IN THE SUPREME COURT OF OHIO

LEAGUE OF WOMEN VOTERS OF OHIO, *et al.*, *Relators*, *v.* OHIO REDISTRICTING COMMISSION, *et al.*, *Respondents*.	Case No. 2021-1193
BRIA BENNETT, *et al.*, *Relators*, *v.* OHIO REDISTRICTING COMMISSION, *et al.*, *Respondents*.	Case No. 2021-1198
THE OHIO ORGANIZING COLLABORATIVE, *et al.*, *Relators*, *v.* OHIO REDISTRICTING COMMISSION, *et al.*, *Respondents*.	Case No. 2021-1210

PRESENTATION OF EVIDENCE BY RESPONDENTS HUFFMAN AND CUPP

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PRESENTATION OF EVIDENCE BY RESPONDENTS HUFFMAN AND CUPP

VOLUME IV

Respondents, Speaker of the Ohio House of Representatives Robert Cupp, and Senate President Matthew Huffman submit the following evidence in this matter[1]:

Exhibit	Item Description	Page no.
1	Senate President Huffman's Responses to Bennett Relators' Discovery Requests	HC_0001-HC_0013
2	Senate President Huffman's Responses to Ohio Organizing Collaborative Relators' Interrogatories	HC_0014-HC_0024
3	Senate President Huffman's Responses to League of Women Voters of Ohio Relators' Discovery Requests	HC_0025-HC_0045
4	Speaker Cupp's Responses to Bennett Relators' Discovery Requests	HC_0046-HC_0058
5	Speaker Cupp's Responses to Ohio Organizing Collaborative Relators' Interrogatories	HC_0059-HC_0068
6	Speaker Cupp's Responses to League of Women Voters of Ohio Relators' Discovery Requests	HC_0069-HC_0088
7	Ohio Redistricting Commission's Combined Responses to Interrogatories and Document Requests	HC_0089-HC_0111
8	Auditor Faber's Responses to Bennett Relators' Discovery Requests	HC_0112-HC_0129
9	Auditor Faber's Responses to Ohio Organizing Collaborative Relators' Interrogatories	HC_0130-HC_0142
10	Auditor Faber's Responses to League of Women Voters of Ohio Relators' Discovery Requests	HC_0143-HC_0187
11	Governor DeWine's Responses to Bennett Relators' Discovery Requests	HC_0188-HC_0208
12	Governor DeWine's Responses to Ohio Organizing Collaborative Relators' Interrogatories	HC_0209-HC_0223
13	Governor DeWine's Responses to League of Women Voters of Ohio Relators' Discovery Requests	HC_0224-HC_0266
VOLUME II		
14	Secretary of State LaRose's Responses to Bennett Relators' Discovery Requests	HC_0267-HC_0285
15	Secretary of State LaRose's Responses to Ohio Organizing Collaborative Relators' Interrogatories	HC_0286-HC_0297

[1] Respondents Huffman and Cupp also reserve the right to rely on any evidence presented in this matter by stipulation or presented by any other party.

16	Secretary of State LaRose's Responses to League of Women Voters of Ohio Relators' Discovery Requests	HC_0298-HC_0340
17	Senator Sykes' Responses to Respondents Huffman and Cupp's Discovery Requests	HC_0341-HC_0360
18	Senator Sykes' Responses to Ohio Organizing Collaborative Relators' Interrogatory Responses	HC_0361-HC_0372
19	Senator Sykes' Responses to League of Women Voters of Ohio Relators' Discovery Requests	HC_0373-HC_0392
20	Leader Sykes' Responses to Respondents Huffman and Cupp's Discovery Requests	HC_0393-HC_0413
21	Leader Sykes' Responses to Ohio Organizing Collaborative Relators' Interrogatory Responses	HC_0414-HC_0424
22	Leader Sykes' Responses to League of Women Voters of Ohio Relators' Discovery Requests	HC_0425-HC_0446
23	ESYKES_0000237-ESYKES 0000247, Email Dated July 21, 2021 from Alex Aryeh, Subject "Final Agenda Joint Caucus Redistricting Retreat.pdf"	HC_0427-HC_0458
24	ESYKES_0000385-ESYKES0000386, Email Dated June 9, 2021 from Samantha Herd, Subject "FW: Draft Sykes/Yuko Letter Governor"	HC_0459-HC_0461
25	ESYKES_0007076-ESYKES0007082, Email Dated September 10, 2021 from Emiliana Morales, Subject "OLBC Redistricting Meeting follow up" and attachment	HC_0462-HC_0469
26	ESYKES_0009394-ESYKES0009397, Email Dated January 19, 2021 from Samantha Herd, Subject "Fwd: Memo for Legislator Roundtable Event w AG Holder" and attachment	HC_0470-HC_0474
27	ESYKES_0007247-ESYKES0007250, Email Dated August 20, 2021 from Samantha Herd, Subject "RE: Invoice and Purchase Letter: Consulting" and attachment	HC_0475-HC_0479
28	ESYKES_0000655-ESYKES_0000685, Email Dated January 22, 2020 from Katy Shanahan, subject "Final Review of Redistricting Guide" and attachment	HC_0480-HC_0511
29	Glassburn000024-Glassburn000031, Signed Contract with Project Govern	HC_0512-HC_0520
30	VYSKES_0013942-VSYKES_0013943, Email Dated August 12, 2021 from George Boas, Subject "Supplemental Allocation of Funds-8.11.2021" and attachment	HC_0521-HC_0523
31	VSYKES_0001113-VSYKES_0001114, Email Dated September 3, 2019 from Keary McCarthy, Subject "Re: Convening Ohio's Redistricting Experts"	HC_0524-HC_0526
32	VSYKES_0004365-VSYKES_0004367, Email From George Boas, October 13, 2021, Subject "George-23"	HC_0527-HC_0530
33	VSYKES_0008968-VSYKES_8970, Email Dated October 13, 2021 from Mike Rowe, Subject "Fwd: Background info for Monday Morning's conference call" and attachment	HC_0531-HC_0534

34	VSYKES_11348, Text Messages between Senator Sykes and Senate President Huffman	HC_0535-HC_0536
Volume III		
35	Affidavit and Expert Report of Dr. Michael Barber	HC_0537-HC_0625
37	Affidavit and Expert Report of Dr. M.V. Hood III	HC_0626-HC_0653
Volume IV		
38	Affidavit and Expert Report of Sean Trende	HC_0654-HC_0701
39	Affidavit of Raymond DiRossi	HC_0702-HC_0743

Respectfully submitted this the 22nd day of October, 2021

By:
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I hereby certify that on this 22nd day of October, 2021, I have served the foregoing document by email:

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4871-5290-1888 v.1

Exhibit 38

IN THE SUPREME COURT OF OHIO

League of Women Voters of Ohio, *et al.*, *Relators*, v. Ohio Redistricting Commission, *et al.*, *Respondents*.	Case No. 2021-1193

AFFIDAVIT OF SEAN P. TRENDE

Now comes affiant Sean P. Trende, having been first duly cautioned and sworn, deposes and states as follows:

1. I am over the age of 18 and fully competent to make this declaration. I have personal knowledge of the statements and facts contained herein.

2. For the purposes of this litigation, I have been asked by counsel for Respondents Huffman and Cupp to analyze relevant data and provide my expert opinions.

3. To that end, I have personally prepared the report attached to this affidavit as Exhibit A, and swear to its authenticity and to the faithfulness of the opinions.

FURTHER THE AFFIANT SAYETH NAUGHT.

Executed on 10/21, 2021	Sean P. Trende

Sworn or affirmed before me and subscribed in my presence the 21st day of October, 2021, in the state of Ohio and county of Delaware.

NATALIE CORRINE MCGLOTHLIN
Notary Public
State of Ohio
My Comm. Expires
February 16, 2026

Notary Public

4868-5993-8816 v.1

Exhibit A

EXPERT REPORT OF SEAN P. TRENDE

I, Sean P. Trende, do hereby declare the following:

1. I am over 18 years of age and am competent to testify regarding the matters discussed in this report.

2. I currently reside at 1146 Elderberry Loop, Delaware, OH 43015. My e-mail is trende.3@buckeyemail.osu.edu.

3. I have been retained in this matter by the Respondents President of the Ohio Senate, Matt Huffman and Speaker of the Ohio House of Representatives, Robert R. Cupp, in the following three matters: *Ohio Organizing Collaborative et al. v. Ohio Redistricting Commission, et al.* (No. 2021-1210), *League of Women Voters of Ohio et al., v. Ohio Redistricting Commission et al.* (No. 2021-1193), and *Bria Bennett et al., v. Ohio Redistricting Commission et al.* (No. 2021-1198).

4. I have been asked to review and provide opinions regarding the Expert reports filed by Relators' and Relators' Experts (collectively, "Relators' Experts"). More specifically, I have been asked to review the "Affidavit of William S. Cooper" [hereinafter "Cooper Report"], the "Affidavit of Dr. Jonathan Rodden" [hereinafter "Rodden Report"], the "Affidavit of Michael S. Latner" [hereinafter "Latner Report"] and "An Evaluation of the Partisan Bias in Ohio's Enacted State Legislative Districting Plan" [hereinafter "Warshaw Report"].

5. All opinions contained in this report are offered to a reasonable degree of professional certainty. I am being compensated $400 per hour for my work in this case.

6. My *curriculum vitae* is attached to this report as **Exhibit 1.**

EXPERT CREDENTIALS

7. I am currently enrolled as a doctoral candidate in political science at The Ohio State University. I have completed all of my coursework and have passed comprehensive examinations in both methods and American Politics. My coursework for my Ph.D. and M.A.S. included, among other things, classes on G.I.S. systems, spatial statistics, issues in contemporary redistricting, machine learning, computer programming and probability theory. I expect to receive my Ph.D. in May of 2022. My dissertation focuses on applications of spatial statistics to political questions.

8. I joined RealClearPolitics in January of 2009. I assumed a fulltime position with RealClearPolitics in March of 2010. My title is Senior Elections Analyst. RealClearPolitics is a company of around 40 employees, with offices in Washington D.C. It produces one of the most heavily trafficked political websites in the world, which serves as a one-stop shop for political analysis from all sides of the political spectrum and is recognized as a pioneer in the field of poll aggregation. It produces original content, including both data analysis and traditional reporting. It is routinely cited by the most influential voices in politics, including David Brooks of *The New York Times*, Brit Hume of *Fox News*, Michael Barone of *The Almanac of American Politics*, Paul Gigot of *The Wall Street Journal*, and Peter Beinart of *The Atlantic*.

9. My main responsibilities with RealClearPolitics consist of tracking, analyzing, and writing about elections. I collaborate in rating the competitiveness of Presidential, Senate, House, and gubernatorial races. As a part of carrying out these responsibilities, I have studied and written extensively about demographic trends in the country, exit poll data at the state and federal level, public opinion polling, and voter turnout and voting behavior.

10. In particular, understanding the way that districts are drawn and how geography and demographics interact is crucial to predicting United States House of Representatives races, so much of my time is dedicated to that task.

11. I am currently a Visiting Scholar at the American Enterprise Institute, where my publications focus on the demographic and coalitional aspects of American Politics. My first paper focused on the efficiency gap, a metric for measuring the fairness of redistricting plans.

12. I am the author of *The Lost Majority: Why the Future of Government is up For Grabs and Who Will Take It.* In this book, I explore the fluid nature of American political coalitions. As part of this analysis, I conducted a thorough analysis of demographic and political trends beginning in the 1920s and continuing through the modern times, noting the fluidity and fragility of the coalitions built by the major political parties and their candidates.

13. I co-authored the 2014 *Almanac of American Politics*. The Almanac is considered the foundational text for understanding congressional districts and the representatives of those districts, as well as the dynamics in play behind the elections. PBS's Judy Woodruff described the book as "the oxygen of the political world," while NBC's Chuck Todd noted that "[r]eal political junkies get two *Almanacs*: one for the home and one for the office." My focus was researching the history of and writing descriptions for many of the newly-drawn districts, including tracing the history of how and why they were drawn the way that they were drawn. In particular, I researched and wrote the descriptions for the state of Ohio.

14. I have spoken on these subjects before audiences from across the political spectrum, including at the Heritage Foundation, the American Enterprise Institute, the CATO Institute, the Bipartisan Policy Center, and the Brookings Institution. In 2012, I was invited to Brussels to speak about American elections to the European External Action Service, which is the European Union's

diplomatic corps. I was selected by the United States Embassy in Sweden to discuss the 2016 elections to a series of audiences there, and was selected by the United States Embassy in Spain to fulfill a similar mission in 2018. I was invited to present by the United States Embassy in Italy, but was unable to do so because of my teaching schedule.

15. In the winter of 2018, I taught American Politics and the Mass Media at Ohio Wesleyan University. I taught Introduction to American Politics at The Ohio State University for three semesters from Fall of 2018 to Fall of 2019, and am currently teaching it. In the Springs of 2020 and 2021, I taught Political Participation and Voting Behavior at The Ohio State University. This course spent several weeks covering all facets of redistricting: how maps are drawn, debates over what constitutes a fair map, measures of redistricting quality, and similar topics.

16. It is my policy to appear on any major news outlet that invites me, barring scheduling conflicts. I have appeared on both Fox News and MSNBC to discuss electoral and demographic trends. I have been cited in major news publications, including *The New York Times*, *The Washington Post*, *The Los Angeles Times*, *The Wall Street Journal*, and *USA Today*.

17. I sit on the advisory panel for the "States of Change: Demographics and Democracy" project. This project is sponsored by the Hewlett Foundation and involves three premier think tanks: The Brookings Institution, the Bipartisan Policy Center, and the Center for American Progress. The group takes a detailed look at trends among eligible voters and the overall population, both nationally and in key states, to explain the impact of these changes on American politics, and to create population projections, which the Census Bureau abandoned in 1995. In 2018, I authored one of the lead papers for the project: "In the Long Run, We're All Wrong," available at https://bipartisanpolicy.org/wp-content/uploads/2018/04/BPC-Democracy-States-of-Change-Demographics-April-2018.pdf.

18. I previously authored an Expert report in *Dickson v. Rucho*, No. 11-CVS-16896 (N.C. Super Ct., Wake County), which involved North Carolina's 2012 General Assembly and Senate maps. Although I was not called to testify, it is my understanding that my Expert report was accepted without objection. I also authored an Expert report in *Covington v. North Carolina*, Case No. 1:15-CV-00399 (M.D.N.C.), which involved almost identical challenges in a different forum. Due to what I understand to be a procedural quirk, where my largely identical report from *Dickson* had been inadvertently accepted by the plaintiffs into the record when they incorporated parts of the *Dickson* record into the case, I was not called to testify.

19. I authored two Expert reports in *NAACP v. McCrory*, No. 1:13CV658 (M.D.N.C.), which involved challenges to multiple changes to North Carolina's voter laws, including the elimination of a law allowing for the counting of ballots cast in the wrong precinct. I was admitted as an Expert witness and testified at trial. My testimony discussed the "effect" prong of the Voting Rights Act claim. I did not examine the issues relating to intent.

20. I authored reports in *NAACP v. Husted*, No. 2:14-cv-404 (S.D. Ohio), and *Ohio Democratic Party v. Husted*, Case 15-cv-01802 (S.D. Ohio), which dealt with challenges to various Ohio voting laws. I was admitted and testified at trial in the latter case (the former case settled). The judge in the latter case ultimately refused to consider one opinion, where I used an internet map-drawing tool to show precinct locations in the state. Though no challenge to the accuracy of the data was raised, the judge believed I should have done more work to check that the data behind the application was accurate.

21. I authored a report in *Fair Fight Action v. Raffensperger*, NO. 1:18-cv-5391-SCJ (N.D. Ga.) relating to Georgia's administration of its elections. The court there held that I was not qualified as an Expert in elections administration.

22. I served as a consulting Expert in *Lee v. Virginia Board of Elections*, No. 3:15-cv-357 (E.D. Va. 2016), a voter identification case. Although I would not normally disclose consulting Expert work, I was asked by defense counsel to sit in the courtroom during the case and review testimony. I would therefore consider my work *de facto* disclosed.

23. I filed an Expert report in *Mecinas v. Hobbs*, No. CV-19-05547-PHX-DJH (D. Ariz. 2020). That case involved a challenge to Arizona's ballot order statute. Although the judge ultimately did not rule on a motion in limine in rendering her decision, I was allowed to testify at the hearing.

24. I authored an Expert report in *Pascua Yaqui Tribe v. Rodriguez*, No. CV-20-00432-TUC-JAS (D. Ariz. 2020). I was allowed to testify at the hearing.

25. I authored two Expert reports in *Feldman v. Arizona*, No. CV-16-1065-PHX-DLR (D. Ariz.). Plaintiffs in that case challenged an Arizona law prohibiting the collection of voted ballots by third parties that were not family members or caregivers and the practice of most of the state's counties to require voters to vote in their assigned precinct. My reports and testimony were admitted. Part of my trial testimony was struck in that case for reasons unrelated to the merits of the opinion; counsel for the state elicited it while I was on the witness stand and it was struck after Plaintiffs were not able to provide a rebuttal to the new evidence.

26. I authored an Expert report in *Smith v. Perrera*, No. 55 of 2019 (Belize). In that case I was appointed as the court's Expert by the Supreme Court of Belize. In that case I was asked to identify international standards of democracy as they relate to malapportionment claims, to determine whether Belize's electoral divisions (similar to our congressional districts) conformed with those standards, and to draw alternative maps that would remedy any existing malapportionment.

27. I authored Expert reports in *A. Philip Randolph Institute v. Smith*, No. 1:18-cv-00357-TSB (S.D. Ohio), *Whitford v. Nichol*, No. 15-cv-421-bbc (W.D. Wisc.), and *Common Cause v. Rucho*, NO. 1:16-CV-1026-WO-JEP (M.D.N.C.), which were efficiency gap-based redistricting cases filed in Ohio, Wisconsin, and North Carolina respectively. I testified at trial in the *Nichol* and *Rucho* cases.

28. I am currently retained as a consultant to legal counsel for the Arizona Independent Redistricting Commission.

SUMMARY

29. In assessing the political effects of the various proposed maps, Relator's Experts do not rely upon a single metric. In fact, Relators' Experts propose three different sets of elections to draw upon. In addition, Relators' Experts take four different approaches to aggregating those elections. These produce differing assessments of the maps, sometimes wildly so.

30. Ohio shows significant signs of partisan clustering, especially among Democrats. This means that Democrats tend to live very close to other Democrats. This clustering has increased over the course of the last decade.

31. This clustering makes it difficult to draw Democratic districts outside of a few metro areas. While Relators' Experts point to the September 15, 2021 Plan uploaded to the Ohio Redistricting Commission Website by Senator Vernon Sykes (hereinafter the "Sykes Plan") as evidence that a map can be drawn that complies with constitutional requirements and will elect fewer Republicans than the General Assembly Plan adopted by the Ohio Redistricting Commission (hereinafter the "Adopted Plan"), a granular review of the maps indicates that the Sykes Plan accomplishes this by rooting out Republican representation in the cities.

REVIEW OF RELATORS' EXPERTS' REPORTS

A. The Relators' and Relators' various Experts produce differing estimates of the partisanship of plans.

32. For my work in this report, I reviewed shapefiles, provided by counsel, of the Adopted Plan, the Sykes Plan, the Ohio General Assembly Districts adopted in 2012 ("hereinafter the "current maps"). I also received shapefiles of Ohio's Census blocks, townships, and villages and cities. All of these files came with vote totals from the 16 statewide partisan races conducted between 2012 and 2020 for the referenced geography. All of my work was performed in R version 4.0.5.

33. For his district assessments, Mr. Cooper averages the two-party vote share of the Democratic candidate for President in 2020, along with the vote shares of the Democratic candidates for Attorney General, Treasurer and Senate in 2018. *See* Cooper Report ¶ 12.

34. Dr. Rodden includes the races that Mr. Cooper averages, but also includes all other statewide partisan races from 2016 and 2018 in his average. *See* Rodden Report ¶ 17. Dr. Latner appears to employ a similar metric. *See* Latner Report ¶ 10.

35. Dr. Warshaw includes the races that Dr. Rodden includes, but also includes additional races from 2014 and 2012, for a total of 13 races. *See* Warshaw Report at 4.

36. Not only do Relators' Experts select different races to evaluate, but they also take conflicting approaches in the method of calculation of district partisanship. For example, Mr. Cooper first calculates two-party vote share for each of the races he has selected, and then averages those four results. Dr. Rodden, on the other hand, appears to add up the votes across races first, and then take the average. Dr. Warshaw, by contrast, weights outcomes from 13 elections by year. He does not, to my knowledge, specify his weighting method. I am therefore unable to replicate

his method with confidence. He also obtains results from PlanScore, which I believe relies only upon presidential data from 2016 and 2020, taken from across the country, not just Ohio.

37. The choice between what I will call the Cooper and Rodden approaches is potentially consequential. Turnout is generally much higher in presidential years than in midterm years. Using Rodden's approach, therefore, will weight those presidential years more heavily than the midterm years. On the other hand, there are more races in midterm years (in Ohio), so using Cooper's approach weights the midterm races more heavily than the presidential-year races.

38. To understand the potential differences, imagine a district with three races, the first two of which are held in the midterm year. In the first race, the candidate of Party A received 30 votes to Party B's 70. In the second, it was 35 to 65. In the third, it was 600 to 500. Using Cooper's approach (averaging 30%, 35% and 54.5%) results in a Party A receiving 39.8% of the vote in the district. Using Dr. Rodden's result (665 total votes for Party A versus 635 votes for Party B) results in Party A receiving 51.2% of the vote in the district.

39. Even though the choice is consequential, there is no clear right or wrong approach; it is just important to realize when reviewing the reports that different approaches can yield different results in consequential ways.

40. To facilitate an apples-to-apples comparison, I have taken the various races selected by each Expert and calculated estimates of election results. To keep all estimates on the same plane, I have aggregated using Cooper's approach (*supra* ¶¶36-38). I have summarized the number of Republican wins and losses in the evaluations of the plans utilizing the metrics proposed by the Relators' Experts. I have also added a simpler metric, often used to evaluate a district's performance: Whether President Trump won or lost a district in 2020. Finally, I have added the information using the Cooper approach on all 16 elections held over the past ten years.

Table 1: Projected Republican Wins Under Various Proposed Election Selections

	Adopted House	Sykes House	Adopted Senate	Sykes Senate
Cooper	61	54	20	19
Rodden	62	56	21	19
Trump 2020 Only	63	56	22	21
All Elections	64	56	22	19
Warshaw	68	61	23	20

41. As you can see, the evaluations of the maps differ significantly in their assessment of Republican wins and losses. These assessments would, in turn, alter the evaluation of Ohio's maps under various metrics of partisanship. For example, using Warshaw's races the difference between the number of senate seats under the Adopted Plan and the Sykes Plan is three seats. Under the Cooper and "Trump 2020" metrics, the difference is just a single seat. The possible range of Republican House seats under the Adopted Plan is between 61 and 68, while for the Sykes plan it is between 54 and 61. The Senate maps range from 20 to 23, Republican seats, and 19 to 21, Republican seats, respectively.

42. There are also some differences between the partisanship estimates tabulated above and the tabulations made by the Relators' Experts in their reports. For instance, Cooper counts 55 Republican seats under the Sykes plan, while I count 54. Aggregating and disaggregating districts is an inexact science, especially if precincts and blocks are split. The difference between Cooper's count and mine comes from the estimation of the 54th district, which I estimate has a 50.15% Democratic performance, and he estimates has a 49.48% Democratic performance.

43. Also, Table 1 finds more Democratic Senate districts in the Adopted Plan under the Rodden metric than the Rodden Report itself finds. *See* Rodden Report at 17 (finding 10 Democratic districts of 33, as opposed to the 12 in the table above). This once again illustrates the

consequences of the Cooper vs. Rodden approaches to aggregating races to calculate district partisanship; if I use the Rodden approach, the numbers in his report match mine. Query whether a statistic that can result in a difference of two seats (of 33) when using modestly different approaches to averaging is useful for evaluating constitutional issues.

B. Ohio's Political Geography Shows Significant Signs of Partisan Clustering.

44. Over the course of the past few decades, much of the United States has seen an increase in partisan sorting. This means that people increasingly live near people who share lifestyles, viewpoints and voting habits. *See, e.g.*, Corey Lang & Shanna Pearson-Merkowitz, "Partisan Sorting in the United States, 1972: 2012: New Evidence from a Dynamic Analysis," 48 *Pol. Geo.*, 119-129 (2015).

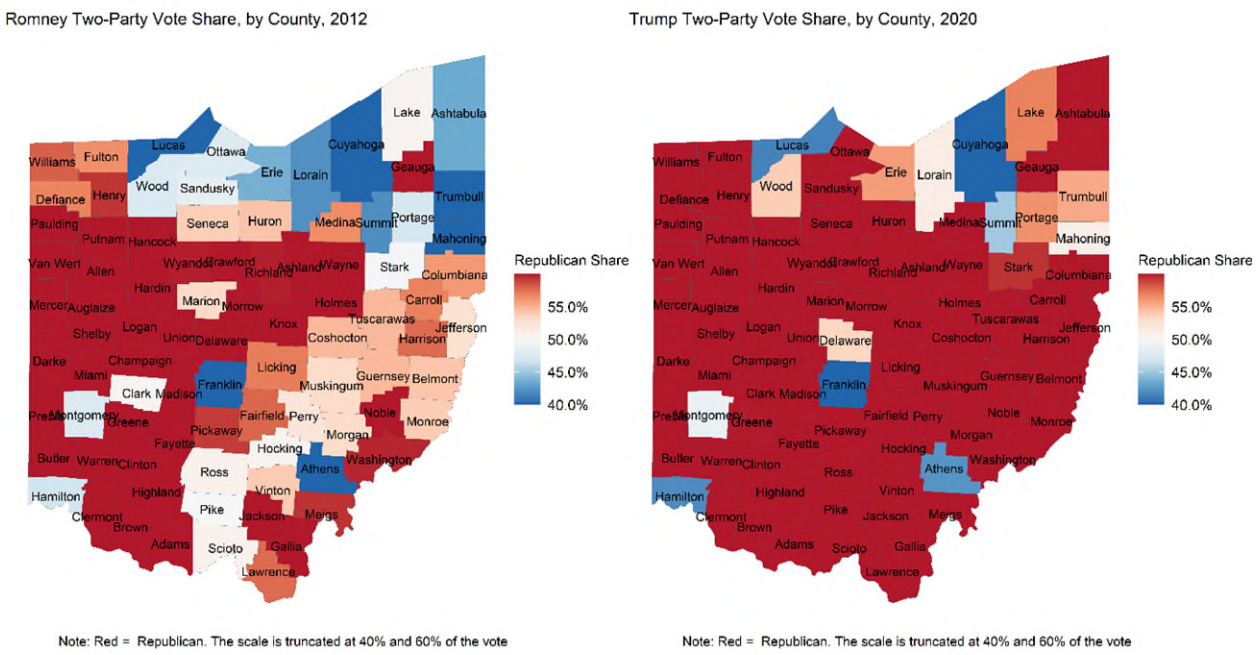
45. Ohio is no exception to this trend. This section is dedicated to exploring those developments. The subsequent section will explore the political consequences of those developments.

46. The changes that have occurred in Ohio over the course of the past decade are readily revealed with a pair of maps. Comparing the 2012 and 2020 elections is useful because both elections took place in a national environment where Democrats performed reasonably well: President Barack Obama won the national popular vote by just shy of four points while President Joe Biden won the national popular vote by a little over four points.

47. At the beginning of the decade, Ohio Democrats showed substantial strength in Ohio's counties that housed its largest cities: Hamilton, Cuyahoga and Franklin. But Democrats also showed substantial strength in other counties. Appalachia was red, but only modestly so, while the counties that ran along Lake Erie leaned toward the Democrats. The Mahoning River Valley counties provided an additional source of Democratic strength. Note that the scale of these maps

is capped at 40% and 60%; one problem with choropleth maps is that outliers can overwhelm the color scale. In this case, allowing a staunchly Republican County such as Holmes County (which gave Trump 83% of the vote) to set the extreme of the color scale would leave much of the rest of the state a pale shading of pink, obscuring important distinctions in the crucial competitive range. We should nevertheless keep in mind that many of these dark red counties are, in reality, substantially redder than the coloring here would suggest.

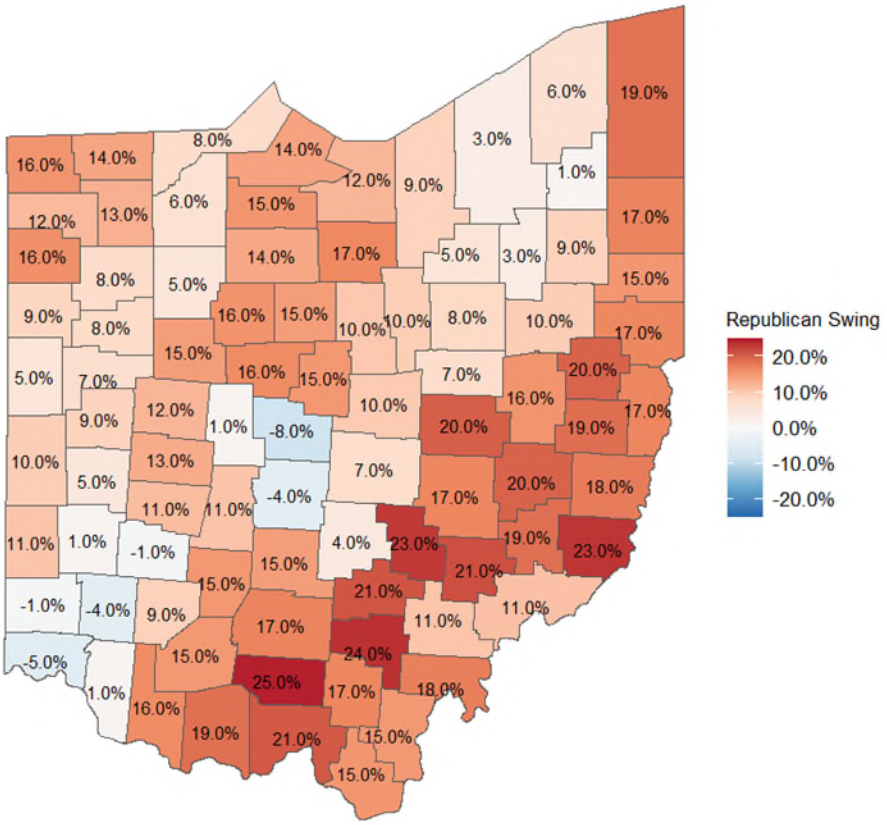
Map 1: Romney (2012) and Trump (2020) Two-Party Vote Share, by County



48. By 2020, this had changed dramatically. The urban centers had become bluer, but now Appalachia was solid red, while the Lake Erie shoreline, Western Reserve, and Mahoning River Valley were red-to-reddish-purple. The political firmament had changed significantly from when the last set of maps was drawn.

49. The following map illustrates these changes at the county level. Here, gradations of red and blue represent the degree of swing in Republican vote share from 2012 to 2020. One does not need a complicated statistical test to see the large swing against Democrats in Southeastern Ohio and along the Pennsylvania border, combined with the more modest (but still pronounced) swings along the Lake Erie shoreline. The only areas that swung toward Democrats were Franklin County (and its northern suburbs), along with Cincinnati and its northern suburbs.

Map 2: Vote Share Swing from Romney (2012) to Trump (2020)

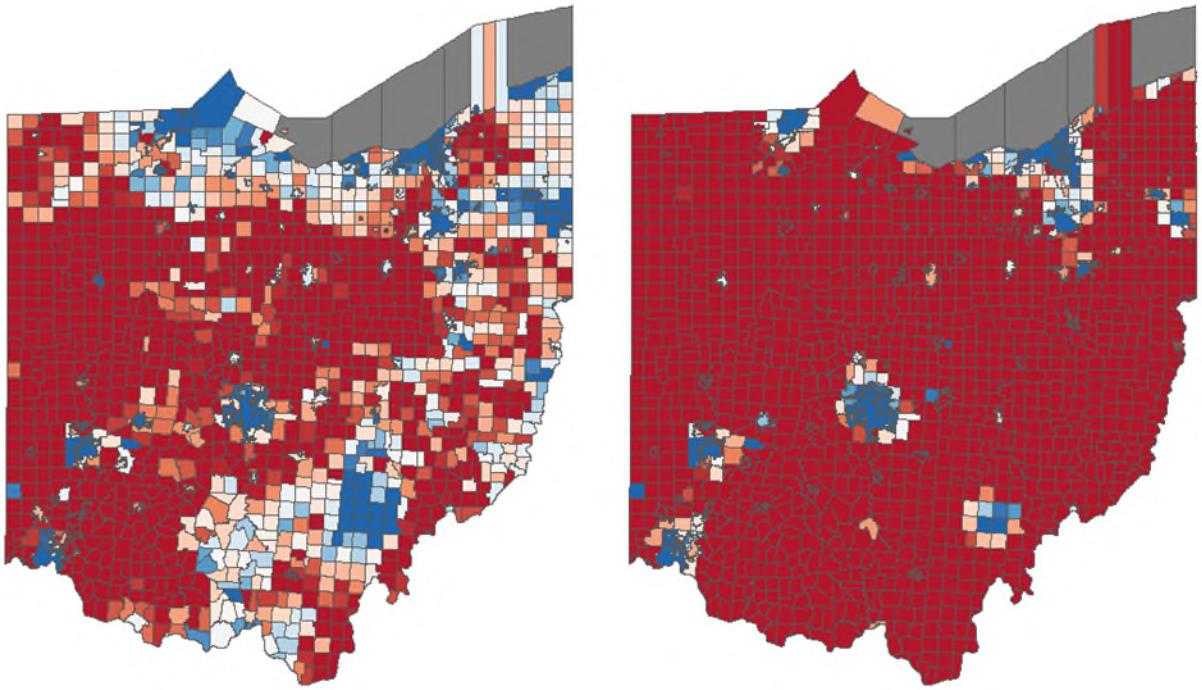


Note: Red = Republican. The scale is truncated at 40% and 60% of the vote

50. The increased geographic concentration of the Democratic coalition is even starker when we look at the map 3, which examines the same data, only at the township and municipality

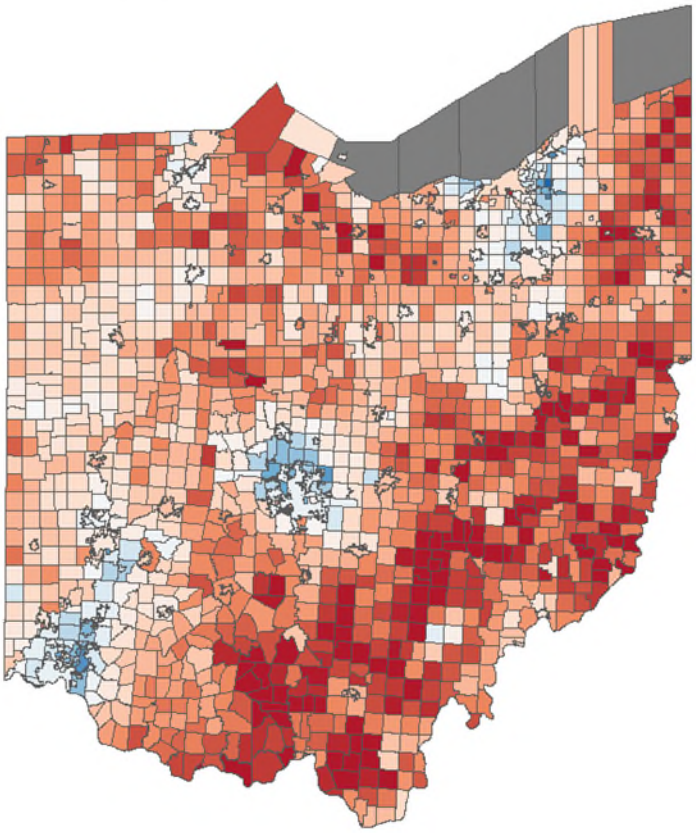
level. This map seems particularly important, given the constitutional restrictions in Article XI § 3 on splitting townships and municipalities.

Map 3: Romney (2012) and Trump (2020) Two-Party Vote Share, at sub-County Level



51. We can also reproduce Map 2 at the sub-County level:

Map 4: Vote Share Swing from Romney (2012) to Trump (2020)

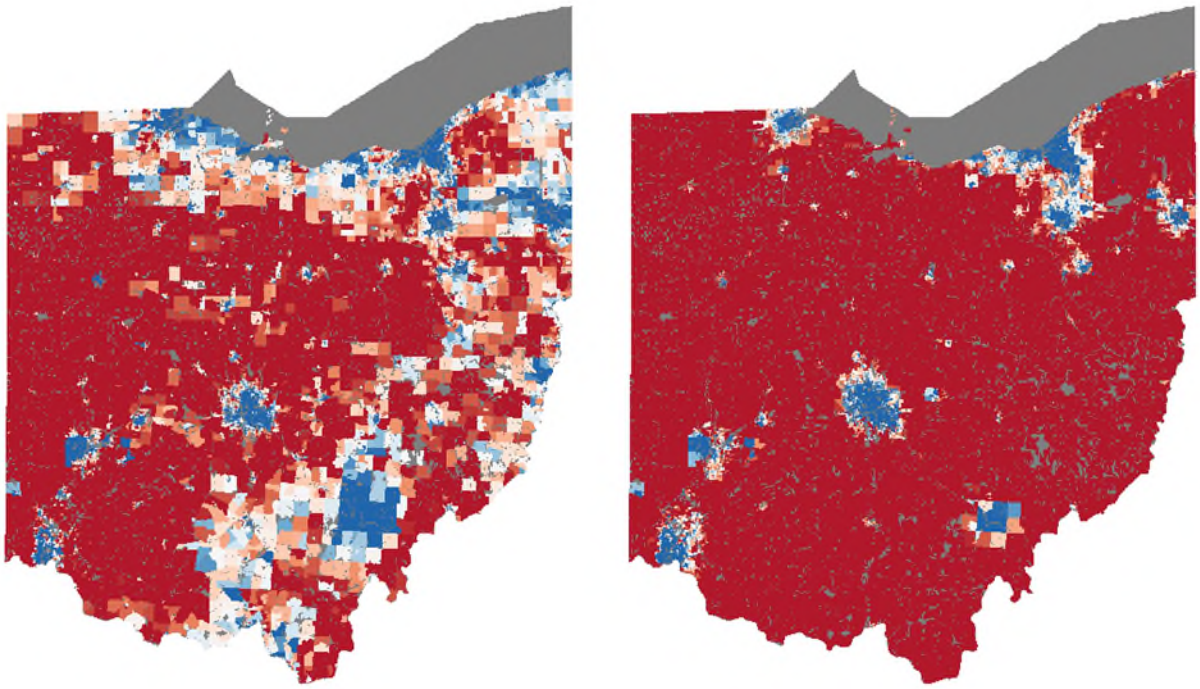


Note: Red = Republican. The scale is truncated at a 25% swing toward either party.

52. It is much the same story as in Map 2; if anything, it is more pronounced. The significant blue and pink areas in southeastern and northern Ohio have substantially dried up by 2020, leaving islands of blue in Cincinnati, Athens, Toledo, Columbus and Cleveland-Akron. The political implications of this will be discussed shortly but should be apparent from this: In the past, it was not difficult to pair blue areas in Toledo with pink or purple areas nearby to create multiple Democratic districts outside of the city proper. Today, those areas simply don't exist.

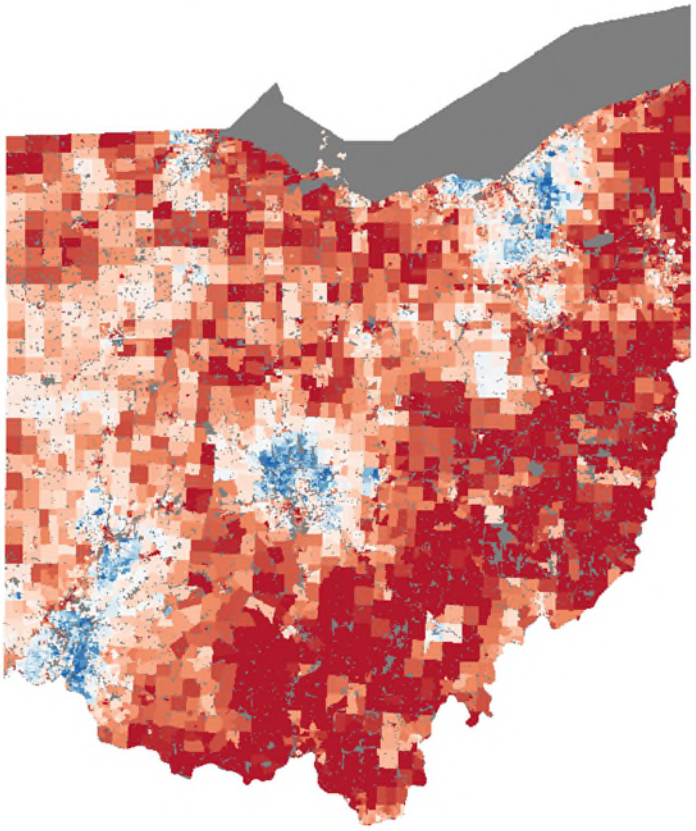
53. We can take an even more granular look, evaluating the map at the census block level. Here, it is more of the same. There is a smattering of blue in the cities and inner suburbs, but otherwise the areas see no change or large red shifts in previously heterogeneous areas.

Map 5: Romney (2012) and Trump (2020) Two-Party Vote Share, at Census Block Level



54. Examining the swing in the block level (Map 6) illustrates the trend even further. Blue swings are isolated dots in the big cities, while the rest of the map is largely a stretch of red.

Map 6: Vote Share Swing from Romney (2012) to Trump (2020)

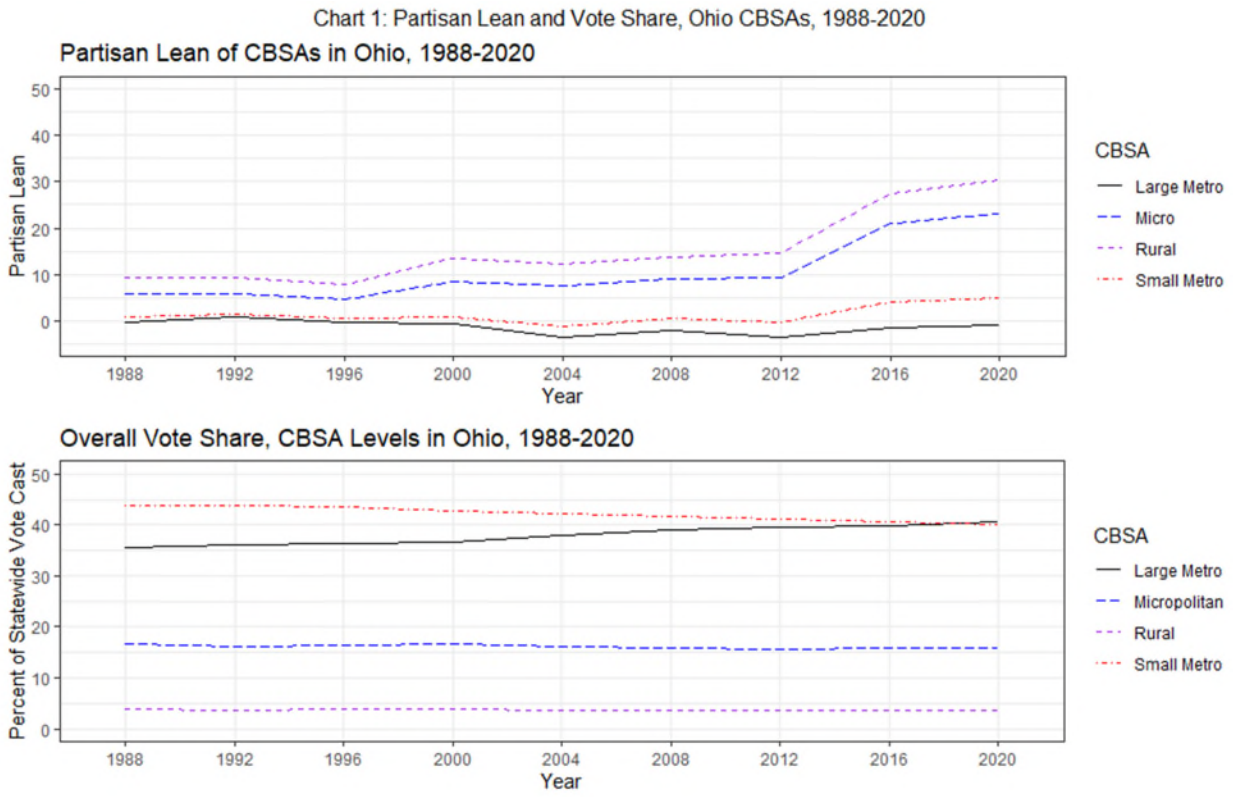


Note: Red = Republican. The scale is truncated at a 25% swing toward either party.

55. Of course, as they say, land does not vote: People do. Many of these large blocks have few residents, while the blue blocks are fairly dense. We will explore the consequences of this for redistricting in the next section. However, by focusing on census blocks, that difference is minimized somewhat, as block populations (unlike county populations) vary between 0 and a few thousand people, rather than counties, which vary between 10,000 or so residents and over one million.

56. We can summarize these findings by plotting the trend in Ohio over the past few decades by census bureau categorization of Core Based Statistical Areas ("CBSAs"). Each county is classified by the census bureau as belonging to a metropolitan area, a micropolitan area, or a rural area. I've further broken the metropolitan areas down into large metro areas, like Cleveland,

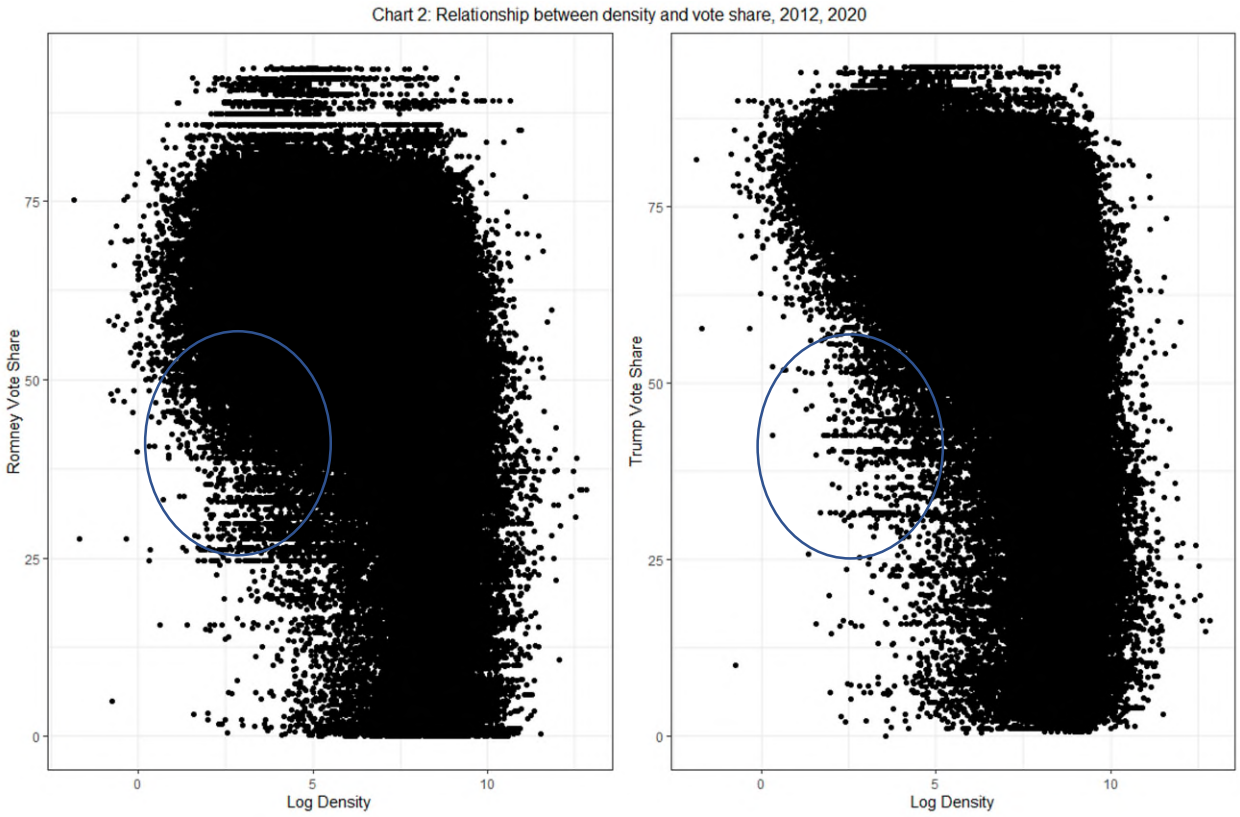
Cincinnati and Columbus, or small metro areas like Dayton or Toledo. I have calculated the share of the vote in Ohio for each group from 1988 to 2020, as well as the partisan lean of each group (that is, how much more Republican the group is than the country as a whole).



57. This shows the substantial swing toward Republicans in micropolitan and rural areas, along with the lack of accompanying swing toward Democrats in the metro areas. At the same time, these groups have maintained their share of the overall vote with remarkable consistency.

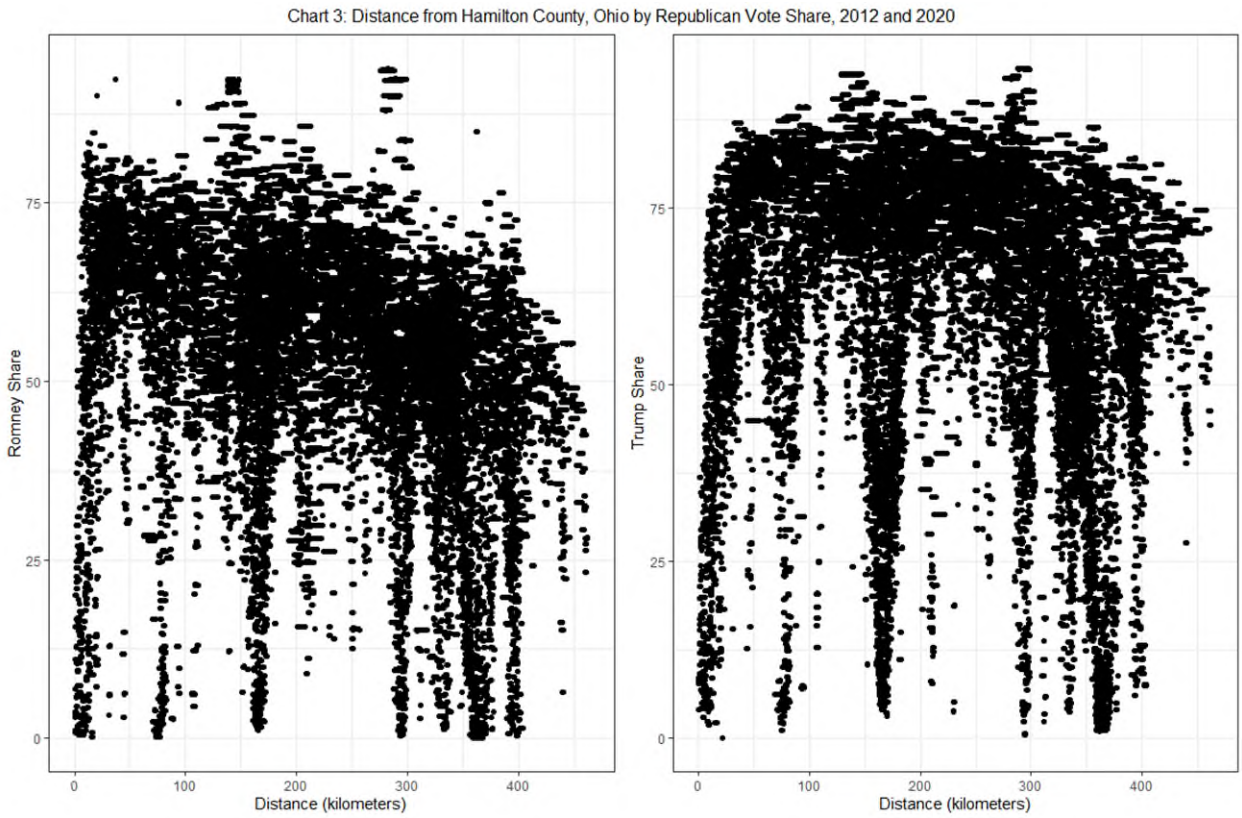
58. We can also follow the approach taken by the seminal article on clustering and map drawing. We start by looking at a scatterplot of the relationship between population density and Republican vote share in 2012 and 2014. *See* Jowei Chen & Jonathan Rodden, "Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures," *8 Q.J. Pol. Sci.* 239, 242-44 (2013). Each dot in these charts represents a census block. Dots that are located further to

the right represent higher-density blocks, and dots that are located higher in the chart represent blocks with higher Republican vote shares.



59. Both the 2012 and 2020 maps have upper-left-to-lower-right shape, demonstrating that as density increases, so too does Democratic voting. Note though that while there are almost no low-density Democratic blocks, there are high-density Republican blocks. Note too that the 2012 map contains a section of blocks just below the 50% Romney vote share level that also have relatively low density (marked roughly by the ellipse in the chart). By 2020, that section had mostly thinned out, indicating a loss of low-density swing blocks. In particular, in 2012 there were 5,929 blocks with fewer than 148 people per square mile that gave Romney between 25 and 50% of the vote. In 2020, that number was just 772 (using Trump's vote share in 2020).

60. We can follow the process in the Chen and Rodden article further by examining the distribution of census blocks as they move away from an arbitrary point in the state. *Id.* at 244. The article chooses downtown Miami as its starting point; I choose Hamilton County, Ohio. Both are large population centers located in a corner of the state (if we chose a population center in the center, we would risk overlapping areas that are equally distant from the point, but are quite far apart from each other).



61. Dots located further to the right on Chart 3 reflect blocks that are increasingly distant from Hamilton County, while dots located higher in Chart 3 again show increased Republican vote shares. In a location with no partisan sorting, the map would look like a blob: there would be no relationship between distance and vote share.

62. That is not what we see here. Instead, we see three patterns. First, we see a "stalactite" pattern in Chart 3. These stalactites, which hang down from a "blob" reflect cities. The left-most stalactite is composed of blocks in Hamilton County, the one around 75 kilometers is blocks in Dayton, the one around 150 kilometers away is Columbus, while the four stalactites on the right of the map represent Toledo, Akron, Cleveland and Youngstown. In other words, there is a clear spatial structure in Democratic voting patterns. Democratic blocks are found largely in clusters, located at particularized distances from the map.

63. This leads to the second pattern, which is the "blob" of Republican blocks at the top of Chart 3. As noted above, a "blob" shape represents a lack of correlation. Republican precincts simply look very different from Democratic precincts. They exist in fairly large numbers at almost every distance from Hamilton County.

64. Chen and Rodden observed a similar structure in Florida (using census block groups) and concluded that "Democrats are far more clustered within homogenous precincts than are Republicans" and that "Democratic precincts tend to be closer to one another in space than Republican precincts." That is, "the nearest neighbors of pre dominantly Democratic precincts are more likely to be predominantly Democratic than is the case for Republican precincts." *Id.* at 245

65. Finally, the structure changes between 2012 and 2020. In 2012, the Republican "blob" at the top of Chart 3 has a clear slope from upper-left to lower-right. Here, that suggests additional spatial structure: As one moves further away from Cincinnati, one encounters fewer heavily Republican blocks. This is consistent with what we had observed in our map of Ohio from 2012, where northern and eastern Ohio had a fair number of rural purple and blueish blocks. That slope is much less pronounced in 2020. Also, the stalactites appear better defined in 2020.

66. Finally, while a Moran's I analysis (a common statistical tool used to measure clustering) finds significant clustering in both 2012 and 2020, the value of the statistic increases from 0.66 to 0.78, suggesting a net increase in the amount of clustering within the state.

C. Clustering has made it difficult to draw rural Democratic seats, necessitating the evisceration of Republican representation in cities to counterbalance these difficulties to achieve proportionality.

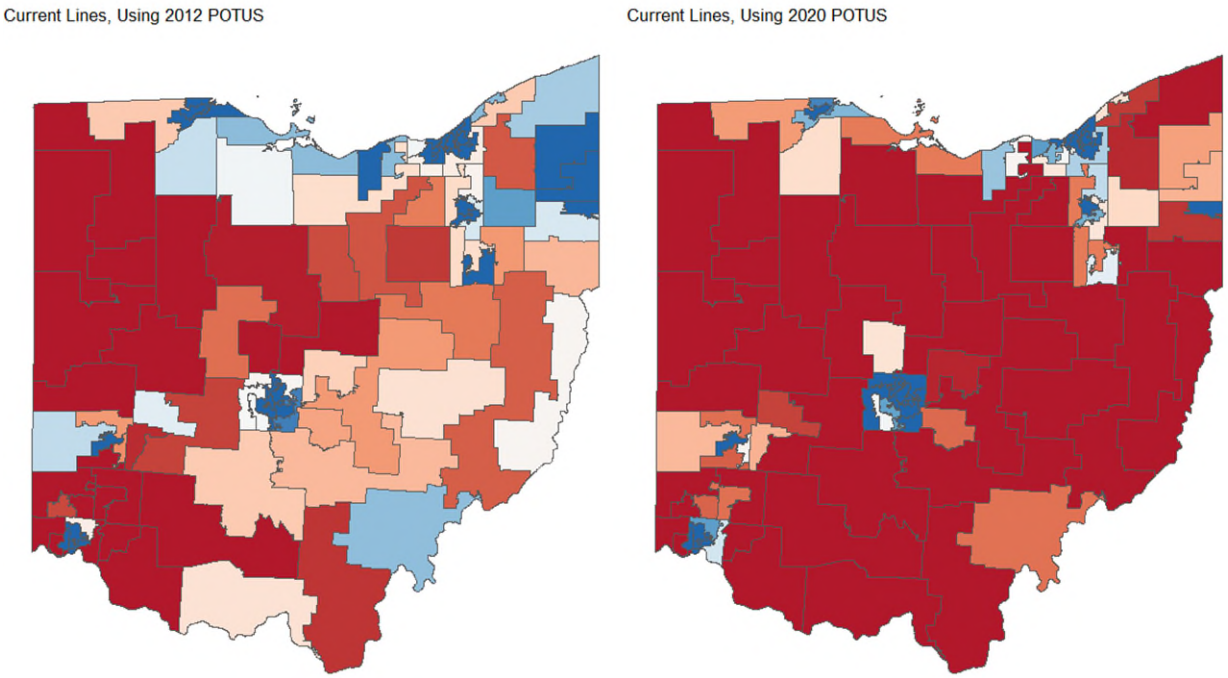
67. Dr. Rodden has written convincingly of the effect of this clustering on Democratic representation in American legislatures. To be clear, Dr. Rodden believes that gerrymandering has a significant effect on electoral outcomes. But when writing of Democrats' focus on gerrymandering as the source of their problems, he writes "[w]ithout a doubt, gerrymandering makes things *worse* for the Democrats, but their underlying problem can be summed up with the old real estate maxim: location, location, location." Jonathan Rodden, *Why Cities Lose* 2-3 (2019). He continues "[I]n many US states, Democrats are now concentrated in cities in such a way that even when districts are drawn without regard for partisanship, their seat share will fall well short of their vote share. It matters a great deal how the districts are drawn, and by whom, but because of where Democrats live, the very existence of winner-take-all-geographic districts has facilitated the systemic underrepresentation of Democrats." *Id.* at 3.

68. Discussing Ohio specifically, Rodden writes of its "blue" towns: "as these towns [like Canton and Ashtabula] lose population and exhibit lower levels of turnout, they are increasingly swallowed up by their very conservative exurban and rural peripheries, where turnout is quite high, which turns the county red as a whole." *Id.* at 52.

69. The consequences of this concentration in Ohio are apparent in Map 7, which compares the Republican presidential candidate's performance under the current House lines in

2012 versus 2020. Once again, these map colors are truncated at 40% and 60% performance.

Map 7: Presidential Vote Share Under Current House Lines, 2012-2020



70. Notice that in 2012 there were a variety of blue or light red districts in southern Ohio. In particular, Democrats had opportunities in districts in Preble County, Scioto County, and Athens County. These dried up by the end of the decade.

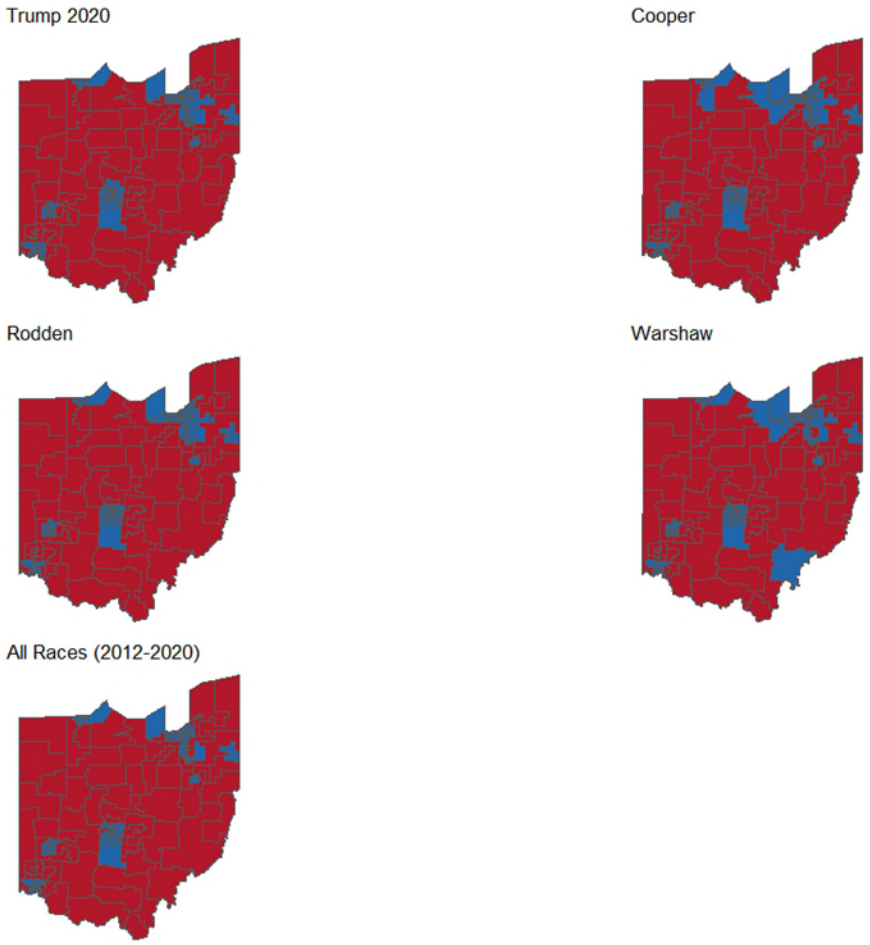
71. Likewise in Northeastern Ohio, Democratic districts in southern Stark County, southern Portage County, and in Ashtabula, Trumbull and Mahoning counties flipped toward Republicans. In Northwestern Ohio, districts in Wood, Sandusky, Ottawa, Erie, and northern Lorain County became difficult areas for Democrats to win.

72. This is not to say that Democrats were without countervailing opportunities. Districts in eastern Hamilton County, Delaware County, outer Franklin County, and outer Cuyahoga County became places where Democrats could compete more aggressively than they

could at the beginning of the decade. But the point is that Democrats lost opportunities throughout rural Ohio and in small metros, and gained opportunities only in the urban centers.

73. Thus, it is unsurprising that the maps adopted by the Commission and the maps offered up by Senator and Representative Sykes differ almost exclusively in their treatment of cities; everyone seems to agree that rural areas can no longer reliably support Democratic representatives. Here, for example, are the evaluations of the partisanship of the districts under the Sykes map, using both the Cooper and Rodden approaches to aggregation (for an explanation of these differences see *supra* ¶¶ 37 - 39).

Map 8: Evaluation of House Districts in the Sykes Plan, Using Cooper Approach to Aggregation



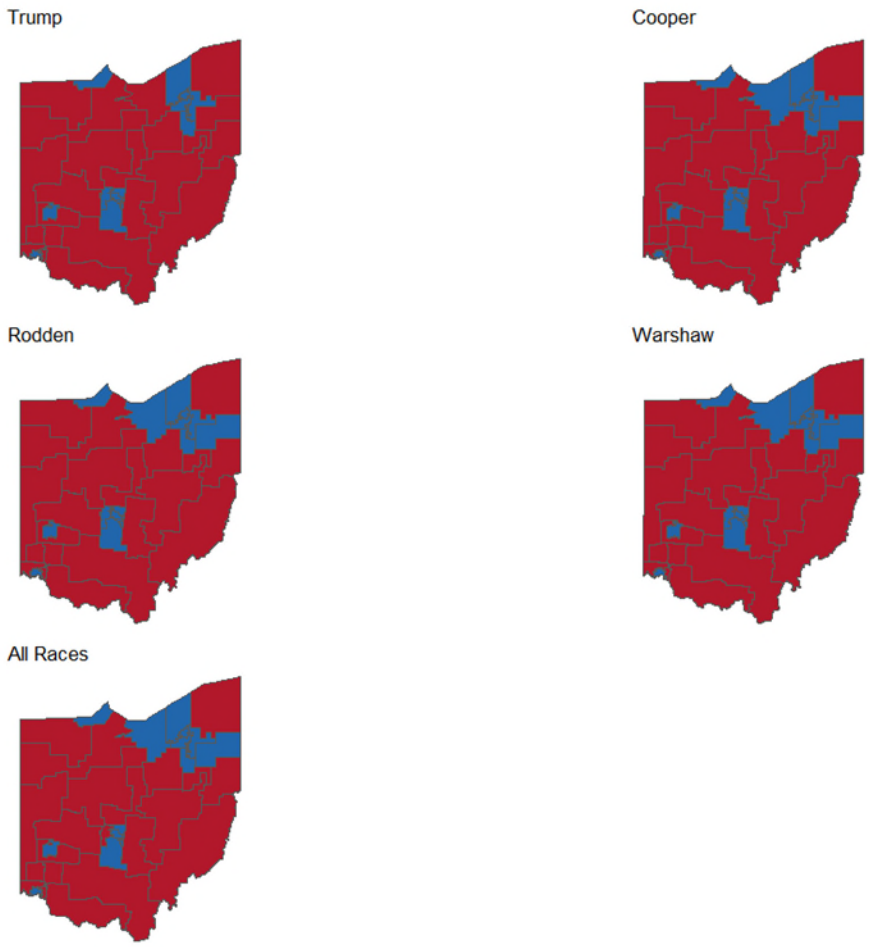
Map 9: Evaluation of House Districts in the Sykes Plan, Using Rodden Approach to Aggregation

74. Regardless of the metric employed, the Democratic districts here are anchored around Cincinnati, Dayton, Columbus, Toledo, Loraine, Cleveland, Akron, Youngstown/Warren and Canton. The sole exception is that using the 13 races that Dr. Warshaw embraces and the Cooper approach to aggregation (remember, Dr. Warshaw weights the races, so this may not be his actual scoring of the district), the district around Athens, Ohio, would favor Democrats.

75. Again, there are disagreements on the particulars but not about the general rule: None of the proposed maps create reliable representation for Democrats outside of the city centers, because it is extremely difficult to draw Democratic districts in rural areas.

76. This is also true of the Senate maps:

Map 10: Evaluation of Senate Districts under the Sykes Plan, Using Cooper Approach to Aggregation



Map 11: Evaluation of Senate Districts under Sykes Plan, Using Rodden Approach to Aggregation

77. Stripped to its essence, the debate that relators are attempting to introduce is really a debate about whether map-makers are required to counterbalance the lack of Democratic districts outside of large metro areas by drawing maps that minimize Republican representation in those urban cores.

78. The lengths that the Sykes Plan goes to in order to avoid creating Republican districts in the city is obvious through a local analysis of the maps. The only attempt at a local analysis of districts is performed by Dr. Latner. Dr. Latner's evaluation of the discretionary choices behind the Ohio maps involves something of an "I know it when I see it approach." This is unsurprising, as there is no well-established political science metric for measuring packing and cracking at the local level. I draw upon my decade of experience as an election analyst, my experience conducting local analyses of congressional districts, including Ohio's, for the Almanac of American Politics, and my knowledge of Ohio's geography as a resident. I will confine myself here to analysis of the state House plans, since the Senate map is downstream of the districts drawn for the House. I will also use the Cooper method for aggregation, for brevity's sake.

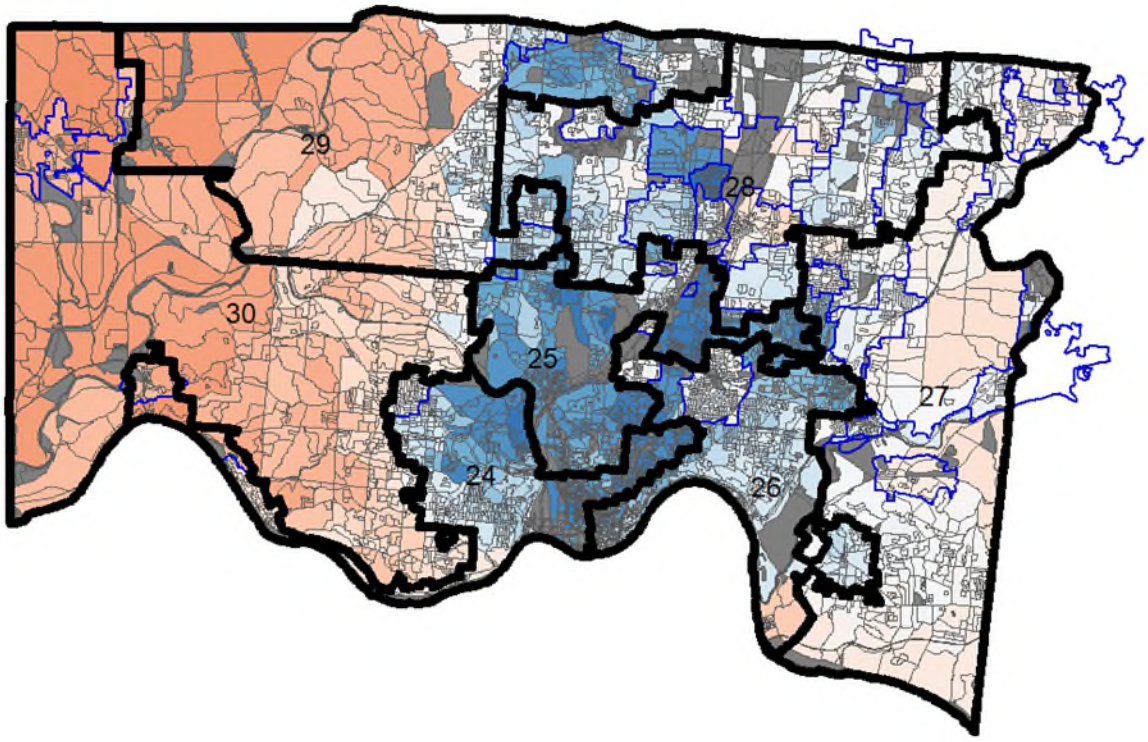
79. Latner writes of the Adopted Plan's districts in Hamilton County "In Hamilton County, I observe that House districts 24 and 25 are packed with 71 percent and 78 percent Democratic voters, respectively, with high proportions (41 percent and 52 percent, respectively) of voting age African-Americans, while adjacent House districts 27, 29 and 30 are safely Republican."

80. "Safely Republican" would have been a reasonable description of District 27 in 2012, when now-Sen. Mitt Romney won it with 60% of the vote. But none of the Republican candidates on statewide tickets in 2018 approached that level of support, save for the Republican candidate for Treasurer. President Trump lost it (narrowly) in 2020.

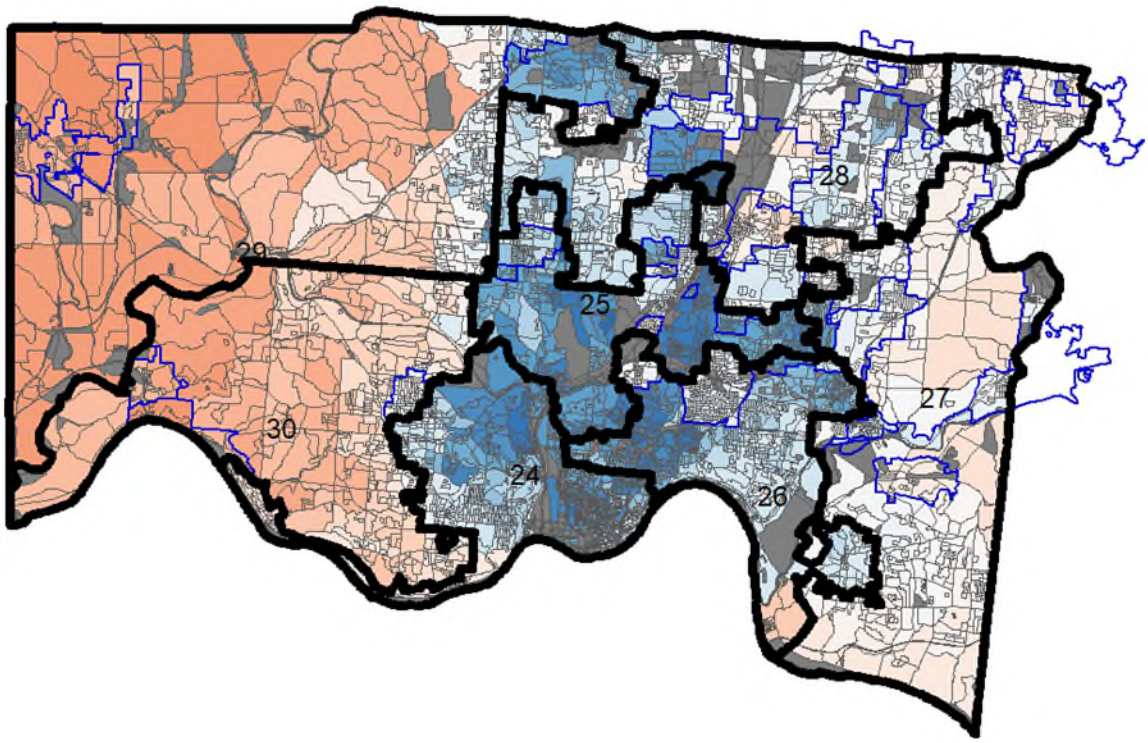
81. More importantly, given the Democrats' "natural packing problem," it is difficult to avoid drawing at least two heavily Democratic districts in Hamilton County. The Sykes map draws three Democratic districts where Trump fell below 31% of the vote, and two districts where none of the statewide Republicans in 2012, 2016 or 2018 cleared 30%.

82. To see what is going on in Hamilton County, an examination of maps of the Adopted Plan and the Sykes Plan, laid over census blocks shaded by partisan support (defined by the Cooper Metric) are useful.

Map 12: Sykes Plan, Hamilton County



Map 13: Adopted Plan, Hamilton County



83. Both the Adopted Plan and the Sykes Plan agree on the need to draw a swing district in eastern Hamilton County, as well as four Democratic districts in central Hamilton County. The differences are found in Districts 29 and 30, in western Hamilton County. The Sykes Plan reduces Republican representation here via a tendril that runs along the Ohio River and ties the middle class, heavily Republican suburbs of Cleves and North Bend with downtown. The 24th also pushes further into western Hamilton County by adding the Republican-leaning city of Cheviot. Having pulled these middle class, Republican leaning areas into a Cincinnati-based district, the Sykes Plan then packs as many of the remaining Republicans into the 30th as possible. This then pushes the

29th into more politically marginal territory in northern Hamilton County, creating a fifth district with a Democratic lean.

84. If the goal is to even out the Republican dominance in rural Ohio by increasing the number of Democratic seats in urban areas, then this approach may be justified. If the goal is to ensure local representation and avoid excessive use of partisan information when drawing lines, this is harder to justify. After all, Hamilton County is not an overwhelmingly blue county. President Biden and Sen. Sherrod Brown both fell just short of 60% of the vote here, while the Democratic candidate for governor in 2018 and Secretary of State Hillary Clinton won by about ten points. The 57% of the seats that the Adopted Plan gives the Democrats here (with one of those Republican seats being very marginal) is roughly balanced, as opposed to the 71% of seats given by the Sykes Plan (with one of those Republican seats being very marginal).

85. Another example comes in Franklin County. While this was previously a swing county (and, much earlier, solidly Republican), today it is deep blue, with Democrats routinely receiving around two-thirds of the vote here.

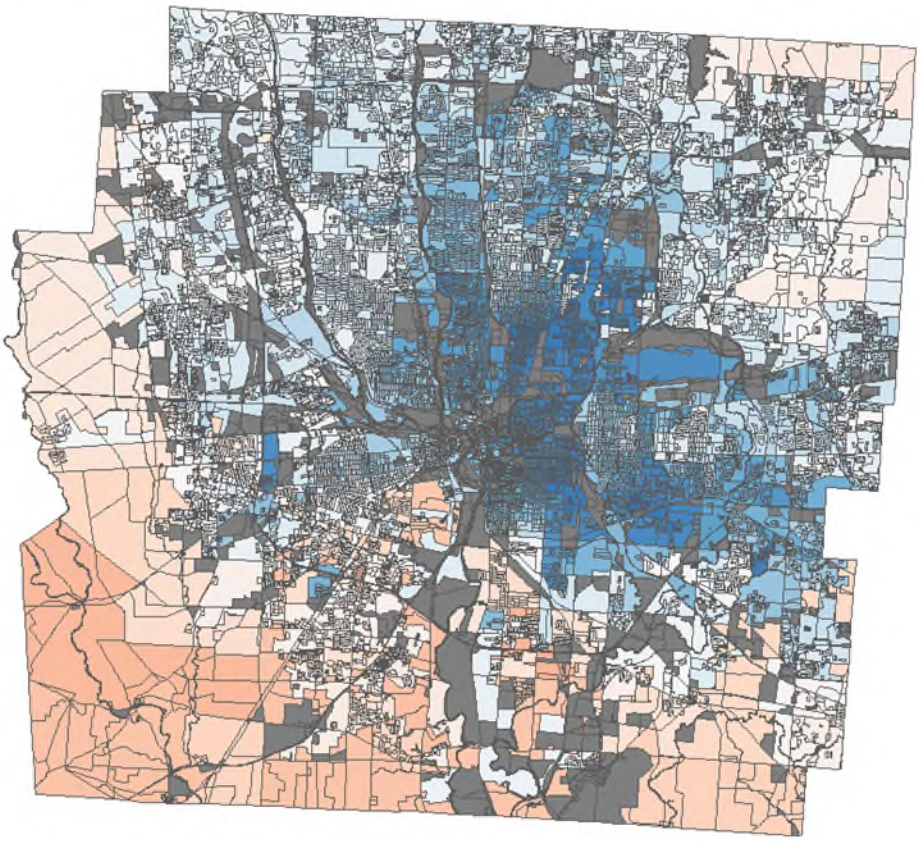
86. Latner writes of Franklin County: "Democratic voters are packed into House districts 1-3 (Senate district 15), including what will now be a 53 percent voting age Black population in district 2. House districts 10 and 11 select municipalities in a manner to create two safe seats, one for each party. These district boundary configurations create the opportunity for a fairly safe Republican seat to be put together in Senate district 16."

87. Franklin County is Democratic, but not so heavily Democratic that it should likely shock the conscience that Republicans in the county are given some representation.

88. At the same time, it is very difficult to draw compact districts that do not include large numbers of Democrats. Using the Cooper metric, Districts 1, 3, 5 and 6 in the Sykes Map all show very low Republican vote shares, with Trump falling below 30% in all four.

89. As with Cincinnati, political geography does Democrats no favors in Franklin County. However, the Sykes Map works effectively against this geography.

Map 14: Franklin County Census Blocks

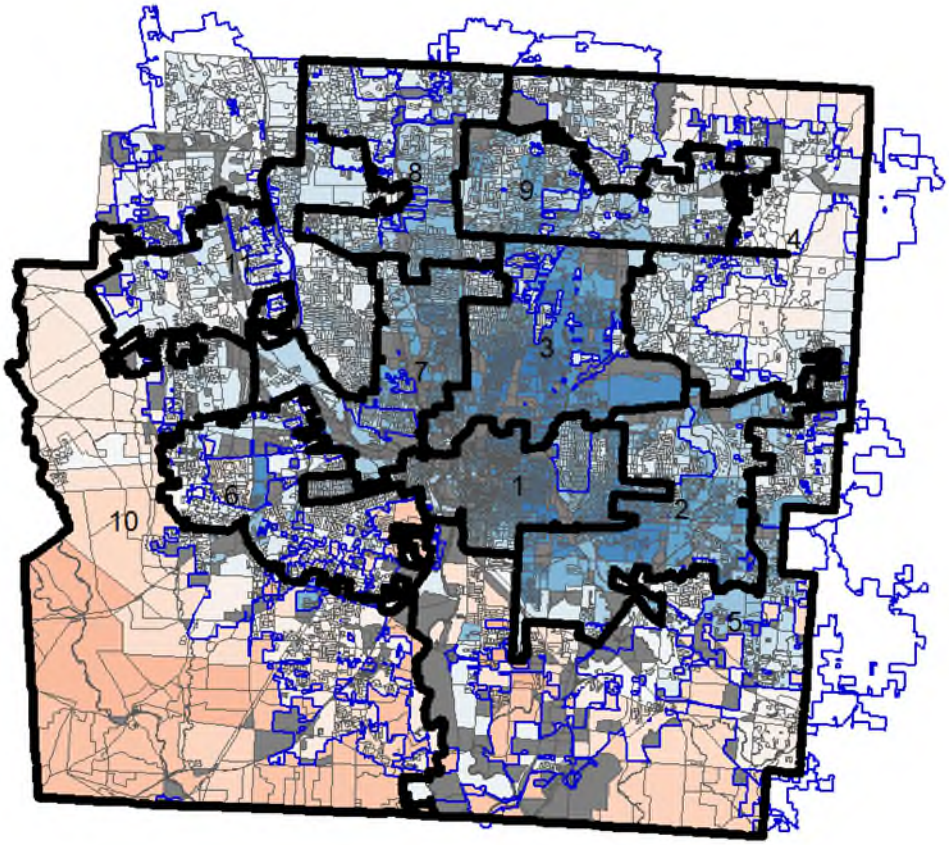


90. As you can see, Franklin County includes a number of heavily Democratic census blocks in the center. The northern suburbs are now relatively "blue," although lightly so. With that said, the southwestern quadrant of the county is still relatively rural, and a compact Republican district based in Pleasant, Prairie and Brown townships would fit here quite naturally. In addition,

a swing district could probably be drawn in the northeastern portion of the county near Plain Township and New Albany.

91. This is effectively what the Adopted Plan did.

Map 15: Adopted Plan, Franklin County



92. At the beginning of the last decade, this map probably would have yielded three Republican districts: one in northeastern Franklin County, one in southwestern Franklin County, and one in the Upper Arlington/Hilliard-based 11th District. Mitt Romney carried all of these districts. But the shift against Republicans in the suburbs hurts Republican chances. President Trump received only 40% of the vote in the 4th and 38% in the 11th. The 10th, however remains Republican; Trump received 53% of the vote here. In addition, the 6th District, based in blue-

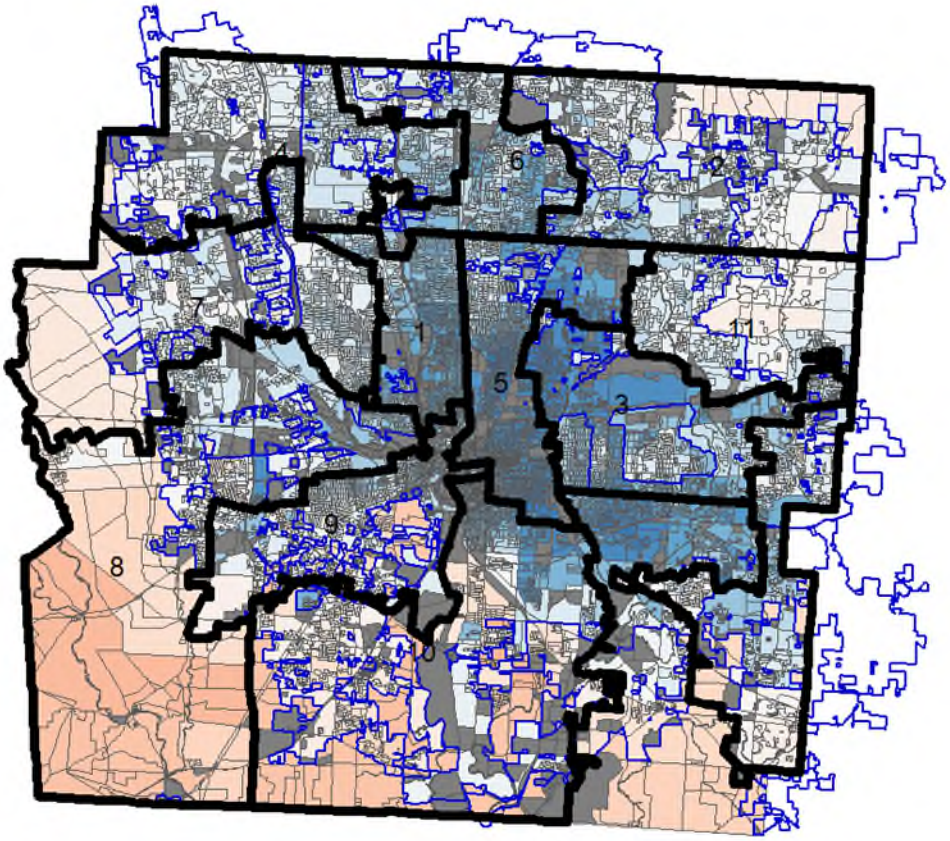
collar southwest Columbus seems to be moving toward Republicans; Trump received almost 46% of the vote here.

93. Looking at the average of all statewide races in these districts, Republicans would receive a majority of the vote in three districts: 4, 10 and 11. This, however, would roughly correspond with their countywide vote share.

94. Finally, Franklin County can't support a full set of districts under the Supreme Court's one-person-one-vote jurisprudence. The Adopted Plan places the "extra" precincts in the city of Dublin, in the northwestern portion of the district. It merges these precincts with Union County, creating a Republican district there. While there are any number of ways to place the "extra" precincts, this one is sensible, as Dublin is a fast-growing suburb whose boundaries lie partly in Union County. Much of Jerome Township and even Plain City in Union County are increasingly extensions of Dublin.

95. The Sykes map, by contrast, would almost certainly eliminate Republican representation in Franklin County altogether. President Trump came nowhere near carrying any of these districts; his best was the 10th district, where he received 45% of the vote. The 10th and 8th districts are the only ones where he received even 40% of the vote. Neither the Cooper nor the Rodden races show Republicans clearing 45% in any of the districts.

Map 16: Sykes Plan, Franklin County



96. Looking at the map in more detail reveals clear choices that have the effect of making it very difficult for any Republican to win a race in Franklin County. In this map Dublin is merged with the City of Worthington. Here, the effect creates a district that was carried by Romney, but where Trump received just 37% of the vote. The more rural townships in southwestern Franklin County are cracked between three districts and combined with heavily urban parts of Columbus. Heavily Republican and rural Pleasant and Prairie townships in the southwest corner of the county are now actually combined with downtown Columbus in the 8th District; it is difficult to conceive of a reason for this.

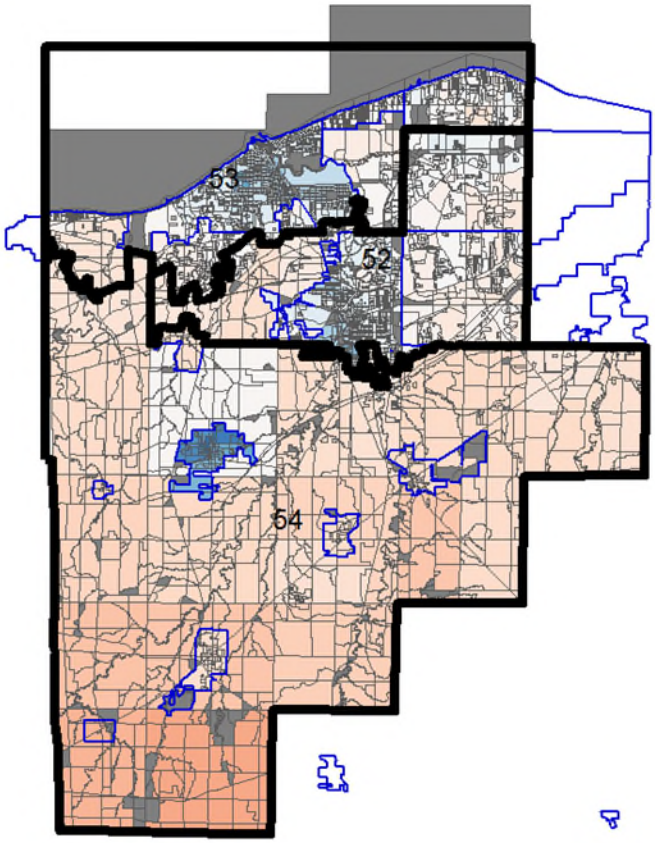
97. Northeastern Franklin County is split between two districts, both of which are Democratic under any metric. The 11th meanders down the right side of the county.

98. The Sykes Plan takes a group of densely populated, heavily Democratic precincts located south of Bexley and Whitehall, and connects them via Groveport with Pickaway County, a rural county that gave Donald Trump over 70% of the vote. The result of joining these disparate groups together, however, is to create a district that does not come close to 50% Republican in any of the various metrics that Relators' Experts use.

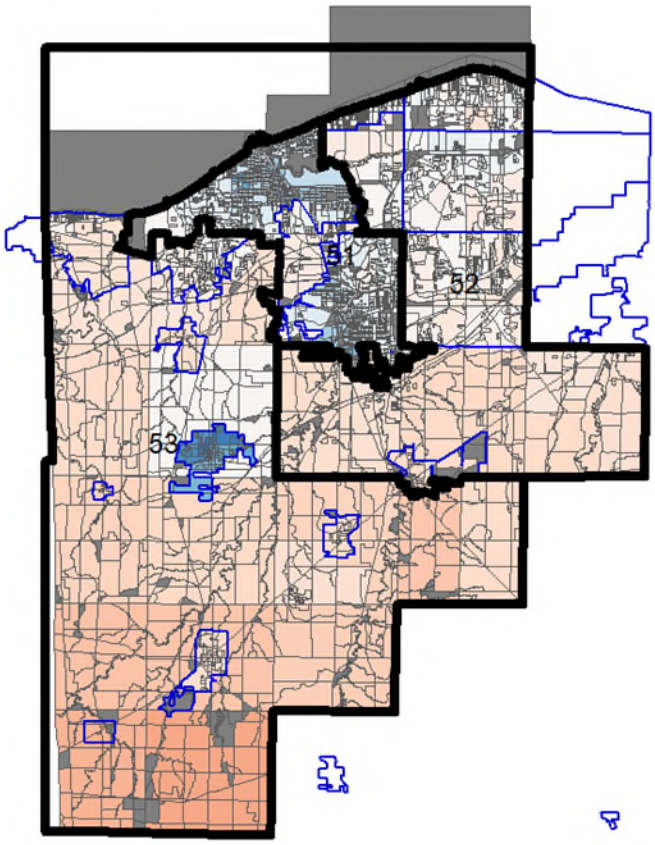
99. The end result of the Sykes Plan is to eliminate Republican representation in Franklin County. Moreover, it does so by making odd choices that are difficult to justify under any traditional redistricting criteria.

100. In Lorain County, both Sykes Plan and the Adopted Plan agree that there should be a substantially Republican district drawn in the southern area of the district. Note that in both plans, this district is is, in reality, joined with other neighboring counties. At the beginning of the decade, this district was fairly Democratic, but by the end of the decade it was much more Republican; every metric gives it a Republican lean.

Map 17: Sykes Plan, Lorain County (District 54 is Cropped)



Map 18: Adopted Plan, Lorain County (District 53 is Cropped)



101. The largest difference comes from a decision whether to align the two remaining districts north-to-south or east-to-west. The Sykes Plan joins the deindustrialized city of Lorain with some of Cleveland's upscale exurbs, such as Avon Lake. It also joins the similarly situated city of Elyria with places like Avon and North Ridgeville. The Adopted Plan places Lorain and Elyria in the same district, while joining together the Cleveland exurbs.

102. To put these choices in perspective, according to the U.S. Census' American Community Survey 5-year data, the median income in Elyria is $44,324, while the median income in Lorain is $38, 291. The median income in Avon Lake is $83,018, the median income in Avon is $109,916, and the median income in North Ridgeville is $77,221. *See*

https://www.census.gov/quickfacts/fact/table/northridgevillecityohio,avoncityohio,avonlakecityohio,loraincityohio,elyriacityohio,US/INC110219.

103. Beyond this, the Adopted Plan and Sykes Plan are largely in agreement. Both maps draw three Democratic districts in Toledo, two Democratic districts in Youngstown-Warren, one Democratic district anchored in Stark County, one Democratic district in Portage County, and 14 Democratic districts in Cuyahoga and Summit counties.

104. None of the Relators' Experts, however, conduct a thorough examination of the maps "under the hood." While rating the competitiveness and lean of districts is a tricky business where different metrics can produce contradictory outcomes, the maps and metrics mostly agree that, outside of the Cleveland, Columbus and Cincinnati metro areas, there are very few Democratic-leaning districts that can be drawn. The Adopted Plan and the Sykes Plan even agree on what many of these districts must look like in their particulars.

105. The approach of the Sykes Plan is to offset Democrats' difficulties in appealing to rural and small-town Ohioans by avoiding the creation of Republican districts in the urban areas, if possible, often by making choices that seem difficult to justify (such as joining downtown Columbus with rural southwest Franklin County). Put differently, if we were to examine the Sykes Plan in Lorain, Franklin, and Hamilton Counties alone, we would conclude that the districts drawn in these counties were gerrymanders.

D. The Various Redistricting Criteria Offer Little Insight Into Whether Ohio's Map is Constitutional

106. The Relators' Experts have calculated various metrics that purport to measure partisan fairness. While it is unclear what the relevance of these metrics is to this litigation, Dr. Warshaw nevertheless does a fair job describing many of the particular shortcomings and strengths

of the varying metrics. Warshaw Report at 6-14. Three important additional points, however, deserve to be made with respect to them.

107. First, all of these are global metrics that only purport to measure the partisan fairness of a map as a whole. They are indifferent to anything that occurs at a local level. One therefore cannot immediately make the leap from a "high" (however that is defined) absolute efficiency gap score and an inference of partisan intent.

108. In particular, all of these metrics ignore the potential effects of partisan clustering. As we've seen, and as Dr. Rodden has explained in his work, this clustering can alter the "baseline" efficiency gap/symmetry/mean-median/declination score that would result if a map were drawn blind to partisanship. In short, these metrics are blind to the reality – that all the map-drawers seem to agree upon – that the weakness of Democrats in rural and small-town Ohio requires drawing a majority of Ohio's state House districts such that Trump won by double digits. So, for example, even when using data from the less-clustered Ohio of 2012, and without observing the requirement that cities, villages and townships be kept intact to the extent practicable, Dr. Rodden finds a baseline mean-median difference of 0.02 in the Ohio Senate. *See* Rodden at 170.

109. Second, the Court should not be moved by the fact that the Adopted Map appears to lean Republican on *multiple* scores. As Dr. Warshaw explains on page 15 of his report, these metrics are highly correlated, in part because they tend to measure the same thing. In other words, a map that scores in one direction on the efficiency gap metric will naturally tend to score in the same direction on the remaining metrics.

110. Third, although the Relators' Experts refer to these scores when declaring the Adopted Map "extreme," that label is arbitrarily applied. This is as it must be, as the efficiency gap is largely useless in assessing the normative question of how high of an efficiency gap is "too

high." In previous litigation, plaintiffs have suggested thresholds of 0.07, 0.075 and 0.125 when determining whether an efficiency gap is too high. Even those thresholds are arbitrary (Relators' Experts sought to link them to the number of seats wasted, which only pushes the question back one step to "how many seats are too many?").

111. Regardless, Dr. Warshaw's estimates of the efficiency gaps for the Ohio House of Representatives under the Adopted Plan (0.07) fails to cross the thresholds for extreme efficiency gaps suggested by plaintiffs in earlier litigation, even without accounting for the indisputable geographic clustering in Ohio. The mean-median difference of 4% likely should be "discounted" by the 2% mean-median gap that Dr. Rodden has previously found as a "baseline" mean-median difference in Ohio (even before accounting for the increased geographic clustering that has occurred since then). Overall, it is unclear what the Court is supposed to conclude from the various efficiency gap, symmetry, declination and mean-median scores reported by Relators' Experts.

CONCLUSION

112. Measuring the competitiveness of districts is a tricky business, and the Relators' Experts have produced numerous approaches to the task and numerous "baskets" of elections to be examined. These often produce contradictory results. Perhaps more importantly, Ohio's political geography makes it very difficult to draw Democratic districts outside of the major cities. The Sykes Plan appears to intentionally work to reduce Republican representation in the cities below what would normally occur under compact districts that did not actively work to reduce such representation.

Exhibit 1

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EDUCATION

Ph.D., The Ohio State University, Political Science, expected 2022.

M.A.S. (Master of Applied Statistics), The Ohio State University, 2019.

J.D., Duke University School of Law, *cum laude*, 2001; Duke Law Journal, Research Editor.

M.A., Duke University, *cum laude*, Political Science, 2001. Thesis titled *The Making of an Ideological Court: Application of Non-parametric Scaling Techniques to Explain Supreme Court Voting Patterns from 1900-1941*, June 2001.

B.A., Yale University, with distinction, History and Political Science, 1995.

PROFESSIONAL EXPERIENCE

Law Clerk, Hon. Deanell R. Tacha, U.S. Court of Appeals for the Tenth Circuit, 2001-02.

Associate, Kirkland & Ellis, LLP, Washington, DC, 2002-05.

Associate, Hunton & Williams, LLP, Richmond, Virginia, 2005-09.

Associate, David, Kamp & Frank, P.C., Newport News, Virginia, 2009-10.

Senior Elections Analyst, RealClearPolitics, 2009-present.

Columnist, Center for Politics Crystal Ball, 2014-17.

Gerald R. Ford Visiting Scholar, American Enterprise Institute, 2018-present.

BOOKS

Larry J. Sabato, ed., *The Blue Wave*, Ch. 14 (2019).

Larry J. Sabato, ed., *Trumped: The 2016 Election that Broke all the Rules* (2017).

Larry J. Sabato, ed., *The Surge:2014's Big GOP Win and What It Means for the Next Presidential Election*, Ch. 12 (2015).

Larry J. Sabato, ed., *Barack Obama and the New America*, Ch. 12 (2013).

Barone, Kraushaar, McCutcheon & Trende, *The Almanac of American Politics 2014* (2013).

The Lost Majority: Why the Future of Government is up for Grabs – And Who Will Take It (2012).

PREVIOUS EXPERT TESTIMONY

Dickson v. Rucho, No. 11-CVS-16896 (N.C. Super. Ct., Wake County) (racial gerrymandering).

Covington v. North Carolina, No. 1:15-CV-00399 (M.D.N.C.) (racial gerrymandering).

NAACP v. McCrory, No. 1:13CV658 (M.D.N.C.) (early voting).

NAACP v. Husted, No. 2:14-cv-404 (S.D. Ohio) (early voting).

Ohio Democratic Party v. Husted, Case 15-cv-01802 (S.D. Ohio) (early voting).

Lee v. Virginia Bd. of Elections, No. 3:15-cv-357 (E.D. Va.) (early voting).

Feldman v. Arizona, No. CV-16-1065-PHX-DLR (D. Ariz.) (absentee voting).

A. Philip Randolph Institute v. Smith, No. 1:18-cv-00357-TSB (S.D. Ohio) (political gerrymandering).

Whitford v. Nichol, No. 15-cv-421-bbc (W.D. Wisc.) (political gerrymandering).

Common Cause v. Rucho, No. 1:16-CV-1026-WO-JEP (M.D.N.C.) (political gerrymandering).

Mecinas v. Hobbs, No. CV-19-05547-PHX-DJH (D. Ariz.) (ballot order effect).

Fair Fight Action v. Raffensperger, No. 1:18-cv-05391-SCJ (N.D. Ga.) (statistical analysis).

Pascua Yaqui Tribe v. Rodriguez, No. 4:20-CV-00432-TUC-JAS (D. Ariz.) (early voting).

COURT APPOINTMENTS

Appointed as Voting Rights Act expert by Arizona Independent Redistricting Commission

Appointed redistricting expert by the Supreme Court of Belize in *Smith v. Perrera*, No. 55 of 2019 (one-person-one-vote).

INTERNATIONAL PRESENTATIONS AND EXPERIENCE

Panel Discussion, European External Action Service, Brussels, Belgium, *Likely Outcomes of 2012 American Elections.*

Selected by U.S. Embassies in Sweden, Spain, and Italy to discuss 2016 and 2018 elections to think tanks and universities in area (declined Italy due to teaching responsibilities).

Selected by EEAS to discuss 2018 elections in private session with European Ambassadors.

TEACHING

American Democracy and Mass Media, Ohio Wesleyan University, Spring 2018.

Introduction to American Politics, The Ohio State University, Autumn 2018, 2019, 2020, Spring 2018.

Political Participation and Voting Behavior, Spring 2020, Spring 2021.

REAL CLEAR POLITICS COLUMNS

Full archives available at http://www.realclearpolitics.com/authors/sean_trende/

Exhibit 39

IN THE SUPREME COURT OF OHIO

League of Women Voters of Ohio, *et al.*, *Relators*, v. Ohio Redistricting Commission, *et al.,* *Respondents.*	Case No. 2021-1193

AFFIDAVIT OF RAYMOND E. DiROSSI

Now comes affiant Raymond E. DiRossi, having been first duly cautioned and sworn, deposes and states as follows:

1. My name is Raymond E. DiRossi. I am over the age of 18, competent to give this testimony, and have personal knowledge of the facts set forth herein.
2. I am the Director for Budget and Finance in the Ohio Senate.
3. I participated in drawing the final General Assembly district plan that was ultimately approved by the Ohio Redistricting Commission (the "Adopted Map"). In drawing the Adopted Map, I utilized geographic information system computer software by Caliper Corporation called Maptitude.
4. Among other things, once a user of Maptitude loads a block assignment file into Maptitude, the software allows a user to see how districts are configured, how they are numbered, whether districts are contiguous, and the population of districts.

5. The maps contained in this affidavit are all images that I captured from Maptitude while reviewing the below-referenced plans and districts in Maptitude, and are provided to illustrate the issues I uncovered with the plans. I marked up some screenshots with red circles, rectangles, or squares or black asterisks for demonstrative purposes; other than such red circles, rectangles, or squares or black asterisks, the maps contained in this affidavit are all true and accurate copies of what I viewed in Maptitude.

6. In addition to the redistricting cycle that is underway in 2021, I also actively participated in drawing Ohio's congressional and legislative maps that were ultimately approved in 2001 and 2011.

I. Analysis of Sykes Sept. 15th Plan.

7. During the final day of negotiations, Ohio Redistricting Commission members Senator Vernon Sykes and House Minority Leader Emilia Sykes offered a final proposed General Assembly district plan to the members of the Commission on September 15, 2021 ("Sykes Sept. 15th Plan"). The Sykes Sept. 15th Plan can be found here: https://redistricting.ohio.gov/assets/district-maps/district-map-172.zip.

8. While the Sykes Sept. 15th Plan was not adopted by the Commission, I was asked to analyze the Sykes Sept. 15th Plan, and have found that it appears to include a number of districts that were constructed in a manner that is inconsistent with the required rules set forth in Article XI of the Ohio Constitution.

9. To perform my analysis of the Sykes Sept. 15th Plan, I reviewed the block assignment files that Senator Sykes and Leader Sykes uploaded to the Ohio Redistricting Commission's website on September 15, 2021. I performed my review of the block assignment files by opening them in Maptitude. From there, I proceeded to review in Maptitude if every

county, township, or municipal corporation was assigned to districts properly, and if House districts and Senate districts were constructed properly.

A. <u>Sykes Senate Map.</u>

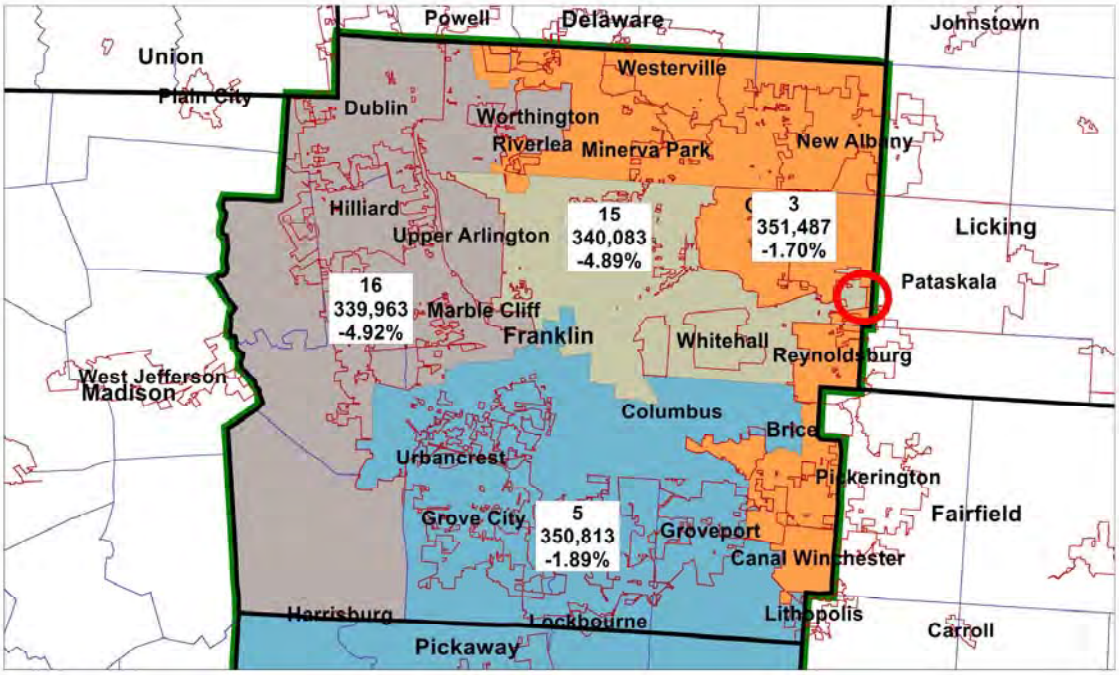
10. The Sykes Sept. 15th Plan includes a separate House and Senate Map ("Sykes House Map" and "Sykes Senate Map", respectively). The Sykes House Map and the Sykes Senate Map, offered by Senator Sykes and Leader Sykes, can be found here: https://www.redistricting.ohio.gov/assets/district-maps/district-map-172.zip

1. <u>Franklin County</u>

11. Section 4(A) of Article XI of the Ohio Constitution states that "Senate districts shall be composed of three contiguous house of representatives districts."

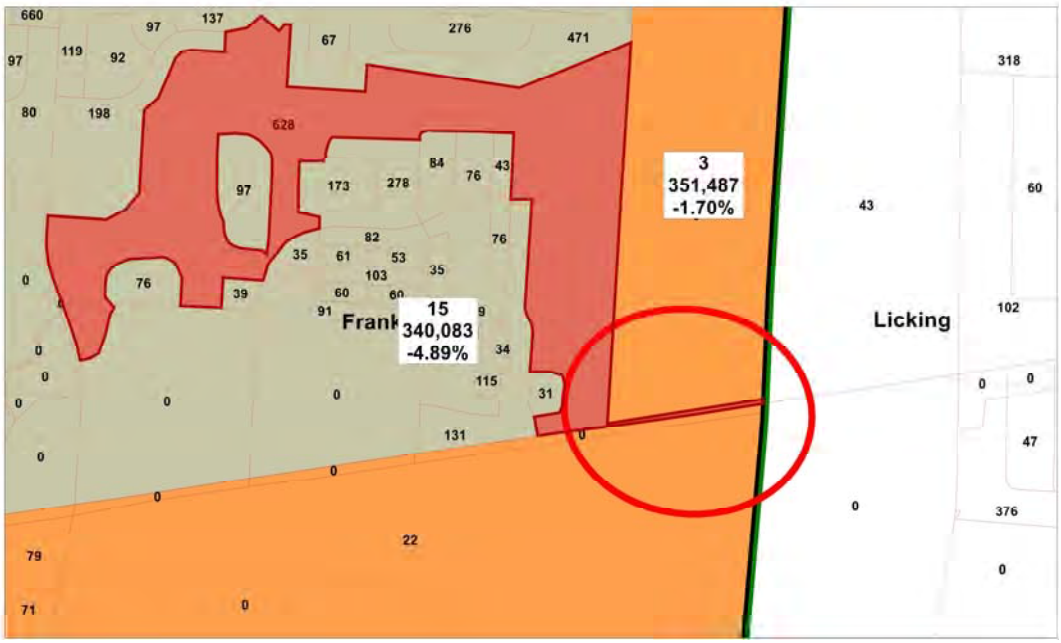
12. In addition, Section 3(B)(1) of Article XI of the Ohio Constitution states that "In no event shall any district contain a population of less than ninety-five per cent nor more than one hundred five per cent of the applicable ratio of representation."

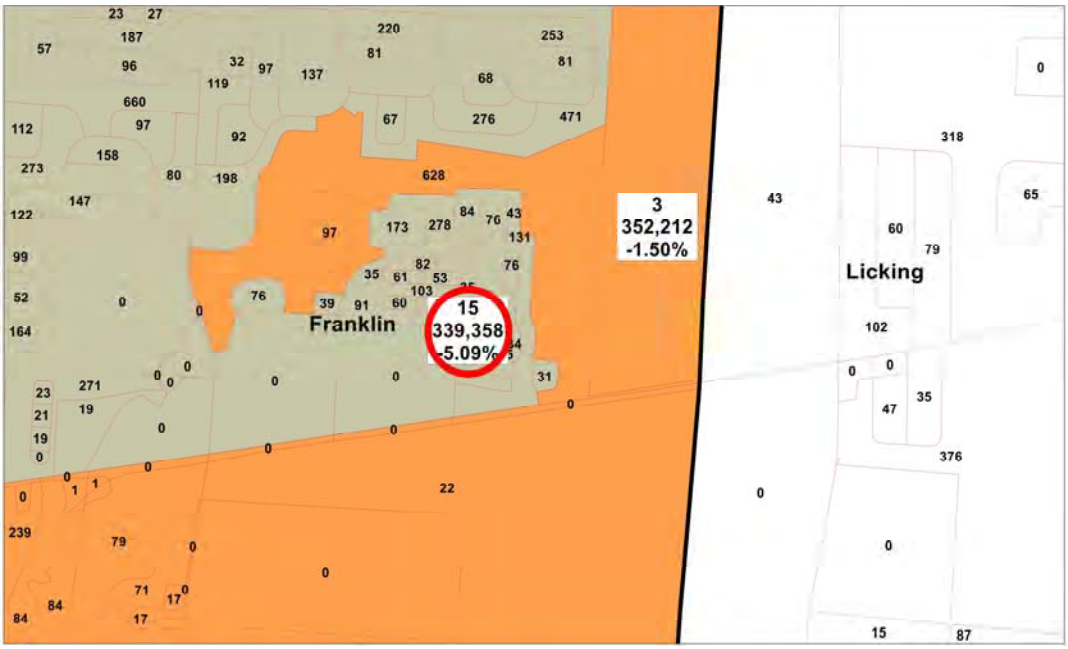
13. Senate District 3 in the Sykes Senate Map is located in Franklin County. The way that district is constructed appears to violate Section 4(A) in that it is not contiguous in that two census blocks currently assigned to Senate District 15, containing 725 people, bisect Senate District 3. Additionally, and as a result, the boundary of Senate District 3 in the Sykes Senate Map is not a single nonintersecting continuous line.


Powell
Delaware
Johnstown
Union
Plain City
Westerville
Dublin
Worthington
Riverlea
Minerva Park
New Albany
Hilliard
Upper Arlington
15
340,083
-4.89%
3
351,487
-1.70%
Licking
Pataskala
16
339,963
-4.92%
Marble Cliff
Franklin
Whitehall
Reynoldsburg
West Jefferson
Madison
Columbus
Bricel
Urbancrest
Pickerington
Fairfield
Grove City
5
350,813
-1.89%
Groveport
Canal Winchester
Harrisburg
Lockbourne
Lithopolis
Carroll
Pickaway

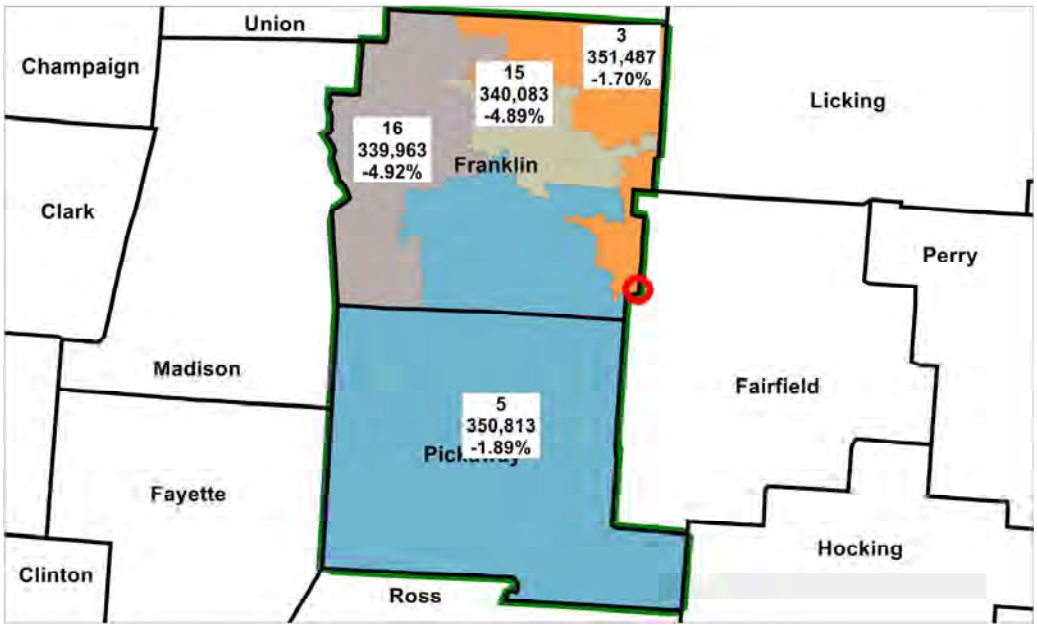
3
351,487
-1.70%
15
340,083
-4.89%
Licking

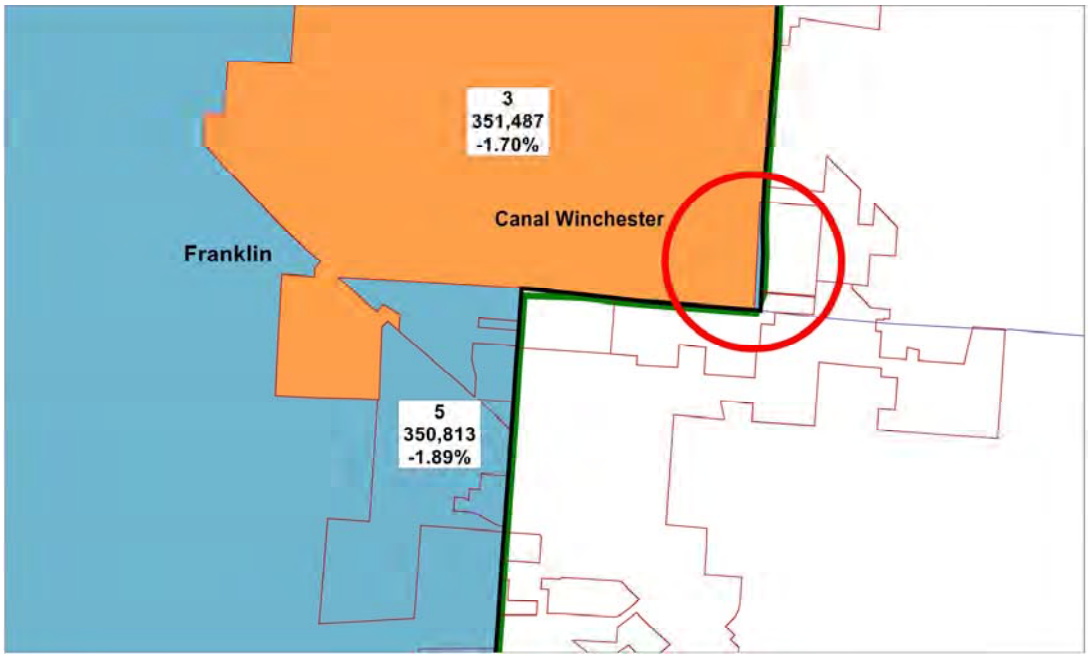
14. If the piece of Senate District 15, which bisects Senate District 3, is added into Senate District 3 to make it contiguous, it would appear to cause Senate District 15 to violate Section 3(B)(1) of Article XI of the Ohio Constitution, in that Senate District 15 would have less than ninety-five percent of the applicable ratio of representation.





15. Senate District 5 located in Franklin County in the Sykes Senate Map is also not contiguous. Part of Senate District 5 is located nowhere near the main portion of Senate District 5, and is instead surrounded by Senate District 3 in Franklin County and Senate District 20 in Fairfield County. Accordingly, Senate District 5 in the Sykes Senate Map is not a single nonintersecting continuous line.



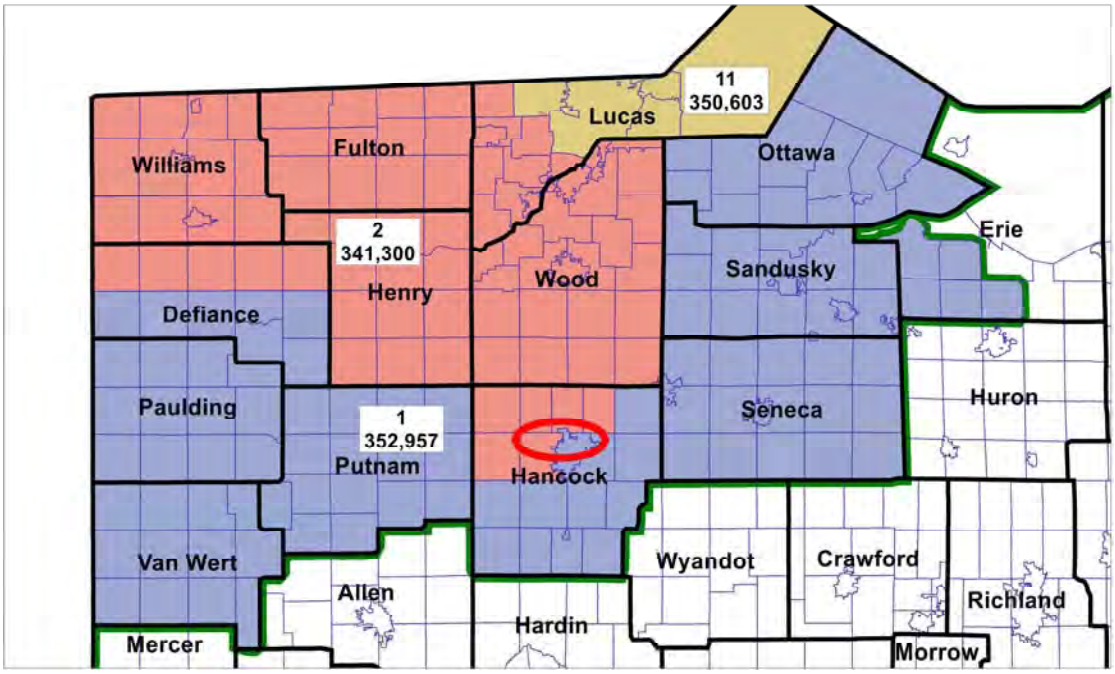


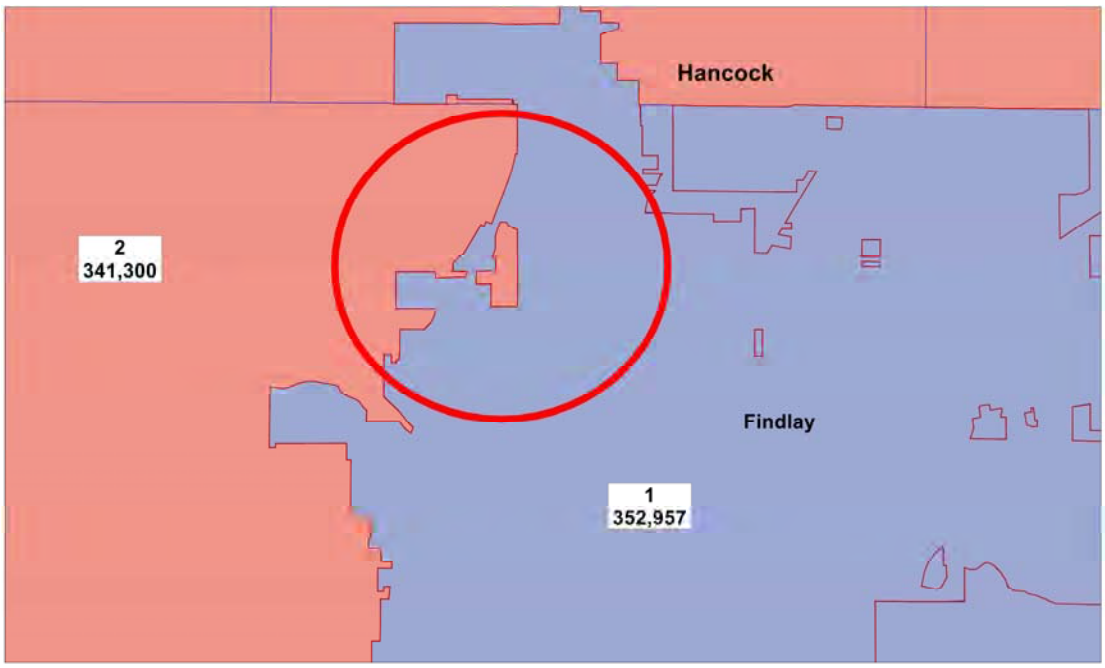
2. Hancock County.

16. Section 3(B)(3) of Article XI of the Ohio Constitution states that "Every general assembly district shall be composed of contiguous territory, and the boundary of each district shall be a single nonintersecting continuous line."

17. Similarly, Section 4(A) of Article XI of the Ohio Constitution, provides that "Senate districts shall be composed of three contiguous house of representatives districts."

18. Senate District 2 in the Sykes Senate Map appears to violate the contiguity requirement in Sections 3(B)(3) and 4(A), in that Senate District 2 is not contiguous. Specifically, Senate District 2 in the Sykes Senate Map would have 729 people completely surrounded by Senate District 1. This breaks contiguity, in that the boundary of Senate District 2 in the Sykes Senate Map is not a single nonintersecting continuous line.




Hancock
2
341,300
Findlay
1
352,957

3. Montgomery County.

19. Section 5 of Article XI of the Ohio Constitution states, in pertinent part:

> At any time the boundaries of senate districts are changed in any general assembly district plan made pursuant to any provision of this article, a senator whose term will not expire within two years of the time the plan becomes effective shall represent, for the remainder of the term for which the senator was elected, the senate district that contains the largest portion of the population of the district from which the senator was elected, **and the district shall be given the number of the district from which the senator was elected**.

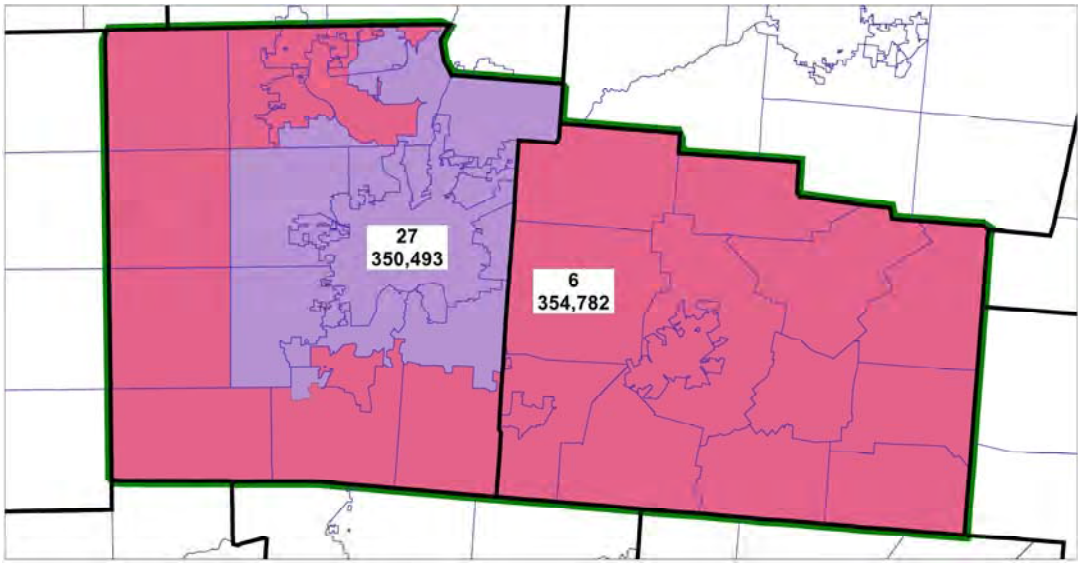
(emphasis added).

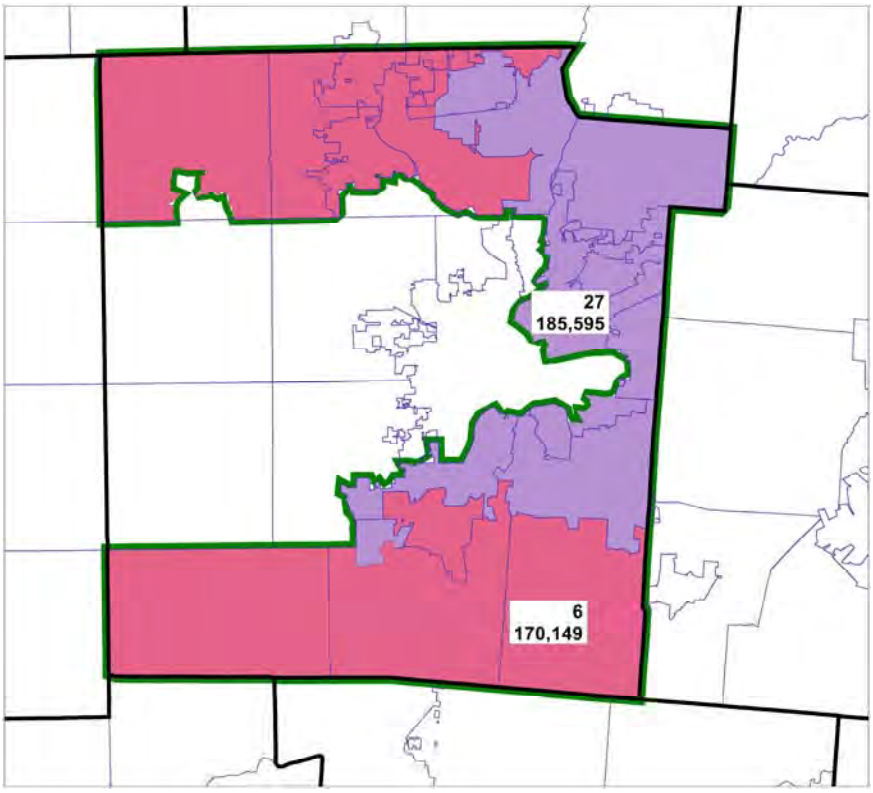
20. There are two Senate Districts currently located in Montgomery County: Senate District 5, representing a portion of Montgomery County, and Senate District 6, representing the remainder of Montgomery County. The current incumbent state senator was most recently elected to Senate District 6 in 2020, and will not run for re-election until 2024. As such, his term shall not expire within two years of the time that the Adopted Map became effective, and he retains the number of his current senate district (e.g. Senate District 6). In contrast, the next election for Ohio Senate District 27 is in 2022.

21. In the Sykes Senate Map, the current Senate District 6 is divided into two districts. The proposed Senate District 6 in the Sykes Senate Map contains 170,149 persons from the current Senate District 6. The proposed Senate District 27 in the Sykes Senate Map contains 185,595 persons from the current Senate District 6.

22. As such, the senate district that contains the largest portion of the population of current Senate District 6 was incorrectly assigned in the Sykes Senate Plan as Senate District 27, rather than Senate District 6. What this means is that the Sykes Senate Map would prevent the current duly elected senator from Senate District 6 from serving out the senator's full four-year term in the correct Senate district. Accordingly, the Sykes Senate Map's

numbering of Senate Districts 6 and 27 appears to violate Article XI, Sec. 5 of the Ohio Constitution.



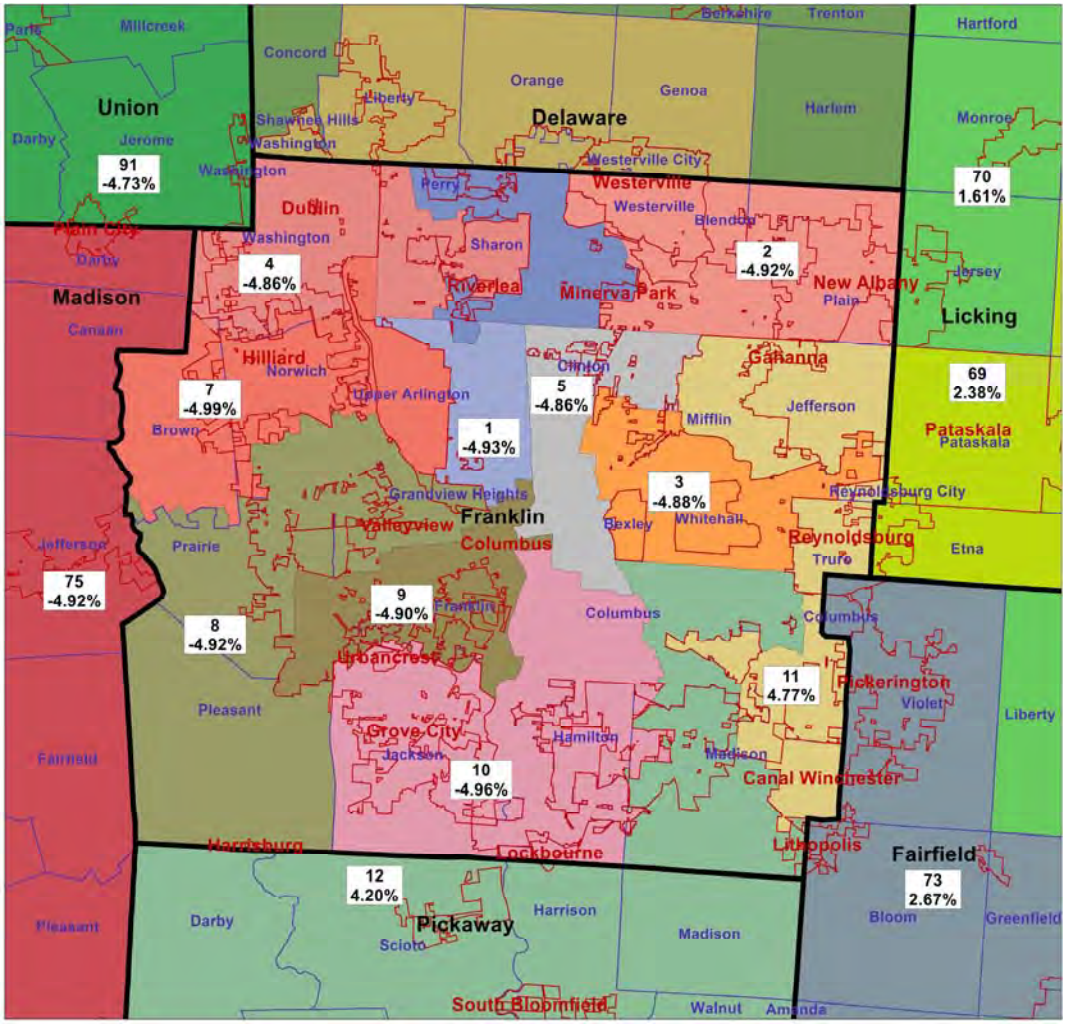


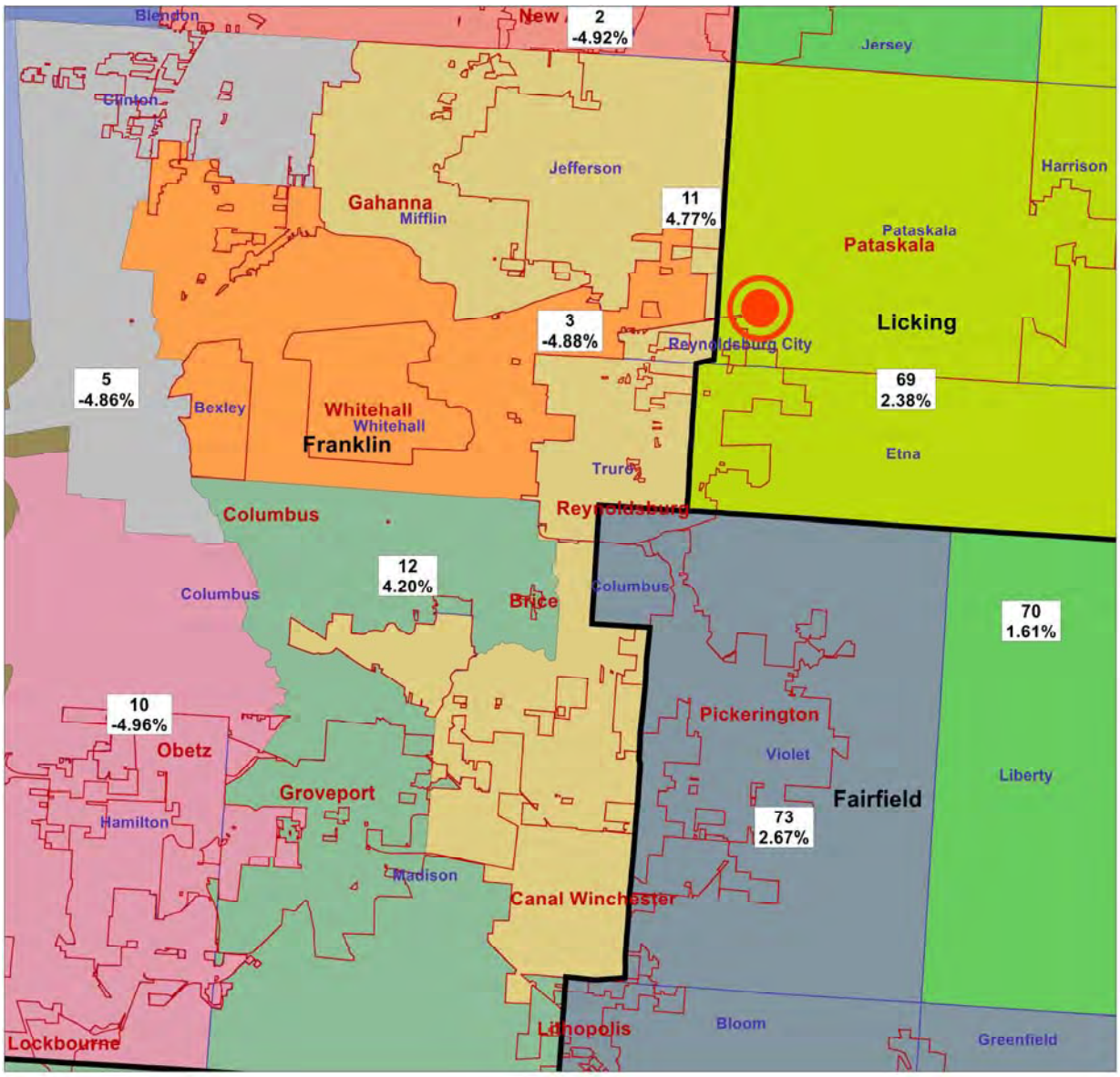
B. Sykes House Map

1. Franklin County

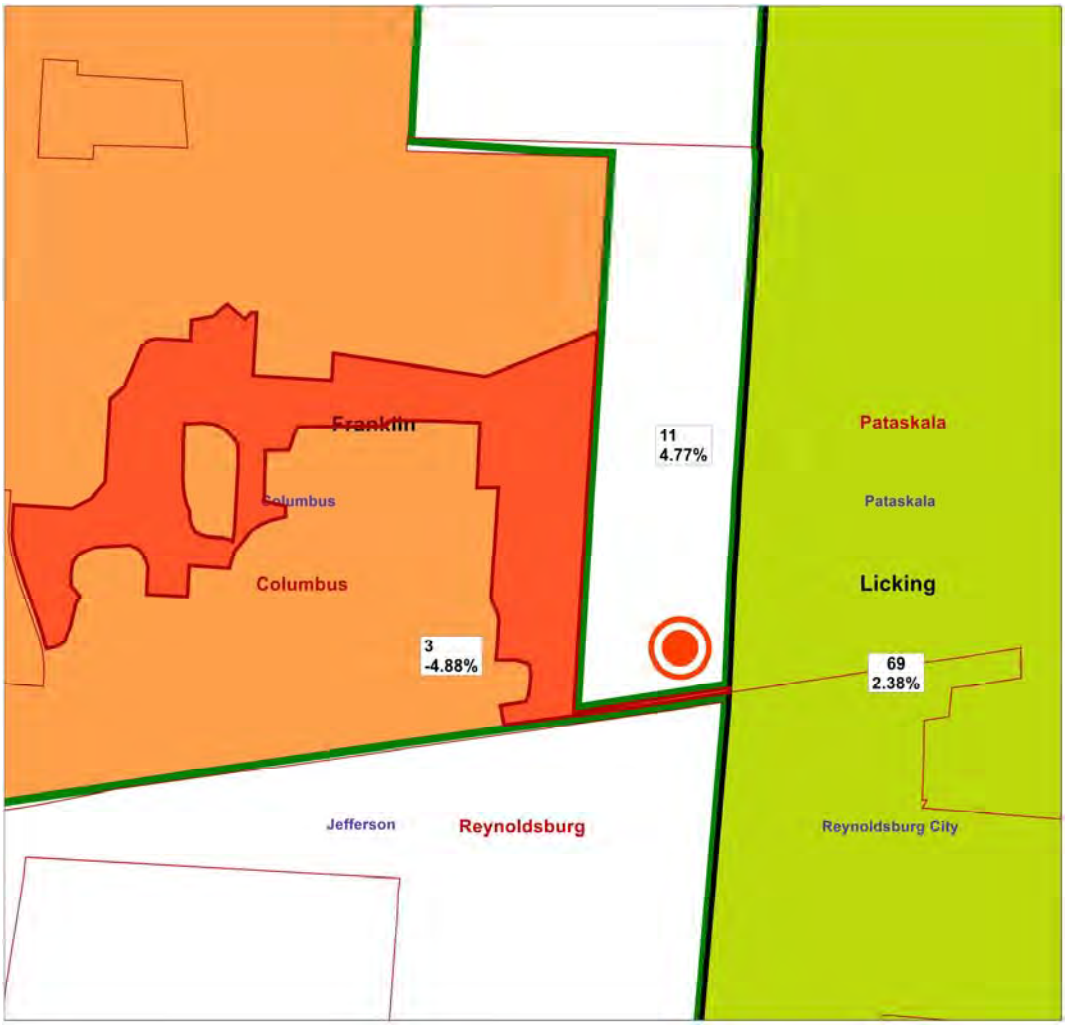
23. Section 3(B)(3) of Article XI of the Ohio Constitution provides that "Every general assembly district shall be composed of contiguous territory, and the boundary of each district shall be a single nonintersecting continuous line."

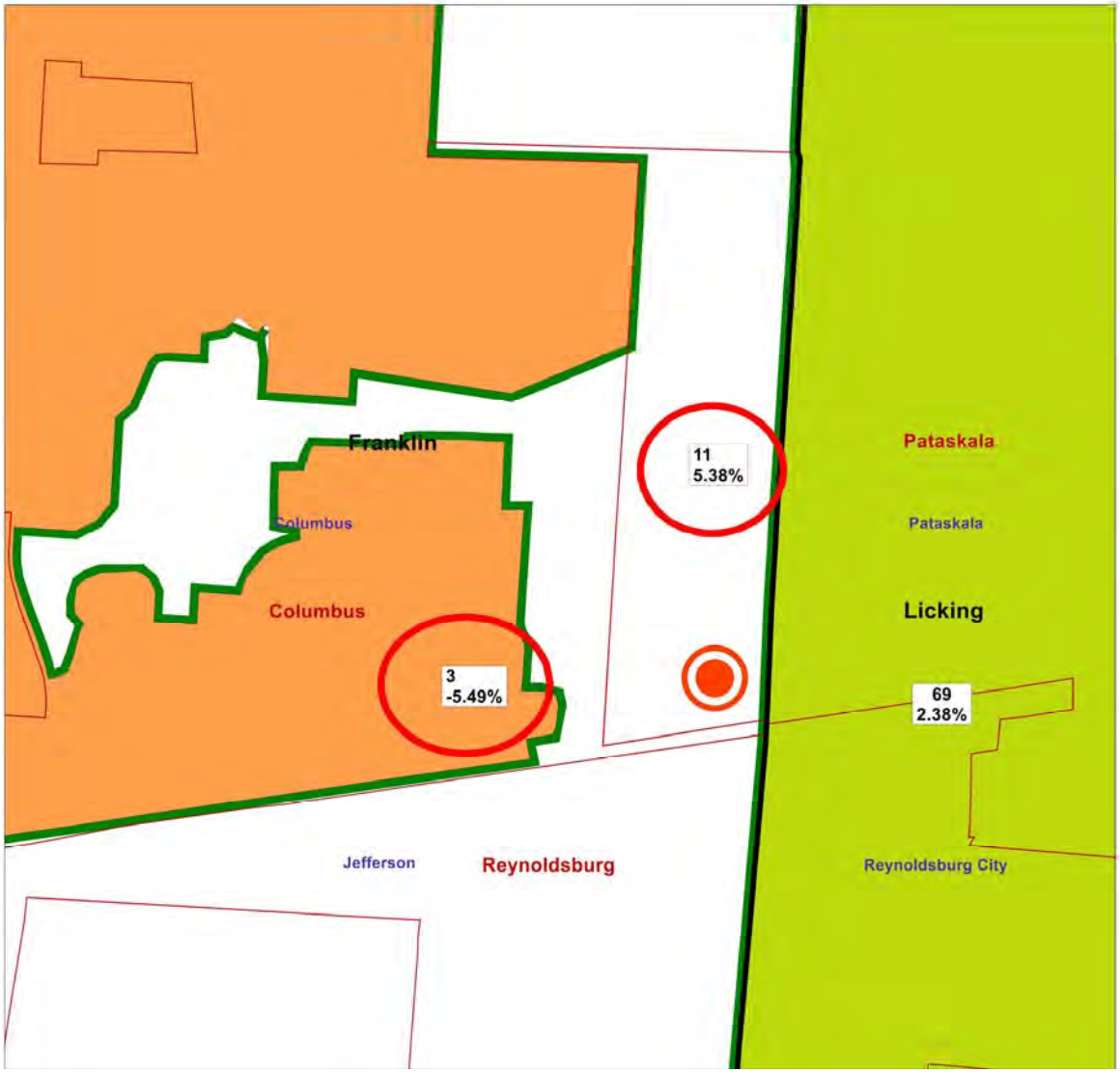
24. In the Sykes House Map, House Districts 3 and 11 are fully located in Franklin County. House District 11, however, is not contiguous due to a part of House District 3, composed of 725 people, bisecting House District 11. This breaks contiguity, in that the boundary of House District 11 in the Sykes House Map is not a single nonintersecting continuous line.



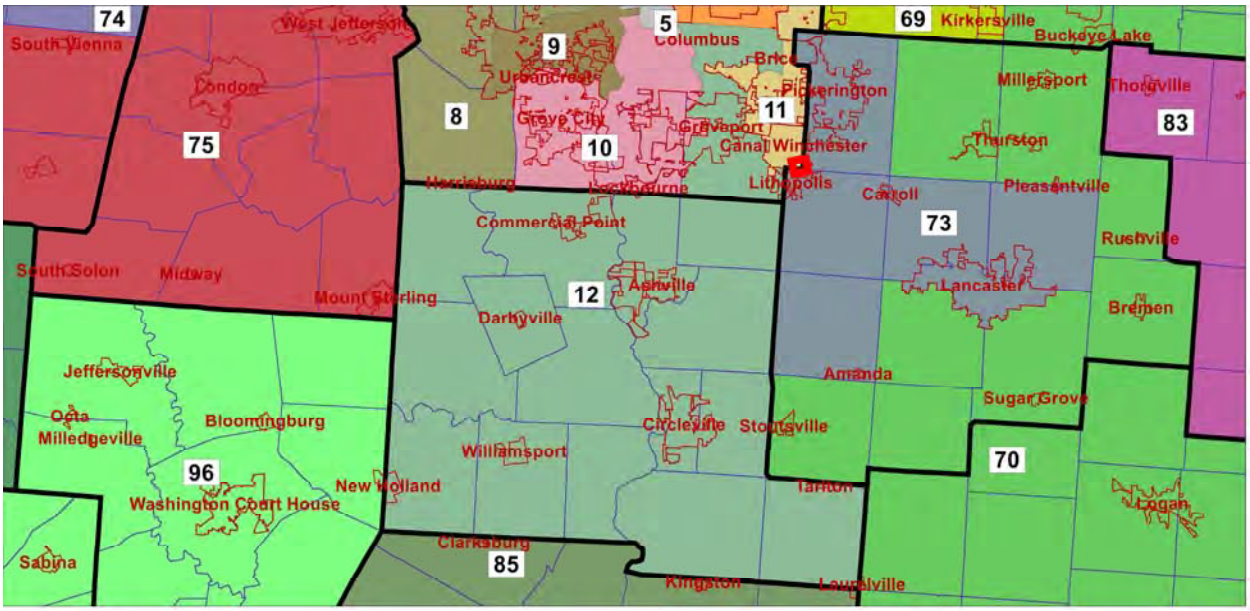

Blendon
New
2
-4.92%
Jersey
Clinton
Jefferson
Harrison
Gahanna
Mifflin
11
4.77%
Pataskala
Pataskala
Licking
3
-4.88%
Reynoldsburg City
5
-4.86%
Bexley
Whitehall
Whitehall
Franklin
69
2.38%
Etna
Truro
Columbus
Reynoldsburg
12
4.20%
Columbus
Brice
Columbus
70
1.61%
10
-4.96%
Obetz
Pickerington
Violet
Liberty
Groveport
Fairfield
Hamilton
73
2.67%
Madison
Canal Winchester
Lithopolis
Bloom
Greenfield
Lockbourne

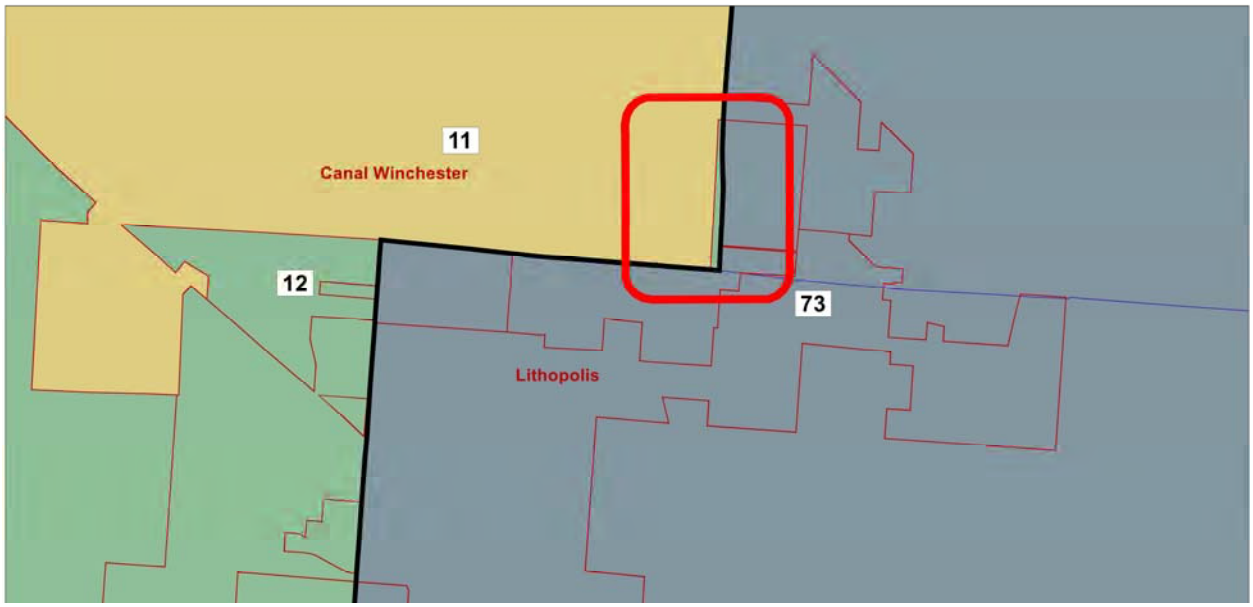
25. In addition, if the piece of House District 3, which bisects House District 11, is added into House District 11, that would appear to cause House District 3 and House District 11 to both violate Section 3(B)(1) of Article XI, of the Ohio Constitution. In this case, House District 11 would have greater than one hundred and five percent of the applicable ratio of representation, while House District 3 would have less than ninety-five percent of the applicable ratio of representation.




Franklin
Columbus
Columbus
3
-5.49%
11
5.38%
Pataskala
Pataskala
Licking
69
2.38%
Jefferson
Reynoldsburg
Reynoldsburg City

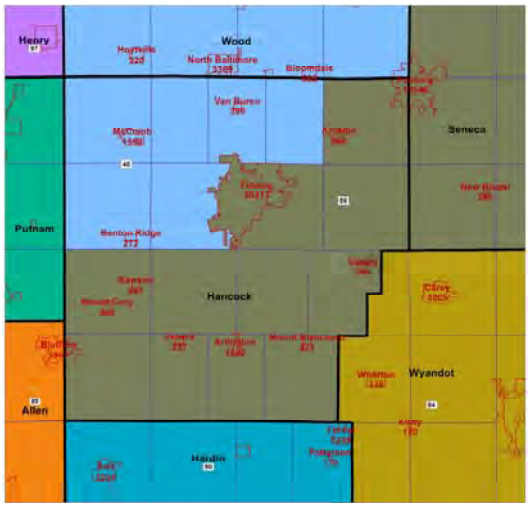
26. Also, part of House District 12 in the Sykes House Map is located in Franklin County. However, part of House District 12 is surrounded by House District 11 in Franklin County and House District 73 in Fairfield County, breaking contiguity. As such, the boundary of House District 12 in the Sykes House Map is not a single nonintersecting continuous line and likely in violation of Section 3(B)(3) of Article XI of the Ohio Constitution.

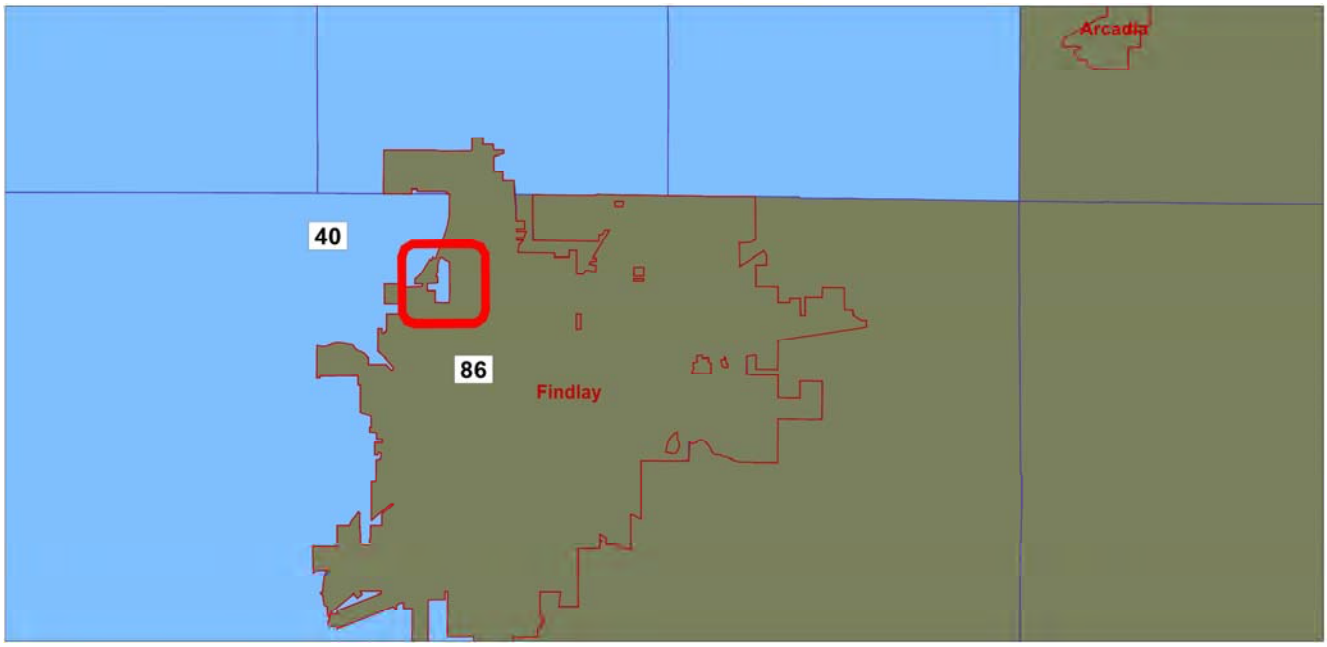




2. Hancock County.

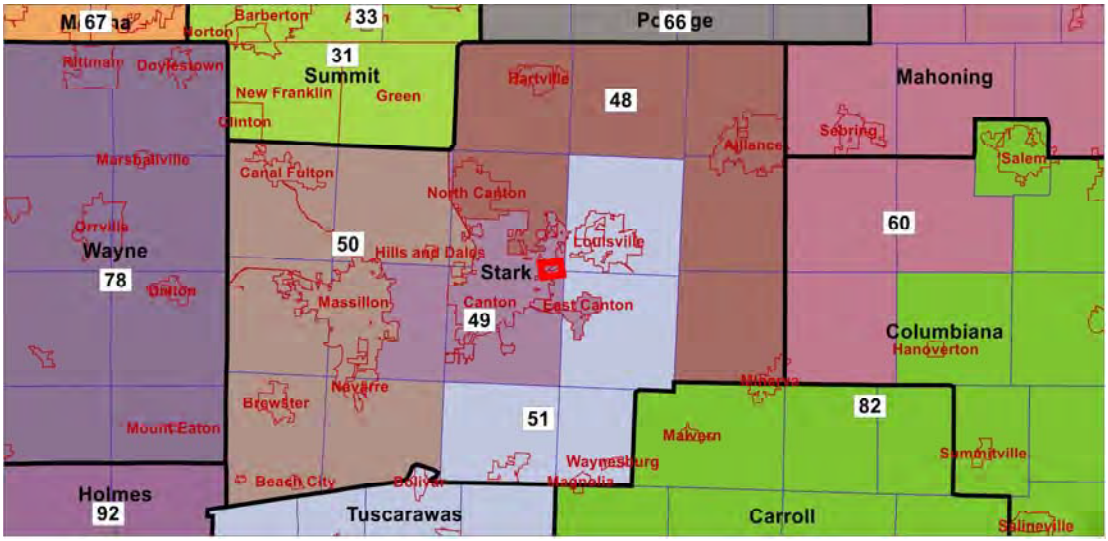
27. In the Sykes House Map, Hancock County is split between House District 40 and House District 86. House District 40, however, appears to violate the contiguity requirement in Section 3(B)(3) of Article XI of the Ohio Constitution, in that House District 40 is not contiguous. Specifically, a portion of House District 40 is surrounded by House District 86; that portion contains 729 people. This breaks contiguity, in that the boundary of House District 40 in the Sykes House Map is not a single nonintersecting continuous line.

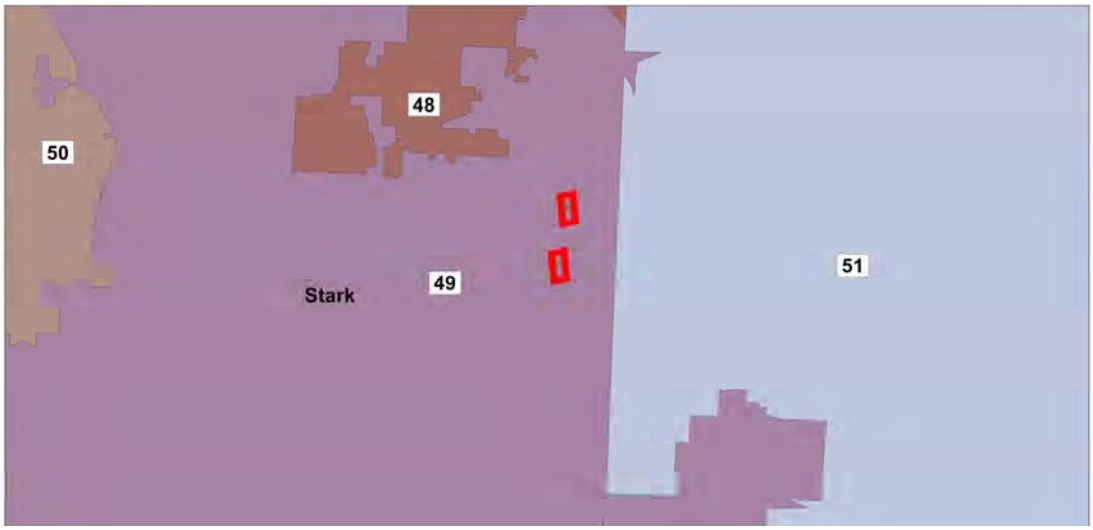


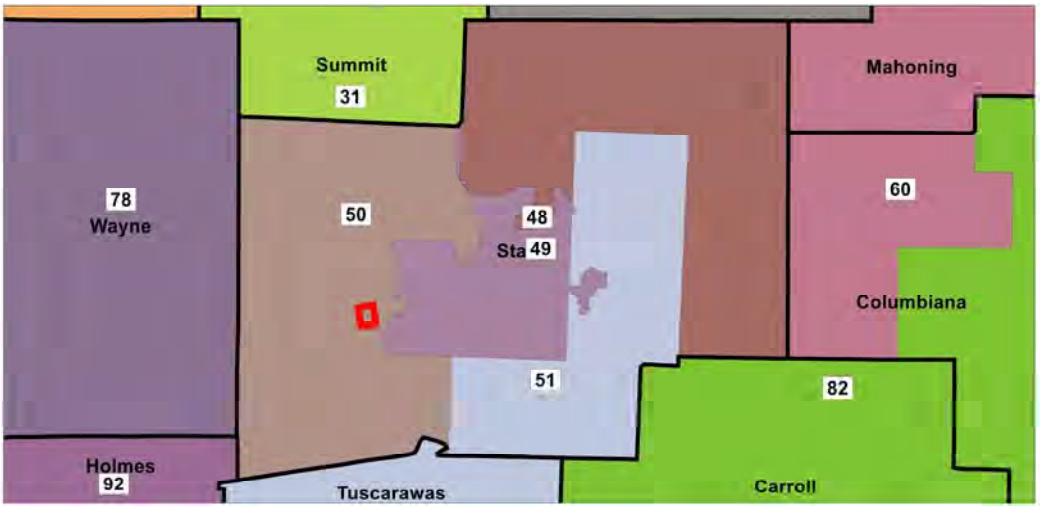


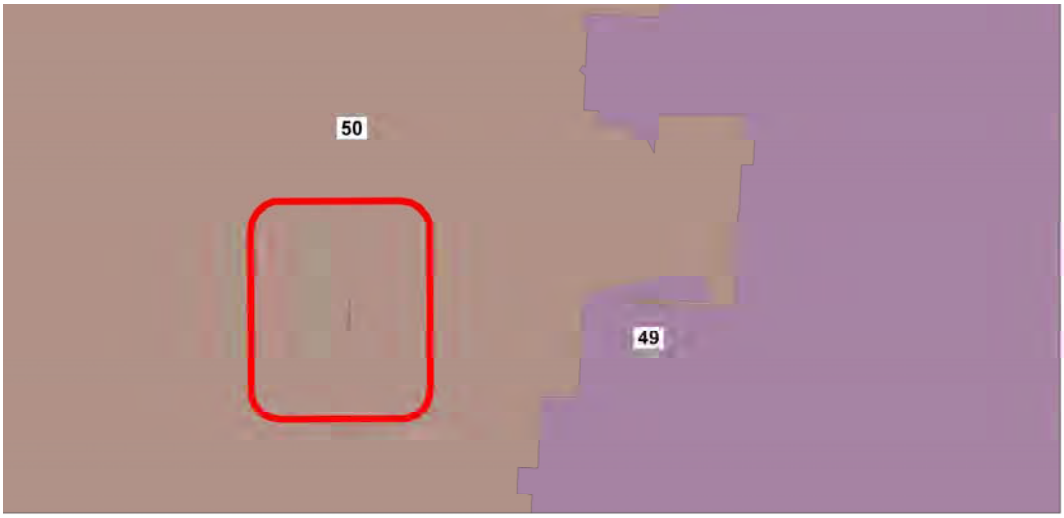
3. Stark County.

28. In the Sykes House Map, Stark County is composed of House Districts 48, 49, 50, and part of 51. House Districts 48 and 49 both appear to violate the contiguity requirements in Section 3(B)(3) of Article XI of the Ohio Constitution, in that neither district is contiguous. A portion of House District 49 is surrounded by House District 50. Additionally, portions of House District 48 are surrounded by House District 49.



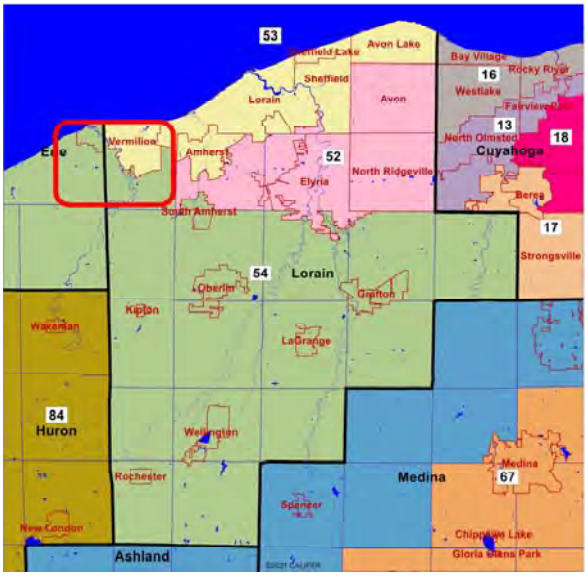


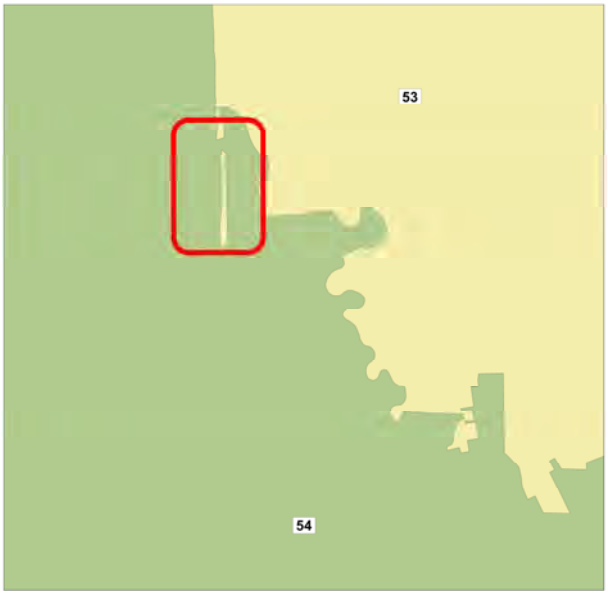

Summit
31
Mahoning
78
Wayne
50
48
Sta 49
60
Columbiana
51
82
Holmes
92
Tuscarawas
Carroll


50
49

4. Lorain County

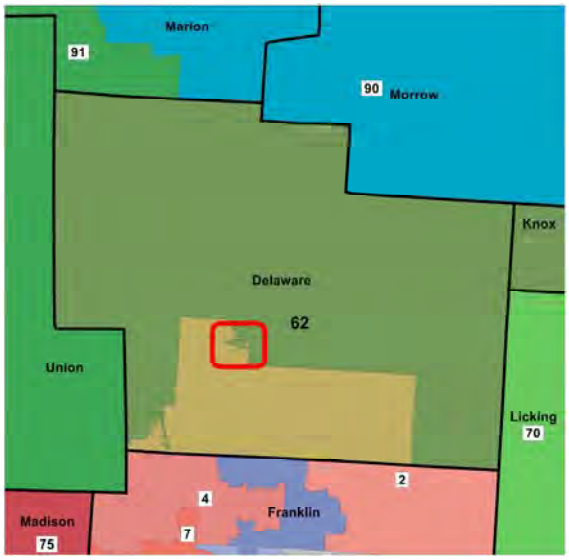
29. In the Sykes House Map, Lorain County is composed of House Districts 52, 53, and part of 54. House District 53 appear to violate the contiguity requirements in Section 3(B)(3) of Article XI of the Ohio Constitution, in that the district is not contiguous. Portions of House District 53 are surrounded by House District 54; those portions contain 61 people. This breaks contiguity, in that the boundary of House District 53 in the Sykes House Map is not a single nonintersecting continuous line.

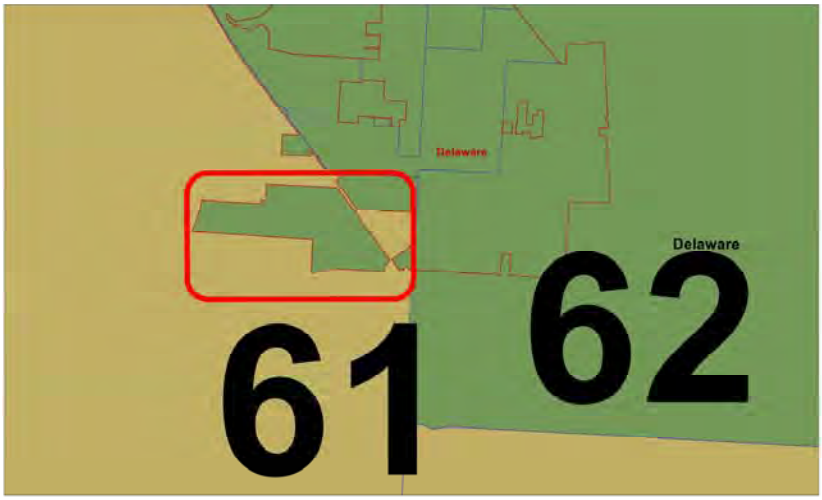




5. Delaware County

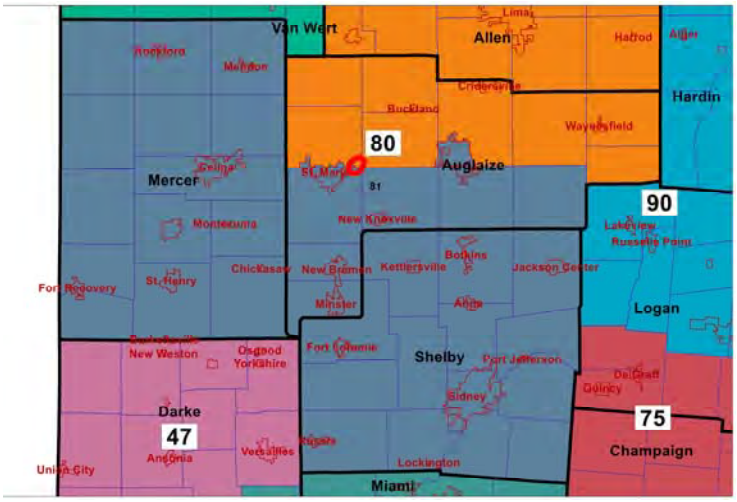
30. In the Sykes House Map, Delaware County is composed of House Districts 61 and part of 62. House District 62 appears to violate the contiguity requirements in Section 3(B)(3) of Article XI of the Ohio Constitution, in that the district is not contiguous. A portion of House District 62 is surrounded by House District 61; that portion contains 8 people. This breaks contiguity, in that the boundary of House District 62 in the Sykes House Map is not a single nonintersecting continuous line.

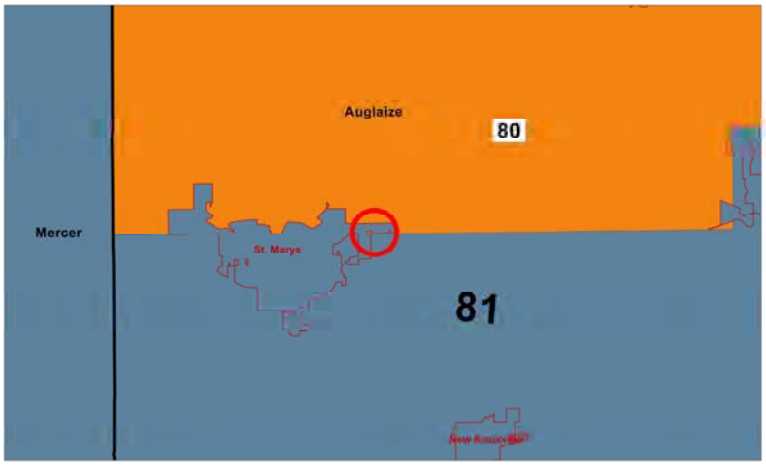


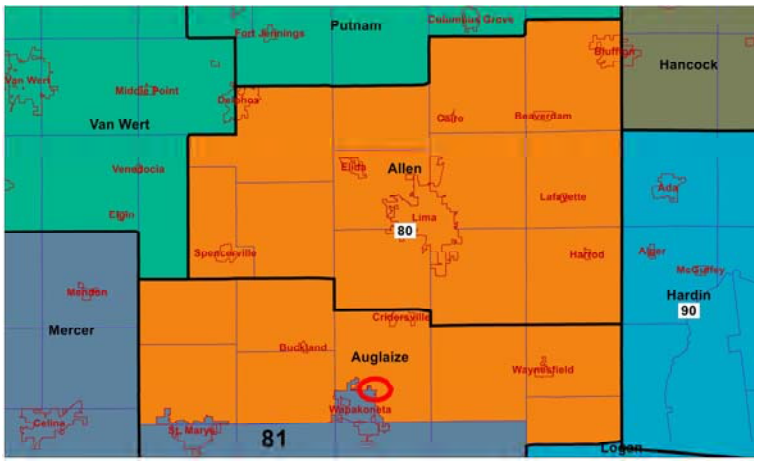


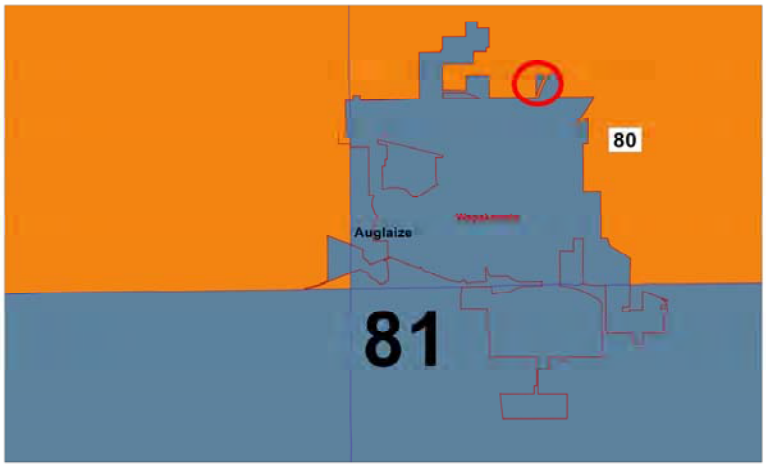
6. Auglaize County.

31. In the Sykes House Map, Auglaize County is split between House Districts 80 and 81. Both House Districts 80 and 81 appear to violate the contiguity requirements in Section 3(B)(3) of Article XI of the Ohio Constitution, in that neither district is contiguous. Portions of House District 80 are surrounded by House District 81. Additionally, a portion of House District 81 is surrounded by House District 80. This breaks contiguity, in that the boundaries of neither House District 80 nor 81 in the Sykes House Map are a single nonintersecting continuous line.






Putnam
Hancock
Van Wert
Allen
Mercer
Auglaize
Hardin
Logan
80
90
81


80
Auglaize
81

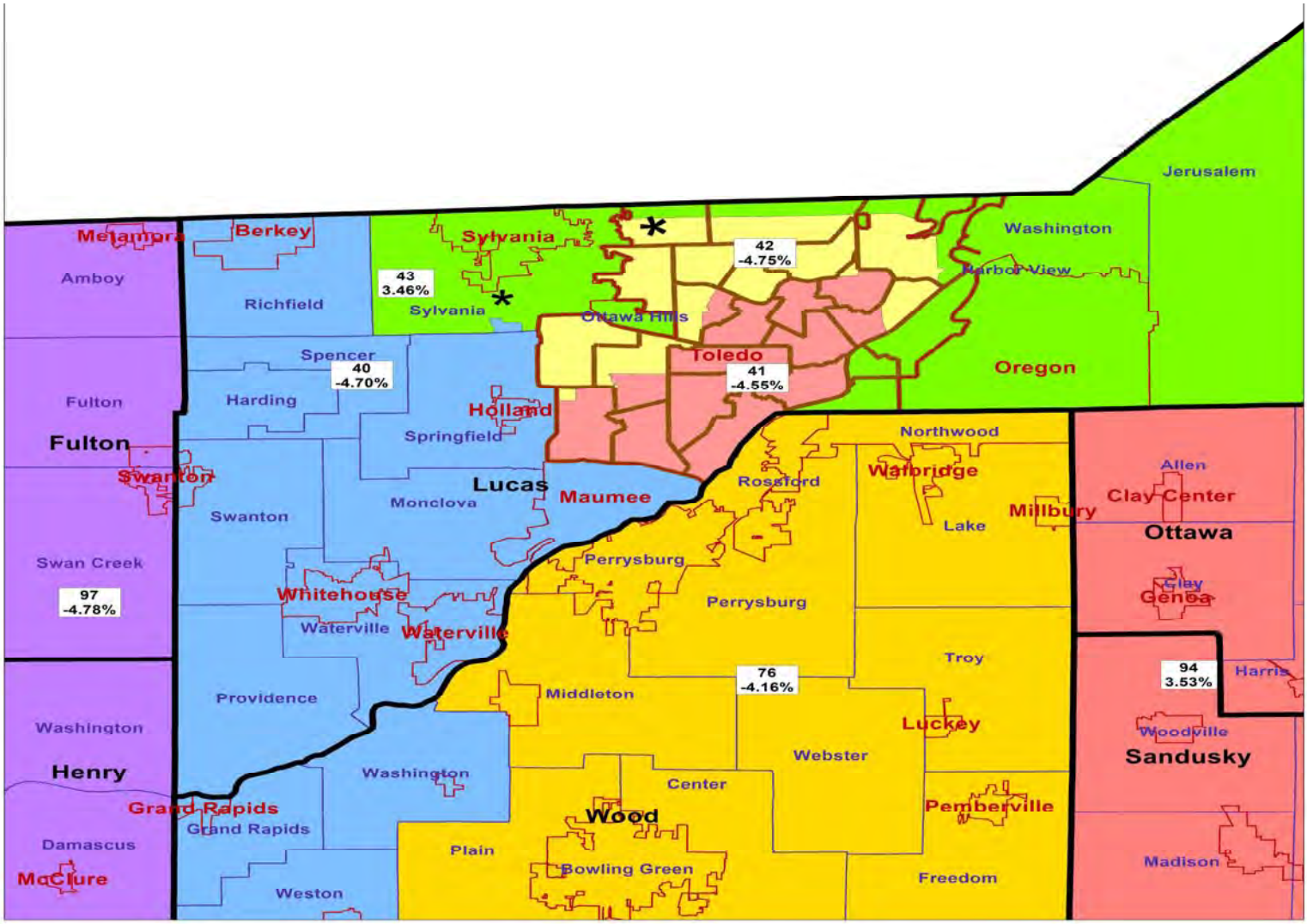
7. Lucas and Wood Counties.

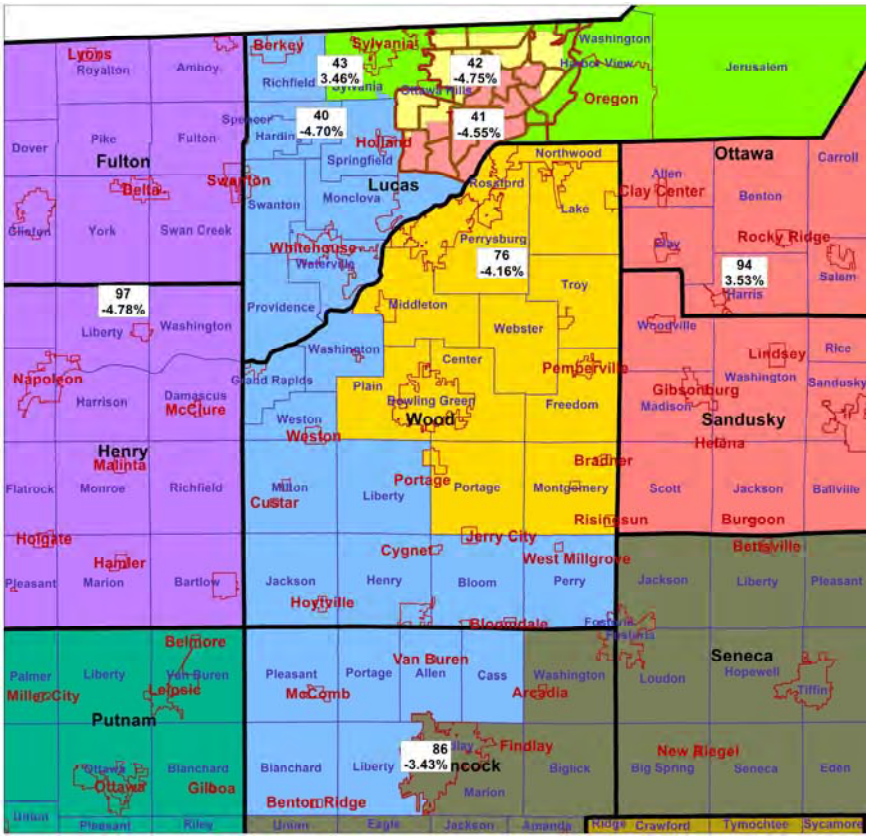
32. Section 3(D)(3) of Article XI of the Ohio Constitution provides:

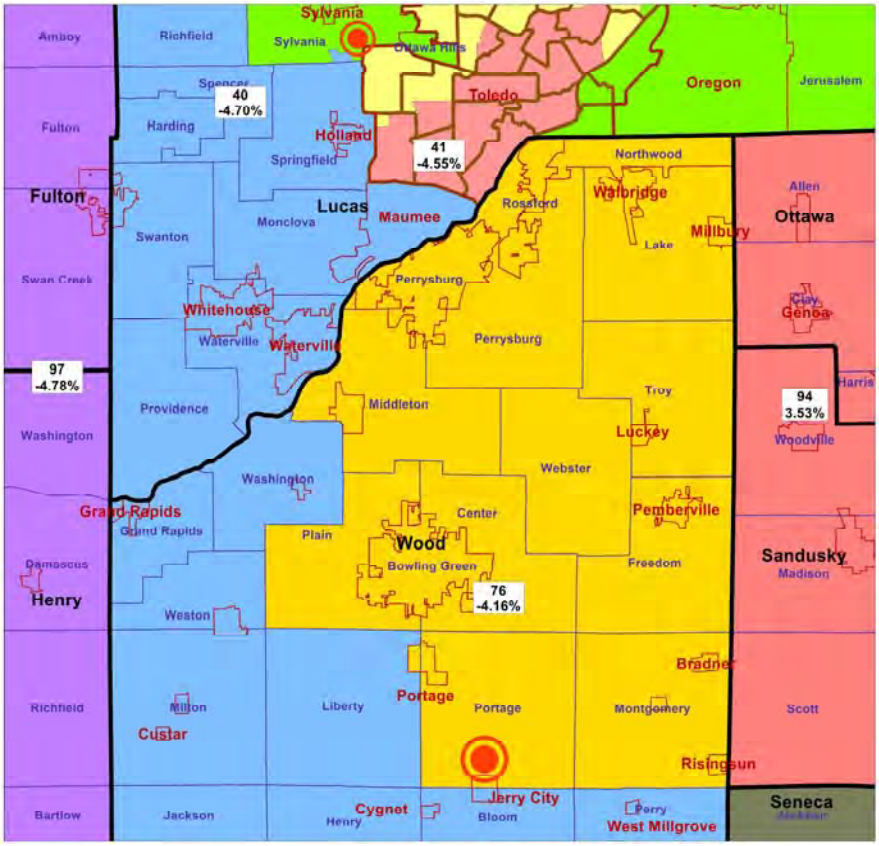
> Where the requirements of divisions (B), (C), and (D) of this section cannot feasibly be attained by forming a representative district from whole municipal corporations and townships, **not more than one municipal corporation or township may be split per representative district**.

(emphasis added).

33. In the Sykes House Map, Lucas County is composed of House Districts 41, 42, 43, and part of 40, which continues into Wood County. House District 43 appears to violate Section 3(D)(3) by splitting both Toledo (municipal corporation) and Sylvania Township (township) in the same district. Likewise, House District 40 appears to violate Section 3(D)(3) by splitting Sylvania Township (township/Lucas County) and Jerry City (municipal corporation/Wood County). As such, both House District 40 and 43 split more than one municipal corporation or township in each respective district.


Jerusalem
Washington
Harbor View
Oregon
Sylvania
Berkey
Melmore
Amboy
Richfield
43
3.46%
Sylvania
42
-4.75%
Ottawa Hills
Toledo
41
-4.55%
Spencer
40
-4.70%
Harding
Holland
Springfield
Fulton
Fulton
Swanton
Swanton
Monclova
Lucas
Maumee
Northwood
Rossford
Walbridge
Lake
Millbury
Allen
Clay Center
Ottawa
Swan Creek
97
-4.78%
Perrysburg
Perrysburg
Whitehouse
Waterville
Waterville
Clay
Genoa
Troy
76
-4.16%
Middleton
Providence
Luckey
Webster
Harris
94
3.53%
Woodville
Sandusky
Washington
Henry
Washington
Center
Wood
Pemberville
Grand Rapids
Grand Rapids
Damascus
Plain
Bowling Green
Freedom
Madison
McClure
Weston


Lyons
Royalton
Amboy
Berkey
Sylvania
43
3.46%
42
-4.75%
Washington
Harbor View
Jerusalem
Richfield
Sylvania
Ottawa Hills
Oregon
40
-4.70%
41
-4.55%
Spencer
Hardin
Holland
Dover
Pike
Fulton
Fulton
Springfield
Northwood
Ottawa
Carroll
Belta
Swanton
Lucas
Rossford
Allen
Clay Center
Benton
Swanton
Monclova
Lake
Glandorf
York
Swan Creek
Whitehouse
Perrysburg
Rocky Ridge
Waterville
76
-4.16%
94
3.53%
Harris
Salem
97
-4.78%
Providence
Middleton
Troy
Liberty
Washington
Webster
Woodville
Washington
Center
Lindsey
Rice
Napoleon
Grand Rapids
Pemberville
Washington
Sandusky
Harrison
Damascus
McClure
Plain
Bowling Green
Freedom
Gibsonburg
Madison
Weston
Wood
Sandusky
Weston
Helena
Henry
Malinta
Bradner
Flatrock
Monroe
Richfield
Milton
Portage
Portage
Montgomery
Scott
Jackson
Ballville
Custar
Liberty
Risingsun
Burgoon
Holgate
Jerry City
Cygnet
Bettsville
Hamler
West Millgrove
Pleasant
Marion
Bartlow
Jackson
Henry
Bloom
Perry
Jackson
Liberty
Pleasant
Hoytville
Bloomdale
Belmore
Van Buren
Seneca
Palmer
Liberty
Van Buren
Pleasant
Portage
Allen
Cass
Washington
Loudon
Hopewell
Miller City
Leipsic
McComb
Arcadia
Tiffin
Putnam
86
-3.43%
Findlay
New Riegel
Ottawa
Blanchard
Blanchard
Liberty
Bigick
Big Spring
Seneca
Eden
Ottawa
Gilboa
Marion
Benton Ridge
Union
Pleasant
Riley
Union
Eagle
Jackson
Amanda
Ridge
Crawford
Tymochtee
Sycamore


Amboy
Richfield
Sylvania
Sylvania
Ottawa Hills
Toledo
Oregon
Jerusalem
Spencer
40
-4.70%
Fulton
Harding
Holland
41
-4.55%
Springfield
Northwood
Fulton
Lucas
Maumee
Rossford
Walbridge
Allen
Ottawa
Monclova
Millbury
Swanton
Lake
Swan Creek
Perrysburg
Whitehouse
Genoa
Waterville
Waterville
Perrysburg
97
-4.78%
Troy
94
3.53%
Harris
Providence
Middleton
Luckey
Washington
Woodville
Webster
Washington
Grand Rapids
Pemberville
Grand Rapids
Center
Plain
Wood
Sandusky
Damascus
Bowling Green
Freedom
Madison
Henry
76
-4.16%
Weston
Bradner
Portage
Richfield
Milton
Liberty
Portage
Montgomery
Scott
Custar
Risingsun
Jerry City
Bartlow
Jackson
Cygnet
Bloom
Perry
Seneca
Henry
West Millgrove

II. Ohio Citizens Redistricting Commission Plan.

34. I was also asked to analyze two separate plans that were offered by a person named Jeniece Brock on the Ohio Redistricting Commission's website. This person uploaded the plans on behalf of something named the "Ohio Citizens Redistricting Commission" (the "OCRC"). The first plan can be found here: https://www.redistricting.ohio.gov/assets/district-maps/district-map-134.zip. ("Plan 134"). The second plan can be found here: https://www.redistricting.ohio.gov/assets/district-maps/district-map-166.zip. ("Plan 166"). Like with the Sykes Sept. 15th Plan, I loaded Plans 134 and 166 into Maptitude through the block assignment files that the OCRC separately uploaded to the Commission's website, and proceeded to review in Maptitude if every county, township, or municipal corporation was assigned to districts properly, and if House districts and Senate districts were constructed properly. Both Plan 134 and Plan 166 appear to contain a significant number of likely constitutional violations.

35. Section 3(C)(1) of Article XI of the Ohio Constitution states as follows:

> House of representatives districts **shall be created and numbered** in the following order of priority, to the extent that such order is consistent with the foregoing standards:

(emphasis added).

36. Similarly, Section 4(D) of Article XI of the Ohio Constitution states as follows:

> Senate districts **shall be numbered** from one through thirty-three and as provided in Section 5 of this article.

(emphasis added).

37. In Plan 134, house and senate districts are named instead of numbered – for instance "Lorain_A, Lorain_B and Lorain_Erie". Plan 134 does not assign a number to a single

House District or Senate District. Thus, it appears that Plan 134 violates either Section 3(C)(1) or 4(D) of Article XI of the Ohio Constitution regarding district numbering.

38. In Plan 166, the lack of any numbering of districts appears to be fixed upon first glance. However, in the Senate Map, it appears that Section 5 of Article XI of the Ohio Constitution was seemingly ignored because there appear to be at least nine (9) Section 5 numbering violations in the Senate Map. These include:

1) Senate District 5 should be Senate District 6;
2) Senate District 9 should be Senate District 8;
3) Senate District 1 should be Senate District 12;
4) Senate District 26 should be Senate District 16;
5) Senate District 17 should be Senate District 20;
6) Senate District 27 should be Senate District 22;
7) Senate District 23 should be Senate District 24;
8) Senate District 22 should be Senate District 26; and
9) Senate District 31 should be Senate District 30

39. Section 3(D)(3) of Article XI of the Ohio Constitution states as follows:

> Where the requirements of divisions (B), (C), and (D) of this section cannot feasibly be attained by forming a representative district from whole municipal corporations and townships, **not more than one municipal corporation or township may be split per representative district**.

(emphasis added).

HC_0729

40. Plan 134 appears to violate the Ohio Constitution's rule on splitting more than one contiguous portion of either a municipal corporation or a township in the following seventy (70) house districts[1]:

1) The district numbered "Clermont_A" splits 2 municipal corporations/townships: Pierce Township & Goshen Township in Clermont County.

2) The district numbered "Clermont_Bro" splits 6 municipal corporations/townships: Pierce Township and Goshen Township in Clermont County; and Scott Township, Franklin Township, Jackson Township and Washington Township in Brown County.

3) The district numbered "Lawrence_Jac" splits 5 municipal corporations/townships: Milton Township, Bloomfield Township, Franklin Township, Lick Township and Jefferson Township in Jackson County.

4) The district numbered "Ross_Jackson" splits 11 municipal corporations/townships: Milton Township, Bloomfield Township, Franklin Township, Lick Township and Jefferson Township in Jackson County; and Liberty Township, Springfield Township, Green Township, Union Township, Deerfield Township and Concord Township in Ross County.

5) The district numbered "Fairfield_Ro" splits 12 municipal corporations/townships: Liberty Township, Springfield Township, Green Township, Union Township, Deerfield Township and Concord Township in Ross County; and Pleasant Township, Berne Township, Hocking Township, Greenfield Township, Liberty Township and Violet Township in Fairfield County.

6) The district numbered "Fairfield_A" splits 6 municipal corporations/townships: Pleasant Township, Berne Township, Hocking Township, Greenfield Township, Liberty Township and Violet Township in Fairfield County.

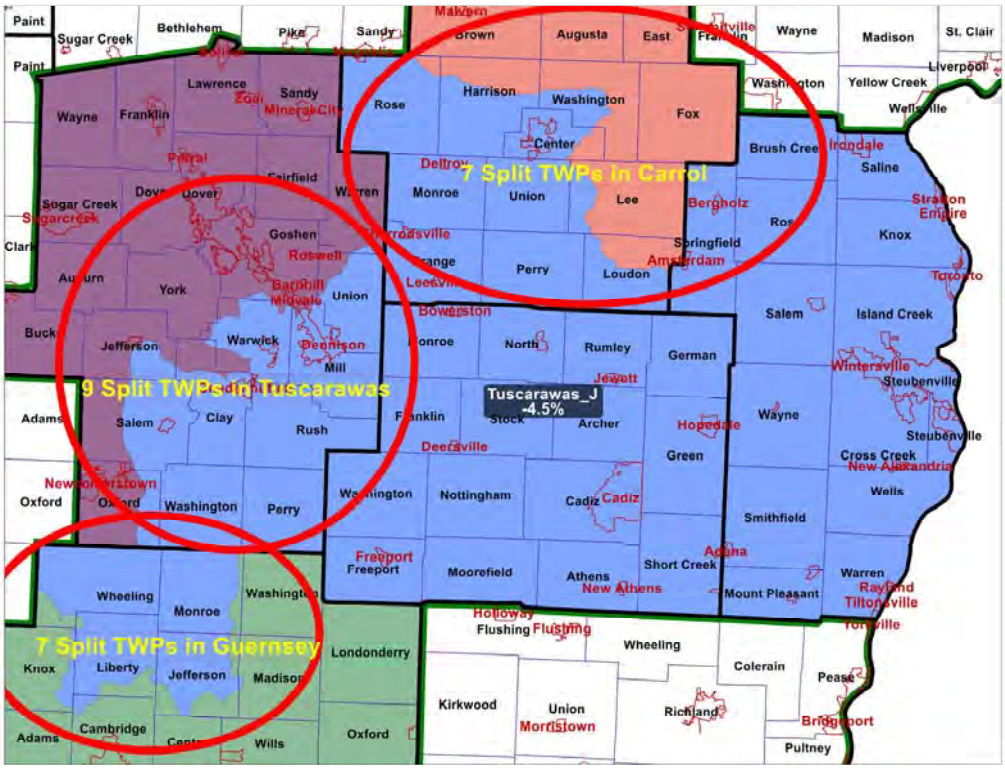
7) The district numbered "Athens_Perry" splits 7 municipal corporations/townships: Monroe Township, Pleasant Township, Pike Township, Monday Creek Township, Salt Lick Township, Jackson Township and Clayton Township in Perry County.

[1] The 70 districts listed here are named in Plan 134, and not numbered. In Plan 166, they were numbered, but the underlying geography of the districts did not change.

8) The district numbered "Washington_P" splits 11 municipal corporations/townships : Monroe Township, Pleasant Township, Pike Township, Monday Creek Township, Salt Lick Township, Jackson Township and Clayton Township in Perry County; Sharon Township, Olive Township, Enoch Township and Stock Township in Noble County.

9) The district numbered "Belmont_Guer" splits 11 municipal corporations/townships: Sharon Township, Olive Township, Enoch Township and Stock Township in Noble County; and Wheeling Township, Knox Township, Liberty Township, Cambridge Township, Monroe Township, Jefferson Township and Madison Township in Guernsey County.

10) The district numbered "Tuscarawas_J" splits at least 23 municipal corporations/townships: Wheeling Township, Knox Township, Liberty Township, Cambridge Township, Monroe Township, Jefferson Township and Madison Township in Guernsey County; Rose Township, Harrison Township, Washington Township, Center Township, Union Township, Lee Township and Loudon Township in Carroll County; and Oxford Township, Salem Township, Jefferson Township, Clay Township, Warwick Township, Goshen Township, Mill Township, Union Township, and Warren Township in Tuscarawas County.



11) The district numbered "Columbiana_C" splits 7 municipal corporations/townships: Rose Township, Harrison Township, Washington Township, Center Township, Union Township, Lee Township and Loudon Township in Carroll County.

12) The district numbered "Tuscarawas_H" splits at least 16 municipal corporations/townships: Oxford Township, Salem Township, Jefferson Township, Clay Township, Warwick Township, Goshen Township, Mill Township, Union Township, and Warren Township in Tuscarawas County; Washington Township, Knox Township, Monroe Township, Hardy Township, Richland Township and Killbuck Township in Holmes County; and Bethlehem Township in Stark County.

13) The district numbered "Muskingum_Co" splits 7 municipal corporations/townships: Perry Township, Bedford Township, Jackson Township, Bethlehem Township, Keene Township, White Eyes Township and Tuscarawas Township in Coshocton County.

14) The district numbered "Licking_Knox" splits 26 municipal corporations/townships: Washington Township, Knox Township, Monroe Township, Hardy Township, Richland Township and Killbuck Township in Holmes County; Perry Township, Bedford Township, Jackson Township, Bethlehem Township, Keene Township, White Eyes Township and Tuscarawas Township in Coshocton County; Wayne Township, Morris Township, Pike Township, Howard Township, Monroe Township, College Township, Pleasant Township, Miller Township, Clinton Township and Liberty Township in Knox County; and Harrison Township, Granville Township and Newton Township in Licking County.

15) The district numbered "Licking_A" splits 3 municipal corporations/townships: Harrison Township, Granville Township and Newton Township in Licking County.

16) The district numbered "Fulton_Defia" splits 4 municipal corporations/townships: Ridge Township in Van Wert County; and Dover Township, Franklin Township and German Township in Fulton County.

17) The district numbered "Lucas_Fulton" splits 6 municipal corporations/townships: Dover Township, Franklin Township and German Township in Fulton County; and Monclova Township, Springfield Township and Sylvania Township in Lucas County.

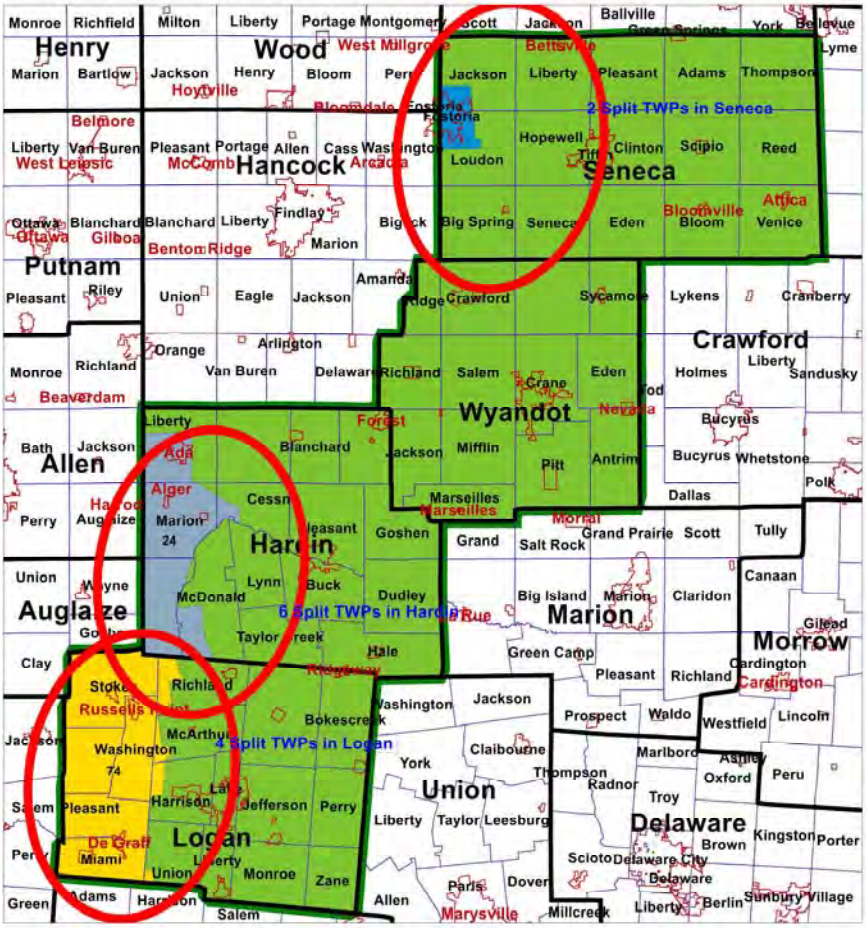
18) The district numbered "Lucas_A" splits 3 municipal corporations/townships: Monclova Township, Springfield Township and Toledo in Lucas County.

19) The district numbered "Lucas_C" splits 3 municipal corporations/townships: Springfield Township, Toledo and Sylvania Township in Lucas County.

20) The district numbered "Wood_A" splits 4 municipal corporations/townships: Portage Township, Weston Township, Center Township and Freedom Township in Wood County.

21) The district numbered "Wood_Hancock" splits 6 municipal corporations/townships: Portage Township, Weston Township, Center Township and Freedom Township in Wood County; snd Jackson Township and Loudon Township in Seneca County.

22) The district numbered "Seneca_Logan" splits 12 municipal corporations/townships: Jackson Township and Loudon Township in Seneca County; Liberty Township, Marion Township, Cessna Township, Lynn Township, Roundhead Township and McDonald Township in Hardin County; and Richland Township, McArthur Township, Harrison Township and Union Township in Logan County.



23) The district numbered "Darke_Auglai" splits 9 municipal corporations/townships: Liberty Township, Marion Township, Cessna Township, Lynn Township, Roundhead Township and McDonald Township in Hardin County; and Neave Township, Greenville Township and Franklin Township in Darke County.

24) The district numbered "Montgomery_M" splits 5 municipal corporations/townships: Richland Township, McArthur Township, Harrison Township and Union Township in Logan County; and Monroe Township in Miami County.

25) The district numbered "Greene_A" splits 4 municipal corporations/townships: Spring Valley Township, Sugar Creek Township, Xenia Township and Beavercreek Township in Greene County.

26) The district numbered "Clark_A" splits 2 municipal corporations/townships: Green Township and Moorefield Township in Clark County.

27) The district numbered "Greene_Clark" splits 6 municipal corporations/townships: Spring Valley Township, Sugar Creek Township, Xenia Township and Beavercreek Township in Greene County; and Green Township and Moorefield Township in Clark County.

28) The district numbered "Medina_A" splits 2 municipal corporations/townships: Lafayette Township and Montville Township in Medina County.

29) The district numbered "Medina_Ashla" splits 2 municipal corporations/townships: Lafayette Township and Montville Township in Medina County.

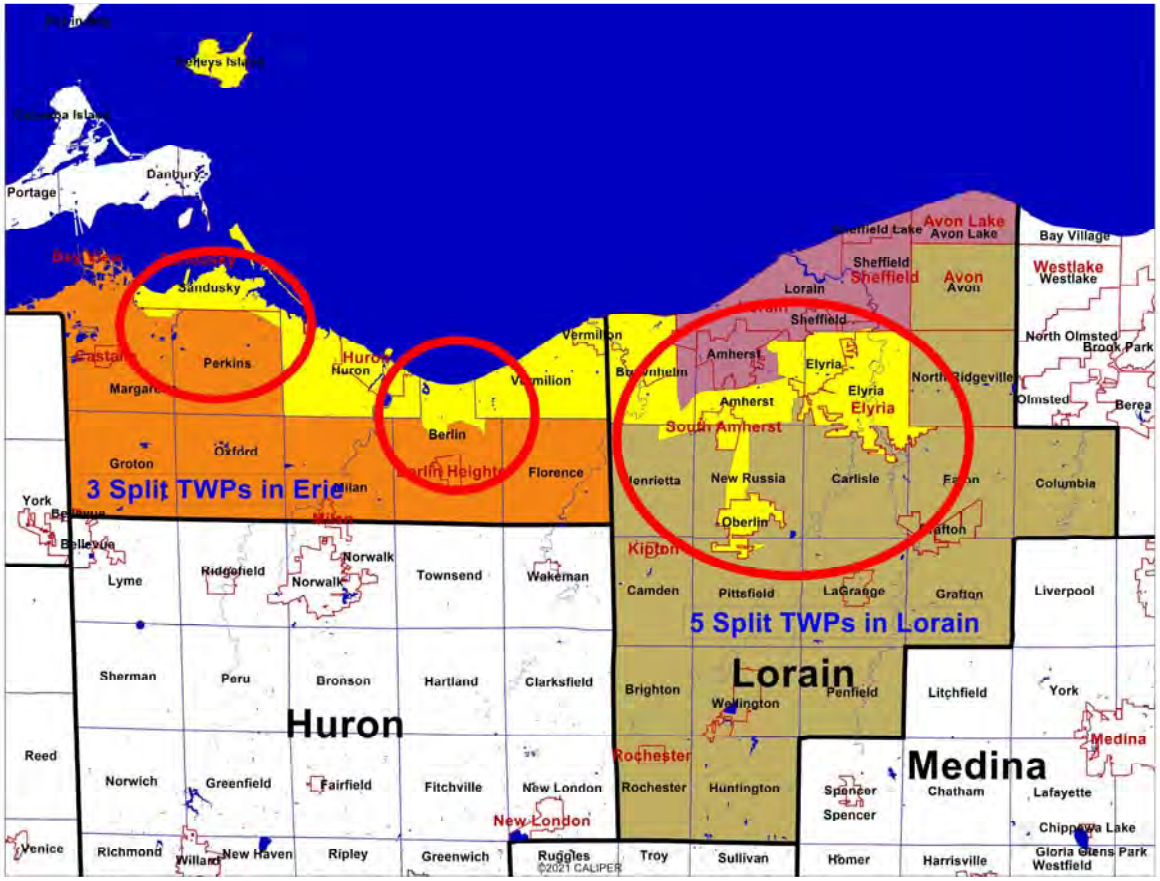
30) The district numbered "Sandusky_Hur" splits 5 municipal corporations/townships: Green Creek Township and York Township in Sandusky County; and Berlin Township, Perkins Township and Margaretta Township in Erie County.

31) The district numbered "Erie_Sandusk" splits 2 municipal corporations/townships: Green Creek Township and York Township in Sandusky County.

32) The district numbered "Lorain_A" splits 3 municipal corporations/townships: Sheffield Township, Brownhelm Township and Amherst Township in Lorain County.

33) The district numbered "Lorain_B" splits 2 municipal corporations/townships: New Russia Township and Henrietta Township in Lorain County.

34) The district numbered "Lorain_Erie" splits 8 municipal corporations/townships: Sheffield Township, Brownhelm Township, Amherst Township, New Russia Township and Henrietta Township in Lorain County; and Berlin Township, Perkins Township and Margaretta Township in Erie County.



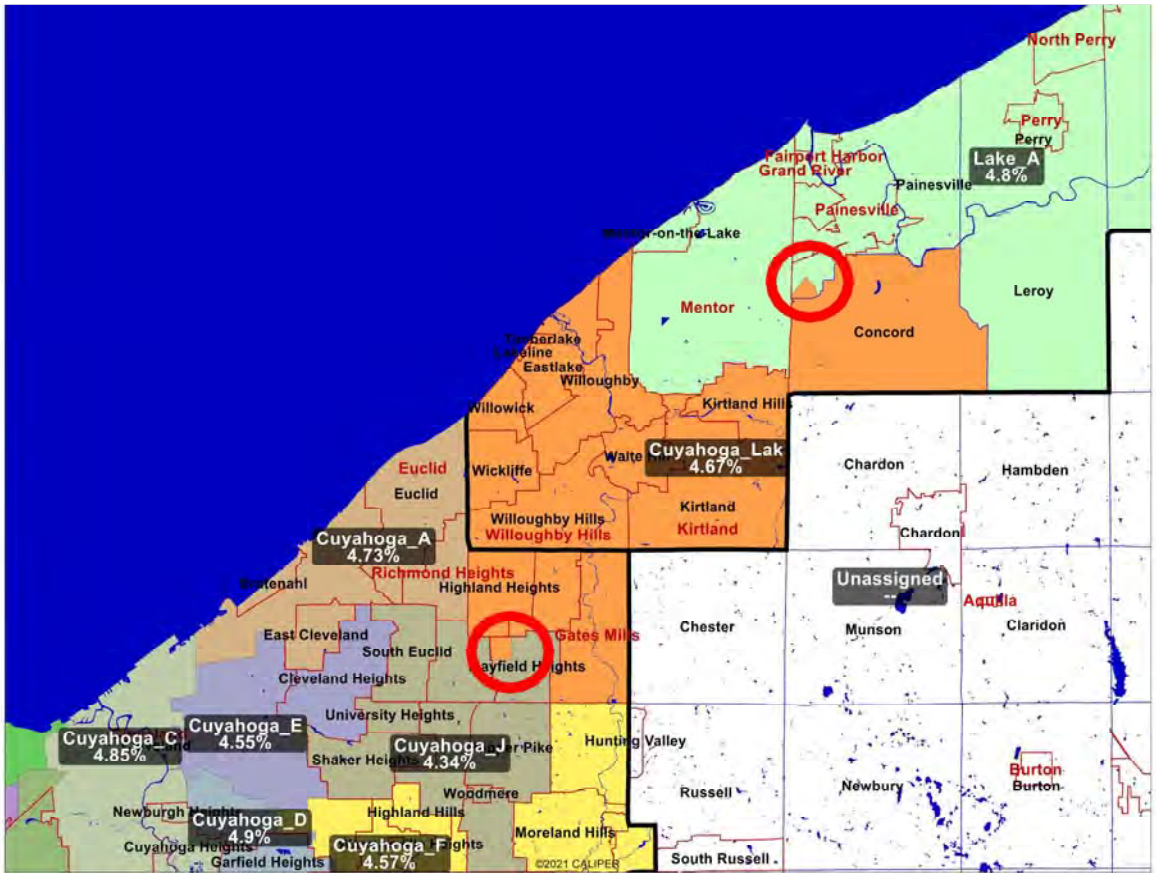
35) The district numbered "Stark_B" splits 5 municipal corporations/townships: Plain Township, Osnaburg Township, Canton Township, Perry Township and Bethlehem Township in Stark County.

36) The district numbered "Stark_C" splits 4 municipal corporations/townships: Canton Township, Perry Township, Bethlehem Township and Plain Township in Stark County.

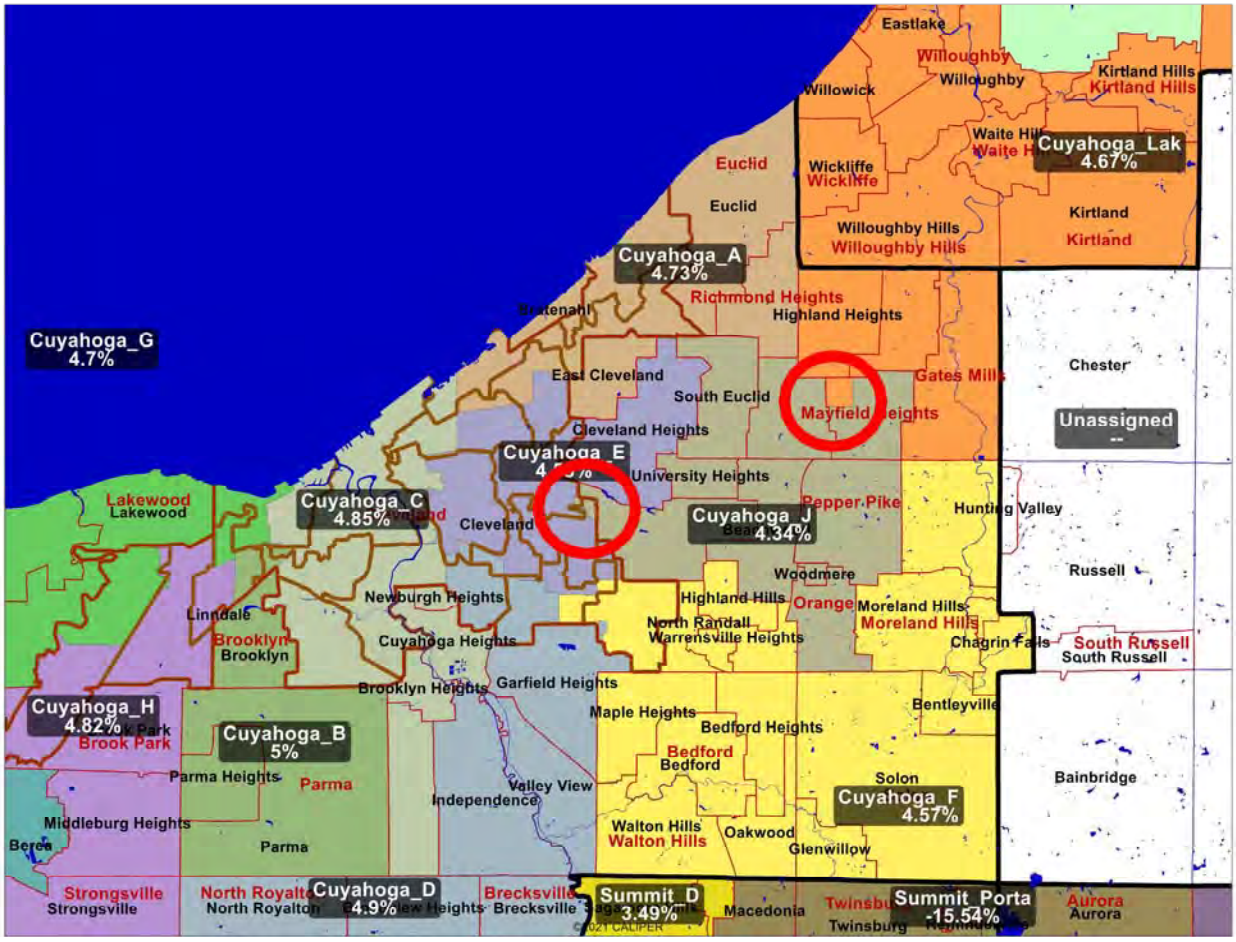
37) The district numbered "Stark_A" splits 4 municipal corporations/townships: Canton Township, Osnaburg Township, Perry Township and Plain Township in Stark County.

38) The district numbered "Ashtabula_Ge" splits 6 municipal corporations/townships: Auburn Township in Geauga County; and Morgan Township, Rome Township, New Lyme Township, Colebrook Township and Plymouth Township in Ashtabula County

39) The district numbered "Cuyahoga_Lak" splits 2 municipal corporations/townships: Painsville Township in Lake County; and Mayfield Heights in Cuyahoga County.



40) The district numbered "Cuyahoga_J" splits 2 municipal corporations/townships: Mayfield Heights and Cleveland in Cuyahoga County.



41) The district numbered "Summit_D" splits 3 municipal corporations/townships: Bath Township, Akron and Copley Township in Summit County.

42) The district numbered "Summit_A" splits 2 municipal corporations/townships: Akron and Copley Township in Summit County.

43) The district numbered "Summit_C" splits 2 municipal corporations/townships: Akron and Coventry Township in Summit County.

44) The district numbered "Summit_B" splits 4 municipal corporations/townships: Coventry Township, Copley Township, Bath Township and Akron in Summit County.

45) The district numbered "Summit_Porta" splits 2 municipal corporations/townships: Auburn Township in Geauga County; and Franklin Township in Portage County.

46) The district numbered "Mahoning_A" splits 3 municipal corporations/townships: Milton Township, Canfield Township and Poland Township in Mahoning County.

47) The district numbered "Mahoning_B" splits 3 municipal corporations/townships. Milton Township, Canfield Township and Poland Township in Mahoning County.

48) The district numbered "Trumbull_Ash" splits at least 10 municipal corporations/townships: Hubbard Township, Vienna Township, Howland Township, Bazeta Township and Champion Township in Trumbull County; and Morgan Township, Rome Township, New Lyme Township, Colebrook Township, and Plymouth Township in Ashtabula County.

49) The district numbered "Trumbull_A" splits 5 municipal corporations/townships: Hubbard Township, Vienna Township, Howland Township, Bazeta Township and Champion Township in Trumbull County.

50) The district numbered "Delaware_A" splits 5 municipal corporations/townships: Orange Township, Genoa Township, Berlin Township, Liberty Township and Concord Township in Delaware County.

51) The district numbered "Marion_Knox" splits 11 municipal corporations/townships: Orange Township, Genoa Township, Berlin Township, Liberty Township and Concord Township in Delaware County; and Waldo Township, Richland Township, Pleasant Township, Marion Township, Big Island Township and Grand Prairie Township in Marion County.

52) The district numbered "Delaware_Mar" splits 16 municipal corporations/townships: Waldo Township, Richland Township, Pleasant Township, Marion Township, Big Island Township and Grand Prairie Township in Marion County; and Wayne Township, Morris Township, Pike Township, Howard Township, Monroe Township, College Township, Pleasant Township, Miller Township, Clinton Township and Liberty Township in Knox County.

53) The district numbered "Miami_Shelby" splits 2 municipal corporations/townships: Monroe Township in Miami County; and Butler Township in Montgomery County.

54) The district numbered "Montgomery_C" splits 3 municipal corporations/townships: Butler Township, Harrison Township and Dayton in Montgomery County.

55) The district numbered "Montgomery_A" splits 2 municipal corporations/townships: Harrison Township and Dayton in Montgomery County.

56) The district numbered "Montgomery_B" splits 2 municipal corporations/townships: Dayton and Miami Township in Montgomery County.

57) The district numbered "Butler_Darke" splits 5 municipal corporations/townships: Neave Township, Greenville Township and Franklin Township in Darke County; and Wayne Township and Madison Township in Butler County.

58) The district numbered "Butler_B" splits 5 municipal corporations/townships: Wayne Township, Madison Township, Hanover Township, Ross Township and Fairfield in Butler County.

59) The district numbered "Butler_A" splits 3 municipal corporations/townships: Hanover Township, Fairfield and West Chester in Butler County.

60) The district numbered "Warren_A" splits 2 municipal corporations/townships: Hamilton Township and Turtlecreek Township in Warren County.

61) The district numbered "Warren_B" splits 2 municipal corporations/townships: Hamilton Township and Turtlecreek Township in Warren County.

62) The district numbered "Hamilton_B" splits 3 municipal corporations/townships: Cincinnati, Symmes Township and Springfield Township in Hamilton County.

63) The district numbered "Hamilton_E" splits 4 municipal corporations/townships: Colerain Township, Green Township, Springfield Township and Cincinnati in Hamilton County.

64) The district numbered "Hamilton_G" splits 3 municipal corporations/townships: Colerain Township, Green Township and Delhi Township in Hamilton County.

65) The district numbered "Hamilton_F" splits 2 municipal corporations/townships: Delhi Township and Cincinnati in Hamilton County.

66) The district numbered "Hamilton_D" splits 2 municipal corporations/townships: Green Township and Cincinnati in Hamilton County.

67) The district numbered "Hamilton_A" splits 2 municipal corporations/townships: Symmes Township and Cincinnati in Hamilton County.

68) The district numbered "Franklin_Uni" splits 2 municipal corporations/townships: Columbus and Prairie Township in Franklin County.

69) The district numbered "Franklin_H" splits 4 municipal corporations/townships: Columbus, Prairie Township, Pleasant Township and Jackson Township in Franklin County.

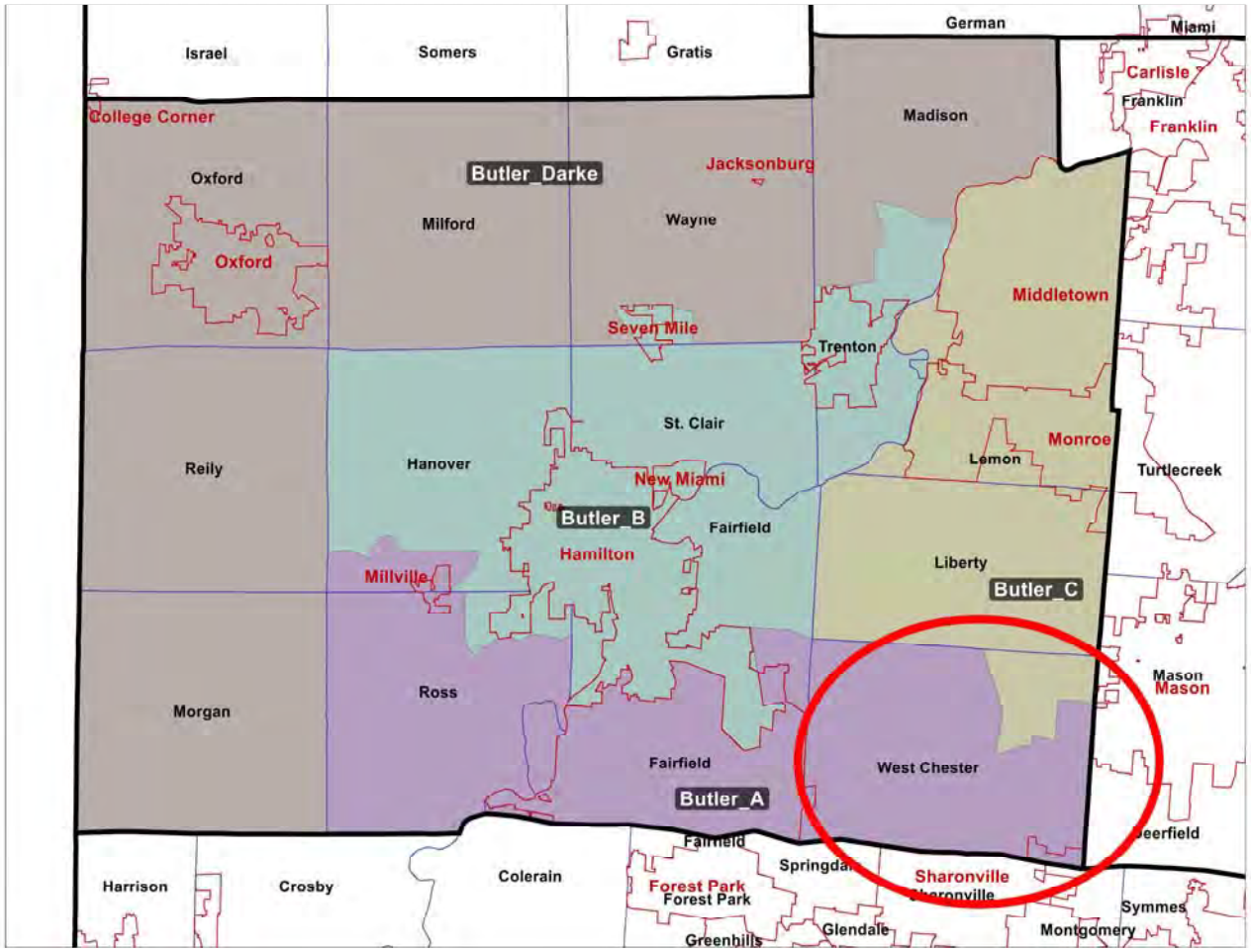
70) The district numbered "Franklin_C" splits 2 municipal corporations/townships: Columbus and Jefferson Township in Franklin County.

41. Section 3(D)(2) of Article XI of the Ohio Constitution states as follows:

> Representative districts shall be drawn so as to split the smallest possible number of municipal corporations and townships whose contiguous portions contain a population of more than fifty per cent, but less than one hundred per cent, of one ratio of representation.

42. Both Plan 134 and Plan 166 split West Chester Township in Butler County into two House Districts: in Plan 134 the districts are numbered "Butler_A" and "Butler _C" (Plan 166 numbered Butler_A as House District 45 and Butler_C as House District 47). Section 3(D)(2) of the Ohio Constitution protects any municipal corporation or township with a population between 59,594 and 119,186. West Chester Township has a population of 64,830, according to the 2020 United States Census. The Adopted Map did not split any municipal corporation or township that had a population within this range. Therefore, it

was possible to not split West Chester Township, and any map that does would appear to violate Section 3(D)(2) of Article XI of the Ohio Constitution.



43. All splits listed above are splits of contiguous municipal corporations or townships – appearing to violate the Ohio Constitution as listed.

44. Article XI, Section 3(B)(3) of the Ohio Constitution provides that "Every general assembly district shall be composed of contiguous territory, and the boundary of each district shall be a single nonintersecting continuous line."

45. In the House Map of Plan 134 and Plan 166, the district numbered "Lorain_Erie" (numbered House District 55 in Plan 166) appears to violate Section 3(B)(3) of Article XI

of the Ohio Constitution, in that the district is not contiguous. Specifically, a portion of the district is completely surrounded by another house district, breaking contiguity. As such, the boundary of "Lorain_Erie"/House District 55 in Plans 134 and 166 is not a single nonintersecting continuous line, which appears to violate Article XI, Section 3(B)(3) of the Ohio Constitution.

46. In the House Map of Plan 134 and Plan 166, the district numbered "Franklin_G" (numbered House District 7 in Plan 166) appears to violate Section 3(B)(3) of Article XI of the Ohio Constitution, in that the district is not contiguous. Specifically, a portion of the district is completely surrounded by another house district, breaking contiguity. As such, the boundary of "Franklin_G"/House District 7 in Plans 134 and 166 is not a single nonintersecting continuous line in violation of Article XI, Section 3(B)(3) of the Ohio Constitution.

47. In the House Map of Plan 134 and Plan 166, the district numbered "Licking_A" (numbered House District 69 in Plan 166) appears to violate Section 3(B)(3) of Article XI of the Ohio Constitution, in that the district is not. Specifically, a portion of the district is completely surrounded by another house district, breaking contiguity. As such, the boundary of "Licking_A"/House District 69 in Plans 134 and 166 is not a single nonintersecting continuous line, which appears to violate Article XI, Section 3(B)(3) of the Ohio Constitution.

FURTHER THE AFFIANT SAYETH NAUGHT.

Executed on 10/22, 2021	Raymond E. DiRossi

Sworn or affirmed before me and subscribed in my presence the 22nd day of October, 2021, in the state of Ohio and county of Franklin.

Notary Public

FRANCIS M. STRIGARI, Attorney At Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date
Sec. 147.03 R.C.