

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION

- - -

THE SOUTH CAROLINA STATE	:	3: 21-cv-03302-MGL-TJH-RMG
CONFERENCE OF THE NAACP,	:	
<i>et al.</i>	:	OCTOBER 4, 2022
	:	
Plaintiffs,	:	VOLUME II (PAGES 266 - 532)
v.	:	
	:	
THOMAS C. ALEXANDER, <i>et al.</i> ,	:	
	:	
Defendants.	:	
	:	
	:	

- - -

TRANSCRIPT OF BENCH TRIAL PROCEEDINGS
BEFORE THE HONORABLE PANEL:
HONORABLE MARY GEIGER LEWIS, HONORABLE TOBY J. HEYTENS,
HONORABLE RICHARD M. GERGEL,
UNITED STATES DISTRICT COURT JUDGES

- - -

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DR. MOON DUCHIN - DIRECT EXAMINATION BY MS. ADEN

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1 *(The following bench trial proceedings resumed on*
2 *Tuesday, October 4, 2022, at 9:03 a.m.)*

3 JUDGE GERGEL: Please be seated.

4 Okay. Welcome, everyone, to day two of the trial in
5 The South Carolina State Conference of the NAACP vs.
6 Alexander.

7 Are there any matters counsel need to take up with
8 the Court before we proceed with the continuation of Dr.
9 Duchin's testimony?

10 MR. CHANEY: Nothing for the plaintiff, your Honor.

11 MR. GORE: Good morning, your Honor. Nothing from
12 Senate defendants.

13 MR. MOORE: Good morning, your Honor. Nothing from
14 the House defendants.

15 JUDGE GERGEL: Very good. Okay. Let's bring Dr.
16 Duchin back in, if we could. Please continue.

17 MS. ADEN: Thank you, your Honor.

18 ***MOON DUCHIN, PhD, having previously been duly sworn,***
19 ***testified as follows:***

20 **DIRECT EXAMINATION (Continued)**

21 **BY MS. ADEN:**

22 Q. Good morning, Dr. Duchin.

23 A. Good morning.

24 MS. ADEN: Your Honor, may I please give Dr. Duchin
25 the items that I gave her yesterday, which include PX --

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1 JUDGE GERGEL: Yes. The answer is yes.

2 MS. ADEN: Okay.

3 **BY MS. ADEN:**

4 Q. When we left off yesterday, I believe that we were
5 focusing on page three through four of your April 11th report.
6 And if I recall, we had been talking about why you obtained
7 information about the previous 2012 map that is identified on
8 the top right of that page. Do you recall that?

9 A. Yes.

10 Q. Okay. Is it your regular practice to look at the
11 previous map, which I'll call "the benchmark plan," in doing
12 the analysis that you do when you conduct redistricting work?

13 A. Yes. I would say that's a standard element.

14 Q. And why?

15 A. In order to illuminate the choices that were made in
16 forming the new plan, because it shows you what the kind of
17 now malapportioned planned from the previous cycle was that
18 had to be changed in order to conform with the rules.

19 MS. ADEN: And you can take that down for a moment.

20 **BY MS. ADEN:**

21 Q. At the end of the day yesterday, we were going through
22 the various sources and materials that you relied upon in
23 conducting your initial report. And I believe that you had
24 mentioned that you had used electoral data with shape files.
25 Do you mind briefly explaining to the Court what that is?

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1 A. Sure. So, the way that cast votes are recorded is in
2 units that are called precincts. Now, the Census Bureau has a
3 data product every 10 years that approximates those precincts
4 and aligns them with census geography. That's called VTDs, or
5 voting tabulation districts. We talked about those yesterday.
6 And so, if you want to make a study of how the boundary lines
7 of districts have electoral consequences, it's important to
8 know where those votes were cast. And so, the basic object
9 that you use to study that is a format called a shape file,
10 which shows you where all those precincts are, and then
11 attached to that as attribute data, is the record of cast
12 votes from previous elections.

13 Q. And are you doing any statistical work with those, or are
14 you -- what are you doing with that data?

15 A. Well, it will primarily come into my reports in the form
16 of electoral effectiveness analysis.

17 Q. Okay. So, yesterday you identified a host of resources
18 and materials that you worked on. Just to close the loop on
19 this subject, I just want to ask: Are these the sources and
20 materials that you typically use in your redistricting work?

21 A. Yes. I think all of these kinds of materials are
22 standard for the kind of analysis that I do.

23 Q. And yesterday afternoon, you also identified the
24 assignment that you were asked to do, the scope of your work
25 in this case. And I would like, before we dive into your

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1 report, for you to summarize the key conclusions in your
2 initial report please.

3 A. Sure. So, as we discussed, the assignment was to look
4 for signs of cracking, in particular, to look for signs that
5 the electoral effectiveness of the map for Black voters had
6 been reduced by the race-conscious choices made in configuring
7 the lines. And I studied that, as we heard, through
8 demographic analysis and electoral analysis. I used
9 qualitative techniques and quantitative techniques. I used
10 ensemble methods and a host of others. And all signs pointed
11 to the same conclusion, which is that strong signs of cracking
12 are present that give evidence of intentional vote dilution.

13 Q. So, I want to turn to a discussion of your analysis of
14 the demographics of South Carolina. And before we
15 specifically talk about South Carolina's demographics, can you
16 please tell us briefly about how race is categorized in a
17 census?

18 A. Sure. So, it's fairly complicated, especially since the
19 1990s. The way that it works is that race has six different
20 categories for which a respondent can select yes or no. And
21 so, those are White, Black, Asian and so on. I can name them
22 all, if you'd like. After making a selection from those
23 categories, separately there's an ethnicity question, which
24 asks a respondent if they're Hispanic or not. And so, if you
25 put it all together, that's six yes-or-no questions, so that's

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1 two to the six, that's 64. But you can't select no for all of
2 them. So, there are 63 races on the census, times two for the
3 ethnicities. So, there's 126 different race and ethnic
4 identification categories, which is quite a lot.

5 Q. Can you tell me about the "any part Black" category?

6 A. Sure. It's actually quite simple. The idea is for all
7 respondents who answer yes to the question, are you Black,
8 that's who's included in the category "any part Black." So,
9 encountered with the yes-or-no question, are you black, it
10 includes everyone who said yes, possibly in combination with
11 other racial identities, and whether Hispanic or not.

12 Q. And when did the census start recording that category?

13 A. So, that's not tabulated in the PL. But the way that I
14 just described the racial categories, that's been used by the
15 OMB, the Office of Management and Budget, since the mid 1990s.

16 Q. And just to be clear, does the "any part Black" category
17 include Hispanic people?

18 A. If they indicated that they are Black, then they're
19 included in that category, yes.

20 Q. Which category of Black did you use in this case?

21 A. For almost everything that you'll find in my report,
22 that's what I used, the "any part Black" category. Although,
23 when I introduce the demographics of South Carolina on page
24 five, I report also the "Black alone" just for contrast.

25 Q. And what does "Black alone" mean?

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1 A. "Black alone" would mean respondents who selected Black,
2 made no other racial category selection, and did not indicate
3 Hispanic ethnicity.

4 Q. So, Dr. Duchin, did you examine South Carolina's
5 demographics?

6 A. I did.

7 Q. And as of the 2020 census, what is the total population
8 of the state?

9 A. So, referring here to page five in my report, the total
10 population is just over 5 million. So, 5,118,425 people.

11 Q. And as of the 2020 census, what portion of South
12 Carolina's total population is "any part Black"?

13 A. Let me make sure I'm getting this right. So, that's
14 1,370,542 or 26.78 percent of the population.

15 Q. And as of the 2020 census, what portion of South
16 Carolina's voting age population is "any part Black"?

17 A. Okay. So, that is 25.28 percent.

18 Q. And what portion of South Carolina's citizen voting age
19 population is "any part Black"?

20 A. There, the number goes back up again a little bit to
21 25.99 percent.

22 Q. And why did you look at citizen voting age population?

23 A. Well, in this part of the report, I'm try to be complete.
24 Census data products give so many different ways to approach
25 the question of demographics. So, here, I'm trying to give a

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1 number of different angles. I'll note that CVAP -- or citizen
2 voting age population -- is more commonly used in states and
3 in context with larger immigrant populations, such as Latino
4 or Asian populations, that are large enough to be part of the
5 inquiry. It won't be the basis of most of my report here,
6 because the bulk of this inquiry has to do with Black and
7 White South Carolinians.

8 Q. And what data source did you use to report citizen voting
9 age population?

10 A. That's derived from another Census Bureau data product
11 called the ACS, or American Community Survey.

12 Q. Did you find anything with respect to any changes in the
13 White voting age population?

14 A. Well, I think you can make conclusions about changes in
15 White voting age population from the numbers that are
16 presented in the report. But those weren't my primary
17 presentations. I mostly focused on the Black population.

18 Q. Can I focus you on your May 4th rebuttal report at note
19 four?

20 A. Yes.

21 Q. Did you make any findings about the White voting age
22 population in that report?

23 A. Yeah. So, this is an example. Here, I note that the
24 White share of South Carolina's population has been dropping.
25 With the WVAP, or White voting age, share dropping from

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1 66.7 percent to 64.9 percent between the last two censuses,
2 from 2010 to 2020.

3 Q. Thank you.

4 MS. ADEN: Mr. Najarian, can you put up on the screen
5 PX-68, which is Figure 1 of Dr. Duchin's April 11th report?

6 BY MS. ADEN:

7 Q. Dr. Duchin, what are you showing in Figure 1?

8 A. So, this is the kind of visual called a choropleth map.
9 And the meaning of that word is that the units are shaded
10 according to, in this case, the share of Black voting age
11 population. And so, what's shaded here is those VTDs, or
12 precincts, but I also show county lines and mark certain
13 cities in the visual.

14 Q. You mentioned VTDs. Are VTDs synonymous with precincts?

15 A. Well, that's a complicated story. Around the country in
16 most places, precincts can and do change regularly. In many
17 places, the control of precinct boundaries is local. It might
18 be at the county level or even the sub-county level, towns can
19 control their precinct boundaries. In some states, like
20 California, they change on a weekly basis.

21 The VTDs should be thought of as a once-in-ten-years
22 snapshot that's made by the Census Bureau, and as I said
23 before, aligned to census geography. So, they're an extremely
24 useful data product but they're not exactly synonymous with
25 precincts, they're just an authoritative snapshot.

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1 MS. ADEN: You could take that down Mr. Najarian.
2 And I would like you to put up PX-69, which is Figure 2 on the
3 next page 6 of Dr. Duchin's April 11th report.

4 **BY MS. ADEN:**

5 Q. Dr. Duchin, what are you showing in this figure?

6 A. So, these figures are showing changes in Black
7 populations. And I'll note -- we'll probably see this next,
8 but there is a typo here. This is actually Black citizen
9 voting age population. So, it's marked BVAP, but it should be
10 BCVAP. And here what I'm doing is I'm showing the county
11 level on top or at the census tract level on the bottom. I'm
12 showing whether the Black population has gone up or down in
13 between, in this case, 2010 and 2019.

14 Q. And are there any notable findings here?

15 A. Well, I think you can see -- there are a few things that
16 I notice when I look at this. And one is, so, those darker
17 blue areas are the ones where the Black population has been
18 rising. And so, you can see that there is a rise in Black
19 population, particularly you can notice in the Charleston area
20 and the Columbia area, and in many other parts of the state.
21 What I see when I go to the lower figure, is breaking those
22 counties up into their census tracts, we can try to figure out
23 whether that population growth is really localized. Is it
24 happening only in certain neighborhoods, where maybe there's
25 new development or is it spread out over the county? And what

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1 I see when I look below is fewer intense blues. And so, most
2 of that population growth is spread out over those counties.

3 Q. Dr. Duchin, did you have occasion to supplement your
4 findings about the shifts in Black population in South
5 Carolina?

6 A. I did. This is revisited in my supplemental report from
7 August.

8 Q. Thank you.

9 MS. ADEN: Mr. Najarian, could you pull up page seven
10 of Dr. Duchin's August 9th supplemental report, PX-120, which
11 has been admitted? And page seven. Thank you.

12 **BY MS. ADEN:**

13 Q. Dr. Duchin, what are you showing on these pages?

14 A. It's just exactly the same kind of information, but now
15 I've shown it at all the intercensal increments --
16 intercensal, meaning between censuses. This is possible
17 because the ACS comes out every year and it gives a rolling
18 average of different population totals that are gotten from
19 survey data. So, you can get more fine-grained information
20 about how that population growth is happening.

21 I've corrected the typo, so now it's marked "BCVAP." And
22 also I've extended it to 2020, because the 2020 ACS came out
23 in between my first report -- as I recall, in between my first
24 report and the supplement. And so, the function of this
25 picture is just to give a little more context and see that

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1 those demographic shifts are happening really gradually over
2 time.

3 Q. And can you tell the Court are there any areas of
4 interest that you found with respect to the Black citizen
5 voting age population changes over time here in South
6 Carolina?

7 A. Well, in this report -- and let me pull it up on paper.
8 Without wanting to go into great length, what I did want to do
9 was give some examples by looking at one or two counties of
10 how that growth compares to the population overall. And so, I
11 think I do that in footnote 3, on page 6, where I note that,
12 for instance, in Richland County -- just to give one
13 example -- I give the year-by-year totals. And then what we
14 can see is that the BCVAP goes up by over 30,000 people, which
15 is more than a quarter. That's quite substantial growth over
16 that period of time. That well outpaces the overall rate of
17 population growth in the county and in this state. So, that's
18 just one example. If we zoom in on Richland County, we can
19 see that the growth that was visible in those pictures really
20 is substantial, relative to the population trends overall.

21 MS. ADEN: Mr. Najarian, do you mind going back to
22 page seven of the August 9th supplemental report?

23 **BY MS. ADEN:**

24 Q. And where would the Court see this represented on this
25 page?

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1 A. Well, you can see Richland County, if you notice in the
2 2011 picture, it's already showing up as having substantial
3 growth right away. And that's maintained over the course of
4 the increments that we saw.

5 MS. ADEN: Your Honor, I got a note that the screen
6 in the break room isn't working and I didn't know if I needed
7 to bring that up.

8 JUDGE GERGEL: Hold just a second.

9 MS. ADEN: Okay.

10 *(Pause)*

11 **BY MS. ADEN:**

12 Q. Did you want to say anything else about what should be
13 found on this page?

14 A. No. I think that covers the Richland County visual.

15 Q. Okay.

16 MS. ADEN: You could take this down for a moment.

17 **BY MS. ADEN:**

18 Q. How does what you found looking at the --

19 THE WITNESS: Did you want a break for the fix there?
20 Oh, we're good? Okay.

21 **BY MS. ADEN:**

22 Q. How does what you found -- when you were looking at the
23 comparison of changes in Black citizen voting age population
24 over time, how does that compare to what you've seen in some
25 of the other states where you've worked?

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1 A. I would say this is a strong trend. It's -- the fact
2 that -- well, nationally, we saw a few trends that include
3 South Carolina, but there are others that are distinctive.
4 One national trend, that perhaps many of us read about in the
5 press, is the number of people who are identifying biracially,
6 with two or more races, is going up around the country. And
7 that's true here as well. The White share of population in
8 many states is reducing. As I already mentioned, we see that
9 here in South Carolina as well. But the population
10 concentration in places that are really important for
11 congressional redistricting that you see here, that we just
12 described, I have not always found that to be the case. So,
13 that creates the conditions for more favorable congressional
14 outcomes in terms of Black voting strength.

15 Q. Given the growth in the areas of the state that you
16 found, would you have any expectation about how the
17 congressional map might change from 2011 to the post-2020
18 census cycle?

19 A. Well, I mean, what I can say, building on what I said a
20 moment ago, we have now two sets of facts: One is that the
21 concentration of Black population is going up in relevant
22 areas, and another is, as we will, no doubt, be discussing at
23 some length, is that the map which used to have CD 6 as a
24 majority Black district, the state's enacted map now drops
25 that below 50 percent. That's still, as we'll see in the

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1 effectiveness analysis, comfortably effective for the moment.
2 But putting those two facts together, they really create quite
3 an opportunity to have more electoral success for Black voters
4 in other districts. So, that is between the reduction of
5 Black voting age population in CD 6 while remaining effective.
6 And the increased concentration of Black voters in relevant
7 areas, there's more opportunity than ever to have Black voting
8 power reflected in other districts.

9 Q. Dr. Duchin, I'd now like to turn to your review of
10 metrics and demographic data against specific congressional
11 plans. So, yesterday, we talked about House and Senate
12 criteria at length. And at the end of the day, we looked
13 briefly at the 11 maps that you identified on pages 3
14 through 4 of your April 11th report.

15 Having done both of those things, did you have occasion
16 to examine maps and apply certain criteria to your analysis of
17 those maps?

18 A. I did. Section 3 of my initial report attempts to make a
19 comprehensive review.

20 Q. Okay.

21 A. I'm sorry. Section 3 reviews the criteria themselves,
22 and Section 4 comprehensively presents metrics and scores.

23 Q. And in Section 4, can you just briefly describe which
24 criteria did you apply in this section of your report?

25 A. Sure. In 4.1, I look at racial demographics that isn't

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1 directly cited in any of the guideline criteria, but it's
2 relevant to understanding electoral opportunity.

3 In 4.2, I look at population deviation, which, of course,
4 is very important for valid redistricting plans. In 4.3, I
5 review some metrics of compactness. In 4.4, I report on
6 political subdivisions, counties, county subdivisions, cities,
7 and towns. In 4.5, I discuss incumbency and the pairing -- or
8 sometimes called "double bunking" -- of incumbents in the
9 various plans. And that's what we find in this section.

10 Q. Why did you examine those criteria against these plans?

11 A. It's an attempt to take everything I can that's
12 measurable from the criteria and discuss, especially the ones
13 that are higher tier here. Now, there are a few criteria that
14 I do discuss elsewhere in the reports, such as core retention,
15 so we'll come to that later. But these are the kind of
16 high-ranking and a few lower-ranking criteria as well.

17 Q. And are these criteria different than the traditional
18 redistricting principles you talked about at the beginning of
19 your testimony yesterday?

20 A. So, these are they, except that incumbency, as I
21 mentioned yesterday, might or might not be considered one of
22 the standard TDPs, or traditional districting principles.

23 Q. I believe yesterday you testified that not all
24 communities of interest can be satisfied. But with respect to
25 traditional redistricting principles overall, can all

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1 traditional redistricting principles be satisfied in a map?

2 A. Well, I would say this is the heart of redistricting, and
3 what's challenging about it is that we have a large number of
4 rules. Some of them are qualitative, some of them are
5 wholistic, some of them are numerical, like population
6 deviation, it's very easy to count, if we take the census data
7 as our basis. And the nature of redistricting is to try to
8 balance this large number of different rules. So, you won't
9 find a plan that's optimal on every criterion simultaneously.
10 The nature of redistricting is to weigh tradeoffs.

11 Q. And you mentioned that you did not look at core retention
12 in this section, but in others. Did you look at VTD splits in
13 this section of your report?

14 A. I did not address VTD splits here. But it does come up,
15 for example, in my response report from May.

16 Q. Okay. And did you look at partisan performance in this
17 section of your report?

18 A. Not in this section, but it's discussed later when I try
19 to compare racial to partisan explanations.

20 Q. And did you consider criteria outside of those identified
21 in the House or Senate guidelines in this section of your
22 report?

23 A. Well, I suppose, you could say that by giving metrics of
24 compactness, I go outside the guidelines, which I prefer not
25 to use metrics of compactness. But as I mentioned yesterday,

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1 I still think that can be helpful to the Court.

2 Q. I want to briefly show you the House Criteria 716.

3 MS. ADEN: And yesterday I think I indicated that
4 this had been admitted. I don't think it had yet been but I
5 believe the Senate defendants do not object to it being
6 admitted. It's the Senate Criteria --

7 JUDGE GERGEL: What's the number?

8 MS. ADEN: 716.

9 MR. GORE: Your Honor, let me note, for the record,
10 it was admitted yesterday as Senate Exhibit 3.

11 JUDGE GERGEL: Senate 3 is already in. You can use
12 it as Senate 3. Okay.

13 MS. ADEN: And if we could put that up on the screen.

14 **BY MS. ADEN:**

15 Q. I want to direct your attention to -- having looked at
16 these Senate guidelines in detail, did you find anything that
17 suggests how a mapmaker should respond if criteria conflicted
18 with what was in these guidelines?

19 A. Let's see.

20 MS. ADEN: Actually, can we take this down and put up
21 the House?

22 THE WITNESS: I was going to say I think that is more
23 directly addressed in the House.

24 MS. ADEN: Which is PX-175.

25 THE WITNESS: Yeah. So, there that's addressed in

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1 Section 9, Priority of Criteria.

2 **BY MS. ADEN:**

3 Q. Okay. And what do you find?

4 A. Well, so here, it's clearly said that if there's a
5 conflict, then the requirements addressed in Sections 1, 2, 3
6 and 4 should be given priority. And I'll note that that is
7 precisely including in Section Roman numeral II, non-dilution
8 of racial and ethnic minority voting strength. So, it's
9 clearly stated here that that is to be given priority over
10 other considerations, such as incumbency, core preservation,
11 and so on.

12 Q. And do you have an opinion -- you can take that down --
13 about whether the legislature could or should consider
14 criteria outside of its own guidelines?

15 A. Well, they certainly could. As to should, I think we
16 talked about this a little bit yesterday, the guidelines are
17 the way that the public can know what standards maps are being
18 assessed by. And so, I would say that, just as a matter of
19 sound state policy and good government practice, there should
20 be an effort to reflect accurately in the guidelines, all of
21 the considerations that will be used to choose among maps.
22 So, I think that addresses both could and should.

23 Q. Okay. So, you mentioned that you examined the maps for
24 their racial demographics?

25 MS. ADEN: Mr. Najarian, will you pull up PX-70,

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1 which is Table 1 on page 9 of Dr. Duchin's April 11th report.

2 **BY MS. ADEN:**

3 Q. Dr. Duchin, generally what are you showing in this first
4 table?

5 A. Okay. So, this shows the Black voting age percentage in
6 every district of every plan that was available to me at that
7 time.

8 Q. Okay.

9 MS. ADEN: If you can go down to the second table on
10 that page, Mr. Najarian.

11 **BY MS. ADEN:**

12 Q. Tell me, Dr. Duchin, what are you trying to show in this
13 second table?

14 A. So, this is just a summary. And here, I read off from
15 the previous table how many districts have at least
16 30 percent, at least 40 percent, or at least 50 percent BVAP.
17 Let me emphasize that those aren't special numbers, those
18 aren't targets. They have no particular significance as kind
19 of thresholds for this kind of inquiry. It's just meant to
20 summarize and give us a view of how things changed. So, for
21 example, if you compare the first two rows, you can see that
22 between the benchmark plan and the enacted plan, this shows
23 that one district -- and we know that that's CD 6 -- which
24 used to be over 50 percent, is now under 50 percent, but that
25 no other districts go over 30, so that remains the only

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1 district over 30 percent BVAP; whereas, some of the other
2 alternative plans that were proposed by members of the public
3 and by NGOs do have two and, in one case, even three districts
4 over 30 percent.

5 Q. Dr. Duchin, looking back at the first table on page 9,
6 what are some of your keys findings with respect to racial
7 demographics and the congressional plans that you reviewed?

8 A. Well, I think here -- this is a good moment to note that
9 BVAP does not tell the whole story. I always try to do a
10 demographic analysis and an electoral analysis and to make
11 sure that they talk to each other to try to have them work
12 hand in hand. So, this is only part of the story. However,
13 we already see, I think, some interesting things if we just
14 look at these numbers. So, we see that drop from 52.5 to just
15 a shade under 47 percent BVAP in CD 6, from benchmark to
16 enacted. And then scanning the other plans, we see that
17 several of them stay over 50 percent, while others drop into
18 the 40s and 30s, and the Robert's Plan looks very different
19 from the others here and in many regards.

20 Now, given that drop, we might expect for the difference
21 to be made up in other districts in places where it might
22 boost opportunity to elect. And so, scanning across the other
23 districts, what we can see is that there's modest rise in CD 2
24 and CD -- let's see -- 4.

25 Q. So, you're looking at the second row and then at the

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1 enacted 2022?

2 A. That's right. Maybe we could highlight just the first
3 two rows of the table, because, right now, I'm comparing
4 benchmarks to the enacted plan. Thank you so much.

5 Q. Thank you.

6 A. And the question I was just addressing is: If the Black
7 voting age population came down in CD 6, where did it go up?
8 Right. And so, it goes up some in CD 4, a hair in CD 3, goes
9 up some in CD 2, stays just about the same in CD 1. And
10 later, we'll have an opportunity to see whether that very
11 dispersed increase in BVAP corresponds with electoral
12 opportunity in those districts. And what we'll find later
13 when we look at election results, is that it does not, it does
14 not correspond to any meaningful opportunity across the other
15 districts in the state.

16 Q. And looking at the demographics of this chart and
17 focusing on the column CD 1, do you find that it's unusual to
18 have CD 1 in the 20 percent range?

19 A. Well, we can see as we look -- now, I should note, a lot
20 of the meaning we'd like to take from this chart hinges on the
21 fact that the numbering of the districts is kind of consistent
22 across these maps. In other words: Is CD 1 coastal? Does it
23 have part of Charleston? And it, for the most part, does.
24 So, just stipulating that it is the case in most of these maps
25 that the numbering is fairly consistent.

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1 So, looking at your question, we can see it's much more
2 common to have CD 1 with a BVAP in the 20s. It can be as high
3 as the 30s. It can be as low as about 17 percent. But in the
4 main -- and this is true in the ensemble approach as well, as
5 we'll see later -- it's pretty normal, when you're following
6 the other rules and principles, to have a somewhat higher
7 Black voting age population in CD 1 than we see in the State's
8 plans.

9 Q. And this chart reflects that CD 1 has the lowest voting
10 age population by a hair, as compared to CD 3; is that your
11 finding?

12 A. That's right. In the enacted plan, CD 1 now has the
13 lowest Black voting age population of any district in the
14 state.

15 Q. And going to the second table on page -- are there any
16 other findings that you want to point out from this table
17 before we move to the second one on that page?

18 A. No. I think I'll just sort of echo what I said a moment
19 ago, which is the inquiry that I'm making is one about
20 cracking. And cracking is about dispersing Black populations.
21 And so, what I just described, where the BVAP comes down
22 significantly in CD 6 but the gains are dispersed across the
23 other districts, that is characteristic of what you might
24 expect in a cracking scenario.

25 Q. And looking at the second table on that page, are there

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1 any key findings with respect to what you're seeing in the
2 plans that you analyzed using this framework?

3 A. Well, I think one thing you can note is that it's quite
4 common for these alternative plans -- including, for example,
5 the Harpootlian Plan -- not to have 50 percent BVAP in any
6 district; and so, in particular, in CD 6.

7 And, again, when we come back and cross reference that
8 with electoral opportunity later, we will see that 50 percent
9 isn't necessary for a performing district. It's possible
10 while still adhering to the traditional principles, but not
11 necessary, as we'll discover.

12 MS. ADEN: Okay. You can take that down, Mr.
13 Najarian.

14 **BY MS. ADEN:**

15 Q. Now we're going to briefly turn to the application of the
16 TRPs in Section 4 of your report. Did you look at the
17 population distributions among the proposed plans?

18 A. I did.

19 Q. Okay.

20 MS. ADEN: Mr. Najarian, if you could pull up PX-71,
21 which is Table 2 on page 10 of Dr. Duchin's April 11th report.

22 **BY MS. ADEN:**

23 Q. Dr. Duchin, what did you find?

24 A. So, here we see, as you'd expect, that the benchmark plan
25 has become somewhat malapportioned over the 10-year period

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1 between the censuses. So, it used to be population balanced,
2 but when the new data was released, we can see that its
3 largest and its smallest districts have over 80,000 people
4 deviation from the ideal size. By contrast, the enacted plan
5 and the next few publicly submitted plans up to Muscatel, all
6 have five people or fewer as the top-to-bottom deviation from
7 the most populated district to the least populated district.

8 Maybe this is a good time to point out that the
9 guidelines specify -- and as I mentioned, it's standard
10 practice in most states across the country to seek one-person,
11 top-to-bottom deviation. And I'd just like to note that any
12 of these plans could be tuned to one-person deviation very
13 easily in a matter of minutes.

14 Q. Is it fair to say, though, that the enacted plan, the
15 South Carolina South Carolina NAACP 1 Plan, the South Carolina
16 NAACP 2 Plan, the Harpootlian Plan, the League of Women Voters
17 Plan, the Foster and Muscatel plans all achieved close to
18 one-person deviation?

19 A. Yes. They all have five or less as their top-to-bottom
20 deviation.

21 Q. Did you look at the compactness amongst the districts of
22 the proposed plans?

23 A. I did.

24 Q. And which statistical metrics that you introduced us to
25 yesterday did you apply in this section of your report?

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1 A. So, here I give the average Polsby-Popper score of the
2 district, average Reock score of the district, and the
3 Scissors Complexity, otherwise known as the Block-cut Edges
4 score of the district.

5 Q. And yesterday you briefly explained to us what each of
6 them means and how they're measured?

7 A. Yes.

8 Q. Those are no cut-offs -- I think yesterday you agreed
9 with me that there's no magic number to these scores?

10 A. No. Certainly not in the South Carolina framework.

11 Q. Do you agree, though, that the Polsby-Popper, the Reock
12 scores, the closer you get to one, what -- is there any
13 significance to getting close to one under the Polsby-Popper
14 and Reock scores?

15 A. Yes. In both of those two scores, the only way to
16 achieve a perfect score of 100 percent, or one, is to be an
17 exactly round district. And that's not very practical. And
18 so, you'll see that very compact districts might have scores
19 in the -- depending on the state and how they fit together
20 with the natural geography, you can have scores in the 20s,
21 and 30s, and 40s. Those would be considered fairly compact.

22 Q. And what about the Block-cut Edges, what will we look
23 for?

24 A. So, Block-cut Edges is different, because it's measuring
25 how many pairs of edges were assigned to different districts.

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1 So, that's a score where lower is better. You'd like a
2 simpler cut, fewer separations.

3 MS. ADEN: Mr. Najarian, would you please put up on
4 the screen PX-72, which is Table 3 on page 11 of Dr. Duchin's
5 April 11th report.

6 BY MS. ADEN:

7 Q. And I would like you to explain to us what you were
8 trying to show in this table.

9 A. Sure. So, the two images below, they show the enacted
10 plan, CD 6, just as an illustrative example. And on the left
11 is the figure that you would use to compute the Polsby-Popper
12 score, while the right-hand figure is for computing the Reock
13 score. What I've done here is, on the left, that's the circle
14 that has the same perimeter as the district. And the fact
15 that that circle is so much bigger means that the district is
16 not doing a very efficient job of enclosing areas. And so,
17 you get the Polsby-Popper score by the ratio, the purple area
18 to the circled area. On the right is the Reock score,
19 where -- as I mentioned yesterday, where you take the smallest
20 bounding circle and take the ratio of those areas. So, you
21 see this figure illustrates why the Reock scores are somewhat
22 higher than the Polsby-Popper scores.

23 Q. And what did you find about the compactness of the plans
24 that you examined according to these measures?

25 A. Well, I find that neither the benchmark plan nor the

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1 enacted plan stands out as especially compact, relative to
2 other alternatives. They do look a little bit better by Reock
3 than by the other two scores. But I'll note, for instance, in
4 the Polsby-Popper column that the Harpootlian Plan, NAACP 2,
5 Harrison Plan, all of these are significantly more compact
6 than the State's Plan. In the Reock's score, we have, again,
7 NAACP 2; the League's Plan; the Harrison Plan looked more
8 compact than the State's Plan. And in Block-cut Edges, where,
9 again, lower is better, again, it's outperformed in
10 compactness by quite a few alternatives. Harpootlian Plan
11 comes up again, Foster's Plan and so on.

12 Q. So, is it fair to say that, looking at these various
13 plans, certain plans score better on some measures, and other
14 plans score better on different measures? Is that fair to
15 say?

16 A. Yes. That's the nature of these scores. They're picking
17 up on different aspects of the geometry.

18 Q. But yesterday you identified Block-cut Edges as -- and
19 today, as having value in areas where boundaries may be
20 irregular; is that fair?

21 A. Yes, that's right. So, especially if you're in a state
22 with a lot of coastline, as we have here, that's going to be
23 penalized in the contour scores. So, the Polsby-Popper score
24 or the Reock's score is going to take a district along the
25 coast and find it to be not very compact, just because that's

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1 a winding boundary. Block-cut Edges fixes that problem by not
2 penalizing coastlines, for instance.

3 Q. And what does that mean for the enacted plan according to
4 these scores?

5 A. Well, I would just, you know, repeat what I said a moment
6 ago, which is that the enacted plan is not one of the most
7 compact. It's a bit more compact than the benchmark in some
8 ways but not others, and it's definitely outperformed in
9 compactness by several of the publicly submitted plans.

10 MS. ADEN: Okay. You can take that down, Mr.
11 Najarian.

12 **BY MS. ADEN:**

13 Q. Did you, in other sections of your report, consider
14 compactness based on nonstatistical measures?

15 A. Well, yes. I would say the other notions of compactness
16 do enter into the report in various ways. For instance,
17 so-called functional compactness has to do with whether it's
18 easy to transit around a district, whether one can efficiently
19 get from some areas in the district to some others. And
20 that's implicitly discussed in the qualitative district review
21 by looking at the ways that the districts are cut, whether
22 they are long major roads and kind of cognizable divisions of
23 territory, or whether the cuts seem arbitrary and unrelated to
24 the way people actually move around.

25 Q. And we'll get to that. Dr. Duchin, in this section of

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1 your report, did you look at various proposed plans' respect
2 for political subdivisions?

3 A. Yes.

4 Q. And which subdivisions in particular?

5 A. So, I look at the splits of counties. The way I -- one
6 of the ways that I get at municipal splits is by looking at
7 the census category called county subdivisions, and then I
8 also separately look at cities and towns.

9 Q. And as you testified to yesterday, the House, as compared
10 to the Senate, considers respect for political boundaries to
11 be a community of interest?

12 A. Yes. It's mentioned under community of interest
13 consideration in the House guidelines in particular.

14 Q. Okay.

15 MS. ADEN: I'd like to look at Table 4, which is
16 PX-73. This can be found on page 4 of Dr. Duchin's April 11th
17 report.

18 **BY MS. ADEN:**

19 Q. What did you find -- before you jump into the findings of
20 this plan, can you detail how you measure adherence to
21 political subdivisions?

22 A. Sure. Here, I have done something very simple. I've
23 given you the number of counties -- let's focus on counties
24 first. So, the number of counties out of the 46 counties in
25 the state, how many of them are split, meaning that they

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1 belong to more than one district, and then how many pieces are
2 they split into. And so, for instance, usually you'd expect,
3 if things are just split in two parts, that the pieces count
4 would be twice as much as the splits count. But, for
5 instance, you can see in the plan called NAACP 1, there are 19
6 splits with 39 pieces. That means one of those counties is
7 split among three districts. That's how to read that.

8 Q. What did you find, having examined all of these plans,
9 about how they adhere to county splits or non-splits?

10 A. Okay. Well, my goal is to understand, in particular, the
11 enacted plan. And so, what you can see here is that, when it
12 comes to county splits and when it comes to subdivision
13 splits, it does somewhat better than the benchmark plan, but
14 is definitely outperformed by a number of the other publicly
15 proposed plans on the table. For instance, you can see that
16 the Harpootlian Plan, which was proposed in an amendment in
17 the legislative process, outperforms the enacted plan by three
18 more intact counties and just really does much better on
19 county subdivisions.

20 Q. And what about the League of Women Voters Plan?

21 A. That one is even better. So, only six counties are
22 split. Although, here, it splits a lot of county
23 subdivisions.

24 Q. Okay. Is there anything else that you'd want to
25 highlight from this table?

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1 A. I think that's pretty good.

2 MS. ADEN: Okay. You can take that down Mr.
3 Najarian. Can you pull up PX-74, which is table 5 of your
4 April 11th report.

5 **BY MS. ADEN:**

6 Q. And here, you're examining how the plan respects
7 political subdivisions, particularly cities and towns?

8 A. That's right.

9 Q. Okay.

10 A. And here, you know, just trying to be very careful about
11 how I report this, let me explain what the slashes mean in
12 this table. So, municipal boundaries can often themselves be
13 really erratic and winding due to histories of municipal
14 annexation and so on. For many historical reasons, city
15 boundaries can be pretty erratic. And so, here, I look at how
16 many splits of cities there are, and then how many of those
17 actually separate the population of the city.

18 So, to be clear, like, you might imagine a city that has
19 a spur, a long skinny spur that doesn't actually have any
20 people living in it. If that got split off from the rest of
21 the city, you might or might not want to consider that, you
22 know, a kind of relevant city split. So, I've reported it
23 both ways. For instance, in the Harpootlian Plan, there are
24 nine cities that are split, but only seven of those splits
25 actually involve population.

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1 Q. What about how the enacted plan compares to other plans
2 in this table?

3 A. Well, I think the pattern holds up from before. And so
4 let's, for instance, compare it to Harpootlian, which
5 continues to be a strong plan here. It has fewer city splits,
6 even fewer that affect population. It has fewer city pieces,
7 accordingly. It has quite a bit fewer town splits. And so I
8 think, just as an example, it outperforms the enacted plan on
9 political boundaries.

10 Q. And how about the League of Women Voters Plan?

11 A. Also.

12 Q. Okay.

13 A. I think, you know, as we'll hear as we go through the
14 report, one of the reasons that the Harpootlian Plan comes up
15 a lot as a touchstone is that -- my understanding of the
16 timeline is that it was made by a legislator, Senator
17 Harpootlian, in full view of public testimony. And so, I
18 regard it to be doing a good job, not only on these
19 quantitative measures of TDPs, but also on the more intangible
20 community of interest principle as well. So, I will probably
21 come back to Harpootlian quite a few times as a model. It was
22 certainly available to the state legislature in their process.

23 Q. And just to be clear on your understanding of the
24 timeline, yesterday you talked about the public hearing
25 testimony that you looked at extensively. And did you

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1 understand that that testimony occurred prior to when the
2 legislature proposed maps?

3 A. Yes. Well, there were many different meetings. And I
4 don't have in mind the exact timeline of those meetings. But
5 I think the bulk of them -- maybe all -- had been concluded by
6 the time that these maps were being debated in the
7 legislature.

8 Q. But the Harpootlian map that you're referencing, your
9 understanding of the timeline is that it was a map proposed
10 during consideration of congressional maps in the legislative
11 process?

12 A. Yes, that's my understanding, and that it -- in the
13 discussion, which I did not, you know, hear, but my
14 understanding is that it was described to have been profoundly
15 impacted by the public testimony.

16 MS. ADEN: You can take that down Mr. Najarian. And
17 I want you to pull up page 13 of PX-67, which is Dr. Duchin's
18 April 11th report and focus on the bottom half of that page,
19 the Section 4.5.

20 **BY MS. ADEN:**

21 Q. Dr. Duchin, what are you examining in this portion of
22 your report?

23 A. This is the pairing of incumbent legislators,
24 representatives in this case.

25 Q. And what did you find?

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1 A. Well, many of the plans don't pair any incumbents. The
2 benchmark plan and enacted plan certainly don't. Harpootlian
3 does not. And then others have some pairings, such as the
4 League's plan, and the Robert's plan, which has three
5 districts pairing incumbents.

6 Q. Anything else that you want to note here?

7 A. No.

8 Q. Okay.

9 MS. ADEN: You can take that down.

10 **BY MS. ADEN:**

11 Q. Now we're going to turn to Section 5 of your report,
12 labeled "Detail District Review". So, Dr. Duchin, after
13 looking at various criteria, population deviation,
14 compactness, political boundaries, and incumbency, as applied
15 to various proposed congressional maps, what did you do next?

16 A. So, in Section 5, what I do is go district by district in
17 the area where the challenged districts are. And so, those
18 are 1, 2, and 5. But we'll hear about District 6 a lot in
19 this section as well because it has a lot of shared boundaries
20 with one, two, and five.

21 Q. And generally, what was considered in your assessment of
22 each of those districts in this section?

23 A. Well, I was trying to understand the changes and how they
24 did or didn't adhere to the traditional districting
25 principles. So, to compliment the metrics approach from the

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1 last section, this is a more, you know, look at where the
2 splits are, are they along major roads. This is a more
3 granular look at how the metrics, how the TDPs are adhered to
4 or not on the ground.

5 Q. And have you done assessments like this before in other
6 cases you've worked on?

7 A. Yes, I have.

8 MS. ADEN: Let's pull up PX-75, which is Figure 3,
9 found on page 15 of Dr. Duchin's April 11th.

10 **BY MS. ADEN:**

11 Q. Before diving into each of the specific districts that
12 you looked at, what did you generally find about the movement
13 of terrain between Districts 1, 2, and 5, and 6, between the
14 2012 benchmark and the 2022 enacted plan?

15 A. Right. So, this figure does attempt to summarize that.
16 And so, here, the question is: We're going for -- as we hear
17 in the State's accounting -- a least-change map, one that
18 resembles greatly the previous map. And the State has told us
19 that an attempt is being made to have greater adherence to the
20 traditional districting principles, to heal some of the issues
21 that may have been present in the last maps or that were
22 created over time. So, for instance, to heal split counties
23 is one possible, by making them whole in the new map, to heal
24 cities is one possible. And so, what this picture is showing
25 us -- here, what I've done is I've color-coded terrain that

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1 was moved from one district assignment to another. And so,
2 yellow was in CD 6, is now in CD 2; blue was moved to a 6 to
3 1; and purple was moved into 6 from the neighbors. First
4 thing I'd like you to notice is just that some of this moved
5 terrain -- first of all, it's scattered in many components
6 around the state. It's not just in one area that terrain was
7 reassigned, but it's the result of many discreet individual
8 local decisions that happen all over this area of the state.

9 And the second thing is -- and I've shown this by
10 highlighting some of the cities -- some of the split cities
11 are not made whole, are not healed in the language I appealed
12 to a moment ago, by the change from benchmark to enacted.

13 Q. You earlier testified about where certain growth in the
14 state had taken place. Does that overlap at all with where
15 you're seeing the movement in this map here?

16 A. Well, definitely. We're seeing movement in some of these
17 coastal areas in and around Charleston. We see different
18 colors showing up there in different chunks. Also, in
19 Richland County around Columbia, we're seeing a number of
20 different components of reassigned terrain around there. So,
21 yes, I would say it is happening in some of those areas of
22 increased Black voting age concentration.

23 Q. Is there anything else you want to say about this figure
24 before we move to the next?

25 A. No. I think the --

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1 JUDGE GERGEL: Can I ask a question, Dr. Duchin, to
2 get my orientation here? The purple area has been moved from
3 CD 1 to CD 6; is that correct?

4 THE WITNESS: Either from six -- let's see. So,
5 there's purple around Charleston, and so that was moved into 6
6 from 1.

7 JUDGE GERGEL: Okay.

8 THE WITNESS: But if you look closely, there's also
9 some purple near Columbia. And so, that comes from a
10 different district.

11 JUDGE GERGEL: I'm just asking about this. So, do we
12 know what areas of town -- if we could get to Charleston,
13 please. I'm just trying to figure out is the area, the
14 northern part, is that North Charleston? Is that where that
15 is? Do you know enough about the geography of what we're
16 looking at here?

17 THE WITNESS: I do, especially if we compare to
18 Figure 5, which I can do while keeping this up on screen. So,
19 yeah, that's exactly right. This helps us compare the purple
20 area. So, if we could zoom back in.

21 So, let me get this right. So, the purple has a kind
22 of long component, and then two to the north. And those are
23 going to intersect North Charleston. So, in particular --

24 I don't know if this is possible, Mr. Najarian, but
25 if you could highlight the top piece of purple. Not -- not

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1 that one but a little bit below. Right here. Yep. Yeah.
2 So, this is getting into the North Charleston area. That's
3 right.

4 And I'll note that what's happening here is that,
5 particularly, you can see this in the choropleth, which is
6 that orange figure in Figure 5, it's particularly heavily
7 Black neighborhoods that are being impacted here. According
8 to 2020 census data, Charleston County has 75,000 Black
9 adults, 60,000 of those are being assigned into District 6 in
10 the new enacted plan.

11 JUDGE GERGEL: Slow down. So, 70,000 African
12 Americans in Charleston County.

13 THE WITNESS: 75,000.

14 JUDGE GERGEL: 75,000. And --

15 THE WITNESS: Of which about 60,000 are being placed
16 in District 6 in this plan. So, that's --

17 JUDGE GERGEL: So, the 2022 plan?

18 THE WITNESS: That's right. The brand new enacted
19 plan puts about 80 percent of the Black adults in this county
20 into District 6.

21 JUDGE GERGEL: I'm sorry. What percentage?

22 THE WITNESS: About 80 percent. Over 79 percent.

23 JUDGE GERGEL: Okay. And do we know the difference
24 between the 2022 plan and the 2012 plan in terms of the
25 percentage of African Americans in Charleston County, CD 6?

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1 THE WITNESS: I don't know that number for the
2 benchmark plan, but that could easily be checked. What we see
3 here is that it is some of these Black neighborhoods of North
4 Charleston that are being impacted by this shift.

5 JUDGE GERGEL: And it looks like it's point
6 contiguity there; is that correct?

7 THE WITNESS: Well, you shouldn't interpret that from
8 this picture because this is just showing the replanned
9 territory. So, no, there isn't point contiguity in all the
10 plans you find on contiguity.

11 JUDGE GERGEL: Thank you. Okay. Thank you.

12 MS. ADEN: So, I want to take both of those figures
13 down for a moment and ask that PX-76, which is Figure 4 on
14 page 16 of Dr. Duchin's report be displayed.

15 **BY MS. ADEN:**

16 Q. Before focusing on this section of your report, what
17 counties are split in CD 1?

18 A. Okay. So, first, let me say which counties are wholly
19 contained. So, all of Berkeley and Beaufort Counties are
20 contained in CD 1 in the enacted plan, and pieces of Jasper,
21 Colleton, Charleston, and Dorchester.

22 Q. In this section of your report, what are a few of the
23 most significant findings about CD 1?

24 A. Well, what I've done here in the figure that's on screen
25 is I've itemized four issues that I find relative to adherence

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1 to TDPs and I've shown you where they occur. And so, A is
2 showing a split in Jasper County. And this is actually a new
3 split. Jasper County used to be the whole in the benchmark
4 plan and is now split with just two precincts in one district
5 and the rest of the county in another.

6 B is showing a split in Dorchester County. And that one
7 I found to be particularly striking. There are six split
8 precincts in Dorchester. So, it's not just that the county is
9 split, but six of the VTDs are split. And when you actually
10 go and look, how are those VTDs split, the pattern is quite
11 clear that they're split into a part with higher Black
12 population and a part that's mostly White, and the part of the
13 precinct with the higher Black population is exactly the part
14 that ends up in CD 6. So, those splits are really racially
15 distinctive.

16 In C, I'm just highlighting, generally, the coastal and
17 Lowcountry areas that came up so often in the
18 community-of-interest testimony. And I feel those are not
19 very well attended to in the formation of this district,
20 whereas by contrast, I mentioned a moment ago, the Harpootlian
21 Plan seems to have taken that much more into account, keeping
22 three of the four counties that I identified as Lowcountry in
23 my map, together in a district.

24 D, finally, is those splits to Charleston County that we
25 were discussing a moment ago, where both Charleston and North

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1 Charleston are split in fairly erratic ways that cut through
2 Black neighborhoods.

3 Q. Are any parts of Dorchester in CD 6? Forgive me if you
4 mentioned that but --

5 A. Yes, I did mention that. That's where I mentioned that
6 there are six precinct splits, and those are racially
7 disparate -- split into racially disparate pieces.

8 Q. Are different parts of Dorchester in different districts?

9 A. That's right. So, Dorchester is split. And as I said
10 about those split precincts, it's the Blacker parts of those
11 precincts, the parts with higher residential concentration of
12 Black residents, that end up in CD 6, and the Whiter parts
13 that end up here in CD 1.

14 Q. Okay. Is there anything else that you want to say about
15 this figure?

16 JUDGE GERGEL: I'm going to ask a question. You
17 mentioned that the city of Charleston was split erratically.
18 Is there anything that gave you that number of 79 percent of
19 African Americans in CD 6 in the county? How about in the
20 city? Have you run that number?

21 THE WITNESS: I don't have that in front of me, but
22 I'd be happy to look that up later.

23 JUDGE GERGEL: Okay. And you said -- is North
24 Charleston split?

25 THE WITNESS: It is. And you can see that --

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1 actually if we go back to Figure 5.

2 MS. ADEN: So, back to PX-77, which is Figure 5 on
3 page 17.

4 JUDGE GERGEL: Yeah.

5 THE WITNESS: I think this is intended to illustrate
6 that. Let me narrate how this does so.

7 In red you're seeing the municipal boundaries. So,
8 that's both Charleston and North Charleston that are shown
9 here, and those are the city boundaries. Now, if the district
10 design followed those municipal boundaries, the Black line,
11 that's the district line, would stick with the red line. You
12 can see that it does that for a little while, but it deviates
13 quite a bit. It cuts right through both Charleston and North
14 Charleston and it does so especially -- you know, the area
15 covered by the label, "Charleston," is heavily Black, and you
16 can see that the city line and the district line both kind of
17 play independently around the areas of these two cities.

18 JUDGE GERGEL: Is the North Charleston split, in your
19 view, a racial split?

20 THE WITNESS: Well, let's see if we can read that off
21 of this figure. I wouldn't say that the North Charleston
22 split in particular is cutting through Black neighborhoods as
23 much as the Charleston split is.

24 JUDGE GERGEL: The Charleston split. Okay. Thank
25 you.

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BY MS. ADEN:

Q. Looking at this figure, did you find anything about the cities of Summerville and Ladson that's worth noting?

A. Yes. So, here I think that what's interesting is Summerville and Ladson themselves, the cities, belong to two different counties, while North Charleston actually belongs to three different counties. And so, as I mentioned earlier, that highlights some of the trade-offs that you face when you are drawing district lines. You can choose to follow county boundaries, you can choose to follow city boundaries. And, here, the mapmakers have chosen neither.

Q. Did North Charleston's treatment in the enacted map in these figures that you've just shown square with the public testimony that you reviewed?

A. No. I found quite a large quantity of public testimony, specifically talking about neighborhoods in both Charleston and North Charleston that had been split, appealing for those splits to be healed, and that's not what happened in the move from the benchmark to the enacted plan.

MS. ADEN: We can take this figure down.

BY MS. ADEN:

Q. Dr. Duchin, is what you observed in your detailed review of CD 1 consistent with the cracking of Black communities in CD 1?

A. Yes, it is.

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1 Q. I want to turn to your detailed review of CD 2.

2 MS. ADEN: And if Mr. Najarian can pull up PX-78,
3 which is Figure 6, that can be found on page 18 of Dr.
4 Duchin's April 11th report.

5 **BY MS. ADEN:**

6 Q. Before we focus in on this congressional district, can
7 you describe the counties that are included in CD 2 in the
8 enacted map?

9 A. Yes. CD 2 contains all of Aiken, Barnwell, and Lexington
10 Counties and parts of Orangeburg and Richland.

11 Q. And what did you find in your review of CD 2 that is
12 notable?

13 A. Well, here I focused on just three items: A is the
14 Orangeburg split, in particular with the City of Orangeburg
15 separated from CD 2, which contains much of the rest of the
16 county. B is this hook feature, this kind of distinctive hook
17 feature, around and into Columbia. And C is the way that that
18 hook splits the city and splits neighborhoods in Columbia.

19 Q. Did you find anything about the racial impact of that
20 hook that you mentioned?

21 A. Well, the first thing that I would say about the hook is
22 that it's a clear example of non-compactness. It's neither
23 functionally compact, nor is it geometrically compact. And
24 so, you might think, yes, it was present in the benchmark plan
25 and has been a feature in South Carolina redistricting for

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1 some time, but you might think that would be a candidate for
2 healing. If the move to a new plan is an opportunity to heal
3 certain features, this might be one that would be under
4 consideration. But, instead, it cracks Black voters along the
5 district boundaries. And I think you can see that here by the
6 choropleth shading showing you high Black concentrations right
7 around the area of that hook.

8 Q. Is there anything else about this figure you want to
9 note?

10 A. Well, just as to -- you know, I keep talking about the
11 opportunities for healing. And so, I think what I want to say
12 about that, kind of in the big picture, is that all of
13 redistricting involves choices. That's going to be a common
14 refrain in my testimony. But, what I see here is patterns of
15 selective healing. So, for instance, Beaufort and Berkeley
16 Counties used to be split and are healed in the new map. I
17 think we heard that Beaufort, in particular, was healed at the
18 request of a representative, Representative Mace. But
19 Orangeburg, which is one of the very small number of majority
20 Black counties in the state, is not chosen for healing. And
21 in particular, Orangeburg, as we see here, is neatly separated
22 from its ring suburbs (*phonetic*) in the redistricting plan.
23 And so that's, you know, just an indication of the priorities
24 present for the line drawers when they thought about what to
25 fix from the old plan in the formation of the new one.

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1 MS. ADEN: You can take that down. And if we can
2 pull up PX-79, which is Figure 7 found on page 19 of Dr.
3 Duchin's report.

4 Q. What are you trying to show in this figure?

5 A. This is akin to the last one. So, red is the Columbia
6 municipal boundary, and black is the district line. And those
7 sure don't look well aligned to me. So, you see that the
8 district line is kind of maintaining that hook feature that I
9 spoke about a moment ago, but not in a way that seems to be
10 particularly cognizant of either the City or of the public
11 testimony.

12 Q. Did you find anything about the cities of Cayce, Columbia
13 and Forest Acres in looking at this area of the state?

14 A. Yes. What I found is that not only is Columbia split,
15 but so are those smaller cities. And I took a look at how
16 those cities are split, trying to understand if the split
17 happens along major roads or along features of natural
18 geography, and it does not.

19 Q. And did you find anything in the public comment about how
20 Columbia communities, including Forest Acres, wanted to be
21 treated in the congressional plan?

22 A. Yes. Actually, in this part of the report, I pulled an
23 example from the public testimony, and that's a commenter
24 named William Maxey (*phonetic*), whose testimony went like
25 this, in part: He said, "Do people in downtown Columbia not

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1 have that much in common with people from Forest Acres or
2 people right across the river? No, they do. That's where a
3 lot of people live, and a lot of those people work." So,
4 that's explicitly saying that communities are separated from
5 each other which form part of a whole for the people on the
6 ground.

7 Q. Okay. Dr. Duchin, is what you observed in your detailed
8 review of CD 2 consistent with the cracking of Black
9 communities in CD 2?

10 A. Yes. I would say this is what it looks like to crack
11 communities.

12 Q. Okay. Anything else before I take this figure down?

13 A. No. That's good.

14 Q. Okay. We can move to your detailed review of CD 5. And
15 if Mr. Najarian can pull up PX-80, which is Figure 8 on page
16 20 of your April 11th report.

17 And you can describe, before we dive in, what are the
18 counties, whole and part, included in CD 5?

19 A. Yes. The 5th District has all of Cherokee, York, Union,
20 Chester, Lancaster, Fairfield, Kershaw, and Lee Counties, and
21 part of Spartanburg County and Sumter County.

22 Q. What did you find with respect to your detailed review of
23 CD 5?

24 A. Well, here, just to be very concise, I focused on Sumter.
25 Sumter was a locust of a significant amount of public

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1 testimony, describing the communities of interest there. But
2 you can see here -- it's outlined in red again in this
3 figure -- that the Sumter COI is not respected. Again, here,
4 as I did before, I tried to take a closer look and understand
5 how that split was happening and noticed, again, it's not
6 along major roads or features of natural geography, but along
7 low-density roads. And I named some of them in the report.

8 Q. Okay. Let's turn to PX-81, which is Figure 9 that can be
9 found on page 21 of your report. What are you trying to show
10 here?

11 A. Well, here, we have, again, the Sumter boundary in red,
12 that's the municipal boundary, and then the, to me, quite race
13 conscious district line that cuts through Sumter in black.

14 Q. And between the first figure related to CD 5 in this one,
15 is it fair to say that both the county and the city of Sumter
16 are split?

17 A. Yes, that's what's happening here. And Sumter, once
18 again, is a majority Black, and one of the few localities in
19 South Carolina that is.

20 Q. And your report references East Sumter and Mulberry.
21 What did you find with respect to those areas?

22 A. Looking for that. Ah, yes. So, East Sumter and Mulberry
23 are neighborhoods mentioned in the public testimony and are
24 split in the enacted map.

25 Q. Is there anything else you want to note about this figure

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1 before we take it down?

2 A. No. I think that covers that well.

3 Q. Dr. Duchin, is what you observed in your detailed review
4 of CD 5 consistent with the cracking of Black communities in
5 CD 5?

6 A. Yes, it is.

7 Q. Did you reach any overall findings after conducting this
8 district-by-district review, beyond what you've already shared
9 with the Court?

10 A. Well, it's intended to be complementary to the metrics
11 and to paint a more complete and granular picture, as I said.
12 And what I found is that the numbers, and a kind of more
13 detailed look at the particulars, support each other in a
14 picture that's consistent with the strategy of cracking.

15 Q. Now, before we turn to Section 6 of your report, I'd like
16 to discuss another proposed congressional map that you've
17 mentioned. Yesterday, you testified that you reviewed the
18 Jessamine or map; is that right?

19 A. That's right.

20 Q. What is that map, as you understand it?

21 A. So, my understanding is that that's a congressional plan
22 that was drawn by staff at the NRRT, the National Republican
23 Redistricting Trust, and was provided to legislators in South
24 Carolina as a draft or potential congressional plan.

25 Q. Now, your analysis of the Jessamine map is in your

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1 supplemental August report; is that accurate?

2 A. Yes. It's one of the main reasons for issuing a
3 supplemental report. I had just been provided with that map
4 and I wanted to complete the record by giving all the same
5 quantitative evaluations of the Jessamine Plan, as I had for
6 the others.

7 Q. And to be clear, the maps that you posted in your
8 original report on pages three through four, where did you
9 find those maps?

10 A. The other 11 maps were provided by the State on their
11 redistricting website.

12 Q. And the map -- and your review of the Jessamine map, that
13 was not a map that you pulled from the State's website; is
14 that fair to say?

15 A. That's correct. It was provided to me by counsel.

16 Q. And what analysis did you conduct of the Jessamine map?

17 A. So, the intention is to give all the same numbers as I
18 had for the other maps. And so, in that August report -- this
19 is done --

20 Q. So, this is PX-126 that I think you're going to?

21 A. Yes.

22 Q. And it is Figure 2 on page 5 of your August 9th, 2022,
23 supplemental report?

24 A. That's right. So, Section 3 of that report is assessing
25 the Jessamine Plan.

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1 Q. And what analysis did you conduct of it?

2 A. In order to agree with the record of the other maps, I
3 give a visual of the Jessamine Plan, I give the racial
4 demographics, I look at the BVAP across the districts. I give
5 the population deviation, the compactness scores, the splits,
6 and discuss incumbent pairing. Again, just bringing it into
7 parity with the treatment of the other plans.

8 Q. Looking at PX-126 -- if you could pull it up Mr.
9 Najarian, on page 5 of the August 9th, 2022, supplemental
10 report -- you show three maps together. Why?

11 A. This is just to give visual comparison of the benchmark
12 enacted in Jessamine Plan. It lets us see that, you know, to
13 the eye, they may look fairly similar, especially the enacted
14 plan may look like the Jessamine Plan. And that's because
15 most of the difference is in the interface between Districts 1
16 and 6, that's the purple and the blue districts. To the eye,
17 most of the rest of the districts look identical, though there
18 are small changes elsewhere in the map as well.

19 Q. And what were the differences that you observed visually?

20 A. Well, I think the most apparent one, as we compare these
21 maps visually, is what I called in the report a novel T-shape
22 in the Jessamine Plan, and that's happening at the interface
23 of Charleston, Berkeley, and Dorchester Counties.

24 Q. Outside of that novel T-shape, would you consider this
25 map more similar or more different than to the enacted map?

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1 A. I would say it resembles the enacted map more than it
2 resembles the benchmark. And then what I try to do throughout
3 the rest of this report is get a little bit below district
4 appearances and try to compare the performance.

5 Q. So, you can take that visual down. And on pages 5
6 through 6, I believe you report some of the metrics that you
7 just identified as having reviewed. Can you describe some of
8 your findings with respect to the Jessamine map in terms of
9 those metrics?

10 A. Yes. So, like the enacted plan, it keeps District 6 a
11 little bit below 50 percent in BVAP. But the number is a bit
12 higher. It's 49.3 percent in District 6 in the Jessamine
13 Plan, which then drops off steeply to 25.4 percent in the next
14 highest district. So, we see a significant drop in the Black
15 voting age population from the one district, which will
16 perform, to all of the others.

17 When it comes to population deviation, they've achieved
18 de minimis top to bottom one-person deviation. So, that's the
19 ideal. For compactness, it's fairly similar to the enacted
20 plan and not as good, for instance, as Harpootlian. In the
21 Reock metric, it's also similar to the enacted plan, but
22 behind others, such as the League's plan, it's Block-cut Edges
23 score is fairly poor, worse than both the benchmark and the
24 enacted plan and many of the other public contenders.

25 In county splits, it's again, fairly similar to the

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1 enacted plan, splitting 13 counties two ways has a relatively
2 high number of county subdivision splits and is, again,
3 similar in city splits and town splits. None of those numbers
4 change whether we look at territory splits or population
5 splits. So, overall, you know, these are a lot of numbers to
6 have in mind, but the summary is that it's generally a little
7 bit worse than the enacted plan on political subdivisions and
8 definitely worse than many of the public proposals. And then
9 I'll note that, like the enacted plan, it pairs no incumbents,
10 as you might expect.

11 Q. We are going to return to your discussion of what you
12 found about the electoral outcomes provided by the Jessamine
13 map or not in another section, but before we wrap up this one,
14 can you determine one way or the other from your analysis of
15 the Jessamine map whether the legislature relied on this map
16 when it drew it's enacting map?

17 MR. GORE: Objection. It's beyond the scope of the
18 expertise. It's not in any of the reports.

19 JUDGE GERGEL: Well, let's hear what she's got to say
20 about her basis for it, first of all. It maybe reasonably
21 inferrible or it may not. So, let me just hear a little bit
22 more before I'll rule on that.

23 Please proceed.

24 THE WITNESS: Well, I think it's not a stretch to say
25 I make no claims to understand any details of the process, but

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1 it's my experience in redistricting broadly, that when you've
2 reviewed a plan, it at least impacts your thinking about the
3 choices in the trade-offs going forward. I wouldn't say
4 anything stronger than that.

5 MS. ADEN: Perfect.

6 JUDGE GERGEL: So, she cannot testify that anybody
7 relied on the Jessamine Plan; is that correct?

8 MS. ADEN: That's correct.

9 JUDGE GERGEL: I overrule the objection because I
10 don't think she actually answered it in any way that went
11 beyond what she already reported. Thank you.

12 Please proceed.

13 **BY MS. ADEN:**

14 Q. And just based upon your experience -- has it been your
15 experience that when you look at one map and you look at
16 another map, you are informed by having looked at both? Is
17 that simply what you are saying?

18 A. Yes. That's all I meant to say. And that's very general
19 matter. Just the more maps you closely review, the more they
20 inform future decisions.

21 JUDGE GERGEL: Just for clarification, is there a
22 dispute about whether anybody relied on or viewed the
23 Jessamine map?

24 MS. ADEN: Yes, there is, your Honor.

25 JUDGE GERGEL: I thought so. So, you know, let's

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1 just proceed. Whether it's relevant or not will be later
2 determined.

3 MS. ADEN: Okay.

4 **BY MS. ADEN:**

5 Q. I'd like to turn back to your initial report, and to
6 turn, in particular, to Section 6 of your report, which is
7 titled, "Vote Dilution Compared to the Neutral Baseline."

8 THE COURT: Ms. Aden, we are going to take a morning
9 break. Is this a good time to break?

10 MS. ADEN: Yes.

11 JUDGE GERGEL: I see movement. Let's take about a
12 10-minute break.

13 MS. ADEN: Thank you, your Honor.

14 **(Recess)**

15 JUDGE GERGEL: I am advised that Senate Exhibit 222
16 may not have been orally mentioned but was intended to be in
17 the record. Is there an objection to the admission of Senate
18 222?

19 MR. FREEDMAN: Your Honor, I don't believe so, but if
20 we can check and report back on the next break.

21 JUDGE GERGEL: Okay. Just remind me.

22 Does anybody know from the Senate whether that was
23 one intended?

24 Mr. Gore, you got any idea about that?

25 MR. GORE: I do believe it was one that was intended

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1 to be included in the record, but we can work with counsel on
2 that.

3 JUDGE GERGEL: Y'all stay on top of this. I just
4 don't want to forget it. I'm just trying to keep the record
5 clean. So, if plaintiffs could just check and advise me at
6 the appropriate time whether it's in, whether there's an
7 objection, then I'll rule on it's admissibility.

8 Okay. Please proceed, Ms. Aden.

9 MS. ADEN: Okay.

10 **BY MS. ADEN:**

11 Q. Dr. Duchin, before we took a break we were turning to
12 Section 6 of your report titled, "Vote Dilution Compared to
13 the Neutral Baseline." Dr. Duchin, did you consider whether
14 the 2022 enacted plan dilutes Black voting strength as
15 compared to some neutral baseline?

16 A. Yes. So, that's exactly what I'm trying to do here. And
17 this is where I introduced for the first time in the report
18 the evidence from those ensembles of alternative maps. That's
19 how I've constructed a so-called neutral baseline.

20 Q. And what do you mean, before we delve into the details of
21 that method as applied here, what do you mean by vote
22 dilution?

23 A. So, here, the question that I'm addressing first is a
24 vote dilution from a demographic angle. As I said, I always
25 try to look at the demographics and the electoral history

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1 together. So, we'll do that one at a time. First, we'll look
2 at how the Black voting age population is distributed. That's
3 what's happening in this section. And then in the next
4 section, I'll turn to electoral history.

5 So, what I mean here by vote dilution is: Was the Black
6 voting age population in South Carolina spread across multiple
7 districts when it would have been expected under neutral
8 conditions to be concentrated enough to have more electoral
9 impact?

10 Q. Why do this analysis?

11 A. This is one primary way to try to measure whether
12 cracking has occurred, is to look at whether the patterns of
13 how BVAP shows up in the districts are characteristic of plans
14 that are made to follow the rules, or whether the demographic
15 patterns are highly unusual -- or you might say outliers.

16 Q. Tell the Court a little bit more about what you mean by a
17 neutral baseline.

18 A. Sure. I think for years this has been really a deep and
19 primary issue when thinking about how courts might handle
20 claims of gerrymandering. For years and years, for decades,
21 the question has been posed: Dilution compared to what? So,
22 what is fundamental to understand is that the rules
23 themselves, system of single-member districts or population
24 balance rules and so on, together with the geography of the
25 state, they might create a condition where just blind mapping

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1 would put a group at a significant disadvantage. So, the
2 intention here is to give an appropriate -- again, the term
3 "baseline" comes up, that is, to look at many alternative ways
4 of districting and see what are the central tendencies, what's
5 typical, what might we expect if we were just following the
6 rules?

7 Q. Now, yesterday when you talked about ensembles, you
8 talked about operationalizing rules. What does operationalize
9 mean?

10 A. Sure. That's a term that's used a lot in data science
11 and computer science. The idea -- to make something
12 operational is to take something that's vague or conceptual
13 and make it concrete, or even quantitative, so that you can
14 use and measure it.

15 Q. And how did you construct your neutral baseline in this
16 section of your report?

17 A. Okay. So, what I do here is I build several different
18 variations on ensembles -- that just means collections -- of a
19 hundred-thousand alternative plans. And I do that in many
20 ways. One is statewide, so, cutting the whole state into
21 seven districts. Later, I'll just look at the districts that
22 are identified in the complaint and take 1, 2, and 5, and 6,
23 because it's in the middle, and just look at ensembles that
24 reconfigure those four. All of the different ensemble
25 variants will have population balance threshold at one percent

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1 -- and I'll come back to that choice in a moment. All of them
2 will enforce contiguity for the districts and don't allow
3 point contiguity in any of the ensembles. And all of them
4 will promote compactness by putting a higher weight,
5 probabilistically, on districts that are more compact.

6 Again, I'd really like to talk about this in terms of
7 best practices and data science, which involves a lot of
8 checks of robustness. So, what I mean by that is you don't
9 just want to do something one way and say, there, I took all
10 the rules into account. Really a kind of comprehensive
11 modeling effort will take the rules, approach them different
12 ways, dial their priority up and down, turn the filter on and
13 off, and look to see how the results change under these
14 different kinds of variations. If the results are very
15 stable, then we call that a robust finding.

16 And so, let me come back, because I think it might come
17 up a few times, and talk in particular about how I handle
18 population deviation. So, as we've heard, as we know, at the
19 end of the day, we'd like our congressional district to be
20 balanced to one-person, top-to-bottom deviation. But I don't
21 build the ensembles that way. And the reason is that the
22 method that I described earlier would be inefficient if
23 restricted at the outset to that really tight deviation.
24 Instead, I build the ensembles out of whole precincts so no
25 VTDs are split at all in my ensemble. So, there's very high

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1 priority, you might say, on integrity of precincts. So, I
2 build these variations using whole precincts, but then I check
3 that the findings are robust. So, one way that I do that is I
4 take one-percent deviation and I do another run at two-percent
5 deviation, and another one at half-a-percent deviation, and I
6 see the tightening or loosening of that population deviation.
7 Did that have an impact on the findings that I'm making? No,
8 it did not here, as in most states that I've ever studied.
9 The next thing I do is check: Can I actually take plans from
10 these ensembles and tune them down to that one-person
11 tolerance? And I find that it's easy.

12 And so, I may have mentioned this yesterday, this is a
13 standard check that I do, is to confirm that they're tuneable.
14 So I both use hand tuning, where a person, me, sits and takes
15 a map from the ensemble and tunes it to the one-person
16 standard. And I have created programs that automatically tune
17 population to one-person standard. And I find that we can
18 consistently tune these ensemble plans within five minutes by
19 hand, or five seconds by computer, without breaking any of the
20 gross properties that I'm describing in the report.

21 Okay. So, that's an example of this kind of bigger
22 picture of responsible modeling, which has to do with trying
23 things many ways and checking whether the results are
24 sensitive. It's kind of a sensitivity analysis, checking
25 whether the results are sensitive to some of those operational

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1 decisions.

2 Q. So, to be clear, is it your testimony that these
3 ensembles can satisfy South Carolina's preference of
4 one-person deviation for each district?

5 A. Yes. I satisfied myself that all these plans are easily
6 tuneable to one-person balance.

7 Q. With respect to the rules in geography that you
8 operationalized in these ensembles, did you consider
9 communities of interest?

10 A. I did. That was one of the toggles that I turned on and
11 off. And so, I'll just mention -- this is already addressed
12 yesterday, was kind of presaged yesterday -- the communities
13 of interest at play here were not identified by the State, at
14 least in any form that I saw, that is, the State never
15 compiled all that public testimony into a list of COIs to be
16 used in the process. And so, what I did as we heard before,
17 was to make one not necessarily authoritative, but good-faith
18 effort to take areas that were covered by a great deal of
19 community testimony, treat them as discrete concrete COIs and
20 add a filter that prioritizes keeping them whole. And then I
21 check to see whether that changes the findings that the
22 State's plan is demographically unusual, and it does not.

23 Q. And are the communities of interest that you considered
24 in these ensembles those that you report at Figure 13 of your
25 April 11th report, PX-86?

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1 A. That's correct.

2 Q. I think that's on page 30.

3 A. That's right, page 30. And so, that's Richland, Sumter,
4 Berkeley, and Charleston Counties, together with the
5 Lowcountry area, covered by four counties in the southern tip
6 of the state.

7 Q. And given what you described about how you tuned things
8 on and off, is it also the case that you considered ensembles
9 without these communities of interests considered?

10 A. Exactly. And so, the research question there was: Does
11 this version of COI priority have an impact on the findings?
12 To see that you turn it on, you turn it off and see whether
13 the outlier status shifts.

14 And I guess one more that we haven't mentioned is
15 counties. So, I have a way of getting the algorithms to keep
16 counties whole. Maybe I'll just say one sentence, without
17 belaboring it, about how to do that. So, what the algorithm
18 does is fuse neighboring districts and then build something
19 called a "spanning tree" that is sort of a skeleton for the
20 double district. And that has a property -- very useful --
21 which is that when you cut it, it gives just two pieces. And
22 so, that's the process, you fuse, you find a skeleton, you cut
23 the skeleton, and that gives you two new districts.

24 When I try to prioritize counties and municipalities, the
25 way I do that is by putting weights on the edges of the

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1 skeleton that makes it more likely to be contained entirely
2 within counties. And the effect is really quite strong. The
3 number of split counties drops until it's comparable with the
4 publicly submitted plans and sometimes even better, using this
5 filter on the ensemble process.

6 Q. And what standard of compactness did you use with these
7 ensembles?

8 A. So, I just mentioned a mathematical device called
9 "spanning trees." And so, what this does is it promotes
10 districts that have a lot of interconnection in their census
11 geography but are more sparsely connected between the
12 districts. So, I've published multiple papers about this
13 method and I've shown in those papers that it produces
14 districts that look compact to the eye and that perform well
15 on the traditional scores, like Polsby-Popper and Reock.

16 Q. And when you were talking about preservation of political
17 boundaries just before I asked you about compactness, were you
18 talking about how your ensembles account for counties and
19 municipalities?

20 A. That's right. And that's done by promoting trees that
21 stay within counties and county subdivisions.

22 Q. Did your ensembles consider race data?

23 A. No. Nothing in the generation of the alternative plan
24 uses race data in any way.

25 Q. Why not?

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1 A. Because I'm testing hypotheses about racial statistics.
2 And so, the method here is to build what some have called
3 "race blind plans" and to see if the plans are made with no
4 attention to race, what would we expect to see just as a
5 natural consequence of the human geography of South Carolina?

6 Q. Did the ensembles consider any other rules in geography,
7 like preservation of cores?

8 A. No, I did not build the ensembles to prioritize core
9 preservation. I did address core preservation in the reports,
10 but in different ways. This is probably a good opportunity to
11 say: It's just not the case that the ensembles are like a
12 giant cannon that you point at all the problems of
13 redistricting, simultaneously. It's a device that allows you
14 to measure the consequences of the rules. And it's quite well
15 used, it's quite effective when layering those rules in a few
16 at a time. And so, I didn't choose to use core preservation
17 in that way, but I do, of course, discuss it in the reports in
18 other ways.

19 Q. Did the ensembles consider partisan performance?

20 A. Building the plans was done also in a party-blind way.
21 But I used the ensembles to make conclusions about whether the
22 plans are unusual in partisan ways as well as racial ways.

23 Q. And did the ensembles consider incumbency?

24 A. No. Building the ensembles was not done in a way that
25 was sensitive to locations of the incumbents, because the

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1 algorithm was not provided with incumbent addresses.

2 Q. Is not applying core preservation, partisan performance,
3 and incumbency what you would consider a weakness of these
4 neutral ensembles that you developed?

5 A. No. On the contrary. Some properties are built into the
6 alternative plans, and others are measured over the
7 alternative plans. And party, race, and incumbency are
8 measured over the alternative plans, not built into their
9 creation.

10 Q. Is it fair to say that the rules that you apply to these
11 ensembles reflect the rules that you reviewed when you looked
12 at the House and the Senate criteria?

13 A. That's right. So, the ensembles are built to take some
14 of the rules that are either highly listed in the guidelines
15 provided by the State, or are otherwise fundamental, in my
16 experience, in redistricting, generally.

17 Q. Dr. Duchin, is it important to look at all of the
18 individual plans within an ensemble that you developed?

19 A. No. That's not how the ensemble method works. And it's
20 key to emphasize, you should not think of these ensembles as a
21 hundred-thousand plans, each ready to be adopted. That's not
22 what they're for. They're for understanding the central
23 tendencies created by the framework. And so, what I have done
24 is reviewed statistics over the ensembles, reviewed summaries
25 of metrics, reviewed properties, and in some cases, picked out

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1 individual plans to understand how they function. But the
2 idea is not to review the plans one by one.

3 Q. Is an ensemble -- would you consider it a way of
4 displaying a bell curve?

5 A. Well, if you take a statistic, as we'll see as I go
6 through my figures, and you measure that statistic over the
7 ensemble, one way to understand that is to plot a histogram.
8 And for almost every statistic of interest in redistricting,
9 that's going to fall on a bell-shaped curve.

10 Q. Okay. How does this particular ensemble analysis,
11 comparing plans to a neutral baseline, fit into the larger
12 scope of your report?

13 A. Well, it's just one pillar. I think it's a strong
14 pillar. I think it gives us quite persuasive evidence, as I
15 hope we'll see shortly. But, as we've been hearing for the
16 last few hours, there's quite a bit more to the analysis,
17 besides just this.

18 Q. Okay.

19 MS. ADEN: Mr. Najarian, if you could please pull up
20 PX-82, which is Figure 10, found on page 23 of Dr. Duchin's
21 April 11th report.

22 **BY MS. ADEN:**

23 Q. Can you describe to us what you were showing here?

24 A. Absolutely. So, this is one of these histograms -- and
25 you can see that it's somewhat bell-shaped, as we tend to

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1 expect in this kind of study. So, what we're looking at here
2 is the gray bars are those hundred-thousand neutrally
3 generated plans. And we're looking at the BVAP, or Black
4 voting age population, in the second highest district. Only
5 emphasize why the second highest. That's because in all of
6 the plans that we're comparing, that were made by people, CD 6
7 has the highest BVAP, or Black voting age population, of all
8 the districts. CD 6 is also not named in the complaint. And
9 so, setting aside CD 6, this starts to look at how Black
10 population is distributed over the other districts. This is
11 looking at the district that's second highest,
12 parenthetically, after CD 6.

13 Q. Is how the second highest district fares, in your view,
14 relevant to a cracking analysis?

15 A. Absolutely. This helps us understand how the population
16 has been spread across the district. Later, in my
17 supplemental report, I put this in context of all the
18 districts in the state. And I think we'll probably see that
19 soon. But this is the beginning of that inquiry, to look at
20 -- as we saw before when looking at the numbers, there's
21 nothing to really steep drop-off in Black population from
22 District 6 to the next district. And this is taking a look at
23 how that population falls.

24 And maybe I'll say another word or two about what we're
25 seeing on the screen. So, the tallest bars in the histogram

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1 are happening about 30 percent. And that's telling you that
2 the most frequent level of Black voting age population in my
3 alternative plans is about 30 percent. So, that's just where
4 people live, in combination with the rules, would tend to make
5 a second district that's about 30 percent Black. Instead, the
6 enacted plan has just 25 percent, 25.4, as you see in the
7 keys. And that's the yellow line. Note that that is in the
8 bottom visible bar of the histogram, and that means very few
9 of the plans in my neutral ensemble have reduced the BVAP in
10 the other districts, besides CD 6, as low as the enacted plan.

11 Actually, one quick thing I'll mention. Focusing on the
12 second highest district means not only is this district at
13 25 percent, but all others in the enacted plan are at 25 or
14 lower. This is the second highest. By contrast, the
15 Harpootlian is at about 33, 33.7. NAACP 1 is at 34.9. And
16 you can see that those are both somewhat higher than the bulk
17 of the ensemble, although they're not as outlying on the high
18 side as the State's enacted plan is on the low side.

19 Q. Now, does the South Carolina NAACP and the Harpootlian
20 Plan maintain CD 6 with BVAP levels above those of the State's
21 Plan?

22 A. Yes. And let me get those numbers so I can be exactly
23 accurate. So, whereas in the highest district, CD 6, the
24 State's Plan has about 47-percent BVAP; Harpootlian is a
25 little higher, 49.7; and the NAACP Plan is over 50 percent.

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1 So, this is now fairly striking. Even in the second highest
2 district, they have a high Black voting age population, though
3 in the highest district, it's more than it was for the State.
4 Again, this fits with the observation from earlier. Since the
5 State has reduced the Black voting age population in CD 6,
6 there are more residents to go around in the other districts.
7 You might expect to see them here, you do not.

8 Q. And, here, meaning the enacted plan?

9 A. Here, meaning the second highest.

10 Q. The second highest, okay. You mentioned the plans that
11 fell to the left of the enacted plan. How many are you
12 describing in this figure?

13 A. Well, so the gray histogram is a hundred-thousand plans.
14 I don't have the number that's in that lowest bar, but
15 eyeballing it, that would be less than one percent that are as
16 depressed in their Black adult population, as we see in the
17 State's Plan.

18 Q. Is there anything else you want to say about this figure
19 before we move forward?

20 A. Well, I think probably next, we'll look at the rest of
21 the districts.

22 MS. ADEN: Yes. You can take this figure down.

23 BY MS. ADEN:

24 Q. Just before we get to that figure, how does that figure
25 that we just looked at relate to the qualitative, the

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1 Section 5 district-by-district review that you described
2 earlier of CDs 1, 2, and 5?

3 A. Sure. I think you should think of this as corroborating.
4 It fits exactly with what we saw before. If communities are
5 being cracked, if split precincts are being divided racially
6 with more Black population going into CD 6, that's exactly how
7 you'd go about suppressing the Black population level in the
8 next district and below.

9 Q. So, did you have occasion to the provide further
10 statewide context for the distribution of Black voting age
11 population that you presented in that Figure 10 that we just
12 looked at?

13 A. I did. I revisited this in the August 9th supplemental
14 report.

15 Q. Okay.

16 MS. ADEN: If we could pull up PX-121, which is
17 Figure 1, on page 2, of the August 9th report.

18 **BY MS. ADEN:**

19 Q. Dr. Duchin, what is this showing?

20 A. Okay. So, instead of a histogram, which shows bars with
21 heights that tell you how often something happens, this is a
22 different kind of plot. It's called a "box and whiskers"
23 plot. And, here, I've broken down the state by districts.
24 So, there are seven columns here, just like the seven
25 districts in any of these plans. And then, the way I've

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1 organized the figure is, once again, as we did a moment ago,
2 we take the district with the highest BVAP, and then the
3 second highest and then the third highest, and those end up in
4 the different columns here. Let me emphasize that it's
5 important to do something like that, because the alternative
6 plans that are generated by the algorithm, they don't have
7 district labels on them. So, it doesn't make sense to ask
8 about CD 1 in a computer plan. You can ask about the district
9 with the most Black population and the district with the next
10 most Black population. And so, that's how this figure is
11 organized.

12 Q. Okay.

13 A. So, the last column, the column marked seven, that shows
14 us what we see in the district with the most Black population.
15 Here's how to read a box-and-whiskers plot. The box goes from
16 the 25th percentile to the 75th percentile of the observation.
17 I've set it up so that the whiskers go from the first
18 percentile to the 99th. And so, that means that 98 percent of
19 the plans fall within the whiskers, right? So, it's
20 98 percent of my hundred-thousand alternative plan. And so,
21 what we see is that actually all four plans that are shown
22 here with colored dots -- benchmark, that's red; enacted,
23 that's pink; NAACP 1 is amber color; and Harpootlian in
24 lavender -- those all have more Black populations than we
25 would have tended to find just drawing according to the rule

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1 that I cited before, more than 99 percent of the neutrally
2 created plans.

3 Moving to the next column, column six, that is the second
4 highest BVAP. So, this is the exact same data that we saw in
5 the last figure. Now it's shown in a box-and-whiskers plot
6 instead of a bell curve, but it's the exact same information.
7 And so, we see the same thing we did before. We see that
8 Harpootlian and NAACP 1 are fairly high but within the
9 whiskers, whereas the benchmark and the enacted plan are both
10 even below that bottom whisker, and that means more extreme
11 than 99 percent of the neutral plans.

12 Q. And you keep referring to "whiskers and boxes." Can you
13 just be even more descriptive about what exactly you're
14 looking at?

15 A. Sure. Absolutely. So, you see how in the column,
16 there's a bracket and there's a long line that extends from
17 the top T down to a bottom T-shape. That's what I'm calling
18 the whiskers. The whiskers are those most extreme markers
19 there. The box is the rectangle. And you'll see a stripe in
20 the box. That's where I've marked the median. That's the
21 50th percentile. So, this picture is designed to make it
22 pretty easy to eyeball the statistical position of the plans
23 relative to the alternatives.

24 Q. Is there anything -- strike that.

25 Is there anything else that you want the Court to take

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1 away from looking at Figure 1?

2 A. Yes. Actually, there is. So, most of these plans are
3 population balance almost exactly on the same population
4 basis. The exception is the benchmark plan, which, of course;
5 being 10 years old, was balanced on a different population
6 basis. But that means that for the other three, there's a
7 fixed sum. There's a certain number of Black adults in the
8 state. And the only question is: To which district are they
9 assigned? And so, when we look at the colored dots, if
10 they're higher than the ensemble in some districts, they've
11 got to be lower in others, because it all adds up to the same
12 toll. So, I think this really helps us understand the pattern
13 that's characteristic of cracking.

14 Q. What would cracking look like?

15 A. It would say: If you're going to distribute the Black
16 voting age population, that you might put it in districts
17 where it isn't going to have an appreciable impact on
18 opportunity. And so, let's take a look at the pink dots which
19 show you the enacted plan, which is the primary plan we're
20 discussing here today. What you can see is that the pink dots
21 are high in the 7th indexed district, that's the district with
22 the most Black population, and the first indexed district,
23 that's the district with the least Black population. Across
24 all the others, 2, 3, 4, 5, 6, the pink dot falls low, and
25 often even very low, such as hitting the whiskers in the

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1 districts marked 6 and 5 and maybe 3. And that is exactly
2 what cracking looks like. It looks like dispersing population
3 so that, in the range where it could have provided
4 opportunity, it's spread out inefficiently, and that
5 opportunity is not secured.

6 MS. ADEN: You can take that figure down.

7 **BY MS. ADEN:**

8 Q. I want to focus you now on page 23 to 24, back at your
9 April 11th report, PX-67.

10 Did you attempt to redraw the enacted map to address the
11 cracking of Black voters in CDs 1, 2, and 5?

12 A. I did. And we can see this in Figure 11.

13 MS. ADEN: Do you mind pulling up Figure 11, which is
14 PX-83, that is found specifically on page 24 of the April 11th
15 report.

16 THE WITNESS: So, this shows two different things.
17 First, the histogram. Let me explain. I mentioned a moment
18 ago that one of the many variations that I attempted was not
19 to scramble all seven districts in the state, but just those
20 discussed in the complaint, 1, 2, and 5, as well as 6, because
21 it's in between. And so, first what you're seeing in this
22 histogram -- and this, I should note, has considerable
23 deference to the State's Plan. It keeps Districts 3, 4, and 7
24 identical to how they are in the State's Plan. So, total core
25 preservation for Districts 3, 4, and 7. And, here, I'm only

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1 scrambling 1, 2, 5, and 6. And so, the first thing to notice
2 is that in this regional ensemble, the finding is the same,
3 that the enacted plan falls very low, compared to the neutral
4 alternatives. What I've done here is I've picked one plan out
5 of the ensemble. The point here is only to illustrate just
6 how easily the State's Plan could have secured more electoral
7 opportunity. So, what you see here -- take a look at those
8 two maps.

9 MS. ADEN: Do you mind zooming in on the two maps,
10 Mr. Najarian?

11 THE WITNESS: So, enacted on the left, alternative on
12 the right. And what you'll see is that Districts 1 and 6 are
13 virtually identical. The only significant change here is the
14 single boundary line between District 2 and District 5 has
15 been randomly moved. And what we find is that this -- so, the
16 coloration is according to Black voting age population. This
17 produces a significantly higher demographic concentration of
18 Black adults in District 5. And this is much more typical --
19 and here again, we can go back, zoom out to the histogram, you
20 see the green line -- this is much more typical of a neutral
21 plan, as you'd expect, since I redrew it at random. What does
22 this tell us? This tells us that moving a single line would
23 make the State's Plan look much less like a demographic
24 outlier. Later, when we fold in electoral results, we'll see
25 that this redrawing, alone, would have provided significantly

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1 more meaningful electoral opportunity for Black voters.

2 **BY MS. ADEN:**

3 Q. Is this a section of the report where you would say you
4 were aware of core retention?

5 A. I think this speaks to core retention, not only because
6 I've only redrawn part of the state while keeping the other
7 three districts intact, but because I only moved a single
8 boundary line. I measured the core retention of this
9 alternative plan and found it to be over 92 percent in
10 agreement with the State's Plan. And that means, even if you
11 took the extremely high bar of agreeing more than 90 percent
12 with the State's map, this passes that test. So, with very
13 high core retention and a minimal redrawing, we're able to get
14 a much more demographically typical and much more electorally
15 promising map for Black voters.

16 Q. And I just will direct you to Footnote 8 on page 23 of
17 that PX-67.

18 A. Yes.

19 Q. And is that where you provided some information about the
20 electoral performance of the redrawn alternative district?

21 A. That's right. That's because I feel strongly -- and I
22 hope this comes up over and over again. BVAP does not tell
23 the whole story. You need to know more about voting patterns,
24 turnout matters, crossover matters. And so, just because
25 District 5 has more Black population, would not automatically

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1 more effective. However, what I discuss in that footnote is
2 that I looked at the four elections, identified for me as most
3 probative for Black voters' preferences, and what I found is
4 that those four Black candidates of choice in all four cases
5 get at least 47 and a half percent of the vote in this new
6 District 5. That is to say these Black candidates of choice
7 would all have competitive outcomes in this newly drawn
8 district.

9 And, again, this isn't a plan that's been microscopically
10 evaluated for its adherence to particular communities and
11 other standards, this is closing your eyes and redrawing one
12 line illustrates just how easy it is to get more opportunity.
13 This is far from unique. There are many many thousands of
14 similar re-drawings.

15 Q. I now want to turn to Section 7 of your report. This is
16 on page 25. It is titled: Electoral Opportunity For Black
17 Voters. Dr. Duchin, did you consider electoral opportunity
18 for Black voters under various congressional plans?

19 A. I did.

20 Q. Now, you closed out the last section by talking about
21 BVAP not being the only measure, and that other information is
22 necessary. Is that what you are attempting to explore in this
23 section of your report?

24 A. Well, that's exactly right. So, I've been emphasizing
25 this, I'll continue to do so. Demographics only tell part of

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1 the story when it comes to the prospect for effective
2 representation. So, very standard technique in the analysis
3 of redistricting plans is to look at past elections and see
4 what would have happened if you reran those past elections in
5 new districts. So, that's what I do here. It's common
6 technique in the literature. This is sometimes called
7 "reconstituted election analysis." But it's really very
8 simple. I have the election results precinct by precinct
9 around the state. I can look at a new district and I can see
10 who got more votes, the candidate of choice of Black voters or
11 their opponent.

12 Q. And in this section, how are you defining electoral
13 opportunity?

14 A. Okay. So, I mentioned a moment ago that there are four
15 particular elections that were identified for me by counsel as
16 especially probative, or giving especially strong evidence of
17 the preferences of Black voters. And so, these were not
18 selected by me, they were selected, as I understand it, from
19 the analysis of another expert, who performed a racial
20 polarization analysis. But I would like to emphasize this is
21 the kind of analysis I often perform elsewhere. Here, we have
22 four races. And we can bring up Table 6 maybe to show what
23 those --

24 MS. ADEN: Table 6 is on page 25 of PX-67. The one
25 above that, please. Thank you.

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1 THE WITNESS: So, these are four contests that,
2 again, were identified as especially informative. And I want
3 to say, while I did not select them, this exactly follows the
4 criteria that are common in the literature. These are four
5 recent elections. They were reasonably competitive. These
6 were not landslide contests. And all four of these have a
7 Black candidate on the ballot. In the case of President 2020,
8 it's Kamala Harris as vice president, but all four do have a
9 Black candidate. And it's been repeatedly found by courts
10 that elections where the Black candidate of choice -- where
11 there's a Black candidate who is an alternative for Black
12 voters, those may be especially informative. So, I find this
13 selection to be entirely reasonable.

14 **BY MS. ADEN:**

15 Q. And to be clear, a source -- to be clear, these are also
16 elections that exhibited what you understood to be racially
17 polarized voting, differing preferences between Black and
18 non-Black voters in those elections?

19 A. In South Carolina, I did not perform a racial
20 polarization analysis, but I think that no one in this
21 litigation contests the high levels of polarizations that are
22 found in general election contests.

23 Q. Okay. I'd like to focus on PX-84, which is Table 7, just
24 below that, on page 25 of the April 11th report. And I'll ask
25 you to explain to us what you were showing us here?

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1 A. Okay. Great. So, here, what I've done is I've asked:
2 How many of those four candidates -- so again, Whittenburg,
3 Glenn, Harrison and the Biden-Harris ticket. How many of
4 those would have won the district? And so, you can see in
5 virtually in all the maps, District 6 has won all four times.
6 Later, we'll look at the margins and we'll see that it's not
7 usually very close. The question of cracking is: How is
8 opportunity distributed across the rest of the map? And here,
9 you can see that if we only pay attention to whether the
10 candidate had the most votes, there is never a win in either
11 the benchmark or the enacted plan outside of District 6 across
12 these four elections. So, all the opportunity to win is
13 happening in District 6. By contrast, in many of the other
14 alternatives, we see other districts being potentially won by
15 the candidate of choice. For instance, in the Harpootlian
16 map, it's not a lot, but two out of four times, the candidate
17 of choice wins in District 1. In the Foster Plan, District 6
18 is somewhat less effective, but we see four out of four in
19 Districts 1 and 7. So, the plans differ in how they
20 distribute electoral opportunity around.

21 Later, we'll nuance this by not only looking at who won,
22 but also whether it was close. But for this, which is our
23 first look at effectiveness, we can see that there's only one
24 other plan among all the public submissions that confines
25 winning opportunity completely to District 6.

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1 Q. And how does the League of Women Voters map fare in this
2 table?

3 A. Same as the Harpootlian map. It provides two out of four
4 wins in District 1.

5 Q. Okay. And when you're defining wins here, can you tell
6 us how you're doing so?

7 A. Sure. This is just plurality wins. So, it looks at
8 whether the Black candidate of choice got more votes than
9 their major party opponents in the case of these elections,
10 therefore, more votes than anyone else.

11 Q. Anything else you want to describe about this table?

12 A. No.

13 Q. Okay. Dr. Duchin, did you have occasion to provide
14 detailed vote shares for the Black voters' candidates of
15 choice for the probative elections you considered in
16 Section 76 your April 11th report?

17 A. I did. I revisited this in the supplemental report and I
18 gave vote shares, and not just wins or losses.

19 Q. And why did you do that?

20 A. Because the question facing us is one of opportunity.
21 It's not about drawing districts that are guaranteed to
22 perform in a particular way, but ones that could be won by a
23 strong candidate running a strong campaign and appealing to
24 all kinds of voters.

25 Q. In your academic work, or other work in redistricting,

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1 has that been referred to as having to pull, haul, and trade
2 for a vote?

3 A. That's right. That's a frequent phrase that you'll hear.
4 I believe it comes from a Supreme Court decision. And the
5 idea is that, again, the goal isn't to draw districts that are
6 absolutely locked down, the goal is to draw districts where
7 the minority group in question could form coalitions with
8 other voters in order to secure opportunity. And sometimes we
9 refer to that as the need to pull, haul, and trade.

10 MS. ADEN: I would like Mr. Najarian to pull up
11 PX-122 and PX-123, which are Tables 1 and 2. And this can be
12 found on page 3 of the August 9th supplemental report and put
13 them side by side.

14 Are you about to pull them up in black and white
15 first?

16 BY MR. ADEN:

17 Q. Dr. Duchin, what are you showing here?

18 A. Okay. So, these are the numbers that show how those
19 Black candidates of choice fared. And what you're seeing here
20 is two of the contests. So, on the left, this is President
21 2020, in other words, this is the Biden-Harris ticket as the
22 candidate of choice. And on the right, you're seeing the U.S.
23 Senate election the same year. This is Harrison as the
24 candidate of choice. And you're seeing how that candidate
25 fared in their major party vote share district by district

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1 across all the plans.

2 MS. ADEN: Okay. And then can you put up the PX-122
3 and the 123 side by side now?

4 **BY MS. ADEN:**

5 Q. So, what is this showing you with colors on these charts
6 now?

7 A. Okay. Great. So, I chose this coloring because walls of
8 numbers are never anyone's favorite way to learn information.
9 And so, the coloring is intended just to make it easier to see
10 patterns and to navigate these figures. But it's all the same
11 numbers that we had before.

12 So, let me explain the coloring. The gray shading is
13 50 percent and beyond. In other words, these are the ones in
14 which Biden-Harris or Harrison would have won the district.
15 That's shown in gray. The next zone is shown in pink. That's
16 47.5 to 50 percent. In other words, those pink boxes show a
17 race where the margin was less than five points. So, I would
18 call that quite a close outcome in the pink. That's what's
19 marked in pink. And then a little bit looser is the standard
20 shown in amber. So, that's where you have at least
21 46 percent, in other words, a margin of eight points or less
22 between the candidates. That's a little bit farther from a
23 victory, but it shows that maybe there is some potential to,
24 as we said a moment ago, pull, haul and trade.

25 So, I hope that that really helps illuminate the patterns

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1 that we see here. Here's what I see when I look at these
2 tables. I see that because of the shifts in population that
3 happened over the last 10 years, the benchmark plan -- and
4 first, you'll notice as you scan down the CD 6 column, that CD
5 6 really is quite electorally effective. For these Black
6 candidates of choice, they're winning quite comfortably in CD
7 6. And that's true, despite the fact that in the enacted
8 plan, that we keep hearing, we've dropped below that
9 50-percent line. It's still quite effective, as we see here.

10 But what I notice when I look at these tables is that in
11 the benchmark, CD 1 has drifted into a pull-haul-and-trade
12 zone, that is, there's some potential opportunity for these
13 Black candidates of choice that has developed in CD 1 over the
14 period from the last census. All of the other publicly
15 submitted plans retain at least some level of competitiveness
16 in CD 1, except Jessamine, which was prepared by the NRRT, and
17 the State's enacted plan, which cut that opportunity back in
18 CD 1. And they do so without creating any opportunity else in
19 the state.

20 Q. Outside of CD 6?

21 A. That's right. Any new opportunity elsewhere in the
22 state.

23 Q. And outside of CD 1, do you see any other -- what do you
24 see? Outside of CDs 1 and 6, what do you see?

25 A. Absolutely. I think one of the striking things is the

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1 Harpootlian Plan. So, take a look at that, and you'll see the
2 Harpootlian Plan has wins for these candidates of choice in
3 Districts 1 and 6, but it also has some promise, some
4 potential, for these candidates of choice in an entirely new
5 location, namely CD 5. And this comports, if we think about
6 it, with that alternative plan that I made with a single
7 redrawn line before. CD 5 is an area where it's certainly
8 possible to create an effective set of conditions.

9 Q. Do you want to say anything else about this before we
10 take it down?

11 A. I think this is good for now.

12 MS. ADEN: Okay. If you can take it down, Mr.
13 Najarian. And if you could pull up PX-124 and 125 -- thank
14 you -- in black and white.

15 **BY MS. ADEN:**

16 Q. What are you showing us here?

17 A. These are the other two probative contests. So, this is
18 the Secretary of State race, featuring Whittenburg on the
19 left; and the Treasurer's race, featuring Glenn on the right,
20 both from the year 2018.

21 MS. ADEN: And if you could take this down and pull
22 up the color versions.

23 **BY MS. ADEN:**

24 Q. What do you see?

25 A. Well, these races had a little bit less success for

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1 Whittenburg and Glenn than for Harrison and Biden-Harris, and
2 you can see that in the colors. Nonetheless, the pattern is
3 the same, which is the benchmark plan, the enacted plan, and
4 the Jessamine Plan really confined electoral opportunity to
5 one district, CD 6, while virtually all of the other publicly
6 submitted plans find opportunity elsewhere in the state. Once
7 again, we see Harpootlian as notable in that CD 1, CD 5, and
8 CD 6, all show some potential for building coalitions to
9 support the Black candidate of choice.

10 Q. Do you want to say anything else about this figure before
11 we take it down?

12 A. I think that's good for now.

13 Q. Okay. Dr. Duchin, on pages 8 through 11 of your
14 supplemental report, PX-120, did you provide additional vote
15 shares for nine other elections?

16 A. I did. Just in the interest of having as complete as
17 possible of a record, my full set of elections available to me
18 that was provided, as we mentioned earlier, included not only
19 those four probative elections, but nine others, which were
20 general elections with a major party Democratic and Republican
21 candidate. And so, for me it was interesting to compare the
22 four elections that were most informative about Black voters'
23 preferences to these others, which I sometimes call "generic
24 partisan contests," not especially tied to Black voters'
25 preferences. And so, I do provide the tables for these. And

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1 I think it's interesting to look at them and see the general
2 patterns are the same, but the removal of opportunity from CD
3 1 is much less consistent in the generic races than it was in
4 the ones that are most informative for Black preferences.
5 We'll see that reflected a few different ways in my report.

6 Q. Before we get to that, I want to just ask you generally:
7 Is it fair to say, from your review of the information that
8 you have prepared for your reports, that the range of BVAP,
9 Black voting age population, and the seven congressional
10 districts, particularly CD 1, can range and still be effective
11 for Black voters?

12 A. Yes. That's actually quite remarkable. We see that
13 across the maps that were proposed as part of the public
14 process, we see that the CD 1 BVAP, if we think all the way
15 back to -- I think that was yesterday.

16 Q. How about we show you something?

17 A. Sure.

18 MS. ADEN: Mr. Najarian, can you pull up PX-90, which
19 is the first chart in Table 1 -- oh. PX-67. The first chart
20 in Table 1 on page 9. Okay. So, that top one. And can you
21 display it beside PX-122, which is Table 1 on page 3 of
22 PX-120.

23 THE WITNESS: Great. So, while that is getting cued
24 up, I'll say, this is really how I like to think about plans
25 and the opportunity they provide, is to look at the

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1 demographics side by side with electoral outcomes to get a
2 complete picture. So, something that I think is really
3 striking here is that across the variance for CD 1, we see
4 that the Black voting age population can dip quite low while
5 keeping that district in play for Black voters' preferences.
6 So, for instance, the Harpootlian Plan goes as low as
7 21.2-percent Black population in that district while still
8 keeping the district viable for building effective electoral
9 coalitions.

10 And so, to the question earlier of whether 50-percent
11 BVAP might be necessary in South Carolina, we see that's far
12 from true, that these districts can perform quite comfortably
13 for Black candidates of choice at significantly lower levels
14 of BVAP.

15 Q. And is that true among other plans like the League of
16 Women Voters Plan?

17 A. Absolutely. There you have 23 percent. Even the
18 Muscatel plan, which dips all the way down to 16.7 percent,
19 still provides some opportunity in CD 1. And so, we see that
20 not only through its strikingly low BVAP in CD 1 but through
21 exactly which voters are brought together in combinations of
22 which others, the enacted plan has really carefully arranged
23 its lines, and the outcome at the end of the day is one of an
24 absence of electoral opportunity outside of CD 6.

25 Q. Based upon analyses like these -- do you have a view --

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1 based upon analyses that you have done like these, do you
2 think that voting patterns on the basis of race can be
3 relevant to determining if Black communities are cracked?

4 A. Yes, I do. I think that when we try to understand
5 cracking, as is relevant for electoral opportunity, it has
6 several faces. One of them is the splitting and disruption of
7 coherent communities, and then another one downstream from
8 that, but very important, is the opportunity for effective
9 representation.

10 Q. And are any of the data sources that you have identified
11 to date any data sources that were unavailable to the State,
12 as far as you're aware?

13 A. Oh, no. On the contrary. This kind of information is
14 widely available, and these kinds of analyses are routinely
15 performed.

16 Q. And you performed these analyses having reviewed the
17 House criteria and the Senate criteria; is that correct?

18 A. That is correct.

19 Q. And to see whether the plans that were proposed by the
20 legislative body and the public complied with the criteria?

21 A. That's right. And if we think back to those criteria,
22 they instructed us that plans which dilute opportunity for
23 minority voters shall not be considered. And I think it's
24 hard to take anything else away from these tables, but to see
25 that the Jessamine Plan but also the enacted plan is really

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1 unusual among the opportunities available to the legislature
2 in its strict confinement of opportunity to just CD 6.

3 Q. What do you think about an argument that Black electoral
4 opportunity is dependent on White also for voting in districts
5 like CD 1?

6 A. I see no contribution between that observation and the
7 rest of the discussion that we've been having, namely,
8 electoral opportunity, in my understanding, has always been
9 seen to contemplate possibilities of coalitional support. We
10 don't assume, when we do a racially polarized voting analysis,
11 100-percent cohesion of these or those voters. We understand
12 that different groups of voters try to fill strong candidates
13 and try to persuade other groups to support them. And many of
14 the plans that were available to the State provide just such
15 coalition opportunities.

16 Q. I'd like to focus you on pages 26 to 27 on your April
17 11th report, Dr. Duchin. Did you perform any other analysis
18 of Black electoral opportunities, particularly involving
19 whether party affiliation explained electoral opportunity?

20 A. I did. And actually, I found this set of results to be
21 really quite striking and informative.

22 MS. ADEN: So, let's ask Mr. Najarian to please pull
23 up PX-85, which is Figure 12 on page 26 of Dr. Duchin's
24 April 11th report.

25 **BY MS. ADEN:**

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1 Q. And I'd like you, if you can keep it broad, to just tell
2 us what we're seeing here?

3 A. Absolutely. So, this is my attempt to do something
4 that's often called for but is really very difficult in
5 general, which is to disentangle race and party in a reality
6 in which they're highly conjoined. And so, this is an attempt
7 to do that, that I think is quite illuminating.

8 Here's what we see: I've separated the four contests
9 most probative for Black voters' preferences from the other
10 nine, the sort of generic party ID races, and I've asked the
11 question: Is the State's Plan unusual in it's performance of
12 the candidates who are especially important to Black voters?
13 And how does that compare to just a generic Democrat? And
14 this is in order to help us understand whether partisan
15 motivation might explain all the properties that we've been
16 observing. So, it's to help us address the counterfactual,
17 maybe the racial properties of these plans just flow from
18 partisan advantage being sought by the line drawers. That's
19 not what we see. So, if you look on the top and on the
20 bottom, on top we have the seven districts times four
21 contests. That's why it's of the total of 28. And if you
22 recall, the benchmark and the enacted plan only have four wins
23 for candidates of choice. And that's why those lines are in
24 the column marked four.

25 So, is that unusual? Yes. If you look at the

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1 hundred-thousand alternative plans, it's quite rare to have
2 only four wins for the candidate of choice. I think in the
3 caption I say this puts it in the 12th percentile of all the
4 alternatives that could have been available. So, it's really
5 unusually poor at providing opportunity in these probative
6 contests.

7 Then we can look at the contests more broadly. So, we
8 can look at these other Democratic races shown on the bottom
9 and we ask the same question: Is the performance of the
10 enacted plan unusually poor for other Democrats? And we see
11 it's no longer unusual. Now we have eight wins out of 63.
12 But if you look at the histogram, you'll see that there are
13 quite a lot of neutral plans that do even worse. Now the
14 State's Plan, instead of the 12th percentile, is actually in
15 47th; in other words, totally unremarkable. So, whereas the
16 State's Plan is unusually extreme in denying opportunity for
17 these strongly preferred Black candidates of choice, it is
18 unremarkable in a generic party ID race.

19 Q. Do you mind taking one map and sort of showing us how it
20 compares in the top table from the bottom table, just to bring
21 it down even one level of specificity?

22 A. Sure. Let's look at the enacted plan, since that's the
23 primary focus here today. And so, that's kind of a green
24 color. And that has --

25 Q. Do you want tell us like where you're looking?

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1 A. Absolutely. We've just successfully highlighted it. So,
2 in the key, you can see the enacted plan has four wins out of
3 28 -- oh, no. It's not that bar. It's down in bar four.

4 Q. The wider green to the left?

5 A. Yes. There you go. Exactly. Thanks. I can see this is
6 a useful demonstration. And so, what we're seeing is, yes, it
7 has fewer wins than the other maps, but also it's unusual
8 compared to these neutral alternatives, compared to my
9 hundred-thousand algorithmically generated maps. It's in one
10 of the very lowest bars that is visible here. There are some
11 maps that have two or three wins, so it's possible to get even
12 less opportunity. But it's infrequent. Most of the bulk of
13 alternatives provide significantly more wins in these
14 probative contests.

15 Now, let's compare that to the bottom, where the enacted
16 plan is in bar eight. Perfect. And you can see now there's
17 almost as much bulk of the histogram to left than to the
18 right. It's almost equal. And that says this plan is right
19 in the middle of the road. It's unremarkable in generic party
20 ID contests. It's only when you single out those races with a
21 Black candidate on the ballot, those races that are most
22 informative for black preferences, that the extremeness of the
23 plan's design becomes apparent.

24 Q. And to put a fine point on this, your characterization of
25 certain elections as probative, where does that come from?

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1 A. Okay. Just to repeat, that was provided to me by
2 counsel, based on the work of a different expert. But having
3 done similar analyses myself, I agree with the principles that
4 identified those four races as especially probative.

5 Q. And having done racially polarized voting analyses in the
6 past, it's your understanding that, once again, elections
7 featuring Black candidates have been considered by Courts to
8 be especially probative of electoral choices of Black voters?

9 A. Absolutely. Those factors that make the elections
10 probative, recency, reasonable competitiveness, a Black
11 candidate on the ballot, all of those are widely recognized by
12 courts as making elections more informative.

13 Q. And what is --

14 A. And if I could, I'd add one more thing here. What I'm
15 plotting here is the number of times the Black candidate of
16 choice won outright. Now, of course, we could make similar
17 plots for the times the Black candidates of choice got close.
18 We could look at times they got within five points or tenth of
19 an eighth point, as we discussed before. I did not provide
20 those figures, but I can tell you that the outlying effect of
21 the State's Plan is not reduced but is actually increased when
22 you look at those close contests. So, that's another example
23 of doing a kind of robust look. I've only shown you this, but
24 behind the scenes, I tried this many different ways to make
25 sure this isn't cherry picked but is really a sound and robust

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1 finding of what's unusual in the State's Plan.

2 Q. And is there anything else notable about the League of
3 Women Voters Plan and how it fares in these different
4 histograms?

5 A. Well, it fares just like Harpootlian in both the top and
6 the bottom, which is to say providing two more wins for the
7 candidate of choice, six rather than four in the enacted plan,
8 and 10 rather than eight.

9 Q. And is there anything else you want to say about these
10 before we bring them down?

11 A. No. I think we've covered it pretty well.

12 Q. Okay. What do you think about an argument that all
13 Democrats lose in CD 1 whether Black or White?

14 A. Whether those Democrats are Black or White? Just want to
15 understand the question.

16 Q. What do you think, yes, about an argument that all voters
17 who are Democrats lose in CD 1 whether they are Black voters
18 or White voters?

19 A. Okay. Let's look at that both ways. First, let's look
20 at whether the candidates are Black or White and then also
21 look at whether the voters are Black or White. So, it's true
22 that CD 1, as it's configured in the State's Plan, does not
23 provide a win for the Democratic candidate across these
24 nonprobative elections as well, but -- I kind of alluded to
25 this before -- it does allow the White Democratic candidates

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1 to get closer. And so, for example, in the governor's race,
2 there's a 46.8 outcome. If we scan the tables, we'll see, as
3 I alluded to earlier, that the stark finding that the
4 candidate has been pushed below the zone where they have a
5 reasonable opportunity to have one, that's a much clearer
6 finding for these Black candidates than it is for White
7 Democrats. That's one thing.

8 But the second half of the question that you just posed
9 is: What about the voters? And so, as we saw, CD 1 often
10 performs fairly well, even with quite a low percentage of
11 Black voters. And so, you might ask: In the State's Plan,
12 aren't all Democrats disadvantaged -- the Black Democrats, the
13 White Democrats -- everyone's disadvantaged because it's been
14 drawn so the Republicans will prevail? What I would say to
15 that is that it's certainly true that anybody who votes for a
16 Democrat won't see their preferences converted to
17 representation. That is certainly true. But when we think
18 about how voting rights litigation operates, when we think
19 about a racial bloc voting analysis, that asks the question of
20 whether over time, Black voters in this case vote cohesively
21 as a bloc. The white voters who cast their votes for a
22 Democrat might turn out in one election and not another. They
23 might vote for a Democrat in one election and for a Republican
24 in another. That's not a stable identifier in the way that
25 being Black is a stable identifier. And so, I don't know of a

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1 kind of analysis that treats White Democrats as a voting bloc
2 in the same way that RPV traditionally treats racial and
3 ethnic groups. So, that's just to add some nuance to the
4 picture.

5 In the large, it's certainly true that anyone who votes
6 for a Democrat will have their wishes frustrated in the CD 1,
7 but that rises to the level of a kind of bloc-voting analysis
8 for Black voters in that district.

9 Q. You have been qualified in this case and in other cases
10 to do the analyses that you have conducted. Do you think that
11 any of the analyses that you have done are unique to your
12 skill set?

13 A. Well, I do think that I'm one of the leaders in
14 developing ensemble methods. I wouldn't say unique to my
15 skill set, but I would say that's an area where I've been at
16 the forefront of developing techniques. So, I hope there's
17 some significant added value in other areas, but I would note
18 ensemble analysis as a particular specialty.

19 Q. But the district-by-district review you did of whether
20 the criteria were met or not met, do you think that other
21 people with training could do that type of analysis?

22 A. Oh, absolutely. I think that the ability to look at the
23 lines, to understand how they fall, which precincts are split,
24 whether there's a distinctive difference between the census
25 blocks on one side of a split or another, whether major roads

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1 are followed, these kinds of analyses are available to a very
2 large number of practitioners.

3 Q. And does that hold true for looking at electoral
4 opportunity as well?

5 A. Absolutely.

6 Q. Do you have any other overall conclusions about electoral
7 opportunity that you want to offer to the Court, or have you
8 covered them?

9 A. Well, I think we've covered them quite well. Maybe I
10 would summarize.

11 Q. Okay.

12 A. The State's Plans severely limits electoral opportunity
13 to one district, and not only the human-drawn alternatives
14 that were available but even, you know, tens of thousands of
15 automatically generated plans all easily provide more
16 opportunity. There were not one, not two, but just a vast
17 number of ways to be less dilutive.

18 Q. Dr. Duchin, are you familiar with Sean Trende?

19 A. We've never met, but I've certainly read a number of his
20 reports.

21 Q. Did you have occasion to review his report in this case?

22 A. I did.

23 Q. Okay. And did you provide a response to some of his
24 findings in a report that you provided on May 4th, 2022, at
25 PX-87?

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1 A. Yes, that's right.

2 Q. Okay. You have testified about core retention during
3 yesterday and today. What do you understand to be Mr.
4 Trende's opinion about core retention in this case?

5 A. My finding from reviewing his report -- or my reading of
6 his report, I should say, is that he treated core retention as
7 a top echelon districting priority for the state.

8 Q. And please remind the Court where you found --

9 MR. GORE: Your Honor, I would just object at this
10 point. Mr. Trende has not yet testified in this matter. We
11 are bringing him live to testify. This all sounds like
12 rebuttal testimony. And the witness is drawing conclusions
13 about what Mr. Trende may or may not have intended in his
14 report, which is I understand is in evidence, but he hasn't
15 come to testify yet.

16 JUDGE GERGEL: Is the report in evidence?

17 MS. ADEN: The report is in evidence.

18 JUDGE GERGEL: Overruled.

19 **BY MS. ADEN:**

20 Q. Can you remind the Court, please, about where you found
21 core retention in each of the Senate and House guidelines?

22 A. Yes. Core retention is discussed -- I feel that it's
23 treated together with incumbency in both sets of guidelines,
24 but that is made explicit in -- I'm sorry. I think it's on
25 the Senate side.

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1 Q. So, the House guidelines are at PX-175, and Senate's are
2 at PX-716?

3 A. Yes. So, in the Senate guidelines, it's explicit in
4 3(b), constituent consistency, that cores and incumbents are
5 to be considered. Again, though, it's listed as additional
6 considerations. And cores are not even explicitly discussed
7 at all on the House side. But you could read them in as being
8 related to incumbency consideration, in which case it is
9 literally the last listed of the criteria in the guidelines.

10 Q. So, what do you think about Mr. Trende's opinion about
11 core retention?

12 A. He may well be right that it was very important to the
13 legislators, but I would just say that that's not reflected in
14 their published guidelines.

15 Q. And let's look at PX-83 very briefly one more time, which
16 is Figure 11 on page 24 of your April 11th report. Did you
17 find that cores of districts can be preserved in maps you
18 considered and/or developed?

19 A. Absolutely. This alternative plan shown here is just one
20 of a vast number of options that would have had greater than
21 90-percent core match with the enacted plan, while providing
22 more meaningful opportunity in districts other than CD 6. I
23 guess I would even amplify that to say, once again, this
24 alternative only changes the line between 2 and 5. We've
25 heard a great deal today about 1 and 6. This alternative

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1 leaves those exactly as they are in the State's Plan and
2 manages to find more opportunity in District 5 with a very
3 high core-retention score. What that enabled me to conclude
4 is that priority for retaining cores does not require us to
5 confine electoral opportunity to CD 6.

6 Q. Are you familiar with Mr. Trende's view that the State's
7 Plan places a high priority on repairing split counties and
8 precincts?

9 A. Yes.

10 Q. And what do you think of his opinion?

11 A. Well, I note in my response report that I find the
12 counting of precinct splits to be quite misleading. Let me
13 find where this is in my report.

14 Q. So, I can direct you to PX-83, page 3.

15 A. Thank you. Oh, there we are. Thanks.

16 So, Trende's report writes that the number of split
17 precincts in the benchmark was 65, but in the enacted plan,
18 it's just 13. And that sounds very good. That sounds like,
19 if you take those numbers at face value, there used to be
20 disrespect for precinct boundaries, and that has been
21 redressed in the enacted plan, which is now much more
22 respectful of precinct boundaries than the old one was. The
23 problem is that those numbers rely on non-contemporaneous
24 boundaries.

25 So, what he's done here is he's counted how many 2020

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1 VTDs were split in 2012. But without a crystal ball and the
2 ability to see into the future, it would have been hard for
3 legislators in 2012 to respect future boundaries. If,
4 instead, you compare the 2012 plan to the VTDs at the time,
5 the numbers are not comparable. And if do you that, if you
6 compare it to 2010 VTDs, the benchmark only splits 13. So now
7 the number of split precincts is 13 before and it's still 13
8 today. This shouldn't be regarded, in my view, as a case of
9 healing splits.

10 Q. What about with respect to counties and cities?

11 A. Let me find those numbers.

12 Q. And just generally.

13 A. Okay. My recollection -- and I can probably find that if
14 I look through here -- is that other than -- I believe the
15 Trende report doesn't mention city splits at all, in any way
16 and in any capacity, and that's probably why I can't find it
17 on the page today.

18 Q. Let me ask you this question. And I'll return to that in
19 a second. Would you agree that Mr. Trende's view is that the
20 State's Plan places a high priority on repairing split
21 counties and precincts?

22 A. Yes. The concept of healing splits is definitely
23 present.

24 Q. And you talked about your disagreement with his view of
25 VTDs. What do you think about his opinion with respect to how

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1 the enacted plan responds to split counties and
2 municipalities?

3 A. Well, again, I don't think that he discusses split cities
4 and towns at all. So, I think split municipalities just
5 aren't present in his report. And as to counties, we've
6 talked about that already, but just as a reminder, it's true
7 that the enacted plan heals three counties that were split in
8 the benchmark and newly splits one other. So, that's Jasper,
9 which was whole before and is now split in the new plan. But
10 that's what I called earlier a case of selected healing. Some
11 counties -- in particular, majority White counties -- are
12 healed while others -- in particular, majority Black,
13 Orangeburg -- are not.

14 Q. You just testified that you don't believe that Mr.
15 Trende's report -- let me ask you this. Are you aware whether
16 Mr. Trende's reports considers splits of cities and towns
17 rather than just counties and precincts that you reviewed and
18 analyzed?

19 A. Right. And I see this now at the top of page two, I say:
20 The Trende report makes no mention at all of several issues.
21 And one of those is city and town boundaries.

22 Q. And does his report include anything on public testimony
23 that South Carolina collected that you reviewed and analyzed?

24 A. No discussion of public testimony.

25 Q. Does it do any comparison of the nine alternative plans

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1 publicly submitted, as compared to the enacted plan and the
2 benchmark plan?

3 A. No discussion of the public alternatives.

4 Q. Does he do anything in terms of looking at electoral
5 opportunity for Black voters?

6 A. He does not. He does not do an ensemble analysis here,
7 which he has done in other states, and he does not address any
8 of the evidence that the enacted plan is more extreme in
9 certain elections than in others.

10 Q. And does he refute your finding that the enacted plan is
11 more extreme in elections most probative for Black electoral
12 opportunity than performance in generic elections?

13 A. I don't think he looks at effectiveness at all, and in
14 particular, certainly doesn't address the
15 probative-versus-generic splits.

16 Q. So, to wrap up your testimony for the Court, Dr. Duchin,
17 can you just briefly, in a few high-level points, describe for
18 the Court the key changes that you saw between the 2011
19 benchmark plan and this 2022 enacted map?

20 A. How did the map change between benchmark and enacted?

21 Q. Yes.

22 A. Okay. Well, as we reviewed, there were reassigned
23 terrain pieces all around the state. We saw that earlier on a
24 map, where we looked at territory that was moved from
25 one district to another. Some of that was done to rebalance

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1 population. Notably, some of that was done to heal certain
2 issues in the old plan. That healing was selective. And in
3 the large, the effect of the transition from one plan to the
4 next was to reduce electoral opportunity that had emerged in
5 District 1 while not providing it anywhere else in the state
6 outside of CD 6.

7 So, I would say the plan -- the very highest level
8 behaves as though Black population has been cracked among the
9 districts, providing one district that will reliably perform
10 and no more opportunity anywhere else in the state in a manner
11 that's really quite unusual for the alternatives that were
12 available to the legislature.

13 Q. And are your findings based on quantitative analysis?

14 A. Quantitative, qualitative analysis, demographic data,
15 electoral data. I've tried to look at this problem
16 comprehensively with as many tools as I have available to me.
17 And all the findings are consonant.

18 Q. And is there anything else you want to share with the
19 Court before I pass you as a witness?

20 A. I think that covers it nicely.

21 Q. Thank you.

22 MS. ADEN: I will pass the witness.

23 JUDGE GERGEL: Okay. Folks, it is the noon hour. I
24 think it is a good time to break and allow the
25 cross-examination.

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1 MR. FREEDMAN: As far as I can tell, plaintiffs
2 maintain our objection to 222. What he offered yesterday did
3 not include 222. It's 224.

4 THE COURT: So, there's an objection to Senate 222.
5 And we'll wait -- the exhibit was admitted during Senate part
6 of the case, and we'll address admissibility then. Thank you.

7 MR. FREEDMAN: Thank you, your Honor.

8 THE COURT: Anything else we need to address before
9 we break? It's now 12:00. Let's return at 1:00.

10 *(Lunch recess)*

11 JUDGE GERGEL: Please be seated.

12 Does anyone have any matters that they need to
13 address with the Court before we resume with the
14 cross-examination of Dr. Duchin?

15 From the plaintiff, anything you need to raise with
16 the Court?

17 MS. ADEN: No, your Honor. Not at this time.

18 THE COURT: Mr. Gore, are you ready to proceed?

19 MR. GORE: We're ready, your Honor.

20 JUDGE GERGEL: Very good. Let's go.

21 MR. GORE: Your Honor, may I approach the witness?

22 JUDGE GERGEL: You may.

23 MR. GORE: Thank you, your Honor, and Dr. Duchin.

24 I've just approached the witness to hand her copies
25 of Plaintiff's Exhibits 67 -- is it 83 and 120 -- the three

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1 reports that she filed in this case, so we can refer to them
2 during the cross.

3 JUDGE GERGEL: Okay.

4 **CROSS-EXAMINATION**

5 **BY MR. GORE:**

6 Q. Do you have those in front of you, Dr. Duchin?

7 A. I do. I think it's 67, 87 and 120.

8 Q. Eighty-seven and 120. Thank you for that correction.

9 Dr. Duchin, I'm John Gore. I represent the Senate
10 defendants. You and I had the pleasure of meeting over Zoom
11 at first and in front of the courthouse for the first time in
12 person yesterday, I believe; is that right?

13 A. That's right. Hi, Mr. Gore.

14 Q. Nice to see you. Dr. Duchin, at the end of our trial day
15 yesterday, you remained under oath as part of your direct
16 testimony; is that right?

17 A. Yes. That's my understanding.

18 Q. After court yesterday, did you discuss the substance of
19 your testimony with anyone?

20 A. I didn't.

21 Q. I'm going to ask that we see now Plaintiff's Exhibit 67,
22 which is your initial report. I'd like to go to page two of
23 that report. Before I get there, I think you testified a
24 little bit this morning about demographic statistics and
25 phenomena in South Carolina; is that correct?

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1 A. Yes.

2 Q. And I believe you testified as to the Black voting age
3 population percentages in South Carolina statewide; do you
4 recall that testimony?

5 A. Yes.

6 Q. And I think you said that Black total population is
7 26.78 percent statewide; is that about right?

8 A. Well, that's what it says in the report, so I hope that's
9 what I testified.

10 Q. Okay. And you also gave a figure for Black voting age
11 population statewide; correct?

12 A. Correct.

13 Q. Did your report contain similar statistics for South
14 Carolina under the 2010 Census results?

15 A. It does not.

16 Q. And are you aware that, in fact, from 2010 to 2020, those
17 percentages actually went down in South Carolina?

18 A. That seems reasonable.

19 Q. And you also testified that the White percentages in
20 South Carolina went down between 2010 to 2020; is that
21 correct?

22 A. Correct.

23 Q. And so, does that mean that other racial groups grew in
24 relative size in that intervening 10 years in South Carolina?

25 A. Well, if I accept the representation, and I do, that the

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1 BVAP went down, it might depend on how you count it because of
2 that multiracial category.

3 Q. Sure.

4 A. But, if your telling me that the any-part-Black
5 percentage went down, then that would be because other racial
6 groups went up.

7 Q. Thank you. Thank you for that clarification. If we can
8 go to page six of your report, which is Exhibit 67, I'd like
9 to ask you about these choropleths, which, as we discussed in
10 your deposition, was a new word for me. So, thank you for
11 educating me on that.

12 You used data from the American Community Survey to
13 generate these choropleths; is that right?

14 A. I did.

15 Q. And you didn't use the 2010 Census data; is that right?

16 A. That's right. These are using citizen voting age
17 population, which isn't part of the 2020 data.

18 Q. How does the margin of error in the American Community
19 Survey compare to the margin of error in the Decennial Census?

20 A. Well, they're two different data products. We don't
21 treat the Decennial as having a margin of error, because it is
22 based on a complete enumeration rather than a survey.

23 Usually, margin of error is a concept reserved for survey
24 data; however, the Census Bureau does provide what's called a
25 PES, or Post-Enumeration Survey, where they estimate how much

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1 error there was in the Decennial data. This year, that has
2 come out, and their estimated errors from the Decennial are
3 similar to how they were in the past cycles.

4 Q. And how do you they compare to the margin of error, or
5 estimated error, in the American Community Survey?

6 A. Well, the right way to deal with the error in the ACS
7 depends on your geographic scale, and also depends on the time
8 range. So, the ACS is released every year, but often, as I do
9 in this report, it's handled in a five-year rolling average.
10 If you use the five-year rolling average and you use large
11 geography, as I've done here, census tracts and counties, then
12 these are considered to be quite precise. I don't have the
13 numbers off the top of my head, but this is a very sound way
14 to use that data.

15 Q. So, you don't have the numbers for the ACS, off the top
16 of your head, correct?

17 A. So, certainly not for these five-year ranges and these
18 geographies.

19 Q. Or for the Decennial Census; is that also correct?

20 A. Right. I could probably give you ballpark figures from
21 the PES, but I don't have any memory of the exact numbers.

22 Q. In this case, do you know whether the map drawer used the
23 Census data, or the ACS data, to draw the enacted plan?

24 A. Well, certainly, the population is balanced with respect
25 to Decennial, but I wouldn't be surprised if they also

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1 consulted ACS data.

2 Q. But do you know one way or the other?

3 A. Oh, I certainly don't.

4 Q. And have you discussed that with the map drawer or any
5 member of the General Assembly?

6 A. I haven't.

7 Q. Now, if we can scroll down one more page here on the
8 screen, I'd like to go to these choropleths that show change
9 in BVAP by county.

10 A. And, again, as we heard before, it should be "BCVAP."

11 Q. BCVAP. Thank you for that continuing clarification.
12 Now, these changes that are being represented here are in the
13 total Black citizen voting age population; correct?

14 A. That's right. And you can see that, if you scroll down a
15 little bit to the color bar, that we're dealing with the
16 number of people.

17 Q. And so, they're not percentages, correct?

18 A. That's right.

19 Q. And you have not provided similar choropleths for White
20 citizen voting age population, correct?

21 A. I have not.

22 Q. So, these choropleths here don't tell us anything about
23 the change in BVAP percentage -- or BCVAP percentage -- in any
24 of these locations, correct?

25 A. Not directly. We did hear earlier, for the example of

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1 Richland County, that I did provide numbers of the Black
2 change as against the total change. But I did not provide
3 that for every county, let alone, every tract.

4 Q. So, let's go ahead and go to that. I believe that's in
5 your supplemental report at page six.

6 A. Sure.

7 Q. Exhibit 120. And we may need to go to the bottom of this
8 page. There it is. And so, looking at Footnote 3 on page six
9 of your report, this is about Richland County; correct?

10 A. That's right.

11 Q. So, it doesn't tell us anything about Charleston County;
12 is that right?

13 A. Definitely true.

14 Q. And even in Richland County, you're comparing a growth in
15 BCVAP to total population growth, correct?

16 A. Yes.

17 Q. So, it's not an apples-to-apples comparison; is that
18 correct?

19 A. Against what other apple?

20 Q. Well, I think what you have here at the end, it says:
21 The overall rate of population growth in the county?

22 A. Right.

23 Q. It's not the overall rate of citizen population growth in
24 the county, correct?

25 A. Oh, I see what you're saying. It's true that I left that

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1 ambiguous. And so, I can't be sure, but I suspect I'm talking
2 about the same population basis.

3 Q. But you don't know that for sure right now?

4 A. It's true that I didn't word it precisely enough.

5 Q. And you point to a total BVAP growth in -- BCVAP growth
6 in Richland County of 30,000 people; is that right?

7 A. Yes, that's right.

8 Q. And given the ideal population size in this plan, that's
9 about four percent of a district; is that right?

10 A. Well, let's see. So, districts are about
11 700-and-something-thousand people, so 30,000 out of 700 is --
12 yeah, that sounds about right.

13 Q. Okay. And Richland County right now is already split
14 between two districts; is that right?

15 A. It is.

16 Q. And so, if you unified Richland County in a district, the
17 increase in that district's BCVAP wouldn't necessarily be
18 30,000 people; correct?

19 A. Well, it's pretty hard to say, because, to do the
20 counterfactual, you'd have to bring some people in and send
21 some people out. It's pretty hard to do that in your head,
22 considering all the possible ways to do so.

23 Q. And, of course, there would have to be offsetting changes
24 somewhere else to balance out a population; correct?

25 A. That's right. That's what I mean.

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1 Q. Again, if we can scroll down to the next page as well,
2 you have these choropleths, based on the American Community
3 Survey, on your rolling five-year averages for the last 10
4 years; is that right?

5 A. Right.

6 Q. And, again, these are showing total BCVAP change,
7 correct?

8 A. They are. They are number of people.

9 Q. And they're not showing percentage change?

10 A. That's right.

11 Q. And they don't show any changes to the White citizen
12 voting age population, correct?

13 A. That's right. The intent, I should say, is that because
14 Black and White make up the vast majority of South
15 Carolinians, that that can be, more or less, inferred.

16 Q. How can that be inferred from here though, because this
17 is just showing a total population growth, and there's no
18 information about total growth in the White citizen voting age
19 population, correct?

20 A. No. That's true. From shares, they can be, more or
21 less, inferred.

22 Q. But this doesn't tell us the share -- the percentage
23 change in Black CVAP, correct?

24 A. Yeah. If I could maybe just give context to the whole
25 discussion, it certainly would have been possible to provide a

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1 much longer, more detailed, more complete demographic report.
2 If that had been a fundamental element of my analysis, I
3 certainly would have done so. But, here, I gave a few -- what
4 I thought were helpful -- indications, but don't claim for
5 this to be a whole picture of demographic change, which would
6 require another -- many dozens of pages.

7 Q. Thank you for that clarification. And just to be clear,
8 it's possible that in areas that had high BCVAP -- Black CVAP
9 -- growth could have also seen White CVAP growth; is that
10 right?

11 A. It's possible. But that's not what we see, for example,
12 in Richland County.

13 Q. Setting aside the Richland example, there is no other
14 information in your report about the growth of White CVAP in
15 any of these areas; is that correct?

16 A. That's right.

17 Q. Dr. Duchin, let's go back to your report, Plaintiff's
18 Exhibit 67. There was some discussion this morning and
19 yesterday about the House and Senate redistricting criteria
20 and guidelines; do you recall that?

21 A. Yes.

22 Q. So, if we go there to -- I guess maybe page seven or so
23 of your report --

24 A. Sure.

25 Q. -- you've divided the criteria into first tier and second

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1 tier requirements; is that right?

2 A. Yes.

3 Q. And these are your categories; is that right?

4 A. Well, I wouldn't go quite that far. These track with the
5 priority order that's explicit in the House guidelines.

6 Q. Let me ask a better question. First tier and second tier
7 are your words?

8 A. Those are my words. Definitely true.

9 Q. Okay. Thank you very much. And you agree, under the
10 first tier requirements, do you not, that the General Assembly
11 is not required to use race to draw districts; is that
12 correct?

13 A. I think you're asking whether the guidelines require them
14 to use race.

15 Q. Yes.

16 A. And no, they do not. They contemplate the possibility,
17 but they don't make it a requirement.

18 Q. And outside of the guidelines, do you have an opinion or
19 a view as to whether the General Assembly was required to use
20 race when it drew the enacted plan?

21 A. Well, I guess I would nuance using race while drawing and
22 using race while evaluating. So, my view generally is that,
23 in order to safeguard minority opportunity in keeping with the
24 guidelines, you'd have to use race in an evaluative capacity
25 whether or not you used it in a primary capacity while drawing

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1 the lines. Does that make sense?

2 Q. So, is it your view that the General Assembly was
3 required to use race to evaluate the plan it drew?

4 A. I think -- I can't imagine any other way of complying
5 with their own guidelines.

6 Q. Let's pull up, if we can, Plaintiff's Exhibit 175, which
7 is the House guidelines, themselves. And if we can scroll
8 down, still on the first page. And I believe under federal
9 law, there's a sentence that starts about the middle of the
10 paragraph, "The dilution of racial or ethnic minority voting
11 strength is contrary to the laws in the United States in the
12 state of South Carolina and is also against the public policy
13 of this state." Did I read that correctly?

14 A. Yes, that sounds right.

15 Q. And do you know what definition of dilution of racial or
16 ethnic minority voting strength the guidelines are actually
17 using here?

18 A. It's not spelled out in operative detail.

19 Q. And you haven't discussed that with any legislators; is
20 that correct?

21 A. I haven't.

22 Q. Or any staff members?

23 A. No. To my knowledge, when I wrote these reports, I'd
24 never met any South Carolina legislators.

25 Q. Is it possible that the guidelines are using the same

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1 definition as Section 2 of the Voting Rights Act?

2 A. It's possible.

3 Q. And is it possible that, otherwise, the guidelines are
4 using a different definition than the definition you used in
5 your reports?

6 A. Certainly.

7 Q. Now, if we can go back to your report, pages 7 to 8, you
8 list some second-tier requirements?

9 A. Yes.

10 Q. And those include contiguity, and compactness,
11 communities of interest, and I think political boundaries; is
12 that correct?

13 A. That's right.

14 Q. And there are other criteria in the guidelines that you
15 don't discuss in this section of your report, correct?

16 A. Sorry. I dropped a few of these papers. That's correct.

17 Q. And that includes preserving the cores of districts,
18 correct?

19 A. I don't discuss that in these sections, but that
20 certainly is addressed in other places in my reports.

21 Q. Thank you. And I look forward to discussing those as
22 well. But it's not something you discussed here, correct?

23 A. Not here, that's right.

24 Q. Dr. Duchin, in your view, what is a map drawer required
25 to do in the event of a conflict between increasing minority

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1 voting opportunity, which you place in the first tier, and
2 complying with the second-tier criterion such as compactness?

3 A. Well, to be careful, I don't know that it talks about
4 increasing minority voting opportunity. It talks about
5 non-dilution, right? So, just to be careful about phrasing.

6 But my view, to your question about what to do in case of
7 conflict, is that the House guidelines say, if there is a
8 conflict, the requirements addressed in Sections 1, 2, 3 and
9 4, which includes non-dilution, should be given priority.

10 Q. And so, just if I can restate your point, when faced with
11 a choice between safeguarding minority voting opportunity on
12 the one hand, and complying with traditional districting
13 principles on the other, it's your reading that the guidelines
14 require safeguarding minority voting opportunity; is that
15 right?

16 A. Absolutely. I think, for instance, since compactness,
17 for example, is one of those, if the compactness could be
18 improved at a cost to minority voting opportunity that amounts
19 to dilution, then one is not to pursue that improved
20 compactness, just for instance.

21 Q. And so, in your view, the General Assembly was required
22 to prioritize minority voting strength over compliance with
23 the second-tier criteria, correct?

24 A. Well, I think, there, it's important to remember that the
25 priority guidance is in case of conflict. And so, the

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1 question I think is: Can we have a non-dilutive map that's
2 highly respectful of TDPs. And I think the record that we
3 went over on direct, from my reports, shows that it is
4 possible to have a non-dilutive map that is highly respectful
5 of TDPs. So, I'm not sure that priority clause ever came into
6 effect, because no conflict was, in fact, present.

7 Q. But if, in fact, a conflict were present, the choice
8 would have to be made in favor of minority voting strength
9 rather than the second tier criteria, right?

10 A. I think that's the plan reading of the guidelines, yeah.
11 That's the nature of your question, what the guidelines say --

12 Q. Right.

13 A. -- and I do believe that is what the guidelines say.

14 Q. And so, in other words, if it's faced with a tradeoff
15 between diluting minority voting strength on the one hand, and
16 complying with second-tier criteria on the other, the choice
17 has to be made in favor of protecting minority voting
18 strength; is that right?

19 A. Well, complying makes it sound like a binary matter --
20 yes, no -- when, often with these particular criteria, it's a
21 matter of degree. And that's why I gave the example of
22 compactness. So, it's not a question of total sacrifice of
23 compactness, but of somewhat improving or somewhat worsening
24 with compactness. And, there, I think we are guided by these
25 publications to prioritize non-dilution over improvement of

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1 the lower-ranked TDPs.

2 Q. Thank you. And I'll ask this question this way: Did you
3 discuss anything in your report, or any of your conclusions,
4 with any legislators or staff of the General Assembly?

5 A. Not to my knowledge.

6 Q. Thank you. So, you didn't discuss the guidelines, or
7 this interpretation of the guidelines, with them, correct?

8 A. I did not.

9 Q. And do you know whether your reading of the guidelines is
10 legally permissible?

11 A. Let's see if I address the question. Tell me if this is
12 responsive: I'm not sure that the guidelines really make it
13 perfectly clear what kind of situations might amount to
14 conflicts, but the way I read the guidelines -- I guess I
15 should carefully refrain from making legal conclusions about
16 whether they're legally permissible. But they sound pretty
17 strong and clear as practical guidance.

18 Q. And so, just to make sure the record's clear, do you have
19 an opinion as to whether or not your reading of the guidelines
20 is legally permissible?

21 A. Not being an attorney, I should continue to refrain from
22 making such an opinion.

23 Q. Thank you. Let's go back to your report, page nine. I
24 believe it's the start of Section 4. And you discussed this
25 with Ms. Aden this morning, as well. And this is your review

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1 of metrics for the congressional maps. Do you recall that
2 this morning?

3 A. I do.

4 Q. And so, when discussing racial demographics here, you
5 used the any-part-Black category from the Census; is that
6 right?

7 A. That's right.

8 Q. And do you know whether the General Assembly also used
9 that category?

10 A. I don't.

11 Q. And map drawers sometimes use different categories than
12 any part Black to draw maps; is that right?

13 A. That's right. There are at least three that are very
14 common: Any part Black, Black alone, and the DOJ definition,
15 which is, you know, quite complex. So, there are many ways
16 that you might count Black population.

17 Q. Let's look at this chart here on page nine. I want to
18 ask you a couple questions about the enacted plan versus the
19 benchmark plan. So, in District 1, it appears that the
20 enacted plan actually increased the BVAP compared to the
21 benchmark plan; is that right?

22 A. It might not have increased the BVAP, but it does
23 increase the BVAP share by about a tenth of a percentage
24 point.

25 Q. Thank you for that clarification. Let's go over to

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1 District 6. There was some discussion about District 6 this
2 morning. And you noted that District 6's BVAP share went from
3 52.5 percent in the benchmark plan down to 46.9 percent; is
4 that right?

5 A. That is right.

6 Q. And I believe your testimony was that's like a 5.6
7 decrease; is that right?

8 A. I don't think that I did live subtraction, but I can
9 attempt it now if it would be helpful.

10 Q. That would be fine. Why don't you go ahead. You can
11 check my math.

12 A. Sure. That looks like that's just short of, yeah, 56.
13 Is that what you said?

14 Q. I believe 5.6.

15 A. 5.6 percent points, I agree. My subtraction is very
16 dangerous on a general matter.

17 Q. Not bad for a lawyer, huh?

18 And I believe your testimony was that this meant there
19 was Black voting age population that could have been spread
20 into other districts; is that right?

21 A. That's right. But that means that there's Black voting
22 age population, which has to be assigned to some district,
23 since all of these plans assign every Census block in the
24 states.

25 Q. And would that have been the 5.6-percent number that

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1 would have been available to reallocate?

2 A. Yeah. You have to be a little bit careful because these
3 plans are very closely balanced, so they have almost exactly
4 the same population. But you should remember that, in
5 general, when talking about districts, they're percentages of
6 a different total.

7 Q. And that's particularly true of District 6 of the
8 benchmark and the enacted plans, correct?

9 A. What is particularly true?

10 Q. Well, benchmark District 6 was severely underpopulated,
11 wasn't it?

12 A. I think that's right.

13 Q. So, it was underpopulated by over 80,000 people; is that
14 right?

15 A. Right. I think that was the most negative deviation, as
16 I reported in the next subsection.

17 Q. So, that 52.5-percent number is using a much different
18 denominator than the 46.9-percent number in the enacted plan,
19 right?

20 A. Yes. And, you know, to be careful, it's true that
21 there's a district that's underpopulated by about 84,700
22 people. And I think -- my memory tells me that that may be
23 District 6, and I think that you are confirming that it is; is
24 that right?

25 Q. Yes. It is District 6.

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1 A. Okay. Great. I'm perfectly prepared to accept that.

2 Q. Okay. So, if District 6 was underpopulated by
3 12 percent, it didn't actually have 5.6-percent BVAP to move
4 to other districts, correct?

5 A. That was exactly the point I was making before, being
6 careful about the denominators.

7 Q. And do you know, in fact, whether the enacted version of
8 District 6 increased the total of Black voting age population
9 in that district?

10 A. I don't have those numbers in front of me, but, given
11 different denominators, that is possible.

12 Q. So, in fact, if that had happened from -- in the enacted
13 plan, there weren't extra Black individuals of voting age
14 population to spread into other districts, correct?

15 A. I want to make sure I'm tracking your question correctly.

16 Q. Sure.

17 A. So, one thing we can do is compare just enacted to
18 benchmarks. And, there, we have to be very careful about the
19 denominators. Another thing that we can do is compare enacted
20 to these other plans, which balance populations just about as
21 closely, within five people, I think we heard before, for most
22 of the plans. And so, you're right that it's very slippery to
23 get the denominators right, comparing enacted to benchmark.
24 But, for instance, it's easy to compare enacted to NAACP 1,
25 NAACP 2, without having that concern. And that comparison

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1 does definitely show exactly what you just indicated, which is
2 that there are more Black adults for the other districts than
3 there were in those comparative plans. And, there, we don't
4 have to fret about our malleable denominators.

5 Q. I appreciate all that clarification, which we'll get to
6 in a moment. I'm trying to understand your testimony from
7 this morning.

8 A. Sure.

9 Q. You pointed to these numbers, as I recall it, and you
10 said there were extra Black individuals of voting age
11 population that could have been dispersed from District 6 and
12 placed in other districts. And my question to you is: That's
13 not exactly true on these numbers, is it?

14 A. Well, here's a way to make sense of it that doesn't
15 require us to do all that counting. We can ask the question:
16 How does the benchmark plan distribute Black adults, compared
17 to one which there had still been a requirement to maintain
18 50 percent? Well, let me pause for a moment -- it will only
19 be a sentence or so -- and think about that comparison. So,
20 this 47, compared to a plan that maintained 50, has more
21 people to go elsewhere. And then it becomes perfectly
22 comparable, cleanly comparable, to ask where did they go.

23 Q. I appreciate that clarification, but that's a comparison
24 of the enacted plan to some other plan on this chart, other
25 than the benchmark plan, correct?

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1 A. Well, that's to hypothetical point.

2 Q. It's a hypothetical, right?

3 A. Right.

4 Q. But you but cannot say, based on this chart, that from
5 the benchmark plan to the enacted plan, there were extra Black
6 individuals of voting age population that could have been
7 moved out of District 6 and placed in some other district?

8 A. Well, just to be clear, I think the spirit of the
9 observation -- I can't remember the wording of the observation
10 from this morning, but the spirit of the observation is that
11 the understanding that it's possible to go below 50 percent,
12 it gives the map makers a lot of latitude about where to put
13 people in the state. That's the spirit of the observation.
14 And that latitude could have been used to generate electoral
15 opportunity, and it was not.

16 Q. But just to be clear -- and a yes-or-no answer I think
17 would suffice --

18 A. Sure.

19 Q. -- you can't actually tell, based on this table, whether
20 there were extra individuals of Black voting age in benchmark
21 District 6 that could have been moved to other districts?

22 A. I think I understand your question.

23 Q. Okay.

24 A. And I think it's true that you can't tell because of the
25 denominator issue.

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1 Q. Okay. Thank you. And if it's possible, at least, that
2 the enacted plan increased the total Black voting age
3 population in District 6, compared to the benchmark plan,
4 right?

5 A. Nationally, and in South Carolina, ideal district size
6 went up.

7 Q. Thank you. So, let's look at the second chart you have
8 on this page. You have the 11 plans listed by the number of
9 districts with BVAP's at or above a certain level; is that
10 right?

11 A. Correct.

12 Q. And I think you testified, before today, that the numbers
13 in the column mark are cumulative. And so, for example,
14 benchmark 2012, it's the same district in each of the three
15 columns, right?

16 A. That's right.

17 Q. So, only three of the plans here had a district with a
18 BVAP above 50 percent; is that right?

19 A. That's correct.

20 Q. And nine plans had a district with a BVAP of above
21 40 percent?

22 A. That's right. All but two.

23 Q. And that includes the enacted plan, correct?

24 A. Yes.

25 Q. And none of the 11 plans had more than one district with

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1 a BVAP above 40 percent, correct?

2 A. I agree.

3 Q. And if we go to the column on the farthest right, it
4 looks like six of the 11 plans, a majority of the plans, had
5 only one district with a BVAP above 30 percent; is that
6 correct?

7 A. One, two, three, four, five, six. I agree. Six. Six
8 has one district.

9 Q. Right. Let's go to the next page of your report and
10 understand population deviation that you did. And you agree
11 that the Senate guidelines require congressional plans to be
12 drawn with a total top-to-bottom deviation of one person; is
13 that correct?

14 A. That's right. It's explicit in those guidelines, but
15 it's also just a national common standard.

16 Q. And, here, we see that both of the NAACP plans, the
17 Harpootlian Plan, and the League of Women Voters Plan violated
18 that criteria in the Senate guidelines, correct?

19 A. Yes.

20 Q. Because they have more than one person total deviation;
21 is that right?

22 A. That's right.

23 Q. Let's go to the next page and talk about compactness for
24 just a moment. And you assess compactness of plans based on
25 three different measures; is that right?

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1 A. Yes.

2 Q. And you agree that the General Assembly was not obligated
3 to use these metrics to measure compactness, right?

4 A. These particular metrics? Certainly not.

5 Q. And was the General Assembly obligated to use any
6 mathematical measurements to measure compactness?

7 A. You mean in the course of debating plans for adoption?

8 Q. Yes.

9 A. No.

10 Q. And, in fact, the House guidelines expressly state that
11 compactness should not be computed based on mathematical
12 measures; is that right?

13 A. They do.

14 Q. And the Senate guidelines, to use your term, adopt a
15 concept of functional compactness; is that right?

16 A. I don't think they use that phrasing, but it's what I
17 would call functional compactness.

18 Q. And the Senate guidelines also don't mention or require
19 the use of mathematical measures of compactness; is that
20 right?

21 A. I can check on "mention" but they certainly don't
22 require. Let me check on "mention."

23 Q. Sure.

24 A. They don't mention the metrics.

25 Q. And the only analysis of compactness you conducted was

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1 with these mathematical measures, correct?

2 A. Oh, no. That's not the case. So, for example, when I do
3 the detailed district review that you heard about earlier
4 today, compactness comes up quite a few times in that
5 discussion. For example, that hook into Columbia is described
6 as a non-compact feature. And so, there are several places
7 where I use more informal, or qualitative, or functional, if
8 you will, notions of compactness.

9 Q. And, here in this part of your report, you didn't do any
10 of that, correct?

11 A. This part of the report is devoted to metrics.

12 Q. And the House guidelines say that compactness should be
13 judged in part by the configuration of prior plans, correct?

14 A. Let me check.

15 MR. GORE: If we can pull up the guidelines on that,
16 Plaintiff's Exhibit 175.

17 THE WITNESS: Yes. That is the quote: "Compactness
18 should be judged in part by the configuration of prior plans."

19 **BY MR. GORE:**

20 Q. And did you do anything to judge compactness by the
21 configuration of a prior plan in this portion of your report?

22 A. Yes, I did. I reported on these metrics for both the
23 prior plan, the benchmark, and for the enacted plan. And so,
24 I suppose it isn't a 100-percent clear what's intended by this
25 sentence in the guidelines, but what I think it means is that

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1 prior plans should set a kind of baseline for what it means to
2 be reasonably compact in South Carolina.

3 Q. And is the enacted plan more compacted than the benchmark
4 plan on at least two of these three measures?

5 A. Let's check. So, the enacted plan has a higher average
6 Polsby-Popper score, a lower Reock score, and a better
7 Block-cut Edges score.

8 Q. So, it's better on Polsby-Popper and Block-cut Edges; is
9 that right?

10 A. It's better on two in the previous plan, and worse on
11 one.

12 Q. And even on the metrics you used, the enacted plan is
13 also better than the South Carolina NAACP Plan 1, correct?

14 A. Well, let's see. Yes, it's better than NAACP 1 on all
15 three scores.

16 Q. And it's better than Harpootlian on Reock, correct?

17 A. Yes -- let's see. That's right, better on Reock but
18 worse -- substantially worse on the other two.

19 Q. Let's go to the next page of your report, where you talk
20 about political subdivisions.

21 A. Sure.

22 Q. And you did not include in this analysis here, on this
23 page, any analysis of any other communities of interest,
24 correct?

25 A. That's right. Here, it's only counties and county

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1 subdivisions, and then the next page, cities and towns.

2 Q. And I believe in your testimony with Ms. Aden, you
3 acknowledged that the House guidelines say that political
4 subdivisions are entitled to no greater weight than other
5 communities of interests; is that right?

6 A. That's right. I think the phrase is "other identified
7 communities of interest" or identifiable. Uh-huh.

8 Q. And if we look at this chart on page 12, the enacted plan
9 outperforms both of the NAACP plans on county splits, county
10 pieces, subdivision splits, and subdivision pieces, correct?

11 A. Let me look and see. I can check. But I'll say, as a
12 general matter, it's not my intention to present NAACP 1 or
13 NAACP 2 as a particularly sterling model plan. This is a
14 collection of plans that were on the public record and
15 available to legislators at the time of their debate.

16 But to your question, it is true that, with respect to
17 counties, the enacted plan performs better than the NAACP
18 plans. And it's really almost the same on county subdivisions
19 as NAACP 2, 29 versus 30 splits.

20 Q. Let's go, if we can, back to your supplement report?

21 A. Yes.

22 Q. Pages 5 and 6, Section 3 of that report. We start at
23 page five. You testified today that you did some analysis of
24 the Jessamine Plan; is that right?

25 A. That's right. I think that's the right pronunciation.

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1 I'm told it's the State flower.

2 Q. That's right. So it's J-e-s-s-a-m-i-n-e, correct?

3 A. Yes.

4 Q. And do you know who the map drawer was of that plan?

5 A. The person who drew the map, I do not know. As I've been
6 informed, the entity who drew the map was the NRRT, the
7 National Republican Redistricting Trust. But there were
8 probably one or more staffers at the mouse, if you will, and I
9 don't know who they were.

10 Q. And do you know when the map drawer drew the plan?

11 A. I do not.

12 Q. Or when it was provided to Senate staff?

13 A. All I know is when it was provided to me, which was in
14 August of this year.

15 Q. So, you don't know whether it was provided to Senate
16 staff after the deadline for public submissions?

17 A. Oh, I do not know.

18 Q. Or after the Senate staff plan was released publicly?

19 A. No idea.

20 Q. And do you know whether this Jessamine map was based on
21 the November 2021 Senate staff plan?

22 A. I have no knowledge of that kind.

23 Q. And do you know who reviewed the plan?

24 A. I don't.

25 Q. And do you know whether that person made any changes to

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1 the map, based on this plan?

2 A. No.

3 Q. And if we scroll to the bottom of page five, I think that
4 what you say is that the major difference between the
5 Jessamine Plan and the enacted plan is the interface of CDs 1
6 and 6; is that right?

7 A. Yes. That's the major visible difference, to be sure.

8 Q. And the Jessamine Plan has a novel T shape at that
9 interface; is that right?

10 A. Yes. I think that's the phrase that I used.

11 Q. And if we scroll to the next page, the Jessamine Plan has
12 a lower BVAP in District 1 than the enacted plan, right?

13 A. Yes.

14 Q. And it is less compact in the enacted plan on the
15 Block-cut Edges measure; is that right?

16 A. Let's check. It is less compact than the enacted plan,
17 yes, on Block-cut Edges.

18 Q. And the Jessamine Plan splits 13 counties, correct?

19 A. Correct.

20 Q. Compared to 10 in the enacted plan; is that right?

21 A. I believe you.

22 Q. And here in Section 4, if we go back to your original
23 report, page nine, this section of your report, you did not
24 include any metrics on core preservation; is that right?

25 A. That's right.

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1 Q. And you did not address VTD splits; is that correct?

2 A. That's right.

3 Q. And you didn't do any kind of partisan or political
4 analysis of the plans in this section, correct?

5 A. Not in this section.

6 Q. And there is some discussion on the next page, I believe
7 -- actually on page 13 --

8 A. Uh-huh.

9 Q. -- about incumbency; do you recall that?

10 A. Yes.

11 Q. And other than incumbent pairs, you didn't consider any
12 other forms of incumbent protection, correct?

13 A. What might those be?

14 Q. How about keeping incumbents' residences with the core of
15 their constituents?

16 A. I would call that core preservation.

17 Q. Okay.

18 A. And so, as we've heard, that's not addressed in this
19 section.

20 Q. The Senate guidelines specify both, preserving the core's
21 districts, and keeping incumbents residences with the core
22 constituents, right?

23 A. It's true that those are both discussed. I think those
24 sound pretty close to the same to me.

25 Q. And do you agree that the General Assembly might have

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1 viewed some of these factors as more important than the
2 factors you did consider in Section 4?

3 A. It's certainly true that they might have held private or
4 collective views that weren't reflected in the guidelines.

5 Q. Let's go now to page 15 of your report, if we can.

6 A. Yes.

7 Q. So, this is Figure 3 from your report that you discussed
8 with Ms. Aden this morning, I believe; is that right?

9 A. Yes, that's right.

10 Q. And I believe your report uses the term "chunks and
11 shards." Is that a technical term?

12 A. No. That is an informal and, I hope, colorful term.

13 Q. And you say that these changes that are shown here on
14 this map do not respect traditional redistricting principles;
15 is that right?

16 A. Let's see if I've written that. I say: "This produces a
17 map that cuts those areas in a way that neither respects
18 traditional redistricting principles, nor publicly identified
19 community needs."

20 Q. And which principles did you consider in arriving at that
21 state?

22 A. Well, here, I was looking at county preservation, city
23 preservation. So, you might have seen in a map that
24 prioritized the healing of city splits. You might see the
25 reassigned territory filling in city boundaries. And that,

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1 for example, is not what we see in this picture.

2 Q. Is your judgment about respected traditional
3 redistricting principles a comparison between the enacted plan
4 and the benchmark plan?

5 A. Well, I would say what I'm doing here precisely is
6 comparing those two and making the inquiry, do the changes
7 track the principles, and finding that they don't.

8 Q. I'd like to talk about that a little bit more. Do you
9 know where Berkeley County is on this map?

10 A. I do.

11 Q. Where is it?

12 A. So Berkeley is next to Charleston.

13 Q. Is it the county that has the kind of "U" shape in blue,
14 rotated? Or can you point it out maybe on the screen? I
15 don't know if the touchscreen works.

16 A. "U" shape in blue. Oh, I see what you mean.

17 Q. Like a rotated "U" shape in blue around a gray
18 protrusion?

19 A. Uh-huh.

20 Q. And the enacted plan made Berkeley County whole, correct?

21 A. That's right.

22 Q. And that respects traditional districting principles,
23 doesn't it?

24 A. That's right.

25 Q. Did you examine whether any of the changes you identified

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1 here, repaired split VTDs?

2 A. Well, we talked about this a little bit ago. I feel
3 there's a slight moving target there, because there are two
4 sets of VTDs in play. There's the 2010 VTDs and the 2020
5 VTDs. And so, I did look at whether there's a larger number
6 of respected VTDs in the new plan than in the benchmark, and I
7 found that there is not. They each split 13 contemporaneous
8 VTDs.

9 Q. And that's based on your comparison of the 2022 plan and
10 2022 VTD lines, the 2012 plan and the 2012 VTD lines; is that
11 right?

12 A. Yes, '22 and '20 VTDs versus 2012 and 2010 VTDs; that's
13 right.

14 Q. And do you know when those VTD lines changed in South
15 Carolina?

16 A. Yes. VTDs are a data product of the Census Bureau that's
17 released around the same time as the P. L. --

18 Q. And how about the precinct lines, do you know when those
19 changed?

20 A. As I mentioned this morning, those may change at all
21 times. They can change in between censuses. They can change
22 at the discretion of local officials. If you're asking if I
23 know the protocol for changing precincts in South Carolina, I
24 do not.

25 Q. And have you examined whether any of these changes you

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1 highlight here, fix split precincts in South Carolina?

2 A. Not specifically.

3 Q. And did you examine the political or partisan effect of
4 any of these changes?

5 A. Of these changes? I did, in fact.

6 Q. And did you examine the effect of any of these changes on
7 incumbents?

8 A. The effect of these changes on incumbents is not
9 appreciable. Incumbents are respected in this
10 before-and-after plan.

11 Q. Where is your political analysis of these changes?

12 A. Where is my political analysis of these changes? Well,
13 this is part -- you know, I think this has come up already a
14 few times. But, as part of best practices in my data
15 scientific work, I do a great deal of checking other questions
16 and variations that may not end up in the report, but they're
17 part of my robustness checks. And so, I did look at the
18 partisan-versus-racial character of these moved territories.
19 It didn't end up in my report, partly because it's my
20 understanding that that kind of question was treated by other
21 experts. But it was part of my due diligence.

22 Q. I see. But your report doesn't address that here in the
23 section, correct?

24 A. That's right.

25 Q. Does it address it anywhere else in any other section?

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1 A. No. As I said, that doesn't make its way into the
2 report. But I'll be happy to tell you what I found.

3 Q. Thank you. So, Section 5 of your report is a
4 district-by-district review of the plan, correct?

5 A. Yes.

6 Q. And you first take issue here on page 15 with the fact
7 that the enacted plan is not aimed at healing key splits of
8 cities and communities that were frequently cited in the
9 public testimony, including Columbia, Sumter, Orangeburg, and
10 Charleston, correct?

11 A. Right. But to be clear, a moment ago you asked if it was
12 a district-by-district review. Let me just specify, only
13 looking at the districts cited in the complaint. So,
14 Districts 1, 2, and 5.

15 Q. Thank you. Do the guidelines say anything about these
16 four communities: Columbia, Sumter, Orangeburg or Charleston?

17 A. No. The guidelines don't name these or any other
18 communities.

19 Q. And these communities were split in the benchmark plan,
20 correct?

21 A. Sumter was. Can you remind me the rest of the list?

22 Q. I'm sorry?

23 A. Sumter was. What else is on your list?

24 Q. I think you have -- it's right there at the bottom of 15:
25 Columbia, Sumter, Orangeburg, and Charleston.

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1 A. Orangeburg County was split, not the city. Charleston is
2 split. Columbia is split. That's right.

3 Q. What did you do to identify these four communities of
4 interest?

5 A. I read all of the voluminous transcripts and e-mails that
6 were part of the public record provided by the State.

7 Q. And do you have any specialized training in reviewing
8 public testimony?

9 A. I would say, actually, that I'm a leading expert on
10 aggregating community testimony.

11 Q. And where did that training take place?

12 A. Where did that training take place? I'm not sure there
13 are training courses on that. In fact, I run some. But I
14 have got multiple publications on it and, as you heard
15 earlier, have been hired and contracted by multiple states and
16 other nonpartisan public bodies to do just that kind of work.

17 Q. And were these four communities of interest the only
18 communities of interest identified by the public testimony?

19 A. Definitely not.

20 Q. And how did you select these four and not others?

21 A. Right. So, we addressed this a little bit earlier, but
22 to come back to it, there's so much public testimony. Some of
23 it is conceptual, some of it is neighborhood-based, some of it
24 is regional. There really are different kinds of interests
25 that are discussed, requests that are made of the line

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1 drawers. So, I would call it quite a large and heterogeneous
2 body of evidence. But what I did was to make one good faith
3 but far from authoritative, effort to look for places where I
4 was consistently hearing the same kinds of messages echoed by
5 more than one commentator, and to pull those out as examples.

6 Q. And did you count, or otherwise quantify, the number of
7 comments for each community of interest?

8 A. I didn't. And I have actually written about this. I
9 think comment counting is not a great metric for understanding
10 the bulk of public testimony. Sometimes people who come to
11 public hearings are testifying in a very personal manner,
12 sometimes on behalf of a group or organization. So, it's
13 really quite a complicated matter to weigh public testimony in
14 meaningful fashion.

15 Q. And has this method that you used ever been endorsed in
16 any academic literature?

17 A. Let's see if I understand. So, there are some methods
18 that I've described that produce community clusters for use by
19 line drawers. And those have been peer-reviewed. Here, I was
20 unable to do that, so I was glad that it had done so, because
21 all of the testimony was narrative. As far as I understand,
22 there was no mechanism, no technological mechanism, set up by
23 the State to help people map their neighborhoods or
24 communities. And that means it would have not been possible
25 to use the synthesis method that I've written about elsewhere.

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1 Q. And do you agree that the public testimony is not
2 representative of the views of all South Carolinians or all
3 South Carolina voters?

4 A. Definitely.

5 Q. And there were other sources of testimony and information
6 on communities of interest that you did not review, correct?

7 A. In the world? Yes.

8 Q. Okay. Because you didn't review the legislative record
9 related to the Congressional Plan, for example?

10 A. Correct. What I did was review the materials on the
11 State redistricting website.

12 Q. And you did not review e-mails submitted by members of
13 the public to the House or Senate redistricting e-mail
14 addresses, correct?

15 A. Actually, that body does include e-mails sent in.

16 Q. And is that the full body of e-mails that you reviewed?

17 A. That, I have no way of knowing.

18 Q. And are you aware that there are thousands more e-mails
19 that were not in that set?

20 A. I would accept that easily.

21 Q. I think you agreed yesterday that you're not attempting
22 to do an authoritative synthesis of these communities,
23 correct?

24 A. Absolutely correct.

25 Q. And reasonable people could identify different

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1 communities than the ones you identified, correct?

2 A. There's no question. Meaning, I agree.

3 Q. The public hearings that you reviewed took place between
4 July and October of 2021. Does that timeline sound right?

5 A. I accept that. I don't have it in front of me, but I
6 believe you.

7 Q. If you'd like to double check, I think it's on page 31 of
8 your report.

9 A. Let's just say that I accept the representation.

10 Q. Thank you. And so, all of that testimony predates the
11 release of the House and Senate staff plans for congressional
12 redistricting, right?

13 A. Well, I would hope so. I would think that would be best
14 practice, is to conclude the intake of public testimony before
15 drawing the draft plans.

16 Q. And it also predates release of the enacted plan,
17 correct?

18 A. I believe you.

19 Q. So, none of the members of the public had seen those
20 staff plans, or enacted plans, at the time of their testimony,
21 correct?

22 A. If the timeline is what we both think, then that's right.

23 Q. And any plans that members of the public referred to in
24 their testimony were some other plans, not plans that didn't
25 exist yet, right?

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1 A. Well, I think a great deal of the testimony was actually
2 about legislative plans. After all, the sessions were
3 convened by the House and by the Senate. And you'll see, even
4 in the excerpts that I include in the appendix to this report
5 explicitly -- you know, it's Senate districts and sometimes
6 House districts that are being discussed. But often, the
7 testimony isn't about a particular plan, but about the desire
8 to keep a community together to give it a voice.

9 Q. Sure. And have you discussed this testimony with any
10 members of the public who gave it?

11 A. Can't be sure.

12 Q. To your knowledge?

13 A. To my knowledge, I think there may be some testimony from
14 LDF staff in there, if I remember right. So, it's possible
15 that I've talked to those people, but that's not part of this
16 analysis.

17 Q. So, other than those fine people, have you talked to
18 anybody else, to your knowledge or memory?

19 A. Not to my knowledge.

20 Q. And so, the individuals who are listed in your appendix,
21 you haven't talked to them personally?

22 A. No. That's right.

23 Q. And you haven't discussed with them whether they believe
24 the enacted plan respects their community of interest then; is
25 that right?

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1 A. In particular, I haven't discussed that because I haven't
2 discussed anything with them, as far as I know.

3 Q. And if I told you, you identified 41 individuals in your
4 Appendix B, would that sound reasonable?

5 A. That sounds reasonable.

6 Q. And do you know how many members of the public actually
7 testified at the hearings whose transcripts you reviewed?

8 A. Oh, there must be hundreds.

9 Q. If I told you it was maybe 292 or so, would that sound --

10 A. That sounds right.

11 Q. -- in the ballpark?

12 A. Yeah.

13 Q. And some members of the public testified that they
14 supported the existing districts and the treatment of their
15 communities under the benchmark plan; is that right?

16 A. Under the benchmark plan? Yes.

17 Q. And that includes members of the public you identify in
18 your Appendix B, doesn't it?

19 A. It may.

20 Q. Okay.

21 MR. GORE: Let's pull up, if we can, Senate
22 Exhibit 231-A, which is admitted into evidence.

23 **BY MR. GORE:**

24 Q. This is a transcript of a Senate hearing in Charleston on
25 August 10th, 2021.

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1 A. Uh-huh.

2 Q. And if we scroll down to page 18, the witness's name is
3 Mr. Dickie Schweers, S-c-h-w-e-e-r-s, and I am hoping that I
4 am pronouncing that somewhere in the ballpark. If we scroll
5 down to page 21, Mr. Schweers, starting on line 6, is talking
6 about how he's an elected representative in Charleston. He
7 says: "I feel like I represent those folks very well. I also
8 feel like those Senate districts need to do the same. They do
9 now. And I would ask that you largely, at least, keep those
10 Senate districts intact because of their relationship to the
11 coastal communities of interest." Did I read that correctly?

12 A. Sounds right.

13 Q. Now, if we flip back to page 32 of your report, you've
14 identified Mr. Schweers in your Appendix B. And on page 31,
15 he's under the category "Coastal and Lowcountry COIs
16 Disregarded."

17 A. That's right.

18 Q. And here on page 32, you cite some testimony from Mr.
19 Schweers, but you don't cite the testimony where he says that
20 the existing districts largely represent his community, right?

21 A. Am I misremembering? Wasn't he talking about Senate
22 districts?

23 Q. Oh, he may have been. But, here, you're citing him as an
24 example of someone who would claim that the coastal or
25 lowcountry COIs were disregarded.

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1 A. In the Congressional Plan -- no, that's right. Let me
2 explain. So, the Senate Plan, which, as I understand it, was
3 never challenged, handles districting differently, makes
4 districts of different sizes, uses a different population
5 balance. It's a different matter, not one that's before us
6 today.

7 The reason that I'm citing council member, Dickie
8 Schweers, here, is that he's one of quite a few people who is
9 talking about this kind of coastal and Lowcountry set of
10 shared interests or shared identity. And so, that's exactly
11 the point that I'm trying to make, is that when we look at the
12 plans that were before the legislature, some of them do, and
13 some of them don't configure their congressional districts in
14 a way that seem to me to be respectful of those shared needs.
15 That's why he cited that, and I think that's appropriate.

16 Q. And do you know whether council member, Schweers,
17 believes that the enacted plan respects his community of
18 interest?

19 A. I have no idea.

20 Q. And do you know whether his Senate district is wholly
21 contained within a congressional district?

22 A. I don't.

23 Q. And if it were wholly contained within a congressional
24 district then his community of interest would be within that
25 congressional district as well, right?

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1 A. No. That's not what I'm trying to do here. What I'm
2 trying to do here is talk about the shared interests that the
3 coastal communities and the Lowcountry counties have in
4 common. That's how he's being cited. And then later, I can
5 take various congressional plans and I can ask: Are they
6 keeping these Lowcountry counties whole? Are they keeping
7 them together? Are they creating a coastal district that
8 takes some of these discussed areas and keeps them together,
9 where possible? So, that's the analysis that I'm doing here.

10 Q. Do you know what definition of "coastal" Mr. Schweers was
11 using in his testimony?

12 A. I haven't met Mr. Schweers.

13 Q. And so, is it possible he's using a different definition
14 of "coastal community of interest" than you are?

15 A. Well, I think "coastal" would mean near the water.

16 Q. But what he would include or delineate is his community
17 of interest may be different from your understanding; is that
18 right?

19 A. Oh, that's definitely right. And I should say, that's
20 one of the reasons I think it's so fundamentally important to
21 ask people to draw or map the areas that they're talking
22 about, because, otherwise, there's just a really large amount
23 of guesswork involved.

24 Q. And we have nothing like that in the record in this case,
25 that you're aware, correct?

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1 A. Would, that we did.

2 Q. Let's go to Exhibit 229-A, if we can. This is another
3 transcript from the Senate hearing. This one took place in
4 Beaufort. And if we start on page 29, just to confirm that
5 the witness here is Mr. Scott Anderson. And Mr. Anderson's
6 testimony continues to page 32.

7 A. Oh, yes. I think I remember jellyfish harvesting.

8 Q. And he says, starting on line 2: "My point being that
9 local issues are best understood and appreciated by those who
10 are local. Our current representatives work extremely well
11 together in looking out for the unique demands of the
12 Lowcountry." Is that correct?

13 A. That's right. Although from this snippet, I can't be
14 sure whether he's talking about congressional representatives
15 or legislative representatives. I'm not sure.

16 Q. And if he's not saying anything about congressional
17 representatives, then that doesn't really bear on the enacted
18 plan, does it?

19 A. No. Again, I would say the way that I'm using this
20 testimony is to try to understand the shared interests. Those
21 are, after all, the basis of COIs as I understand them and as
22 they are described here in the guidelines. What I'm
23 extracting from these isn't so much instructions, put me here,
24 put me with these people, don't put me with those. I think
25 those kinds of instructions, which are frequently heard in

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1 public testimony, are very hard to weigh and to synthesize.

2 Instead, I just want to be clear, what I'm doing here is
3 trying to identify what are the shared interests, especially
4 as they align with the categories in the guidelines. And so,
5 just what's on screen now, you can see the unique demands are
6 described as growth, tourism, environmental concerns along the
7 coast, just to name a few. These are the kinds of things I
8 was looking for, not so much the testimony about whether
9 they're happy with their legislative representation.

10 Q. And you don't know how Mr. Anderson defines the term,
11 Lowcountry, correct?

12 A. I don't.

13 Q. Or what he means by his coastal environment or coastal
14 community, correct?

15 A. I have not had a chance to interview him. I can only use
16 what's on the record here.

17 Q. And if we go -- sticking here at 229-A -- down to page
18 62, just to confirm on page 62, this is the testimony of Mr.
19 Murdaugh, M-u-r-d-a-u-g-h. And if we scroll down, Mr.
20 Murdaugh's testimony is at the bottom of page 64. And he
21 starts on line 22. He's talking about Colleton County on
22 line 19. And he says on 22: "I'm speaking mostly of the
23 Senate district. I'm not getting into the congressional
24 districts, and this really applies to the Senate and the
25 House." Is that right?

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1 A. Again, the relevance for me is about the shared interest
2 in the areas of the state that he's describing.

3 Q. Is it possible that Mr. Murdaugh is defining his
4 community of interest differently for the House and Senate, as
5 opposed to the congressional district?

6 A. Oh. Well, that's -- it's interesting to think about
7 whether what constitutes a relevant community might be
8 dependent on the kind of districting that you're talking
9 about. I would say that that might be an open question. But
10 as to where people have shared interests with policy
11 ramifications, that's the kind of testimony I was looking for
12 in this record.

13 Q. But you don't know whether any of these individuals
14 shared that view of their communities of interest with respect
15 to the Congressional Plan; is that right?

16 A. Would you mind rephrasing that?

17 Q. Sure. You didn't discuss this testimony with any of
18 these people; is that right?

19 A. Thank you. I did not.

20 Q. And so, you don't know their views on what their
21 community of interests would be in a congressional district;
22 is that right?

23 A. I'm not sure that -- from the guidelines, for example,
24 it's contemplated that the definition of "community" might be
25 plan-specific. I'm just not sure that's contemplated here and

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1 I definitely can't tell you whether that was in the minds of
2 these commentators.

3 Q. But it's certainly possible it was in the mind of the
4 voter or citizen who testified publicly, right?

5 A. Sure. I can imagine a citizen who would think one kind
6 of community was relevant for one map and a different kind of
7 community was relevant for a different map.

8 Q. Let's move on to page 16 of your report, if we can.

9 A. Uh-huh.

10 Q. I believe what you're looking at here, if we get to
11 Figure 4, is a map of South Carolina but with emphasis on
12 District 1; is that right?

13 A. That's right.

14 Q. And District 1, in the enacted plan -- or at least
15 District 1 in the benchmark plan split Dorchester, Charleston,
16 Colleton, and Beaufort Counties; is that right?

17 A. I think that's right.

18 Q. And are you aware of any public testimony that supported
19 maintaining District 1 in its benchmark configuration?

20 A. I don't recall any as I sit here, but certainly I'm
21 willing to believe that that exists.

22 Q. Okay. Can we go to page 33 of your report? It's a
23 statement from a Mr. Mark Hartley.

24 A. Did you say 33?

25 Q. Yes.

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1 A. Yes.

2 Q. And he says: "I represent the 1st District on the board.
3 And the 1st District is -- congressional district is largely
4 coastal. It runs along South Carolina coast from
5 C-a-l-i-b-o-g-u-e Sounds in Jasper County through the coastal
6 portions of Beaufort, Colleton, and Charleston Counties, up to
7 the Santee River. As a 1st Congressional District
8 representative on DNR board, I can attest to the 1st
9 Congressional District as a community of interest." Did I
10 read that correctly?

11 A. Yes.

12 Q. So, let's go back to page 16 of your report, if we can.

13 A. Sure.

14 Q. And I believe, on page 16, you use the phrase "coastal
15 and Lowcountry COIs;" is that right?

16 A. Yes.

17 Q. And your definition of "Lowcountry," if you will refresh
18 my memory, is what exactly?

19 A. Well, I took it to be the collection of four counties at
20 the tip, which I believe are Jasper, Beaufort, Colleton, and
21 Hampton Counties.

22 Q. And other than coastal being on the coast, do you have a
23 more refined definition of which regions you consider
24 "coastal" for purposes of this analysis?

25 A. Generally, the testimony that I reviewed is talking about

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1 from the Lowcountry up through Charleston County. A lot of
2 the coastal testimony is about that part of the state.

3 Q. And are you aware of any public testimony that supported
4 keeping coastal Charleston split from the City of Charleston
5 or North Charleston?

6 A. I don't, as I sit here, but I don't deny that it's
7 possible.

8 Q. If we can go back to Senate Exhibit 231-A, and start on
9 page 14, to confirm that the witness here is Mayor Goodwin of
10 Edisto Beach. And if we scroll down to page 17 of this, we'll
11 pick up some more of Mayor Goodwin's testimony. And starting
12 there on line 7, he says: "So, in closing, I request that the
13 reapportionment committee realize beach-front communities are
14 important communities of interest. For example, in many ways
15 Folly Beach has more in common with Edisto Beach, Isle of
16 Palms, Sullivan's Island, Johns Island -- I mean, excuse me,
17 Sullivan's Island and Isle of Palms, than we do with Johns
18 Island, the city of Charleston, or the city of North
19 Charleston. And with that in mind we ask that you preserve
20 our long coastal beach-front Senate districts as much as
21 possible, Districts 43 and 34, in Charleston County." Did I
22 read that correctly?

23 A. Uh-huh.

24 Q. And do you know where District 43 is located?

25 A. Oh, I don't. I mean, I can't provide that for you as I

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1 sit here.

2 Q. And so, you're not aware that it extends along the
3 Charleston coast but doesn't take in any of the city of
4 Charleston or North Charleston?

5 A. Certainly willing to accept that.

6 Q. Let's go back to page 16 of your report and resume our
7 discussion of the coastal and Lowcountry COIs. I believe you
8 said that the Harpootlian Plan is highly cognizant of these
9 COIs. Is "highly cognizant" a technical term?

10 A. No. I don't mean it to be.

11 Q. And you acknowledged, Doctor, I think earlier today, that
12 redistricting involves tradeoffs, correct?

13 A. Fundamentally.

14 Q. And added emphasis on one metric can come at the expense
15 of other metrics; is that right?

16 A. Definitely true.

17 Q. So, making these communities whole would have required
18 tradeoffs with other objectives the General Assembly might
19 have wanted to pursue; is that correct?

20 A. That's right.

21 Q. And that could have been preserving the core's of
22 districts, for example?

23 A. For example.

24 Q. Or even preserving other communities of interest; is that
25 right?

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1 A. That's right.

2 Q. So, at the bottom of page 16 of your report, I believe
3 you say in this: "Coastal and Lowcountry COI's are
4 disregarded. COI testimony asked to keep together coastal
5 communities and Lowcountry communities, Particularly Jasper,
6 Charleston, Colleton, and Beaufort but these are -- Beaufort,
7 but these are split in the State's map."

8 So, you mentioned here that Beaufort County is split in
9 the enacted plan, correct?

10 A. I think what I mean here is, I took those four counties
11 that I mentioned before together to constitute a Lowcountry
12 COI. And that's what's split. So, it's not that Beaufort
13 County itself is split, it's that it's split off from the
14 others.

15 Q. And does your appendix cite to witnesses who identify
16 Beaufort County as a community of interest?

17 A. It most likely does.

18 Q. And so, for any of those witnesses, their community of
19 interest is respected by the enacted plan, keeping Beaufort
20 County whole, right?

21 A. It's true that for anyone for whom Beaufort is their
22 salient COI, they would be pleased that it was kept whole.

23 MR. GORE: Can we go back to page 33 of Dr. Duchin's
24 report.

25 BY MR. GORE:

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1 Q. And there's testimony here from an individual named Queen
2 Quet. And this is testimony given at one of the public
3 hearings about Gullah Geechee Community; is that right?

4 A. That's right.

5 Q. And she mentioned the Sea Islands, St. Helena Island,
6 Polawana Island, Dataw Island, and that's here in Beaufort
7 County, but we also have a kinship with Edisto Island." Did I
8 read that correctly?

9 A. Yes.

10 Q. And are you aware that all of those island communities,
11 coastal communities, mentioned are in Congressional District 1
12 under the enacted plan?

13 A. That sounds right.

14 Q. Let's go back to page 16 of Dr. Duchin's report. And you
15 mention here that Districts 1 and 6 in Dorchester split six
16 VTDs; is that correct?

17 A. At least, because there are six that I described. There
18 may be more.

19 Q. And you did not review the full legislative record for
20 justifications for those splits, did you?

21 A. I did not.

22 Q. And did you examine whether the District 1 through 6 line
23 here, follows the line for House District 98?

24 A. I did not examine that.

25 Q. Now, if we go back to page 17, you say Charleston County

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1 is split erratically; is that correct?

2 A. Yes.

3 Q. And I believe you testified this morning that the black
4 lines are district lines and the red lines are municipal
5 lines; is that right?

6 A. That is right.

7 Q. And are these municipal lines in red true and accurate?

8 A. To the best of my knowledge.

9 Q. And are you aware that James Island is an independent
10 municipality surrounded by the city of Charleston?

11 A. I'm not, but that is frequent. It's often the case that
12 cities have holes in them that include either unincorporated
13 territory or separately incorporated territory.

14 Q. And are any of those doughnut holes in the city of
15 Charleston shown on your map here?

16 A. I don't think they're visible here. Maybe covered up by
17 the label, but I can't be sure.

18 Q. I want to call your attention, Dr. Duchin, to the
19 district line near North Charleston -- actually, a little bit
20 north of North Charleston. There's a shape that looks like a
21 flagpole -- a flag on a flagpole or maybe a dog leg left on a
22 golf course. This one right here in black.

23 A. In black. Sure.

24 Q. Did you examine whether that shape follows the county
25 line between Charleston and Dorchester?

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1 A. I'm sure that I did examine that, but that's not visible
2 in this picture.

3 Q. But you believe that it did actually follow the county
4 line?

5 A. That's not the kind of thing I could tell you live,
6 without an appropriate demonstrative.

7 Q. But it's possible, right?

8 A. It's possible.

9 Q. And you haven't shown the benchmark lines here, correct?

10 A. That's right, I have not.

11 Q. Okay. So, you're not examining only changes to the
12 district line made by the enacted plan, correct?

13 A. That's right. I'm examining the enacted plan's lines.

14 Q. And that includes lines that the enacted plan inherited
15 from the benchmark plan, as well as lines that have changed
16 from the benchmark plan, correct?

17 A. That's right. I think that's come up quite a number of
18 times already, that many features are held over while others
19 are changed, sometimes in a manner that's thought to heal
20 problems, and sometimes in a manner that creates new problems.

21 Q. And when we talk about things that were kept, or retained
22 or inherited, do you know whether the city of North Charleston
23 was changed at all in the enacted plan from the benchmark
24 plan?

25 A. By that, I think you mean the treatment of the city

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1 rather than the city boundaries.

2 Q. Yes. Was any part of North Charleston moved in the
3 enacted plan from one district to another?

4 A. I think that we looked at that earlier today. I can't
5 remember the answer, but I think -- well, perhaps you can tell
6 me what you think the answer is.

7 Q. I'm just curious as to your answer. Do you know one way
8 or the other?

9 A. I can't tell from this picture, honestly.

10 Q. And was any part of North Charleston in District 6 in the
11 benchmark plan, to your memory?

12 A. I'm sorry, but I'm not sure.

13 Q. And is it possible that the portion of North Charleston
14 in District 6 in the benchmark plan remained unchanged to the
15 enacted plan?

16 A. That is possible.

17 Q. That the enacted plan did not change District 6's
18 treatment of North Charleston; is that possible?

19 A. That's possible. I think that's actually addressed, that
20 it's -- despite -- let's see if I say this here. Public
21 comment is particularly vocal on North Charleston, that is to
22 say, I think what you're saying is quite right, and what I'm
23 pointing out here, what I'm flagging, is that there were quite
24 a number of residents of North Charleston who testified that
25 they're harmed by the treatment of their city. Nonetheless,

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1 that was not among the features that were healed.

2 Q. So, in other words, North Charleston is the same between
3 the benchmark plan and the enacted plan, the treatment of
4 North Charleston is the same. And what you're pointing out is
5 that some people advocated for different treatment?

6 A. That's exactly right.

7 Q. And were there any people who advocated for the same
8 treatment?

9 A. I don't specifically remember anyone saying that they
10 love the way North Charleston was divided up, but it's
11 certainly possible.

12 Q. And have you examined whether the changes the enacted
13 plan made in Charleston County placed all of coastal
14 Charleston in the same district?

15 A. Again, difficult to answer that question in great
16 specificity. But I think I already talked about this, in
17 part, earlier today when I mentioned the way that BVAP is
18 split between Districts 6 and 1 in Charleston County, with the
19 bulk of Black adults in Charleston County going into District
20 6, which extends, as we know, all the way up to Richland.

21 Q. Correct. And have you examined whether the changes in
22 the enacted plan made in Charleston reunited the Charleston
23 Peninsula in a single district?

24 A. I didn't specifically look at that.

25 Q. And have you examined whether those changes follow

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1 natural geographic lines in Charleston County, such as the
2 Stono and Cooper Rivers?

3 A. I did not look at that.

4 Q. And you did not, at least in your report, say anything
5 about the political effect of these changes in Charleston
6 County, correct?

7 A. Well, I think what I talked about earlier is entirely
8 consistent with the big picture story that I addressed on
9 direct, which is it may well be the case that there were
10 partisan goals in the division of the county, but how those
11 partisan goals were achieved was by sorting the Black
12 population of this county so that the bulk of the Black
13 population falls in this district that stretches all the way
14 through the state.

15 Q. Here on page 17, you don't say anything about whether the
16 enacted plans changed a Republican or Democratic vote share in
17 Charleston County in either district; is that right?

18 A. That's not -- you're right. That's not what this section
19 is about.

20 Q. And in this section, did you examine whether the enacted
21 plan changes in Charleston repaired split VTDs?

22 A. As I mentioned before, I don't think -- I regard the plan
23 as healing overall more VTDs than before. I think it
24 maintains the status quo number of splits. But if you're
25 asking whether I looked at whether the changes tracked the VTD

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1 boundary changes -- was that your question?

2 Q. Go ahead and answer that question, if you'd like.

3 A. Just trying to make sure I understand. I did not look at
4 that specifically in this case.

5 Q. And you mentioned North Charleston, which you already
6 spoke of Summerville and Ladson as well here on page 17; is
7 that right?

8 A. Yes.

9 Q. And all three of those cities were split in the benchmark
10 plan; is that right?

11 A. Let's see. I don't think it says that here, but I'm
12 willing to accept that.

13 Q. In any event, I think you do recognize that those cities
14 all span more than one county; is that right?

15 A. Definitely, that's correct. Summerville and Ladson span
16 two counties, while North Charleston spans three.

17 Q. So, making those cities whole requires a tradeoff between
18 city splits and county splits, correct?

19 A. I believe that's exactly the point I was making this
20 morning.

21 Q. And was there any requirement in the guidelines or
22 otherwise for the General Assembly to choose county splits
23 over city splits or vice versa?

24 A. No.

25 Q. And are you aware that counties, rather than cities,

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1 administer elections in South Carolina?

2 A. That would be in keeping with most states.

3 Q. And you testified yesterday that many South Carolinians
4 identify their community of interest by their county, correct?

5 A. Yes. More than in some other states I've studied.

6 Q. I'd like to go now back up to page 16 of your report,
7 where you discuss Jasper County.

8 A. Yes.

9 Q. And you note that two precincts from Jasper County are
10 placed in District 1. Are you aware of any anything in the
11 legislative record supporting that split?

12 A. The split of those particular precincts?

13 Q. Yes.

14 A. I don't recall.

15 Q. And are you aware of any public testimony supporting that
16 split?

17 A. Oh, I thought that was your last question. I'm sorry.
18 What was your last question?

19 Q. The legislative record.

20 A. Oh, okay. No, I did not read the legislative record, and
21 I don't recall any specific public testimony either on that
22 point.

23 Q. Can we go to page 34 of your report, which is part of
24 Appendix B. I want to look at the testimony of Timothy Wyld
25 (*phonetic*).

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1 A. Yes.

2 Q. And Mr. Wyld says: "I live in Sun City, which should be
3 in the dictionary as the definition of a community of
4 interest. Unfortunately, I live on the north side of Sun
5 City, and even the map that your wonderful cartographer has
6 drawn over there, does not recognize our little section of Sun
7 City that is in Jim Clyburn's district. We are not contiguous
8 with any county other than Beaufort. We are totally
9 surrounded by Beaufort County."

10 So, are you aware that those two precincts in Jasper are
11 part of the Sun City community of interest that extends into
12 the Beaufort County?

13 A. I'm willing to accept that.

14 Q. And are you aware that, in fact, those two precincts are
15 just across the road from Beaufort County in the Sun City
16 community?

17 A. I accept that.

18 Q. Let's go back to page 18 of your report. Before we get
19 into this, just one more question about Jasper. Are you
20 aware, one way or the other, as to whether that was the reason
21 the map drawer placed those precincts into District 1?

22 A. Oh, as I've said, and as I'll repeat, I have no special
23 knowledge of process for the map drawer.

24 Q. And let's move now to District 2, picking up on page 18.

25 A. Sure.

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1 Q. Would you start with Orangeburg County?

2 A. Yes.

3 Q. And Orangeburg County was already split under the
4 benchmark plan, correct?

5 A. That's right.

6 Q. So, making Orangeburg County whole might have required
7 splitting another county somewhere else; is that right?

8 A. I don't know that it would. Since there are already a
9 number of split counties, it's likely that you could have made
10 this county whole, without an additional county split.

11 Q. But it would have required a tradeoff of some other
12 principle, correct?

13 A. Well, not necessarily. In the meaning of worsening
14 another principle, that's not necessarily the case, though it
15 could be.

16 Q. And are you aware of any testimony in support of
17 maintaining the split of Orangeburg County?

18 A. Not specifically.

19 Q. And do you know which precincts were moved from District
20 6 to District 2 in Orangeburg County?

21 A. You mean their names?

22 Q. Yes.

23 A. No. That would be really impressive, wouldn't it?

24 Q. That would be quite impressive. Are you aware of any
25 public testimony supporting that move?

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1 A. No.

2 Q. And have you examined whether any of the changes in
3 Orangeburg conform the district line to the VTD line?

4 A. That seems reasonable to think that they would.

5 Q. Next, you talk about on page 18, the hook into Columbia.

6 A. Yes.

7 Q. And you acknowledge that that hook has been present in
8 the plan for quite some time, right?

9 A. I do.

10 Q. And you're aware that it was present in the benchmark
11 plan, correct?

12 A. In particular.

13 Q. And are you aware that it was present in the 2002 plan?

14 A. I believe, I remember that from Mr. Trende's report.

15 Q. And that plan was drawn by a court?

16 A. May well be.

17 Q. Are you aware of anything in the legislative record to
18 support maintaining that hook?

19 A. Specifically, in that language, I don't remember that.
20 Although, again, there's just so much testimony, that I really
21 wouldn't want to be swearing to what's not in the testimony.

22 Q. And I think you said earlier today that you thought this
23 hook shape was a candidate for change in the district; is that
24 right?

25 A. That's right. I think that most observers would agree

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1 that it's a non-compact feature.

2 Q. But if it had been upheld as legal in the past, that
3 would be a reason a map drawer might want to keep it, right?

4 A. That, frankly, doesn't make a great deal of sense to me,
5 just in the sense that legality of the plan overall wouldn't
6 be a reason to maintain it's least attractive features.

7 Q. But a map drawer may not want to make changes to things
8 that have been upheld in the past, correct?

9 A. I would think that generally the map drawer would be
10 using the opportunity of a redraw to improve the map. In
11 fact, I think that we've heard that repeatedly.

12 Q. And moving the hook shape might be worse for the map on
13 other criteria, correct?

14 A. I'm sure that's true. Well, it depends on how you
15 addressed it.

16 Q. Let's go to page 19, where you talk about splitting in
17 and around Columbia.

18 A. Sure.

19 Q. You note the splitting of the cities of Cayce, Columbia,
20 and Forest Acres.

21 A. Yes.

22 Q. And Columbia was split under the benchmark plan, correct?

23 A. Yes. Yes, it was.

24 Q. And are you aware of any testimony supporting these
25 splits?

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1 A. Not specifically.

2 Q. And have you examined whether any of the changes in
3 Richland County conform the district line to the VTD line?

4 A. I think that would be the expected behavior.

5 Q. And how about whether it conforms the congressional
6 district line to the line between Senate Districts 21 and 22?

7 A. I didn't examine that.

8 Q. Let's go now to the next page, where you discuss District
9 5, on page 20?

10 A. Yes.

11 Q. You note the split of Sumter here; is that right?

12 A. That is right.

13 Q. And was Sumter split in the benchmark plan?

14 A. I believe that it was.

15 Q. You also mention City of Sumter, East Sumter, and
16 Mulberry; is that right?

17 A. Yes.

18 Q. And were those communities split in the benchmark plan to
19 your knowledge?

20 A. I think so.

21 Q. And are you aware of anything in the legislative history
22 supporting this split in Sumter?

23 A. You mean the fact that it is split, or the way that it is
24 split?

25 Q. How about the fact that it's split, first.

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1 A. Was there testimony saying that Sumter is better served
2 by being split?

3 Q. Yes.

4 A. I don't recall that.

5 Q. And have you examined whether the changes the enacted
6 plan made to Sumter place more of the city of Sumter in
7 District 6?

8 A. I have not looked at that, specifically.

9 Q. And have you examined whether the changes in Sumter
10 conform the district line to the VTD line?

11 A. That would be expected.

12 Q. I believe you state in your report, the bottom of page
13 20, that one Sumter precinct is split along parts of two roads
14 that appear to be in the middle of a cemetery?

15 A. Yes.

16 Q. Is that right?

17 A. That is right.

18 Q. And you agree, as a general matter, that people
19 ordinarily do not live in cemeteries, right?

20 A. I believe we discussed this in the deposition.

21 Q. We did.

22 A. And my answer then and now is that it can be really
23 surprising, as someone who studies census data, just where
24 people are said to live. But as a general matter, I certainly
25 agree, that we don't expect too many people to be living in a

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1 cemetery.

2 Q. So, if this precinct is, in fact, split in the middle of
3 a cemetery, you can't say for sure that it affects any
4 population at that split, correct?

5 A. That's correct, I'm not sure. Nonetheless, it's a good
6 principle of redistricting to try to make divisions along
7 major roads, major features of natural geography, cognizable
8 splits. And I think one that runs through a cemetery wouldn't
9 qualify.

10 Q. And what did you do to locate the precise location of
11 this split in this road?

12 A. So, generally, when I was trying to understand the
13 character of these splits, I used various kinds of mapping
14 software to look both at neighborhood names, to look at the
15 presence of businesses, community centers, and other kinds of
16 buildings. I sometimes used satellite view to try to
17 understand if they were high density or low density areas. Is
18 that what you mean?

19 Q. Uh-huh. Yeah. Thank you. Let's move on to Section 6 of
20 your report, if we can.

21 A. Sure.

22 Q. It starts on page 22. And this is vote dilution compared
23 to a neutral baseline, correct?

24 A. Yes.

25 Q. You did not conduct a *Gingles* analysis for this report,

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1 correct?

2 A. That's right. A *Gingles* analysis, in full, would be
3 suited to a VRA challenge, which this is not.

4 Q. And so, your use of the phrase "vote dilution" here is
5 not vote dilution for purposes of Section 2 of the Voting
6 Rights Act, correct?

7 A. No. I believe it's actually echoing language in the
8 guidelines.

9 Q. So, here, you're intending to incorporate the guidelines
10 and the guidelines definition rather than Section 2
11 definition; is that right?

12 A. Well, as you noted earlier quite rightly, the guidelines
13 aren't very precise. But I'm intending to echo the language
14 of the guidelines.

15 Q. You're not intending to echo the language of Section 2 or
16 *Gingles*, correct?

17 A. Some of the methodology will certainly overlap, but it's
18 not a *Gingles* analysis, as you said.

19 Q. And so, if the guidelines were, in fact, using the
20 Section-2 definition of voter dilution, that would not be
21 captured within your analysis, correct?

22 A. Well, tell me if this is what you mean. I think you have
23 on the record, alternative plans, including some that create
24 an additional majority district. I think you have on the
25 record a racially polarized voting analysis, not conducted by

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1 me but by another plaintiffs expert. So, I think many of the
2 ingredients are present, if not all, of the basic ingredients.
3 But this is not intended to be a VRA analysis. It's my
4 understanding right?

5 Q. I think so. And so, if the guidelines are referencing
6 some kind of VRA analysis, that's not this, correct, the
7 analysis you've done?

8 A. This would go to that.

9 Q. But it's not a *Gingles* analysis, correct?

10 A. Sure.

11 Q. And so, how do you define vote dilution here?

12 A. Right. Okay. So, what I've tried to do in this
13 section -- we heard about this earlier, but just to
14 recapitulate. In this section, I'm looking at demographics.
15 I'm looking at how, in particular, the Black voting age
16 population is distributed, and I'm looking at how we might
17 have expected it to be distributed under the framework
18 articulated in the rules and guidelines.

19 Q. And so, I think you used the phrases "cracking" and
20 "electoral opportunity"; is that right?

21 A. Yes.

22 Q. And your definition of electoral opportunity means having
23 a reasonable likelihood to prevail in elections; is that
24 right?

25 A. Reasonable likelihood or, I would say, at the risk of

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1 being repetitive, an opportunity to prevail. In other words,
2 a record of electoral history that shows the possibility of
3 getting close or of getting more votes than the opponent.

4 Q. So, your definition does not require any particular level
5 of BVAP percentage in a district, correct?

6 A. No. And I think that I've emphasized that a few times
7 and I will continue to do so. I think BVAP is important to
8 understand, but I think it's best used together with electoral
9 history, which is why I do them in successive sections of the
10 report.

11 Q. And so, that's different than the *Gingles* definition
12 under Section 2, correct?

13 A. Definition of?

14 Q. Doesn't *Gingles* require a BVAP threshold of 50 percent?

15 A. The *Bartlett v. Strickland* ruling is what makes that
16 threshold explicit. Is that what you mean?

17 Q. Yes. And thank you for correcting.

18 A. So, *Gingles* is a ruling from 1986. *Bartlett's* a while
19 later. So, I think the *Gingles* framework itself did not
20 establish demographic lines. That came later.

21 Q. But under Section 2, there's a requirement of a
22 50-percent-plus-one district, correct?

23 A. Yes. That is what I am identifying as dating to
24 *Bartlett*.

25 Q. And you don't require that for your definition of

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1 electoral opportunity, correct?

2 A. In my understanding, neither does the VRA require that as
3 part of the definition of opportunity. I think it's a
4 threshold test for litigation.

5 Q. And so, your definition of electoral opportunity
6 contemplates crossover voting by non-African-American voters,
7 correct?

8 A. Definitely. As does the VRA framework, if we continue to
9 compare them.

10 Q. And in other words, under your definition, a district can
11 provide minority voters electoral opportunity even if the
12 minority group can elect its candidate of choice only in
13 combination with non-African-American crossover, correct?

14 A. Again, this may be changing -- I believe the Supreme
15 Court took this up just today. But under the current legal
16 framework that's in common in my analysis here and in the
17 standing VRA framework.

18 Q. I thought you said that *Bartlett* required a 50-percent
19 district though, right?

20 A. Okay. Let me try to explain it the way that I understand
21 it, once again, insisting that I am not a lawyer. But my
22 understanding is that there are two different elements. One
23 is a threshold test to advance to litigation. And then
24 there's a liability phase. Later, there will be a remedial
25 phase. And my understanding of the body of law is that, at

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1 the remedial phase, there's no need at all for a 50-percent
2 district. That was a threshold test to launch the litigation.

3 Q. Let me ask the question this way: Does your definition
4 of electoral opportunity allow for a coalition district?

5 MS. ADEN: Your Honor, I'm just going to object to
6 the extent that any of these questions call for a legal
7 conclusion.

8 JUDGE GERGEL: Yeah. I'm just wondering the benefit
9 of debating with a mathematician, legal standards.

10 MR. GORE: I'm trying to understand, your Honor.

11 JUDGE GERGEL: I think we ought to just move on.

12 MR. GORE: That's fine. I can do that.

13 JUDGER GERGEL: Yeah. She says repeatedly she's not
14 a lawyer.

15 THE WITNESS: Thank you.

16 **BY MR. GORE:**

17 Q. So, just to finish out the line of question, I'm trying
18 to understand how your definition compares to Section 2 and
19 the Section-2 analysis.

20 A. Sure.

21 Q. But it's possible to have a district with electoral
22 opportunity and a BVAP as low as maybe 20 percent; is that
23 right?

24 A. Well, what I don't want to do is presume to tell you how
25 that would be viewed by a court. I don't want to do that.

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1 But what I am doing here is defining electoral opportunity in
2 keeping with the scholarly literature that I've contributed
3 to. And that definition of opportunity is that candidates of
4 choice can either win or get reasonably close to winning.
5 That's what I'm calling opportunity here. And I'm agreeing
6 with you, that as we heard earlier, in South Carolina today,
7 that could exist with as low as 20-percent BVAP.

8 Q. And if there are a sufficient number of crossover voters,
9 then the BVAP in the district could be relatively low, as low
10 as 20 percent, and still provide electoral opportunity under
11 your analysis, right?

12 A. I think that's what I just said. But in any event, I
13 agree with that.

14 Q. Thank you. So, let's go to the neutral baseline part of
15 this heading.

16 A. Yes.

17 Q. And so, you agree it's necessary in a vote-dilution
18 analysis to identify a neutral baseline; correct?

19 A. I think it's helpful.

20 Q. And you don't use the benchmark plan as the baseline for
21 analysis here, correct?

22 A. That's correct.

23 Q. And you, instead, use the ensemble plans, correct?

24 A. That's right. I use one or, in fact, several collections
25 of alternative plans to provide a baseline.

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1 Q. So, you're not asking whether changes to the enacted plan
2 made to the benchmark plan are, themselves, cracking in
3 isolation, correct?

4 A. That's right. The point of this type of inquiry is not
5 to study things in isolation, but in the context of
6 alternatives.

7 Q. And so, you're looking -- again, as we talked before --
8 at all the lines in the enacted plan, both those in the
9 enacted plan carried over from the benchmark plan, and those
10 of change, correct?

11 A. That's right.

12 Q. And then you compare all those lines to the ensemble
13 plans; is that right?

14 A. Well, I compare the statistics.

15 Q. And you said yesterday that the purpose of the ensemble
16 method is not to simulate how a person draws a map, correct?

17 A. Right.

18 Q. Or how the map drawer in this case drew the enacted plan;
19 is that right?

20 A. Certainly right.

21 Q. And it's not a cannon aimed at all problems and criteria,
22 correct?

23 A. That's right. It's not a one-stop shop.

24 Q. And the ensembles considered some of the rules and
25 criteria, but not all of them, correct?

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1 A. Well, the ensemble method is flexible. You can layer in
2 rules, as I was discussing earlier. And I think it's
3 profitable to do so. But it's not a case of simply checking a
4 number of boxes and saying, there I took everything into
5 account.

6 Q. And I think you testified earlier that the ensemble
7 method here didn't generate a hundred-thousand plans that are
8 ready to be adopted; is that correct?

9 A. That's not the goal.

10 Q. And you agree that the ensemble plans were never proposed
11 to the General Assembly, correct?

12 A. Certainly.

13 Q. Now, if we go to page 22 of your report, you mentioned
14 that population balance and contiguity are enforced in the
15 algorithm; is that right?

16 A. Population balance and contiguity are enforced, yes.

17 Q. So, as I understand the algorithm, you instruct it to
18 consider certain rules, and it generates plans based on those
19 rules, correct?

20 A. Well, I design a process for changing one plan to the
21 next, and the next, and so on. And then I create a long chain
22 of changes, until I have a big variety of different plans.

23 Q. And for population balance, you did not instruct the
24 algorithm to draw the plans to a top-to-bottom deviation of
25 one person, correct?

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1 A. That's right. As I said earlier, the ensemble plans use
2 whole precincts. There are no precinct splits at all. And
3 so, it would not be reasonable to expect one-person deviation.

4 Q. And, in fact, you used a one-percent deviation; is that
5 right?

6 A. That's the main basis. But as I testified earlier, I
7 also tried it with two percent and half-a-percent to see if
8 the findings were any different.

9 Q. So, when we look at the histogram on page 23 of your
10 report, are those plans drawn to a one-percent deviation or
11 some other deviation?

12 A. I think these are one percent.

13 Q. And in given our ideal district size of around 730,000
14 people, one percent is about 7,300 people, correct?

15 A. That's right. So, you cannot exceed that amount of
16 deviation from ideal.

17 Q. And so, the figures and histograms in your report aren't
18 tuned to a plus or minus one-person deviation, correct?

19 A. That's right. As I said earlier, what I ascertained is
20 that they're tuneable.

21 Q. And you said just a moment ago that no VTDs are split by
22 your ensemble plans, correct?

23 A. That's right.

24 Q. And it's your reading of the guidelines that the General
25 Assembly had to prioritize population equality as a first-tier

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1 requirement over avoiding VTD splits as a second-tier
2 requirement, correct?

3 A. Well, that's right. But my understanding of mapmaker
4 process -- I've been one myself and also have talked to many
5 mapmakers -- is that it's quite typical to first make a map
6 out of precincts and then tune the population as a last step.
7 I would call that standard practice.

8 Q. And you also say, on page 22, that your algorithm is
9 implemented with a preference for preservation of counties and
10 municipalities, correct?

11 A. That's right. I tried it with and without that.

12 Q. But your report doesn't actually provide us any data on
13 that, correct?

14 A. No. But it's all in the materials that were disclosed.

15 Q. And so, your report doesn't tell us how the ensemble
16 plans compared to the enacted plan on, say, county splits, for
17 example?

18 A. That's not written up, correct.

19 Q. Or even on split municipalities, correct?

20 A. That's right.

21 Q. So, some of the ensemble plans may have more splits than
22 the enacted plan; is that right?

23 A. Well, I can tell you that it's my standard practice to
24 make sure that the amount of weight that's put on county
25 preservation and municipal preservation produces numbers that

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1 are in line with the plans under consideration. And so, I did
2 that here, as I do as a matter of routine.

3 Q. And you also said that you implemented a preference for
4 compactness, right?

5 A. That doesn't have to be implemented. That's part of the
6 feature of how the algorithm works.

7 Q. And, again, you didn't provide any data in your report
8 about the compactness of your ensemble plans; is that right?

9 A. That's right. But I can tell you that, again, it's part
10 of my standard practice to be sure that the compactness of the
11 plans is in keeping with the public alternatives. And it was
12 here.

13 Q. And you say on page 22 that you performed two runs of
14 this ensemble?

15 A. Well, I described two runs there. There were quite a few
16 variants.

17 Q. And one of those prioritizes preservation of certain
18 communities of interest, and one does not, correct?

19 A. That's right.

20 Q. And those communities of interest are the same
21 communities of interest that we discussed before, right?

22 A. The same.

23 Q. And those were Richland County, Sumter County, Berkeley
24 County, Charleston County, and the four counties you put in
25 the Lowcountry; is that right?

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1 A. Yes.

2 Q. And so, four of those five communities are simply whole
3 counties, correct?

4 A. That's right. And so, by adding that as a filter in the
5 runs, it places a higher weight on keeping those whole than on
6 the rest of the counties.

7 Q. And because those communities are counties, and the
8 Lowcountry is defined by counties, those communities overlap
9 with the -- preserving those communities overlaps with
10 avoiding county splits as well, right?

11 A. I would say it's aligned.

12 Q. And your algorithm made no use of race data; is that
13 right?

14 A. Sure.

15 Q. And you say on page 22, that the ensemble generation is
16 neutral with respect to all their properties; is that right?

17 A. In the sense that they're not addressed in the decision
18 rules being made along the runs of these changes.

19 Q. I think you said earlier, that includes core
20 preservation, partisan performance, and avoiding incumbency
21 pairs, right?

22 A. That's fair.

23 Q. All right. If we go to 6.1, you compared the properties
24 of the enacted plan to alternative statewide plans that were
25 made under conditional criteria, correct?

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1 A. Yes.

2 Q. And those are the ensemble plans we just discussed; is
3 that right?

4 A. Yes. That's one of these ensembles of a hundred-thousand
5 plans.

6 Q. And you say, on page 22, that cracking would tend to show
7 up as unusually low BVAP in the second highest district,
8 correct?

9 A. In particular.

10 Q. And is there a standard or technical term of art for
11 unusually low?

12 A. No. That's intended to be informal.

13 Q. You agree with me, don't you, Dr. Duchin, that the second
14 highest BVAP district is not necessarily the second best
15 electoral opportunity district for Black voters, correct?

16 A. That's certainly true. We heard that throughout the
17 testimony earlier. That's one of the reasons that I
18 supplemented this report with that box-and-whiskers plot we
19 saw before, that shows all the districts across the state.

20 Q. So, let me just follow up on that. So, there are some
21 plans where it's the third highest BVAP district that
22 outperforms the second highest BVAP district in terms of
23 electoral opportunity, correct?

24 A. And so on down the line.

25 Q. And if we look at page 23, Figure 10, you say that the

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1 enacted plan has a BVAP in it's second highest district that
2 is especially low, correct?

3 A. Yes.

4 Q. And you haven't shown here the benchmark plan, correct?

5 A. That's right. Although, it would be easy to mentally add
6 that just by looking at the BVAP in the benchmark plan. I
7 think probably the reason I didn't do it is the precise one,
8 you raised earlier, that the population balance is different,
9 making it a little slipperier to compare.

10 Q. And so, you're not comparing the enacted plan to the
11 benchmark plan, correct?

12 A. The goal of this section is to compare it to the ensemble
13 plans.

14 Q. And do you have a standard for determining when BVAP is
15 especially low in the second district?

16 A. Well, if you mean is there a kind of bright line for what
17 constitutes an outlier, there isn't. But I think, no matter
18 where we would draw that line, we'd agree that this, which is
19 in the most extreme, less than one percent, would certainly
20 qualify.

21 Q. And so, you say that the BVAP in the second highest
22 district in the enacted plan is 25.4 percent, right?

23 A. Yes.

24 Q. So, if we can turn to page nine of your report. This
25 chart on top gives the BVAPS in various districts in various

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1 plans, correct?

2 A. It does.

3 MR. GORE: We need a break, your Honor.

4 JUDGE GERGEL: Okay. Folks, we're going to take the
5 afternoon break. Ten minutes.

6 **(Recess)**

7 JUDGE GERGEL: Please be seated.

8 Mr. Gore, you may continue, sir.

9 MR. GORE: Thank you, your Honor.

10 **BY MR. GORE:**

11 Q. Dr. Duchin, are you ready to proceed?

12 A. Yes.

13 Q. Now, on page nine of your report?

14 A. Yes.

15 Q. And I just want to look at a couple of plans here on page
16 nine. Looks like in the SCNAACP Plan 2, the second highest
17 BVAP district is District 7, at 25.4 percent, correct?

18 A. Yes, that's correct.

19 Q. And that's the same as in enacted District 7, correct?

20 A. The 25.4? Yes.

21 Q. And so, you would also consider the BVAP in the second
22 highest district in the SCNAACP Plan 2 to be especially low,
23 correct?

24 A. Yes. That's right.

25 Q. And how about the League of Women Voter's Plan, I believe

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1 that District 7 is 24.5 percent, the second highest district
2 there, correct?

3 A. That's right.

4 Q. And that would also be especially low, to use your
5 terminology, correct?

6 A. That's correct.

7 Q. Okay. Let's go, if we can, to the supplemental report,
8 to the box-and-whiskers plot which is on pages 1 and 2, Figure
9 1 of your report.

10 A. Yes.

11 Q. Actually, page two. And so, within this, so I understand
12 it, the highest BVAP district here isn't necessarily District
13 2 -- or District 6, correct?

14 A. That's right. And I spent some time on that earlier,
15 because I understand that it can be confusing. But the
16 numbers that you see on the columns here are just positional,
17 telling you which has -- one has the lowest BVAP, two after
18 that, and so on up to seven. They're not geographical.

19 Q. And there's no incumbency consideration in your model,
20 correct?

21 A. There is no incumbency consideration in the generation of
22 the plan. That's right.

23 Q. So, for example, Congressman Clyburn resides in District
24 6, which is the highest BVAP district in the enacted plan, but
25 he might reside, in fact, in the lowest BVAP district in one

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1 of the ensemble plans, correct?

2 A. I will regard that as quite unlikely, but it's possible.

3 Q. It's possible, right?

4 A. Yes.

5 Q. He wouldn't necessarily be in the highest BVAP district
6 in the ensemble plan, right?

7 A. That's right.

8 Q. And if he moved from the highest BVAP district to the
9 lowest BVAP district, that would be a pretty significant
10 change in his district; wouldn't it?

11 A. It would probably require a pretty significant
12 geographical change. It would certainly be a significant
13 demographic change.

14 Q. And according to the box-and-whiskers plot here the 7th
15 District, or the highest BVAP district in the ensemble plans,
16 has an average BVAP of around 35 percent; is that right?

17 A. Yeah. So, just to orient ourselves to the plot, if we
18 look at the box in column 7 and we look at the line marked
19 across that box, that's the median, or 50th percentile.
20 Doesn't mean it's the average. Those are not quite the same.
21 And so, I agree that the median is at about 35 percent.

22 Q. And that is noticeably lower than any of the four
23 human-drawn plans, you have depicted here?

24 A. Yes, it is.

25 Q. And on this box-and-whiskers plot, the active plan and

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1 the benchmark plan are fairly similar across each of these
2 districts, correct?

3 A. That's right.

4 Q. And these ensemble plans are subject to the same
5 parameters we discussed before, in terms of the criteria they
6 consider and don't consider, correct?

7 A. Yes.

8 Q. And so, I think you testified earlier that you consider a
9 district to have unusually low BVAP if it's below the bottom
10 whisker on the box-and-whisker plot; is that correct?

11 A. That put's it in the lowest, one percent, of
12 observations.

13 Q. So, that would be true for the Harpootlian's 5th District
14 here; is that right?

15 A. That's right. So, Harpootlian is shown in lavender in
16 the plots. And as I said before, the way these work, because
17 it's a fixed sum quantity, is that if you're high in some
18 districts, you have to be low in others so that the sum can be
19 the same.

20 Q. And it's also true of the NAACP Plan in the 1st, 3rd and
21 4th of the districts here, right? It's in yellow?

22 A. That's right.

23 Q. Let's go back to your report at page 23. You ran another
24 ensemble that focused on Districts 1, 2, 5 and 6, correct?

25 A. Yes, I did.

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1 Q. And those are subject to the same parameters, correct?

2 A. That's right.

3 Q. And you don't know --

4 A. Page 23, did you say?

5 Q. Yeah, Page 23. Focused area 6.2?

6 A. Yes.

7 Q. And you don't know in which district Congressman Clyburn
8 is placed in those ensemble plans either, correct?

9 A. Well, not in general over the ensemble. Although, we can
10 see for instance, I've highlighted the enacted and an
11 alternative plan. And you can see that District 6 is
12 practically identical, which certainly means that Clyburn is
13 retained in District 6. I can also tell you, because I
14 verified this when compiling the report, that, in fact, this
15 alternative plan maintains all incumbents in their districts.

16 Q. Let's scroll down, if we can, to page 24 of your report.
17 And you provided this alternative map here, correct?

18 A. Yes.

19 Q. Okay. And I believe you said that, in this alternative,
20 Districts 1 and 6 are the same as they are in the enacted
21 plan; is that right?

22 A. They're not identical, but virtually identical. Nearly
23 unchanged, is what it says in the caption.

24 Q. Nearly unchanged. Okay. Thank you for that
25 clarification. So, the alternative versions of these

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1 districts would also split Charleston, Colleton, Dorchester,
2 and Jasper, correct?

3 A. Yes. I think you should regard this as having a great
4 deal of deference to the enacted plan.

5 Q. So, it does not respect the communities of interest that
6 you identified earlier in your report and that we talked about
7 at some length, right?

8 A. That's right. Here, what I'm doing is prioritizing least
9 change, that is, core retention.

10 Q. And if we move to 2 and 5 in this alternative
11 configuration, does this alternative configuration move Fort
12 Jackson out of District 2?

13 A. I can't be sure from this representation.

14 Q. And does this configuration keep the four Lowcountry
15 counties split from each other?

16 A. It keeps them handled in virtually identical fashion to
17 the enacted plan.

18 Q. And I think you testified that this alternative plan
19 retains 92 percent of the population, compared to the enacted
20 districts, correct?

21 A. Correct.

22 Q. But doesn't that mean that the enacted districts retain
23 more of the benchmark districts than the alternative districts
24 do?

25 A. Oh, that may certainly be true. I can't remember

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1 offhand, but Mr. Trende's report contains a core retention
2 figure for enacted comparative benchmarks, and I believe it to
3 be in the upper 90s.

4 Q. But you would agree that the enacted plan is better on
5 preserving cores of the benchmark districts than this
6 alternative plan, correct?

7 A. That's likely, although it's not computed here.

8 Q. And do you know what the change is here, compared to
9 here?

10 A. No. Again, this plan was picked from the ensemble, so
11 the changes aren't a product of intention. This is just an
12 example.

13 Q. And you haven't run any compactness measures on these
14 districts or anything like that?

15 A. Did I? I don't seem to have reported it.

16 Q. And let's move on then to the next page, page 25. And
17 this is the electoral opportunity for Black voters section?

18 A. Yes.

19 Q. And do you know why counsel identified these four races
20 as particularly probative for Black electoral opportunity?

21 A. My understanding is that these flow from the polarization
22 analysis conducted by another expert, Dr. Liu.

23 Q. And do you know whether Dr. Liu did a polarization
24 analysis of any other districts -- or any other elections?

25 A. Oh, I think that he did. Although, I should make sure to

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1 clarify that I haven't read his report.

2 Q. You haven't read his report. Okay. And you gave an
3 effectiveness score here in this chart, which is simply the
4 number of times the Black preferred candidate wins in each
5 district; is that right?

6 A. That's right. This is the exact representation that's
7 later nuanced by looking at vote shares to see whether the
8 outcomes were close. But, here, it is only: Did the Black
9 candidate of choice win by the plurality standard?

10 Q. Now, if we scroll back up to page 23, note eight, of your
11 report --

12 A. Yes.

13 Q. -- there we see that you report here the effectiveness of
14 the alternative district configuration of 2, 5, 1 and 6, that
15 we talked about just a minute ago, right?

16 A. Yes.

17 Q. And that had an effectiveness score of five; is that
18 right?

19 A. Let's see. Yes. You can infer that, because what I
20 write is that the candidate receives at least 47.5 percent of
21 the vote in each of the four elections, winning outright in
22 one of the four.

23 Q. And you have a sentence here at the end of the footnote:
24 "That performance corroborates the claim that this is a
25 strengthened district for Black voters, and one in which a

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1 candidate would likely have to campaign in a way that lead to
2 some Black support in order to prevail."

3 Did you do any analysis to determine whether this
4 district is one in which a candidate would likely have to
5 campaign in a way that led to some Black support in order to
6 prevail?

7 A. The support for that conclusion is exactly the previous
8 sentence, namely the 47.5 figure for the Black candidate of
9 choice.

10 Q. And you didn't do any additional analysis for that half
11 of the sentence?

12 A. That's right. So, the basis is simply what's written
13 here.

14 Q. If we can go back to page 25, the effectiveness analysis.
15 And so, both the benchmark and the enacted plan have an
16 effectiveness score of four out of 28, correct?

17 A. That's right.

18 Q. And the Harpootlian Plan is six; is that right?

19 A. Yes.

20 Q. So, that's four wins in District 6 and it generates two
21 wins in District 1; is that right?

22 A. That's right.

23 Q. And it generates no wins in any other district, correct?

24 A. That's true. However, as we heard earlier, it does
25 generate close outcomes in District 5.

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1 Q. Excellent. Let's go to that next, which is Exhibit 120,
2 your supplemental report. Let's scroll down to page three.

3 A. Yes.

4 Q. And you talked about the shading earlier with Ms. Aden.
5 These cutoffs you chose -- so, 46 percent to 47.5 percent are
6 in amber; is that right?

7 A. Yes.

8 Q. And these cutoffs were not chosen based on any
9 established standard or legal principle, correct?

10 A. I hope I made this clear earlier, but certainly I'll say
11 now. They're not meant to represent a bright line test of any
12 kind. These are thresholds that I developed just looking for
13 patterns in these tables. It's an attempt to make the tables
14 easier to read and to summarize.

15 Q. And if we scroll up to the bottom of page two, down a
16 little bit more, right there, that last paragraph --

17 A. Yes.

18 Q. -- you report here the statewide shares for candidates of
19 choice in these four elections?

20 A. Yes.

21 Q. And you say the average is 43.72 or nearly 44 percent,
22 correct?

23 A. Yes.

24 Q. And so, 46 percent is only about two percent higher than
25 the average?

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1 A. Two percentage points higher.

2 Q. Percentage points, sorry. Thank you. And every election
3 -- if we scroll back down to page three, every election where
4 the Black preferred candidate receives less than 50 percent of
5 the vote, is a loss for that candidate, correct?

6 A. Would have been a loss.

7 Q. Would have been a loss. Correct. Because this is
8 reconstituted data?

9 A. That's exactly right. They did not campaign for a
10 districted office.

11 Q. Is this the two-party vote share?

12 A. That's right. It's the major party vote, which is just
13 Democrats and Republicans.

14 Q. So, if we look at this 2.1, just as an example,
15 Presidential 2020, the Biden-Harris number --

16 A. Yes.

17 Q. -- in Harpootlian District 1, that's 51.8 percent,
18 correct?

19 A. Yes, it is.

20 Q. And if we can refer back quickly to page nine of your
21 report --

22 A. Yes.

23 Q. -- what's the -- it's the other report. It looks like
24 the BVAP in Harpootlian District 1 is 21.2, correct?

25 A. I agree.

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1 Q. So, to receive 51.8 percent of the vote in a 21.2-percent
2 BVAP district, the Black preferred candidate must receive
3 significant White crossover support, correct?

4 A. It's likely. Although, I'd just caution us all to
5 remember that not every resident votes. And so, there are
6 questions of turnout, differential turnout, for groups that
7 make it hard to be sure of the composition of the electorate
8 on that day.

9 Q. And did you analyze those questions of turnout as part of
10 your report?

11 A. Well, that's the point of the reconstituted election
12 analysis, that it takes into account both differential turnout
13 patterns and crossover patterns. All of that is present in
14 the cast vote totals. And that's why it's so important to use
15 electoral history in this way.

16 Q. Right. But you would agree that the candidate here would
17 need significant White crossover support to get 51.8 percent
18 of the vote in this district, right?

19 A. I think it's likely that the electorate has a demographic
20 composition not dissimilar to the adult population overall.

21 Q. And based on turnout, the candidate might actually need
22 even more votes from the crossover voters than from the
23 African-American voters, correct?

24 A. It's possible. It could go one way or the other.

25 Q. Now, if we look here on page nine, District 1 in the

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1 Harpootlian Plan is not the second highest BVAP district in
2 that plan?

3 A. That is correct.

4 Q. For example, District 5 is at 33.7 percent?

5 A. Just going to say, exactly, 6 is highest, followed by 5,
6 followed by 2, followed by 1, if I'm reading right.

7 Q. And we just discussed a minute ago that District 5 in the
8 Harpootlian Plan generated zero wins for the Black preferred
9 candidate --

10 A. Right. If I remember right --

11 Q. -- under your model.

12 A. -- it's zero wins and at least in four of those outcomes,
13 actually. So, four outcomes that earned the colors that we
14 described earlier.

15 Q. So, it's zero wins in a 33.7-percent district and two
16 wins in a 21.2-percent district, correct?

17 A. That's right. And this is why it's so important to use
18 the demographic and electoral analysis together. Neither one
19 stands alone.

20 Q. And that indicates that there's higher crossover voting
21 in the areas covered by District 1 than in District 5?

22 A. Again, it's likely that might also turn out as
23 implicated. And so, I did not study the question of the rates
24 of crossover voting. But it is likely.

25 Q. Let's examine for a moment -- if we can go back to 120

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1 page three -- oh, I'm sorry. It's 67, page 25, of this
2 report.

3 A. Is that the initial report?

4 Q. Initial report, your effectiveness scores.

5 A. Yes.

6 Q. And for the Legal Women Voters Plan, it's also six total,
7 correct?

8 A. Sorry, I'll be there in a moment. Yes, I can see that on
9 the screen. Yes.

10 Q. And, again, that's four wins in District 6, and two wins
11 in District 1, correct?

12 A. Yes. I'm just checking. That's right. And it looks
13 like the other two times in probative contests, the League map
14 produced very close outcomes of 49.6 and 49.3.

15 Q. So, let's go to your supplemental report at page three.
16 And in District 1, under the LWV Plan, the Biden-Harris ticket
17 received 51.7 percent of the vote; is that right?

18 A. Yes.

19 Q. And if we go back just one last time to page nine of your
20 original report, we can confirm that the BVAP in the Legal
21 Women Voters Plan in District 1 is 23.3 percent, correct?

22 A. Correct.

23 Q. And that's lower than the BVAP in Districts 5, 6, and 7
24 in that plan, correct?

25 A. Yes. That's right.

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1 Q. And so, the 23.3-percent BVAP in District 1 translates
2 into 51.7-percent support for the Black candidate on the
3 results that we just reviewed, correct?

4 A. That's quite right. And so, just to summarize, in case
5 anyone is getting lost in all the numbers, higher BVAP, lower
6 BVAP, it really depends on which people you're talking about
7 and which contest. BVAP, alone, isn't predictive of outcomes,
8 and that's why both elements are featured here.

9 Q. And do you happen to know where in South Carolina White
10 Democratic voters live?

11 A. Well, as I said before, I'm a little hesitant to talk
12 about White Democratic voters, because people can vote one way
13 in one election, a different way in the next. I, myself, have
14 voted for members of both major parties. And so, to be a
15 White Democrat isn't a permanent identity. So, I'd be careful
16 talking about where White Democrats live. But I can certainly
17 talk about where the inference methods that are widely used
18 predict that White people voted Democratic, what precincts
19 that happened in. That's definitely something we can approach
20 with inference methods.

21 Q. And that would be in your Charleston and Columbia where
22 those voters reside, correct?

23 A. Well, it's certainly true that near Charleston and
24 Columbia, you see performance at lower levels of BVAP, and
25 from that, you can conclude relatively higher patterns of

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1 crossover voting. But looking back, before this congressional
2 analysis, I did work, as I think you know, on the State House
3 map, where the districts are smaller. And that gave me the
4 occasion to look at the relationship between BVAP and voting
5 patterns all across the state. And I actually found
6 significant incidents of crossover voting in many parts of the
7 state.

8 Q. And for a crossover voter who votes for the Black
9 preferred candidate, their preferred candidate loses whenever
10 the Black preferred candidate loses, right?

11 A. Right. Let me just make sure I'm unpacking that
12 correctly. If you have a White person who votes for the Black
13 preferred candidate in a situation with polarization, and the
14 Black preferred candidate loses, then it follows
15 chronologically that that White voter's preference was not
16 actualized.

17 Q. And all of the candidates in these elections, the Black
18 preferred candidates are all Democrats, correct?

19 A. That's true.

20 Q. So, any voter who voted for the Democratic candidate,
21 where the Democratic candidate loses, also doesn't see their
22 preferred candidate prevail, correct?

23 A. Yes. But, sounds like a logical syllogism, and it is.
24 So, if you didn't vote for the candidate who won, then you
25 didn't get your preference reflected in the outcome.

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1 Q. And that's all true, regardless of the race of the voter,
2 correct?

3 A. Definitely true.

4 Q. Let's go now to page 26 of your first report. And we'll
5 talk about these nine other elections that you analyzed.

6 A. Yes.

7 Q. And did you conduct an RPV analysis for these elections?

8 A. I did not conduct any RPV analysis for this case.

9 Q. But you would agree that the Black preferred candidate in
10 each of these elections is the Democratic candidate?

11 A. Yes, I would. That's my understanding.

12 Q. And here on page 26, you're comparing performance of
13 plans against the ensemble plans, correct?

14 A. Well, yes, and implicitly against each other, since the
15 figure shows the collection of 11 publicly submitted plans and
16 the ensemble.

17 Q. And the ensemble plans are drawn to be politically
18 neutral, they don't consider politics, correct?

19 A. That's right. They're drawn in a neutral fashion.

20 Q. So, would you, in your experience, expect that
21 politically neutral ensemble plans would generate more wins
22 for Democratic candidates than, say, a plan that was drawn to
23 help Republicans?

24 A. If the plan was drawn with some skill to help
25 Republicans, then it would probably be more favorable to

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1 Republicans than a plan drawn without that intent.

2 Q. And if we go scroll down to the bottom histogram, it
3 looks like the enacted plan and the benchmark plan both
4 generate eight wins in the 63 contest, the nine contests
5 across seven districts, correct?

6 A. That's right.

7 Q. That's about 12.5 percent of the time; does that sound
8 right?

9 A. Eight out of 63 is about an eighth. So, yes, that's
10 right.

11 Q. And if we go to the histogram above that, both the
12 benchmark plan and the enacted plan generate wins in four out
13 of the 28 contests; is that correct?

14 A. That's correct.

15 Q. And that's about 14 percent of the time?

16 A. Just so.

17 Q. So, the enacted plan and the benchmark plan generate wins
18 for the Black preferred candidates in the probative elections
19 more frequently than for the Democratic candidates in the
20 other elections, correct?

21 A. Just so we're reading this correctly, that's exactly what
22 we'd expect, because, as noted in the supplemental report, the
23 statewide share is a bit higher for the Black preferred
24 candidates than for the ones called "generic Democrats". And
25 so --

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1 Q. Right. But --

2 A. And since -- oh, sorry.

3 Q. Sorry, go ahead.

4 A. Since the vote share's a little bit higher, you'd expect
5 performance to be a little bit higher.

6 Q. And so, let's talk about that. Let's go back to your
7 supplemental report, 120. And on page two, you gave the
8 statewide vote shares for the four most probative elections,
9 correct, the bottom of page two?

10 A. Yes.

11 Q. As you did not give the statewide vote share for the
12 Black preferred candidate in the nine elections, correct?

13 A. That's right. I gave some information. I said sometimes
14 as low as 37 percent, averaging 41.99.

15 Q. And, here, if we look at the set of four, that's .448 is
16 the highest statewide share, correct?

17 A. Yes.

18 Q. And are you aware that the statewide vote share for the
19 Black preferred candidate in one of the elections in your set
20 of nine is actually higher than that?

21 A. I have no reason to dispute that.

22 Q. And that was around 45.98 percent in the 2018 governor's
23 race?

24 A. Okay.

25 Q. And do you know what it was in the 2018 attorney general

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1 race?

2 A. Oh, I wish had that kind of memory. I don't.

3 Q. Do you have any basis to disagree with me if I told you
4 it was around 43.75 percent?

5 A. 43.75, that sounds believable.

6 Q. And if I told you that the average statewide vote share
7 in the top four elections in your set of nine was
8 43.71 percent for the Black preferred candidate, would you
9 have any basis to disagree with me on that?

10 A. No, I won't disagree with you. But just to be clear,
11 you're doing the major party vote share, as well?

12 Q. Yes, the two-party vote share.

13 A. Okay. Sounds good.

14 Q. And if all that's right, 43.71 is pretty much the same as
15 43.72, correct?

16 A. It sure is.

17 Q. And if we scroll down here, you stated the average
18 statewide vote share, the difference between 43.72 and 41.99,
19 with a set of four in a set of nine, correct?

20 A. Yes. That sounds right.

21 Q. And that's only about two percent; is that right?

22 A. Two percentage points. I'm sorry to keep insisting on
23 that.

24 Q. That's okay. And you did not report here in your
25 supplemental report, or your opening report, the number of

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1 crossover voters in any of these districts, correct?

2 A. I didn't measure that, and so I couldn't report it.

3 Q. Let's go back to your report -- page 27 of your opening

4 report. I'd like to start in the first paragraph, at the

5 third sentence. And you say: "Only 12.4 percent of maps

6 drawn in a race-neutral fashion have as low of an

7 effectiveness score as the State's Plan when considering the

8 probative elections." Is that right?

9 A. That's right.

10 Q. And those are the ensemble plans, correct?

11 A. You mean the phrase, "maps drawn in a race-neutral

12 fashion?" Yes, That refers to the ensemble plan.

13 Q. And at the end of this paragraph, you say: "The State's

14 maps from 10 years ago, and again from this year, are the ones

15 that are demonstrably diluted. And as we've seen, they

16 submerged traditional districting principles in order to

17 secure this absence." Is that right?

18 A. Yes. That's what's written.

19 Q. And if we go just briefly back to your supplemental

20 report on page three, you say -- actually, I think this is

21 your other report. So, let's not worry about that. Let's go

22 back to your first report, page 27.

23 A. Okay.

24 Q. So, when you talk about submerging traditional principles

25 in order to secure this outcome, those are the principles that

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1 you considered in your reporting on the ensemble plans,
2 correct?

3 A. Well, I think they're the principles discussed
4 throughout. They are the ones that are discussed
5 qualitatively as precinct splits, the nature of the precinct
6 splits, splitting along major roads, running through
7 cemeteries, all of this is part of the picture of how
8 traditional principles are collectively handled.

9 Q. But your ensemble plans did not consider certain
10 principles, correct?

11 A. That's right. If you mean they were not designed by an
12 algorithm that operationalized those principles, that's right.

13 Q. Let's go, if we can, to Exhibit 87, which is your
14 supplemental report.

15 A. Do you want the May 4th report or the August --

16 Q. Okay. I'm sorry. It's back on 120, on page three. So,
17 this is your supplemental report.

18 A. Okay.

19 Q. From August. So, if we go to the top of page three, you
20 say: "That figure illustrated that the State's enacted plan
21 provides a far starker disadvantage in probative elections
22 than in other general election contests, leading me to
23 conclude that race was predominating over even partisan
24 analysis -- partisan advantage in the enacted map."

25 Did I read that correctly?

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1 A. Yes.

2 Q. And the only election day that you reviewed was for the
3 exogenous statewide elections, correct?

4 A. That's right.

5 Q. And you didn't analyze any congressional election data,
6 correct?

7 A. Right. So, to be clear, here, I'm referring to the
8 relative performance in the ensemble analysis. It doesn't
9 work to use district at election in an ensemble analysis.
10 They're virtually always used with statewide contests. The
11 reason -- I think it's worth explaining -- is that what we're
12 doing is moving those district lines. And when you move the
13 district lines, you create new districts that aren't the same
14 terrain that voted in any particular district at elections in
15 the past. And that's why statewide elections are the contest
16 of choice for this kind of analysis, because they have the
17 same candidates on either side of the new lines, just as they
18 do of the old lines.

19 Q. And when you drew this conclusion, you were looking at
20 all the lines in the enacted plan, not just the changes that
21 it made to the benchmark plan, correct?

22 A. Here, the analysis does not compare to the benchmark
23 plan.

24 Q. So, it doesn't compare to the benchmark plan. So, did
25 you analyze what the enacted plan does to partisan performance

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1 compared to the benchmark plan?

2 A. Well, yes. We can see that not only in the tables like
3 the one on the screen now, but for what I called the "Generic
4 Party ID Contests" in Appendix A of the same report, that
5 would constitute the partisan performance.

6 Q. And if we look here on page three of 120, compared to the
7 benchmark, the enacted plan in District 1 reduces the
8 Biden-Harris vote share by about 1.4 percent, correct?

9 A. Percentage points, right?

10 Q. Percentage points. And that means that there's an
11 increase in 1.4 percentage points in the Republican vote share
12 in District 1 under the enacted plan, correct?

13 A. Correct.

14 Q. And if we can go back to your first report on page
15 nine -- and we talked about this before -- in District 1, the
16 enacted plan increased the BVAP compared to the benchmark
17 plan -- BVAP percentage compared to the benchmark plan,
18 correct?

19 A. Exactly right.

20 Q. Okay. So, the enacted plan both increased the BVAP
21 percentage and the Republican vote share in District 1,
22 correct?

23 A. That's right.

24 Q. And that indicates that the enacted plan moved the White
25 crossover voters out of District 1, correct?

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1 A. That's not the way I would describe the situation,
2 because, again, I don't think a White crossover voter is an
3 identified individual or block.

4 Q. But individuals that may cross over to vote in support of
5 a Black candidate, correct?

6 A. I wouldn't construct these sentences this way, although I
7 do see what you're getting at.

8 Q. And so, there may have been individuals who crossed over
9 to vote for Black preferred candidates who the enacted plan
10 moved out of District 1 compared to the benchmark plan,
11 correct?

12 A. May have been.

13 Q. And you haven't looked into whether that's true or not?

14 A. I haven't done an analysis to identify crossover rates of
15 voting, let alone, to spatialize the presence of crossover
16 voters.

17 Q. And by "spatialize" you mean figure out where they
18 actually live and vote, correct?

19 A. That's right. I mean, to locate.

20 Q. Thank you. So, let's go back to page 27 of your report.
21 If we go back to the first paragraph on that page, I think the
22 last sentence we already read: "The maps are demonstrably
23 diluted." But I want to focus on the second half: "They
24 submerged traditional principles in order to secure this
25 outcome."

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1 With the use of the "in order" language, are you drawing
2 an inference about the General Assembly's intent or purpose
3 here?

4 A. Well, I think the way that I'd like you to read this is
5 as providing evidence of intent. The conclusion of intent is
6 one that I would leave to the Court. But I see my role as one
7 of providing evidence. And I think what I've done here is
8 provided the evidence of intent.

9 Q. And you're not drawing an ultimate conclusion then, one
10 way or the other?

11 A. I don't think that's my role. I'm trying to stay in my
12 lane.

13 Q. And if we scroll down to Section 8, I'd like to go to the
14 first paragraph. There's a sentence about halfway down that
15 says, "considering the strong guidance," which refers back, I
16 think, to the guidelines: "And the increased Black population
17 in the Columbia and Charleston areas, see Figure 2, we would
18 expect increased electoral opportunities for Black voters to
19 be reflected in the Congressional Plan." Is that right?

20 A. Uh-huh.

21 Q. And Figure 2 gave us the increase in total Black citizen
22 voting age population, not a percentage change, correct?

23 A. The figure itself, that's correct. While you're looking,
24 I'll expand on that. I think this is the strength of the
25 ensemble analysis. What we have gotten to just here, really

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1 is where ensemble analysis shines, because what it does is it
2 compares the choices made by the legislature to actual
3 alternative plans, that, at least for chosen criteria, are
4 equally respectful of the traditional principles.

5 So, earlier you were talking about a vote share of 44 or
6 43 and so on. And it used to be before ensemble analysis was
7 available, that people talked a great deal about seats, votes,
8 curves, and converting seats to votes, and whether you were
9 hitting proportionality. The major contribution of ensemble
10 analysis is to take into account where people are located and
11 to see what's possible, given their actual human geography and
12 political geography. And so, I'd like to sort of make sure
13 we're taking away from all of this, that that's just what the
14 ensemble analysis is trying to do. It's trying to see, are
15 the plans unusual compared to actual alternatives with the
16 same facts on the ground.

17 Q. And I appreciate that clarification, because I want to
18 clarify something that you said. You said you're comparing
19 the choices the General Assembly made to the ensemble,
20 correct?

21 A. To alternatives that were available, right.

22 Q. Right. But you're not focusing -- you're not isolating
23 just the changes that were made in the enacted plan, correct?

24 A. You mean as against the benchmark?

25 Q. Yes.

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1 A. That's right. I'm looking at the enacted plan overall
2 compared to other alternatives.

3 Q. With all the features and lines it may have inherited
4 from the benchmark plan, correct?

5 A. It inherited some features, for sure.

6 Q. And those are among the features that you're trying to
7 compare to the ensemble plans, correct?

8 A. That's right. But I think the question of dilution,
9 which is the one I'm trying to address here, looks at what
10 would have been expected or possible. So, there's an
11 opportunity that the legislature has every time a new census
12 data comes out, to create a whole new division of the state
13 into voting districts. And I'm looking at what was possible
14 in this moment of opportunity.

15 Q. Let's turn now, if we can, to your Exhibit 87, which is
16 your May report. I have been calling it the rebuttal report,
17 but I think you refer to it as the May report, correct?

18 A. Sure. Any of those is fine.

19 Q. And you say here on page one in the last bullet on that
20 page, if we can get to that, you're talking about the enacted
21 plan and the Harpootlian Plan. And you say in the last two
22 sentences: "The Harpootlian Plan is comparable or superior to
23 the State's Plan enacted 2022, in all traditional districting
24 principles, Section 4, a previous report, and provides
25 measurably greater minority opportunity to elect."

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1 You acknowledge the Harpootlian Plan performs worse on
2 core retention than the enacted plan though, correct?

3 A. That's right. To clarify, I've said a few times that
4 it's sort of a matter of debate, whether you'd call that a
5 traditional principle.

6 Q. And let's scroll down a little bit further, if we can, to
7 I think on page two -- or perhaps page one. You suggested
8 earlier in your testimony to Ms. Aden that Mr. Trende treats
9 core preservation as a tier-one requirement; is that correct?

10 A. I think the phrase I used here is -- I used the phrase
11 "high priority" and "top priority". And I think somewhere
12 else, I called it "first echelon." But all of these are kind
13 of pointing in the same direction.

14 Q. And you haven't discussed Mr. Trende's report with him,
15 have you?

16 A. I haven't had the pleasure of meeting him yet.

17 Q. Let's go to the next page, if we can -- actually, let's
18 go to page three. And here you had this discussion before
19 with Ms. Aden about how many splits -- VTD splits that there
20 are in the various plans; is that right?

21 A. Yes.

22 Q. We talked a little bit about that today?

23 A. Right.

24 Q. At the time the enacted plan was drawn, how many
25 precincts of VTDs did the benchmark plan split under the 2020

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1 lines?

2 A. Okay. I think you're asking how many 2020 VTDs are split
3 by the plan from eight years earlier, from whole.

4 Q. Correct.

5 A. And, here, I think I compute that. And I have confirmed
6 that the benchmark split 65, 2020 VTDs. That's what it says
7 here in the last sentence of the first paragraph.

8 Q. And so, Mr. Trende's reporting of those numbers is
9 accurate, correct?

10 A. I never said it was inaccurate. What I said is that it's
11 misleading.

12 Q. Well, how is it misleading if it's inaccurate?

13 A. Oh, well, I think that's what misleading means.
14 Something may be technically accurate, but may lead you to an
15 inappropriate conclusion. Here's how I mean that here: The
16 implication that I took from the Trende report is that the new
17 plan is much more respectful of the guidance to keep precincts
18 whole than the old plan was. I find that not to be reflected
19 in the number 65, because there's no way that legislators in
20 2012 could have predicted the 2020 VTD line.

21 Q. But, of course, if the legislators in 2020 had left 65
22 split VTDs, that's far less respectful of that principle than
23 fixing the number down to 13, correct?

24 A. Indeed.

25 Q. One moment, please. Okay. A couple more questions about

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1 core retention.

2 A. Sure.

3 Q. And you said that it's controversial whether core
4 retention is a traditional principle, right?

5 A. I would say -- yes. What I said is that not everyone
6 would agree that it belongs on the list of traditional
7 principles.

8 Q. And I think earlier -- maybe it was yesterday -- you
9 described what you view as the standard traditional
10 districting principles?

11 A. That's an informal list that I called "the big fix," I
12 think.

13 Q. Right. And core preservation is not on that list, right?

14 A. It's not on that list.

15 Q. But you're aware that this Court, in prior cases,
16 recognized core retention as a traditional districting
17 principle, correct?

18 A. I'm aware that it's been recognized as a legitimate
19 principle. Here, I'm just trying to be careful. I'm not
20 trying to be pedantic. I'm just trying to be careful about
21 the term of our TDP.

22 Q. And have courts recognized it as a race-neutral
23 principle?

24 MS. ADEN: I'm going to object again to the extent
25 that that calls for a legal conclusion.

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1 JUDGE GERGEL: Yeah. Mr. Gore, we need to pick up
2 the pace here. This is way too tedious.

3 MR. GORE: Thank you. I've got just one more
4 question to ask.

5 JUDGE GERGEL: Go ahead.

6 **BY MR. GORE:**

7 Q. But you agree that preserving the cores of districts is
8 in the Senate guidelines?

9 A. Yes.

10 Q. And the General Assembly was -- could treat that as a
11 traditional or legitimate principle, correct?

12 A. They could.

13 Q. I have no further questions.

14 THE COURT: Okay. House, cross. Let's avoid any
15 duplication.

16 MR. MATHIAS: Thank you, your Honor. Andrew Mathias,
17 for the House.

18 **CROSS-EXAMINATION**

19 **BY MR. MATHIAS:**

20 Q. Dr. Duchin, nice to see you again. We've had some good
21 times. This is likely our last.

22 MR. MATHIAS: Can you pull up PX-83 for me? And can
23 you zoom in on both enacted and alternative districts, just
24 that portion of the page. Thank you.

25 **BY MR. MATHIAS:**

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1 Q. Dr. Duchin, you told me in one of the depositions we had
2 -- I don't remember which -- what you meant by the term
3 "operationalize." Can you remind me?

4 A. Well, I can supply a new definition and hope that it
5 matches the earlier one.

6 Q. I'm sure it will.

7 A. Operationalize means to take something that may be vague
8 or informal and to make it precise and possibly quantitative
9 in such a way that you can use it functionally.

10 Q. And in your work on this case, did you attempt to
11 operationalize communities of interest?

12 A. I did make an attempt to do so.

13 Q. And am I correct to recall that, in operationalizing
14 communities of interests, you relied on the thousand-plus
15 pages of comment at the various hearings, Senate and House?

16 A. That's right. I exclusively relied on that.

17 Q. Do you remember anybody talking about the
18 Chesney/Williston community of interest?

19 A. I do not remember that, as I sit here.

20 Q. Do you know where Chesney is?

21 A. I don't.

22 Q. I think this was a touchscreen, so I'm going to write
23 there. Chesney is about right there.

24 A. Okay.

25 Q. Do you know where Williston is?

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1 A. I don't.

2 Q. Williston is about right here. So, Chesney is closer to
3 the state of North Carolina than it is Williston, correct?

4 A. That seems reasonable.

5 Q. And Williston is closer to the state of Georgia than it
6 is Chesney, correct?

7 A. No reason to doubt you.

8 Q. And did you tell Mr. Gore that the alternative district's
9 map was generated using your ensemble plan?

10 A. That's right. This is just an example picked out that,
11 as I said, only illustrates how little of a change would be
12 needed to create more electoral opportunity.

13 Q. And that very little change, to use your words, paired
14 Chesney and Williston in the same congressional district,
15 correct?

16 A. Yes. Well, I accept that.

17 Q. You accept that that's true?

18 A. Yes.

19 Q. And so, your algorithm that took into account -- meaning,
20 operationalized -- communities of interest created this new
21 District 2, that paired Chesney and Williston; that's correct?

22 A. Right. And that brings us back to an important point.
23 The algorithm is using probabilistic or random steps. And
24 it's expressly designed so that everything is possible. It
25 only makes certain things more likely than others.

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1 Q. And conceivably -- well, not conceivably. It's intended
2 to respect communities of interest, correct?

3 A. I'm not sure whether this was in -- as you heard, there
4 were some ensemble runs with COI preservation and some
5 without. And I'm not sure which run this was from.

6 Q. Do you think you would be able to operationalize the
7 amount of community outcry there would be if Congressional
8 District 2 included Chesney and Williston?

9 A. I wouldn't propose to predict.

10 Q. That's all I've got. Thank you.

11 THE COURT: Anything on redirect?

12 MS. ADEN: No, your Honor.

13 JUDGE GERGEL: Very good. You may step down.

14 THE WITNESS: Thank you.

15 JUDGE GERGEL: Call your next witness.

16 MS. ADEN: Plaintiffs call Taiwan Scott.

17 MR. TRIVEDI: Your Honor, while Mr. Scott is coming
18 into the courtroom, I wanted to raise that he is Muslim and
19 would prefer to be sworn in on a Quran, if the Court has one
20 available.

21 JUDGE GERGEL: That would be great. We'd be honored
22 to do it.

23 MR. TRIVEDI: All right. Thank you very much.

24 MR. INGRAM: Mr. Scott is in the restroom. He will
25 be right back.

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1 TAIWAN RAMON SCOTT, having been first duly sworn,
2 *testified as follows:*

3 DIRECT EXAMINATION

4 BY MR. INGRAM:

5 Q. Good afternoon, Mr. Scott. Can you please state your
6 full name for the record?

7 A. Taiwan Ramon Scott.

8 Q. Would you mind pushing that mic closer to you? Thank
9 you. Mr. Scott, how do you racially identify?

10 A. African American.

11 Q. Mr. Scott, what do you do for a living?

12 A. I am a licensed real estate agent and I'm also an on-site
13 assistant property manager.

14 Q. And where do you reside?

15 A. On Hilton Head Island.

16 Q. And what areas of the state have you lived and worked in,
17 aside from Hilton Head?

18 A. I lived in Charleston, South Carolina. And pretty much,
19 that's it.

20 Q. Are you a registered voter in South Carolina?

21 A. Yes, I am.

22 Q. What congressional district do you live in?

23 A. Congressional District 1.

24 Q. Who is your Congress person?

25 A. My Congresswoman is Nancy Mace.

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1 Q. How long have you lived in South Carolina?

2 A. About 25, 27 years. But I've been coming here as long as
3 I can remember.

4 Q. In what context did you come here?

5 A. My grandmother was actually born on Hilton Head, a native
6 islander of Hilton Head. So, I've been spending summers on
7 Hilton Head, just like I said, as long as I can remember.

8 Q. How long has your family resided in South Carolina?

9 A. Hundreds, hundreds of years. My family is of the
10 Gullah-Geechee culture.

11 Q. Can you briefly share with the Court the history of the
12 Gullah community in the region?

13 A. Well, the Gullah community is one of the oldest
14 communities that can relate our ancestors back to Africa. And
15 my understanding is -- I think it's around 2026, I think, or
16 27 -- Congress enacted the Gullah Geechee Heritage Cultural
17 Corridor, which we are pretty much a part of.

18 Q. And what geographic area is comprised in that corridor?

19 A. Roughly 30 miles from the coast, from -- I want to say
20 Wilmington, North Carolina down to Jacksonville, Florida.

21 Q. And as a member of the Gullah community, what are some of
22 the issues that you and your community have experienced?

23 A. Historically, we experienced the difficulty with land
24 retention, heirs property, economic development opportunities,
25 issues with ordinances, zoning, the list goes on. Historical

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1 significant structures and places that have been basically
2 erased, including encroachments on cemeteries.

3 Q. And can you share more details about the heirs property
4 issue?

5 A. Yes. Historically, the Gullah community lived a communal
6 life, whereas the lands would pass between the elders to their
7 next of kin, and actually didn't leave a will. So, it was
8 more of a community-living lifestyle. However, because of
9 development and things that happened, that type of land
10 ownership has become more and more difficult and has forced a
11 lot of people's property into heirs and basically forced a lot
12 of the properties into tax sales and land seizures and things
13 of that nature.

14 Q. And have you worked with your community to help advocate
15 for these issues?

16 A. Yes. Yes. It's been an ongoing issue. For example,
17 Hilton Head -- and I'm pretty sure it's not limited to Hilton
18 Head -- whereas, we try to explain with an example. Example
19 with heirs property is, you have, let's say, a 10-acre tract
20 of land that's owned by a brother and sister -- or husband and
21 wife, rather, and they have five kids. And those five kids,
22 when that husband and wife pass will be entitled to roughly,
23 let's say, two acres of property a piece. What's been imposed
24 on us has been, in order to subdivide that property, we would
25 have to put in -- will have financial impacts on us where we

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1 would have to put infrastructure in place in order to
2 subdivide the property. And I mentioned Hilton Head because I
3 personally experienced it and I know that there's ways that
4 this can be resolved or dealt with. Whereas, prior to Hilton
5 Head Island being incorporated, families would basically take
6 that 10-acre tract of land, hire a surveyor, would come out
7 and survey that piece of property. They'll take that survey,
8 showing the access point, how these five, two-acre tracts of
9 land would be accessible, take that 10 acres -- that survey to
10 the county, and record it and have it subdivided. And those
11 family members would actually get their deeds -- you know,
12 prepare deeds, have the deeds prepared -- and that property
13 would be subdivided.

14 When the town of Hilton Head was incorporated they
15 basically told the county, stop doing that. Before they will
16 allow the property to be legally subdivided, the town wants a
17 -- they want to actually go out and approve the subdivision.
18 So, when I say "approve the subdivision," what's required is,
19 like I said, roads, drainage, sewer, you know, all
20 infrastructure. So, that's a financial burden that's being
21 placed on that family in order to subdivide that property.
22 Now, again, we started with five siblings. So, what happens
23 if those five siblings each have five kids? So, we go from
24 five to 25, and it just escalates and escalates and escalates.

25 So, if there was a way that we can kind of take a step

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1 back and go to the way things used to be with the County --
2 being under the County, then that would actually help the
3 heirs property situation. So, I think --

4 JUDGE GERGEL: Mr. Ingram, let's move on. We
5 understand the heirs property problem.

6 MR. INGRAM: Thank you.

7 **BY MR. INGRAM:**

8 Q. And, Mr. Scott, how could a congressional representative
9 help advocate about this situation?

10 A. I believe that there is an opportunity whereas bills
11 could be helped drafted that can help basically reduce the
12 amount of heirs property. Because, again, we're talking about
13 ordinances and rules that have been put in place or policies
14 that have been put in place that have caused the heirs
15 property situation to escalate. If Congress feels or felt
16 that the Gullah Geechee Heritage Corridor was significant
17 enough to flag it as a historical designated area, then I
18 think that there's opportunities for congressional
19 representatives to come in and do something to help retain our
20 property.

21 Q. And properly speaking, Mr. Scott, can you think of an
22 example of what type of -- what this intervention would look
23 like?

24 A. One good example is just recently. Again, when we talk
25 about heirs property and we talk about economic development,

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1 we look at, more recently, what's happening on Hilton Head
2 with the road expansion, Highway 278 expansion, and also with
3 the airport expansion, both happening within historic Gullah
4 communities. Recently, we had Senator Davis come down and
5 basically flag our area within the Gullah-Geechee community as
6 -- to quote what he said: "Pretty much bearing the negative
7 impacts of growth per se on the island." So, he has initiated
8 -- it's about \$5 million worth of seed money for economic
9 development, to help kind of loosen some of the things and
10 give opportunities for economic development in our community.
11 I see that as a way that congressional representatives have
12 the possibility to impact what's happening in our community.

13 I look at the airport expansion with the \$19 million that
14 Mace was able to secure for us. There's a great opportunity
15 whereas the Gullah community will be able to take a part -- be
16 a part of economic development within that airport. You know,
17 so there are ways that representatives, in my opinion, can
18 step in and help retain and help one of their significant
19 cultural -- one of the most significant cultural entities or
20 communities in America.

21 Q. Aside from airports and highways, do you have any other
22 sort of interventions regarding Congress that your community
23 could benefit from?

24 A. Community block grants. Those are ways that monies can
25 come in, helping to pave roads. Even with the insurance, you

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1 know, with heirs property and things of that nature, where
2 there has been, more recently, some of FEMA's requirements
3 with heirs property and insurance as far as insurance is
4 involved, where now that there's a possibility or opportunity
5 that we can be afforded some of the funds to help our
6 community. Because, historically, that has always been an
7 issue with heirs property and in regards to acquiring
8 insurance for like when hurricanes and things like that
9 happen. For example, when Matthew came in, you know, there
10 were no funds that were available for our community, because
11 we were quote/unquote "privately owned" or within -- you know,
12 outside the gated communities.

13 Q. And, Mr. Scott, do you have any concerns about your
14 current congressional representation in CD 1?

15 A. My concern has been -- and continues to be -- a voice, or
16 lack of a voice for what's been happening with land depletion,
17 pretty much. I feel as though we are the endangered species
18 when it comes down to gentrification and land loss. So,
19 again, I question, you know, why isn't there more of an
20 initiative and incentive to step in and to help pretty much
21 right the wrong. There's more than enough opportunity there.
22 We see that. You know, when funds are requested throughout
23 other areas, you know, for whatever reason, they can get the
24 attention that they deserve. But I feel as though we haven't
25 -- we continue to lack that representation and that voice.

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1 Q. And have you raised these concerns with your current
2 Congresswoman?

3 A. More recently, actually, for some time, we have -- when I
4 say "we," I'm referring to the native island leadership in
5 Hilton Head -- has reached out to representatives and actually
6 had a meeting scheduled to continue bringing these issues to
7 the forefront. But, you know, that particular meeting was
8 cancelled. Senator Davis does come down a lot. But, again,
9 it's just we know that there's, historically, an issue within
10 our areas. And we don't feel as though there's enough
11 attention that has been given to try to rectify these issues.

12 Q. And before Congresswoman Mace, did you have any issues
13 with your prior representatives in CD 1?

14 A. The issues have always been there. Now, how much of
15 attention they have gotten is always questionable. We don't
16 feel as though there's never been enough attention that can
17 help, you know, get our issues in the forefront.

18 Q. Mr. Scott, I want to ask you about the current enacted
19 map.

20 MR. INGRAM: So, can we please pull up PX-489?

21 BY MR. INGRAM:

22 Q. Mr. Scott, do you recognize this document?

23 A. Yes. It appears to be the approved map.

24 Q. And what did you think when you first saw this map?

25 A. Well, I think that -- well, my first thought was -- is

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1 another map, you know, same of the -- I would say I didn't
2 believe that the map is doing my community justice as far as
3 Congressional District No. 1 is concerned.

4 Q. And what concerns did you have when looking at the map
5 about Congressional District 1?

6 A. I look at the continued issues that we've had,
7 historically, with the amount of growth. And when I say
8 "growth," I'm referring to the highly tourist designated areas
9 that continues to affect my Gullah culture, and not being able
10 to partake in economic development opportunities, not being
11 able to rectify or right some of the wrong that has been
12 imposed on us, and not being able to elect someone who can put
13 our issues in the forefront.

14 Q. And, Mr. Scott, did you have any issue with the
15 boundaries of Congressional District 1?

16 A. Not knowing particularly the lines, understanding that
17 the communities of Charleston and North Charleston are like
18 communities where Blacks -- where Gullah-Geechee community
19 people are, I think that there was an opportunity that should
20 have been afforded to give us -- put us in a place where we
21 can be able to elect someone that can speak up on our behalf.

22 Q. From your experience with the Gullah community, what
23 issues does Charleston and North Charleston and its residents
24 have in common?

25 A. Again, it all kind of goes down to the heirs property,

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1 ordinances, zoning, land use, economic development, the amount
2 of -- how high the taxes are being raised. That's basically
3 taxing us off, you know, of our ancestral lands. So, I look
4 at those particular areas and say, okay, well, we have these
5 same issues, we have these same concerns. And I still
6 question, you know, if Congress believed that -- you know,
7 it's important enough to identify this area, why isn't --
8 what's the next step? It's one thing to say, here are areas
9 of interests, let's go out and let's flag a building or let's
10 name buildings after historical Black people, you know, but
11 what's being -- what's in place to help us? You know, where's
12 that voice that we have that -- I mean, these issues didn't
13 just begin. Historically, we've had these issues going on.
14 So, what is it going to take in order for us to get the
15 attention that we deserve, the attention that Congress
16 themselves said we should have?

17 Q. Mr. Scott, do you think these current boundaries are
18 harmful to the Black community and the Gullah community in CD
19 1?

20 A. Yes, I do.

21 Q. Why?

22 A. I believe, again, that it doesn't open up an avenue for
23 us to elect someone who will speak up and advocate for
24 historical concerns that continue to arise and just continue
25 to escalate.

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1 Q. As a 27-year-long resident of this area, can you remember
2 a time when you did have an advocate in Congress?

3 A. I would say we've had an advocate, probably with Joel
4 Cunningham, who actually visited multiple times the Gullah
5 community of Hilton Head. I mean, we've actually sat down
6 with him multiple times. But, you know, it's almost like a
7 hit and miss. You know, when do we get the attention that we
8 deserve? A lot of people won't -- a lot of people don't
9 understand the impact of the decisions that are made and how
10 it affects people on a daily. You know, we should have an
11 advocate for us.

12 Q. And looking at this map, do you see the legislature
13 branch increasing or decreasing Black voting power in your
14 community?

15 A. What I see is there was an opportunity to help get us a
16 voice. And I think we deserve an opportunity to have a voice.

17 Q. And as a plaintiff, are you alleging that the legislators
18 have any animus or hate towards the Gullah community?

19 A. I wouldn't say there's any hate, but I will quote a
20 native Gullah elder, who says to me: "They love the culture
21 but not the people." You know, for me that's impactful. So,
22 if we're looking at one of the highest -- or possibly the most
23 impactful financial benefit to the State of South Carolina,
24 which is tourism, and you look at a culture that's basically
25 being pushed to the side because of quote/unquote "development

TAIWAN SCOTT - DIRECT EXAMINATION BY MR. INGRAM

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1 and progress," but at the same time, you have identified this
2 culture as -- I would say, indigenous -- I mean, we've gotten
3 to the point where you've identified us, something's wrong.
4 It doesn't add up.

5 Q. And, Mr. Scott, will your community face harms if these
6 maps do not change?

7 A. I believe if we're not afforded the opportunity to elect
8 a voice, someone who will speak up on our historical concerns,
9 we will continue to lose our property. And without the
10 people, you won't have the culture.

11 Q. And what communities do you believe should be in CD 1?

12 A. I believe that the areas of Charleston and North
13 Charleston should be brought together. They should be brought
14 in together. Just because they weren't before, doesn't mean
15 that it's right. You know, we should have a voice. And
16 that's all the Gullah community has been asking for, is an
17 advocate to come out and speak up on ongoing concerns. And
18 we're missing an opportunity to help preserve what you have
19 already -- what Congress has already said and designated as an
20 area of concern.

21 Q. Mr. Scott, why did you decide to become a plaintiff in
22 this lawsuit?

23 A. Well, you know, sometimes you get pushed into things, you
24 know, whereas, you know, it becomes bigger than yourself. A
25 lot of people won't believe this, but I personally

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1 experienced, I would say, discrimination and racism, outright,
2 when it comes down to Hilton Head, in being able to open a
3 business on my property. Okay. Hilton Head was incorporated
4 in 1983. From 1983 to pretty much last year, there has not
5 been one native Gullah, one native islander, whose been able
6 to open up a new business and new buildings on their property.
7 Since 1983. Now, after a seven-year legal battle, that I'm
8 pretty much myself coming out of, we finally broke that cycle.
9 It truly took me to sit back and realize that it's not about
10 me personally, it's bigger than Taiwan Scott. It's about a
11 culture that has been systematically pushed to the side and
12 taken advantage of.

13 And when I say that nobody listens, nobody's been
14 listening. Everybody knows what's going on. Everybody can
15 see that there is land loss. Everybody can see that there's
16 heirs property. Everybody can see that. What are you doing
17 about it? Nobody's doing anything about it. There is
18 opportunity to help sustain the issues that you are part of
19 accepting. I mean, what does it take to happen for us to be
20 able to get a level playing field? That's it. Most people,
21 they're not looking for economic development, they're looking
22 just to continue living on their land. That's it.

23 Now, if I wanted to bring a mobile home on my property, I
24 didn't have no problem with that. But when you're talking
25 about economic -- sustainable economic opportunity, that's

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1 when all the roadblocks came up. I tried my best to go out
2 and reach out to representatives; not just my own, outside of
3 my area. But no one would step in. But there's a problem.
4 There's a systemic problem that needs to be changed, and it
5 goes back to "They love the culture but not the people." So,
6 we can take advantage of the Gullah-Geechee community and the
7 historical sites, and we can continue advertising bringing
8 people to the Gullah Geechee Corridor, you know, because it's
9 going to bring financial gain to the State. But what about
10 the people? What about the people whose backs it's built on?
11 When are we going to get an opportunity? That's all we've
12 asked for, is a level playing field.

13 A place like Hilton Head, and we still don't have sewer
14 in a world class resort destination. Something is
15 systemically wrong with that. How can they even justify that?
16 There are areas in our community that you wouldn't even know
17 about and wouldn't even want to drive by, because they have
18 put the facade up for the tourists not to see it. But we got
19 bicycle paths going through our communities. You know,
20 something is wrong with that. We can put hundreds of
21 thousands of dollars into sea yacht basins. That's priority.
22 What about the cemetery? What about the historic cemeteries
23 throughout our Gullah communities? My family is buried at the
24 18th hole in Sea Pines. Buried down there. And you wouldn't
25 even know the cemetery exists. So, who is doing anything

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 about it? "We love the Gullah culture but we don't love the
2 people."

3 MR. INGRAM: Thank you, Mr. Scott.

4 I will pass the witness.

5 THE COURT: Cross-examination.

6 MS. STRINGFELLOW: May it please the Court,
7 your Honor.

8 **CROSS-EXAMINATION**

9 **BY MS. STRINGFELLOW:**

10 Q. Good afternoon, Mr. Scott. How are you?

11 A. I'm well. And yourself?

12 Q. My name is LaJessica Stringfellow. I met you virtually
13 not too long ago, so it's good to see you in person.

14 A. I do remember.

15 Q. So, I don't have many questions for you, just a couple.

16 Mr. Scott, you testified that you live in Congressional
17 District 1, right?

18 A. Yes.

19 Q. And in 2012, you also resided in Congressional District
20 1; is that correct?

21 A. Yes.

22 Q. Were you in Congressional District 1 in 2002?

23 A. If the lines weren't changed, then I would say yes.

24 Q. Well, I'll represent to you that Hilton Head was in
25 Congressional District 1 in 2002, okay?

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 A. Okay.

2 Q. And so, you mentioned being a part of the Gullah
3 community in Hilton Head, right?

4 A. Yes.

5 Q. And Hilton Head, the entire area of Hilton Head and the
6 Gullah community that resides there, it's a part of
7 Congressional District 1, isn't it?

8 A. Yes.

9 Q. And so, your community of the Gullah community in Hilton
10 Head is not split between two districts; is that correct?

11 A. When I look at my community, I don't limit it to Hilton
12 Head, I look at areas that are -- I mean, I'm literally less
13 than 150 miles from where I am now, you know, to Hilton Head.
14 So, I still consider this area as my community.

15 Q. But your community on Hilton Head is fully within
16 Congressional District 1, right?

17 A. Well, when you say "my community," what are you referring
18 to?

19 Q. Where you reside in Hilton Head, it's fully within
20 Congressional District 1?

21 A. I reside in Hilton Head in Congressional District 1, yes.

22 Q. And you're aware that the congressional districts in
23 South Carolina significantly grew over the past 10 years,
24 right?

25 A. Yes.

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 Q. And so, are you aware that the congressional districts
2 have to be numerically balanced in comparison to one another?

3 A. Yes.

4 Q. And so, are you aware that Congressional District 1 grew
5 so much that it needed to shed some of that population to the
6 surrounding districts?

7 A. I understand that because we grew, it needs to be
8 dispersed in different areas, but my question still that I
9 have is: Even though with that growth, why aren't we put in a
10 position to be able to elect someone that will speak out for
11 us?

12 Q. Okay. And so, you're aware that a part of Charleston is
13 in Congressional District 1, right?

14 A. Yes.

15 Q. And so, you mentioned that you -- or you testified that
16 you believe North Charleston should be a part of Congressional
17 District 1; is that your testimony?

18 A. I believe that between North Charleston and Charleston,
19 we should have had the opportunity to be within -- that area
20 should have had the opportunity to be within Congressional
21 District 1.

22 Q. But are you aware that North Charleston is a part of
23 Congressional District 6?

24 A. Yes.

25 Q. Would you agree with me that the citizens of North

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 Charleston have an ability to elect a candidate of their
2 choice in Congressional District 6?

3 A. I would say that, because of the area there, that there
4 should have been an opportunity afforded to bring citizens
5 into Congressional District 1 that will give us an opportunity
6 to elect our preferred candidate.

7 Q. Okay. But that doesn't answer the question I'm asking
8 you. The community in North Charleston that resides in
9 Congressional District 6, would you agree that they are able
10 to elect a candidate of their choice?

11 A. I would agree that they are in a position to elect a
12 candidate of their choice. I believe that they would have had
13 a better opportunity to help Congressional District 1 by being
14 incorporated into it.

15 Q. Okay. And --

16 A. I don't think there's an issue with Congressional
17 District No. 6 as far as a representative is concerned. I
18 think they have someone that's speaking out on their behalf.
19 The problem that I have is, we don't.

20 Q. So, the Gullah community that resides in North
21 Charleston, you would agree they do have a representative that
22 will speak out on their behalf?

23 A. I believe that they have been given an opportunity to
24 have someone, yes.

25 Q. Would you agree with me that North Charleston can share

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 similarities with some of the communities that are closer to
2 it than Hilton Head?

3 A. I believe North Charleston -- I mean, throughout the
4 Gullah Geechee Corridor, there are issues or concerns that we
5 all have.

6 Q. Not just considering the Gullah community but just in
7 general, would you agree that the area shares similarities
8 with the surrounding community that are closer to it than
9 Hilton Head?

10 A. I believe there are similarities, but I still question if
11 they're given the opportunity -- afforded the opportunity to
12 prosper or to have a voice.

13 Q. And the Gullah community is not the only community within
14 North Charleston, right?

15 A. Correct.

16 Q. Mr. Scott, you didn't participate in this redistricting
17 cycle, did you?

18 A. I did not.

19 Q. You didn't attend any of the public input hearings that
20 took place around the state, did you?

21 A. I did not.

22 Q. You did not convey your concerns to any of the South
23 Carolina legislative members, did you?

24 A. That's correct.

25 Q. Mr. Scott, did you have the opportunity to review any of

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 the proposed maps that were proposed to the legislature?

2 A. In depth? No.

3 Q. Are you aware that the South Carolina NAACP submitted
4 proposed maps for the Congressional Plan?

5 A. I believe they have, yes.

6 Q. And do you believe that the South Carolina NAACP maps
7 would have been more beneficial to your community?

8 A. Honestly, I can't answer that, if they would have been
9 more beneficial or not.

10 Q. Are you aware that one of those maps that were proposed
11 by the South Carolina NAACP had Hilton Head Island separated
12 from North Charleston?

13 A. No, I'm not aware of it.

14 Q. Are you aware that several of the other maps that were
15 proposed by organizations had Hilton Head separated from North
16 Charleston?

17 A. Well, what I can remember is talk amongst the community
18 that areas within Beaufort were taken out. And my
19 understanding is because -- well, based on what I see, is
20 because they stressed that they didn't want that to happen,
21 their voices were heard. Now, we're talking about White
22 people who spoke up and said, we didn't want this. And I
23 believe that's why, you know, that was taken in consideration.
24 But when you look at the areas of Charleston and North
25 Charleston, where people of color have said, hey, you know,

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 we've got some issues here, we need a voice, in my opinion --
2 well based on what I see, that wasn't taken into
3 consideration. Their voice wasn't loud enough, if you ask me.

4 Q. But we've established that the citizens of North
5 Charleston are able to elect a candidate of their choice,
6 right?

7 A. I do understand that, but I still go back to, you know,
8 being able to bring in the two areas -- to be able to have
9 someone that they can elect.

10 Q. Mr. Scott, are you aware that the Black voting age
11 population increased in Congressional District 1 with the new
12 enacted map?

13 A. Yes. My understanding is it did increase.

14 Q. And wouldn't you agree that having an increase in the
15 Black voting age population would be beneficial to the voting
16 influence for Black residents in Congressional District 1?

17 A. I believe having the opportunity -- I believe just
18 because it grew -- it growing is one thing, but being able to
19 elect someone that's going to speak out for your concerns is a
20 bigger concern, in my opinion. And just because it grew, we
21 still don't have a person to stress and represent us.

22 Q. And your previous testimony was that you lack
23 representation and you lack someone to advocate for your
24 issues; is that correct?

25 A. I think, historically, by what we can see has been

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 happening within our community, historically, it's shown that
2 we continue to fight for the same issues, we continue to have
3 the same concerns, and if there was an effort, if there was a
4 voice, then I think there would be some type of -- there would
5 be more -- I think you would be able to see more happening
6 within our communities.

7 Q. Okay. Mr. Scott, did you have an opportunity to meet
8 with Representative Joe Cunningham when he represented
9 Congressional District 1?

10 A. Yes, actually.

11 Q. Did he advocate for issues on Hilton Head Island?

12 A. We've met with Joe Cunningham multiple times. With any
13 representative, or any proposed representative or anyone who
14 is seeking election, we always try to meet with them to bring
15 our issues to the forefront. To say that our concerns were
16 addressed with Joe Cunningham, I wouldn't say that it was a
17 priority -- it was given the priority enough that we seen the
18 results. Was it initiated to try? Yes. I know that offshore
19 drilling was one of our main concerns that we've had. And as
20 far as I know and as far as I remember, that is something that
21 he tackled. But we're talking about -- the way we look at it
22 is, a big wheel has been turning in one direction for a long
23 time, and in order to right the wrong, I think we collectively
24 need voices, especially if we have representatives that
25 represent Gullah communities.

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 Q. Okay. It's a great point that you made there. So, you
2 testified that Senator Tom Davis visits Hilton Head often,
3 right?

4 A. I would say more often now than ever because of the
5 Highway 278 expansion through the historical Gullah community
6 and the widening of the bridges. There has been some issues,
7 I would say, between -- or disagreements between Beaufort
8 County and the town of Hilton Head. So, yeah, Senator Davis
9 has been coming down more often. And, again, I think it's
10 because of that effect. It hasn't been, in my opinion, driven
11 by ongoing Gullah concerns. Having \$5 million seed money for
12 economic development pretty much solidifies to me that the
13 opportunity is always there, it's always been afforded. You
14 know, why now? You know, why not before? Historically, you
15 know, this is something that could be addressed.

16 Q. And Senator Davis was instrumental in your community
17 receiving that --

18 JUDGE GERGEL: Ms. Stringfellow, I don't think
19 Senator Davis, a state senator, is going to be relevant to
20 this case, unless you can demonstrate that.

21 MS. STRINGFELLOW: Well, your Honor, the witness has
22 testified that he did not have -- he believes that there
23 wasn't significant representation advocacy for his issues.

24 JUDGE GERGEL: We're not dealing with the Senate
25 Plan, we're dealing with Congressional Plan.

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 MS. STRINGFELLOW: Okay.

2 Mr. Scott, I think that's all the questions I have
3 then.

4 JUDGE GERGEL: Thank you, ma'am.

5 Cross-examination by the House? Let's avoid
6 repetition.

7 MR. BARBER: My name is Hamilton Barber, for the
8 House Defendants.

9 **BY MR. BARBER:**

10 Q. I have a few questions for you today, Mr. Scott.

11 You said that the Gullah Geechee Cultural Heritage
12 Corridor extends from Wilmington, North Carolina to
13 Jacksonville, Florida, right?

14 A. Yes.

15 Q. And I presume it spans multiple districts in South
16 Carolina, right?

17 A. Yes, it does.

18 Q. So, that means that this community has representation
19 across South Carolina, right?

20 A. We have representatives throughout the Gullah Geechee
21 Corridor, yes. However, we feel that we don't have
22 representation for us, where I live, Congressional District 1,
23 a voice for us.

24 Q. Okay. So, don't have any representative in CD 1?

25 A. We have a representative, but I believe that that

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 representative has not fulfilled -- I believe that that
2 representative has not spoken -- has not represented the
3 Gullah Geechee community in Congressional District 1 in our
4 best interests, of the Gullah people.

5 Q. Okay. And with such a large district -- excuse me, such
6 a large community, would you agree with me that this area is
7 too large for a single congressional district between
8 Wilmington, North Carolina and Jacksonville, Florida?

9 A. I think that, based on areas -- I mean, I don't know if
10 it's significant, if it should have. I can't answer if we
11 should have one representative. You're crossing different
12 states.

13 Q. I got you. But even within South Carolina, would you
14 agree with me that there's different cultures, different
15 political beliefs, in such a large area?

16 A. Different -- sorry?

17 Q. Different cultures, different political beliefs.

18 A. Yes.

19 Q. But would you agree with me that there are competing
20 different communities of interest just within Gullah community
21 area?

22 A. Well, I know, historically, we all have the same
23 concerns. I mean, we all have heirs property concerns, we all
24 have rising taxes concerns, we all have sustainable economic
25 development concerns that we haven't been able to partake in.

TAIWAN SCOTT - CROSS-EXAMINATION BY MS. STRINGFELLOW

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1 I mean, those issues, they cross lines. They have been
2 historically out there and they continue to be.

3 Q. And in your non-Gullah community, they also have those
4 same issues as well, right?

5 A. I would assume, but has those non-Gullah communities been
6 designated by Congress as culturally historical and
7 significant? I'm talking about my community. I'm here to
8 advocate about my community.

9 Q. I understand. And just to shift gears quickly, an
10 attorney from the NAACP asked you to be a plaintiff, right?

11 A. I've had, like I mentioned earlier, seven years of
12 dealing with issues on Hilton Head. I've had an ongoing
13 conversation and I've had ongoing communications with Legal
14 Defense Fund for every bit of probably close to six years now.
15 I mean, they have been to Hilton Head. They have actually
16 forded Hilton Head on our behalf for ongoing concerns. So, I
17 have an ongoing relationship with them.

18 Q. And at that time, the plan had not even passed, right?

19 A. I'm sorry?

20 Q. And at that time, the redistricting plan had not even
21 passed, right, when you were asked to be a plaintiff?

22 A. When -- my ongoing relationship with them?

23 Q. How did you become to be part of this --

24 A. Again, I've had multiple dealings over at least a
25 six-year period of time with the Legal Defense Fund.

TAIWAN SCOTT - REDIRECT EXAMINATION BY MR. INGRAM

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1 Q. Just for the sake of time, I'm going to shift gears. You
2 had an opinion piece published September 29, 2022, in the
3 State Newspaper online, right?

4 A. Yes.

5 Q. Did anyone other than yourself help draft that piece?

6 A. I mean, I worked with the Legal Defense Fund, I worked
7 with counsel on that. But, I mean, that's my words. I mean,
8 that's what's been happening. I mean, I stick by it.

9 Q. Okay. You spoke favorably about the efforts of Senator
10 Davis, right?

11 A. Yes.

12 Q. And he's a Republican, right?

13 A. Yes.

14 Q. So, that means you have no concern with a Republican
15 representative, right?

16 A. It doesn't matter to me if it's Republican or Democrat.
17 All I want is a voice for my community. And that's all we've
18 been asking for, is a voice for our community.

19 MR. BARBER: That's all the questions I have.

20 THE COURT: Thank you. Thank you, sir.

21 MR. INGRAM: I just have brief redirect.

22 JUDGE GERGEL: The word "brief" is very important.

23 **REDIRECT EXAMINATION**

24 **BY MR. INGRAM:**

25 Q. Mr. Scott, are you a member of the South Carolina NAACP?

TAIWAN SCOTT - REDIRECT EXAMINATION BY MR. INGRAM

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1 A. No, I'm not.

2 Q. And my last question: In your view, Mr. Scott, does
3 North Charleston have more in common with your community or
4 with Columbia?

5 A. Definitely more with my community.

6 Q. Thank you. That is all.

7 JUDGE GERGEL: Thank you. You may step down, sir.

8 THE WITNESS: Thank you.

9 MS. ADEN: Your Honor, if you're willing, we have one
10 more fact witness that we believe will be very brief, and can
11 end the day and take another witness off our list.

12 JUDGE GERGEL: How brief? Folks, I want to say
13 something to you: We can do this a lot more efficiently. I
14 mean, I tried a lot of cases in my day, over a hundred cases.
15 And this is tedious. Everybody's pace is just too slow.
16 You've got to kind of get to the point and move on. You know,
17 and I'm fussing at everybody here, not one side or the other.
18 But y'all need to get organized tomorrow so that, when we come
19 back, y'all are more efficiently getting it. On almost every
20 witness, we got it in like the first hour. We knew your
21 points, all of the points, within an hour. And y'all just
22 kept going over and over. We all read all those reports, we
23 listened to y'all. It's excellent, but there's just too much
24 repetition.

25 Bring your witness in.

HENRY GRIFFIN - DIRECT EXAMINATION BY MR. AUDAIN

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1 MR. AUDAIN: Thank you, your Honor. We call Henry
2 Griffin.

3 *HENRY GRIFFIN, having first been duly sworn,*
4 *testified as follows:*

5 MR. AUDAIN: Good afternoon. My name is Raymond
6 Audain, A-u-d-a-i-n.

7 **DIRECT EXAMINATION**

8 **BY MR. AUDAIN:**

9 Q. Good afternoon, Mr. Griffin. You can take your mask off.

10 A. Good afternoon.

11 Q. Can you please state your full name for the record?

12 A. Henry Griffin.

13 Q. Mr. Griffin, where do you live?

14 A. I live in St. Stephen, South Carolina.

15 Q. How long have you lived there?

16 A. I've lived in St. Stephen since I was two.

17 Q. How old are you now, sir?

18 A. Seventy.

19 Q. Are you a registered voter?

20 A. I am.

21 Q. How long have you been a registered voter?

22 A. Since I was 18.

23 Q. Why did you register to vote at such a young age?

24 A. Because of the struggle in the way that our grandparents
25 and parents had to fight and struggle to get the right to

HENRY GRIFFIN - DIRECT EXAMINATION BY MR. AUDAIN

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1 vote. So, I felt I would be denying them if I didn't vote.

2 Q. What congressional district do you live in?

3 A. Congressional District 1.

4 Q. What congressional district did you live in last year?

5 A. Congressional District 6.

6 Q. Are you a member, currently, of any civic organizations?

7 A. I am. I'm a member of the NAACP. I'm a member of the
8 Phi Beta Sigma Fraternity. I'm a member of the Sumter Free
9 Health Clinic. We have a Dad's Club for children who don't
10 have fathers, at JK Gourdin Elementary School. And I'm a
11 church member.

12 Q. Thank you, Mr. Griffin. Let's talk a little bit about
13 your involvement with the NAACP. How long have you been a
14 member of the NAACP?

15 A. Since about the time I started voting.

16 Q. So, since you were about 18?

17 A. About 18, yes.

18 Q. And do you currently hold any offices?

19 A. I do. I'm the President of the Upper Berkeley Branch of
20 the NAACP. I'm also the second vice president of the South
21 Carolina State Conference of the NAACP.

22 Q. And how many members does the Upper Berkeley Branch of
23 the NAACP currently have?

24 A. We have about 75 members.

25 Q. And, president, is that an elected office?

HENRY GRIFFIN - DIRECT EXAMINATION BY MR. AUDAIN

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1 A. It is.

2 Q. How many times have you been elected president?

3 A. I've been elected president three times.

4 Q. And what are some of the issues that the Upper Berkeley
5 Branch is currently working on?

6 A. We're working on trying to ensure that the rural people
7 in our area get broadband, clean water. We're also trying to
8 deal with some of the inequities that come up with the poor
9 people.

10 Q. Thank you for that, Mr. Griffin. So, you mentioned
11 broadband and clean water. In what ways can responsive
12 congressional representation help the branch address the issue
13 of broadband?

14 A. Well, there's funding that -- or grants that have been
15 available for broadband and clean water, and a responsive
16 congressional leader could direct those funds to the area that
17 we could have it done.

18 Q. So, generally speaking, why is responsive congressional
19 representation important to Black communities in Berkeley
20 County, in your estimation?

21 A. Our community is a rural community, and we don't have
22 broadband and clean water, we don't have sewage. So, we're
23 trying to get -- sewage is maybe the last one, but we're
24 trying to definitely get clean water and broadband.

25 Q. And in what ways can your Congressman, somebody working

HENRY GRIFFIN - CROSS-EXAMINATION BY MR. TRAYWICK

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1 in the federal government, help address these issues, as
2 opposed to your state or your local representative?

3 A. Well, I knew -- I know through a grant from Congressman
4 Clyburn that gave water to rural Williamsburg County. And the
5 water was just as bad there as it is in parts of Berkeley
6 County.

7 Q. Mr. Griffin, do you know who your new Congressperson is?

8 A. I do.

9 Q. Who is that?

10 A. Nancy Mace.

11 Q. Do you know if Nancy Mace is running for re-election in
12 this year's midterms?

13 A. Yes, she's running.

14 Q. Has she campaigned in your community at all?

15 A. No.

16 Q. Thank you, sir.

17 MR. AUDAIN: All the questions I have, your Honors.

18 THE COURT: Cross-examination?

19 MR. TRAYWICK: May it please the Court. Lisle
20 Traywick, from behalf of the Senate defendants.

21 JUDGE GERGEL: Now, mr. Traywick, let's show what a
22 brief cross-examination is.

23 MR. TRAYWICK: I promise you it will be brief, your
24 Honor.

25 JUDGE GERGEL: I pray you can do it.

HENRY GRIFFIN - CROSS-EXAMINATION BY MR. TRAYWICK

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1 MR. TRAYWICK: That's right. I can. I've
2 streamlined it in realtime.

3 **CROSS-EXAMINATION**

4 **BY MR. TRAYWICK:**

5 Q. Mr. Griffin, it's nice to see you today. I have just a
6 few questions for you. You remember your deposition on
7 September 12th, right?

8 A. I do.

9 Q. Okay. And you testified in your deposition that the maps
10 just passed not too long ago, right?

11 A. That's the way I -- my understanding at that time.

12 Q. Okay. So, you weren't aware that they passed on
13 January 20th of this year?

14 A. I am now.

15 Q. Okay. You're in an executive leadership role of the
16 South Carolina State Conference of the NAACP, correct?

17 A. That's correct.

18 Q. Okay. And so, you know Ms. Brenda Murphy, don't you?

19 A. I know her.

20 Q. Is she the president of the State Conference?

21 A. She is.

22 Q. So, in your leadership role, are the two of you in
23 regular contact?

24 A. Sometimes.

25 Q. Okay. But you testified you heard nothing about

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1 redistricting until July or August of this year, correct?

2 A. I testified about congressional districting.

3 MR. AUDAIN: I'm just going to register an objection,
4 your Honor. I don't know that that's --

5 JUDGE GERGEL: Overruled. It's okay.

6 MR. TRAYWICK: Thank you.

7 **BY MR. TRAYWICK:**

8 Q. And you didn't participate in the congressional
9 redistricting process, right?

10 A. No.

11 Q. Okay. You didn't reach out to your state representative
12 or your Senator, did you?

13 A. No.

14 Q. You testified in your deposition you didn't do that
15 because you didn't have time; is that right?

16 A. I don't remember saying that I didn't have time.

17 Q. Okay. During your deposition, you also complained that
18 the BVAP was not high enough in the 1st District of the
19 enacted plan; is that correct?

20 A. I think I said that.

21 Q. You think the map drawers should have prioritized that in
22 drawing the 1st District?

23 A. No, I don't think he should have prioritized it. But I
24 don't think he should have minimized it to the very bare
25 minimum either.

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1 Q. You were previously in the 6th District, correct?

2 A. That's correct.

3 Q. Okay. So, you were pleased with the 6th District last
4 time, weren't you?

5 A. I was.

6 Q. Okay. You were aware one of the NAACP's proposed maps
7 submitted this cycle put all of Berkeley County into the 1st
8 Congressional District, weren't you?

9 A. Yes.

10 Q. Okay. And you're aware that the BVAP in the 1st District
11 actually increased in the enacted plan from 2012; is that
12 right?

13 A. Yes, sir. But I'm also aware that if we pour a bottle of
14 water in the ocean, we'll have more water; but does it make a
15 difference?

16 Q. I like the analogy. Thank you. You also testified you
17 believe North Charleston should have gone into the 1st
18 District instead of Berkeley, right?

19 A. I think I did.

20 Q. Okay. In your view, that would have made the map fair,
21 right?

22 A. I'm not -- I don't know that.

23 Q. Okay. But are you aware that some people from Berkeley
24 preferred strongly to be in the 1st and for Berkeley County to
25 be kept whole?

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1 A. I'm not aware of that.

2 Q. Okay. But were you also aware that Representative Mace
3 lived in Berkeley County at the time the maps were drawn?

4 A. So, they did the map for her to give her what she wanted.
5 Is that how -- why -- how the map was done?

6 Q. I'm sorry, Mr. Griffin. I get to ask you the questions.

7 A. Oh, okay.

8 JUDGE GERGEL: A pretty good one, though.

9 BY MR. TRAYWICK:

10 Q. But you've never spoken with her, have you?

11 A. No, I haven't.

12 Q. Okay. So, you can't say one way or the other whether
13 she'll be responsive to your needs, can you?

14 A. I can't.

15 Q. Okay. Nor can you say one way or another whether she'll
16 be responsive to the needs of the Black community, can you?

17 A. I do know that she didn't campaign in the Black
18 community.

19 Q. There's still time yet, correct?

20 A. Yes.

21 Q. Okay. Last thing, Mr. Griffin. You do agree that
22 politics played a role in how the maps were drawn, correct?

23 A. I think it did.

24 Q. Thank you. No further questions.

25 JUDGE GERGEL: Thank you, sir.

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1 Now, Mr. Traywick did an excellent job. You got a
2 high bar here.

3 MR. PARENTE: I'll be even more brief, your Honor.
4 My name is Michael Parente, for the House defendants.

5 JUDGE GERGEL: You're going to show him up, aren't
6 you?

7 MR. PARENTE: I'm going to try my best, your Honor.

8 **CROSS-EXAMINATION**

9 **BY MR. PARENTE:**

10 Q. Mr. Griffin, you testified that you lived in the St.
11 Stephen area of Berkeley County; is that correct?

12 A. That's correct.

13 Q. And do you recall during your deposition that you
14 testified about the Black voting age population in the St.
15 Stephen area? Do you recall that?

16 A. I recall that.

17 Q. Okay. Do you remember what you testified the Black
18 voting age population in the St. Stephen area is?

19 A. I think my final answer was, I wasn't sure.

20 Q. Okay. Do you recall saying that you believed it was over
21 50 percent?

22 A. I remember. And then I recanted it saying that I wasn't
23 sure.

24 Q. Understood. But you would agree that St. Stephen is a
25 high-percentage African-American community; is that correct?

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1 MR. AUDAIN: Objection, your Honor. I really think
2 this is mischaracterizing his deposition testimony.

3 JUDGE GERGEL: Overruled. Mr. Griffin is handling
4 himself just fine. Go ahead.

5 MR. PARENTE: I'll rephrase it.

6 **BY MR. PARENTE:**

7 Q. Do you believe that St. Stephen has a high percentage of
8 African-American residents?

9 A. I believe so.

10 Q. And so, adding St. Stephen to Congressional District 1
11 does not support the idea of diluting African-American vote in
12 Congressional District 1; does it?

13 A. I think it does.

14 Q. Okay. And you also testified that you didn't believe
15 that the process allowed for input or transparency; do you
16 recall that testimony?

17 A. I recall that.

18 Q. Did you attend any of the public meetings set up by the
19 House of Representatives?

20 A. Set up by the House of Representatives?

21 Q. The House of Representatives held 11 public hearings
22 across the state. Do you recall attending any of those
23 hearings?

24 A. For the State House of Representatives?

25 Q. Yes. The State House of Representatives held hearings

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1 and took testimony from the public. Did you attend any of
2 those meetings?

3 A. I think I did.

4 Q. All right. And you testified that you're a member of the
5 executive committee of the State Conference of the NAACP; is
6 that correct?

7 A. I am.

8 Q. And does the State Conference of the NAACP have to vote
9 on litigation?

10 A. They do.

11 Q. And do you recall a vote of the State Conference on this
12 litigation?

13 A. I don't recall.

14 Q. Do you recall being presented any evidence of intentional
15 racial discrimination or racial gerrymandering prior to that
16 vote on litigation?

17 A. I don't remember.

18 Q. Okay. Thank you, sir. Those are all my questions.

19 JUDGE GERGEL: Anything on redirect?

20 MR. AUDAIN: No, your Honor.

21 THE COURT: Thank you.

22 I want you to know, everybody else, that those
23 lawyers did it just right. I want to congratulate all of
24 them. Okay, folks. It's the 5:00 o'clock hour. Are there
25 matters we need to address?

1 MR. CHANEY: Yes. One thing, your Honor. Dr. Ima is
2 one of the plaintiffs' experts. Because of a scheduling
3 concern, we initially were intending to put him on today, but
4 he's not able to come back till the end of this week. We've
5 spoken with the defendants, both for the House and Senate,
6 about essentially taking him out of order --

7 JUDGE GERGEL: We can do it out of order.

8 MR. CHANEY: Okay. Thank you. I just wanted to flag
9 that for the Court.

10 JUDGE GERGEL: Judges are a little more flexible than
11 juries on that. Glad to do that. And I appreciate the
12 defendants accommodating that as well.

13 Okay. Folks, we will be sharp, bright, and early on
14 Thursday morning at 9:00 a.m. Everyone be safe. And y'all
15 work together and see if we can't streamline this thing. This
16 matter is adjourned.

17 * * * * *

18 I certify that the foregoing is a correct transcript from
19 the record of proceedings in the above-entitled matter.

20 s/Lisa D. Smith,

11/5/2022

21 Lisa D. Smith, RPR, CRR

Date