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IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

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WILLIAM WHITFORD, et al.,
Plaintiffs,

-vs-

Case No. 15-CV-421-bbc

GERALD NICHOL, et al.,
Defendants.

* * * * *

DEPOSITION OF KENNETH MAYER, Ph.D.

Monday, November 9, 2015

8:57 a.m.

Reported by: Lisa A. Creeron, RPR

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DEPOSITION of KENNETH MAYER, Ph.D., a witness in the above-entitled action, taken at the instance of the defendants, under the provisions of the Federal Rules of Civil Procedure, taken pursuant to notice, before LISA A. CREERON, a Registered Professional Reporter and Notary Public in and for the State of Wisconsin, at the Wisconsin Department of Justice, 17 West Main Street, in the City of Madison, County of Dane, and State of Wisconsin, on the 9th day of November, 2015, commencing at 8:57 a.m.

A P P E A R A N C E S

PAUL STRAUSS, RUTH GREENWOOD and ANNABELLE HARLESS, CHICAGO LAWYERS' COMMITTEE FOR CIVIL RIGHTS UNDER LAW, INC., Attorneys at Law, 100 North La Salle Street, Suite 600, Chicago, Illinois 60602, appearing on behalf of the plaintiffs;

BRIAN P. KEENAN, Attorneys at Law, WISCONSIN DEPARTMENT OF JUSTICE, 17 West Main Street, Madison, Wisconsin 53703, appearing on behalf of the defendants.

* * * * *

(Original transcript is filed with Attorney Keenan)

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KENNETH MAYER, Ph.D.,

called as a witness, being first duly
sworn in the above cause, testified
under oath as follows:

EXAMINATION

BY MR. KEENAN:

Q We met at the hearing on Monday, but I just
introduced myself. My name is Brian Keenan. I'm an
attorney representing the defendants in this case.
We're here for your deposition. Have you been
deposed before?

A Yes.

Q Okay. So I suppose you know some of the rules, but
I'm just going to go over a few of the ground rules
just to refresh your memory. We have a court
reporter here, and she's taking down the testimony
and so it's important we get a clear transcript. So
if you'd please let me finish my question before you
say your answer, I'll try to let you say your answer
before I start a next question so that we make it
easy for her.

You understand that you've sworn to tell the
truth?

A Yes.

Q Okay. Now, if at any time during the deposition if

1 you don't understand my question, just let me know.
2 We want to make sure you understood the question and
3 give a truthful answer. So if you don't understand,
4 just tell me. I'll try to rephrase the question or
5 we can have her repeat it back. Do you understand?

6 A Yes.

7 Q Okay. Maybe I could just get your educational
8 background. I know some of it's in your report, but
9 maybe just the schools that you got, the degrees --
10 the schools you went to, the degrees you obtained and
11 the years.

12 A My undergraduate degree is from the University of
13 California-San Diego, and that was 1982. My Ph.D. is
14 from Yale University, and I received that in 1988.
15 And there are subsidiary degrees you get along the
16 way, master's and master's of philosophy, which I
17 think the dates were '86 and '87.

18 Q And the Ph.D. was from where?

19 A Yale.

20 Q Yale. And then what was the Ph.D. in?

21 A Political science.

22 Q And then you are now a professor at the University of
23 Wisconsin-Madison, correct?

24 A Correct.

25 Q Okay. How long have you been a professor there?

1 A Since 1989.

2 Q So right after you got your Ph.D. at Yale?

3 A I spent a year after I received my degree working for
4 the RAND Corporation in Washington, DC.

5 Q And what's your current title, so to speak, as a
6 professor at Madison?

7 A Professor of political science and affiliate faculty
8 of LaFollette School of Public Affairs.

9 Q And what are your research areas?

10 A Research interests are American politics, the
11 presidency, elections, elections administration, some
12 interest in Australian politics, but mostly American
13 politics.

14 I teach courses in the undergraduate course,
15 courses in the presidency, a course on campaign
16 finance, various seminars, but all of them are
17 focused on either elections, elections
18 administration, the American presidency, and I taught
19 one course on comparative electoral systems.

20 Q Do you teach any classes that relate to districting
21 or redistricting like that's at issue in this case?

22 A Not specifically. I have taught courses that deal
23 with various issues relating to election
24 administration and that plays a role, but no courses
25 specifically on redistricting.

1 Q You're an expert -- serving as an expert witness for
2 the plaintiffs in this case. Have you served as an
3 expert witness in other cases?

4 A Yes.

5 Q And how many other times?

6 A They are in my report. I think it is six or seven
7 times. I'd have to go back and look to be sure.

8 Q And how many of those deal with -- have dealt with
9 districting situations as opposed to perhaps campaign
10 finance or something else?

11 A Well, let me think for a minute. Can I look at my
12 report?

13 Q Yeah. Actually why don't we mark that as
14 Exhibit 1.

15 A I just want to make sure I get this correctly.

16 Q And then you can refer to that.

17 MR. KEENAN: Here's a copy for
18 Exhibit 1.

19 MR. STRAUSS: Thank you.

20 (Exhibit 1 is marked for identification)

21 Q And just for the record, this is the Exhibit 1 that
22 was provided by your counsel that has the -- I had a
23 copy that didn't have the appendix with some data
24 error -- or an annex, sorry. This one has the annex
25 to it.

1 A So this covers the last eight years, Baldus vs.
2 Brennan was a redistricting case. Kenosha County vs.
3 City of Kenosha was a redistricting case. I was an
4 expert in 2001, and I think that was Baumgart vs.
5 Wendelberger. Those are the -- as best I can recall,
6 those are the only cases where I have testified as an
7 expert on a redistricting matter.

8 Q Okay. I'm familiar with the Baldus and the Baumgart
9 case, but what was the Kenosha one about?

10 A The Kenosha case involved a dispute between the City
11 of Kenosha and the County of Kenosha over the drawing
12 of wards and districts and it -- as I remember, it
13 involved disputes over whether the -- how the city
14 and county resolve discrepancies or disagreements
15 over wards and as they affect county supervisory
16 district lines and city aldermanic lines.

17 Q Okay. That was going to be my next question. So it
18 involved local election lines, not state assembly
19 lines?

20 A Correct.

21 Q Okay. And which party did you represent in that --
22 or not represent but provide an expert report for?

23 A I provided an expert report on behalf of the city.

24 Q Do you know what the end result of that case was?

25 A The end result of the case -- again I'd have to go

1 back and look at the record. The end result was that
2 the city was able to reconfigure its wards so that
3 they were in compliance with the -- again I'm
4 operating -- it's been a long time, it's been four
5 years since I've looked at this, that the city was
6 able to reconfigure its wards to address some of the
7 disagreement.

8 Q Okay. And do you know if there was a judicial
9 decision that allowed that or was it a settlement or
10 agreement or do you know?

11 A I don't know.

12 Q Okay. And then it says you have testified as an
13 expert witness at trial or deposition. Which -- did
14 you testify in a deposition, trial or both in that
15 case?

16 A Baldus was deposition and at trial. NAACP vs.
17 Walker, both deposition and trial. The one case
18 where I testified in deposition but not in trial was
19 McComish vs. Brewer.

20 Q Okay. So there was a trial in the Kenosha County
21 one?

22 A There was.

23 Q In the Baldus vs. Brennan case, on behalf of which
24 party did you submit an expert report -- or parties?

25 A I'm pretty sure it was on behalf of Baldus because

1 Brennan was on the GAB.

2 Q Okay. And what was your understanding of who the
3 plaintiffs were in that case?

4 A People who were challenging the constitutionality of
5 Act 43.

6 Q And then in the Baumgart case from the 2000 round of
7 redistricting, on which side did you -- on behalf of
8 which -- sorry, on behalf of which parties did you
9 submit an expert report?

10 A That case I recall I worked -- one of the parties was
11 the Senate Democratic Caucus I believe was the party
12 that -- I worked for or provided the report for.

13 Q And what were the issues you offered an opinion on in
14 Baumgart to the extent you can remember?

15 A In that case my role involved assessing the partisan
16 consequences of the proposed plans submitted by all
17 of the parties.

18 Q And did you offer an opinion on perhaps which parties
19 under the map that was the best in that case?

20 A I would have to go back and look at my report, but my
21 recollection is that both the party I was working for
22 and the other party, which I believe was the Assembly
23 Republicans, had submitted multiple maps and I
24 analyzed those maps and provided analysis about the
25 estimated consequences that those maps would have.

1 But I would have to go back and look at the report to
2 be more specific.

3 Q And what's your understanding of the district that
4 came into being as a result of the Baumgart case?
5 Did the court accept either of the maps that were
6 drawn by the parties, or did it draw its own map?

7 A So are we back in 2001?

8 Q 2001, yeah.

9 A So my understanding is that the court took the
10 submissions from both parties and produced its own
11 map.

12 Q Okay. Well, let's switch to this case. When did you
13 first get approached about potentially being an
14 expert in this case?

15 A I believe it was somewhere around -- it was over the
16 summer. Somewhere around July. I don't remember
17 precisely.

18 Q July of this -- 2015?

19 A 2014.

20 Q 2014. And who did you talk to about it?

21 A I believe the initial conversations were with
22 Peter Earl and Ruth, Ruth Greenwood.

23 Q And after that initial contact, when did you
24 officially become involved with the case?

25 A I would have to look at the agreement letter. I'm

1 not sure when I actually signed that.

2 MR. KEENAN: Let's mark that then as
3 No. 2.

4 (Exhibit 2 is marked for identification)

5 Q And you mentioned an agreement letter and we put
6 before you Exhibit 2, and is this the agreement
7 letter that you're referring to?

8 A I believe it is, yes.

9 Q And it's dated November 5th, 2014. Does that refresh
10 your recollection about the time you were retained
11 about?

12 A I would say November.

13 Q And it's your understanding that this letter contains
14 the scope of work that you were asked to do on behalf
15 of the plaintiffs in this case?

16 A That's correct.

17 Q And it says that your rate is \$300 an hour. That is
18 your rate, correct?

19 A Correct.

20 Q Looking at your report, did anyone else assist you in
21 doing the work that went into the production of your
22 report?

23 A In terms of the report, no.

24 Q Okay. And when you said in terms of the report, that
25 indicates that perhaps someone else assisted you in

1 some other ways?

2 A I had a graduate student whom I've worked with before
3 do some of the data issues, particularly regarding
4 the -- I guess the proper term would be preparing the
5 data for subsequent analysis.

6 Q Okay. And what type of data is that?

7 A It was, as I explained in the report, that I obtained
8 data from the LTSB and GAB, primarily ward level
9 election and demographic election returns and
10 demographic data.

11 Q And what's your understanding of what -- first who
12 was the grad student?

13 A His name is Brad Jones.

14 Q What did Mr. Jones do to the data in order to prepare
15 it for the subsequent use by you?

16 A His responsibilities or his tasks were to do some --
17 I'll call it cleanup to making sure that the
18 different fields and the data conformed so that we
19 could put them together, and I also instructed him
20 and used him to do some disaggregation. At one of
21 the points we took ward level estimates and
22 disaggregated them down to the block level using
23 voting eligible populations. So it was
24 essentially -- I wouldn't say data analysis, but data
25 processing to put the data in a form that was

1 suitable for the actual analysis.

2 Q You used a couple terms there that I just want to get
3 on the record what they are. You mentioned ward
4 level data and block level data. Could you just
5 explain what those are?

6 A Sure. The data on elections and the redistricting
7 data that the Legislative Technology Services Bureau
8 produced were largely at the ward level or the voting
9 tabulation district level. But I also used census
10 data or the actual redistricting files, the map files
11 that the Legislative Technology Services Bureau
12 produced. And those include block level data, the
13 250,000 or so blocks, census blocks that are defined
14 by the Census Bureau, and in doing the analysis and
15 preparing the maps, I did that at the block level.
16 So it was necessary to take the ward level results
17 and disaggregate them down to the census block level.

18 Q Okay. So maybe if I could just also get you to
19 define what disaggregate means when you're talking
20 about the ward level down to the block level.

21 A Sure. In this case it means assigning values to
22 census blocks based on the percentage of the ward
23 population, the voting eligible population that
24 existed in each census block. And I explained a
25 couple of examples in the report of how I did that.

1 Q How big is a census block? Are they uniform in size
2 or are they -- do they differ in terms of the number
3 of people in them?

4 A They vary.

5 Q Okay. And then I take it that a ward is made up of
6 several different census blocks?

7 A Usually.

8 Q Usually, okay. And does that vary from ward to ward,
9 I guess?

10 A Well, in terms -- vary in terms of what?

11 Q Like, for example, like a ward could be five census
12 blocks or one or 10, it depends on the ward, or do
13 wards tend to have a certain number of census blocks
14 that are in them?

15 A The number of census blocks in each ward varies.

16 Q Okay. And so when you're disaggregating, are you
17 attempting to -- you're taking a larger data set made
18 up of several census blocks and trying to establish
19 the number of votes from the ward totals that are
20 assigned to each different census block? Perhaps
21 that's a bad question.

22 A Can you -- I mean --

23 Q Sure.

24 A -- the methodology of doing this is actually pretty
25 standard. It's common and disciplined, but I want to

1 make sure that I understand what I mean based on --
2 match it up.

3 Q Sure. Well, maybe you could explain what you're
4 doing when you take -- I take from your testimony
5 that you're taking ward level information then and
6 it's a bigger number than trying to break it down
7 into smaller numbers that go into each census block?

8 A Correct. When you're working with GIS data or
9 geographic data, it's very common to apply or to
10 transfer information at one level to another level.
11 And a common way to do that is that you assign or
12 distribute values at a higher level to a lower level
13 based on the distribution of population.

14 So in my report, I developed estimates of
15 partisanship, the number of people who I estimate
16 will vote Democratic or Republican, and I broke those
17 down or distributed those ward level totals to the
18 various blocks in that ward based on the proportion
19 of each block or the proportion of a ward that was
20 made up in that block.

21 Q Okay. And when the data disaggregated from the ward
22 level to the block level, is it a straight
23 population, for example, like one block has 30
24 percent of the people of this ward, so, therefore, 30
25 percent of the totals get assigned to that block, or

1 do you actually go into the demographic data and
2 adjust for different types of populations that vary
3 block to block?

4 A I did do adjustments -- I made two adjustments. One
5 is that we adjusted for citizenship using data that
6 is data on people who are of voting age but are not
7 eligible to vote because they're not citizens. And I
8 also controlled for institutional -- prison
9 populations which are similarly -- these are
10 typically voting age, but they can't vote in
11 Wisconsin and so it was -- I made a calculation of
12 the voting eligible population in each ward and
13 block.

14 Q But after you accounted for those two issues, then
15 were the votes assigned from the ward level to the
16 block level based on just the percentage of voters
17 that -- eligible voters that were in that block
18 compared to the whole ward?

19 A That's correct. And that's very common in both GIS
20 and in political science as a way of doing that.

21 Q Sure. And I'm just trying to make sure that I
22 understand it correctly.

23 A Sure.

24 Q Okay. I've got a couple of documents here.

25 (Exhibit 3 is marked for identification)

1 Q And I guess first I should maybe back up a little
2 bit. So you understand that there's a subpoena
3 issued for documents related to this case, correct?

4 A Yes.

5 Q You turned over documents that were in your
6 possession to your attorneys who then turned them
7 over to me, do you understand that?

8 A Correct.

9 Q And so what was your understanding of the documents
10 that you were supposed to give to your attorneys that
11 they could provide to me?

12 A My understanding was that I was to turn over
13 documents that reflected the things that I took into
14 account, all of the data sources that I took into
15 account in preparing my report.

16 Q Okay. And so there weren't any documents that you
17 took into account in your report that you failed to
18 give to your attorneys?

19 A There were some things in the bibliography, I
20 suppose, the publicly available things that I relied
21 on, but there was nothing that I relied on in making
22 my report that I did not turn over.

23 Q So getting back to No. 3, I'll just tell you what I
24 did. This is several different documents that were
25 in your production that I put together. These were

1 the invoices that listed Brad Jones on them.

2 A Um-hum.

3 Q And I tried to put them in chronological order. And
4 you mentioned Brad Jones before. So are these the
5 invoices for Mr. Jones' work on this case?

6 A These look -- these are the invoice that he
7 submitted, so reflecting the work that he did.

8 Q And then do you know if he's been paid for his work?

9 A He has.

10 Q Okay. And who has paid him for the work?

11 A I believe the same people who paid me.

12 Q And who is that?

13 A The Chicago Lawyers' Committee, and I did receive one
14 check or a couple of checks from the national ACLU.

15 Q And then I also --

16 MR. KEENAN: We'll mark this as No. 4.

17 (Exhibit 4 is marked for identification)

18 Q Exhibit 4 is similar to what I did with Exhibit 3 was
19 I took the invoices that had Kenneth Mayer
20 Consulting, LLC on it and put them in chronological
21 order and just grouped them together here. So if you
22 want to take a look at that, and I'm just going to
23 ask you if these invoices constitute all of the
24 invoices that you've submitted for your work in this
25 case.

1 A So this looks like -- it looks like there's one
2 error. The invoice I submitted in February was for
3 January, but it says the dates of services were
4 December. So that looks like it's incorrect.

5 Q Okay. But that's just a typographical error?

6 A Right.

7 Q Okay. It says Kenneth Mayer Consulting, LLC. What
8 is that LLC?

9 A That's a limited liability corporation that I set up
10 in the State of Wisconsin.

11 Q And is that the -- I guess the business forum for
12 which you do the consulting work on these when you're
13 an expert witness?

14 A Correct.

15 Q Looking at Exhibit 4, I noticed that there's one bill
16 for a computer. Why did you submit a bill for what
17 looks to be a computer to the plaintiffs' attorneys?

18 A The software that I use to -- the GIS software only
19 runs on Windows machines and all of my computers are
20 Macs, so it was necessary to get a machine that could
21 run the program.

22 Q So if we add up all the total of these invoices, we
23 could get the total amount you've billed to the
24 plaintiffs in this case, correct?

25 A Through these dates, correct.

1 Q Yeah. And has all that money been -- have you been
2 paid for all those invoices?

3 A I don't know.

4 Q Okay. And you mentioned that some of the checks came
5 from the Chicago Committee and others came from the
6 national ACLU. Do you know what percentage of your
7 invoices were paid by either entity?

8 A No.

9 Q What's your understanding of why the national ACLU
10 paid some of the bills?

11 A I don't know.

12 Q Perfectly fine answer. I think we can put -- like 2,
13 3 and 4 we probably won't refer much to again, so you
14 can probably just put somewhere. Exhibit 1 we will
15 refer to, so you might want to keep that handy.

16 Another thing I didn't say is that since we do
17 have documents and if I put a document in front of
18 you, feel free to read it over and refresh your
19 memory and look at it to the extent you need to to
20 answer a question when it relates to a document.

21 A Okay, thank you.

22 Q And also I forgot to mention we can take breaks when
23 you want, so if you're feeling like you have to go to
24 the bathroom or anything like that, just let us know
25 and we can take a break. I will add if there's a

1 question pending, I'll ask you to answer the question
2 that's pending, but then we can take a break if you
3 need to.

4 A Okay.

5 Q Okay. Maybe we could just go to the back of the
6 report, the annex. You mentioned in the report that
7 there were some data errors in Wisconsin election
8 data, and I just wanted to ask you about what -- as I
9 understand it, there were some errors in the ward
10 level data not matching up between the GAB and the
11 LTSB, is that correct?

12 A Correct.

13 Q Okay. And so how did you go about resolving any of
14 those data errors?

15 A The process is that whenever I am provided or begin
16 working with a large data set, it's always important
17 to go through and check the validity of the data.
18 And so in this case we had -- I had -- I'm using the
19 royal we meaning I had the LTSB data which was an
20 individual ward level data on demographics,
21 population, information on the municipality, the
22 jurisdictions in terms of assembly, senate,
23 congressional districts that that ward was in. And
24 it had voting data going back, depending on the file
25 that you used, sometimes it would go back a number of

1 election cycles.

2 And so the first thing that I did is took that
3 data file, which had 6,500 or so records, however
4 many populated wards there are in Wisconsin, 6,592,
5 and calculated -- used that data to calculate
6 district level totals for assembly races, which will
7 tell me whether or not those totals are accurate, and
8 I compared them to the GAB, the Government
9 Accountability Board totals and the Blue Book, the
10 State of Wisconsin Blue Book and I took that to be
11 authoritative.

12 And I found a number of cases where the totals
13 were off, sometimes considerably. The totals were
14 off. There were districts where according to the
15 GAB, a candidate was running unopposed, but there
16 were votes that showed up for both parties in the
17 LTSB data and these were -- I found these to be
18 significant and concluded that it required
19 investigation. I had a conversation with a staffer
20 at the LTSB asking them about this, and I suspected
21 one of the problems and one of the reasons that this
22 happened is that the GAB, the way that elections are
23 administered in Wisconsin is that they are
24 administered at the ward level but smaller
25 municipalities, I think those that have fewer than

1 35,000 people are actually permitted to combine
2 individual wards into reporting units, and that's
3 done for administrative ease.

4 And so if you look at the official GAB totals,
5 frequently they'll be City of Madison Ward 96, but in
6 some areas, they'll be the City of Marshfield. It
7 will be Wards 1, 3 and 5 and so they're combined and
8 there is no -- that's how they received the data.
9 And so if you looked at just the GAB, you would get
10 data at the reporting unit level.

11 The LTSB has data at the ward level, and I was
12 told by LTSB that they did their own allocation
13 process, which is assigning reporting -- in cases
14 where you had reporting units, to assigning those
15 totals to individual wards, and I thought that that
16 is one of the ways that the totals were wrong.

17 I have a chart in there, I believe it was the
18 City of Mequon that shows what happened and so the
19 City of Mequon, the LTSB data, when you take that
20 data and recombine it into the reporting unit level,
21 all the numbers are off. And so one of the steps
22 that I conducted is to -- I went through in those
23 places where there were errors, I fixed them and I
24 fixed them by either correcting them to the totals in
25 the GAB or I redid the -- I redid the steps that they

1 performed and reallocated the reporting unit totals
2 to the individual ward levels to get accurate -- an
3 accurate representation of what those totals were.

4 Q Okay. A lot in that answer, so I'm just going to try
5 to break it down a little bit and just try to figure
6 out what -- so for an assembly race, if we go to the
7 GAB election data that says Candidate A had 17,000
8 votes and Candidate B had 15,000 votes total
9 throughout the district, you took that number as
10 accurate, correct?

11 A I took that number as authoritative.

12 Q Authoritative might be a better word. And then if
13 the GAB's ward level data didn't have an issue of
14 combining certain wards into one reporting unit,
15 would the GAB's ward level data be accurate or
16 authoritative?

17 A So are you asking whether the GAB's individual ward
18 level data is authoritative?

19 Q Yes.

20 A I took the GAB data as authoritative.

21 Q And at the ward level as well?

22 A Correct.

23 Q Okay. Now, some of the GAB data might be -- I think
24 you said where there are several wards combined into
25 one reporting unit, is that correct?

1 A Correct.

2 Q Okay. So I think you used the City of Marshfield
3 example of like 1, 3 and 5? Or it's 1, 3 and 5 are
4 combined into one reporting --

5 A Actually it might be better to use the Mequon because
6 we actually have --

7 Q Okay, yeah. Maybe. Where is that?

8 A That's in the --

9 Q Page 3 of the annex. So we see there's three columns
10 here on this page. One says GAB reports, one says
11 LTSB data and one says difference. So the GAB
12 reports, for example, it has Ward 1, there's only one
13 ward there and a list of Romney and Obama votes and
14 vote totals. Did you take that line, Ward 1 in
15 Mequon, as authoritative?

16 A Yes.

17 Q Okay. But then the LTSB data, that had some
18 different numbers there, and I take it when you
19 looked at that data and compared it to GAB data, you
20 noticed a discrepancy and thought that the LTSB data
21 for Ward 1 needed to be corrected, so to speak?

22 A Well, there are two parts to that. I think it's more
23 accurate to say that I looked at -- compared the LTSB
24 data, ward level data to the GAB, so the LTSB was
25 different and it required investigation as to why.

1 Q Okay. But just looking at these two, if I pulled up
2 these two spreadsheets, so to speak, that had both of
3 the ward units reporting here and GAB as Ward 1 and
4 then LTSB as Ward 1, if I wanted to know which one
5 had the authoritative vote totals, that would be the
6 GAB?

7 A Right. As I understand it, the LTSB data has no
8 official status. It is simply the data that is
9 presented and I think that it's -- I am not aware of
10 anything that suggests that that has any official
11 status as opposed to something that they release.
12 It's the GAB which I took to be authoritative.

13 Q Okay. And then I guess we go to GAB like, for
14 example, the GAB reports, there's reporting Units 3
15 and 4 together, Wards 3 and 4 are together and if I
16 understand your testimony correctly, in a situation
17 like that, that may cause some errors in the LTSB
18 data because there's one reporting unit for multiple
19 wards?

20 A Well, I'm not prepared to say that the second part of
21 that is true.

22 Q Okay.

23 A But the -- correct to say that in the GAB data,
24 Wards 3 and 4 produce results at the reporting unit
25 level, and those numbers are off as well in the LTSB

1 data.

2 Q Okay. And then so when you did any sort of
3 calculation in Mequon here, there's Wards 3 and 4
4 report together, what did you do to disaggregate, so
5 to speak, Ward 3 from Ward 4 based on the data in the
6 GAB report?

7 A Well, the disaggregation was the second step in this
8 because the first step was to try to determine why
9 these individual ward or reporting unit totals are
10 off in the LTSB data. My experience tells me that
11 this is an allocation issue because if you look at
12 the totals, the last row, the total number of votes
13 cast for Romney and Obama were all accurate. They
14 match up perfectly.

15 It's just the internal distribution of those
16 votes in the LTSB data is incorrect, and that is why
17 I concluded that this was a problem or there was an
18 error in how the LTSB allocated those votes, and I
19 don't know why that happened. I don't know why the
20 LTSB when it had individual wards just didn't plug
21 the GAB totals in there, I don't know why.

22 But it's clear this was an erroneous allocation
23 of votes in this case at the reporting unit level,
24 and if the reporting unit level is wrong, it's not
25 going to get better when you further disaggregate

1 into wards.

2 Q Sure.

3 A And so I was able to identify every case where there
4 was what I considered to be a material discrepancy.
5 There were some where it was a single vote or a small
6 handful of votes that was too small to have any
7 effect on subsequent analysis. And as I explained in
8 the report, I went through and corrected those and
9 there were -- this was only one of the errors.

10 There were other instances that I describe in
11 here where a ward was simply assigned to the
12 incorrect district in the LTSB data and I was able to
13 identify and fix those.

14 Q Okay. But if I want to just look at the -- what were
15 the results in a particular election by reporting
16 unit, I can just go to the GAB spreadsheet that lists
17 each reporting unit and that would be the
18 authoritative source of the vote totals?

19 A That's correct.

20 Q Okay. I think that's enough on the data errors. If
21 we just go get a little more general, what's your
22 understanding of what partisan symmetry is?

23 A I understand partisan symmetry to mean that the
24 political parties, the two major parties are treated
25 equally in terms of their ability to translate the

1 votes that they receive into seats.

2 Q And when you say the votes they receive, what do you
3 mean by that?

4 A The votes that they receive in a particular --
5 typically partisan symmetry is used in the context of
6 legislative races where you have a set of elections
7 and you --

8 Q So it will be the votes cast for all the candidates
9 in a particular party?

10 A Generally. There are some exceptions to that, as I'm
11 sure we'll get into.

12 Q And what's -- and maybe we can just get into it now.
13 What's your opinion about the appropriate way to
14 measure a party's share of the vote in a
15 legislative -- a series of legislative elections, for
16 example, like the 2012 election for Wisconsin
17 Assembly?

18 A In the political science literature in the context of
19 redistricting, the general -- what is in my view the
20 generally accepted way of measuring that is looking
21 at some measure of the underlying partisanship of a
22 district. Frequently this is a function of the
23 actual votes that are cast, but there are instances
24 where that will not give you an accurate measure of
25 the underlying partisanship, particularly when there

1 are uncontested races.

2 But there were also issues where incumbency can
3 affect the vote and so the -- a common, I don't know
4 if I would say it was the most common, but a common
5 method of estimating the vote or partisanship in a
6 district is you construct a measure of the
7 partisanship of that district. And sometimes you can
8 use the actual votes. In many cases you can't.

9 And that gives you an estimate of what the
10 underlying partisanship of a district would be
11 ideally. In some cases you would need to do that
12 independent of the actual candidates who are
13 running.

14 Q For legislative elections, would it be appropriate to
15 look at that party's candidate for, for example,
16 presidency in the state during the same election to
17 determine the statewide vote share for that party?

18 MR. STRAUSS: Object to the form of
19 the question. Appropriate for what purpose?

20 MR. KEENAN: Well, for determining the
21 statewide vote share that we're using in
22 determining partisanship symmetry.

23 A So can you restate?

24 Q Yeah.

25 A I'm kind of losing track here.

1 Q Sure. At some instances I see reference to the fact
2 that President Obama won a certain percentage of the
3 vote in Wisconsin in 2012. Other times there's a
4 reference to the amount of votes perhaps adjusted
5 that the Democratic candidates won in the 2012
6 assembly elections. Which one would be the
7 appropriate one to use for measuring partisan
8 symmetry of the assembly elections?

9 A It depends. My references to the presidential
10 vote is -- the statewide presidential vote is a
11 marker of an indication. It is a measure of
12 statewide partisanship. But that is not the measure
13 I used in constructing my analysis of the underlying
14 partisanship of all of Act 43 and also the
15 demonstration plan that I drew.

16 Q And when you calculated the Democrat statewide vote
17 share in the 2012 assembly elections, was it higher
18 or lower than the share of the vote that
19 President Obama received in Wisconsin in 2012?

20 A So if I calculated referring to my measure of
21 partisanship?

22 Q Yes. The way you -- you said you didn't look at the
23 presidential vote as -- you did something else, you
24 looked at your measure.

25 A Right.

1 Q And did your measure come up with a number that was
2 higher or lower than President Obama's vote total in
3 Wisconsin in 2012?

4 A Well, now we're starting to get apples and oranges.
5 We're talking about percentages or numbers.

6 Q Well, we can do either or both.

7 A I don't recall sitting here. I would have to look at
8 the data to be able to tell you whether -- I would
9 have to look at the report. I don't remember what
10 those numbers are or even if I did that calculation.

11 Q Okay. And then another question would be when
12 calculating the statewide vote share of the
13 Republicans and the Democrats, how do you account for
14 votes that are cast for third parties or even just
15 scattering votes for random candidates?

16 A So in doing the calculation, the accepted practice
17 and the discipline is that you count the major
18 parties. And the scattering will typically be a
19 minuscule proportion, but it's the two-party vote
20 that is the quantity of interest.

21 Q Okay. So just so I understand that, the two-party
22 vote would be, for example, I'm just giving you some
23 numbers, if there's 100 statewide votes and one party
24 got 50 votes and one party got 48 votes and another
25 like random people got two votes, you disregard those

1 two votes and now the vote total is 50 to 48, is that
2 correct?

3 A Well, for the purposes of doing an analysis of a plan
4 that you would look at the 50 and the 48.

5 Q And so then the percentage ends up being a little bit
6 off where it's now the party that got 50 percent
7 actually got a little more than 50 percent because
8 it's --

9 A Well, I dispute the term off because that suggests
10 that there is a true measure that this departs from.

11 Q Fair enough.

12 A The political scientists and people who study
13 redistricting would say that the best measure of the
14 partisanship in that scenario would be 50 divided by
15 98, which would be a small majority. We could do the
16 math.

17 Q Yeah. That's just what I'm trying to get at.

18 A It would be 50 percent. It would be probably 51
19 percent.

20 Q So when you look at a GAB statewide election total,
21 President Obama or Scott Walker or someone might have
22 a total, but that's not quite exactly right because
23 someone -- it's not the exact percentage of the
24 two-party vote because there's some scattering of
25 some less than one percent of votes that are out

1 there?

2 A There will be -- there are votes that are not counted
3 in those percentages. They are almost always a
4 trivial and immaterial number.

5 Q Okay. What is a wasted vote?

6 A So a wasted vote in the context of the efficiency gap
7 is a vote that is cast by either the losing party in
8 an election or for the party with -- that wins, the
9 number in excess of what was necessary to win the
10 seat.

11 Q Now, the losing party makes sense, that's pretty
12 easy. You just take their vote total, right, and
13 that counts -- all those are wasted votes, is that
14 correct?

15 A Yes.

16 Q Okay. Now, for the winner, I just want to figure out
17 how we just get to the exact number there. How do
18 you determine the number of wasted votes for the
19 winning candidate's party?

20 A So I recall it is the essentially one-half of the
21 margin of victory in terms of number of votes.

22 Q Okay. So that would take the winning candidate's
23 number, whatever it is, subtract the losing
24 candidate's number and left with something and then I
25 divide that by two and I got -- and that's the wasted

1 votes for the winning candidate?

2 A Say that again. I want to make sure --

3 Q Sure. Yeah. I may not have explained it very well.

4 So I would take the vote total for the winning
5 candidate and then subtract from that the vote total
6 for the losing candidate and I'm left with the
7 difference -- the margin of victory, correct?

8 A Correct.

9 Q And I would take the margin of victory and divide
10 that by two and I have the wasted vote number for the
11 winning party?

12 A Correct.

13 Q Okay. And if I just to make sure that that number is
14 a two-party vote measure, it also kind of disregards
15 any sort of stray votes that are cast for candidates
16 outside of that two-party race?

17 A So it's correct that that quantity is calculated
18 using the -- well, it will always be the Democratic
19 and Republican candidate and -- but it counts only
20 those votes.

21 Q What's your understanding of where the -- well, first
22 maybe you mentioned that as part of the efficiency
23 gap, we're talking about the wasted vote. What is
24 the efficiency gap?

25 A It's a measure of the -- it is a measure of the total

1 number of wasted votes divided by the total number of
2 votes cast and it gives you a measure of the relative
3 number of wasted votes for the two parties.

4 Q What's your understanding of where this version of
5 the efficiency gap first came into being in the
6 political science world?

7 A Well, that's an ambiguous question because the method
8 and quantity was explained in a University of Chicago
9 Law Review article. I don't know exactly the
10 publication date. It may have been October 2014 or
11 something like that, but I can't tell you the history
12 and evolution of the concept.

13 Q So did that article from you think maybe October of
14 2014 but may be off a little bit, did that article
15 provide the basis for how you went about calculating
16 the wasted votes in Wisconsin in 2012?

17 A So my method of calculating the wasted vote relied on
18 the methods and formulas outlined in that article.

19 Q Okay. And then were there any other -- whether
20 they're law reviews or political science articles or
21 I don't want to limit it, but any other articles or
22 maybe something else that you relied on in developing
23 your method for calculating the wasted votes in
24 Wisconsin?

25 A Well, in terms of the actual calculation of the

1 wasted votes or the method -- so in terms of the --
2 once I had my district level measures, my method of
3 calculating the wasted votes, I did not rely on any
4 other sources.

5 Q Okay. Yeah. I'm aiming more at the theoretical
6 concept that you were using, where that came from.
7 And so that came from this article in the Chicago Law
8 Review?

9 A Yes.

10 Q Okay. How does this efficiency gap method of
11 calculating partisan symmetry differ from other
12 methods of calculating partisan symmetry?

13 A That you'd have to ask the author of the article.
14 I'm really not in a position to answer that.

15 Q All right. Are you familiar with the term partisan
16 bias as a measure of political or partisan symmetry?

17 A Well, the partisan bias is not really synonymous of
18 partisan symmetry. It reflects something different.

19 Q Enlighten me, I guess. What does it reflect that's
20 different?

21 A So the quickest definition of partisan bias would be
22 in a 50-50 election what percentage of seats does the
23 majority party have and so if the -- so if there was
24 a 50-50 election and one -- in that election, one
25 party had 55 percent of the seats, would you

1 calculate the partisan bias at five percent, and
2 there are sort of roughly analogous methods of
3 looking at it at different levels, but that's -- as I
4 understand it, that's the most common way of
5 measuring the partisan bias.

6 Q Have you ever performed a partisan bias calculation
7 on Wisconsin or any other state's election?

8 MR. STRAUSS: Object to the form. In
9 what year?

10 MR. KEENAN: Any year.

11 A It's possible that I may have done something similar
12 in the Baumgart case. I don't remember.

13 Q Do you consider yourself an expert in calculating the
14 partisan bias in this 50-50 election scenario?

15 A Well, can you define -- I mean I know how to do it.

16 Q Okay.

17 A And I'm familiar with the literature of how that's
18 done.

19 Q All right. Well, I just didn't want to start asking
20 you questions about something you had no idea what it
21 was. So how does one go about determining how many
22 seats a party would win in a 50-50 election?

23 A So normally the method would be to construct an
24 underlying measure of election outcomes and then
25 typically you would perturb -- you would apply

1 frequently what would be a uniform swing and you
2 would assume that the percentage of the vote that the
3 one party gets goes up or down by a fixed amount
4 around the state and you would adjust that to see
5 what happens at 50, look at the numbers of seats and
6 that's what you would use as the partisan bias, and
7 there are lots of refinements in terms of how you
8 calculate the winners, but that's -- my recollection
9 is that that's the most common method of doing it.

10 Q So someone has to create a model that determines
11 underlying partisanship of each and every district in
12 the state?

13 A Well, you wouldn't necessarily need to -- you can do
14 it just looking at the actual votes, but it
15 ultimately relies on some measure of election
16 outcomes at the district level that you can perturb
17 or examine what happened under some alternative
18 scenarios.

19 Q And then so, for example, in a 48-52 election, this
20 many seats, and then eventually you get to 50-50 and
21 then you have to see how many seats each party gets?

22 A Well, it's more complicated than that. In a 48 to 52
23 statewide election, the district level votes would be
24 distributed, and so you would see what happens in the
25 district where you perturb the percentage.

1 Q Okay. I guess to be clear, the method you used in
2 this case isn't a measure of partisan bias in the
3 50-50 election?

4 A That's correct.

5 Q Why don't you explain the -- how you went about
6 determining the underlying partisanship of each
7 district in the Wisconsin Assembly? And feel free to
8 refer to your report to the extent you need to do
9 that.

10 A What I did in the report was construct the regression
11 model that uses as the dependent variable the actual
12 assembly vote in contested districts. And the
13 independent variables, I'm going to refer to my
14 report here just to make sure I get this correct.

15 Q Sure. And just identify, please, the page where
16 you're at and we can follow along.

17 A Okay. So I'm on Page 10 and 11. So it explains --
18 it is a model that uses as a dependent variable the
19 assembly vote in a particular ward. This is ward
20 level analysis.

21 Q Maybe I could just stop you. In terms of the
22 assembly vote just so -- I know they're small
23 numbers, but is this the two-party vote or the total
24 vote?

25 A I did a separate model for Democrats and Republicans

1 in each district. So this is the actual number of
2 votes received by in the first case the Democratic
3 candidate and then I ran the model again for the
4 Republican candidate.

5 Q For just the D's and R's, so if there was some
6 candidate that gets 15 and I look at the results, I
7 need to add the Republican and the Democratic actual
8 votes to get the total votes in your model?

9 A Well, the way that you would use this to get a
10 district level measure is that you would look at the
11 Democratic and Republican totals.

12 Q All right. Continue, sorry.

13 A Then the dependent variables again for each ward are
14 the demographics, the total voting eligible
15 population and these are numbers, not percentages.
16 The total Black voting eligible population, the
17 Hispanic voting eligible population.

18 And on the next page, the Democratic and
19 Republican presidential vote, again these are all
20 absolute totals. A dummy variable, if there is a
21 Democratic incumbent or a Republican incumbent and
22 that's one, if it's a Democratic or Republican
23 incumbent, zero otherwise. And then the last term of
24 the county, that's what's called a fixed effect,
25 there's a dummy variable for each county reflecting

1 some possible geographic effects.

2 And I did this again for the underlying data
3 with the actual vote totals in contested assembly
4 districts in 2012.

5 Q Okay. One thing is just with political scientists,
6 you guys like to use these equations, and I'm not
7 sure exactly how to say the letters and numbers and
8 things that are there. So when it says y and then
9 like little i , I guess, how would I just like refer
10 to that?

11 A That's Y_i or Y , sub i .

12 Q Y , sub i , okay.

13 A But that's just sort of a symbolic representation
14 sort of explaining the regression and just sort of
15 as -- expresses the fact that this is a linear model.

16 Q And then the sub i is meant to refer to -- that's for
17 one district?

18 A For each ward.

19 Q Each ward, okay, that's a ward. And then there's A ,
20 do we just call that, or alpha?

21 A Alpha.

22 Q And then is the next one beta?

23 A Beta.

24 Q Sub i or sub 1?

25 A Yeah.

1 Q Okay. And then there's the really fancy one at the
2 end?

3 A Right. That's basically it reflects the fact there
4 are 72 counties in Wisconsin. So rather than write
5 out all 72 counties, it's a way that for each county,
6 it's a 1 if it's in that county, a 0 if it's not and
7 then I believe I excluded Dunn County because when
8 you have a dummy variable that's exhaustive, you need
9 to exclude at least one variable because otherwise
10 you have a constant that makes it difficult to -- or
11 makes it impossible to generate the estimates.

12 Q We've been going for like an hour. I don't know if
13 you're fine still going or if you want a break.

14 A I could take a break.

15 MR. KEENAN: Okay. Let's take a
16 break.

17 (Short recess is taken)

18 Q Mr. Mayer, before the break, we had just started to
19 get into the model on Pages 10 and 11, so we can just
20 go back there and I'd like to just go into each of
21 the different pieces of the model and we can just
22 talk about them individually. So I think we already
23 talked about the assembly vote part of it. The total
24 voting age population, why don't you explain that
25 element of the formula?

1 A The census produces numbers for each block which the
2 LTSB aggregates into wards, and one of the variables
3 is the number of people 18 or over who are eligible
4 to vote. I did two corrections. One is that I
5 adjusted for estimates of noncitizenship rates using
6 separate estimates that the census produces. I
7 believe I used county level estimates of basically
8 the percentage of adults for noncitizens and did that
9 correction and also removed institutionalized felon
10 populations using state and federal prisons.

11 Q Okay. So I think we talked about that earlier in the
12 deposition.

13 A Okay. And so that gives me an estimate of the number
14 of people who are eligible to vote in each ward,
15 which is a better figure to use than the total number
16 of people because there may be numbers of people who
17 for whatever reason are not eligible to vote.
18 Generally these numbers are going to be small enough
19 that they are not likely to make a material effect on
20 the outcome.

21 Q So just so I understand the county level issue with
22 the noncitizenships, for like a ward that's in Dane
23 County here, you just took the Dane County average
24 for noncitizens and applied that to each ward in Dane
25 County?

1 A Well, there are separate estimates for each ethnic
2 and demographic group. So there's noncitizenship for
3 Whites, African-Americans, Hispanics, Asians and so I
4 applied the noncitizenship rates to each of those
5 demographic groups.

6 Q So as they appear in Dane County, so if there's five
7 percent Hispanics, then you needed to -- I'm sorry.
8 Probably I think that's a bad question.

9 So you looked at the underlying demographic data
10 of each county or did you look at the demographic
11 data of each ward?

12 A Well, I applied the county level noncitizenship
13 estimate to the wards and they don't differ that much
14 from the municipality level estimates. One of the
15 reasons I used the county estimates is because you
16 have a slightly larger geographic jurisdiction.
17 Those estimates are going to be more accurate because
18 there are more people. But I strongly suspect that
19 it would not change if I had applied the city level
20 figures in any case. Those would have been -- there
21 was a larger chance that those estimates were
22 inaccurate or would be more likely to be a larger
23 margin of error using the larger base population.

24 Q Sure. And I guess maybe I'm trying to figure out
25 that's the percentage of noncitizenship used. What

1 did you apply that to?

2 A So I applied the voting age to the voting age
3 population. Just to give a hypothetical example that
4 in most parts of the state, the noncitizenship rate
5 among White voting age, White non-Hispanic voting
6 age, the noncitizenship rate is on the order of 1 to
7 1.2 percent and so would reduce the ward level
8 populations by that much. They tend to be very small
9 with the exception of Hispanics where you have a
10 larger noncitizenship rate.

11 Q But you looked at each individual ward's demographic
12 data to determine like how many Hispanics are in this
13 ward and then applied the noncitizenship factor to
14 that ward individually?

15 A Correct.

16 Q All right. I probably asked that poorly to get that
17 simple answer, so I apologize.

18 Why don't we just -- I think you probably can
19 address Black and Hispanic voting age population
20 together. Like what do those elements mean?

21 A Those are again taken from census. The number of
22 people identified in census as Black and Hispanic and
23 again with the same adjustment made for voting
24 eligible population.

25 Q Okay. And then why did you break out Black voting

1 age population, Hispanic voting age population
2 separately from total voting age population?

3 A Well, the reason I did that was because the
4 propensity to vote the partisanship of different
5 demographic groups varies. Blacks are more likely to
6 be democrats. Hispanics are slightly more likely to
7 be democrats or vote Democratic is the proper way to
8 phrase that. And so it was -- I considered it
9 necessary to include a measure of that as a way of
10 trying to estimate the number of people who vote for
11 one party or the other.

12 Q When you eventually did the -- run the numbers for an
13 individual ward, what -- I'm trying to think of the
14 way to ask this. But, for example, like when you put
15 in the Black voting age population, what percentage
16 of that are you assigning to like the Democratic
17 column, or is that --

18 A That's purely a function of what the data showed. I
19 wasn't doing any prior assignment.

20 Q Okay.

21 A It was you run the regression, you will get a
22 coefficient that tells you each additional Black
23 voting age person will add a certain number -- in
24 this case a fraction of votes for Democrats or
25 Republicans, so it's not an assumption that I made.

1 It's driven by the results.

2 Q Sure. I didn't mean to like imply that, but you gave
3 me the way to ask it to you, I think. How did you
4 develop that coefficient that then goes into the
5 formula?

6 A That's simply a function of the regression commands
7 done in this data where you have the data and you
8 tell it I want to use this as a dependent variable
9 and here are my independent variables and it performs
10 the calculations and it gives you the results and you
11 show them -- give some of the results and the annex
12 gives the full set of coefficients.

13 Q Okay. So if we just turn to the annex to --

14 A It would be Page 5.

15 Q Page 5, okay. So it says Black voting age
16 population, coefficients negative .03, is that what
17 you're referring to?

18 A Correct.

19 Q So for someone that doesn't have as much of a
20 background in stats, what does that mean?

21 A So the way that you would interpret this result or
22 that results, the coefficient is minus .03 which
23 suggests that each -- and this is all linear -- the
24 unit of analysis is the person.

25 So each additional -- as the Black population

1 goes up, the Republican number -- number of
2 Republican votes will tend to go down. You also need
3 to look at the estimate of precision, which is the
4 standard error, and that simply gives you a way of
5 assessing how precise this estimate is and in
6 particular use that further statistical test to see
7 if the coefficient is different from zero. And the
8 P-value, which is the last, that gives you the
9 probability that the number is significantly
10 different from zero.

11 The bottom line is that the Black voting age,
12 this coefficient is not significant. And the reason
13 it's not significant is that the bulk of that effect
14 is going to be picked up through the Republican and
15 Democratic presidential votes, that if I know how
16 many Republicans vote, if people voted for
17 Republicans, having the additional information of how
18 many people in the ward were African-American doesn't
19 give me much more information, which is a little
20 different than for the Democratic vote. So that's
21 why I ran different models.

22 Basically through -- in this table, the
23 coefficients, the rows that are bolded, those are
24 what would be defined as statistically significant
25 coefficients.

1 Q Okay. So the ones that are not bolded, Black voting
2 eligible population, Hispanic voting eligible
3 population and Democratic presidential votes, are not
4 significant?

5 A Correct.

6 Q Statistically significant?

7 A Correct.

8 Q And then maybe I can just get you to define what
9 these columns are. You mentioned them, but the
10 robust standard error, the t-statistic and P-value.

11 A So the standard error, again it's the calculation of
12 the precision of the coefficient estimate that the
13 coefficients will be drawn -- it will be a
14 distribution and basically if you think of it as a
15 curve, as the standard error goes down, that curve
16 gets narrow and so you can have more confidence that
17 that number is precisely where it is.

18 It's robust because there's an adjustment to be
19 made when the -- each of the wards is clustered into
20 a particular district and we know that you have one
21 candidate running in a series of wards and so it's an
22 adjustment that is made to the standard error to
23 account for that. The t-statistic is simply the
24 coefficients divided by the standard error, and
25 generally the t-statistic is greater than plus or

1 minus -- it's greater than 1.96 or smaller than minus
2 1.96. That gives you a measure of the statistical
3 significance. And the P-value is just an expression
4 of the significance of the estimate.

5 Q Okay. I think you may have just done this, but it
6 slipped out of my head. The P-value, what's the
7 cutoff for showing what's significant or not
8 significant?

9 A So the typical standard is using -- it's called a 95
10 percent confidence interval and that in a data set of
11 this size, that cutoff will be 1.96.

12 So you can see just an example, the Republican
13 presidential votes is .95, which means that each
14 additional Republican presidential vote gives you .95
15 votes for the candidate. The standard error is .01.
16 The t-statistic is 110, which is -- that means that
17 the probability that that number is actually zero is
18 zero.

19 Q Okay. Maybe you could explain why the Democratic
20 Assembly incumbent and Republican Assembly incumbent
21 are also significant.

22 A Generally when there's an incumbent in a race, that
23 incumbent will do better. There's long literature in
24 political science explaining why this is true.
25 Better name recognition, better candidates, they tend

1 to have more experience, more money. And so other
2 things being equal, an incumbent will do better in a
3 district than a non-incumbent of the same party would
4 do.

5 Q Looking at the numbers, could you just explain what
6 those numbers signify in terms of their significance?

7 A So generally a -- so we're looking at the number of
8 votes that the Assembly Republican candidate would
9 get. And the fact that the Democratic Assembly
10 incumbent coefficient is negative, it's small, but
11 it's negative, is that other things being equal in a
12 race where the Democratic Assembly incumbent, the
13 number of the votes for the Republican will go down.

14 Q Okay.

15 A And the reverse for the Republican incumbent, that in
16 the case where you have a Republican incumbent, that
17 will go up. And I need to make one correction. The
18 Democrat -- the incumbency coefficients are weighted
19 by the population of the ward.

20 Q Explain what that means.

21 A So if I just used -- typically you would just use a
22 dummy variable. It's one in a ward where there's a
23 Democratic incumbent and zero when there's not, but
24 because the wards are unequal size and some of them
25 they have populations ranging from a few hundred to a

1 few thousand, that would bias the results because you
2 would expect more votes for the Democratic candidate
3 when you have a Democratic incumbent in a ward of
4 3,000 people as opposed to a ward of 100 people or
5 300 people.

6 And so this is -- you would have to multiply
7 this number by the population of the ward to get the
8 number of additional votes that the candidate would
9 receive.

10 Q When you're calculating the raw like actual total
11 numbers, but is the percentage effect the same? You
12 know, like a 100-vote ward might get two more votes
13 or something, but then you'd upscale that to 1,000
14 and it gets a load of 20 more votes or something? Or
15 is there a difference added to that?

16 A Well, the coefficient is that the -- let me think
17 here for a minute. The independent effect of
18 incumbency would be -- as a theoretical quantity
19 would be constant across wards, although the effects
20 would not. So basically for each additional person,
21 you would expect an effect based on incumbency and
22 that effect -- that effect on that individual person
23 or that individual level effect would be the same in
24 a ward of 100 people as opposed to a ward of 3,000
25 people even though the total number of votes that the

1 Republican or Democrat would get would be different
2 in those two.

3 Q Okay. So if I'm looking at just a district-wide vote
4 total that isn't broken down into each individual
5 ward, is there a way to take your number and just
6 kind of like convert that into like a total
7 percentage of the vote that's a bump due to
8 incumbency, you know, like five percent, two percent,
9 one percent just to kind of get an idea as to like
10 the magnitude of that effect?

11 A I'm just trying to work out in my head whether you
12 could do that. The way that this model expresses
13 that is that you would get an increment in each ward
14 based on the coefficient and the size of the ward,
15 and I think it's possible that you could simply apply
16 that to the district-wide total. But that's -- I
17 would not be comfortable doing that.

18 The way that I would want to do that is to do
19 the analysis and actually look at the incremental
20 number of votes you get on a district by district
21 basis. You might be able to get a first
22 approximation of what that might look like, but
23 it's -- there are reasons why you would want to
24 interpret that with caution.

25 But the general rule holds is that -- the other

1 issue here is that that coefficient exists after you
2 have taken into account the Republican and
3 presidential -- Republican and Democratic
4 presidential vote. So you wouldn't be able to look
5 at that number and say, ah, there were 50,000 votes
6 or 40,000 votes cast in the assembly race, .02, that
7 means that the Republican advantage was 800 votes.

8 You would have to look at that and say that
9 would be after you take into account all of the other
10 variables. So this is the independent effect of
11 incumbency once you've controlled for the other
12 variables. So in that sense, you wouldn't be able to
13 take this coefficient and just apply it to a district
14 to come up with an estimate of the total effect of
15 incumbency.

16 Q So the effect of the incumbency, will it be
17 different, for example, a ward that has 55 percent
18 that voted for the Republican presidential candidate
19 versus another ward that has 40 percent that voted
20 for the Republican candidate? You know, how does the
21 effect of this Republican Assembly incumbent differ
22 there?

23 A This is a linear estimate and so that assumes that
24 the effects would be the same at different levels of
25 Republican support or Democratic support.

1 Q Okay.

2 A But again the number -- that that would be after you
3 take into account the Republican and Democratic
4 presidential votes, so you would not see the same
5 presidential number of votes for Republicans and
6 Democrats in the 55 percent Republican district as
7 opposed to 55 percent Democratic district. So you
8 need to keep that in mind that this is controlling
9 for all of these factors, including population and
10 counties and all of these things.

11 Q I think I understand it. So we've been talking about
12 the Democratic and Republican incumbents. I think
13 we've gone over those. And then the county, what
14 exactly is the county effect?

15 A Well, there are different areas of the county that
16 may have particular political dispositions that these
17 don't capture and it was -- struck me as prudent to
18 put this in. You can see most of the effects are
19 actually not significant, and even the effects on
20 which you would think of the most Republican and most
21 Democratic districts, like the effect in Washington
22 County, Waukesha County, Ozaukee County, Dane County,
23 Milwaukee County, those are all not significant, but
24 it gives me a little more analytical leverage to
25 include those.

1 Q And what page?

2 A We're looking at the coefficients on Page 6 and 7.

3 Q It's the same that these ones that are bolded are the
4 ones that have a significant -- statistically
5 significant effect?

6 A Correct.

7 Q So then you mentioned Dane and Milwaukee and
8 Washington. And those are not bolded, that's the way
9 you reference it?

10 A Right. That means once you take into account all
11 these other variables, being in Dane County does not
12 have an independent effect on the Republican
13 presidential vote.

14 Q So just going back to Page 10 and 11 -- 11, I guess,
15 in this -- should I call it an equation?

16 A Sure. Or model.

17 Q Model. Which elements take the actual votes cast
18 in -- for the assembly candidates in that district --
19 as maybe I should say you applied this model to
20 several different -- to Act 43 actual elections and
21 then to your demonstration plan. I'm kind of
22 focusing on the Act 43 since there's no actual
23 elections under your demonstration plan.

24 When looking at Act 43, which elements of this
25 model take into account the actual votes cast for the

1 particular candidates in an assembly district?

2 A I would say they all do because the actual vote is
3 the dependent variable. So these all reflect the
4 estimate of the effect these variables have on the
5 actual vote. So in that sense, they are all related
6 to what actually occurred in the -- in contested
7 districts.

8 Q But in terms of actually like plugging in the numbers
9 of Candidate A in District 1 got 12,000 votes and
10 Candidate B in District 1 got 15,000 votes, where do
11 those numbers go into the equation?

12 A They go in on the left-hand side.

13 Q The assembly vote?

14 A Right.

15 Q Where you add up total votes Republican and total
16 votes for Democrats?

17 A Well, again we'd need to be precise here that the
18 dependent variable is the ward level totals. So I'm
19 not adding anything up there. And that the model
20 estimates the effect of all of these independent
21 variables on the actual vote. So in that sense, they
22 are all connected and they all are a function -- all
23 of the estimates are a function of the actual vote.

24 Q Let's go to something else quick. Page 40, there's
25 like Figures 10, 11 and 12. I'll just ask you some

1 questions on those, but you can look at them to
2 familiarize yourself.

3 A Okay.

4 Q So we'll just start at Figure 10 and it says actual
5 2012 Republican Assembly vote in Act 43 districts.
6 What did the numbers in Figure 10 represent?

7 A This is a histogram that shows the distribution of
8 the actual results. And the way that you would look
9 at -- so the X axis here is the Republican vote
10 percentage in 2012 going from zero to 100 and what
11 this shows is that the left-hand bar, the one with
12 the 23, that is 23 districts in which there was no
13 Republican running, so that Republican vote
14 percentage shows up as zero.

15 You look at the right-hand side where there's
16 the bar with the 4, that shows that there were four
17 districts where there was a Republican on the ballot
18 but no Democrat. And so the rest of these figures
19 show that, for example, there was one -- this is just
20 the Republican votes.

21 If you looked at the Democratic vote, it would
22 be the mirror image of this. There was one district
23 in which the Republican got between 25 and 30 percent
24 of the vote, nine where the Republican got between 40
25 and 45 percent. The bold vertical line is 50

1 percent, so everything to the right the Republican
2 won, everything to the left, the Republican lost.
3 And this shows you that there were a large number of
4 Republicans who won with between 50 and 60 or
5 basically between 50 and 65 percent of the vote.

6 I counted 51 Republicans won with between 50 and
7 65 percent of the vote. So this shows the
8 distribution of the actual results.

9 Q And the percentage of vote, is this like we'd been
10 talking about before, the two-party vote, or is this
11 just like the top line number?

12 A I believe this is the percentage of the two-party
13 vote.

14 Q So someone might have got 47. -- or 49.8 percent, but
15 they would actually be counted as above 50 percent
16 because once you look at if they won the seat, they
17 would have gotten more than 50 percent of the
18 two-party vote? And it's like a hypothetical of a
19 guy -- you know, a close race where there's 48 to
20 49.6 and then there's scattering.

21 A It is possible that if someone got 49.9 percent of
22 the vote and the Democrat got 48 percent and there's
23 someone else with that extra, it's possible that that
24 could move someone over 50 percent, but I don't
25 recall that there were any -- certainly not many

1 examples of that.

2 Q And then going to Figure 11, it says Republican vote
3 forecast in Act 43 districts-Gaddie measure. What
4 does this represent?

5 A This is estimates that the expert that was hired in
6 the 2012 redistricting case, he did an analysis for
7 the -- I guess we'll call them the defendants. I
8 don't know if that's the right term -- where he
9 derived his own estimate of what the results would --
10 like what the partisanship would be and the projected
11 Republican vote in the Act 43 districts and laid
12 along the same axis. So you can visually compare
13 them.

14 Q And then going to Figure 12, it says Act 43 baseline
15 partisan measure. What does that recommend?

16 A This is the numbers that came out of the regression
17 model. It gave me estimates of the number of votes
18 that were cast, and from that, I extracted the
19 incumbency advantage. So the baseline partisanship
20 is an estimate of what the vote would be in an Act 43
21 district that was contested with no incumbent.

22 Q And this reminded me of something I forgot to ask on
23 your model. What elections went into looking at the
24 baseline for you to determine the baseline
25 partisanship of the districts? Did you just look at

1 the 2012 election results, or did you look at past
2 elections as well?

3 A I used the 2012 election results.

4 Q And so if we look at Figure 12, that's your
5 calculation of the baseline partisan measure based on
6 the 2012 election results?

7 A Correct.

8 Q I was going to get to Table 9, which is on Page 52 --
9 no, sorry. Table 8. Table 8 on Page -- how you
10 calculated the efficiency gap for Act 43.

11 A We're on Page 50?

12 Q 50, yeah, sorry. I misspoke. Why don't you just
13 generally explain what your -- what the calculations
14 you did on Table 8.

15 A So this reflects my -- the results of the model which
16 I used to produce estimates of the votes that -- the
17 underlying partisanship of the votes. It's basically
18 the model applied to Act 43 districts extracting the
19 incumbency advantage.

20 The reason I did that is I wanted to have a
21 uniform basis of comparison with my demonstration
22 plan, the results produced by Professor Gaddie, and
23 compared it to the underlying partisanship of the
24 Act 43 districts. So the predicted Democratic and
25 Republican votes are the model estimates of what the

1 votes would have been and if the race was contested
2 and when there was no incumbent running.

3 So this is a way of correcting for the -- how to
4 deal with uncontested races because we know in an
5 uncontested race that even if there's no Republican
6 on the ballot and the Republican gets zero votes,
7 that doesn't mean there are no Republicans in the
8 district. So it's necessary to correct for that.
9 And so this is the -- each district from 1 to 99 has
10 a predicted Democratic and Republican vote total
11 which is produced by the model.

12 It predicts the winning party, which is
13 simply which candidate gets the most votes, and then
14 it goes through and calculates the efficiency gap for
15 each district, the lost -- the votes for the losing
16 candidate are lost, the surplus votes or the votes in
17 excess of what is necessary. So the efficiency gap
18 has two categories of wasted votes. There are lost
19 votes and there are surplus votes, that the lost
20 votes are the votes cast for the losing candidate.
21 The surplus votes is one-half of the margin of
22 victory for the winning candidate.

23 You would add up the surplus and wasted votes or
24 the lost and surplus votes for Democrats and
25 Republicans and you can -- and then you basically add

1 those up across all districts and the difference
2 between the wasted Democratic and wasted Republican
3 votes gives you a net wasted votes which when divided
4 by the total number of votes cast gives you the
5 efficiency gap.

6 Q I'm going to mark a document.

7 (Exhibit 5 is marked for identification)

8 Q And I've put before you Exhibit 5. What this is is
9 there was a document that your counsel provided
10 called -- it was a spreadsheet called Efficiency Gap
11 Calculations, and there were several tabs in that
12 Excel spreadsheet, and then this was the one that was
13 labeled Act 43 Direct. So it had a lot of columns,
14 so I printed out on legal size paper here, but I
15 think it matches up with the calculations done on
16 Table 8 in terms of the -- you can check that over to
17 make sure I gave you the right document.

18 A So this looks like the spreadsheet I used to generate
19 this table.

20 Q Okay. So I was just going to ask you some questions
21 on the spreadsheet and the columns and just what they
22 are. So obviously district is the district and then
23 there's Pop, what does that mean?

24 A That I believe is the population of the district,
25 total population.

1 Q And then there's a column that says Dev, do you know
2 what that --

3 A That's deviation, which is the difference between the
4 population and the ideal population, which I believe
5 is 57,444. Yeah, that's what it is.

6 Q Okay. And then percent?

7 A The percent deviation.

8 Q And then there's dhat_open. Do you know what that --

9 A So typically when you're dealing with an estimate,
10 you use -- if you were to write it down, it would be
11 a D with a caret over it, so dhat, rhat. So that was
12 how I identified that it was a predicted value, and
13 then open reflects the fact that it assumes -- it's
14 an estimate after the incumbency advantage has been
15 extracted. So it assumes that the seats are open.

16 Q So that -- you see that 16.235 is what's listed on
17 the Table 8 as predicted Democratic votes?

18 A Correct.

19 Q And so that column is what your model predicts would
20 be the Democratic votes in the Assembly District 1?

21 A Correct.

22 Q The Dem percent, what does that mean?

23 A That's the percentage of the Democratic vote of the
24 two-party vote. Basically you add up the Democratic
25 and Republican vote and you divide the Democratic

1 vote -- or you divide each party's side by that total
2 and that gives you the percentage of the two-party
3 vote.

4 Q And it says rhat_open. I think I know what that
5 means, but you can explain it.

6 A That's the estimate of the number of votes that a
7 Republican candidate would receive in a contested
8 race with no incumbent.

9 Q And then I would think Republican percentage, that's
10 the baseline --

11 A That's the Republican share of the two-party vote.

12 Q Okay. And then D Lost?

13 A So that's -- I think those just matched the lost
14 Democratic, lost Republican, surplus Democratic,
15 surplus Republican, the total of the Democratic and
16 Republican wasted votes.

17 Q All right. And then Rep Win, it says 1, I take it
18 that means the Republican would win that district?

19 A Correct.

20 Q How is the R surplus determined? I was trying to
21 figure that out by just adding and subtracting these
22 numbers, but I wasn't quite sure how it worked out.

23 A It should be that if you subtract the Republican vote
24 from the Democratic vote in District 1, for example,
25 that gives you 383 -- 393, I believe that's right.

1 So that gives you 393, the margin of victory, you
2 divide that by two, which gives you 196.5, which I
3 rounded.

4 Q Okay. To 197, all right. And so for every one of
5 these districts, we can just do that same calculation
6 and we'll get that R wasted or the D wasted if
7 they're the winner?

8 A Correct.

9 Q Okay. Now, so if we look at the District 1, you can
10 look at either the spreadsheet or the table, this is
11 a pretty close election, correct, in that there's 197
12 surplus votes?

13 A That's a close election.

14 Q Okay. Then how would you characterize the seat as
15 like a toss-up seat or a swing seat, or is there a
16 name that you characterize kind of a 50-50 seat like
17 this?

18 A It would be accurately characterized as a toss-up
19 seat.

20 Q Okay. Now, I take it if the surplus Republican
21 votes, it's only 197, if this election goes a little
22 bit differently in real life rather than in the model
23 and the Democratic candidate wins narrowly, then
24 these numbers flip in the sense that the Republican
25 is going to have 16,000-some wasted votes and the

1 Democrat is going to have a narrow number of surplus
2 votes?

3 A Correct.

4 Q Okay.

5 (Exhibit 6 is marked for identification)

6 Q I put before you Exhibit 6, which is a printout from
7 the Government Accountability Board website, and this
8 is the 2012 fall general election final vote totals
9 from the GAB website. So if you could flip to -- I
10 printed out the entire thing because I just figured
11 we should have the entire document, but the assembly
12 districts start --

13 MS. GREENWOOD: Page 8.

14 Q 8, okay. So if we look at Assembly District 1, on
15 the official results, the actual results were
16 Gary Bies, I think the Republican won with 16,993
17 votes at 52.27 percent and then Patrick Veaser I
18 believe is a Democrat. He lost at 48.65 percent. So
19 I guess what I'm trying to say is the actual election
20 results, the 69.83 is not the number that you have
21 here for the Republican votes in Assembly District 1?

22 A That's correct.

23 Q And then also the 16,124 is different from your
24 predicted Democratic votes?

25 A That's correct. Again this table is based on

1 estimates of what the vote would be.

2 Q Okay. So why did you use estimates instead of the
3 actual vote totals?

4 A Because in extracting the incumbent advantage, I
5 concluded that it was best to use a consistent
6 methodology rather than picking and choosing and
7 applying one method in this district, one method in
8 that district.

9 And again this is consistent with what
10 Professor Gaddie did, and I wanted to make sure that
11 I had a consistent methodology that I applied to
12 Act 43 and the demonstration plan because in the
13 demonstration plan, we -- that's based on a
14 hypothetical set of results in a different plan and
15 wanted to make sure that I was applying a consistent
16 methodology and consistent judgment in making
17 comparisons across the two plans.

18 Q And but Act 43 elections did take place with actual
19 incumbents running, correct?

20 A That's true.

21 Q So when you look at the actual vote totals cast in
22 the assembly districts, they reflect whatever measure
23 of incumbent advantage any incumbent had?

24 A That's true.

25 Q Now, in your predicted Republican vote total, 16,628,

1 is that created just by looking at 16,993 and
2 subtracting out an incumbent advantage?

3 A No.

4 Q So it is 16,628 is produced by that model we went
5 through earlier that had the number of different
6 variables --

7 A Correct.

8 Q -- on Page 10 and 11?

9 A Correct.

10 Q We don't need to go through them all again.

11 A But again after extracting the incumbent advantage.
12 I actually don't know sitting here whether Gary Bies
13 was the incumbent in District 1.

14 Q Yeah, perhaps he wasn't. Now, subtracting out the
15 incumbent advantage, that ends up reducing the wasted
16 votes for any incumbent who won, is that correct?

17 A It would -- extracting the incumbent advantage would
18 reduce the number of votes for the incumbent, so it
19 would have the effect of reducing the number of
20 surplus votes.

21 Q And then this is like -- am I correct in saying that
22 this is a zero sum gain with respect to the
23 Democratic and Republican votes in the sense that by
24 reducing the Republican incumbent vote, you would
25 increase the Democratic losing vote?

1 A Well, not necessarily.

2 Q Why not?

3 A Because again working from the model estimates that
4 if you reduce the number of Republican votes for the
5 incumbent, that doesn't increase the number of votes
6 that the Democrat gets.

7 Q Well, I thought that your model, though, used the
8 total votes for Assembly District 1 would be the
9 total two-party votes cast.

10 A Correct. But if I did that and extracted the
11 incumbency advantage and basically moved from -- I'd
12 have to double check this, but if I extracted the
13 incumbency advantage, you only do that for the
14 incumbent. You don't -- extracting the incumbency
15 advantage reduces the number of votes that the
16 incumbent would get. I would have to go back and
17 look at the results, but --

18 Q But your model assumes -- or maybe I'm wrong. In
19 Assembly District 1, for example, there's 16,993
20 votes for the winner and 16,124 votes for the loser.
21 Is your total turnout model, so to speak, like total
22 number of votes that are going to be cast in Assembly
23 District 1 adding up 16,993 and 16,124?

24 A No.

25 Q Okay. What does the total turnout model mean?

1 A Well, the total turnout is the predicted number of
2 votes that would be cast and it's going to be
3 different than the actual total. It's going to be
4 very close. I think in this one I was off by 350
5 votes, which that's pretty good. But so let's go
6 back a step here. If we look at the regression
7 results on -- I'm on Page 21.

8 So these are the substantive variables. So if
9 you look at the effects of incumbency for the
10 Democratic and Republican Assembly incumbent that you
11 can see that those -- the coefficients are -- the
12 coefficient for Democratic Assembly incumbent is
13 positive for Democrats, .028, negative for Republican
14 votes, minus .021.

15 Now, those numbers are different. They're not
16 the mirror image of each other. They show that the
17 number of votes that the Democratic Assembly
18 candidate gets is higher when the Democrat is a
19 Republican, they get more Democratic votes and fewer
20 Republican votes. In extracting that advantage, you
21 use this -- the results of the model to generate the
22 results, but you set both of these equations, both of
23 these coefficients to zero.

24 So that means that you are -- you are, in fact,
25 when you subtract the incumbency advantage, it has

1 the effect in a race with a Democratic incumbent,
2 that reduces the number of votes that the Democratic
3 candidate gets. It increases the number of votes
4 that the Republican candidate gets, but those numbers
5 are not equal. It's not like you take 100 votes.

6 It depends on what the coefficients are, and so
7 it would affect both totals, but it's not you're
8 taking marbles from one jar and transferring them to
9 the other. It depends on what the underlying data
10 show.

11 Q That makes sense.

12 A Okay.

13 Q But there would be some sort of, so to speak, like
14 reduction for the incumbent and bump for the
15 non-incumbent candidate, but we can't say that
16 they're equivalently sized?

17 A Correct.

18 Q Do you have an opinion as to whether your baseline
19 partisanship numbers for all of these districts would
20 hold also for the 2014 election?

21 A I think that they would be similar. I don't know how
22 they would line up exactly. The reason I have some
23 confidence that they would be similar is that my --
24 if you look at my estimates using 2012 data to
25 generate the estimate of underlying partisanship,

1 that's based on the 2012 election and measures of
2 underlying partisanship.

3 When Professor Gaddie did his underlying
4 partisanship estimate in 2011, he did them -- he did
5 not have the 2012 election results. He had previous
6 election results, 2010, 2008, 2003. And he did it in
7 a different way. It is analogous in terms of what
8 he's trying to measure, but his methods were slightly
9 different than mine. If you look at -- so you look
10 at Page 30, which is Professor Gaddie's baseline
11 partisan metric plotted against mine. You can see
12 that there are some differences, but they are very
13 strongly related in that the correlation, the R
14 squared between these two measures are .96, which is
15 almost perfect.

16 And my conclusion looking at this is that we are
17 measuring the same thing in that the fundamentals of
18 the districts do not change even when the actual
19 votes that might be cast in an election do change.
20 So it is likely that the -- well, these numbers would
21 be different if you used 2014, but that's a separate
22 problem. You could not -- you couldn't take this
23 model and simply say we're going to plug in the 2014
24 numbers and get what the -- see what the results are.

25 But my conclusion is that this model is an

1 accurate measure of the underlying partisanship of
2 the districts that were created in Act 43.

3 Q So do you think the partisan gerrymandering should be
4 based on underlying partisanship of the district or
5 based on the votes that were actually cast in the
6 legislative elections?

7 A It's hard to give a clear answer to that because it
8 depends on what you're measuring. Now, looking at
9 the actual results gives you one indication of what
10 happened. But as I explained here and is well-known
11 in the discipline that there are other things that
12 you need to look at, in particular, trying to deal
13 with the question of uncontested districts.

14 Q What's the margin of error for determining the
15 baseline partisanship of the district?

16 A So my -- with the Act 43, I would have to go back and
17 look at the standard error of the regression, but
18 it's probably on the order of plus or minus one and a
19 half percentage points. I'd have to look
20 specifically, but these are very precise estimates.
21 It's not a large margin of error.

22 Q Although for determining the efficiency gap for
23 districts that are somewhere between 48 and 52
24 percent, that 1.5 percent margin of error could flip
25 a district from one to the other, can't they?

1 A Possibly. But the margin of error is not a uniform
2 thing that anything that's within the margin of error
3 means that you don't know what the answer is. That
4 the farther away you are, the less likely it is that
5 the actual number is -- that as you move away from
6 the point estimate, the likelihood that the number
7 being that far away goes down considerably.

8 So in a 49 percent -- in a 51-49 percent
9 district, the margin of error suggests that there is
10 some likelihood that the actual number is different,
11 and it is not impossible that that actually might be
12 51-49, but that's not equally likely. You can't say
13 that, oh, the margin of error is 1.5 and the -- my
14 estimate is a victory margin of 1.5 percent, so it's
15 a coin flip. That's not how you calculate the
16 probabilities.

17 Q Sure. But a district like that wouldn't be a
18 guaranteed win for the party that had districted it
19 to be 51-49 percent Republican, is that correct?

20 A That's correct. That would be a competitive
21 district.

22 Q Now, you calculate the percentage of the districts
23 out to like 49.402 percent.

24 A Um-hum.

25 Q Do you think that it is possible to get the

1 partisanship down to like hundredths and thousandths
2 of a percentage?

3 A Well, that's the results of the number, and as you
4 will see, I rounded that to I think one or two
5 significant digits. I'm not sure what the actual
6 figures are. Now, that's not suggesting that I think
7 you should measure that out to the 100,000th. That's
8 a function of the way that Excel calculates the
9 numbers and you look at that. So you clearly would
10 have to round that.

11 MR. KEENAN: Off the record.

12 (Discussion off the record)

13 (Exhibit 7 is marked for identification)

14 Q Can you read it okay, Mr. Mayer?

15 A Yes.

16 Q All right. Because I think I can get an electronic
17 copy up here if we need to blow it up, and I think
18 the numbers are also somewhere else too here.

19 MR. KEENAN: I will also mark this
20 right away as Exhibit 8.

21 (Exhibit 8 is marked for identification)

22 Q So my first question is going to be do you know what
23 Exhibit 7 is? That's the color copy.

24 A Yes.

25 Q What is that?

1 A This is a chart, a table that was produced by
2 Professor Gaddie which analyzed the projected
3 partisanship of the districts in the map of -- the
4 Act 43 districts.

5 Q Okay. And I'll explain what Exhibit 8, what I did is
6 the same thing I did with Exhibit 5 is I printed out
7 the tab of your spreadsheet that was titled Gaddie
8 Metric that was at the top there on the wasted votes
9 or maybe it was called Efficiency Gap spreadsheet and
10 if I compare, I was just comparing -- if you look at
11 Exhibit 7, the third column is the new and it has a
12 list of percentages, like the first one is 51.22, and
13 then if you look at the Gaddie Metric spreadsheet,
14 there's a rep percentage column and that has .5122
15 and if I go down, it looks like it's matching up.

16 A Correct.

17 Q But let me know if you disagree. So maybe I could
18 just have you explain what you did in the Gaddie
19 metric wasted vote calculation.

20 A So if I recall, and I would have to look at the math,
21 so what Professor Gaddie produced was a map of
22 percentages, sort of his estimate of the underlying
23 partisanship of the district. In order to generate
24 an efficiency gap calculation that is consistent with
25 what I did in the rest of my report, I needed a

1 method of converting those percentages to actual
2 votes.

3 And so what I believe I did, and I would have to
4 go back and double check, but I believe what I did is
5 looked at the total number of votes for the
6 Democratic and Republican candidates that my model
7 generated. So that gives me a total. So we would
8 add up the Republican and Democratic votes in
9 District 1, that gives me the total number of votes,
10 and then I applied the percentages in this chart to
11 that number to give me a distribution of the number
12 of votes. And I think that's what I did.

13 And then I used the predicted Democratic and
14 Republican votes to replicate an efficiency gap
15 calculation that I could then compare with my
16 metric.

17 Q Okay. So if I understand correctly, the Republican
18 percentage column is just taken straight from
19 Professor Gaddie's numbers in Exhibit 7?

20 A I believe that's true.

21 Q Now, the corresponding Democratic percentage, is
22 that -- would that just be 100 percent minus whatever
23 the Republican percentage is?

24 A That's correct.

25 Q So this again is a straight two-party vote

1 calculation?

2 A Right, which again is consistent with how the problem
3 was handled in the literature.

4 Q And then in terms of the predicted number -- the
5 total number of votes, obviously you needed to apply
6 the 51.22 percent to a total vote number to get to
7 the Republican vote total. How did you come up with
8 like the total number of votes in this district?

9 A As I mentioned, I believe what I did is -- we can
10 actually check this if you would like. I believe
11 that the total number of Democratic and Republican
12 votes is the same in this model. Or in here, I think
13 I took that in the total that I generated in my model
14 to come up with an estimate of the total number of
15 votes, and we can check that if you'd like.

16 Q Okay. I can look at that, too, over the lunch break.
17 Now, Professor Gaddie himself, though, to your
18 understanding did not make projections of the
19 expected turnout in the 2012 elections when he did
20 this chart in Exhibit 7?

21 A I don't believe he did, but I don't know for sure.

22 Q Okay. And then how is -- you've gone into this a
23 little bit before, but what's your understanding as
24 to how Professor Gaddie arrived at his Republican
25 percentage there?

1 A So my understanding as he described it is that he
2 looked at past electoral performance in certain
3 elections, and I don't recall precisely which ones
4 that he looked at, and he concluded that that was an
5 effective way to come up with an accurate estimate of
6 the partisanship. So my understanding is that is how
7 he generated these numbers.

8 Q Okay. And then where did your understanding of how
9 he did this come from?

10 A From his deposition in which he described his methods
11 and the different files that he produced that I was
12 able to examine.

13 Q And that's the deposition from the Baldus litigation?

14 A See, the problem is that the Baldus vs. Brennan --
15 there's so many B's in these cases.

16 Q Baumgart, yeah.

17 A To be precise.

18 Q Okay. So here's your report. And in your report,
19 the Gaddie metric calculation is at Table 9, I
20 believe, which is on Page 52. And just to confirm,
21 so the way that the wasted votes were calculated was
22 the same way that we went over with respect to the
23 Act 43 calculations?

24 A Yes.

25 Q All the losing candidate votes count as wasted and

1 then the surplus votes is the differential divided by
2 two?

3 A Correct.

4 Q Now, it's not your testimony that Dr. Gaddie himself
5 went ahead and performed any sort of calculation like
6 this?

7 A Not that I'm aware of.

8 Q Okay. Basically what you did is you took his
9 underlying baseline partisanship numbers and plugged
10 them into -- I guess you didn't plug them into your
11 model, but you applied them to the total votes
12 produced by your model?

13 A Correct. I'm glad you rephrased that -- that was
14 very nicely done.

15 MR. KEENAN: Actually I think I'm at a
16 good stopping point to go to lunch and then come
17 back.

18 (Lunch recess is taken)

19 (11:18 p.m. to 12:19 p.m.)

20 Q We're back on the record after lunch. Let's just go
21 back to some of the stuff we were talking about
22 before lunch. One was uncontested seats and we had
23 talked a little bit about how those were handled. I
24 just wanted to look at first maybe just generally
25 explain for any of the Act 43 calculations that you

1 did how your model predicted the votes in an
2 uncontested race.

3 A So the model itself utilized data from contested
4 districts. I think there were 72 contested
5 districts. And all of the independent variables, the
6 incumbency, the presidential votes, demographics, the
7 county fixed effects, those are all exogenous to the
8 characteristics of any particular district.

9 And so I was able to use the relationships that
10 the model produced in the 72 contested districts to
11 create evidence of the uncontested districts because
12 we still have a presidential vote, we still have the
13 ballots cast for both the Republican and Democratic
14 presidential candidates. We have the demographics.
15 So I essentially developed a model using the
16 contested districts and then applied the results of
17 that model using the values of the independent
18 variables in uncontested districts to generate the
19 vote, the estimated vote totals for the uncontested
20 districts.

21 Q Okay. So in terms of the total number of votes that
22 would be cast in an uncontested race, how is that
23 determined?

24 A It was a function of the number of votes cast in the
25 presidential, so the turnout is related to that, but

1 again the nature of that relationship was a function
2 of the relationship that you observed in contested
3 districts.

4 Q Okay. And so the number of total votes that you
5 see -- that your model predicts between both of the
6 parties' candidates, is that going to be greater than
7 the total number of votes that the candidate received
8 undefeated?

9 A So can we find --

10 Q Sure. I was thinking maybe we could look at your
11 exhibit, Table 8, Page 50. And if you want to for
12 reference go to Exhibit 6, I think District 8 is the
13 first uncontested one. And then 9 and 10 I think are
14 uncontested. And if I look at the votes for
15 District 8, you know, Jocasta Zamarripa received
16 78-69 votes.

17 MR. STRAUSS: I'm sorry, I missed it.
18 Where are you?

19 MR. KEENAN: Sure. It's Page 10 of
20 Exhibit 6. So it's Assembly District 8.

21 MR. STRAUSS: Okay, thanks. Yes.

22 Q So there is 78-69 votes for the uncontested
23 Democratic candidate and then I see that -- looks
24 like there's about 9,000 estimated votes for your
25 Act 43 calculation.

1 A Okay.

2 Q So maybe just explain like what -- how you end up
3 with 9,000 votes here when there was 7,800--some cast.

4 A I don't see 9,000 votes. Where are we?

5 Q If I look at No. 8, I see predicted Democratic vote,
6 73-42, predicted Republican vote, 1,738.

7 A I see. So again the no incumbent baseline is the
8 estimated partisanship of a contested race with no
9 incumbent, and then in this District 8 is -- I
10 believe Zamarripa was the incumbent. The reason
11 that -- so basically the fact that there was no
12 Republican on the ballot in District 8 doesn't mean
13 that there were no Republicans in the district.

14 If you looked at the presidential vote, you
15 would see that Romney did get some votes in that
16 district and so the no incumbent baseline is an
17 estimate of what the votes would have been had that
18 race been contested and had there been no incumbent.

19 And so a couple of things are going on here.
20 One is that turnout will go up in a contested race as
21 opposed to in an uncontested race because those 1,700
22 people who would have voted Republican under my
23 model, they have no Republican to vote for. And so
24 the most common thing for them to do is simply to
25 abstain, and that's one of the reasons why you see

1 almost invariably lower turnout, sometimes much lower
2 turnout in an uncontested race rather than a
3 contested race.

4 So that explains the reason why my model
5 estimates that there would be 9,000 votes cast in a
6 contested race with no incumbent as opposed to the
7 result which was an uncontested race with an
8 incumbent.

9 Q Okay. And then when we go to the Gaddie calculation,
10 did you take, for example, the total number of votes,
11 you know, the 7,342 and 1,738 equals -- there's a
12 certain amount of total turnout in that. Did you
13 then just apply Gaddie's percentages to that number?

14 A I believe I did. I'd have to sit down and do the
15 calculations. My recollection is that's the way that
16 I calculated the total number of votes is using the
17 estimates generated by my model and as for the totals
18 in applying them to Professor Gaddie's calculations.

19 Q Did your calculations for the efficiency gap for
20 Act 43 have any instances where the model predicted a
21 winner from the wrong party?

22 A There were I believe two instances where the model
23 picked the wrong winner and I explained -- there's a
24 table and it shows -- I think those two races, it
25 was, you know, the winner got between 50 and 51

1 percent, 52 percent. They were both very close.

2 Q So how was that handled? Did the wasted vote
3 calculation proceed on the basis that your model was
4 correct, or did it flip that, so to speak, to show
5 who actually won the race?

6 A When my model -- I used the results from my model. I
7 didn't go back and manually correct the errors. The
8 results are what they are.

9 Q Did you do an efficiency gap calculation for the 2014
10 legislative elections?

11 A I did not.

12 Q Is there any reason why you did not?

13 A A couple of reasons. One is that I concluded that
14 the presidential year was the -- was going to give
15 you the most accurate estimate of the underlying
16 partisanship. And that's what's typically done for
17 trying to assess a redistricting plan.

18 I had Professor Gaddie's estimates that he
19 produced of what he anticipated what the results
20 would be. And doing -- repeating the results for
21 2014 was actually a very involved process. It's not
22 sitting down and saying, oh, I'm going to just change
23 this number and punch a button. It would take quite
24 a bit of work to do that.

25 But I did 2012 because in my view that the first

1 election after redistricting is going to give you
2 the -- an accurate estimate of the effects of that
3 redistricting plan.

4 Q Now, coming at the next redistricting in 2020, the
5 first election is going to be a nonpresidential year,
6 correct?

7 A Correct.

8 Q So if a court has to do this next time around, should
9 it wait until a presidential year? Should it look at
10 the 2022 year?

11 A Well, so in 2022 would be a nonpresidential year, so
12 I would -- I mean it's hard to know precisely, but in
13 that election, I would probably -- I don't know for
14 sure but would be interested in what would happen in
15 the first election after redistricting.

16 Q Now, the turnout -- the total turnout number is a lot
17 different between the presidential year and a
18 nonpresidential year, correct?

19 A That's correct.

20 Q Okay. Please explain how it differs.

21 A Well, it's well-known the empirical pattern is
22 significant, that there are more people who vote in
23 the presidential year than in a midterm election
24 because without a president on the ballot, interest
25 in the campaign is less and so there's no question

1 that the number of people who vote in a midterm
2 election year is going to be lower than the number
3 who vote in the presidential election year.

4 Q Is the difference in turnout going to drive a
5 difference in efficiency gap calculations?

6 A Probably.

7 Q And do you know how much?

8 A Judging -- I have to go back and look at
9 Professor Jackman's report that the efficiency gap
10 was lower in 2014 than it was in 2012.

11 Q That leads me to one question which is you're
12 familiar with Professor Jackman's report, correct?

13 A I've read it, yes.

14 Q And he calculates the efficiency gap in a different
15 way from you, correct?

16 A In some ways, yes. The underlying concepts are
17 similar, but the precise methodologies were
18 different.

19 Q Okay. So explain to your understanding what his
20 methodology was.

21 A So my understanding of his method is that he used
22 what is in terms of the formula for the efficiency
23 gap an equivalent mechanism of calculating it, which
24 is a formula which looks at the percentage of vote
25 and the percentage of seats, and that's how he

1 generated that, whereas I went through on a district
2 by district basis looking at the actual number of
3 votes.

4 Q Can you explain for me how those two different
5 calculations yield basically the same end result?

6 A Because the reason they yield the same or very
7 similar results is that they're both measuring the
8 same thing, that the seat share and vote share
9 calculation is the equivalent of what you would get
10 if you did the district by district calculations with
11 equal turnout. And my method was to look at district
12 by district and actually counting the votes, and I
13 did that for two reasons.

14 One is that I had the data available to do it.
15 The second is that in the second step of my analysis,
16 I was going to estimate what the partisan effect
17 would be under an alternative district configuration.
18 And if I was just looking at the percentage, there
19 was no way to know what would happen if you have a
20 district that's 47 percent-53 percent, if you changed
21 the boundaries so the district is different, there's
22 no way just looking at the percentages -- there's no
23 way to calculate or estimate what the vote would be
24 in the alternative district. For that you needed a
25 measure of actual votes.

1 But that measure is not necessary if all you
2 were interested in doing is calculating the
3 efficiency gap, and that is why his estimate and my
4 estimate are very close.

5 Q So you mentioned assuming equal turnout, I think was
6 the phrase?

7 A Correct.

8 Q Could you just explain what that means?

9 A Well, so one way of doing the efficiency gap is that
10 you just look at the percentages in each district
11 without looking at the votes, and by looking just at
12 the percentages, you are making an assumption that
13 turnout is going to be equal in every district, and
14 that way, that is mathematically identical to doing
15 it as he did, which is using the seats and votes.

16 In looking at the actual votes or, more
17 properly, the estimated votes, I'm able to take
18 advantage of the fact that in this case, I can derive
19 estimates of the numbers of votes that are cast in
20 each district, and it gives me a method of
21 calculating the efficiency gap that I can compare to
22 an alternative district configuration such as my
23 demonstration plan.

24 Q So if I'm understanding, equal turnout means it's
25 assuming District 1 has the same number of voters as

1 District 2 and District 3 and District 4, all the way
2 down the line?

3 A Correct.

4 Q Okay. And so then if you know that District 1 is 53
5 to 47 percent, you know that 47 percent of the vote
6 is wasted on one side and 30 is on the other and then
7 you can come up with a --

8 A Correct.

9 Q Okay.

10 A But having said that, the fact that our numbers are
11 so close means that the fact that he did just looking
12 at the percentages and I did it at the turnout, the
13 fact that those numbers are so close means that
14 they're both estimating the same underlying
15 phenomenon.

16 Q Does he adjust for the incumbency effect?

17 A I don't believe so.

18 Q And the --

19 A Which is another reason why my efficiency gap
20 calculation for Act 43 is going to be a little bit
21 different because I've already extracted the
22 incumbency advantage.

23 Q Do you know if Professor Jackman's total statewide
24 vote share, is it actual -- is it the average share
25 in each district, or is it the average of the total

1 statewide vote? Or is it the same?

2 A Well, these are questions you probably should direct
3 to him because --

4 Q Yeah.

5 A -- I don't know that I'm in a position to get into
6 the weeds about his specific methodologies.

7 Q Okay, that's fine. Now, out of every 10-year period,
8 there's going to be either two or three elections
9 that take place in a presidential election cycle and
10 two or three that take place in a nonpresidential
11 cycle depending on the decade. Do you think your
12 efficiency gap model accounts for how there might be
13 differences between the presidential election year
14 and the nonpresidential election year?

15 A Well, the model that I developed was an estimate of
16 the efficiency gap in 2012. And in that sense, you
17 would expect to see similar results in presidential
18 years and similar but somewhat different results in
19 off year elections, and I think here I would defer to
20 Professor Jackman in his estimates of how enduring
21 efficiency gaps are over time.

22 Q Let's move on. Your report a few times refers to the
23 fact that I believe the Democrats won 51 or so
24 percent of the statewide assembly vote, is that
25 correct?

1 A I don't think that number is correct, but I would
2 have to check, but I --

3 Q Well, maybe I should just ask you like how do you in
4 your Act 43 calculation, what would be the way to
5 figure out the total statewide vote share for each
6 respective party?

7 A Well, based on the model that I did, you would be
8 able to look at the total number of votes cast for
9 Democrats and Republicans and calculate the
10 percentage that each party received.

11 Q So on Table 8, I guess is the right one, we have the
12 total -- the total predicted Democratic votes, the
13 total predicted Republican votes, we could add those
14 two together to get the total votes and then we would
15 figure out what the percentage was for each of them?

16 A Right. But again this is for the no incumbent
17 baseline, so this is an estimate of what the vote --
18 what the baseline partisanship would be without
19 taking incumbency into effect.

20 Q Now, in the differences between the presidential year
21 and the nonpresidential year, is turnout affected
22 equally in all parts of the state? Does it drop 30
23 percent everywhere or does it change in different
24 areas?

25 A That I don't know.

1 Q The way you calculate the efficiency gap, for
2 example, in districts, the turnout that has actually
3 been seen in that district affects the total number
4 of wasted votes for each party, is that correct?

5 A So, I'm sorry, say that again.

6 Q Sure. So like in -- the number of wasted votes in a
7 district is partly a function of the total turnout in
8 that district, correct, total number of votes cast?

9 A Not necessarily.

10 Q Why not?

11 A Because it's going to be more a function of what the
12 distribution of the votes would be. If you had
13 100,000 votes cast in a district with a 51-49 split,
14 the efficiency gap would be lower than it would be in
15 an election with 20,000 votes that was 60-40. So
16 it's not -- turnout can be one of the factors that
17 explains it, but it is not the only one and it's
18 probably not even the driving one.

19 It's the distribution of votes that makes the
20 larger contribution to the efficiency gap
21 calculations.

22 Q Sure. But in an individual district, if turnout in,
23 for example, a district that is always going to be
24 Republican, one of these uncontested races is very
25 high in that district, that's going to increase the

1 everybody uses the same rule.

2 Q Okay. So maybe I could get what you think if there
3 is a generally accepted definition, what those are
4 and then what your opinion is on those.

5 A So in my own work on state legislatures, I had
6 defined as competitive districts that where the
7 incumbent wins with less than 60 percent of the vote,
8 that other people used definitions of 55 percent.

9 So generally somewhere in the range of 50 to 55,
10 55 to 60 percent is what is one threshold for
11 classifying a race that is conceivably competitive.
12 It doesn't mean that you can easily have races where
13 an incumbent wins with 57 percent of the vote and
14 that's going to be considered generally safe.

15 Q Okay. Kind of switching topics a little bit, what
16 factors would a legislature who is going about trying
17 to do a redistricting plan after a census, what would
18 they have to do in order to if they wanted to base a
19 plan on your version of the efficiency gap, what
20 would they have to do to do that?

21 A So if I understand the question is how would you go
22 about devising a plan that would have a small
23 efficiency gap.

24 Q Yeah.

25 A Essentially the way that you would do it is minimize

1 the amount of packing and cracking that you do. So
2 not excessively concentrating voters of one party
3 into a small number of overwhelming districts, not
4 splitting up voters, I mean so that you would
5 essentially treat voters from the major parties
6 equally.

7 Q What sort of like calculations do they have to make
8 in order to figure out how well they're doing on that
9 so that after the fact someone is going to come up
10 with these calculations, what would they have to do?

11 A Well, I mean you would need information as the type
12 that Professor Gaddie did with the likely partisan
13 outcomes are -- that you expect to see in districts
14 or you could use an alternative measure, which is
15 what I did, and use that information in the course of
16 creating the districts and measuring the results.

17 Q Now, would you have to make some sort of estimate as
18 to how many votes are going to be cast in that next
19 election?

20 A You could do it that way. It's not necessarily the
21 way. Professor Gaddie did not. I did. So that's
22 one way you could do it.

23 Q Looking at some -- your report, it mentions a
24 specific example of packing and cracking on Page 41,
25 I believe.

1 A 43.

2 Q It starts at 41 about Sheboygan, the City of
3 Sheboygan and then it continues on, yeah, 43. So if
4 I have it correctly, under the prior plan, the 26th
5 Assembly District was -- it contained the City of
6 Sheboygan itself in its entirety and also some of the
7 surrounding areas?

8 A So in the 1992 and 2001 redistricting rounds, the
9 city was entirely contained in a single assembly
10 district.

11 Q And then in the most recent one, that was the 26th
12 District?

13 A Well, the most recent was the 26th District entirely
14 contained in the 26th in the 1992 and the 2001
15 rounds.

16 Q And then in the 2010 round, the 26th includes part of
17 the City of Sheboygan, but you're saying it's cracked
18 also into the 27th District?

19 A Correct.

20 Q Okay.

21 A So this is a classic example of cracking because you
22 have a jurisdiction which was small enough to be
23 included in a single assembly district, which it had
24 been for 20 years. It's a Democratic city. I would
25 classify it as reasonably strongly Democratic. My

1 calculation showed that if the entire city was in a
2 single assembly district, it was very likely to
3 result in a Democratic district, but you by splitting
4 it, you take a portion of those Democrats or a
5 portion of those -- that Democratic partisanship and
6 you split it into two districts where they don't come
7 close to forming a majority in either one.

8 So this is quite literally a textbook
9 demonstration of the cracking phenomenon where you
10 have a jurisdiction that you don't need to split and
11 you split it for what appears to be no other reason
12 than to crack a Democratic constituency into two
13 separate constituencies to create two Republican
14 districts.

15 Q In your version of the City of Sheboygan district,
16 the 26th District under the demonstration plan,
17 what's your baseline partisanship of the district you
18 created?

19 A Well, I don't know that my baseline plan, that
20 district is named the 26th because the numbering
21 system was a little different, but I would have to go
22 back and confirm, and that's just because what I call
23 the 26th District in my plan may not be the plan -- I
24 could go back and look, but it was -- actually we can
25 even --

1 Q On 42 you say the result would have been a 54 to 56
2 percentile?

3 A Right, but I don't know that that is -- that's
4 probably close to what happened, but -- what I did,
5 but I would have to go back and actually look to get
6 the precise numbers.

7 Q Okay. In the 26th District in the 2010 election,
8 which party won that district?

9 A I'm not sure.

10 (Exhibit 9 is marked for identification)

11 Q I show you Exhibit 9, which this is the GAB printout
12 for the fall election of 2010. Now, it says error on
13 the first page because, I don't know, that's what it
14 does when it prints out, but if you turn to the 26th
15 District, I mean is it correct that the Republican
16 won that district in the 2010 election?

17 A I'm looking at this, which is Page 15 of Exhibit 9.
18 It shows that the Republican won by 151 votes if I'm
19 calculating correctly.

20 Q So you're classifying that as a Democratic district,
21 but under the prior plan, it wasn't impossible for a
22 Republican to win that district, was it?

23 A Well, by definition that's true because a Republican
24 won it just barely in 2010. But then the
25 Republicans -- the vote percentage went up from 48.9

1 to 51.3 on the subsequent election.

2 Q Now, in a 51.3 percent race, it's not impossible for
3 a Democrat to win that race either, is it?

4 A Not impossible.

5 Q And then in the 27th, you calculate the baseline open
6 seat partisanship measure at 52.3 percent?

7 A Well, again I'm not sure that --

8 Q On Page 42 on your report.

9 A Let's take a look here. Correct, so my underlying
10 partisanship estimate for the 27th was 52.3. That's
11 the open seat baseline.

12 Q Okay. And so I mean would you characterize both of
13 those seats as winnable for the democrats?

14 A I would classify the 26th as potentially winnable. I
15 wouldn't classify the 27th as winnable for the
16 Democrats. Not impossible, but extremely difficult.

17 Q Okay. At 52.3, it's extremely difficult for them to
18 win that seat?

19 A As again this is the open seat baseline, I would
20 classify this as difficult for the Democrats to win,
21 not impossible.

22 Q Okay. Now, what your plan would do, though, it would
23 make one safe Republican district and one safe
24 Democratic district, correct?

25 A It would --

1 Q They would be safer, it would be having one district
2 more Republican and one district more Democratic,
3 right?

4 A I believe so, that's correct.

5 Q Have you tested any of your demonstration map
6 districts that are narrow Democratic districts, how
7 they would have fared in the 2014 election, whether
8 the Democrats would have actually held onto those
9 seats?

10 A No.

11 Q Let's transition into your demonstration plan.

12 A Okay.

13 Q How did you go about -- first let me just ask you
14 what computer program did you use to do the
15 demonstration plan?

16 A I used a GIS program called Maptitude, Maptitude for
17 Redistricting.

18 Q Is that -- I just don't know, is that the program
19 that the legislators used to draw the Act 43 map?

20 A I don't know.

21 Q Okay.

22 A There are -- the two most commonly used redistricting
23 programs are Maptitude for Redistricting and another
24 one called AutoBound. I don't know --

25 Q I believe the other one was AutoBound -- from reading

1 the deposition, I believe it was AutoBound. If there
2 were two different -- if you used Maptitude and they
3 used AutoBound, does that create -- is there any sort
4 of like incompatibility where you can't compare a map
5 drawn from one and a map drawn from the other?

6 A There shouldn't be, no.

7 Q How did you go about drawing the demonstration plan?

8 A So in drawing the plan, what I did was to draw -- to
9 draw a plan that took into account the traditional
10 redistricting requirements, which is population
11 equality, contiguity, compactness, adherence to
12 Section 2 of the Voting Rights Act, respect for
13 political subdivisions, and then going through the
14 map trying to draw it in a way that was balanced
15 between the parties in terms of creating equal
16 opportunities to elect the candidates so that there
17 weren't a significantly different number of
18 noncompetitive seats or a significantly different
19 number of competitive seats. We're trying to treat
20 the voters equally in terms of their creating
21 districts that gave members of each party an equal
22 opportunity to see their votes translated into --
23 converted into seats.

24 Q Did you start using a baseline of the prior districts
25 that were in existence, or did you just start fresh?

1 A With one exception. I left the 8th District alone
2 because that was a district created by the federal
3 court in 2012, and I knew that that district was
4 Voting Rights Act compliant.

5 The African-American majority-minority districts
6 in Milwaukee I treated similarly to what they were
7 under the plan, which we also knew was compliant.
8 But other than those districts, I started with a
9 blank slate.

10 Q I believe you said this before, but what's the ideal
11 population of an assembly district?

12 A So I believe it's 57,444.

13 Q And is that 57,444 what?

14 A That is the ideal population as calculated by looking
15 at the total population of the state, dividing it by
16 the number of districts in a legislative body and
17 that gives you the -- in a district plan with perfect
18 population equality, that's the number that you would
19 hit. So that's essentially 57,444 is the total
20 population of Wisconsin after the 2010 census divided
21 by 99.

22 Q But that includes children who aren't going to be
23 able to vote, correct?

24 A Correct.

25 Q And I think you mentioned like felons who can't vote?

1 A Correct.

2 Q And then does the 57,444 include noncitizens?

3 A The way the census calculates it, it's everybody.

4 Q Okay. So it's just 57,444 people are the voting
5 numbers, but the number of eligible voters will be
6 different than that?

7 A Yes.

8 Q Okay. How many districts did you draw that contain
9 any part of the City of Milwaukee?

10 A I would have to look at the map. I could tell you I
11 don't know off the top of my head.

12 Q Do you know how many you did that concluded --
13 included any part of the City of Madison?

14 A I would have to check. I don't remember off the top
15 of my head.

16 Q And do you know how those compared -- even if you
17 don't know the number, do you know how it compared in
18 terms of comparing it to Act 43?

19 A I suspect they were very close, if not identical, but
20 again I can't be certain.

21 Q You mentioned compactness was one of the factors that
22 you looked at, and I know you did a comparison of
23 your plan to the Act 43 plan in terms of compactness?

24 A Correct.

25 Q What was the standard you used to measure compactness

1 of yours?

2 A I used something called the Roeck standard, which is
3 R-o-e-c-k.

4 Q What is that?

5 A The way that the Roeck standard is calculated is you
6 take a district and you place that district inside
7 the smallest circumscribing circle. So you draw a
8 circle that is the smallest circle that contains the
9 entire district, and the Roeck value is the area of
10 the district divided by the area of the smallest
11 circumscribing circle, and it gives you a value
12 between 0 -- you can't really have a value of 0 --
13 and 1 where 1 would be you actually have a perfectly
14 circular district, but basically as districts with
15 more irregular shapes that are longer will tend to
16 have lower measures on this index.

17 Q So lower is good or bad in terms of compactness?

18 A Higher values indicate more compactness.

19 Q Are there other ways to measure compactness?

20 A Yes.

21 Q What are some of the other ways?

22 A Other ways look at -- there are probably 10 or 12
23 methods of doing that. There is no universal
24 agreement on which method is the best. One of the
25 reasons I used the method that I did is that in

1 the -- in 2012, I have the record of that case shows
2 what the Roeck number, the average compactness on the
3 Roeck index is for Act 43. So I was able to compare
4 it directly to that.

5 Q That was going to be one of my questions. So you got
6 the compactness, the Roeck compactness on Act 43 from
7 the Baldus litigation?

8 A Correct.

9 Q Do you know specifically where in that litigation?

10 A I'm not sure. I think it may have been in the --
11 there was a report that both parties submitted. It
12 may have been called the Joint Stipulation of Facts.
13 I'm not sure. But it was somewhere in those
14 documents.

15 Q Okay. Now, as I understood it, it's an average of
16 all the districts?

17 A Correct.

18 Q So it would take like District 1 through 29, they
19 each get their own individual scores and then you
20 average those scores together?

21 A Correct.

22 Q How did you calculate the Roeck score for your map?

23 A There's a feature in Maptitude that allows you to
24 generate compactness scores and it gives you an
25 option on it and it was able to do a report that

1 listed the compactness scores, and I'm pretty sure I
2 put the table in either the annex or the -- yeah, so
3 Page 13 of my annex shows the Roeck scores, the
4 smallest circle scores for the district.

5 Q Okay. And the average is -- I guess it doesn't say
6 on that table, but it's earlier in there.

7 A I believe it's .41.

8 Q And then did you use any of the other manners of
9 measuring compactness to measure your demonstration
10 plan?

11 A I did not.

12 Q And why not?

13 A I had the point of comparison and I didn't see any
14 reason to generate the other numbers because I had
15 nothing to compare them to.

16 Q Was the Roeck test the only measure of compactness of
17 the Act 43 districts that you recall seeing?

18 A It's the only one I recall seeing.

19 Q How did some of the other ways of measuring
20 compactness differ from the Roeck test?

21 A Well, I'll give you a couple of examples. One
22 measure is the difference between the ratio of the
23 long axis to the short axis of a district. So if you
24 have a district that's very, very long and thin, that
25 would tend to give you a high number as opposed to a

1 district that was more of a circle or a square.

2 There is something called the perimeter to area
3 measure, which is you calculate the length of the
4 perimeter of a district, which will be higher with
5 highly irregularly shaped districts with lots of
6 nooks and crannies, and you divide that by the area,
7 and as the perimeter area gets -- or area to
8 perimeter, as it gets smaller, it means the district
9 is more irregularly shaped.

10 There are a variety of different ways to do
11 this. Generally speaking, and there are lots of
12 exceptions, generally these measures tend to move in
13 the same direction, that if one measure shows a high
14 degree of noncompactness or a high degree of
15 compactness, that it is common -- it's not invariably
16 true, but it's common for different measures to show
17 similar results.

18 Q How does the Roeck test handle a district that's
19 like, for example, in Wisconsin that's on Lake
20 Michigan?

21 A So one of the issues of how you calculate the Roeck
22 index for District 1, which is Door County, and you
23 calculate that by looking at the circle and it just
24 is a feature of the geography that there is no way to
25 calculate a highly compact district in that part of

1 the state.

2 Q And then would the same hold true, for example, of
3 someone -- it's on a border of another state,
4 Illinois or Iowa or Minnesota somewhere, the circle
5 is going to extend out into the bordering state and
6 there's just nothing you can do about it?

7 A That's correct.

8 Q Going to the municipal split, what counts as a
9 municipal split?

10 A So my understanding of the way Wisconsin counts
11 municipal splits, it's a simple determination is if a
12 district border bisects a city or county, then that
13 municipality is split. That is as best as I am aware
14 and -- actually I can say that a little more
15 definitively, but that is how Maptitude calculates
16 the split. I will give you a report of the number of
17 municipalities that are in more than one district.

18 Q So just in my head so I have this clear, Milwaukee is
19 going to be too big to have one district, there's
20 going to be like several districts within Milwaukee?

21 A Right. Correct.

22 Q But drawing two districts in that doesn't count as a
23 split, right, or does it?

24 A Will, as I understand, it is a municipality that is
25 split into more than one districts.

1 Q When you have a number that says there's this many --
2 I'm trying to find the table where you list the --

3 MS. GREENWOOD: Page 37.

4 MR. KEENAN: Which one?

5 MS. GREENWOOD: Page 37.

6 Q Okay. Yeah, so I'm just trying to figure out what
7 goes into the 64 city, town, village splits and 55
8 county splits, and then Act 43 has 62 city, town,
9 village splits.

10 So if Milwaukee, for example, has like seven
11 districts or six districts, I don't know how many,
12 but does that -- but you need to have that just
13 because of the equal population, you know, like
14 there's nothing wrong with having six districts in
15 Milwaukee, does that count as six splits, or does it
16 count as zero splits?

17 A No, it counts as one split.

18 Q One split?

19 A Yeah. At least that's how I understand how Maptitude
20 does it. The dividing line is whether a municipality
21 is split.

22 Q But that split is going to happen under anyone's
23 plan, I guess, because you just can't draw Milwaukee
24 into --

25 A Correct.

1 Q And the same with some of these bigger cities?

2 A It would be the same in any larger jurisdiction that
3 exceeded the ideal of population.

4 Q And then Milwaukee County I guess would be the same
5 thing, that would count as a county split?

6 A I believe so, yes.

7 Q And then, now, say that there's a bunch of districts
8 in Milwaukee, but then now we have one district that
9 loops between Milwaukee and Waukesha. Is that still
10 just one split, or is it one county split, or is it
11 now do we have two county splits?

12 A I believe -- I would have to go back and check --
13 that that would count as -- it would depend on how
14 many other splits that there were. So if -- because
15 my understanding is that it's not the number of
16 splits that a jurisdiction is put into. It's whether
17 or not it is split. So I believe that that would
18 count as one split.

19 Q Okay. And then now that we've split Waukesha County
20 at least once, it's now -- it can only count as one
21 split, even once then you could split it with
22 Jefferson -- I don't know what the border is, but
23 some other county on the border, there's still one
24 split?

25 A Well, but that could also count as a split in

1 Jefferson County. So Jefferson County, it was
2 possible to place that in a single district and there
3 was a little finger from Waukesha, that that would
4 count as a split in Jefferson County.

5 Q Okay. And then what about, now going to the smaller
6 levels, like dealing with the villages, if there's a
7 village that can fit entirely within one district,
8 maybe there's two of them even right next to each
9 other and they're totally encircled in a district,
10 that would be zero splits?

11 A Correct.

12 Q Okay. But then if -- I guess if one of those
13 districts, half of it is in one district and half is
14 in the other --

15 MR. STRAUSS: Object to the form. You
16 said two districts. You mean two towns?

17 MR. KEENAN: Yeah, sorry.

18 Q Yeah, like two villages -- or, no, sorry. If there's
19 like one village, but then it ends up getting cut in
20 half between two districts, that counts as one split?

21 A Correct.

22 Q Okay. But then if that town or village had been
23 carved into three -- instead of two, it had been like
24 divided up into three different districts, would that
25 still be one split?

1 A I believe that it would still count as one split.

2 Q Okay. Is there a list that was generated that shows
3 like what are the splits in the demonstration plan
4 like when you run the report or something that gives
5 you that information?

6 A It does produce a report, yes.

7 Q But does it just have a number?

8 A And it shows the locations of the splits.

9 Q Okay. Do you know if you'd say there's a version of
10 that document or report that would have been
11 produced?

12 A So I don't know that that was -- I actually submitted
13 that report because what I was interested in was just
14 the number.

15 Q When you were districting, did you attempt to keep
16 communities of interest together?

17 A As a rule, yes.

18 Q So how did you go about trying to do that?

19 A Well, the communities of interest standard is very
20 subjective and -- but part of that is keeping
21 subdivisions together, but I tried to not have too
22 many divisions or districts that combined vastly
23 different parts of the state to ensure that different
24 regions of the state were kept together.

25 Q Are you offering an opinion that the demonstration

1 plan keeps communities of interest together better
2 than Act 43?

3 A I don't know that I would make the statement that it
4 was better because I made an effort to keep that in
5 mind. But that's a very loose and subjective
6 standard that can be difficult to do.

7 Q Why don't you turn to Table 7, which is your
8 calculation of the efficiency gap under the
9 demonstration plan?

10 MS. HARLESS: What page is that?

11 MR. KEENAN: 48.

12 Q And I will mark a similar spreadsheet there which is
13 the demonstration plan version.

14 (Exhibit 10 is marked for identification)

15 Q And Exhibit 10 is similar to what you've seen before,
16 but I printed out the tab on the efficiency gap
17 spreadsheet, and I think it was titled All Open Seat
18 Data.

19 A Right.

20 Q Which I think is what I understood to be the
21 demonstration plan calculations. Is that what it is?

22 A I believe so, yes.

23 Q So I guess we can look at either Exhibit 10 or the
24 Table 7 in the report. How did you go about
25 calculating the efficiency gap for the demonstration

1 plan?

2 A The same way that I did for the Act 43, that I had
3 essentially block level estimates of the number of
4 Republican and Democratic votes, the demonstration
5 plan was created out of those blocks and so that
6 meant that each district had a predicted number of
7 Democratic and Republican votes which formed the
8 first two columns and then I calculated the
9 efficiency gap in the same way as I did for Act 43,
10 calculating the lost and surplus votes for both
11 parties.

12 Q Now, for -- if I take it the -- your districts are
13 made out of -- did you define your districts in the
14 demonstration plan based on specific ward numbers in
15 various municipalities?

16 A No.

17 Q What were they made up of?

18 A I made them -- I did not use wards, and the reason I
19 didn't use wards is those wards were actually created
20 after Act 43 went into effect and so if I built the
21 new districts out of those wards, I would be building
22 them using essentially a template for -- that was
23 used for Act 43.

24 I constructed them where I could out of entire
25 jurisdictions, whether it's counties, municipalities.

1 Where that was not possible or whether when I created
2 a district that in order to achieve population
3 equality, I couldn't do that, then I worked with
4 census blocks.

5 Q And then each of your districts is made up of a
6 certain subset of the census blocks and
7 jurisdictions?

8 A Well, it's a combination of again you can select
9 entire jurisdictions, which can be efficient, and you
10 can also build a district or create the district by
11 selecting individual census blocks.

12 Q And then for your demonstration, District 1 is
13 obviously different from Act 43, District 1, correct?

14 A Correct.

15 Q And so for your District 1, how did you determine the
16 predicted Democratic vote and the predicted
17 Republican vote?

18 A Once I had generated the expected Republican and
19 Democratic votes at the -- using the original model,
20 I then disaggregated or allocated those ward level
21 results to the blocks inside that ward using the
22 percentage of the voting eligible population in that
23 ward. And so once that was done, I had a file that
24 for each block in the state of the 250,000, 252,000
25 or so blocks, each block had an expected number of

1 Democratic and Republican votes again for the no
2 incumbent baseline, and that would allow me to draw a
3 hypothetical demonstration plan and generate
4 estimates of what the partisanship, what the voting
5 would be in those districts.

6 Q How is the total number of votes in the district
7 determined? For example, I'm just looking at
8 District 1, and it looks like your predictions show
9 about 32,000-some votes. I realize that's a function
10 of some sort of your equation, but I'm just trying to
11 figure out how does it get to that number?

12 A That's simply adding up the number of Democratic and
13 Republican -- predicted Democratic and predicted
14 Republican votes in each block as you build that
15 block into the district. That's the number that
16 results.

17 Q Okay. What's your definition of gerrymandering?

18 MR. STRAUSS: Object to the form of
19 the question to the extent it calls for a legal
20 conclusion. But you can answer.

21 A So there are a variety of different ways of defining
22 that. As a political scientist, it's most commonly
23 defined as the drawing of district lines in a manner
24 that intentionally provides a political benefit to
25 one party over the other.

1 Q Do you have an opinion of whether the plan that was
2 in effect in the 2000s assembly districts, whether
3 that was a gerrymander?

4 MR. STRAUSS: Again object to the
5 extent it calls for a legal conclusion. If you
6 understand the question.

7 A Yeah, I mean that one was produced by courts and
8 courts generally do not take partisanship into
9 account. At the same time, my understanding of the
10 way that the 2001 plan was drawn is that the judges
11 in that case accepted submissions from the parties.

12 There were a number of maps the Democrats
13 submitted, there were a number of maps that
14 Republicans submitted and that they incorporated that
15 into their drawing of the map. So the -- I'll leave
16 it at that.

17 Q Do you know how many times the Democrats have won the
18 Wisconsin Assembly in the last 20 years?

19 A I could look. I don't know off the top of my head.

20 Q Does your demonstration plan, would it give them --
21 give Democrats an advantage in terms of attempting to
22 like control the assembly?

23 A I would have to look at the results. I'm not sure
24 what the expected -- I think there's a table in there
25 somewhere. Let me look.

1 So on Page 46 there's a table that shows the
2 summary statistics and it shows that my plan would be
3 expected to produce a 51 to 48 Democratic majority in
4 the assembly.

5 Q Okay. And that's based off of just looking at the
6 2012 election data, though, right, your calculations?

7 A I just want to make sure I give a precise answer.
8 That that's based on the underlying model, which is
9 based on the 2012 election results.

10 Q Yes, that's sort of what I meant to say. So yes.

11 A Okay.

12 Q But thank you for clarifying. And do you know if
13 that baseline partisanship would then hold under an
14 election that -- in like 2014 where a Republican won
15 the highest office on the ballot that year?

16 A Well, I haven't done the numbers, but it's quite
17 possible that if you did that result for 2014 that it
18 would show a Republican majority, but I don't know.

19 Q And then just going back to your demonstration plan
20 partisanship model, I'm looking at Exhibit 10, but I
21 guess it's probably the same. The column D percent
22 and R percent are PCT, but I think it's percent, it's
23 about the seventh one in, it says D PCT?

24 A Okay.

25 Q And then the ninth one, it says R percent, do you see

1 those two columns?

2 A Yes.

3 Q If I wanted to look at a particular district under
4 your demonstration plan and determine what your view
5 of the underlying partisanship is, those are the two
6 columns I'd look at?

7 A Correct, if you were interested in the percentages.

8 Q Yeah. So like, for example, when it says party
9 split, 48 to 51 on Page 46 of your report, that's
10 looking at those two columns and seeing where --
11 which party's over 50 percent?

12 A Correct.

13 Q And just doing this again, I think I know the answer,
14 but those are two party percentages, so just the
15 two-party vote?

16 A Correct.

17 Q So someone is going to be 50 percent over in each one
18 of those races?

19 A Correct.

20 MR. KEENAN: I think I want to take a
21 break.

22 (Short recess is taken)

23 Q Well, back on the record. I just have a few more
24 follow-up questions. Where did you get the number of
25 municipal splits that Act 43 had? Where did you get

1 that number from?

2 A I believe I got that from within Maptitude using the
3 same method, but I'm not sure.

4 Q So you think you imported the Act 43 districts into
5 your Maptitude program and ran a report like that?

6 A I think so.

7 Q So I guess if that's the case, Maptitude was using
8 the same measurements?

9 A I believe so. I would have to go back and double
10 check.

11 Q Are you expressing an opinion about the durability of
12 the efficiency gap in Wisconsin over the course of --

13 A I think on that I will defer to Professor Jackman and
14 his report.

15 Q Very good.

16 MR. KEENAN: That's all I have.

17 MR. STRAUSS: Just give us a minute
18 and let us talk and see if we have any questions
19 to ask.

20 (Short recess is taken)

21 MR. STRAUSS: So on the record.

22 EXAMINATION

23 BY MR. STRAUSS:

24 Q In your calculations of the efficiency gap, you used
25 what you described as estimates. What do you mean by

1 estimates?

2 A So these were -- these estimates were generated by
3 the underlying model, which looked at the
4 relationship between the independent variables that I
5 used in the actual assembly vote and then I used the
6 results of that model to generate forecasts,
7 estimates of what the underlying partisanship was in
8 each of the 99 assembly districts and also used that
9 to generate estimates in the demonstration plan that
10 I drew.

11 But one thing to note about this model is that
12 it was a highly accurate, you know, with very
13 extraordinarily high R squares, which you rarely see
14 in social science models, so I'm very confident that
15 these are accurate estimates of the existing
16 partisanship and what it would have been in my
17 demonstration plan.

18 Q And do you consider -- when you use the word
19 estimate, do you -- how would you compare that to
20 using the word guess?

21 A I'm using the estimate in the statistical sense, that
22 it is a number that is produced through analysis,
23 that there is obviously going to be some degree of
24 error, but I'm confident that that error is very
25 small and in no sense is it a guess.

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MR. STRAUSS: Okay. I don't have any
further questions.
MR. KEENAN: No further questions.
MR. STRAUSS: We'll reserve signature.
(1:39 p.m.)

1 STATE OF WISCONSIN)
 2) ss.
 3 COUNTY OF DANE)
 4

5 I, LISA A. CREERON, a Registered Professional
 6 Reporter and Notary Public in and for the State of
 7 Wisconsin, do hereby certify that the foregoing is a
 8 true record of the deposition of KENNETH MAYER, Ph.D., who
 9 was first duly sworn by me; having been taken on the 9th
 10 day of November, 2015, at the Wisconsin Department of
 11 Justice, 17 West Main Street, in the City of Madison,
 12 County of Dane, and State of Wisconsin, in my presence,
 13 and reduced to writing in accordance with my stenographic
 14 notes made at said time and place.

15 I further certify that I am not a relative
 16 or employee or attorney or counsel for any of the
 17 parties, or a relative or employee of such attorney
 18 or counsel, or financially interested in said action.

19 In witness whereof, I have hereunto set my hand
 20 and affixed my seal of office this 14th day of November,
 21 2015.

22
 23 _____
 Notary Public, State of Wisconsin
 My Commission Expires: 1/29/17
 24
 25