan performance within a census block." Barreto/Rios Report ¶43.

The implication here is that these VTD splits were made using race as a proxy for politics, since political data is not available at the census block level. The latter part is true, however, it does not follow from it that the former is also true. First, there is no real need to use race as a proxy for politics in these split precincts. In Texas, 440 split precincts averages out to around 12 split precincts per district. In the context of a 700,000+ person district, that is unlikely to have a massive impact on partisan performance, especially given some of the points below.

Second, there can be many reasons to split a precinct for a Congressional District: To improve overall compactness, to conform with geographic features or roadways,

to carve out an incumbent, or to satisfy Fourteenth Amendment equal population requirements. Also, racial demographics are at best an imperfect indicator of politics. In a scenario where a mapmaker uses the 2024 presidential election as a guide for line drawing, where Hispanic voters are 60%-40% demographic in some places or even voted outright Republican,[1] using race as a heuristic for party affiliation would hardly do better than flipping a coin.[2] Third, because racial groups are frequently geographically clustered in America, it would not be at all surprising that we might find consistently higher minority populations on one side of the district line than the other. Sometimes meaningful differentials will occur by chance.

Moreover, aside from innuendo, there is no actual evidence offered in the First Barreto/Rios Report demonstrating that these VTDs are split on the basis of race. I offer a limited test here. It is limited because it is not realistic to examine all 400+ split VTDS in the available time. Instead, I examine the splits for TX-18, one of the foci of this lawsuit. It illustrates why the mere presence of VTD splits does not give rise to an inference that race was a motivating factor in splitting precincts.

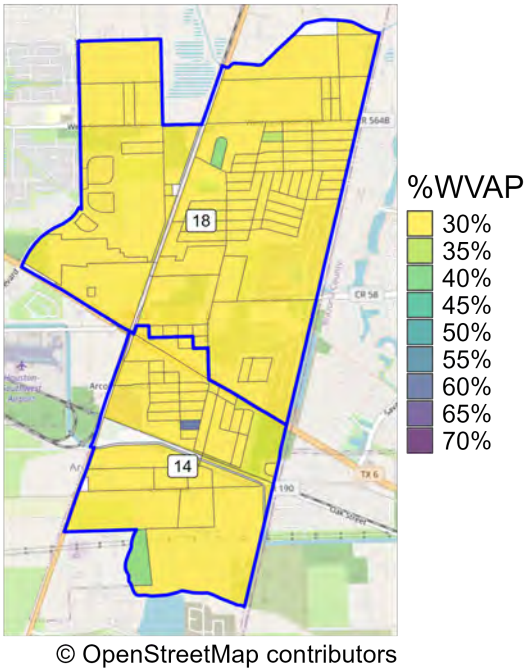
First, precinct 001003. It is split between districts 14 and 18. It is located at the far southern tip of the district, creating a protuberance. This is chopped off, giving the district a more regular shape. The precinct is overwhelmingly Hispanic throughout. The portion included in 18 has a total population of 6,093, a White VAP of approximately 4%, a BVAP of 23% and an HVAP of 72%. The portion outside has a total population of 1746, a WVAP of approximately 6%, a BVAP of 23% and an HVAP of 70%.[3] If we look at how blocks are split, there is no obvious pattern of racial sorting.

[1]Even if all 691 White residents of voting age in Zapata County, or all 846 White residents of voting age in Starr County, had showed up to vote and voted for Trump, Trump still mathematically had to have carried the non-White population there.

[2]At one point, the Barreto/Rios report claims that, because their and other EI analysis of the area were available, that Texas Republicans were aware of and knew of these voting patterns. This assumes, of course, that Texas Republicans did not–rightly or wrongly— disagree with EI as the proper way to measure partisanship, or that they were not unaware of the particular findings in this litigation.

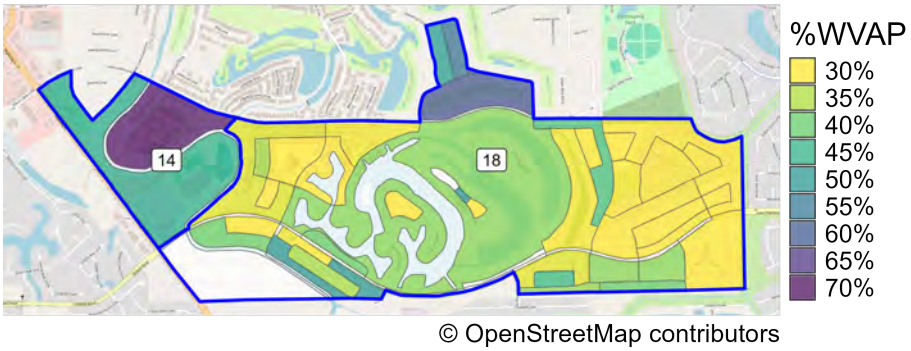
[3]Here I use voting age population, because CVAP data for precincts have large error margins and must be estimated from block groups when not co-terminous.

Figure 1: Precinct 001003, blue lines reflect District boundaries



Precinct 002018 is located in on southwestern edge of District 18. It is cut in such a way that it minimizes a protuberance into 18. The portion included in 18 has a total population of 4,336, a White VAP of approximately 29%, a BVAP of 29% and an HVAP of 11%. The portion outside has a total population of 284, a WVAP of approximately 67%, a BVAP of 14% and an HVAP of 13%. If we look at how blocks are split, there is no obvious pattern of racial sorting; it is unclear why a racial gerrymanderer would leave the heavily White section in the northern portion of the precinct intact.

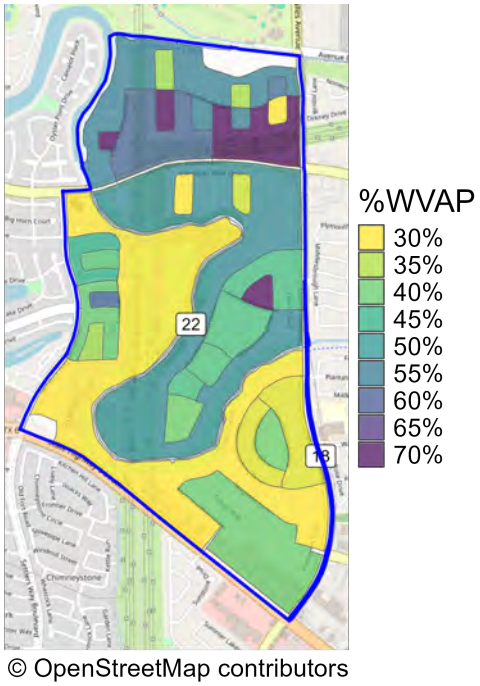
Figure 2: Precinct 002108



Precinct 004140 places five unpopulated blocks into District 18. This has the effect of bringing the district boundary to Dulles Ave.[4]

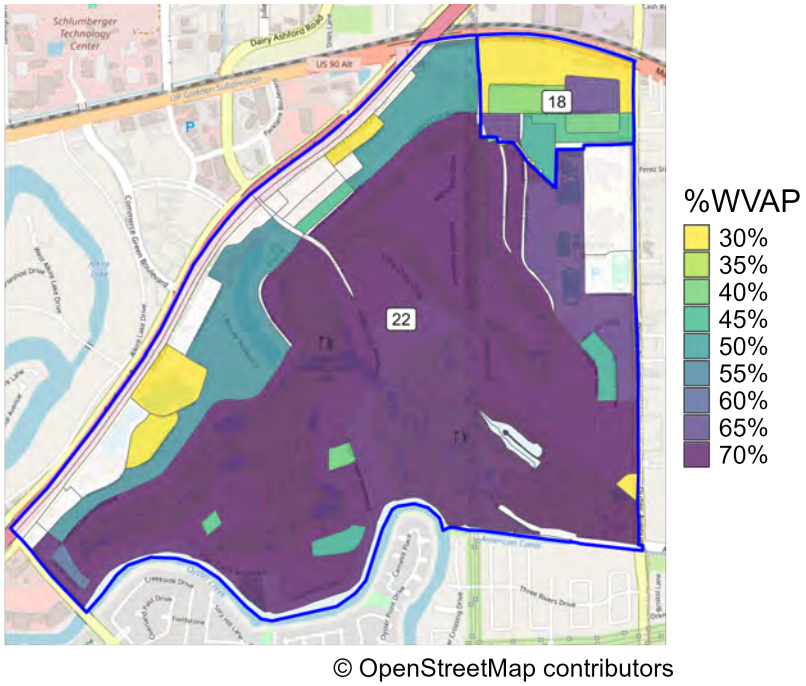
[4]Using the 2020 VTDs, Dave's Redistricting counts nine blocks with a population of 20, with a WVAP of 15% (3 individuals) placed in 18, leaving 4,150 individuals with a WVAP of 43% in 22.

Figure 3: Precinct 004140



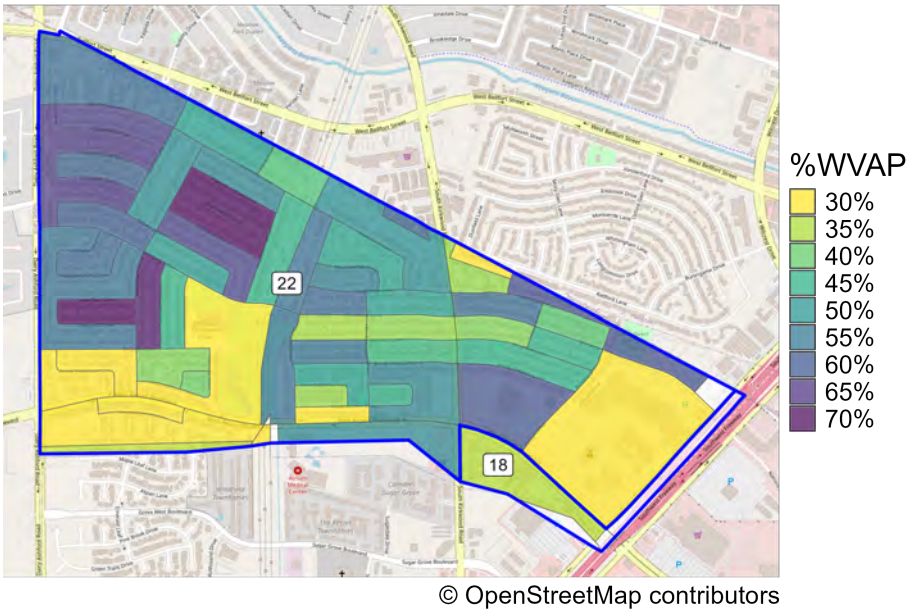
Precinct 003009 is at the western edge of District 18. The portion included in 18 has a total population of 564, a White VAP of approximately 41%, a BVAP of 15% and an HVAP of 14%. The portion outside has a total population of 3,530, a WVAP of approximately 66%, a BVAP of 5% and an HVAP of 8%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 4: Precinct 003009



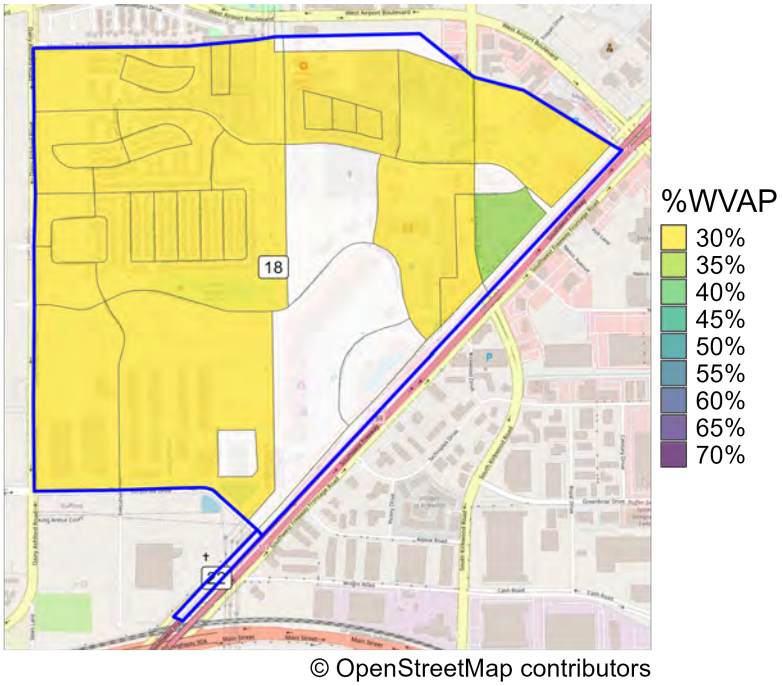
Precinct 002022 splits a frontage road and a small populated portion from District 22. The portion included in 18 has a total population of 205, a White VAP of approximately 34%, a BVAP of 40% and an HVAP of 14%. The portion outside has a total population of 4,580, a WVAP of approximately 47%, a BVAP of 9% and an HVAP of 22%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 5: Precinct 002022



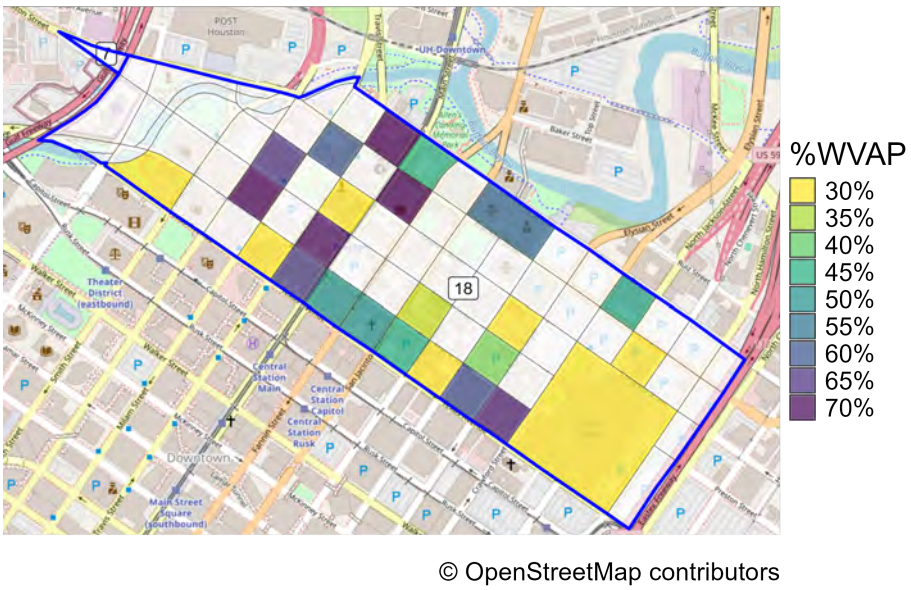
Precinct 002096 has a "tail" that extends into District 22 that follows the Southwest Freeway. The map removes two unpopulated blocks on that Freeway, eliminating the tail.

Figure 6: Precinct 002096



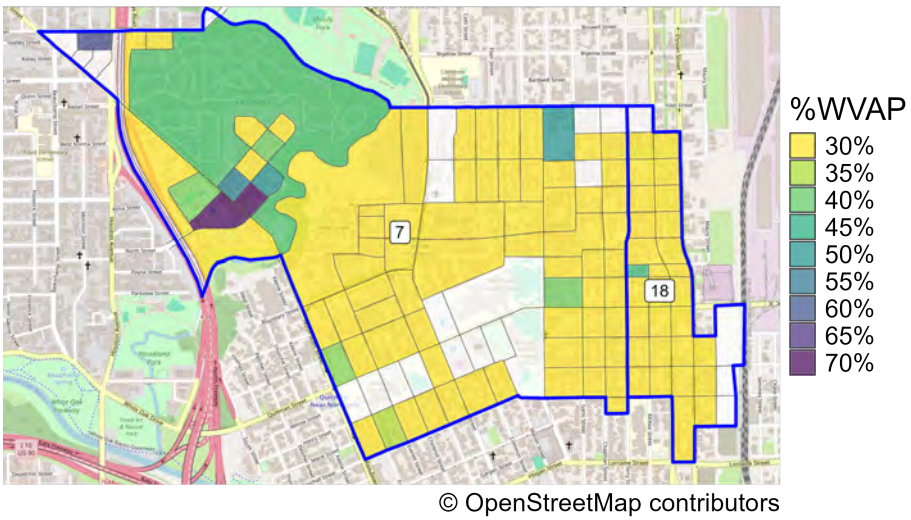
Precinct 000890 runs southwest of the University of Houston. It has a point that extends across the Gulf Freeway. It is unpopulated. The map removes two unpopulated census blocks, cutting off the tail.

Figure 7: Precinct 000890



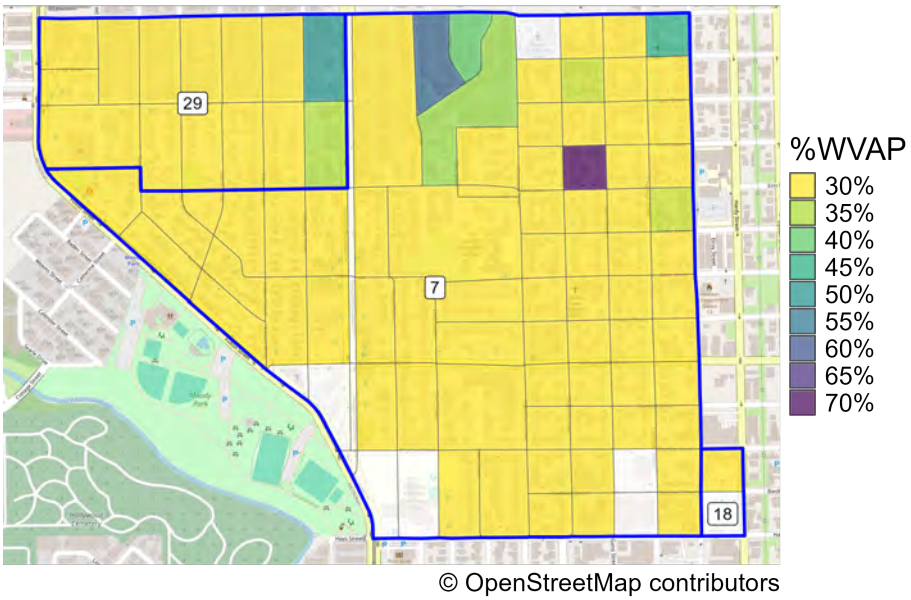
Precinct 000046 includes Hollywood Cemetery and the areas to the southeast. It is part of a series of precinct splits that result in a straight line dividing 7 from 18 along Terry Street. The portion included in 18 has a total population of 885, a White VAP of approximately 7%, a BVAP of 12% and an HVAP of 79%. The portion outside has a total population of 4148, a WVAP of approximately 12%, a BVAP of 15% and an HVAP of 71%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 8: Precinct 000046



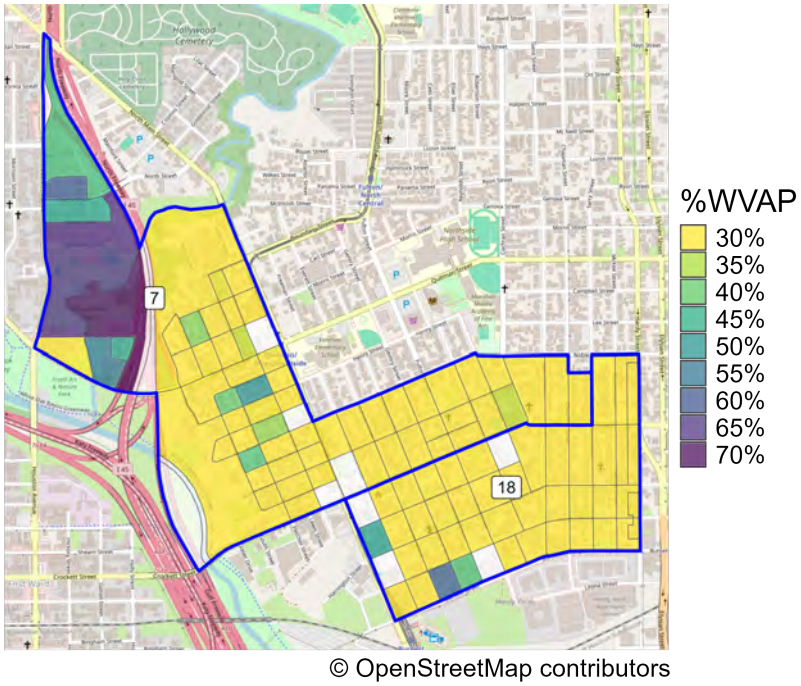
Precinct 000339 is just to the north of 000046. It is split three ways. The split between Districts 18 and 7 continues the split down Terry Street, creating a straight line. The portion included in 18 has a total population of 19, a White VAP of approximately 0%, a BVAP of 14% and an HVAP of 86%. The portion included in 7 has a total population of 3,592, a WVAP of approximately 9%, a BVAP of 10% and an HVAP of 80%. The portion included in 29 has a total population of 649, a WVAP of approximately 10%, a BVAP of 2% and an HVAP of 86%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 9: Precinct 000339



Precinct 000044 is just to the South of 000046. The split continues down Terry Street, before turning west down Hogan Street. The portion included in 18 has a total population of 1,434, a White VAP of approximately 12%, a BVAP of 7% and an HVAP of 79%. The portion outside has a total population of 2,365, a WVAP of approximately 18%, a BVAP of 6% and an HVAP of 73%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

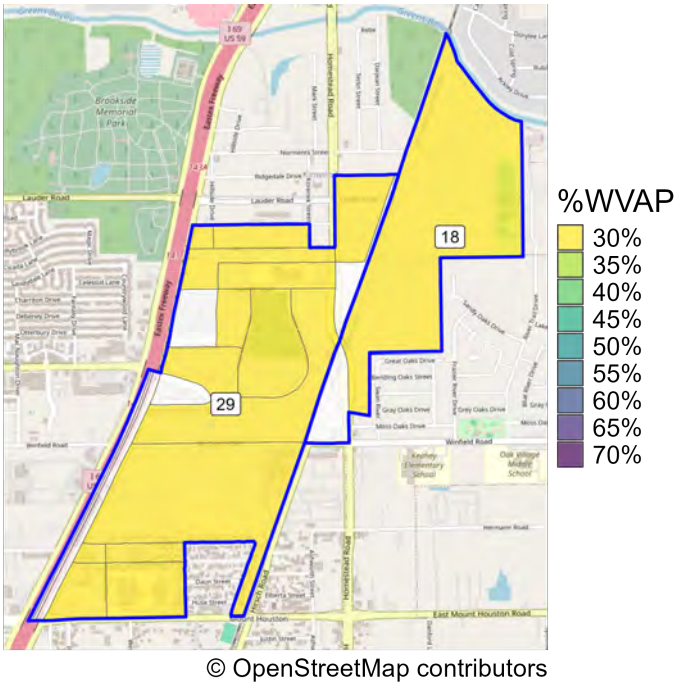
Figure 10: Precinct 000044



Precinct 000792[5] includes areas southeast of Brookside Memorial Park. It is split along a railway line that forms most of the boundary between districts 18 and 29 here, creating a straight line. The portion included in 18 has a total population of 14. It has one (1) resident of voting age, who is Hispanic. The portion outside has a total population of 2,705, a WVAP of approximately 8%, a BVAP of 39% and an HVAP of 52%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

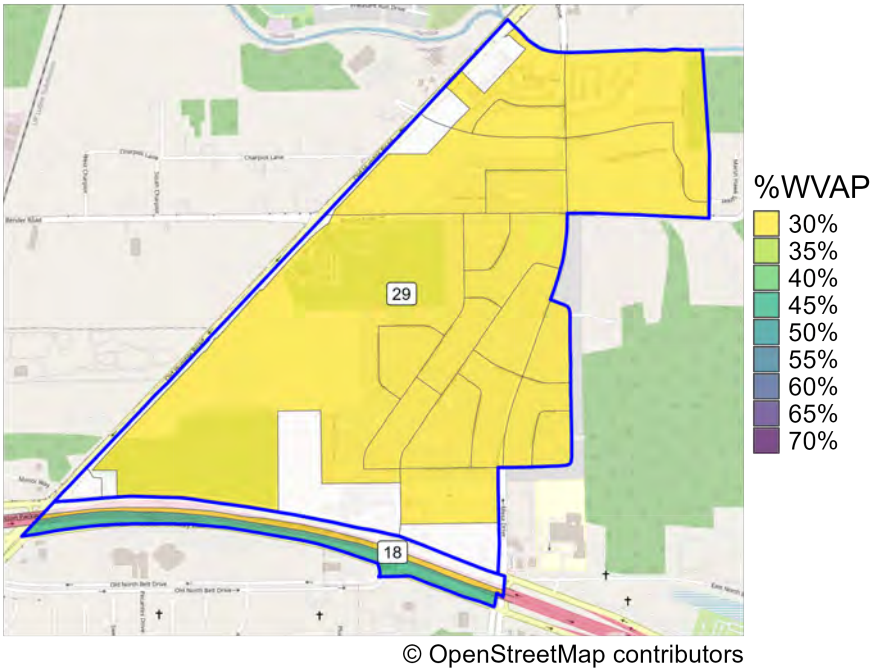
[5]This precinct appears to have changed considerably from the 2020 VTD shape. Numbers are for reference only.

Figure 11: Precinct 000792



This new precinct is also on the northern boundary of District 18; it is split to put Sam Houston Freeway in District 18. The portion included in 18 has a total population of 18, a WVAP of 4%, a BVAP of 50%, and an HVAP of 20%. The portion included in 29 has a total population of 3,014, a WVAP of 11%, a BVAP of 41%, and an HVAP of 43%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

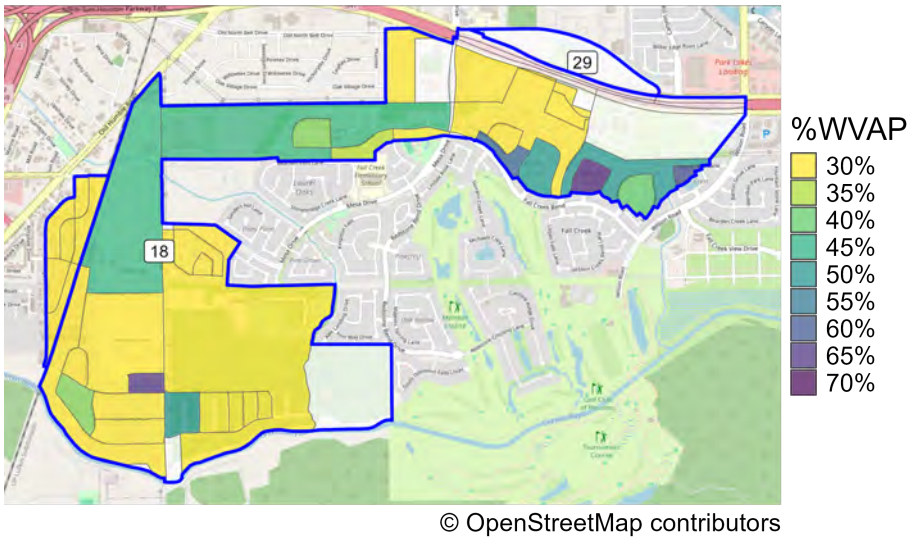
Figure 12: New precinct



Precinct 000083[6] is on the northern boundary of District 18. It is split on the western boundary to continue along the railway mentioned above, and in such a way to put the Sam Houston Tollway in the district. The portion included in 18 has a total population of 5,597, a White VAP of approximately 26%, a BVAP of 31% and an HVAP of 36%. The portion outside has a total population of 369, a WVAP of approximately 9%, a BVAP of 7% and an HVAP of 78%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

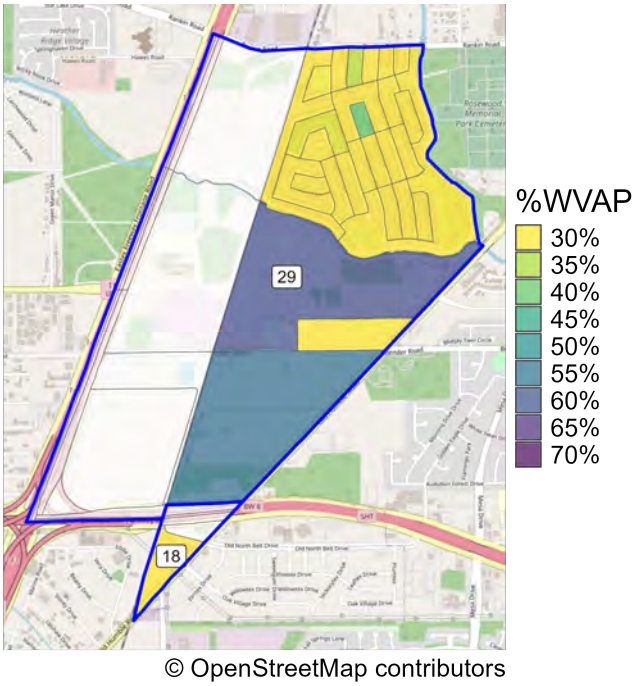
[6]This precinct appears to have changed considerably from the 2020 VTD shape. Numbers are for reference only.

Figure 13: Precinct 000083



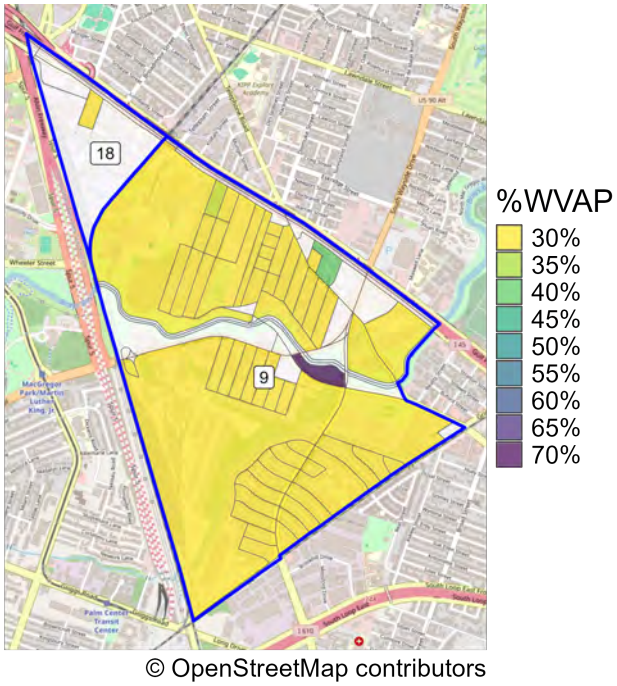
Precinct 000840 lies at the intersection of the Eastex Freeway and the Sam Houston Parkway. A tail extends across the parkway into 18. The map cuts it off. The portion included in 18 has a total population of 282, a White VAP of approximately 12%, a BVAP of 32% and an HVAP of 57%. The portion outside has a total population of 3090, a WVAP of approximately 19%, a BVAP of 31% and an HVAP of 46%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 14: Precinct 000840



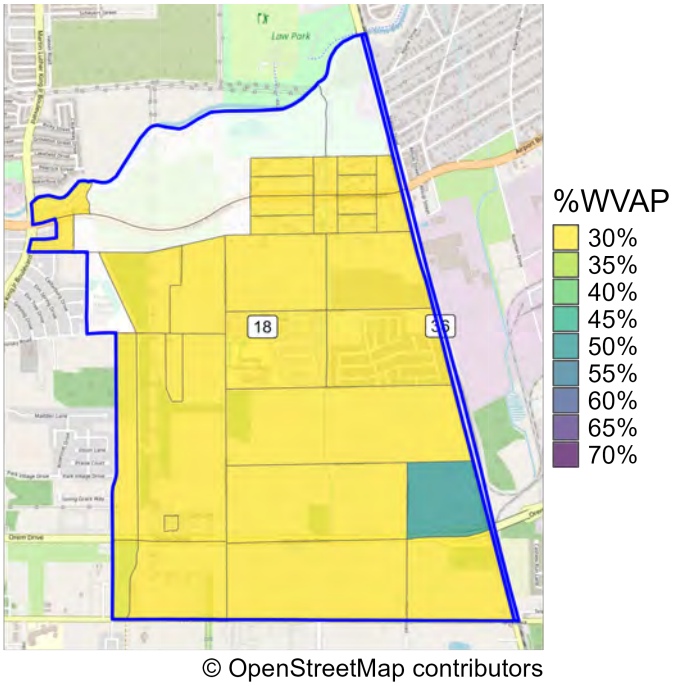
Precinct 000343 lies to the northwest of the intersection of I-45 and I-610. The district trims off a point that otherwise juts into District 18. The portion included in 18 has a total population of 10, one of whom is a Hispanic resident of voting age. The portion outside has a total population of 5,267, a WVAP of approximately 7%, a BVAP of 6% and an HVAP of 85%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 15: Precinct 000343



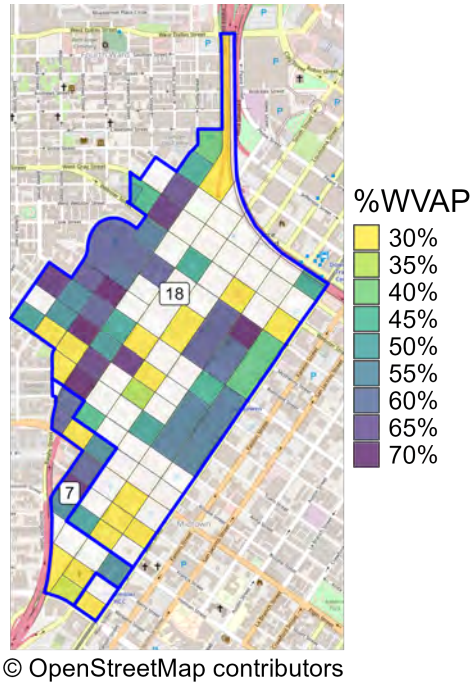
Precinct 000607 is split to add an unpopulated portion of the precinct into District 36, bringing the boundary out to Mykawa Rd.

Figure 16: Precinct 000607



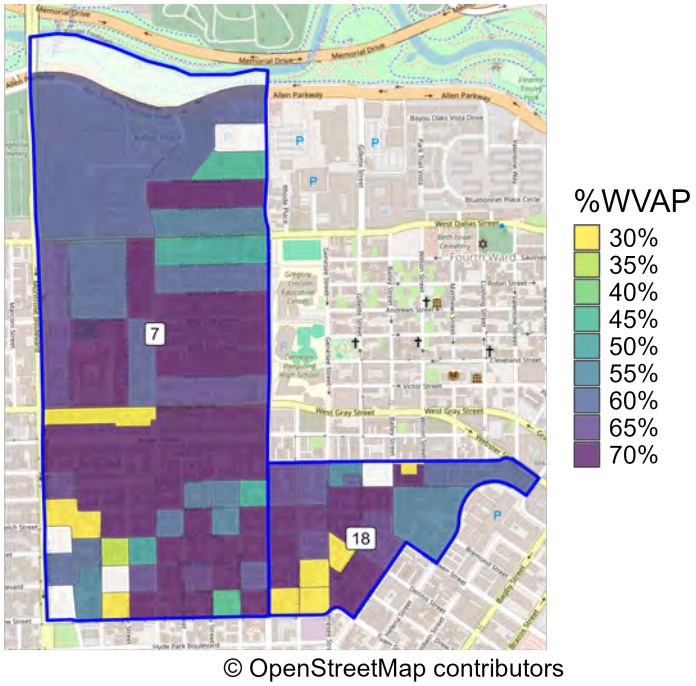
Precinct 000032 is along the boundary between districts 7 and 18, north of Texas Medical Center. The portion included in 18 has a total population of 5,258, a White VAP of approximately 54%, a BVAP of 12% and an HVAP of 19%. The portion outside has a total population of 1,124, a WVAP of approximately 56%, a BVAP of 10% and an HVAP of 19%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 17: Precinct 000032



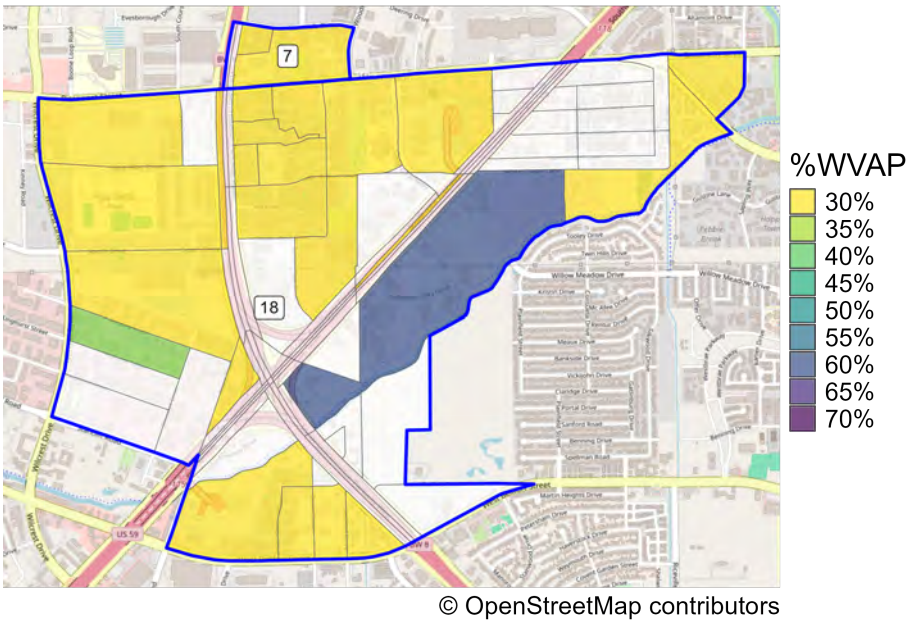
Precinct 000033 is split down Taft St. The portion included in 18 has a total population of 1,214, a White VAP of approximately 63%, a BVAP of 6% and an HVAP of 17%. The portion outside has a total population of 4622, a WVAP of approximately 64%, a BVAP of 4% and an HVAP of 18%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 18: Precinct 000033



Precinct 000359 is split along Bissonnet St., maintaining a straight line for the district. The portion included in 18 has a total population of 13,433, a White VAP of approximately 4%, a BVAP of 37% and an HVAP of 56%. The portion outside has a total population of 1,090, a WVAP of approximately 3%, a BVAP of 53% and an HVAP of 43%. If we look at how blocks are split, there is no obvious pattern of racial sorting.

Figure 19: Precinct 000359



I have no doubt that if one were to fish through a collection of 400 split precincts, they could eventually uncover some precincts where the split boundary lines up with racial demographics. As described above, these things can occur normally. But there is nothing in the First Barreto/Rios Report that demonstrates this, and the fact that an important congressional district shows no evidence of racial motivation in precinct splits suggests that we can't draw a strong inference against the map simply on the basis of it containing multiple split precincts.

2 Response to First Barreto/Rios Report Analysis of the Map Drawing

2.1 Harris County

The First Barreto/Rios report also claims that "[t]he specific district boundaries for Plan C2333 clearly focus on race, whether it is excluding specific Anglo/White neigh-

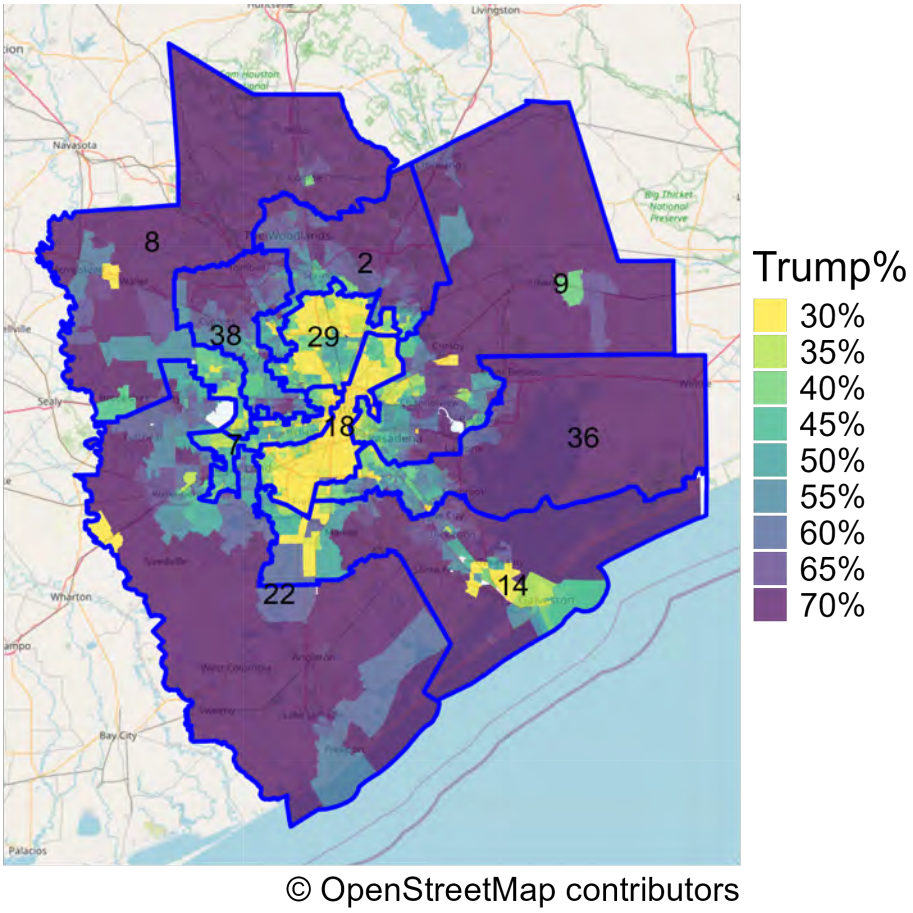
borhoods, or drawing lines firmly along boundaries to include high density Black and Hispanic communities in Districts 9, 18, 27, 33, and 35, among others. Beyond the specific regional analysis in Maps 1 - 15, we also provide six maps for the entire state of Texas that identify neighborhood populations by Black, Hispanic and Anglo with either the 2021 (C2193) or the new 2025 (C2333) boundaries overlaid (Maps 16 - 21). These maps provide the ability to zoom in to any county or region of the state to see closer detail down to individual city blocks and neighborhoods." First Barreto/Rios Report ¶¶44. It is unclear what this is meant to reference, as the "specific regional analysis in Maps 1-15" is simply screenshots of different maps captured in ArcGIS or cropped from Dave's Redistricting App, with little actual analysis.

Some of these maps, such as the dot density plots (see, e.g., Map Figure 15) are simply unhelpful. Dot density maps are useful for viewing where groups are clustered, but they cannot sort between areas with a high minority population relative to the overall population, versus areas with a high minority population and also a high non-minority population. This is particularly relevant where, as here, multiple groups are being plotted simultaneously and then viewed at a low level of resolution. This is because computers create dot density maps by layering dots on top of each other. In areas with high total populations, this will result in overplotting, where one population completely covers another population. So, if a large number of dots representing minorities are layered over another large number of dots for a non-minority group, or a different minority group, only the former group will appear. Choropleth maps are better suited to this task.[7]

Regardless, this analysis disregards politics as an explanation, and only makes a superficial attempt to disaggregate the two for District 9. First, I offer some new maps to better explore this at the regional level for Harris County. This shows the Harris County area, but with the maps highlighted by President Trump's 2024 vote share rather than by race.

[7] I typically use dot density maps when exploring population compactness for purposes of Section 2 of the Voting Rights Act. For exploring gerrymandering, I typically employ choropleths.

Figure 20: Houston area precincts by Donald Trump Two-Party Vote Share, with C2333 district boundaries overlaid



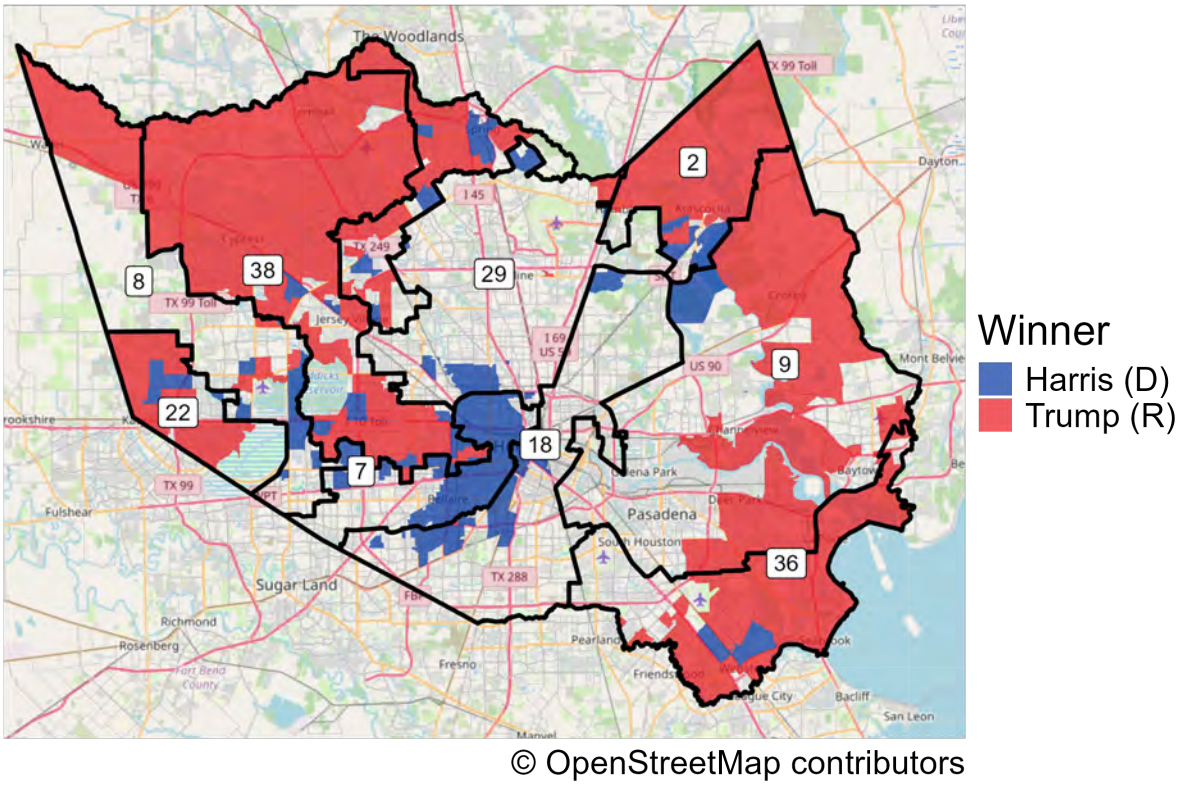
As you can see, the maps do what they have always done: Take the heaviest concentration of Trump votes and push them into a handful of districts: This time districts 7, 18, and 29. District 29's boundaries with District 2 and District 38 closely follow the political topology of the region, as does the boundary between 7 and 38. On the east, the heaviest Democratic areas are clustered into 18, and seemingly odd shapes such as the epiglottis on the north eastern edge likewise separate heavily Democratic areas from less so.[8] To put it differently, if we take the Harris County precincts where Harris received greater than 70% of the two-party vote, there are four in District 2, three

[8]There are five populated precincts in this area. All gave Harris at least 80% of the vote. The precincts adjacent to it gave her, moving clockwise from the top right: 27%, 45%, 48%, 45%, 55%, [unpopulated], 60%, 65% and 67% of the vote.

in District 8, four in District 9, four in District 36, and one in District 38. By contrast, there are 31 in District 7, 150 in District 18, and 61 in District 29. If we look at precincts where Trump received 70% of the vote or more, there are two in District 7, two in District 29, and none in District 18.

We can also see how politics, rather than race, seemingly drove the line drawing by recreating the map from the trial phase of this case. This takes the plurality White precincts in the Houston area, and codes them by whomever won the precinct.

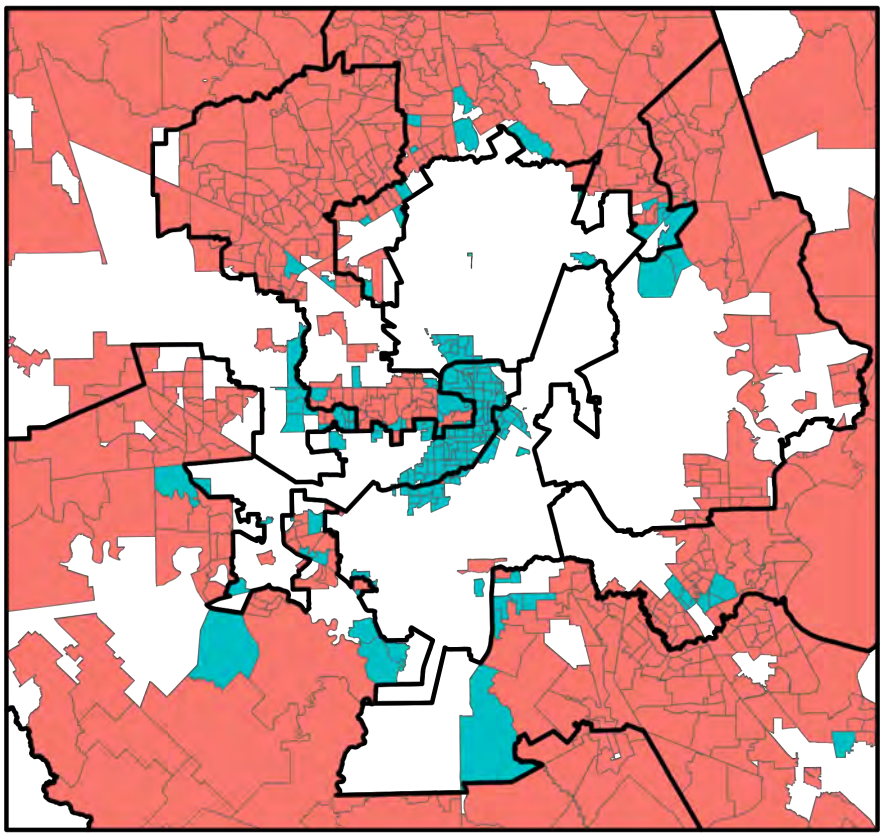
Figure 21: Houston area white plurality precincts, shaded red for Trump win and blue for Harris win, with C2333 district boundaries overlaid



As you can see, districts 7 and 18 both have a fair number of White residents, which is not the tactic of a racial segregator. A majority of those residents, however, voted for

Harris. The few exceptions either (a) have almost no population; (b) voted marginally for Harris and/or (c) are bridge precincts needed to access more heavily Trump precincts. We can see this more clearly if we zoom in to Harris County:

Figure 22: Harris County white plurality precincts, shaded red for Trump win and blue for Harris win, with C2333 district boundaries overlaid

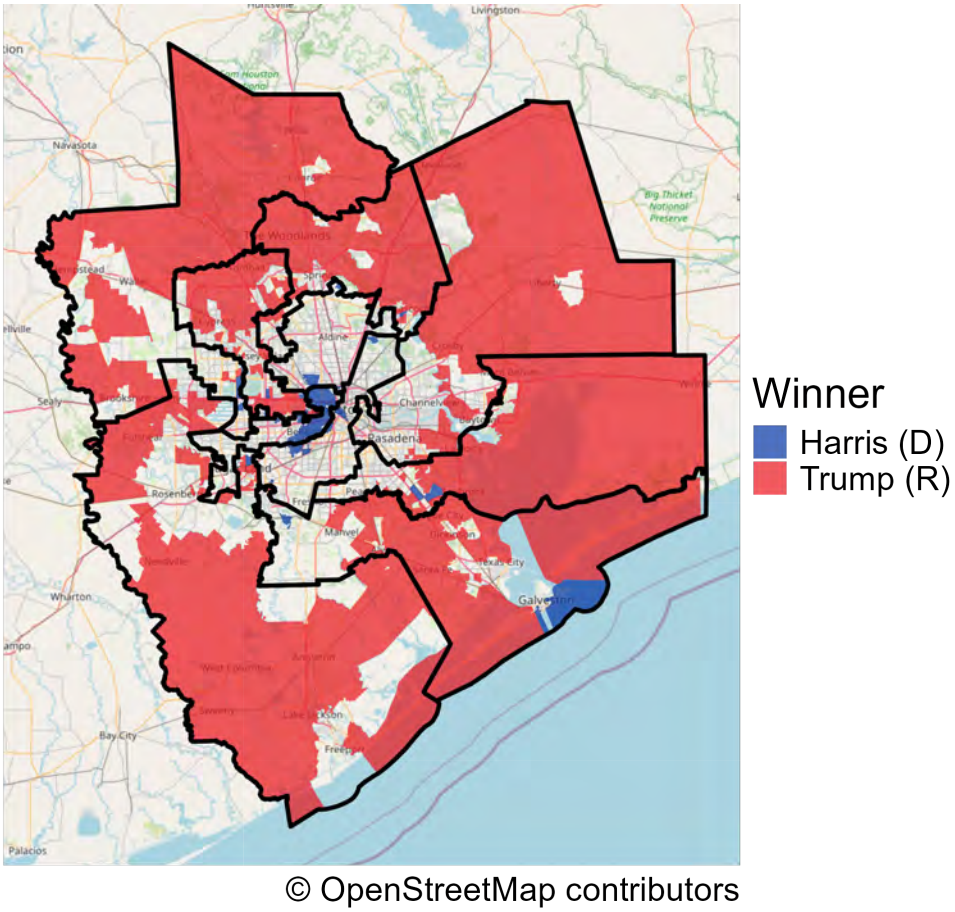


At trial in this matter, counsel for plaintiffs suggested that perhaps this type of map was "misleading" because a plurality White precinct might have a large population of persons of color. When we filter to majority White precincts, it doesn't look significantly different. There are fewer precincts highlighted, but they are still well-sorted.

This is unsurprising, as majority-White precincts are simply a subset of plurality-White precincts. Therefore, if the plurality-White precincts are well-sorted by politics, it

would be unsurprising for the majority-White precincts to also be well-sorted by politics.

Figure 23: Houston area white majority precincts, shaded red for Trump win and blue for Harris win, with C2333 district boundaries overlaid



Regardless, a would-be racial gerrymanderer would likely, at the very least, slice off the heavily Hispanic, densely populated northeastern corner of District 7 (Northside Houston) and pick up more of the White population north of I-610.

2.2 District 9

The First Barreto/Rios report also emphasizes the way the legislature drew District 9. First Barreto/Rios Report ¶¶ 45-46 The crux of the complaint seems to be that because District 9 could have been drawn with a higher Republican vote share and a

lower HCVAP, it is not credible to claim that the only goal was to increase the Republican vote share in District 9. While fact testimony on how District 9 was drawn is likely more useful than our forensic analysis, a few points are worth making here.

First, we are actually in agreement: It's unlikely that the only goal was to increase the Republican vote share in District 9. It just does not follow that because the politics was not the only goal in drawing District 9 that race was therefore a primary goal in drawing District 9. Redistricting is a complex exercise that involves balancing many goals. It is also an exercise in robbing Peter to pay Paul, particularly at the congressional level. When residents are moved out of one district, other residents must necessarily be moved into that district from somewhere. That often sets off second- and third-order effects. Here, the transformation from C2331 to C2333 grew into a complex chain of events involving almost 700,000 residents in 12 districts, 667,000 of whom lived in the Houston area.

We are also in agreement on a fact that the First Barreto/Rios Report acknowledges but glosses over: The changes result in a district that achieves the stated goal of increasing the Republican vote share in District 9. It might not ***maximize*** it, but maximization doesn't appear to be a stated goal, at least from the First Barreto/Rios Report. The changes transform the district from the only Republican district in the Houston region with a Trump performance of less than 60% to one where, like the other Republican districts, Trump won with around 60% of the vote.

To see why it is inappropriate to focus solely on District 9, consider the following: District 9 started with a Republican vote share of 57.7%. Two districts – 36 and 14, had Republican vote shares of 67% and 64%, respectively. From a gerrymandering point of view, that is an inefficient distribution of Republican votes. District 9 has its Republican performance improved by moving 111,000 residents in from District 36. Dr. Barreto notes that by moving Liberty County into District 9, its Republican vote share was improved substantially, but that it was now overpopulated by 110,000 residents.

Dr. Barreto's suggestion that this could be equalized by swapping residents out

of the southwestern, heavily Hispanic portion of the district makes some sense if there were no other goals to be pursued. But he overlooks that District 36 was now underpopulated; 111,000 residents had to be put in to District 36 from somewhere. It might be accomplished in the region to which he points, but he overlooks that by removing Liberty County from District 36, District 36 was also rendered non-contiguous.

The only way to connect the two portions of District 36 at this point is to cut into District 14 in Jefferson County, which the map did; this move involved a small number of resident changes. Now, however, District 9 cannot be population-equalized solely with swaps from District 36, because doing so would leave District 36 overpopulated. District 14 is also now underpopulated.

At this point, we can start to see other goals being pursued as a part of this swap. The mapmakers removed more voters from District 14 in northern Brazoria County, giving the district a more regularized edge. District 36 started to equalize its population by taking residents from District 18, helping to push that district out of Brazoria Couty entirely and remove a county split (which could potentially be used as a part of an argument that District 18 reflects a racial gerrymander). Overall, this brings the Republican vote share of 36 down to 62.6% and the overall population into parity. But District 14 is now substantially underpopulated.

District 14 removes an ungainly hook from the bottom of District 18, and also removes the remainder of that district from Brazoria County. District 14 also takes another precinct from the bottom of District 18, pushing that district boundary to Route 6. That portion of 14 is now non-contiguous, so the district follows the Brazos River into District 22. District 22 is now underpopulated by 55,000 residents. To help counter this, and to reduce district 14's overpopulation, District 14 gives up 24,887 residents to District 22, mostly in southern Brazoria County.

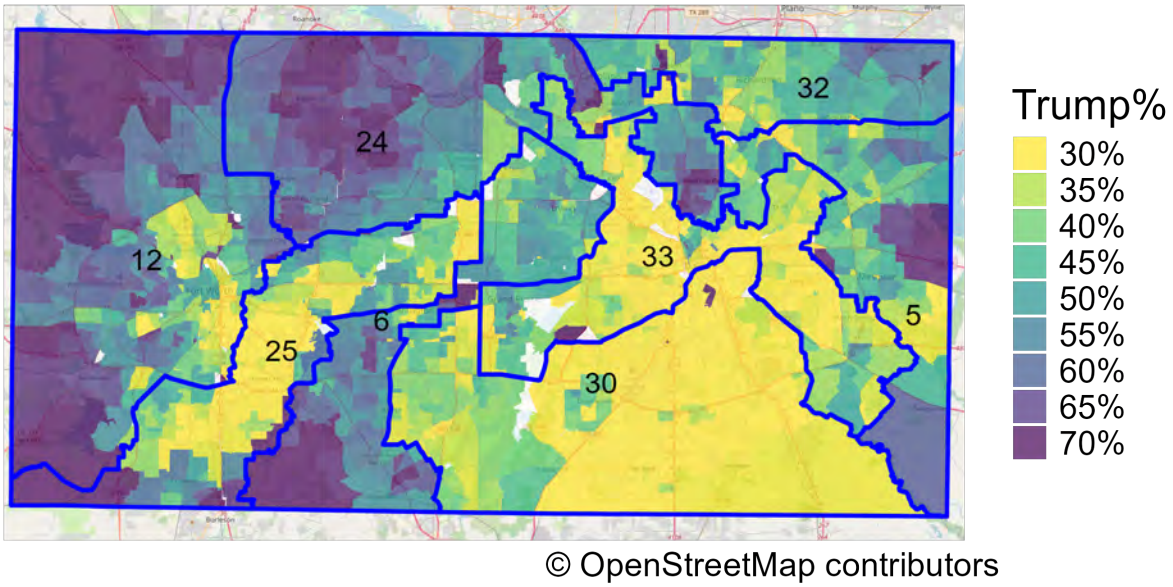
This chain of events continues for quite some time, but the point should be clear. The First Barreto/Roy Report's point might make more sense if the legislature had claimed it was only concerned about making District 9 as Republican as possible. Perhaps

fact discovery will prove them right. But from a "forensics" standpoint, there are other legitimate goals served by the redraw that the Report ignores.

2.3 Dallas/Tarrant counties

There is little analysis offered in the First Barreto/Rios report of the Dallas area; simply a reference to maps. Once again, they largely ignore politics. A look at Trump's vote share by precinct, with district lines overlaid, once again shows the political nature of the redraw. In Tarrant County, the Democratic portions of the district are cut in half. District 25 is able to take in the lion's share of the Democratic population here, because the 220,000 residents of the district in the rural counties gave Donald Trump an astonishing 85% of the vote. Adding in Parker and Johnson counties brings the population total to 320,000, and Donald Trump's vote share down to 83% (Harris received 16% of the vote). Even if the remaining residents had voted for Kamala Harris by 70%, Donald Trump still would have carried the district. Likewise, since the 112,000 residents of Parker County in District 12 went for Donald Trump by more than 50 points, the district had a large cushion to add Democratic residents.

Figure 24: DFW area precincts by Donald Trump Two-Party Vote Share, with C2333 district boundaries overlaid



District 6 once again threads between the Democratic portions of Tarrant County in districts 25 and 30 to reach still-marginal territory in Irving. It extends into Dallas County right up to the point where the precincts turn heavily Democratic, at which point District 33 begins.

Districts 30 and 33 obviously soak up most of the Democratic precincts in Dallas County. Of the 354 precincts in Dallas or Tarrant counties where Donald Trump received less than 30% of the vote, 294 (83%) are placed in districts 25 (47), 30 (149) or 33 (98). The remainder are sprinkled through districts 5 (17), 6 (5), 12 (26), 24 (3), or 32 (9). If we look at precincts Trump carried with 70% of the vote or more, there are not many (79), but only two are in district 30, six in district 33, and five in district 25.

We can once again see that the odd appendage from District 24 into Dallas County succeeds in carving out the most heavily Republican Precincts around Highland Park and University Park. District 5 mostly swaps swing precincts near Garland and Sachse for Democratic precincts in Lakewood and Northeast Dallas. Overall, the lines are fairly sharp.

We can also re-examine our maps showing how majority White districts are dealt with. Whether we look at white plurality precincts, or the narrower subset of white majority precincts, we see that these precincts are spread among the districts; the key is that the White Biden precincts are either pushed into District 33 or placed in districts 5 or 32, where they are overwhelmed by rural Trump voters.

Figure 25: Dallas/Tarrant County white plurality precincts, shaded red for Trump win and blue for Harris win, with C2333 district boundaries overlaid

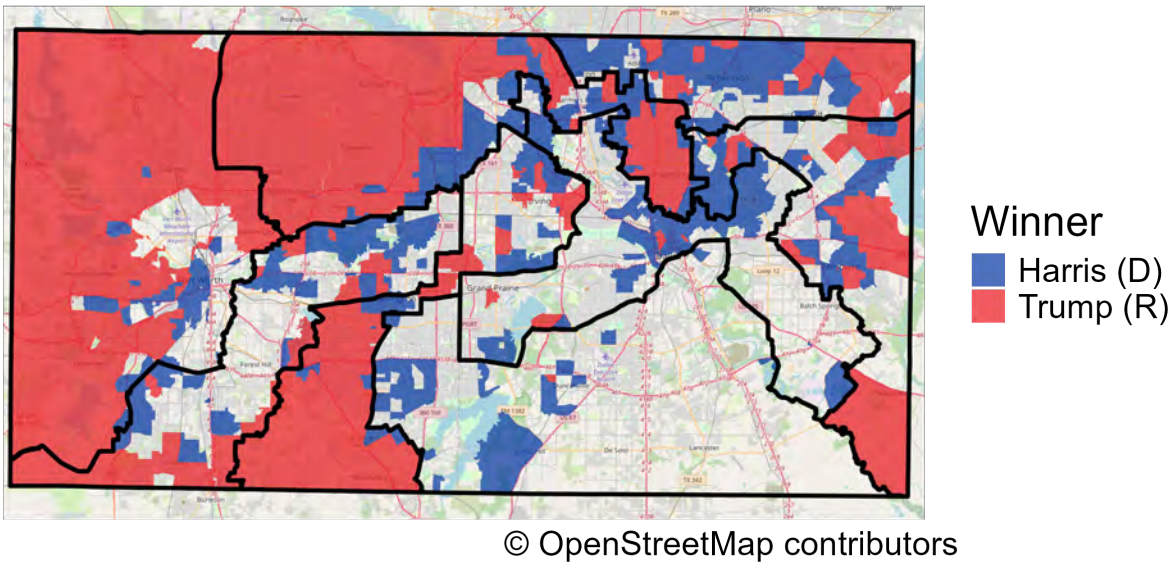
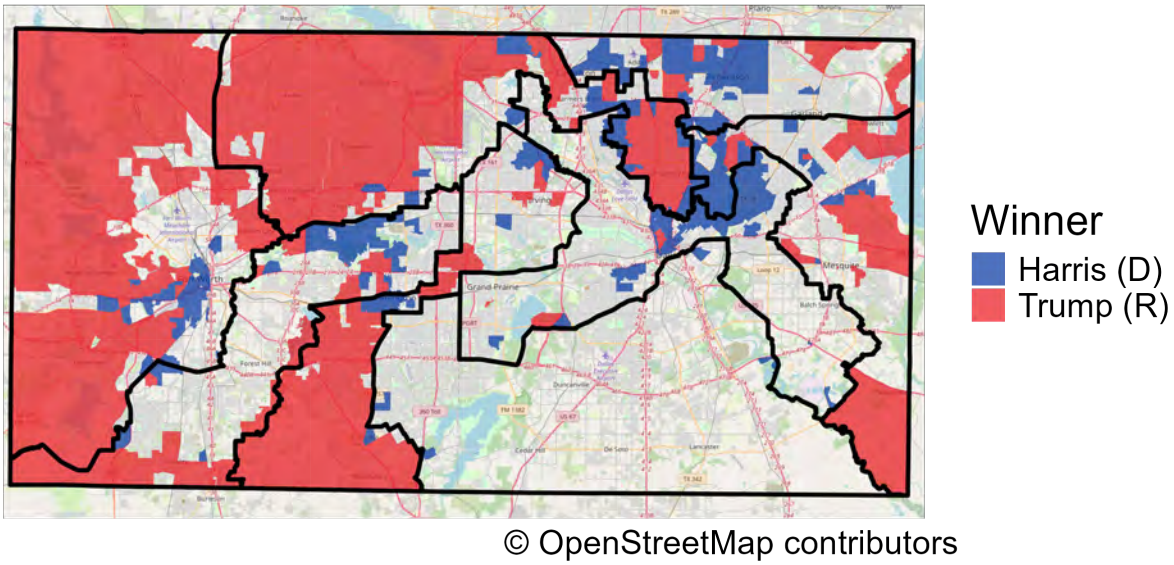


Figure 26: Dallas/Tarrant County white majority precincts, shaded red for Trump win and blue for Harris win, with C2333 district boundaries overlaid

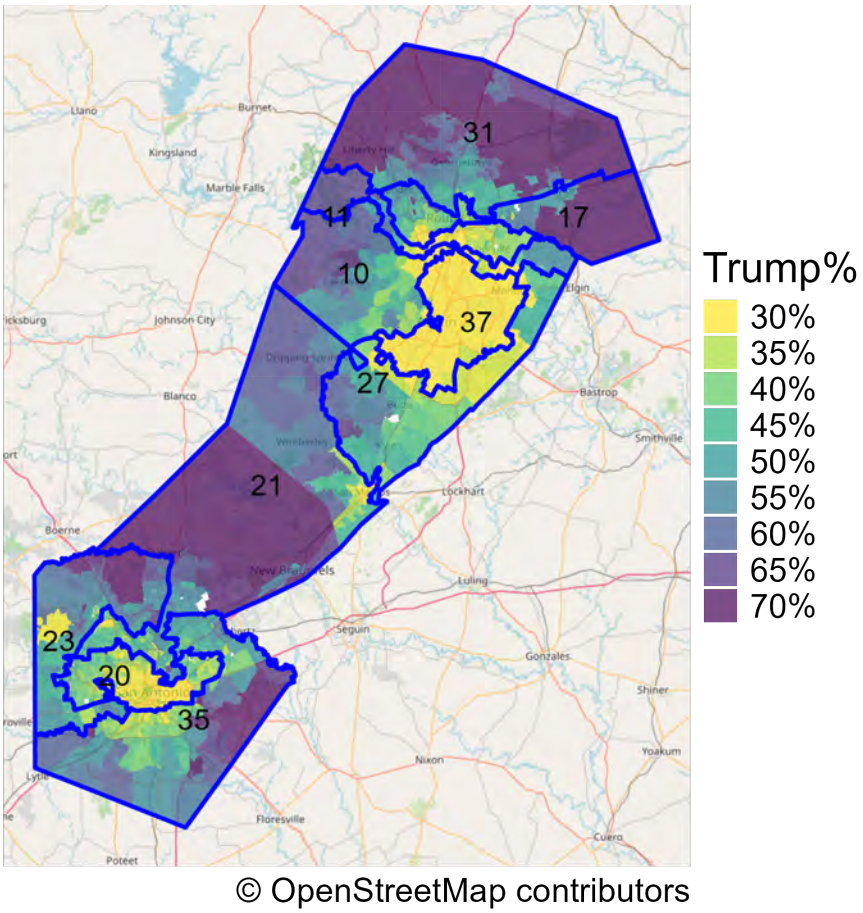


2.4 Bexar/Travis counties

The Bexar and Travis county area districts show the same tendencies. District 37 is reconfigured in such a way that it takes in the core of Democratic Austin. It contains only 14 precincts where Donald Trump received more than 30% of the vote. The remaining democratic precincts are cracked between districts 10, 11, and 17, which in turn extend deep into rural Texas. Outside of Travis County, District 10 has 490,000 residents, who gave Donald Trump 72% of the vote. District 11 has 609,000 residents, who gave Donald Trump 76% of the vote. District 27 has 679,000 residents, who gave Donald Trump 64% of the vote. Democratic areas around Round Rock are subsumed into District 17, the rural areas of which gave Donald Trump around 70% of the vote.

In Bexar County, we can see that District 20 takes in most of the heavily Democratic areas. Harris lost just 7 precincts in that district. Outside of District 20, Bexar County was evenly split between Harris and Trump.

Figure 27: Austin/San Antonio area precincts by Donald Trump Two-Party Vote Share, with C2333 district boundaries overlaid



Once again, the view between White plurality and White majority precincts is much the same; the mapmaker places a large number of White majority/plurality precincts into District 37 notwithstanding the availability of a large number of non-White majority precincts to the east of the district. But that would place a large number of majority-White Harris-won precincts in surrounding districts, making them more marginal.

Figure 28: Austin/San Antonio area white plurality precincts, shaded red for Trump win and blue for Harris win, with C2333 district boundaries overlaid

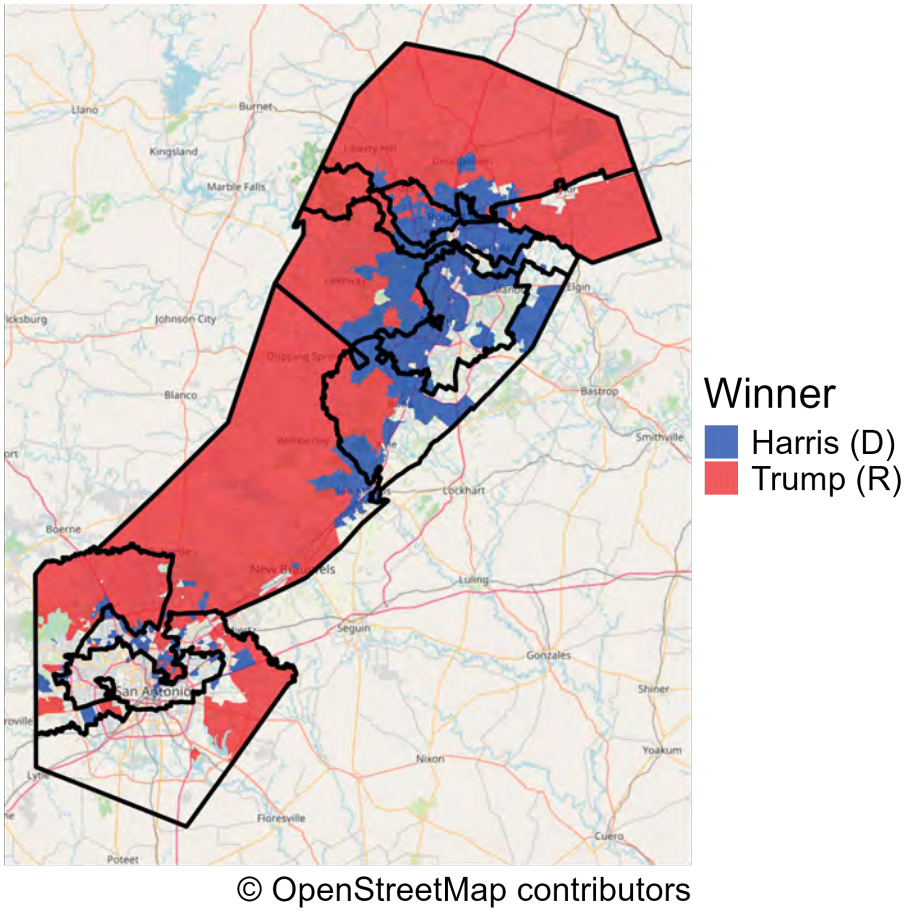
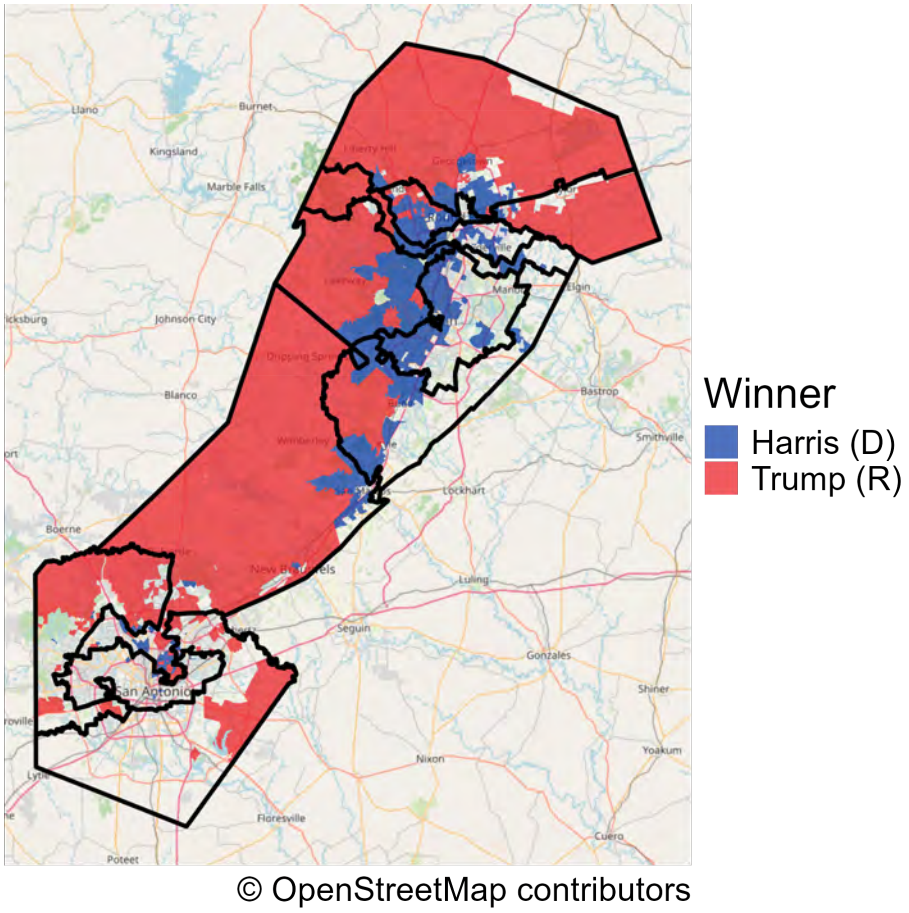


Figure 29: Austin/San Antonio area white majority precincts, shaded red for Trump win and blue for Harris win, with C2333 district boundaries overlaid



3 Simulations Overview

Throughout these cases the various experts have repeatedly discussed computerized simulations, but the purpose and limitations of these simulations are often glossed over. But because a full treatment of the simulations included in the Barreto/Rios reports involves some deeper considerations than we have encountered in the past, I will spend some time up front discussing the simulations generally before turning to their specific simulations. This discussion is intentionally kept at a high level and simplified for readability, so nuances will be glossed over. But it will hopefully help the Court to better evaluate the data and to answer relevant questions.

The goal of determining whether a plan is drawn with partisan intent is a difficult one. In particular, the astronomically (literally) large number of maps available makes it difficult to compare a given map to the universe (again, literally) of possibilities, since there are, for all human purposes, a limitless number of possibilities.

With advances in computing power, however, it has become possible to have a computer generate a large number of maps conforming to certain criteria. A few of these techniques, if allowed to run an infinite amount of time, produce every map available (subject to given constraints).

Two of these techniques, "sequential monte carlo" and "merge-split" algorithms are employed in this matter. Without getting too far into the details of the algorithms, sequential monte carlo draws maps "from scratch," while merge-split changes a map in steps by selecting two adjacent districts, merging them together, and then re-splitting them into two (hopefully) different districts. Over the course of many, many "steps," this approach will explore the possible maps available.

In effect, these techniques produce a poll of potential maps. It's impossible to speak to every American to learn their political preferences, so instead we speak to a small sample and draw inferences from based upon that sample. In the same way, since it is impossible to enumerate every map, we ask the computer to produce a sample of those maps. The political or racial makeup of an enacted map can then be compared to the political or racial makeup of the computer-drawn ensemble. If the political or racial makeup of the enacted map differs from that of our ensemble, we might conclude that the enacted map was drawn with political or racial considerations in mind. Put differently, if our ensemble were truly produced under the same constraints as those which constrained the mapmaker, save for political and racial concerns, we might conclude that politics or race entered the mapmaker's calculations. If our ensemble is markedly different from the enacted map, we might conclude that race or politics was the predominate consideration.

There are three important caveats. First, these ensembles are powerful tools in certain circumstances. For example, when a map is so convoluted that there really can

be no valid consideration other than something like race or politics – in other words the map maker was effectively unconstrained – lightly constrained simulations will easily identify the map as a partisan or racial outlier. Since race is often unavailable as an explanation due to the limitations of the 14th Amendment, that will often leave politics as the explanation. This is the situation I confronted in my testimony in Maryland and New York.

When it clear a map is a gerrymander, but it is unclear whether it is a racial or political gerrymander, it can be more complicated. It can be especially complicated if state law allows for one of those types of gerrymanders. First and foremost, it is difficult to achieve a representative map set because these algorithms were not created to draw gerrymanders. In other words, it is hard to get them to draw a set of race-neutral political gerrymanders in order to rule out the possibility of race as an explanation, or vice-versa although there are workarounds of varying utility. The algorithms naturally tend to draw compact districts, so if a mapmaker is largely indifferent to compactness, or isn't at least theoretically constrained by a "strong" compactness requirement in a state constitution, it can be difficult to truly approximate the non-racial or non-political constraints under which the mapmaker was operating, because you have to force the simulations to act against their natural tendency.

Moreover, because race and politics are often intertwined in America, they are difficult to disaggregate. To the extent compliance with the federal Voting Rights Act is a legitimate reason to draw heavily on the basis of race, these explanations can sometimes be ruled out by "freezing" potentially protected districts – again, this tactic has been explored elsewhere, including by myself in New York and Maryland – and restricting analyses to areas where race is not a viable explanation. This is effectively what Dr. Barreto attempts to do in some of his analyses, although there are problems with the way that he has implemented it. Second, it is important to ensure that the simulations operate under the same set of constraints as the mapmaker. Because many of these constraints – compactness for example – often relate to political outcomes, failure to

constrain oneself in the same way as the map drawer can result in a politically skewed ensemble (relative to the map maker). Returning to our polling analogy, if you are polling Texas and have a list of residents of Dallas and Tarrant counties, you will probably obtain a racially diverse sample. If you see some other Texas pollster who gets a heavily all-White sample, you might suspect something is amiss and conclude that he was a bad pollster. If, however, this other pollster had a list that contained mostly panhandle counties, it will be difficult to isolate problems with his technique from the fact that you and he were simply operating under different constraints.

To make this more concrete, if a mapmaker is unconcerned with compactness and your algorithm tends to produce compact maps, it becomes more difficult to isolate politics (or race) as a driving factor in an enacted plan. The mapmaker might simply be drawing less compact districts than the algorithm, and because politics, race and compactness often intertwine, that compactness preference has a second order effect of producing a different racial or political makeup.

Or, a mapmaker might be interested in protecting incumbents of his or her party. He might do this by (a) ensuring they are not drawn into a district with another incumbent of the same party (b) ensuring that they are not drawn into a district that is politically unfavorable and/or (c) ensuring that they are not drawn into unfamiliar territory, risking a primary challenge. In my experience drawing maps, working with incumbents can constrain the acceptable outcomes in ways that are difficult to quantify; a map that placed them in a district with another incumbent or left them vulnerable to a primary challenge would be dead on arrival. Also, because race and politics are often interrelated in America, a map maker who wanted to draw districts that strongly favored his party would likely be sampling from a different set of possible districts than a simulation ensemble produced pursuant to generalized redistricting concerns.

Third, these simulations can be quite fragile, and their output must be carefully examined. The simulations tend to take user-imposed constraints quite seriously, and when too many constraints are imposed they may produce only a handful of unique plans.

An ensemble that nominally produces hundreds of thousands of maps may, in fact, only produce only a handful of ***unique*** maps, rendering useful comparisons impossible.

In the "step-based" approach that the Barreto/Rios reports utilize, there is an additional problem that the mathematics involved rely on something called a Markov Chain. While this is a mathematically complex subject, the following should loosely explain the issues that can arise from this.

Imagine that you intend to explore a planet using remote "rovers," or if you prefer, "a robot." One robot therefore sent to a foreign planet. To explore the planet, it makes random choices to turn. Rather than constantly sending back video, which would be time consuming to evaluate, it sends pictures at set times. From this sample of pictures, you hope to learn about the general features of the planet as the robot moves through polar regions, forests, etc.

For the first few moves the robot makes, you are likely going to receive pictures that are highly dependent on the starting point and are therefore not representative of the planet. But after enough random choices, the robot will make choices that lead it away from the starting point and, eventually (in theory), around the entire planet. Given enough time, your pictures will produce a representative sampling of what the planet looks like. If the robot is allowed to continue long enough, it will eventually send pictures from all over the planet, and you will have valid inferences about what the planet is like from your photo set, and your starting point will be irrelevant. This is (basically) what "convergence" means.

You may have two questions in your head immediately: (1) How long will it take to achieve this state and (2) what if my robot starts in a crater that it has trouble getting out of? The first question is a very good one, and it honestly doesn't have a clear answer, but this is a complex subject that is beyond my critique here. Long story short: It's part of why such a massive number of plans are typically created. The second question provides a bigger practical stumbling block. Suppose your robot starts out in a crater with only a narrow path out. It might take your robot an extremely long time to find

this path. If you've called a stop to exploration before that, believing that surely you've covered the whole planet by now, you might conclude that the crater is representative of the world when in fact your robot was just stuck in a bottleneck.

There are solutions and workarounds here. The most common – employed by Dr. Barreto here – is to land multiple robots. They likely won't all land in the crater. When they all eventually start to return pictures that, in their totality, look the same, you'll assume that the different landing points have likely converged and you now have a good sample you can draw inferences from.

In the real world, if the program is strongly constrained by a compactness requirement, but the map has a narrow strip of precincts (or one large precinct), it may have a difficult time producing maps that move through that area, and thus fail to explore the full sample space until an unusually large time is spent. If the chain is terminated before that happens, it will not produce a valid sample.

To address this, many packages, including *redist*, which I used earlier in the case and the Barreto/Rios reports employ here, enable you to run multiple chains and include diagnostics that will tell you whether your ensemble is sufficiently diverse (*i.e.*, it does not repeatedly return the same maps) and whether the chains have converged. In other words, if you explore the diagnostics, it will tell you whether you have a usable ensemble from which you can draw inferences.

3.1 Data creation and management

During the course of this litigation, experts have generally been good about providing the data to each other that they will need to reproduce each others' work. For example, Dr. Duchin has provided her chains to defense to examine, and Dr. Ansolabehere provides all data and computer code needed to replicate his work. I've provided clearly labeled code and shapefiles needed to recreate my ensembles.

The Barreto/Rios report is different. They have declined to produce his simulation set for inspection. This would not necessarily be a huge problem. At the time of my

initial report, I did not save my final simulations, as they were often massive files that consumed a lot of memory and were difficult to transfer because they were far too large to e-mail. To try and ensure that opposing experts could replicate the exact maps that I produced, however, I used a technique known as setting a seed. This tries to ensure that any computer running my code would make the same random choices that my computer made. Thus, an expert who ran my code would still produce the same solution set that I was examining, and could explore and critique that set as they see fit.

Dr. Barreto/Mr. Rios did not set a seed in their code, which means that the exact simulation set that they produced and examined is effectively destroyed. While I've received word that they have offered to run sims using a seed of my choice, and that I can recreate my simulations using the same seed, I learned of this roughly 36 hours before this report was due, making such a solution impractical (and it isn't clear why they just wouldn't produce those simulations).

After all, according to the Second Barreto/Rios Report, it required several weeks to produce the final simulations given the "high computing demands required to complete analysis on the newly passed maps for the second most populous state in the country with nearly 19 million registered voters and 38 congressional districts." Regardless, the best available option at this point is to replicate their process via whatever code they have shared and accept that the maps produced may be somewhat different from what they analyzed.

Even this has proven difficult, however. To run the code, the computer reads in a file via the command "texas_24 <− fread("filepath")". What this does is place something into the computer's memory that it labels "texas_24." That object is later transformed into a redistricting map which the computer uses as the basis for its simulations.

Unfortunately, there is no item in the production titled "filepath." My understanding is that plaintiffs have refused to produce this document, and instead refer to the computer code for instructions on what to include in the file. In other words, they do not produce the files needed to run their code, but rather instruct defense on which

data to obtain, which can then be manipulated to (hopefully) produce the file that they would put in their own "filepath" slot. This is troubling because (a) it isn't how this is usually done, in my experience and (b) there are choices – how to weight data, how to handle split precincts, and so forth – that have to be made by a programmer here. This is why in my previous productions all native shapefiles on which I relied were made available, and code is included that illustrates how I turned those into my mapfile. It required no search for data by opposing experts, nor did it require guesswork on how I chose to merge and weight data. If I made a mistake in merging my data, or if I made a questionable choice, it could be discovered. This is not possible – for all I know the files on which Dr. Barreto or Mr. Rios relied are riddled with errors and inconsistencies. This has been important in litigation in the past; in a case in Nassau County, since replication files were made fully available, it became apparent that there was an error in a different expert's joining process that frequently yielded non-contiguous districts. If I had been left to do it on my own and not made the error, I would not have produced those maps. Regardless, I have, as per counsel's instructions, carefully followed the instructions in Dr. Barreto/Mr. Rios's code to create the shapefile on which their code is based, using my best judgment. My analysis follows.

4 Review of the Barreto/Rios Simulations

The first Barreto/Rios Report concludes with a set of simulations. It opens with a now-familiar dotplot of what appears to be 1,000 simulation results of a statewide map. I say "appears" to be because I don't believe that I've ever received any code that produces 1,000 simulations. If Dr. Barreto/Mr. Rios are using the merge-split, algorithm, as they do in the second report, then 1,000 simulations is far too few steps in the simulations to draw conclusions. In fact, 1,000 simulations are a low number for any simulation evaluation. My assumption is that Dr. Barreto and/or Mr. Rios uses SMC here – the algorithm that I used in my initial report – which is not a step-based algorithm. Nevertheless, they produce two orders of magnitude fewer maps than I produced earlier.

In fact, that is lower than I ever recall seeing produced with merge-split or SMC in litigation.

Moreover, a quick look at the output here shows immediate signs of a problem: Banding. You can see that in several instances (Ranks 1-4, Rank 7, Rank 12, Rank 38), the dots form lines, rather than a cluster. This often indicates a lack of diversity in the simulations. One reason to produce a large number of plans is that the software will often produce duplicate maps, particularly if it finds a combination of precincts that works particularly well. On its own, this is not a problem. If you were polling the height of American men, you would get multiple responses near 5'9". Since you need a representative sample of the underlying distribution to perform statistical inference, we want multiple instances of maps that might fit the constraints particularly well. At the same time, if you only have a handful of maps that fit a set of constraints, it is an indication that the simulation is overconstrained, and that the maps are not able to explore the sample space fully.

Finally, all that these maps demonstrate is that the map is either a political or a racial outlier. We do not need simulations for this, as we are in agreement here. But the problem is that in order to distinguish between the two, we need a set of simulations that accurately replicates the constraints under which the map maker was laboring while withholding either racial or political data, but not both. If that is accomplished – and it is difficult to do so in most circumstances – a researcher can then compare the racial or political makeup of the simulation ensemble to the racial or political makeup of the enacted map and draw inferences.

But because Map C2333 presents as an outlier on both the political and racial simulations, we cannot draw an inference other than that the map does not look like one drawn without unusually heavy partisan or racial demands. That does not disaggregate race from politics.

More importantly, it uses a measure of Republican performance that I, in my experience as an elections analyst, would not employ. Nor does it appear that the map-

maker employed it. This iteration of simulations counts a district as Republican if Donald Trump carried it. But this would be a bad heuristic for two reasons. First, Trump won the popular vote by about 1.5 points in 2024. This means that a district that he carried by a point would actually have a slight Democratic tilt to it overall.

To see why, consider Massachusetts in 1980 and 1984. Ronald Reagan carried it narrowly both years. On a naïve read, one might conclude it was a "Republican" state. The national environment, however, was extremely favorable for Republicans both years at the presidential level. The state was about seven points to the left of the national average, but because Reagan was winning by large margins, that was enough for the state to go "red." In 1988 and 1992 the state remained about seven points to the left of the popular vote, but because the environment was less favorable to Republicans, the election was closer and the Democrat carried it. While it might look as though the partisanship of the state changed, in fact it was more-or-less constant relative to the country: It was always one that would be expected to vote for a Democrat in a neutral year. In the same way, in a purely neutral year where the popular vote is split exactly, we would expect Democrats to have a slight advantage in a district Trump won by a point or so. A Republican gerrymanderer would be extremely unlikely to draw such a district.

Moreover, this is intended to be a test of mapmaker intent, and the mapmaker here apparently did not want to draw marginally Republican districts. He drew *overwhelmingly* Republican districts. Again, fact discovery might yield a different conclusion, but the First Barreto/Rios report even cites to an example of Republicans expressing dissatisfaction with a district that was almost 58% Republican. Thus, a 51-49 district, which most analysts would consider a tossup, would not be one that would satisfy a political gerrymanderer's desire to entrench his party in seats in a red state like Texas. A simulation set that counted such a district as acceptably Republican would not be constrained in a way similar to the mapmaker.

There are two other simulation sets that can be addressed quickly. The code for the second set, which covers some of South Texas, was never produced. I have no code

that tries to filter districts in Guadalupe County, or District 35. Since the simulations were not produced, it is impossible for me to replicate or evaluate the Barreto/Rios' map's supposed findings here. With that said, given the badly flawed nature of the subsequent simulations, I would be reluctant to trust these results.

The final simulations in this set do appear to be made available in the code produced. However, the instructions for that code provide "Dataset needs CVAP, 2024 Presidential Election results, and C2193 boundaries merged at the VTD level For other regional replications, change the counties to subset on lines 27-28 Also, change the number of ndists on line 34; the K_min on line 52." (cleaned up). This differs from later code, which specifies using the C2333 boundary files. In other words, these simulations appear to test the wrong map. This may well be a typo, but since I have no shapefile and no computer output to test, I cannot be sure of this. However, based upon what I have available to me, these simulations are unhelpful because they test the wrong map.

The Second Barreto/Rios declaration begins with an analysis of Districts 7, 18, and 29. ¶6. It concludes that it would be extremely unlikely that a majority BVAP district would be drawn. Because they are analyzing only Democratic districts, they claim that they do not have to worry about politics as an explanation.

The problem is that this approach does not actually replicate the approach that the mapmaker was taking. While the envelope approach is useful, particularly in a large state like Texas, it also has real limitations. Simulations need some room to "breathe" in order to truly approximate the choices available to the mapmaker, but also to allow the map set to converge and avoid bottlenecks. In fact, we know from the discussion of the drawing od District 9 above that when the mapmakers drew Districts 7, 18 and 29, that they did *not* feel limited to the precincts that ended up in Districts 7, 18 and 29.

To that end, I replicated the Barreto/Rios simulations for Districts 7, 18 and 29. I then did what Dr. Barreto and/or Mr. Rios seemingly failed to do: Run diagnostic checks on it. The chains here fail multiple diagnostics and are unusable. The diagnostics report "WARNING: Low Plan Diversity," with a red "X" next to it. It continues "Low diversity

. . . '. Consider weakening or removing constraints, or increasing the population tolerance." Next, it says "Watch out for low acceptance rates (less than 10%)." The reported chain acceptance rates are 1.0%, 1.1%, 0.9%, 0.9%, 0.9%, 1.1%, 1.0%, and 1.1%. In other words, the simulations that they produce fall far short of what the creators of the software considered adequate for producing an ensemble from which you can draw valid inferences. It is so far off, creating an effective sample would require effectively creating an entire new case-in-chief.

Looking at the plans more closely, of the 393,608 generated plans, 357,775 are duplicates, leaving just 35,833 unique plans. This is the low plan diversity complained about. If anything, this undersells the problem, since a map can be one precinct off from a separate map and still appear as though it were a "different map."

Dr. Barreto next explores possibilities for districts 30 and 33. Once again, when we run basic diagnostics on the plans, it responds "WARNING: Low plan diversity." Just to be sure of myself, I ran 16 chains here, and the acceptance rates were as follows: 0.3%, 0.3%, 0.3%, 0.3%, 0.2%, 0.3%, 0.3%, 0.3%, 0.3%, 0.3%, 0.4%, 0.3%, 0.3%, 0.2%, 0.3%, and 0.3%. Recall that the software warns against acceptance rates of less than 10%. A brief comparison of the chart in the Second Barreto/Rios Report and mine confirms that we are reaching similar results.

To illustrate what is occurring "under the hood" consider the following chart, which shows every 10,000th map in the chain created in this region:

If you look carefully enough, you can see variations in the way districts are drawn, but they are marginal. Maps 114,000 and 124,000 vary by a couple of precincts at the very top, so while they are technically different maps for purposes of a computer, I do not know that most humans would consider them different in a meaningful way. At the same time, it appears that map 74,000 in the chain is the same as map 124,000 in the chain.

In other words, the chain is "stuck." It has found a basic configuration that optimizes the constraints under which it exists, and finds it difficult to improve upon. But

Figure 30: Map state at steps 14,000 through 124,000, every 10,000 steps

because we are humans and not robots, who likely do not have a fixed polsby-popper compactness score to target in our mind, we might find that we prefer a configuration that lays more on its side, which is what the existing map does. Regardless, this is not a sufficient baseline from which to operate. It would require effectively starting from scratch with an entirely different simulation set – in effect a new opening report from Dr. Barreto/Mr. Rios – to draw adequate conclusions.

We then proceed to the analysis of Republican districts in the Harris County area. Here, Dr. Barreto/Mr. Rios effectively concede defeat from the outset: They are unable to produce seven districts where Trump's vote share was higher than 59%; the most they can produce is six. They proceed instead with districts where Trump's vote share was higher than 56%, notwithstanding the fact that a district with a 57% Trump share was specifically judged insufficient by the legislature. Second Barreto/Rios Report n.2. They assert that this shows the "greater unlikelihood" of producing a Trump-majority Hispanic district in the area, but they do not know this; this is the entire reason that we produce simulations. Remember, maps with seven 59% Trump districts are not a subset of maps with six 59% Trump districts or of maps with six 56% Trump districts; they are a completely different set that may be limited to completely different configurations. There are presumably far fewer combinations in the area that result in seven 59% Trump districts than there are combinations that result in seven 56% Trump districts; it may be that the legislature stumbled on one of only two or three possible configurations.

Regardless, a quick examination of Figure S3 and Figure S4 reveals problems at the outset with those simulations that they do produce: there is extreme banding at almost every level:

Indeed, chain acceptance rates are once again dangerously low: Below 10% in multiple instances. It warns "WARNING: Low plan diversity" and continues "Low diversity: Increase the number of samples."

And once again, we can see that the maps produced are variations on a single theme. Because of the "donut" around Harris County, the logical way to produce compact

Figure 31: Figure S3, Second Barreto/Rios Report

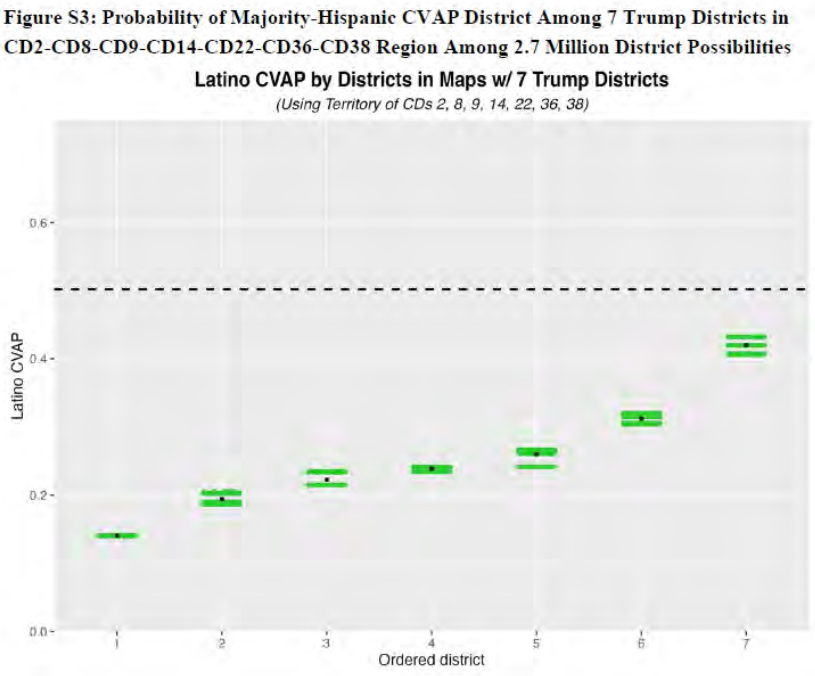


Figure 32: Figure S4, Second Barreto/Rios Report

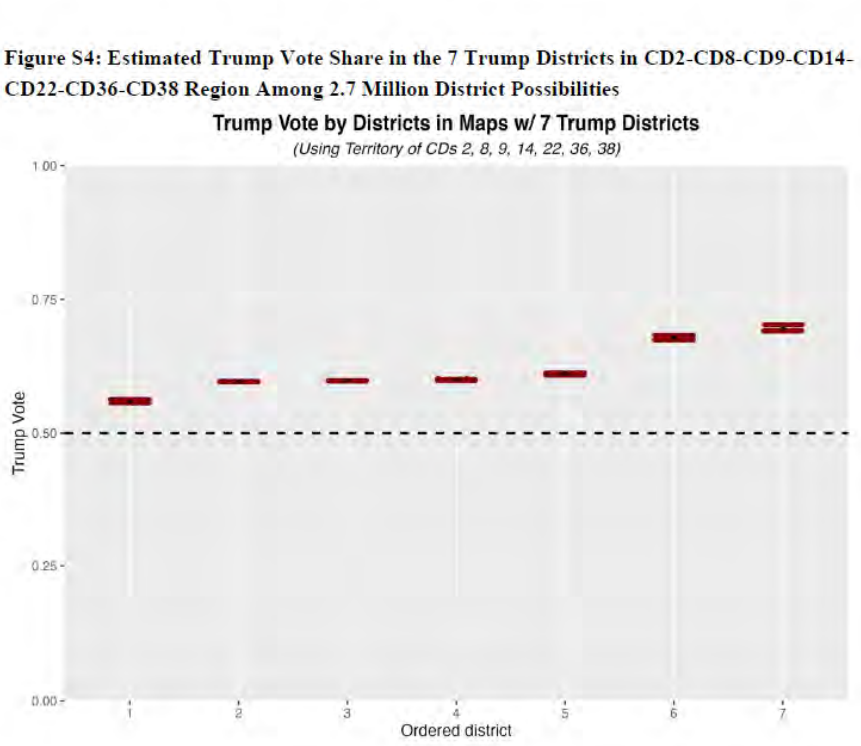
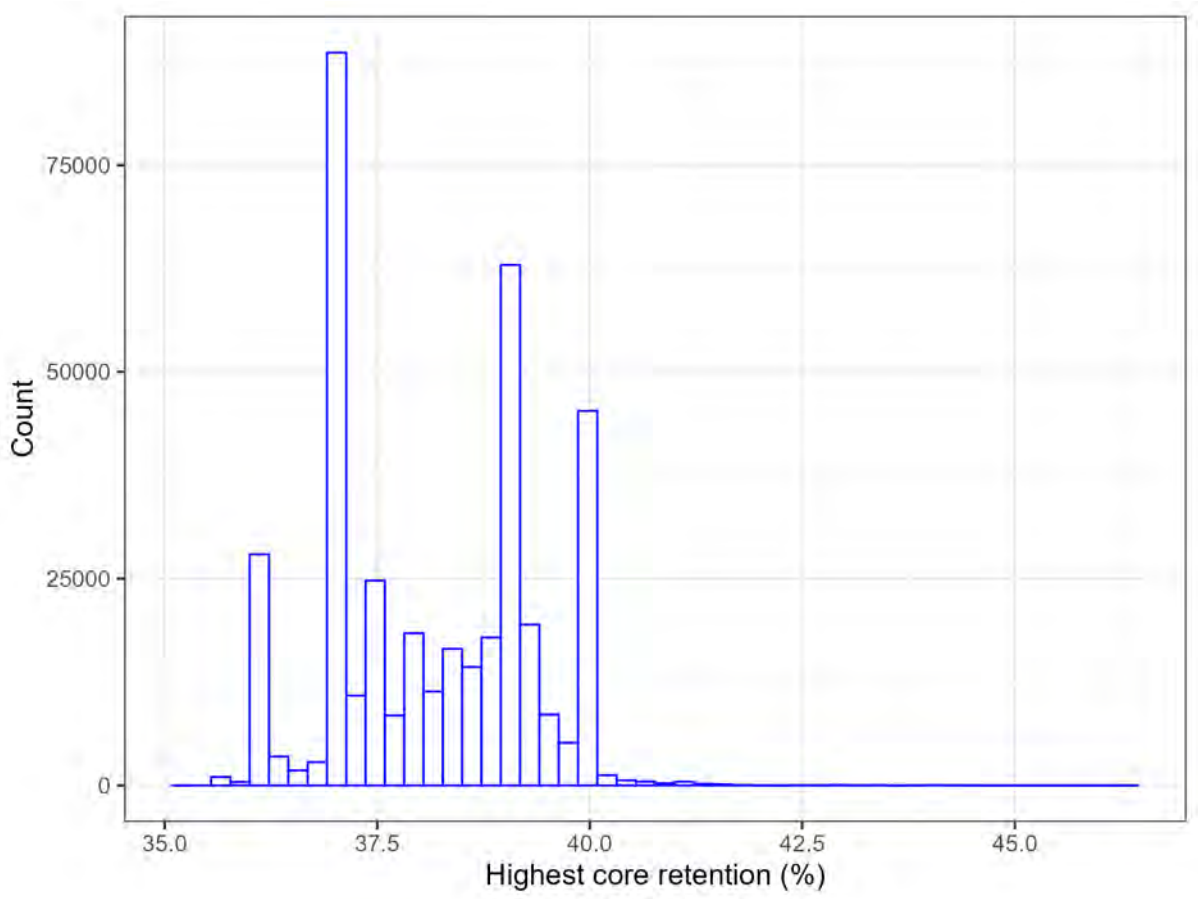


Figure 33: Map state at steps 14,000 through 124,000, every 10,000 steps

districts is to create pizza slices emanating from the center. Once again, the computer finds a configuration that it likes and repeatedly samples variations of it. Because that basic configuration is different than what the mapmaker decided upon – and apparently much more respectful of compactness – it is unsurprising that it produces a different racial breakdown than the enacted map: The maps are simply drawn from different distributions.

This also introduces additional complications. Because we are now dealing with Republican-held districts, incumbency becomes a challenge. In particular, the mapmaker would not want to place Republican incumbents in the same districts. Yet in this ensemble, 179,633 of the 393,607 maps (45%) place at least two Republican incumbents in the same district.

Figure 34: Highest core retention rates per ensemble map, Barreto/Rios Ensemble for Harris County



Finally, because we are dealing with Republican districts, there is likely a concern over core retention, aside from District 9. Core retention is the maximum percentage of the population in the baseline map (here the 2022 map) that is retained in a single district in the proposed map. As it turns out, the six Republican-held districts in this cluster in C2333 have core retention rates of 59% or higher. This is generally favored by incumbents, who do not want to have to introduce themselves to new voters every cycle.

As it turns out *none* of the districts in the Barreto/Rios ensemble here have core retention rates of even 59%.

With the South Texas analysis, things are worse. The diagnostics return the following "Chain acceptance rates: 0.1%, 0.1%, 0.1%, 0.0%, 0.0%, 0.1%, 0.1%, and 0.1%." Recall that the software warns against acceptance rates under 10%. It also warns that

"R-hat values for summary statistics should be between 1 and 1.05." The R-hat is a crucial diagnostic: It warns us that a robot might be stuck in a crater. When we run our diagnostic, all of our chains report R-hat diagnostics well beyond the 1.05 marker: Compactness (1.73); Population deviation (1.388); Trump Vote (1.388); Harris Vote (1.708); White CVAP (1.879); Latino CVAP (1.907); Black CVAP (2.554). It then warns in bold: " Chain convergence: Increase the number of samples. If you are experiencing low plan diversity, address that issue first." Of course, these diagnostics are flagged in a set created *before* Dr. Barreto and/or Mr. Rios filter out roughly half of the plans for failing to produce a sufficient number of Trump districts. Moreover, of these plans, only 107 appear to be unique. These simulation results are simply unreliable.

The same is true of Dr. Barreto and/or Mr. Rios' statewide plans. None of the acceptance rates are above 10%. None of the chains appear to have converged in either the base or after they filter down to 30 Trump-district maps. The chart on Figure S7 shows evidence of banding, which is unsurprising given that there are only 4680 unique plans at this point. This is simply unreliable.

Moreover, the indifference to incumbency creates real difficulties here. Every map in the ensemble places two Republican incumbents into the same district at least once. Finally, C2333 maintains, on average, 64% of the cores of districts. Many maps in the ensemble have a maximum core retention of less than that, and an average core retention in the 20% range.

Figure 35: Max Core Retention, Statewide Sims, Barreto/Rios set

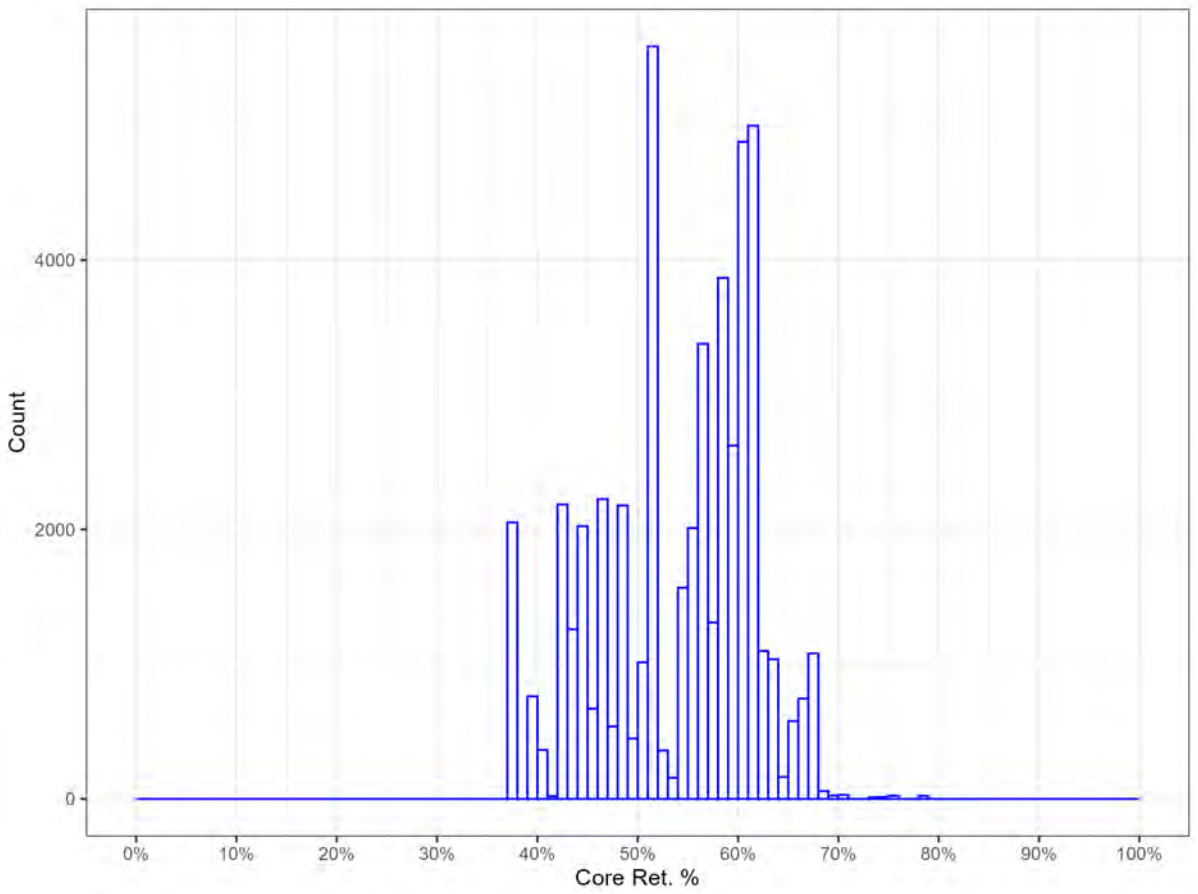
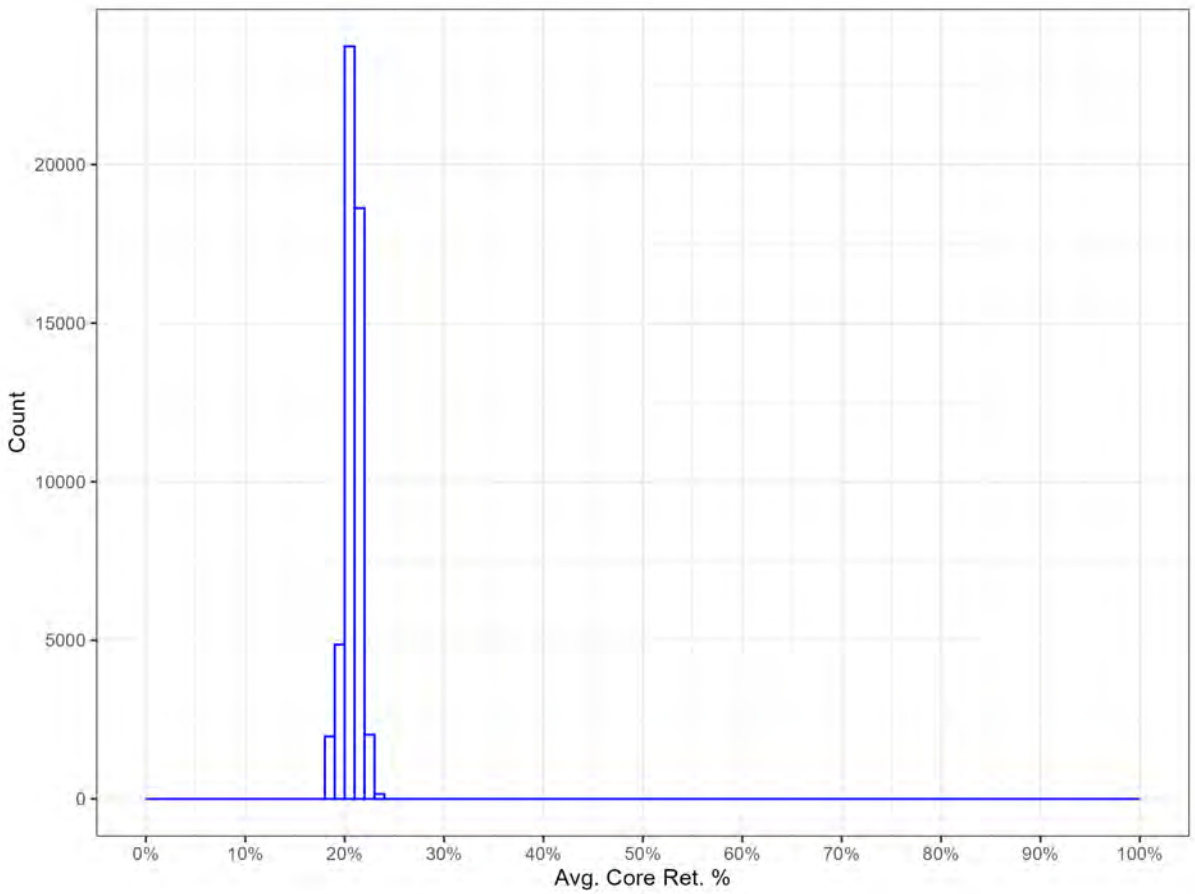


Figure 36: Avg. Core Retention, Statewide Sims, Barreto/Rios set



5 Response to Mr. Ely

I have also reviewed the Ely Report. It largely repeats the observations in the First Barreto/Rios Declaration, and consists mostly of maps that illustrate the makeup of precincts in the Harris County area and Bexar County. It also includes performance expectations for various districts. A few additional responses are warranted here. First, it appears that Mr. Ely's maps are mislabeled. He claims that his racial plots show whether precincts are majority Hispanic CVAP, Black CVAP, White CVAP, or Asian CVAP. It appears as though the units here are census blocks. The numbers at the census block level for ACS data would be estimated from the block groups, and would have huge error margins. Second, the political data, available on pages 12-15 confirm the degree to

which the maps cleave to political boundaries in the district.

6 Conclusion

The report of Mr. Ely adds little to the discussion not touched upon by other experts. The Barreto/Rios report fails to demonstrate that race, rather than politics, predominated in the drawing of the maps. The simulations are all fatally flawed, and can not be relied upon here.

I declare under penalty of perjury under the laws of the State of Ohio that the foregoing is true and correct to the best of my knowledge and belief. Executed on September 22, 2025 in Delaware, Ohio.

Sean P Trende

Sean P. Trende