STATE OF MICHIGAN
IN THE MICHIGAN SUPREME COURT

LEAGUE OF WOMEN VOTERS OF MICHIGAN, AMERICAN CITIZENS FOR JUSTICE, APIA VOTE - MICHIGAN, DETROIT ACTION, LGBT DETROIT, NORTH FLINT NEIGHBORHOOD ACTION COUNCIL, RISING VOICES, KENT BLOHM, CATHY BROCKINGTON, DENISE HARTSOUGH, DONNA HORNBERGER, GILDA JACOBS, JUDY KARANDJEFF, MARGARET LEARY, ATHENA MCKAY, CHRISTINE PAWLAK, KATHERINE PRIMEAU, RONALD PRIMEAU, SUSAN ROBERTSON, SUE SMITH,

Plaintiff,

v.

INDEPENDENT CITIZENS REDISTRICTING COMMISSION,

Defendant.

MSC. No.164022

Original Jurisdiction
Cont 1963, art. 4, § 6(19).

DEFENDANT INDEPENDENT CITIZENS REDISTRICTING COMMISSION'S APPENDIX

TABLE OF CONTENTS

EXPERT REPORT OF JOWEI CHEN, Ph.D.

June 1, 2018

I am an Associate Professor in the Department of Political Science at the University of Michigan, Ann Arbor. I am also a Faculty Associate at the Center for Political Studies of the Institute for Social Research at the University of Michigan as well as a Research Associate at the Spatial Social Science Laboratory at Stanford University. In 2007, I received a M.S. in Statistics from Stanford University, and in 2009, I received a Ph.D. in political science from Stanford University. I have published academic papers on legislative districting and political geography in several political science journals, including *The American Journal of Political Science* and *The American Political Science Review*, and *Election Law Journal*. My academic areas of expertise include legislative elections, spatial statistics, geographic information systems (GIS) data, redistricting, racial politics, legislatures, and political geography. I have unique expertise in the use of computer simulations of legislative districting and to study questions related to political geography and redistricting.

I have provided expert reports in the following redistricting court cases: Missouri National Association for the Advancement of Colored People v. Ferguson-Florissant School District and St. Louis County Board of Election Commissioners (E.D. Mo. 2014); Rene Romo et al. v. Ken Detzner et al. (Fla. 2d Judicial Cir. Leon Cnty. 2013); The League of Women Voters of Florida et al. v. Ken Detzner et al. (Fla. 2d Judicial Cir. Leon Cnty. 2012); Raleigh Wake Citizens Association et al. v. Wake County Board of Elections (E.D.N.C. 2015); Corrine Brown et al. v. Ken Detzner et al. (N.D. Fla. 2015); City of Greensboro et al. v. Guilford County Board of Elections, (M.D.N.C. 2015); Common Cause et al. v. Robert A. Rucho et al. (M.D.N.C. 2016); League of Women Voters of Pennsylvania et al. v. Commonwealth of Pennsylvania et al. (No. 261 M.D. 2017); Georgia State Conference of the NAACP et al v. The State of Georgia et al. (N.D. Ga. 2017). I have testified at trial in the following cases: Raleigh Wake Citizens Association et al. v. Wake County Board of Elections (E.D.N.C. 2015); City of Greensboro et al. v. Guilford County Board of Elections (M.D.N.C. 2015); Common Cause et al. v. Robert A. Rucho et al. (M.D.N.C. 2016); League of Women Voters of Pennsylvania et al. v. Commonwealth of Pennsylvania et al. (No. 261 M.D. 2017). I am being compensated $500 per hour for my work in this case.

Research Questions and Summary of Findings:

The attorneys for the Plaintiffs in this case have asked me to analyze Michigan's current House, Senate, and Congressional districting plans, as created by Public Act 128 of 2011 and Public Act 129 of 2011. Specifically, I was asked to analyze whether each of these three enacted districting plans has the effect of producing an extreme partisan outcome that diverges from possible alternative maps.[1]

In conducting my academic research on legislative districting, partisan and racial gerrymandering, and electoral bias, I have developed various computer simulation programming techniques that allow me to produce a large number of non-partisan districting plans that adhere to traditional districting criteria using US Census geographies as building blocks. This simulation process is non-partisan in the sense that the computer ignores all partisan and racial considerations when drawing districts. Instead, the computer simulations are programmed to optimize districts with respect to various traditional districting goals, such as equalizing population, maximizing geographic compactness, and preserving county, municipal, and ward boundaries. By generating a large number of randomly drawn districting plans that closely follow and optimize on these traditional districting criteria, I am able to assess any enacted plan drawn by a state legislature and determine whether the enacted plan produces a partisan outcome that deviates from computer-simulated plans that follow traditional, partisan-neutral districting criteria.

More specifically, by holding constant the application of non-partisan, traditional districting criteria through the simulations, I am able to determine whether the enacted plans were partisan outliers.

I used this simulation approach to analyze Michigan's enacted House, Senate, and Congressional districting plans in several ways. First, I conducted 3,000 independent simulations, instructing the computer to generate 1,000 House, 1,000 Senate, and 1,000 Congressional districting plans for Michigan that strictly follow the non-partisan districting outlined in Act 463 of 1996 and Act 221 of 1999 and are reasonably geographically compact. I found that all 1,000 computer-simulated plans contain fewer county breaks and fewer municipal

[1] I reviewed Michigan's statutory redistricting guidelines in MCL § 3.63 et seq and MCL § 4.261 et seq and applied the criteria mandated in these statutes to produce a set of alternative maps for Michigan's Congressional, Senate, and House districting plans.

breaks than are contained in Michigan's enacted plan. The enacted plans' districts are also significantly more geographically non-compact than every single one of the 1,000 computer-simulated districting plans created for Michigan's House, Senate, and Congressional delegation.

Most importantly, I found that each of the enacted plans was a partisan outlier when compared to the computer-simulated plans. Each of the three enacted plans creates more Republican districts than every single one of the 1,000 computer-simulated districting plans created for Michigan's House, Senate, and Congressional delegation. Using common quantitative measures of political bias, including the Efficiency Gap and the Median-Mean Difference, every one of the computer-simulated plans is more politically neutral than Michigan's enacted Congressional, Senate, and House plans.

Michigan's Statutory Redistricting Guidelines
And the Computer-Simulated Districting Algorithm

Michigan has two redistricting statutes - MCL § 4.261 et seq (Act 463 of 1996) and MCL § 3.63 et seq (Act 221 of 1999) – that describe in detail the criteria to be followed in the drawing of the state's Congressional, Senate, and House districts. The statutes describe five criteria to be followed in producing each districting plan: 1) Contiguity; 2) Equal population thresholds; 3) Minimizing county breaks; 4) Minimizing municipal breaks; and (as to some districts) 5) Geographic compactness. These five criteria are also traditional districting principles in the drawing of Congressional and state legislative districting plans.

Furthermore, both statutes state that the list of districting guidelines detailed in each statute is exhaustive. MCL § 4.261 mandates that House and Senate plans "shall be enacted using only the following guidelines," while MCL § 3.63 similarly requires that the drawing of congressional plans must follow "only these guidelines in the following order of priority." Hence, it is clear that both statutes not only specify the five districting criteria and their order of priority, but they also prohibit any other considerations, such as the partisan composition of districts or the protection of incumbents.

Appendix A of this report describes the details of the computer-simulated districting algorithm and how these five redistricting criteria are implemented by the computer algorithm in producing Congressional, Senate, and House plans.

Preserving Majority-Minority Districts in Computer-Simulated Plans

When I programmed the computer simulation algorithm, plaintiffs' counsel instructed me to ensure that all simulated maps contained certain majority-minority districts covering Detroit, Southfield, and Flint.

In producing simulated congressional plans, the algorithm freezes the enacted plan's boundaries for congressional Districts 13 and 14, which cover all of Detroit and some surrounding municipalities. In describing the 1,000 computer-simulated congressional plans throughout the remainder of this report, I always include the enacted plan's Districts 13 and 14, even though the boundaries of these two districts are obviously identical in every simulated plan.

In producing simulated Senate plans, the algorithm freezes the enacted plan's boundaries for Senate Districts 1 through 7, which collectively cover all of Wayne County. Wayne County is apportioned seven Senate districts, and in the enacted plan, Senate Districts 1 through 5 are the majority African-American districts covering Detroit. However, once Districts 1 through 5 are frozen into place, the remaining western half of Wayne County must be divided into exactly two Senate districts in order to avoid an unnecessary county break. The only way to draw these two remaining districts while following the MCL § 4.261 redistricting guidelines requires using the same boundaries as the enacted plan's Senate Districts 6 and 7. Therefore I simply instructed the computer to freeze the enacted plan's Senate Districts 1 through 7 in every simulated plan. In describing the 1,000 computer-simulated Senate plans throughout the remainder of this report, I always include the enacted plan's Senate Districts 1 through 7, even though the boundaries of these seven districts are obviously identical in every simulated plan.

In producing simulated House plans, the algorithm freezes the enacted plan's boundaries for House Districts 1 through 10, which collectively cover all of Detroit City, House District 15 (Dearborn), and House District 35 (Southfield). Additionally, the algorithm only permits plans that place the City of Flint into a district with a 55% or higher Black Voting Age Population ("BVAP"). As before, I freeze all majority-African-American districts covering Detroit, which include House Districts 1 through 10. House District 9, however, also includes a small northern fragment of the City of Dearborn. In order to avoid any further breaks of Dearborn, House District 15, consisting of the remainder of Dearborn, must also be frozen exactly as it appears in the enacted plan. Next, as noted earlier, a Southfield-area district with House District 35's racial composition can only be achieved by freezing the precise boundaries of House District 35.

Finally, as noted earlier, the simulation algorithm frequently produced a House district covering the City of Flint that approximates or exceeds the 58% BVAP of House District 34. Therefore, I programmed the algorithm to simply discard any plan failing to create a Flint-area district of at least 55% BVAP.

Thus, in describing the 1,000 computer-simulated congressional plans throughout the remainder of this report, I always include the enacted plan's House Districts 1 through 10, 15, and 35, even though the boundaries of these 12 districts are obviously identical in every simulated plan.

Measuring the Partisanship of Districting Plans

Map drawers and scholars of redistricting most commonly use past election results to assess and compare the partisan composition of any given district, whether in an enacted congressional, Senate, or House plan or in a hypothetical plan. Overlaying these past election results onto a districting plan enables one to estimate the partisanship of each district within each plan. These past election results allow me to then directly compare the partisanship composition of the enacted plan to the partisan composition of the computer-simulated plans. In this section, I explain the set of past elections I use to analyze each district in the enacted plans and the computer-simulated plans, and then I explain the various methods I use in this report to measure the overall partisanship of each districting plan.

Election Results (2008-2016) Used to Measure Districts' Partisanship: I use actual election results from recent, statewide election races in Michigan to assess and compare the partisan performance of each district within the computer-simulated and the enacted congressional, Senate, and House districting plans analyzed in this report. Past voting history in federal and statewide elections is a strong predictor of future voting behavior. Mapmakers thus can and do use past voting history to identify the class of voters, at a precinct-by-precinct level, who are likely to vote for Democratic (or Republican) candidates for Congress. Indeed, that is the entire reason why mapmakers are able to intentionally draw maps so effectively to produce biased political outcomes.

In general, the most reliable method of comparing the partisanship of different legislative districts within a state is to consider whether the districts—and more specifically, the census blocks that comprise each district—have tended to favor Republican or Democratic candidates in

recent, competitive statewide elections, such as the Presidential, Gubernatorial, and US Senate elections. Recent statewide elections provide the most reliable bases for comparisons of different precincts' partisan tendencies because in any statewide election, the anomalous candidate-specific effects that shape the election outcome are equally present in all districts across the state. Statewide elections are thus a better basis for comparison than the results of legislative elections (such as U.S. House and state legislative elections) because the particular outcome of any legislative election may deviate from the long-term partisan voting trends of a constituency, due to factors idiosyncratic to the legislative district as currently constructed. Such factors can include the presence or absence of a quality challenger, anomalous difference between the candidates in campaign efforts or campaign finances, incumbency advantage, candidate scandals, and coattail effects.[2] Because these idiosyncratic factors would change if the legislative district were drawn differently, it is particularly unsuitable to use election results from legislative district when comparing the partisanship of an existing district to a simulated district that would have different boundaries.

Indeed, based on my experience studying redistricting practices in multiple states, it is common for legislative map-drawers to assess the partisanship of a districting plan using the election results of past statewide races, rather than legislative district races. In recent years, for example, legislative map-drawers used and analyzed such statewide election data when producing districting plans in North Carolina, Pennsylvania, and Wisconsin. Map-drawers recognize that legislative district election results are highly sensitive to the district-specific factors listed above, while the results of statewide races are directly comparable across different districts within the state.

To measure the partisanship of each district within Michigan's enacted congressional, Senate, and House plans and each computer-simulated plan, I first obtained from plaintiffs' counsel electronic files reporting block-level election results for all of Michigan's 40 statewide elections held during 2006-2016. I then overlaid these block-level election vote counts onto the district boundaries in each plan, thereby allowing me to calculate the vote totals across these statewide elections within every district in each enacted plan, as well as in each of my computer-

[2] E.g., Alan Abramowitz, Brad Alexander, and Matthew Gunning. "Incumbency, Redistricting, and the Decline of Competition in U.S. House Elections." *The Journal of Politics.* Vol. 68, No. 1 (February 2006): 75-88.

simulated plans. These calculations allow me to determine whether each district in each simulated plan (and each enacted plan) favors Republican or Democratic candidates.

In analyzing the partisanship of each district in Michigan's enacted plans, as well as all of the computer-simulated plans in this report, I aggregated together the results of Michigan's statewide elections held during 2006-2010 and during 2012-2016. These statewide elections include the US Presidential (2008, 2012, 2016), US Senator (2006, 2008, 2012, 2014), Gubernatorial (2006, 2010, 2014), Secretary of State (2006, 2010, 2014), and Attorney General (2006, 2010, 2014) elections. Also included among these statewide contests are the elections for the State Board of Education, the University of Michigan Board of Regents, the Michigan State University Board of Trustees, and the Wayne State University Board of Governors, all of which are held every two years (2006, 2008, 2010, 2012, 2014, 2016). All 40 of these statewide elections were contested by both parties, and most were reasonably close; thus, the combined partisan vote totals from these statewide elections provides an accurate reflection of voters' underlying partisan tendencies across different districts throughout Michigan.

When evaluating the partisanship of Michigan legislative districting plans, I analyze these 40 statewide election contests over two separate time periods: First, I sum the total Republican votes and total Democratic votes cast over all statewide elections during 2006-2010 (a total of 21 election contests), and I determine whether each legislative district had more total Republican or Democratic votes cast during all of these 21 election contests. Second, I sum the total Republican votes and total Democratic votes cast over all statewide elections during 2012-2016 (a total of 19 election contests), and I determine the proportion of votes across these elections in each district that favored each party.

I analyze the 2006-2010 election results and the 2012-2016 election results separately. First,

have occurred under the state's 2011 enacted plans. All 19 of these statewide elections were contested by both parties. Thus, the combined partisan vote totals from these statewide elections provides an accurate reflection of voters' underlying partisan tendencies across different districts throughout Michigan.

As an example, Table 1 illustrates how I assess the partisan composition of Congressional Districts 1 and 2 from Michigan's current enacted congressional plan using the results of the 19 statewide elections during 2012-2016. As illustrated in the first two columns, voters in Congressional District 1 cast a total of 210,845 votes for the Republican Donald Trump and 133,251 votes for Democrat Hillary Clinton. When summed across all 19 of the statewide elections during 2012-2016, District 1 voters cast a combined total of 4,408,972 votes in favor of the various Republican candidates in these races and 3,434,286 votes in favor of the Democratic candidates; in other words, 56.21% of the two-party votes cast during these elections were in favor of a Republican candidate. The final two columns in this Table perform the same calculations for Congressional District 2, showing that 60.77% of votes cast in the district were in favor of a Republican candidate. Together, these calculations allow us to conclude that both districts generally favor Republican candidates, but Congressional District 2 is slightly more Republican-leaning than Congressional District 1.

Finally, as two additional measures of partisanship, I calculate each district's partisanship by measuring Republican candidates' share of the two-party votes in the 2006-2010 education and university board elections, and I also calculate Republicans' share of the two-party votes in the 2012-2016 education and university board elections. These elections include all races for the State Board of Education, the University of Michigan Board of Regents, the Michigan State University Board of Trustees, and the Wayne State University Board of Governors. These education and university board election results lead to substantially the same partisan estimates as using all statewide elections during these time periods. Nevertheless, I present these two additional measures because it has been common practice in Michigan to measure the partisanship of legislative districts using the aggregated outcomes of recent education and university board elections.

Table 1:
Calculating the Partisan Composition of Districts Using Past Statewide Election Results

Election Contest	Congressional District 1 (2011 Enacted Plan) Republican Votes:	Congressional District 1 (2011 Enacted Plan) Democratic Votes:	Congressional District 2 (2011 Enacted Plan) Republican Votes:	Congressional District 2 (2011 Enacted Plan) Democratic Votes:
2016 US President	210,845	133,251	193,209	132,454
2016 Board of Education	334,645	204,472	355,630	203,302
2016 Univ of Michigan Regents	330,565	214,574	353,649	208,767
2016 Michigan State Trustees	325,786	218,958	348,269	212,403
2016 Wayne State Governors	314,602	209,715	340,127	205,248
2014 Governor	136,045	109,144	135,681	75,452
2014 Secretary of State	141,340	93,644	136,784	67,324
2014 Attorney General	144,581	91,375	134,022	68,253
2014 US Senator	123,453	116,481	116,302	88,910
2014 Board of Education	221,422	180,911	227,377	136,682
2014 Univ of Michigan Regents	218,700	177,295	228,424	133,213
2014 Michigan State Trustees	219,534	170,800	226,461	130,383
2014 Wayne State Governors	206,791	175,778	217,096	132,830
2012 US President	189,420	160,210	184,762	142,079
2012 US Senator	154,868	182,554	170,798	146,329
2012 Board of Education	292,357	247,273	319,459	222,504
2012 Univ of Michigan Regents	283,190	250,296	310,567	228,690
2012 Michigan State Trustees	289,739	244,387	317,064	218,466
2012 Wayne State Governors	271,089	253,168	300,809	226,611
Total Votes in all 2012-2016 Statewide Elections:	**4,408,972 (56.21%)**	**3,434,286 (43.79%)**	**4,616,490 (60.77%)**	**2,979,900 (39.23%)**

After measuring each district's partisanship by aggregating together all statewide elections during 2006-2010 and 2012-2016, as well as just the subset of education and university board elections, I then proceed to measure the overall partisanship of each entire districting plan using the following three different measurements:

The Number of Republican and Democratic Districts: The most basic and commonly-used method of measuring the partisanship of an entire districting plan is to simply count up the number of Republican and Democratic-favoring districts within the plan. This basic quantity allows me to directly compare the partisan distribution of an enacted plan to the partisanship of computer-simulated districting plans. Using this measure, I am also able to precisely quantify the difference in partisanship between the enacted plan and any simulated plan.

To illustrate an example, Michigan's enacted congressional plan contains a total of nine districts (Districts 1, 2, 3, 4, 6, 7, 8, 10, 11) in which Republican candidates received more total votes than Democratic candidates over the course of the 19 statewide elections during 2012-2016. In the remaining five Congressional Districts in the enacted plan (Districts 5, 9, 12, 13, and 14), Democratic candidates received more combined votes than Republican candidates over the course of these 19 statewide elections.

I find that overall, using recent past statewide elections has been an extremely accurate predictor of actual legislative election outcomes in the enacted plans' districts. For example, in 9 of the 14 districts in the enacted congressional plan, the total number of Republican votes cast outnumbered the total Democratic votes cast during the 2006-2010 statewide elections. These same 9 districts also had more Republican than Democratic votes cast during the 2012-2016 statewide elections. These 9 enacted districts have all elected Republican congressional representatives during each congressional election held under the enacted plan (2012, 2014, and 2016). The remaining 5 districts in the enacted congressional plan had more Democratic than Republican votes cast during the 2006-2010 statewide elections, as well as during the 2012-2016 statewide elections. These 5 enacted congressional districts have all elected Democratic congressional representatives during each congressional election held under the enacted plan (2012, 2014, and 2016). Hence, the use of 2006-2010 and 2012-2016 statewide elections has been a perfectly accurate predictor of actual congressional election outcomes in every election held under the enacted plan.

The 2006-2010 and 2012-2016 statewide elections have been similarly accurate in predicting state legislative election outcomes. In the enacted House plan, 61 out of the 110 House districts contained more Republican than Democratic votes cast during the 2006-2010 statewide elections, as well as during the 2012-2016 statewide elections. These 61 Republican-leaning districts correspond closely to the actual partisan outcomes of the 2012, 2014, and 2016 State House elections, which have produced 59, 63, and 63 Republican victories, respectively, or an average of 61.7 Republican victories. Finally, in the enacted Senate plan, 23 of the 38 Senate districts contained more Republican than Democratic votes cast during the 2006-2010 statewide elections, and 24 of the 38 districts had more Republican than Democratic votes cast during the 2012-2016 statewide elections. Only one set of Senate elections has been held under the enacted Senate plan: Republicans won 27 seats in the November 2014 general election.

By comparing the number of Republican districts in an enacted plan to the number in each of the computer-simulated plans, I am able to evaluate whether or not the particular number of Republican-favoring districts in an enacted plan was a partisan outlier.

The Median-Mean Difference: The Median-Mean Difference is another accepted method that redistricting scholars commonly use for comparing the relative partisan bias of different districting plans.[3] For any districting plan, the mean is simply calculated as average of the Republican vote shares across all districts, and the median is the Republican vote share in the district where Republicans performed the middle-best; if there are an even number of districts across the entire plan, then the median is calculated as the average Republican vote share in the two districts where the Republicans performed the middle-best. For example, in any congressional districting plan in Michigan, the median would be the average vote share in the Republicans' seventh and eighth-best congressional districts. In any State Senate plan, the median would be the average vote share in the Republicans' nineteenth and twentieth-best Senate districts. The Median-Mean Difference is then calculated as the median district vote share, minus the mean district vote share. Thus higher, positive values indicate that the median district's Republican vote share is higher than the mean district-level Republican vote share.

For example, using the aggregated results of Michigan's 2006-2010 statewide elections, the 14 districts in Michigan's enacted congressional plan have a mean Republican vote share of 46.80%, while the median district has a Republican vote share of 53.52%. Thus, the enacted congressional plan has a Median-Mean Difference of 6.72%, indicating that the median district is skewed significantly more Republican than the plan's average district. In other words, the enacted plan distributes voters across districts in such a way that most districts are significantly more Republican-leaning than the average congressional district, while Democratic voters are more heavily concentrated in a minority of the congressional districts. This skew in the enacted plan thus creates a significant advantage for Republicans by giving them stronger control over the median district.

An important question, however, is whether this significant Median-Mean Difference arises naturally from applying the statutory redistricting guidelines to Michigan's census

---

[3] Robin E. Best and Michael D. McDonald, "Unfair Partisan Gerrymanders in Politics and Law: A Diagnostic Applied to Six Cases." 14 Election Law Journal Vol. 14, No. 4 (2015). Samuel Wang, "Three Practical Tests for Gerrymandering: Application to Maryland and Wisconsin." 15 Election Law Journal Vol. 15, No. 4 (2016).

boundaries, given the state's unique voter geography. Or rather, is the skew in the enacted plan's Median-Mean Difference explainable only as the product of an intentional partisan effort to favor one party over another in the drawing of the districts? By comparing the Median-Mean Difference of an enacted plan to that of the computer-simulated plans, I am able to evaluate whether or not such an extreme Republican-favoring skew in the Median-Mean Difference was a necessary result of a districting process.

The Efficiency Gap: A third commonly-used measure of a districting plan's partisan bias is the efficiency gap.[4] To calculate the efficiency gap of any enacted or computer-simulated plan, I first determine the partisan leaning of each simulated district and each individual district, as measured by any given set of election results, such as the 2012-2016 statewide elections. Using the 2012-2016 statewide elections as a simple measure of district partisanship, I then calculate each districting plan's efficiency gap using the method outlined in *Partisan Gerrymandering and the Efficiency Gap*[5]. Districts are classified as Democratic victories if, across these statewide elections, the sum total of Democratic votes in the district during these elections exceeds the sum total of Republican votes; otherwise, the district is classified as Republican. For each party, I then calculate the total sum of surplus votes in districts the party won and lost votes in districts where the party lost. Specifically, in a district lost by a given party, all of the party's votes are considered lost votes; in a district won by a party, only the party's votes exceeding the 50% threshold necessary for victory are considered surplus votes. A party's total wasted votes for an entire districting plan is the sum of its surplus votes in districts won by the party and its lost votes in districts lost by the party. The efficiency gap is then calculated as total wasted Republican votes minus total wasted Democratic votes, divided by the total number of two-party votes cast statewide across all seven elections.

Thus, the theoretical importance of the efficiency gap is that it tells us the degree to which more Democratic or Republican votes are wasted across an entire districting plan. A significantly positive efficiency gap indicates far more Republican wasted votes, while a significantly negative efficiency gap indicates far more Democratic wasted votes.

---

[4] Eric McGhee, "Measuring Partisan Bias in Single-Member District Electoral Systems." Legislative Studies Quarterly Vol. 39, No. 1: 55–85 (2014).
[5] Nicholas O. Stephanopoulos & Eric M. McGhee, *Partisan Gerrymandering and the Efficiency Gap,* 82 University of Chicago Law Review 831 (2015).

In addition to calculating the efficiency gap using each district's votes from the 2012-2016 statewide elections, as described above, I also separately calculate the efficiency gap using the combined results from the 2006-2010 statewide elections. As before, I sum up the total Democratic votes and total Republican votes from across these statewide elections and calculate a single efficiency gap for each simulated and enacted districting plan using these combined partisan vote counts.

An important question, however, is whether an enacted plan's Efficiency Gap arises naturally from applying the statutory redistricting guidelines to Michigan's census boundaries, given the state's unique voter geography. Or rather, is the skew in the enacted plan's Efficiency Gap explainable only as the product of an intentional partisan effort to favor one party over another in the drawing of the districts? By comparing the Efficiency Gap of an enacted plan to that of the computer-simulated plans, I am able to evaluate whether or not such an extreme Republican-favoring skew in the Efficiency Gap was a necessary result of a districting process.

Comparison of Simulated Congressional Plans to the Enacted Congressional Plan

To evaluate the enacted Congressional Plan, I produced and analyzed a set of 1,000 simulated congressional plans using the computer simulation algorithm. As described earlier, the algorithm strictly follows the five non-partisan redistricting guidelines detailed in MCL § 3.63: Contiguity, perfect equalization of district populations, minimizing county breaks, minimizing municipal breaks, and geographic compactness. Table 2 compares how the enacted congressional plan and the 1,000 computer-simulated plans perform with respect to these various districting criteria.

Figure 1 compares the partisanship of the simulated plans to the partisanship of the enacted congressional plan. Specifically, Figure 1 uses all statewide elections during 2006-2010 (upper histogram) and during 2012-2016 (lower histogram) to measure the number of Republican-leaning districts created by the 1,000 simulated plans. As measured by these election results, the simulated plans all create from 6 to 8 Republican districts out of 14 total districts. Using the 2006-2010 statewide elections as a baseline, most of the simulated plans contain 7 Republican districts; using the 2012-2016 statewide elections as a baseline, the vast majority of simulated plans contain 7 Republican districts.

By contrast, the enacted congressional plans contains 9 Republican districts, using either set of statewide elections. In each histogram, the red dashed line indicates the number of Republican districts created by the enacted congressional plan. The finding that none of the 1,000 computer-simulated plans ever reaches the enacted plan's creation of 9 Republican districts demonstrates, with over 99.9% certainty, that the enacted plan created a pro-Republican partisan outcome that is a partisan outlier.

Figure 2 confirms this pro-Republican partisan bias in the enacted plan by analyzing districts using the education and university board elections held during 2006-2010 (upper histogram) and during 2012-2016 (lower histogram) to measure the number of Republican-leaning districts in each plan. As measured by these election results, the simulated plans all create from 5 to 8 Republican districts out of 14 total districts. Using the 2006-2010 statewide elections, most of the simulated plans contain 6 Republican districts; using the 2012-2016 statewide elections, the vast majority of simulated plans contain 7 Republican districts. By contrast, the enacted congressional plans contains 9 Republican districts, using either set of statewide elections. This is an outcome never observed in any of the 1,000 computer simulated plans, thus confirming that the enacted plan is a partisan outlier.

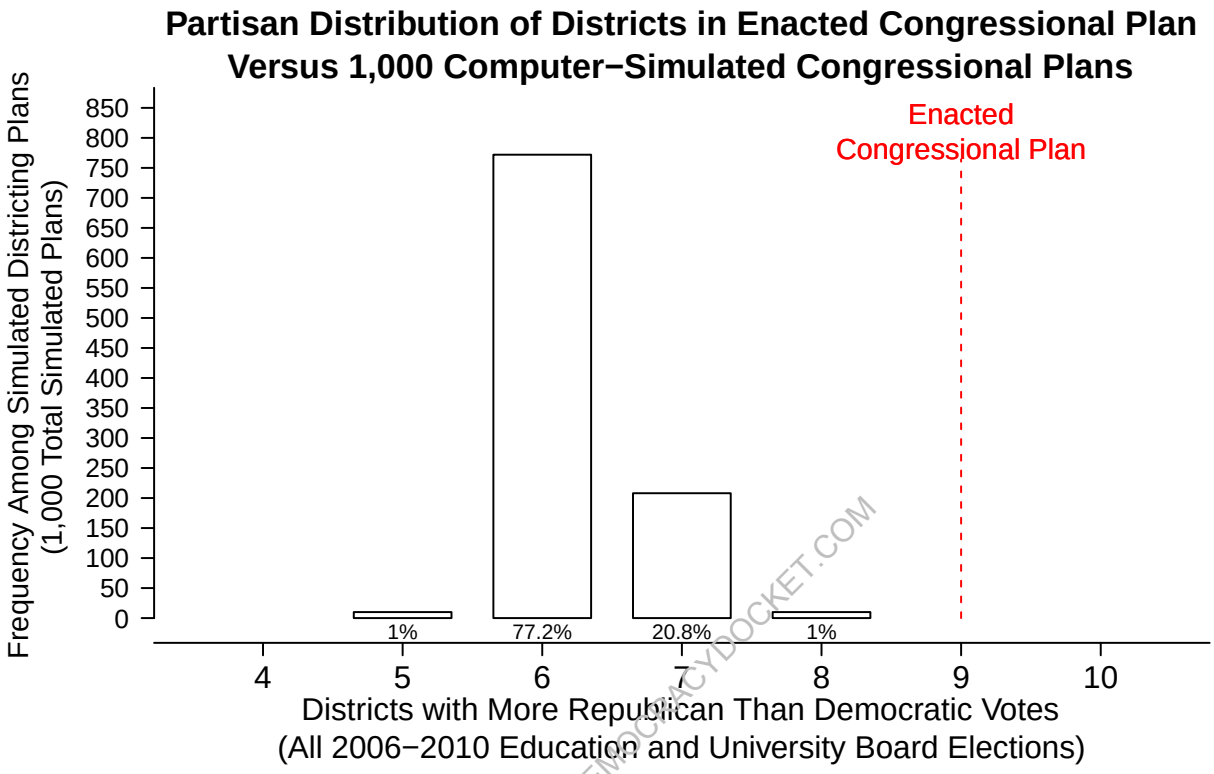
Why did the enacted congressional plan fail to produce geographically compact districts? As Figures 1 – 4 collectively illustrate, the enacted congressional plan is entirely outside the range of all 1,000 simulated maps with respect to both geographic compactness and the partisan distribution of seats

Collectively, these findings suggest that the enacted congressional plan was drawn under a process in which a partisan goal – the creation of 9 Republican districts – predominated. I am thus able to conclude, with over 99.9% statistical certainty, that the enacted congressional plan created districts less compact than what would have reasonably emerged from a districting process not driven by partisan intent.

Table 2:
Comparison of the Enacted Congressional Plan (Act 128 of 2011) to Computer-Simulated Congressional Plans

	Enacted Congressional Plan (Public Act 128 of 2011)	1,000 Computer-Simulated Congressional Maps:
Number of County Breaks, as defined by MCL 3.54(b) (Including Wayne County):	11	10 (1,000 simulated maps)
Number of Counties Divided into Multiple Districts (Including Wayne County):	11	9 (22 simulated maps) 10 (978 simulated maps)
Number of Municipal Breaks, as defined by MCL 3.63(c) (Excluding Detroit):	12	9 (18 simulated maps) 10 (982 simulated maps)
Number of Municipalities Divided into Multiple Districts (Excluding Detroit):	12	9 (18 simulated maps) 10 (982 simulated maps)
Compactness as Defined by MCL 3.63(c)(vii) Total Land Area Within Districts' Circumscribing Circles but Outside of their Respective Districts (Lower Area Indicates Greater Compactness):	120,210 Sq. Km.	95,171 to 114,898 Sq. Km.
Compactness as Defined by MCL 3.63(c)(vii) Average Ratio of Each District's Land Area to the Land Area Inside the District's Circumscribing Circle (Higher Ratio Indicates Greater Compactness):	0.463	0.471 to 0.509
Compactness, Measured Using Average Reock Score (Higher Score Indicates Greater Compactness):	0.389	0.433 to 0.474
Districts with More Republican than Democratic Votes (All 2006-2010 statewide elections):	9	6 (227 simulated maps) 7 (453 simulated maps) 8 (320 simulated maps)
Districts with More Republican than Democratic Votes (All 2012-2016 statewide elections):	9	6 (5 simulated maps) 7 (875 simulated maps) 8 (120 simulated maps)
Districts with More Republican than Democratic Votes (All 2006-2010 Education and University Board elections):	9	5 (10 simulated maps) 6 (772 simulated maps) 7 (208 simulated maps) 8 (10 simulated maps)
Districts with More Republican than Democratic Votes (All 2012-2016 Education and University Board elections):	9	6 (4 simulated maps) 7 (865 simulated maps) 8 (131 simulated maps)

Figure 1:



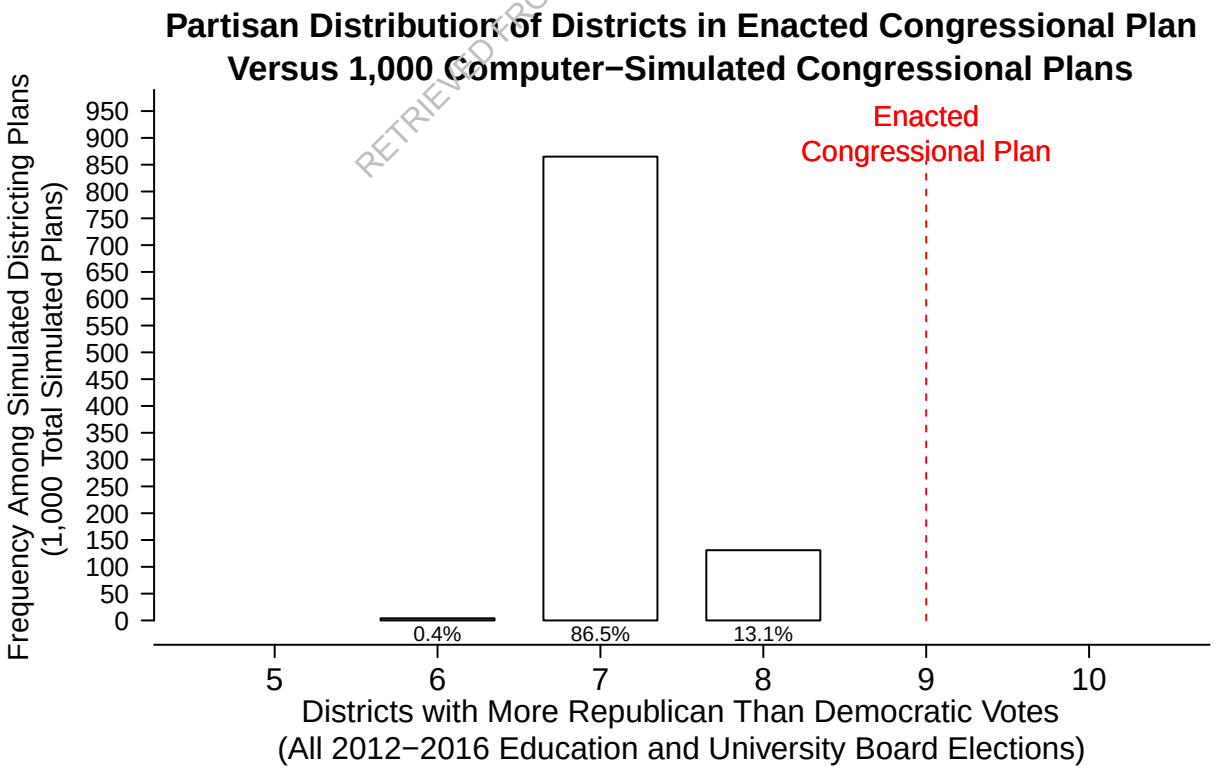
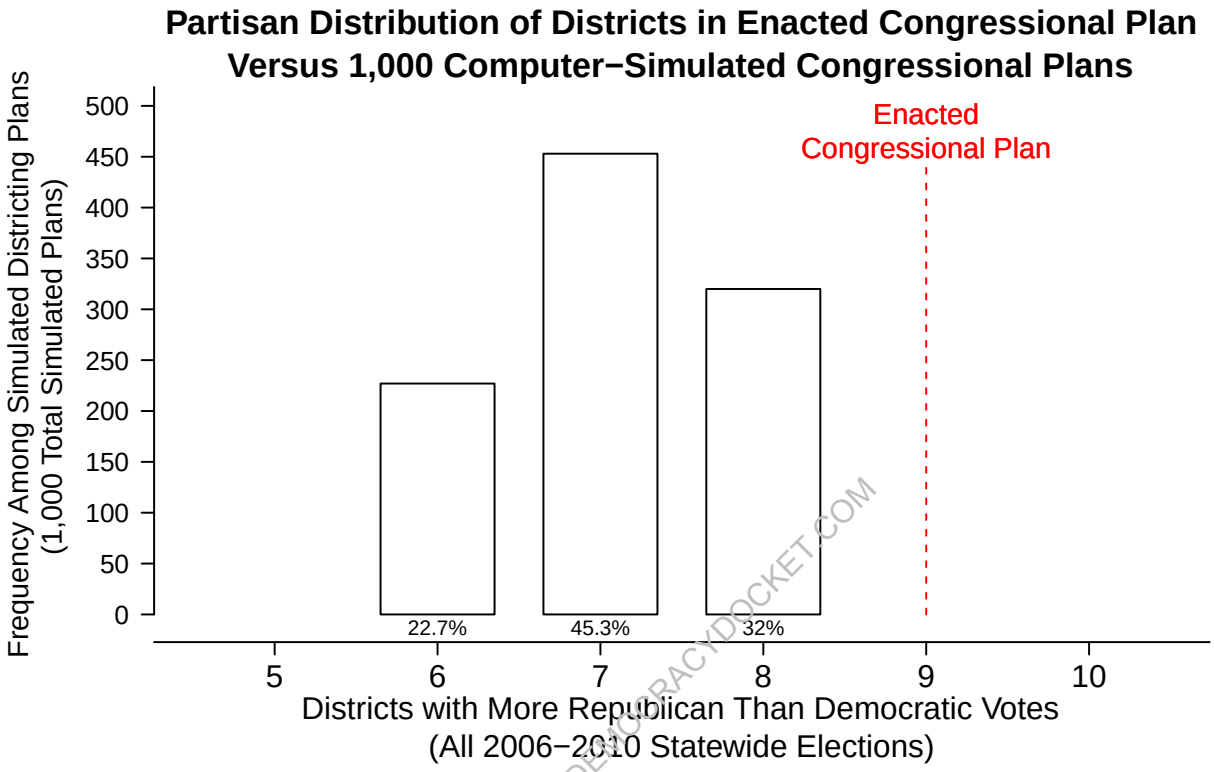
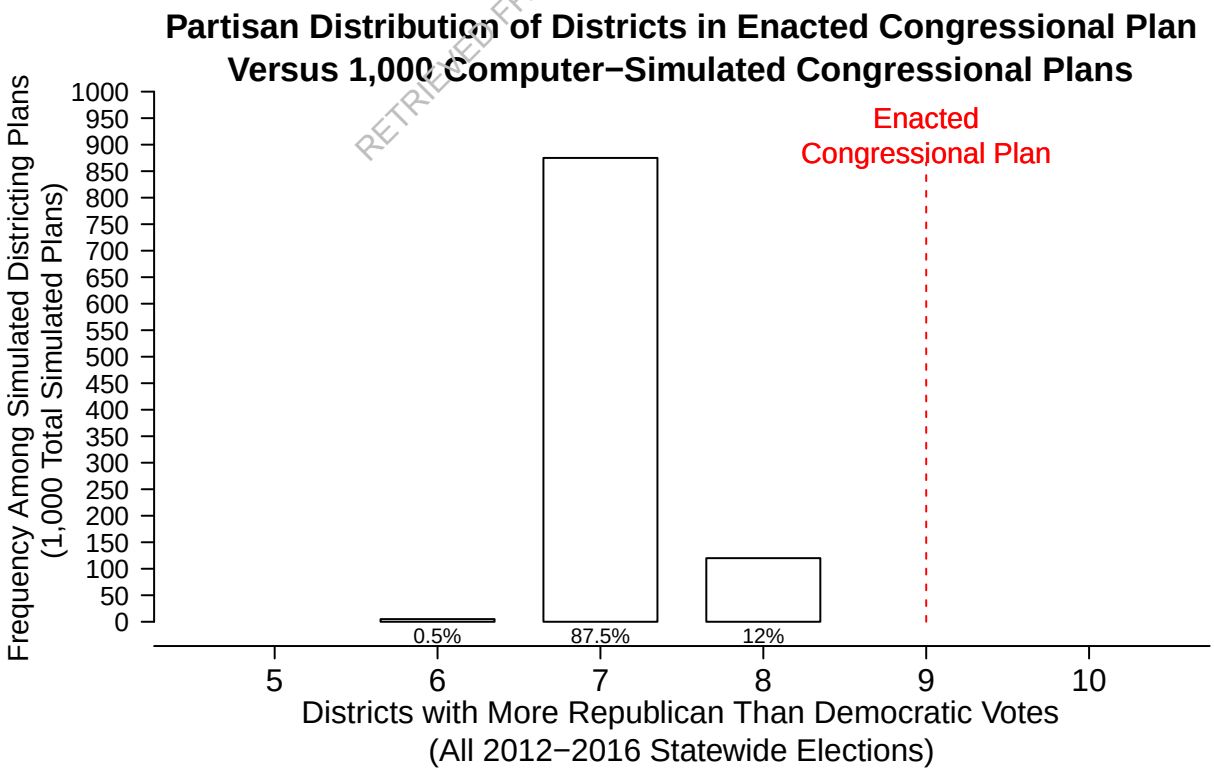


Figure 2:





Robustness Checks Using Alternative Measures of Partisan Bias: Comparing the number of Republican-favoring districts, as measured by recent past statewide elections, is the most comprehensive and statistically valid method of measuring the partisan bias of the enacted congressional plan, as compared to the computer-simulated plans. Counting the number of Republican and Democratic-favoring districts in a plan, as measured using recent statewide elections, is a broad, durable and sufficient measurement of districting plan partisanship, particularly since it is common practice in Michigan to assess the partisanship of districts by aggregating together the results of recent statewide education and university board elections.

What follows in the remainder of this section, then, is a completely separate set of analyses in which I examine the simulated plans and the enacted congressional plan using two alternative measures of partisanship and electoral bias: The Median-Mean Difference and the Efficiency Gap. These two alternative measures are presented as robustness checks, and the conclusions reached in the previous sections do not depend on these robustness checks. I introduce these alternative measures of districting-plan partisanship in order to illustrate the findings of my simulation analysis in more relatable ways and to demonstrate the robustness of these findings.

I first measure the Median-Mean Difference of the enacted congressional plan and then compare it to the Mean-Median Differences of the 1,000 computer-simulated congressional plans. As described earlier in this report, using the aggregated results of Michigan's 2006-2010 statewide elections, the 14 districts in Michigan's enacted congressional plan have a Median-Mean Difference of 6.72%. The enacted plan's districts have a mean Republican vote share of 46.80%, while the median district has a Republican vote share of 53.52%. Thus, the enacted congressional plan has a Median-Mean Difference of 6.72%, indicating that the median district is skewed significantly more Republican than the plan's average district. Similarly, using the results of Michigan's 2012-2016 statewide elections, the Median-Mean Difference of the enacted congressional plan is 7.55%, confirming that the median district is skewed significantly more Republican than the enacted plan's average district. In other words, the enacted plan distributes voters across districts in such a way that most districts are significantly more Republican-leaning than the average congressional district, while Democratic voters are more heavily concentrated in a minority of the congressional districts. This skew in the enacted plan thus creates a

significant advantage for Republicans by giving them stronger control over the median district in the enacted congressional plan.

Figure 3:

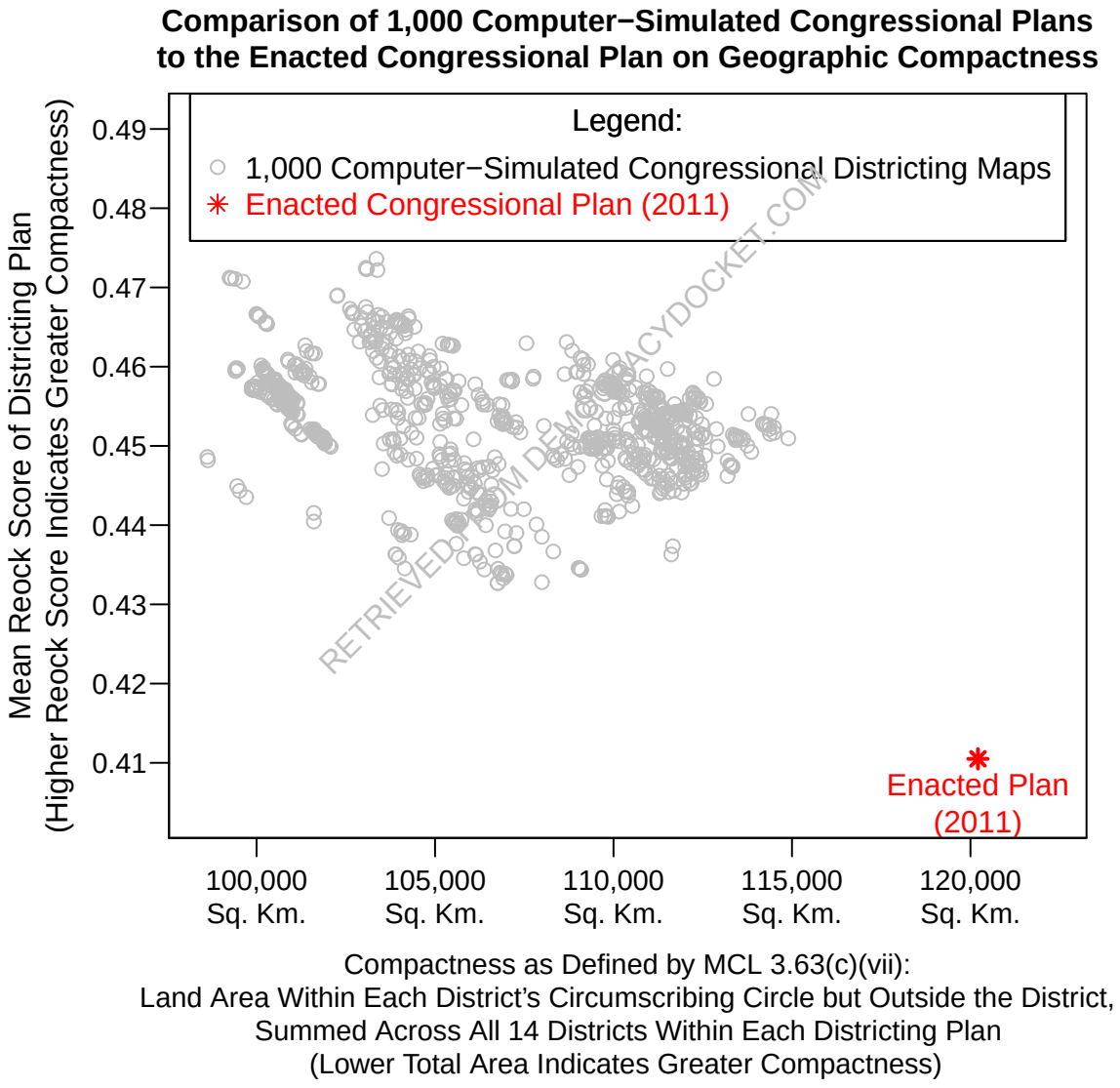
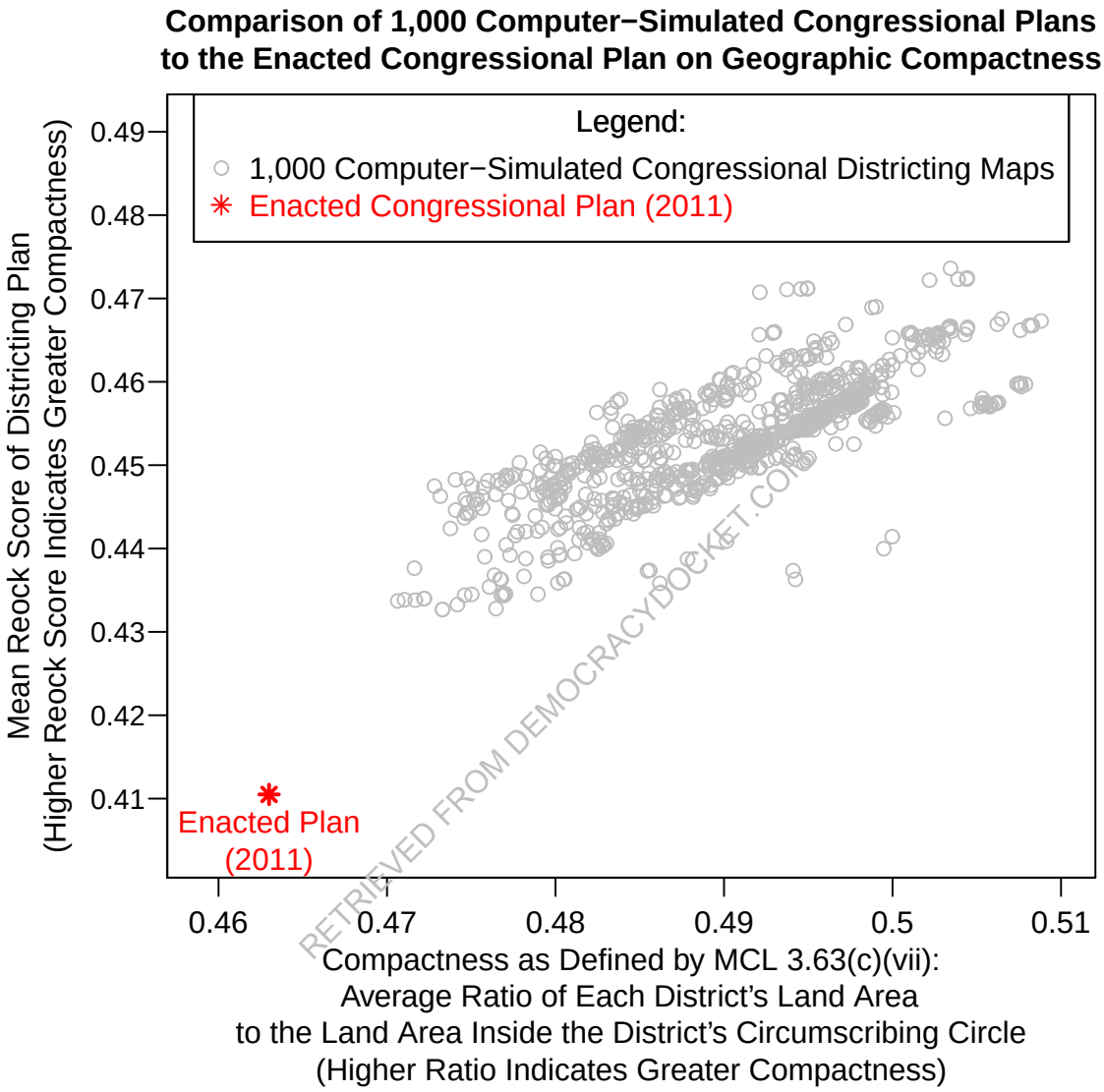


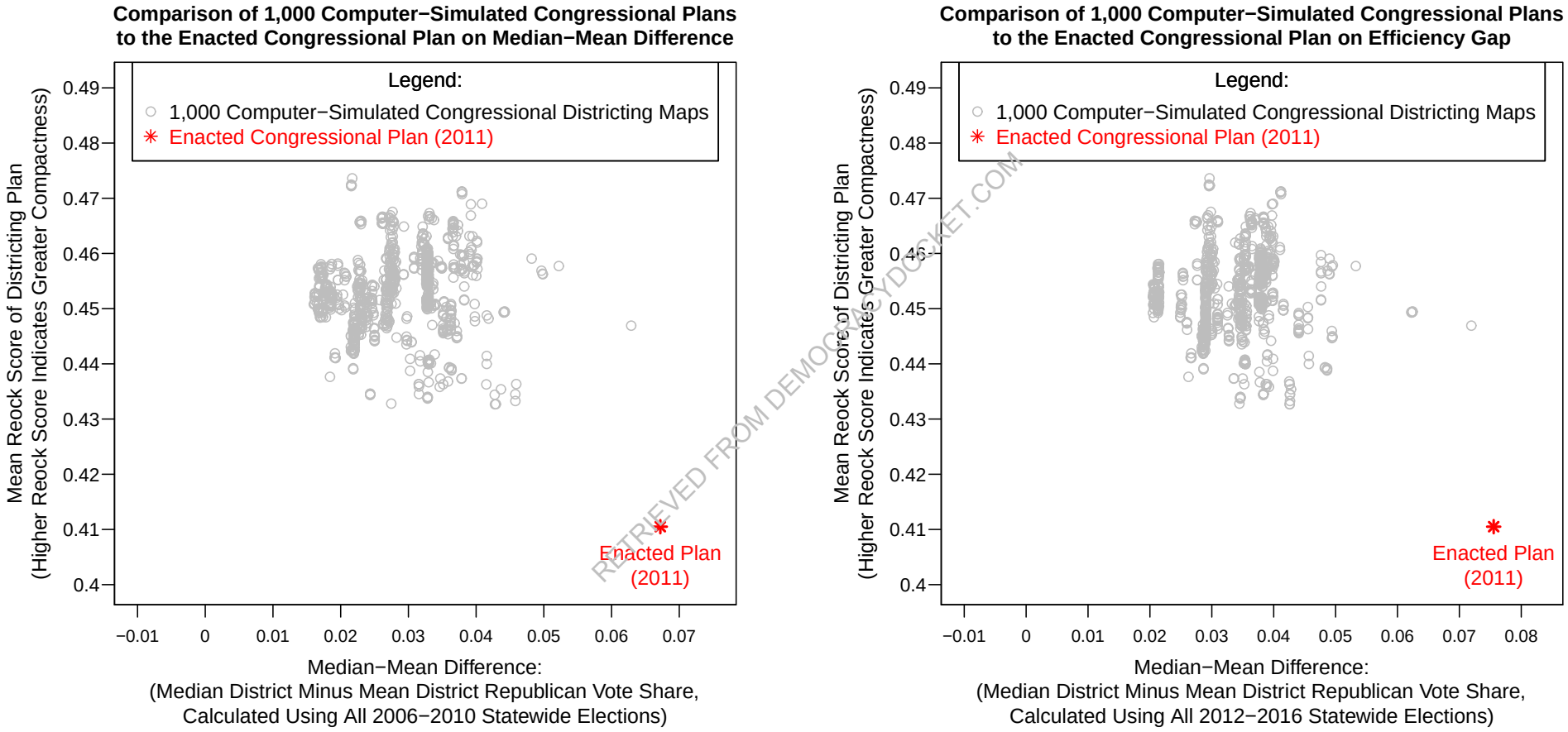
Figure 4:



How does this Median-Mean Difference of the enacted plan compare to that of the 1,000 computer-simulated plans? Figure 5 presents comparisons of the enacted congressional plan to the 1,000 computer-simulated plans on their Median-Mean Differences. The left side of this Figure calculates the Median-Mean Difference using the aggregated results of Michigan's 2006-2010 statewide elections, while the right side of the Figure uses the aggregated results of the 2012-2016 statewide elections. In both diagrams, the horizontal axis depicts the Median-Mean Difference of each plan, while the vertical axis depicts the Reock score of each plan, measuring the plan's geographic compactness. In each diagram, the red star represents the enacted congressional plan, while the gray circles represent the 1,000 computer-simulated plans.

Using either set of elections, it is very clear that the enacted congressional plan is significantly more skewed in favor of Republicans than every single one of the 1,000 computer-simulated plans. Almost all of the computer-simulated plans have a Median-Mean Difference between 2% to 3.8%, using the 2006-2010 statewide elections, and between 2% to 3.6%, using the 2012-2016 statewide elections. Not a single simulated plan comes even close to the enacted plan's extreme Median-Mean Difference of 6.72%, using the 2006-2010 statewide elections, and 7.55%, using the 2012-2016 statewide elections. I thus conclude, with extremely strong statistical certainty, that the enacted plan's extreme Median-Mean Difference is clearly not the result of Michigan's natural political geography, combined with the application of Michigan's statutory redistricting guidelines. It is the result of partisan intent.

Figure 5:

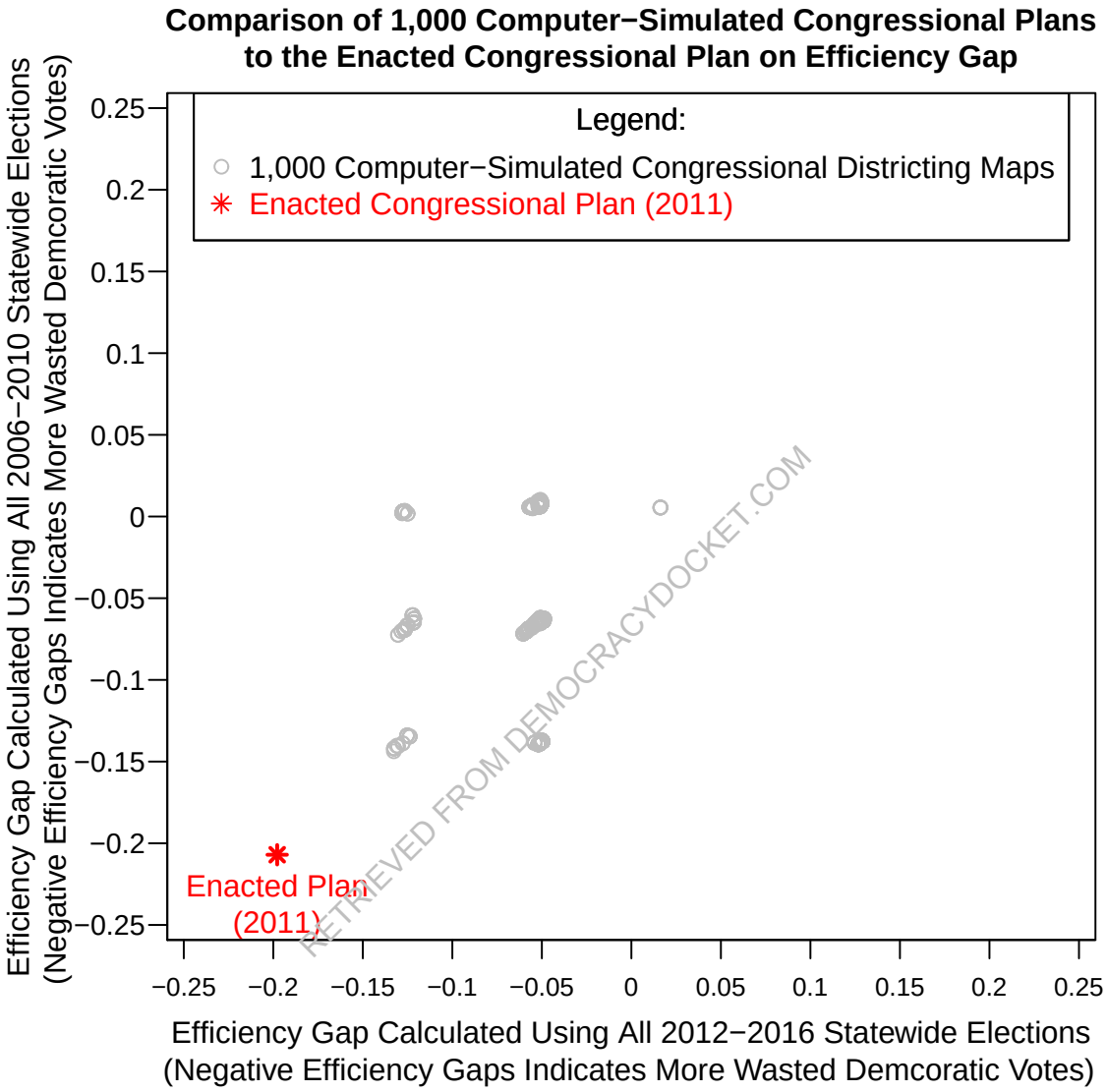


The fact that the 1,000 simulated plans in Figure 5 all produce a small but positive Median-Mean Difference results, at least in part, from the fact that, as noted earlier, the simulation algorithm simply freezes Congressional Districts 13 and 14 (covering Detroit City) from the enacted plan, without attempting to draw these two districts' boundaries in a partisan-neutral manner. The small Median-Mean Differences in the computer-simulated plans may also partially reflect a modest skew in Michigan's voter geography that slightly benefits the Republicans in districting. This modest skew in the simulated districting plans may result naturally from Democratic voters' tendency to cluster in urban areas of Michigan, as I have explained in my previous academic research.[6] But more importantly, even when combined with the skew from freezing majority-minority districts, the range of this natural skew, as shown in Figure 5, is always much smaller than the extreme 6.72% Median-Mean Difference observed in the enacted congressional plan. Hence, these results confirm the main finding that the enacted plan creates an extreme partisan outcome that cannot be explained by Michigan's voter geography or by the application of the MCL § 3.63 redistricting guidelines. Instead, the extremity of the enacted plan's Median-Mean Difference can only be explained by a districting process that pursued a partisan goal.

Next, I compare the enacted congressional plan to the 1,000 computer-simulated congressional plans using the efficiency gap. Figure 6 illustrates these efficiency gap calculations: The vertical axis depicts each plan's efficiency gap using the 2006-2010 statewide elections, while the horizontal axis depicts each plan's efficiency gap using the 2012-2016 statewide elections. The 1,000 gray circles in this Figure represent the computer-simulated districting plan, while the red star represents the enacted congressional plan.

[6] Jowei Chen and Jonathan Rodden, 2013. "Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures" *Quarterly Journal of Political Science*, 8(3): 239-269; Jowei Chen and David Cottrell, 2016. "Evaluating Partisan Gains from Congressional Gerrymandering: Using Computer Simulations to Estimate the Effect of Gerrymandering in the U.S. House." *Electoral Studies*, Vol. 44, No. 4: 329-430.

Figure 6:



First, this Figure reveals that most of the 1,000 simulated districting plans are reasonably neutral with respect to electoral bias, as measured by the efficiency gap. Using either set of elections, over half of the simulated plans exhibit an efficiency gap within 5% of zero, indicating minimal electoral bias in favor of either party. In fact, 22.5% of the simulations produce an efficiency gap between -1.0% and +1.0%, using the 2006-2010 statewide elections. These simulated plans with nearly zero efficiency gap are all plans that contain exactly six Republican and eight Democratic-favoring districts, as measured by the 2006-2010 statewide election results. These patterns illustrate that a non-partisan districting process very commonly produces a neutral congressional plan in Michigan with minimal electoral bias, as measured by efficiency gap.

Second, it is also important to note that the computer simulations produce plans with both slightly positive and negative efficiency gaps. But the broader, more striking finding in this analysis is that over one-half of the simulated plans produced by the partisan-neutral simulation algorithm strictly following traditional districting criteria are within 5% of a zero efficiency gap. Hence, it is clearly not difficult to create a map that is relatively unbiased according to the efficiency gap measure and follows the MCL § 3.63 redistricting guidelines. To produce a map with significant electoral bias deviating by over 15% from a zero efficiency gap would require extraordinary and deliberate partisan map-drawing efforts.

Third, Michigan's enacted congressional plan, denoted in Figure 6 as a red star, produces an efficiency gap that is extremely inconsistent with and outside of the entire range of the 1,000 computer-simulated plans. The enacted plan creates an efficiency gap of -20.7% using the 2006-2010 statewide elections and -19.8% using the 2012-2016 statewide elections, indicating that the plan consistently results in significantly more wasted Democratic votes than wasted Republican votes. Thus, the level of electoral bias in the enacted congressional plan is not only entirely outside of the range produced by the simulated plans, the enacted plan's efficiency gap is far more biased than even most biased of the 1,000 simulated plans. The improbable nature of the enacted plan's efficiency gap allows us to conclude with overwhelmingly high statistical certainty that the enacted congressional plan is a partisan outlier.

Comparison of Simulated Senate Plans to the Enacted Senate Plan

To evaluate Michigan's enacted Senate Plan, I produced and analyzed a set of 1,000 simulated Senate plans using the computer simulation algorithm. As described earlier, the algorithm strictly follows the five non-partisan redistricting guidelines detailed in MCL § 4.261: Contiguity, equalization of district populations within the thresholds mandated by MCL § 4.261, minimizing county breaks, minimizing municipal breaks, and geographic compactness. Table 3 compares how the enacted Senate plan and the 1,000 computer-simulated plans perform with respect to these various districting criteria.

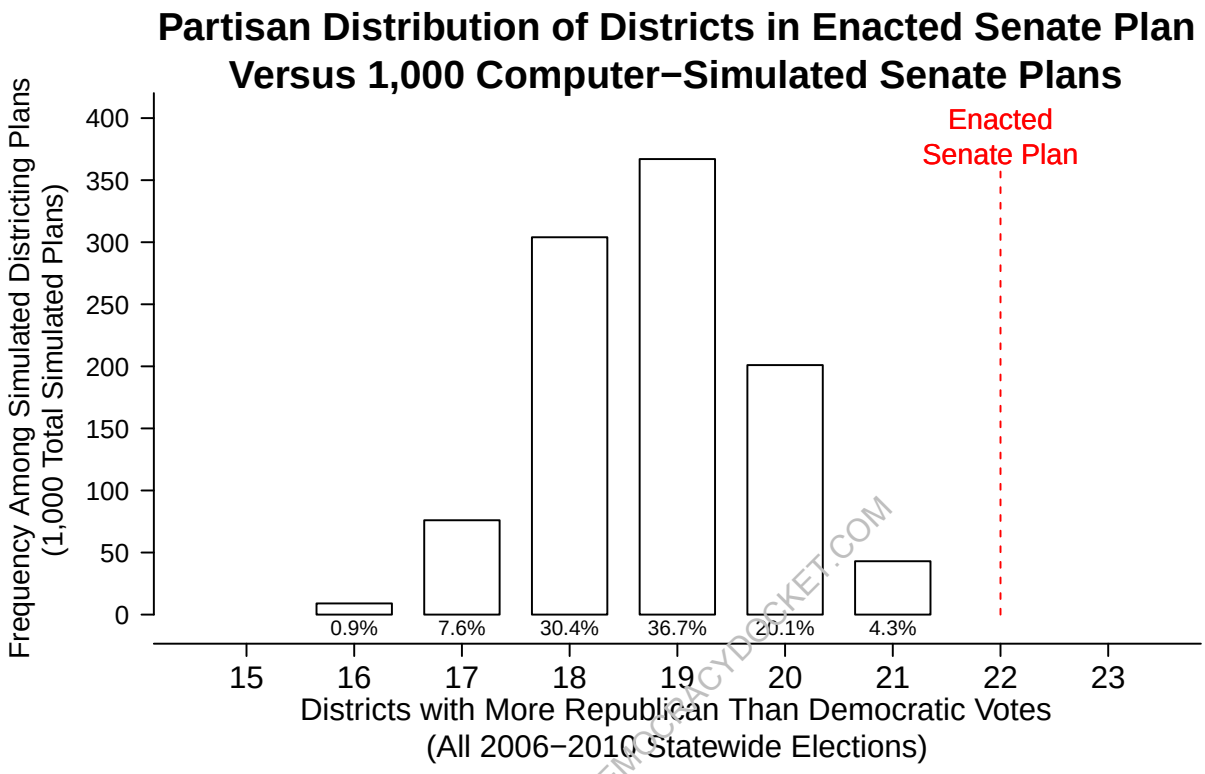
Figure 7 compares the partisanship of the simulated plans to the partisanship of the enacted Senate plan. Specifically, Figure 7 uses all statewide elections during 2006-2010 (upper histogram) and during 2012-2016 (lower histogram) to measure the number of Republican-leaning districts created by the 1,000 simulated plans. As measured by the 2006-2010 statewide election results as a baseline, the simulated plans all create from 16 to 21 Republican districts out of 38 total districts; the vast majority of simulated plans create 18 to 20 Republican districts. Using the 2012-2016 statewide elections as a baseline, the simulated plans all create from 18 to 22 Republican districts out of 38 total districts; the vast majority of simulated plans create 19 or 20 Republican districts.

By contrast, the enacted Senate plans contains 22 Republican districts, as measured by the 2006-2010 elections, and 24 Republican districts, as measured by the 2012-2016 elections. In each histogram, the red dashed line indicates the number of Republican districts created by the enacted Senate plan. The finding that none of the 1,000 computer-simulated plans ever reaches as many Republican districts as the enacted plan allows me to conclude, with over 99.9% certainty, that the enacted plan is a partisan outlier that intentionally created a pro-Republican partisan outcome.

Table 3:
Comparison of the Enacted Senate Plan (Act 129 of 2011) to Computer-Simulated Senate Plans

	Enacted Senate Pla (Public Act 129 of 2011):	1,000 Computer-Simulated Senate Maps:
Number of County Breaks, as described by MCL 4.261:	6	5 (1,000 simulated maps)
Number of Counties Divided into Multiple Districts (Excludes Wayne County):	6	5 (1,000 simulated maps)
Number of Municipal Breaks, as described by MCL 4.261 (Excluding Detroit and Brownstown Twp):	5	0 (1,000 simulated maps)
Number of Municipalities Divided into Multiple Districts (Excluding Detroit):	6	1 (1,000 simulated maps)
Compactness as Defined by MCL 4.261(j) Total Land Area Within Districts' Circumscribing Circles but Outside of their Respective Districts (Lower Area Indicates Greater Compactness):	138,893 Sq. Km.	96,030 to 126,774 Sq. Km.
Compactness as Defined by MCL 4.261(j) Average Ratio of Each District's Land Area to the Land Area Inside the District's Circumscribing Circle (Higher Ratio Indicates Greater Compactness):	0.459	0.477 to 0.503
Compactness, Measured Using Average Reock Score (Higher Score Indicates Greater Compactness):	0.395	0.419 to 0.442
Districts with More Republican than Democratic Votes (All 2006-2010 statewide elections):	22	16 (9 simulated maps) 17 (76 simulated maps) 18 (304 simulated maps) 19 (367 simulated maps) 20 (201 simulated maps) 21 (43 simulated maps)
Districts with More Republican than Democratic Votes (All 2012-2016 statewide elections):	24	18 (123 simulated maps) 19 (454 simulated maps) 20 (346 simulated maps) 21 (75 simulated maps) 22 (2 simulated map)

Figure 7:



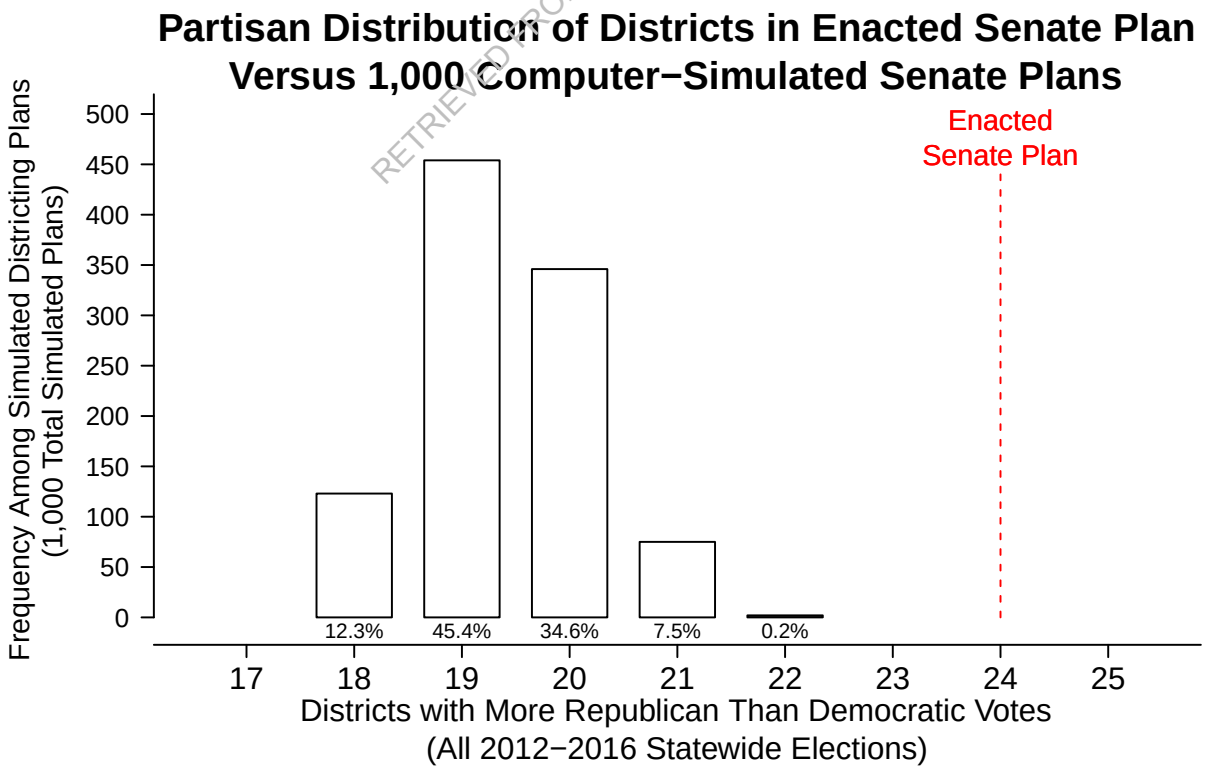
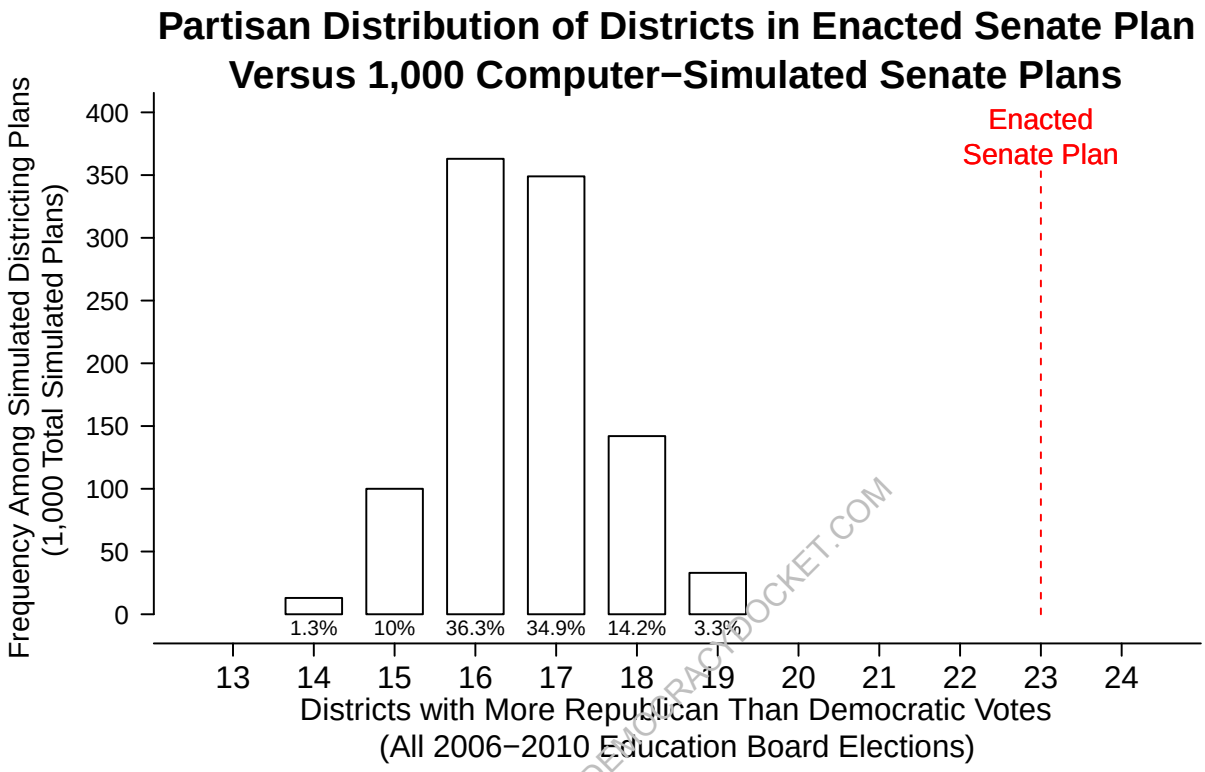


Figure 8:



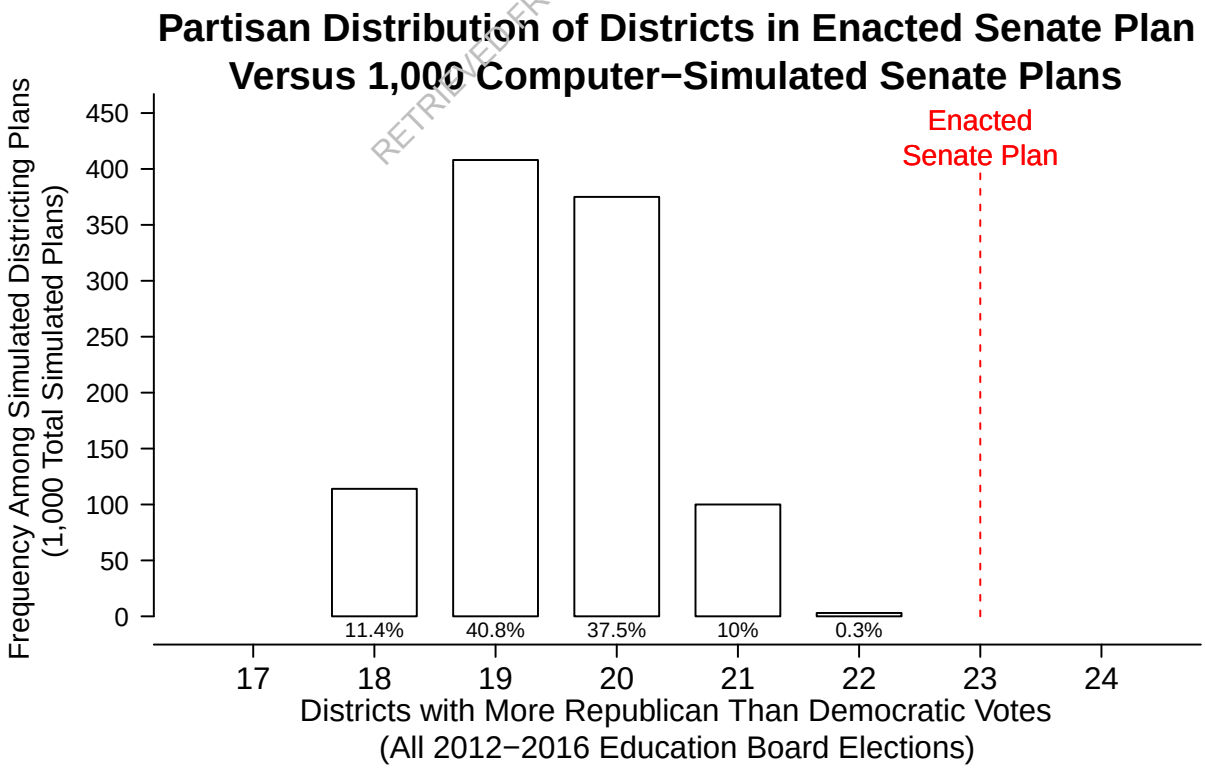


Figure 8 confirms this pro-Republican partisan bias in the enacted Senate plan by analyzing districts using the education and university board elections held during 2006-2010 (upper histogram) and during 2012-2016 (lower histogram) to measure the number of Republican-leaning districts in each plan. As measured by the 2006-2010 statewide election results, the simulated plans all create from 14 to 19 Republican districts out of 38 total districts; the vast majority of simulated plans create 16 or 17 Republican districts. Using the 2012-2016 education and university board elections, the simulated plans all create from 18 to 22 Republican districts out of 38 total districts; the vast majority of simulated plans create 19 or 20 Republican districts.

By contrast, the enacted Senate plan contains 23 Republican districts, as measured by the 2006-2010 education and university board elections, and 23 Republican districts, as measured by the 2012-2016 education and university board elections. In each histogram, the red dashed line indicates the number of Republican districts created by the enacted Senate plan. The finding that none of the 1,000 computer-simulated plans ever reaches the number of Republican districts in the enacted plan allows me to confirm, with over 99.9% statistical certainty, that the enacted plan created a pro-Republican partisan bias, and that the enacted plan is a partisan outlier.

Why did the enacted Senate plan fail to produce geographically compact districts? As Figures 7 – 10 collectively illustrate, the enacted Senate plan is entirely outside the range of all 1,000 simulated maps with respect to both geographic compactness and the partisan distribution of seats.

Collectively, these findings suggest that the enacted Senate plan was drawn under a process in which a partisan goal – creating additional Republican districts – predominated. I am thus able to conclude, with over 99.9% statistical certainty, that the enacted Senate plan created districts less compact than what would have reasonably emerged from a nonpartisan districting process rather than a process driven by partisan intent.

Figure 9:

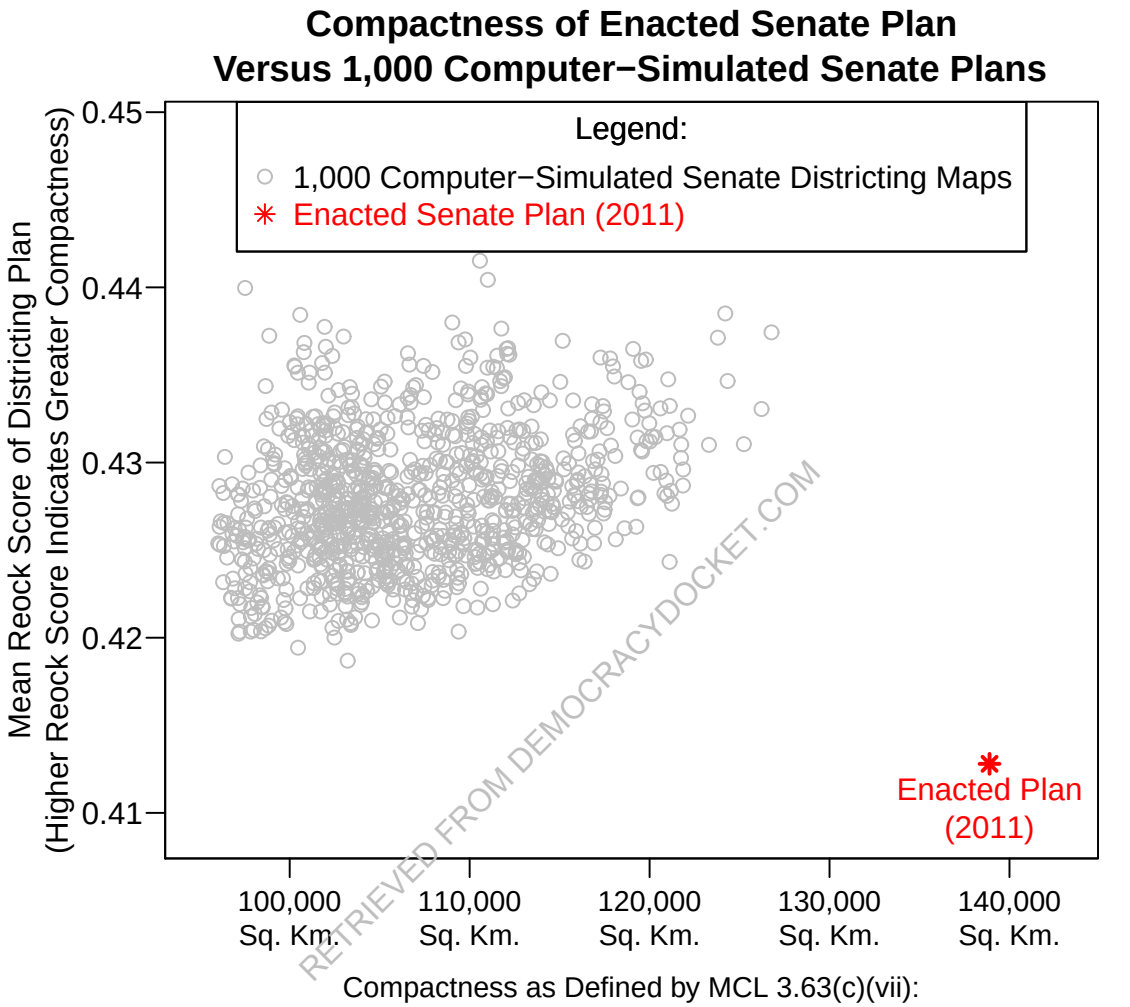
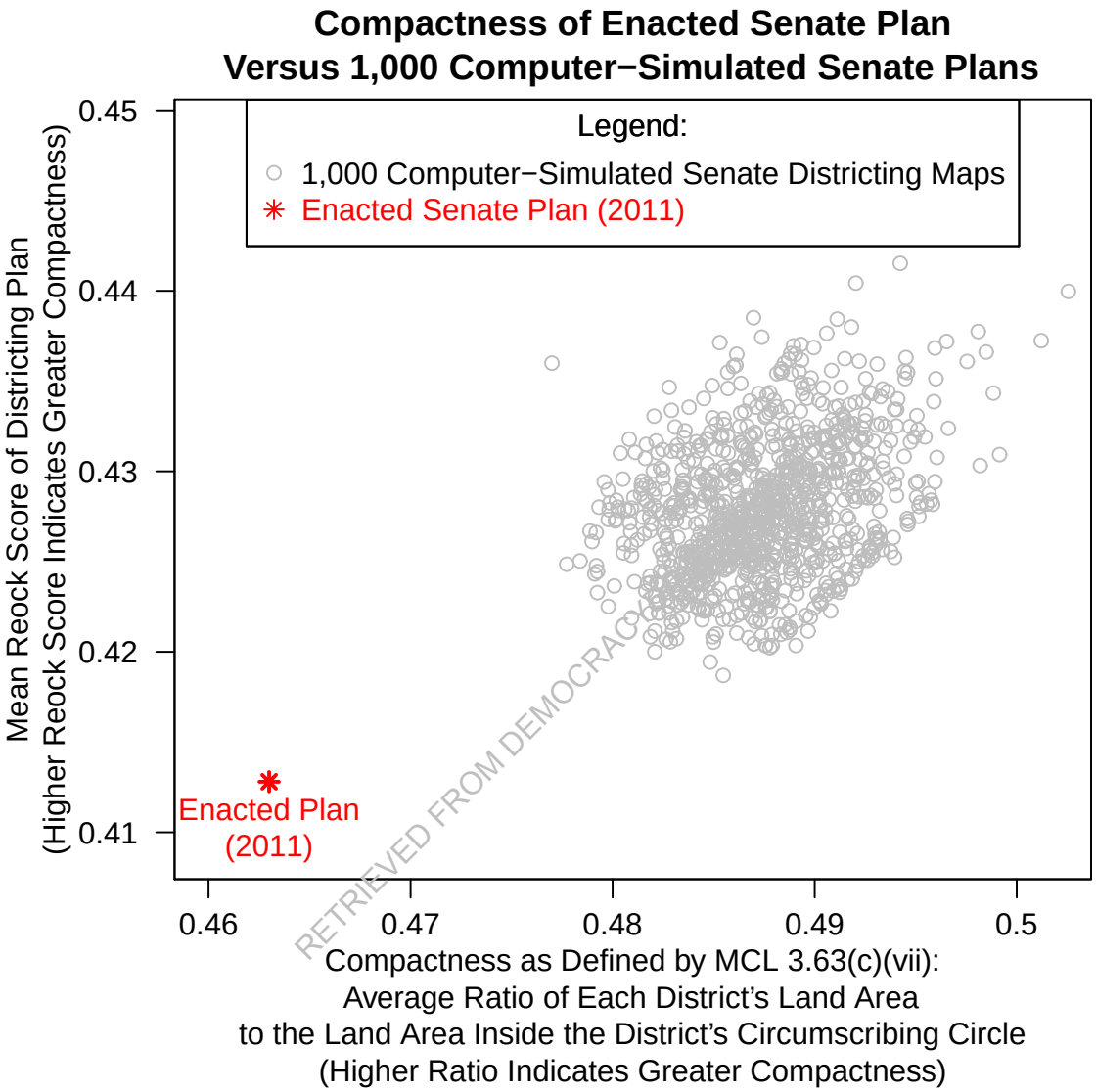


Figure 10:



Robustness Checks Using Alternative Measures of Partisan Bias: Comparing the number of Republican-favoring districts, as measured by recent past statewide elections, is the most comprehensive and statistically valid method of measuring the partisan bias of the enacted Senate plan, as compared to the computer-simulated plans. Counting the number of Republican and Democratic-favoring districts in a plan, as measured using recent statewide elections, is a broad, durable and sufficient measurement of districting plan partisanship, particularly since it is common practice in Michigan to assess the partisanship of districts by aggregating together the results of recent statewide education and university board elections.

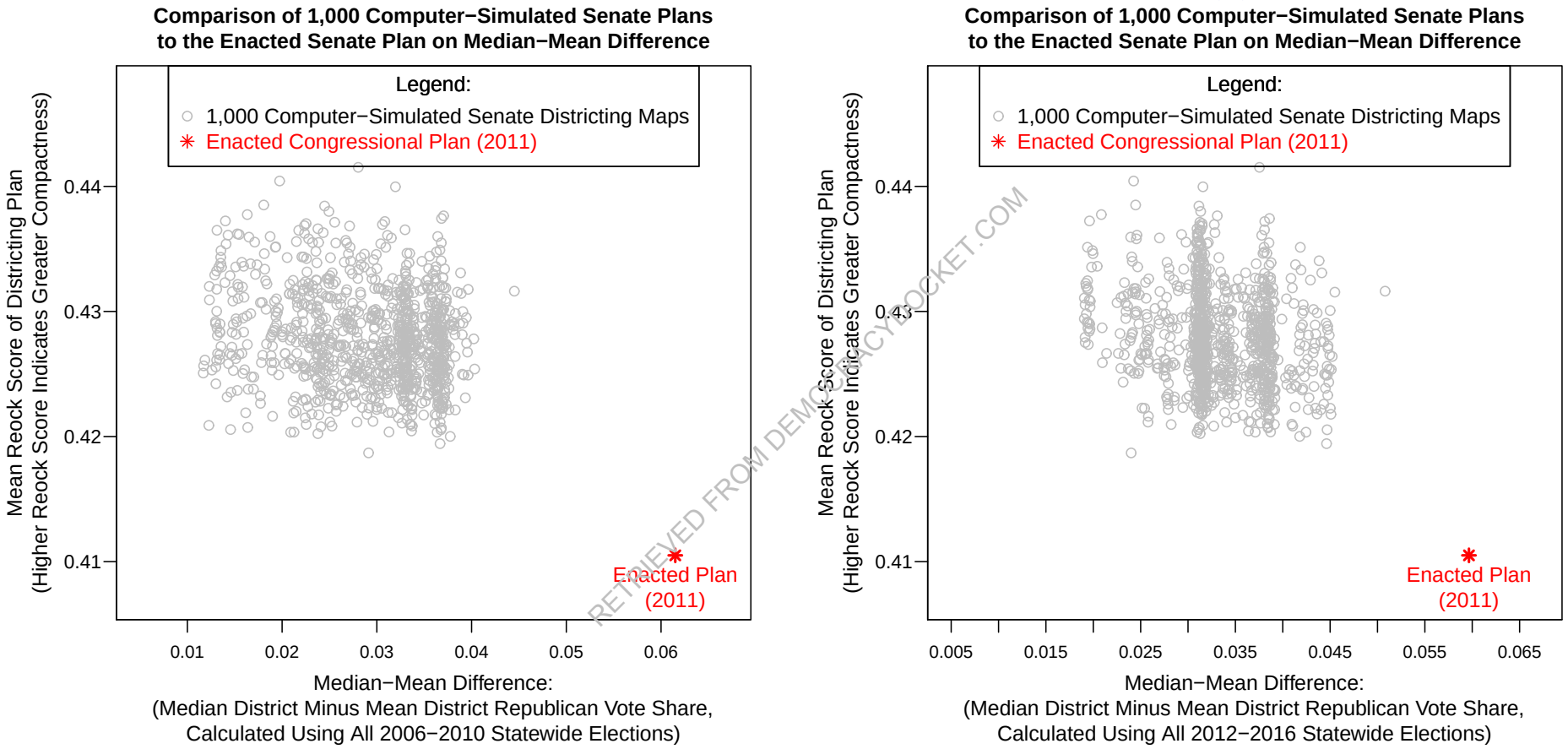
What follows in the remainder of this section, then, is a completely separate set of analyses in which I examine the simulated plans and the enacted Senate plan using two alternative measures of partisanship and electoral bias: The Median-Mean Difference and the Efficiency Gap. These two alternative measures are presented as robustness checks, and the conclusions reached in the previous sections do not depend on these robustness checks. I introduce these alternative measures of districting plan partisanship in order to illustrate the findings of my simulation analysis in more relatable ways and to demonstrate the robustness of these findings.

I first measure the Median-Mean Difference of the enacted Senate plan and then compare it to the Mean-Median Differences of the 1,000 computer-simulated Senate plans. As described earlier in this report, using the aggregated results of Michigan's 2006-2010 statewide elections, the 38 districts in Michigan's enacted Senate plan have a Median-Mean Difference of 6.15%. The enacted plan's districts have a mean Republican vote share of 46.59%, while the median district has a Republican vote share of 52.74%. Thus, the enacted Senate plan has a Median-Mean Difference of 6.15%, indicating that the median district is skewed significantly more Republican than the plan's average district. Similarly, using the results of Michigan's 2012-2016 statewide elections, the Median-Mean Difference of the enacted Senate plan is 5.97%, confirming that the median district is skewed significantly more Republican than the enacted plan's average district. In other words, the enacted plan distributes voters across districts in such a way that most districts are significantly more Republican-leaning than the average Senate district, while Democratic voters are more heavily concentrated in a minority of the Senate districts. This skew in the enacted plan thus creates a significant advantage for Republicans by giving them stronger control over the median district in the enacted Senate plan.

How does this Median-Mean Difference of the enacted plan compare to that of the 1,000 computer-simulated plans? Figure 11 presents comparisons of the enacted Senate plan to the 1,000 computer-simulated plans on their Median-Mean Differences. The left side of this Figure calculates the Median-Mean Difference using the aggregated results of Michigan's 2006-2010 statewide elections, while the right side of the Figure uses the aggregated results of the 2012-2016 statewide elections. In both diagrams, the horizontal axis depicts the Median-Mean Difference of each plan, while the vertical axis depicts the Reock score of each plan, measuring the plan's geographic compactness. In each diagram, the red star represents the enacted Senate plan, while the gray circles represent the 1,000 computer-simulated plans.

Using either set of elections, it is very clear that the enacted Senate plan is significantly more skewed in favor of Republicans than every single one of the 1,000 computer-simulated plans. Almost all of the computer-simulated plans have a Median-Mean Difference between 1.0% to 4.0%, using the 2006-2010 statewide elections, and between 1.7% to 4.5%, using the 2012-2016 statewide elections. Not a single simulated plan comes even close to the enacted plan's extreme Median-Mean Difference of 6.15%, using the 2006-2010 statewide elections, and 5.97%, using the 2012-2016 statewide elections. I thus conclude, with extremely strong statistical certainty, that the enacted Senate plan's extreme Median-Mean Difference is clearly not the result of Michigan's natural political geography, combined with the application of Michigan's statutory redistricting guidelines. It is the result of partisan intent.

Figure 11:

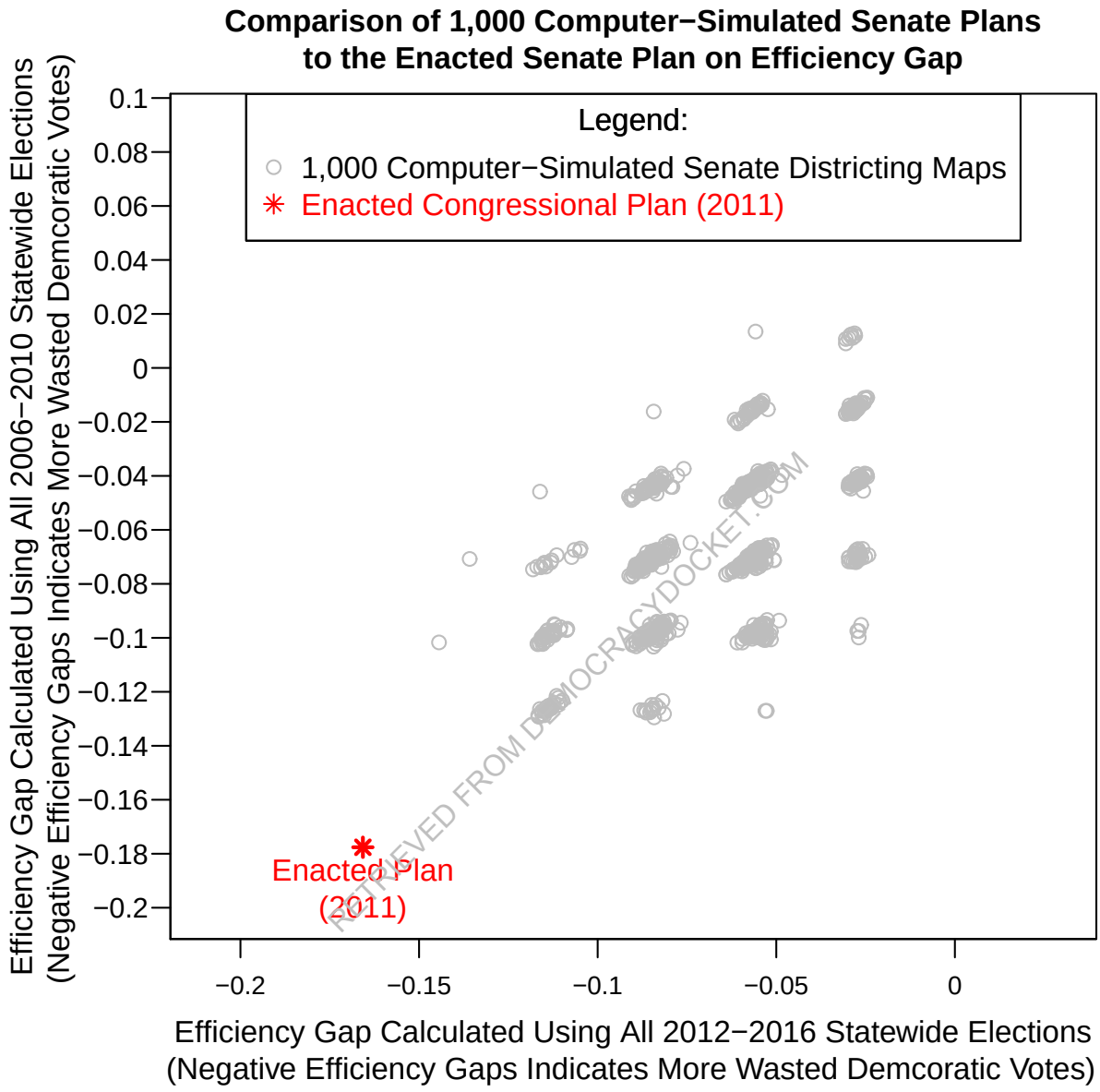


The fact that the 1,000 simulated plans in Figure 11 all produce a small but positive Median-Mean Difference results, at least in part, from the fact that, as noted earlier, the simulation algorithm simply freezes Senate Districts 1 through 7 (covering Detroit City and Wayne County) from the enacted plan, without attempting to draw these seven districts' boundaries in a partisan-neutral manner adhering to the MCL § 4.261 redistricting guidelines. The small Median-Mean Differences in the computer-simulated plans may also partially reflect a modest skew in Michigan's voter geography that slightly benefits the Republicans in districting. This modest skew in the simulated districting plans may result naturally from Democratic voters' tendency to cluster in urban areas of Michigan, as I have explained in my previous academic research.[7] But more importantly, even when combined with the skew from freezing majority-minority districts, the range of this natural skew, as shown in Figure 11, is always much smaller than the extreme 6.15% and 5.97% Median-Mean Differences observed in the enacted Senate plan. Hence, these results confirm the main finding that the enacted plan creates an extreme partisan outcome that cannot be explained by Michigan's voter geography or by the application of the MCL § 4.261 redistricting guidelines. Instead, the extremity of the enacted plan's Median-Mean Difference can only be explained by a districting process that pursued a partisan goal in the drawing of districts.

Next, I compare the enacted Senate plan to the 1,000 computer-simulated Senate plans using the efficiency gap. Figure 12 illustrates these efficiency gap calculations: The vertical axis depicts each plan's efficiency gap using the 2006-2010 statewide elections, while the horizontal axis depicts each plan's efficiency gap using the 2012-2016 statewide elections. The 1,000 gray circles in this Figure represent the computer-simulated districting plan, while the red star represents the enacted Senate plan.

[7] Jowei Chen and Jonathan Rodden, 2013. "Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures" *Quarterly Journal of Political Science*, 8(3): 239-269; Jowei Chen and David Cottrell, 2016. "Evaluating Partisan Gains from Congressional Gerrymandering: Using Computer Simulations to Estimate the Effect of Gerrymandering in the U.S. House." *Electoral Studies*, Vol. 44, No. 4: 329-430.

Figure 12



First, this Figure reveals that most of the 1,000 simulated districting plans are reasonably neutral with respect to electoral bias, as measured by the efficiency gap. Using either set of elections, over half of the simulated plans exhibit an efficiency gap within 6% of zero, indicating minimal electoral bias in favor of either party. Not a single simulated plan exhibits an efficiency gap greater than 15%. These patterns illustrate that a non-partisan districting process very commonly produces a neutral Senate plan with minimal electoral bias, as measured by efficiency gap.

Second, it is also important to note that the computer simulations produce plans with both slightly positive and negative efficiency gaps. But the broader, more striking finding in this analysis is that over one-half of the simulated plans produced by the partisan-neutral simulation algorithm following traditional districting criteria are within 6% of a zero efficiency gap. Hence, it is clearly not difficult to create a map that is relatively unbiased according to the efficiency gap measure. To produce a map with significant electoral bias deviating by over 15% from a zero efficiency gap, however, would require extraordinary and deliberate partisan map-drawing efforts.

Third, Michigan's enacted Senate plan, denoted in Figure 12 as a red star, produces an efficiency gap that is extremely inconsistent with and outside of the entire range of the 1,000 computer-simulated plans. The enacted plan creates an efficiency gap of -17.8% using the 2006-2010 statewide elections and -16.6% using the 2012-2016 statewide elections, indicating that the plan consistently results in significantly more wasted Democratic votes than wasted Republican votes. Thus, the level of electoral bias in the enacted Senate plan is not only entirely outside of the range produced by the simulated plans, the enacted plan's efficiency gap is far more biased than even the most biased of the 1,000 simulated plans. The improbable nature of the enacted Senate plan's efficiency gap allows us to conclude with overwhelmingly high statistical certainty that the enacted Senate plan is a partisan outlier.

Comparison of Simulated House Plans to the Enacted House Plan

To evaluate Michigan's enacted House Plan, I produced and analyzed a set of 1,000 simulated House plans using the computer simulation algorithm. As described earlier, the algorithm strictly follows the five non-partisan redistricting guidelines detailed in MCL § 4.261: Contiguity, equalization of district populations within the thresholds mandated by MCL § 4.261, minimizing county breaks, minimizing municipal breaks, and geographic compactness. Table 4 compares how the enacted House plan and the 1,000 computer-simulated plans perform with respect to these various districting criteria.

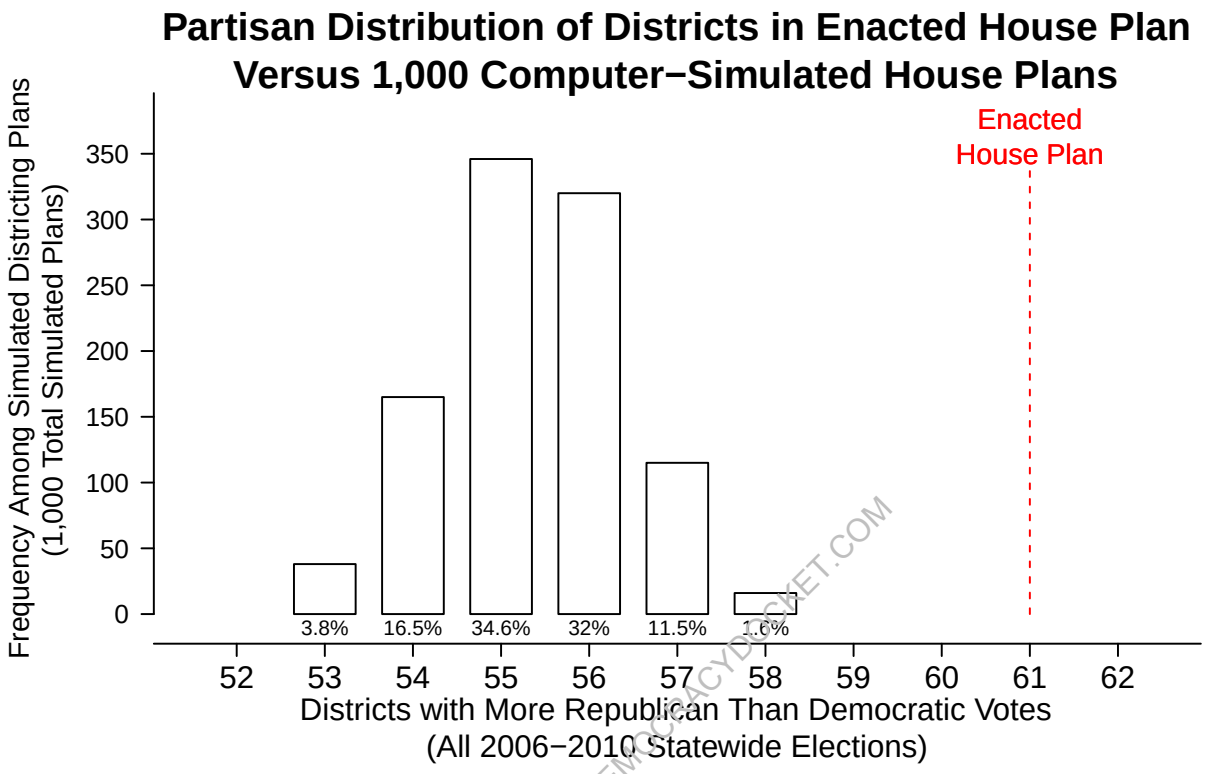
Figure 13 compares the partisanship of the simulated plans to the partisanship of the enacted House plan. Specifically, Figure 13 uses all statewide elections during 2006-2010 (upper histogram) and during 2012-2016 (lower histogram) to measure the number of Republican-leaning districts created by the 1,000 simulated plans. As measured by the 2006-2010 statewide election results, the simulated plans all create from 53 to 58 Republican districts out of 110 total districts; the vast majority of simulated plans create 54 to 56 Republican districts. Using the 2012-2016 statewide elections as a baseline, the simulated plans all create from 56 to 60 Republican districts out of 110 total districts; the vast majority of simulated plans create 58 Republican districts.

By contrast, the enacted House plans contains 61 Republican districts, as measured by the 2006-2010 elections, and 61 Republican districts, as measured by the 2012-2016 elections. In each histogram, the red dashed line indicates the number of Republican districts created by the enacted House plan. The finding that none of the 1,000 computer-simulated plans ever reaches the enacted plan's creation of 61 Republican districts allows me to conclude, with over 99.9% statistical certainty, that the enacted plan is a partisan outlier which intentionally created a pro-Republican partisan outcome.

Table 4:
Comparison of the Enacted House Plan (Act 129 of 2011) to Computer-Simulated House Plans

	Enacted House Plan (Public Act 129 of 2011):	1,000 Computer-Simulated House Maps:
Number of County Breaks, as described by MCL 4.261:	17	14 (1,000 simulated maps)
Number of Counties Divided into Multiple Districts (Including Wayne County):	28	27 (1,000 simulated maps)
Number of Municipal Breaks, as described by MCL 4.261 (Excluding Detroit):	24	13 (300 simulated maps) 14 (700 simulated maps)
Number of Municipalities Divided into Multiple Districts (Excluding Detroit):	24	14 (994 simulated maps) 15 (6 simulated maps)
Compactness as Defined by MCL 4.261(j) Total Land Area Within Districts' Circumscribing Circles but Outside of their Respective Districts (Lower Area Indicates Greater Compactness):	176,224 Sq. Km.	149,055 to 172,776 Sq. Km.
Compactness as Defined by MCL 4.261(j) Average Ratio of Each District's Land Area to the Land Area Inside the District's Circumscribing Circle (Higher Ratio Indicates Greater Compactness):	0.447	0.448 to 0.468
Compactness, Measured Using Average Reock Score (Higher Score Indicates Greater Compactness):	0.415	0.418 to 0.435
Districts with More Republican than Democratic Votes (All 2006-2010 statewide elections):	61	53 (38 simulated maps) 54 (165 simulated maps) 55 (346 simulated maps) 56 (320 simulated maps) 57 (115 simulated maps) 58 (16 simulated maps)
Districts with More Republican than Democratic Votes (All 2012-2016 statewide elections):	61	56 (1 simulated maps) 57 (81 simulated maps) 58 (749 simulated maps) 59 (167 simulated maps) 60 (2 simulated maps)

Figure 13:



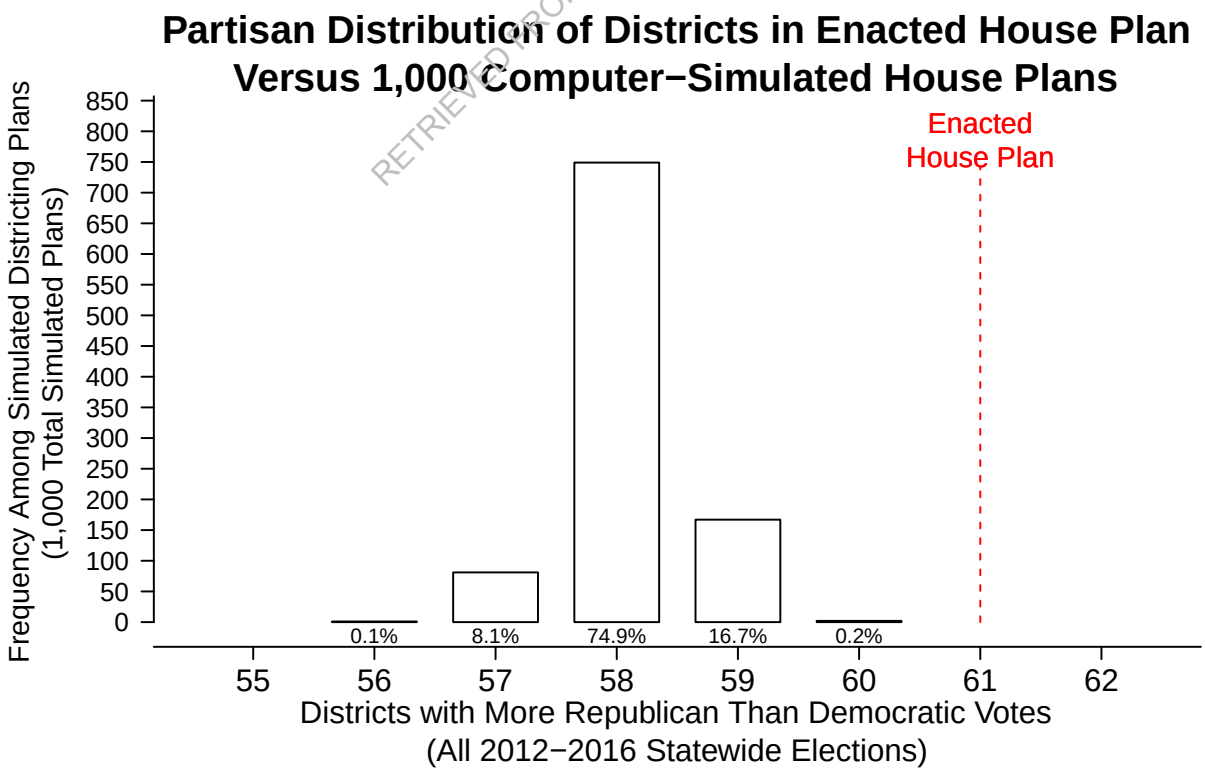
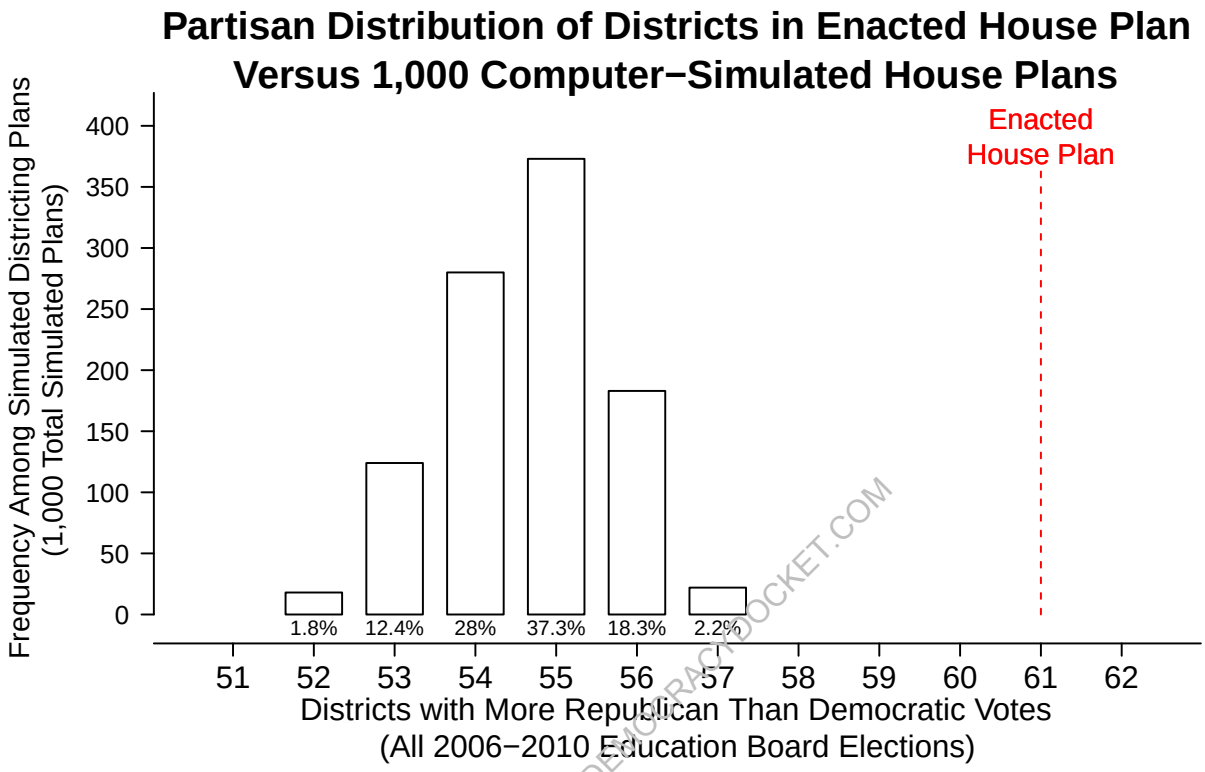


Figure 14:



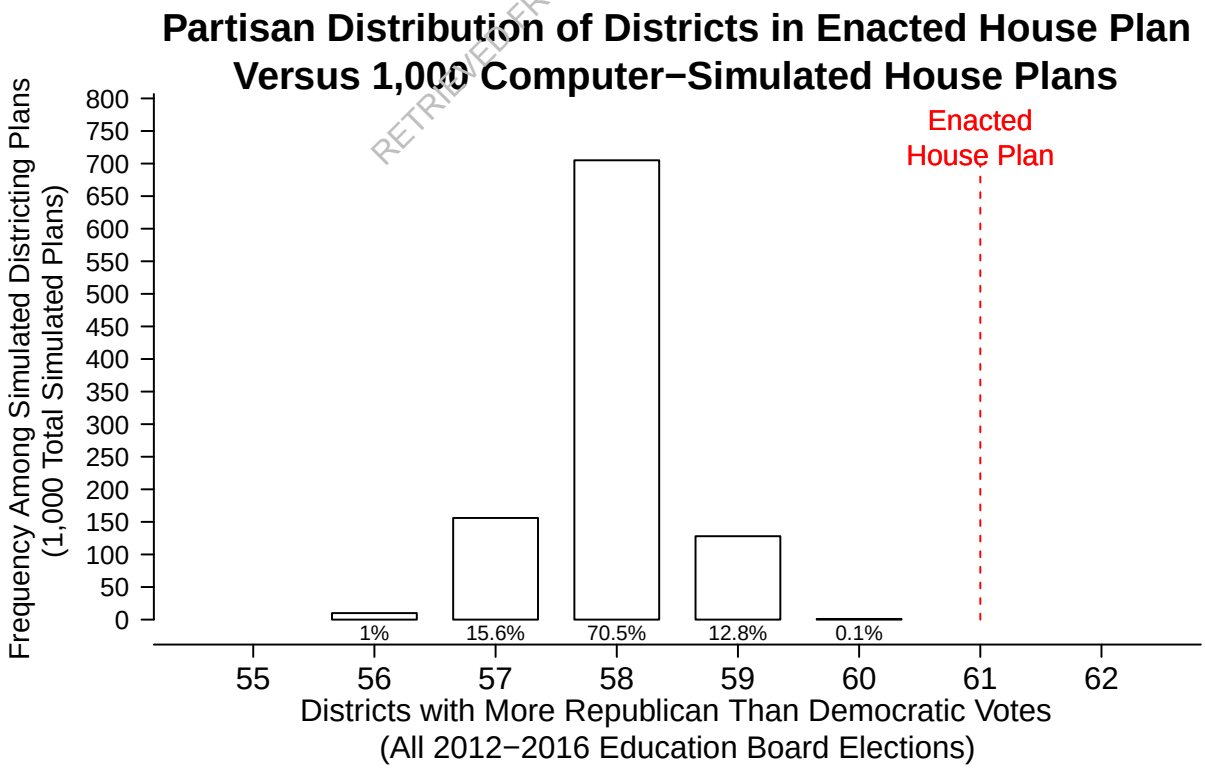


Figure 14 confirms this pro-Republican partisan bias in the enacted House plan by analyzing districts using the education and university board elections held during 2006-2010 (upper histogram) and during 2012-2016 (lower histogram) to measure the number of Republican-leaning districts in each plan. As measured by the 2006-2010 election results as a baseline, the simulated plans all create from 52 to 57 Republican districts out of 110 total districts; the vast majority of simulated plans create 53 to 56 Republican districts. Using the 2012-2016 education and university board elections as a baseline, the simulated plans all create from 56 to 60 Republican districts out of 110 total districts; the vast majority of simulated plans create 58 Republican districts.

By contrast, the enacted House plan contains 61 Republican districts, as measured by the 2006-2010 education and university board elections, and 61 Republican districts, as measured by the 2012-2016 education and university board elections. In each histogram, the red dashed line indicates the number of Republican districts created by the enacted House plan. The finding that none of the 1,000 computer-simulated plans ever reaches the number of Republican districts in the enacted plan allows me to confirm, with over 99.9% statistical certainty, that the enacted plan is a partisan outlier which contains a pro-Republican partisan bias.

Why did the enacted House plan fail to produce geographically compact districts? As Figures 13 – 16 collectively illustrate, the enacted House plan is entirely outside the range of all 1,000 simulated maps with respect to both geographic compactness and the partisan distribution of seats.

Collectively, these findings suggest that the enacted House plan was drawn under a process in which a partisan goal – creating additional Republican districts – predominated. I thus am able to conclude, with over 99.9% statistical certainty, that the enacted House plan created districts less compact than what would have reasonably emerged from a nonpartisan districting process rather than a process driven by partisan intent.

Figure 15:

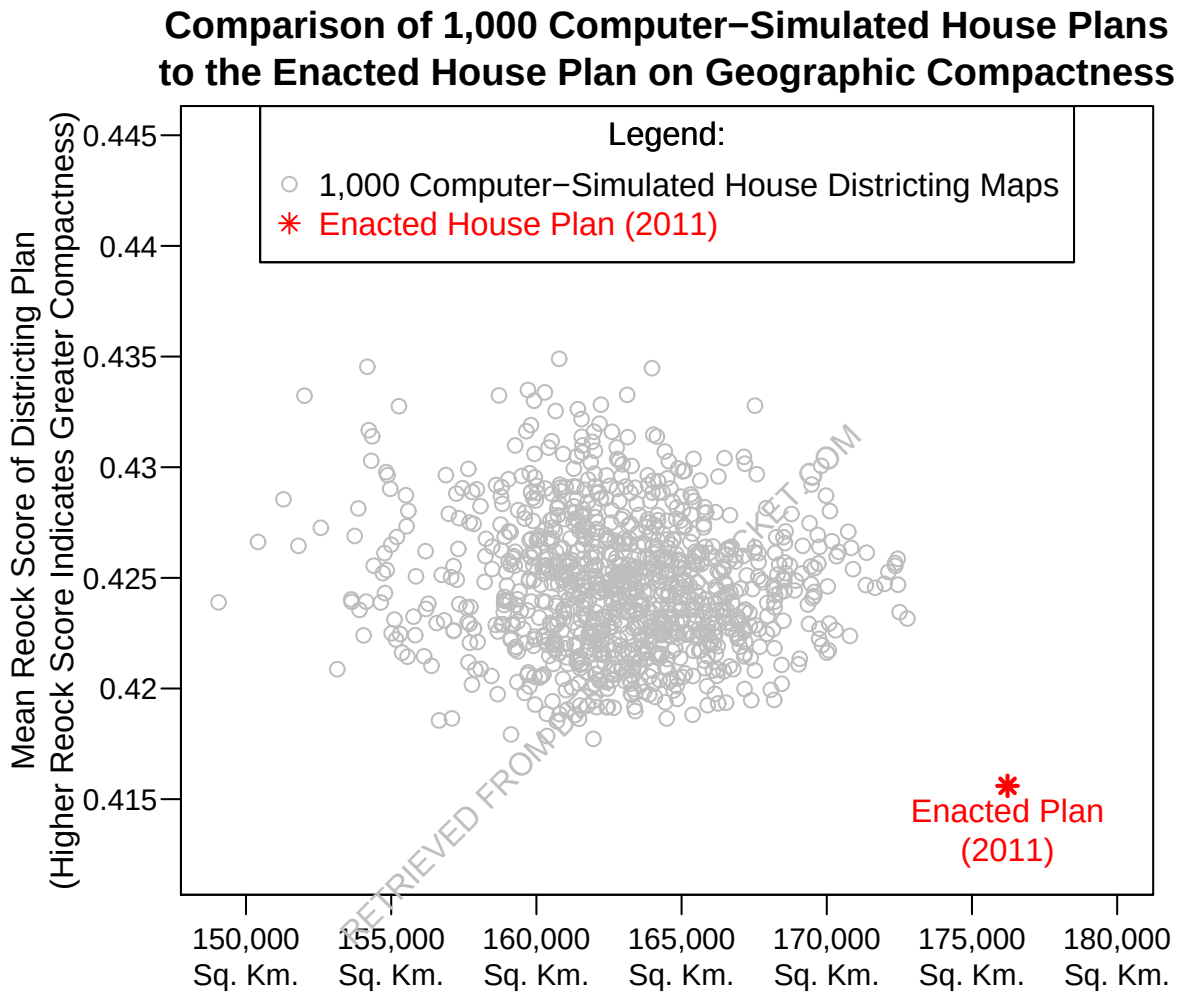
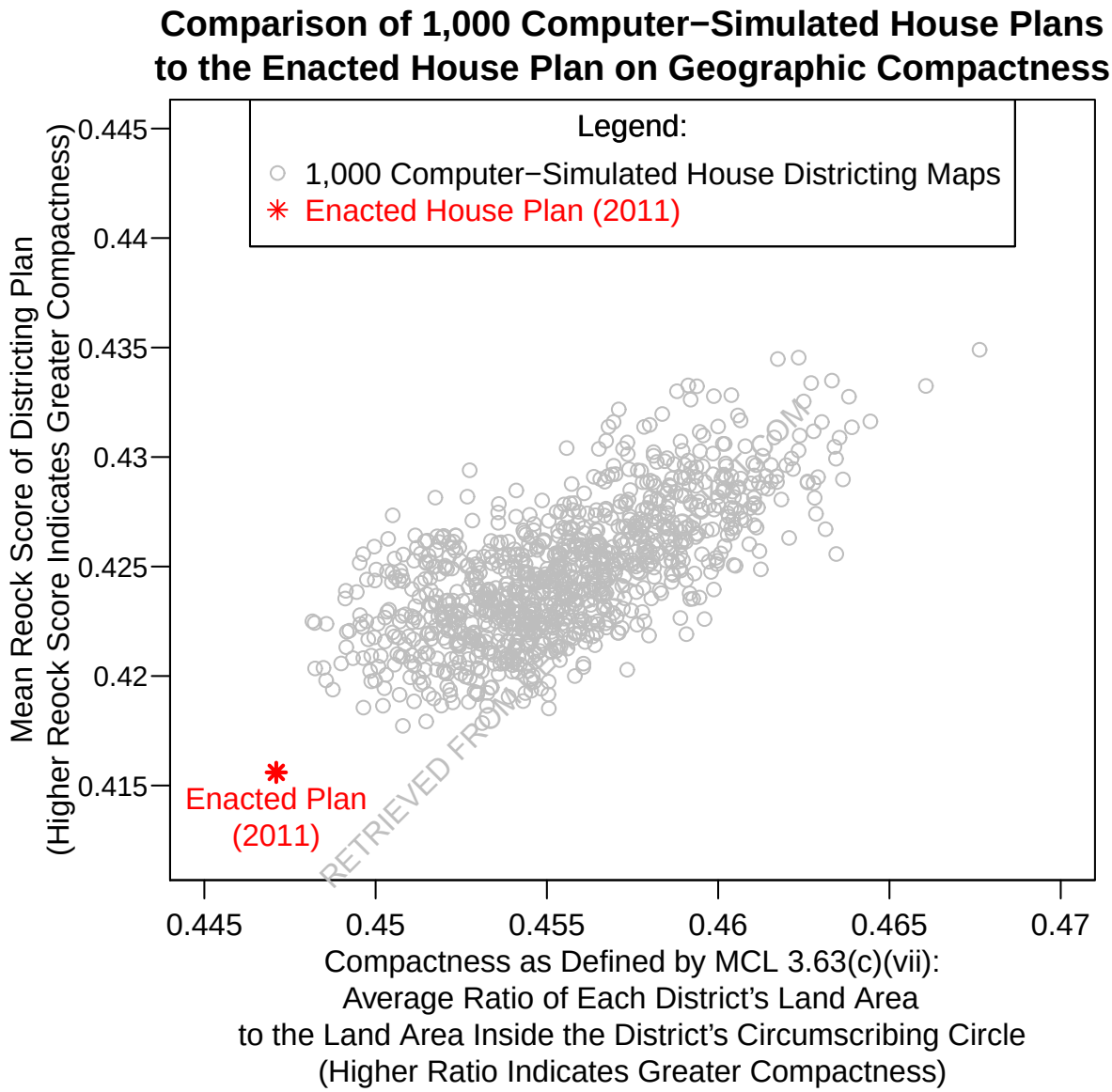


Figure 16:



Robustness Checks Using Alternative Measures of Partisan Bias: Comparing the number of Republican-favoring districts, as measured by recent past statewide elections, is the most comprehensive and statistically valid method of measuring the partisan bias of the enacted House plan, as compared to the computer-simulated plans. Counting the number of Republican and Democratic-favoring districts in a plan, as measured using recent statewide elections, is a broad, durable and sufficient measurement of districting plan partisanship, particularly since it is common practice in Michigan to assess the partisanship of districts by aggregating together the results of recent statewide education and university board elections.

What follows in the remainder of this section, then, is a completely separate set of analyses in which I examine the simulated plans and the enacted House plan using two alternative measures of partisanship and electoral bias: The Median-Mean Difference and the Efficiency Gap. These two alternative measures are presented as robustness checks, and the conclusions reached in the previous sections do not depend on these robustness checks. I introduce these alternative measures of districting plan partisanship in order to illustrate the findings of my simulation analysis in more relatable ways -- and to demonstrate the robustness of these findings.

I first measure the Median-Mean Difference of the enacted House plan and then compare it to the Mean-Median Differences of the 1,000 computer-simulated House plans. As described earlier in this report, using the aggregated results of Michigan's 2006-2010 statewide elections, the 110 districts in Michigan's enacted House plan have a Median-Mean Difference of 5.19%. The enacted plan's districts have a mean Republican vote share of 46.22%, while the median district has a Republican vote share of 51.41%. Thus, the enacted House plan has a Median-Mean Difference of 5.19%, indicating that the median district is skewed significantly more Republican than the plan's average district. Similarly, using the results of Michigan's 2012-2016 statewide elections, the Median-Mean Difference of the enacted House plan is 6.86%, confirming that the median district is skewed significantly more Republican than the enacted plan's average district. In other words, the enacted plan distributes voters across districts in such a way that most districts are significantly more Republican-leaning than the average House district, while Democratic voters are more heavily concentrated in a minority of the House districts. This skew in the enacted plan thus creates a significant advantage for Republicans by giving them stronger control over the median district in the enacted House plan.

How does this Median-Mean Difference of the enacted plan compare to that of the 1,000 computer-simulated plans? Figure 17 presents comparisons of the enacted House plan to the 1,000 computer-simulated plans on their Median-Mean Differences. The left side of this Figure calculates the Median-Mean Difference using the aggregated results of Michigan's 2006-2010 statewide elections, while the right side of the Figure uses the aggregated results of the 2012-2016 statewide elections. In both diagrams, the horizontal axis depicts the Median-Mean Difference of each plan, while the vertical axis depicts the Reock score of each plan, measuring the plan's geographic compactness. In each diagram, the red star represents the enacted House plan, while the gray circles represent the 1,000 computer-simulated plans.

Using either set of elections, it is very clear that the enacted House plan is significantly more skewed in favor of Republicans than every single one of the 1,000 computer-simulated plans. Almost all of the computer-simulated plans have a Median-Mean Difference between 2.9% to 4.5%, using the 2006-2010 statewide elections, and between 4.5% to 6.0%, using the 2012-2016 statewide elections. Not a single simulated plan comes even close to the enacted plan's extreme Median-Mean Difference of 5.19%, using the 2006-2010 statewide elections, and 6.86%, using the 2012-2016 statewide elections. I thus conclude, with extremely strong statistical certainty, that the enacted House plan's extreme Median-Mean Difference is clearly not the result of Michigan's natural political geography, combined with the application of Michigan's statutory redistricting guidelines. It is a partisan outlier driven by partisan intent.

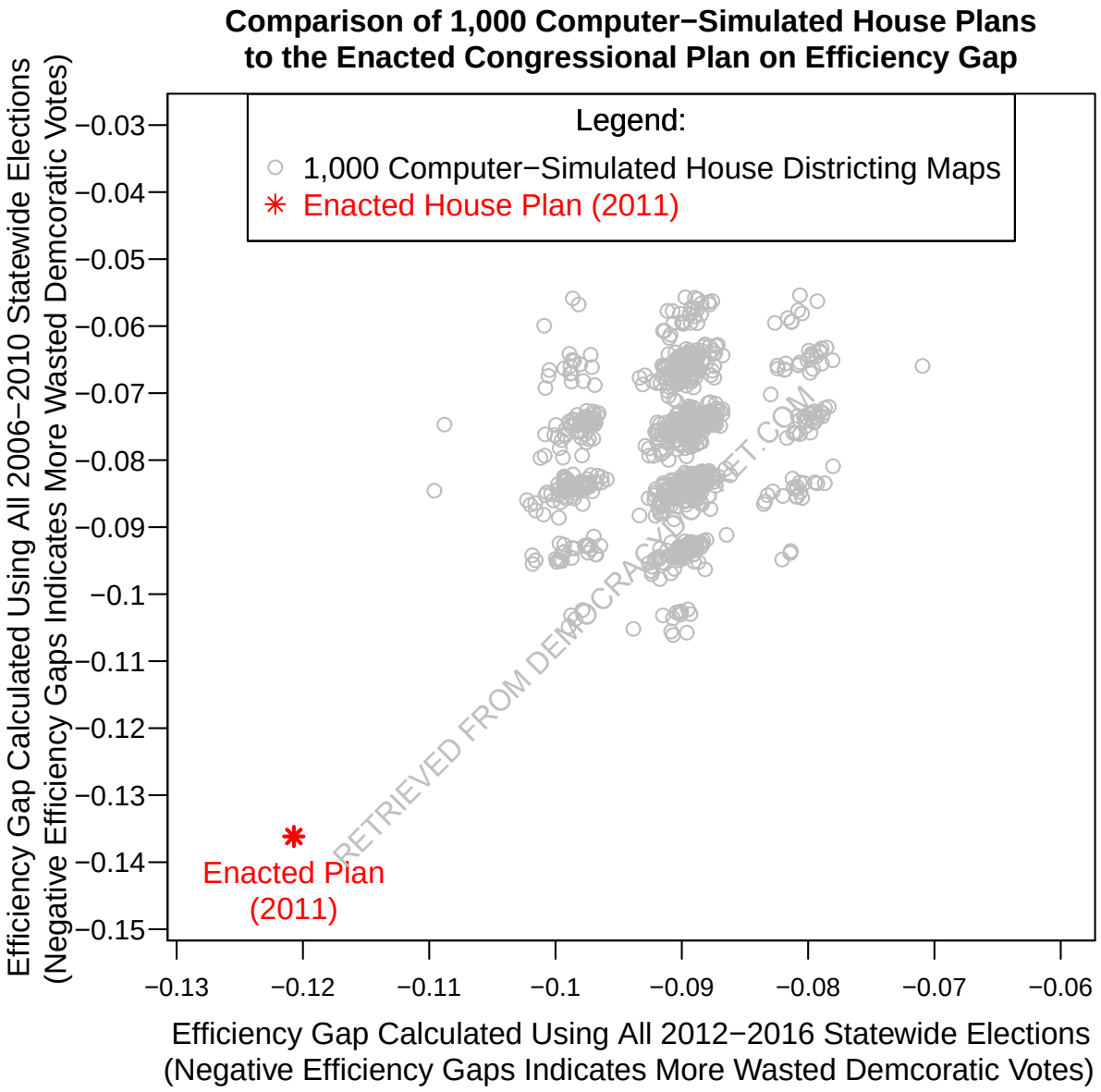
Figure 17:

The fact that the 1,000 simulated plans in Figure 17 all produce a small but positive Median-Mean Difference results, at least in part, from the fact that, as noted earlier, the simulation algorithm simply freezes 12 House Districts (covering Detroit, Dearborn, and Southfield) from the enacted plan, without attempting to draw these districts' boundaries in a partisan-neutral manner. The small Median-Mean Differences in the computer-simulated plans may also partially reflect a modest skew in Michigan's voter geography that slightly benefits the Republicans in districting. This modest skew in the simulated districting plans may result naturally from Democratic voters' tendency to cluster in urban areas of Michigan, as I have explained in my previous academic research.[8] But more importantly, even when combined with the skew from freezing majority-minority districts, the range of this natural skew, as shown in Figure 17, is always much smaller than the extreme 6.86% Median-Mean Difference (calculated using the 2012-2016 statewide elections) observed in the enacted House plan. Hence, these results confirm the main finding that the enacted plan creates a partisan outcome that cannot be explained by Michigan's voter geography or by the application of the MCL § 4.261 redistricting guidelines. Instead, the extremity of the enacted plan's Median-Mean Difference can only be explained by a districting process that pursued a partisan goal.

Next, I compare the enacted House plan to the 1,000 computer-simulated House plans using the efficiency gap. Figure 18 illustrates these efficiency gap calculations: The vertical axis depicts each plan's efficiency gap using the 2006-2010 statewide elections, while the horizontal axis depicts each plan's efficiency gap using the 2012-2016 statewide elections. The 1,000 gray circles in this Figure represent the computer-simulated districting plan, while the red star represents the enacted House plan.

[8] Jowei Chen and Jonathan Rodden, 2013. "Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures" *Quarterly Journal of Political Science*, 8(3): 239-269; Jowei Chen and David Cottrell, 2016. "Evaluating Partisan Gains from Congressional Gerrymandering: Using Computer Simulations to Estimate the Effect of Gerrymandering in the U.S. House." *Electoral Studies*, Vol. 44, No. 4: 329-430.

Figure 18:



This Figure reveals that most of the 1,000 simulated districting plans reflect a small amount of electoral bias in favor of the Republicans. Nevertheless, not a single simulated plan exhibits an efficiency gap greater than 11%. These patterns illustrate that a non-partisan districting process very commonly produces a House plan in Michigan with a small amount of pro-Republican electoral bias, as measured by efficiency gap. To produce a map with significant electoral bias deviating by over 11% from a zero efficiency gap, however, would require more extraordinary and deliberate partisan map-drawing efforts.

However, Michigan's enacted House plan, denoted in Figure 18 as a red star, produces an efficiency gap that is extremely inconsistent with and outside of the entire range of the 1,000 computer-simulated plans. The enacted plan creates an efficiency gap of -13.6% using the 2006-2010 statewide elections and -12.1% using the 2012-2016 statewide elections, indicating that the plan consistently results in significantly more wasted Democratic votes than wasted Republican votes. Thus, the level of electoral bias in the enacted House plan is not only entirely outside of the range produced by the simulated plans, the enacted plan's efficiency gap is far more biased than even the most biased of the 1,000 simulated plans. The improbable nature of the enacted House plan's efficiency gap allows us to conclude with overwhelmingly high statistical certainty that non-partisan districting criteria mandated in MCL § 4.261, combined with Michigan's natural political geography, could not have produced a districting plan as electorally skewed as the enacted House plan. The plan is a partisan outlier created with partisan intent.

The Partisan Durability of Michigan's Enacted Districting Plans

Having found that Michigan's enacted Congressional, Senate, and House plans are partisan outliers compared to computer-simulated plans produced by following Michigan's statutory redistricting criteria, I then analyzed whether these enacted plans are politically durable. The partisan durability of a districting plan refers to whether a plan would allow a particular political party to preserve its majority control over a chamber or congressional delegation under a reasonable range of alternative electoral conditions. In other words, would the Republicans still likely win a majority of Michigan's congressional districts even during an election in which overall Republican electoral performance is worse than normal?

For decades, political scientists have used uniform swing analysis to assess the durability of any given electoral system. [9] Uniform swing analysis begins with the general observation that when a political party performs worse than normal in a given election, its vote share generally decreases by a comparable degree in all legislative districts across Michigan; a party's poor electoral performance is usually not limited to a single district. Similarly, when a party has a better than normal year at the polls, its vote share generally rises in all districts across Michigan, not just a single district.

Hence, to assess how a party would perform under alternative electoral conditions, political scientists conduct a uniform swing analysis, simulating a uniform increase (or decrease) in a party's vote share across all districts within a state. One can then assess, for example, how many congressional districts Republicans would still win if the party suffered a uniform -1% swing to its vote share in every district within Michigan.

Hence, a uniform swing analysis can determine whether a party's majority control over a legislative chamber or congressional delegation is strong enough to withstand a reasonable range of alternative electoral conditions. If a districting plan gives Republicans control over a majority of all districts, and only a significant pro-Democratic uniform swing would allow Democrats to ever win a majority of districts in a single election, then the Republicans' majority control over the districts is a durable one. Hence, partisan durability simply describes whether a party's

[9] Andrew Gelman and Gary King, "A unified method of evaluating electoral systems and redistricting plans." American Journal of Political Science, 38 (1994), pp. 514-554. D. Butler, D. Stokes. Political Change in Britain: Forces Shaping Electoral Choice. Macmillan, London (1969).

control over a majority of districts is generally safe under a reasonable range of alternative electoral conditions.

To assess the partisan durability of Michigan's enacted plans, I evaluate the actual results of each set of Congressional (2012, 2014, and 2016), Senate (2014), and House (2012, 2014, and 2016) elections held using the enacted plans. All seven of these sets of elections resulted in Republicans winning a majority of Michigan's districts. Hence, for each set of elections, I calculate the smallest pro-Democratic uniform swing that would have been necessary in order for Democrats to win one-half of all districts - that is, how much of a uniform swing would have been necessary for Republicans to lose their majority control over Michigan's districts?

Table 5 presents these uniform swing calculations. For example, in November 2012, Republicans won 9 of 14 congressional districts, and the Republican vote share in the seventh-most Democratic district was 53.37%. Therefore, a uniform swing of -3.37% would have been needed for Republicans to lose their majority control over districts and for Democrats to win exactly 7 out of 14 districts. This uniform swing calculation indicates that Republicans possessed durable majority control over Michigan's congressional districts, and this majority control could withstand normal electoral fluctuations. Figure C1 in Appendix C illustrates the district-by-district breakdown of this uniform swing analysis.

A similar conclusion emerges from uniform swing analyses of each of the other six legislative and congressional elections. In the 2014 and 2016 congressional elections, Republicans won 9 of 14 congressional districts, and a uniform swing of -6.45% (in November 2014) and -7.79% (in November 2016) would have been required for Democrats to win one-half of all districts. In the November 2014 Senate elections, Republicans won 27 of 38 districts, and a uniform swing of -6.4% would have been required for Democrats to win one-half (19 of 38) of all districts. Finally, Republicans won 59, 63, and 63 of Michigan's 110 House Districts in the 2012, 2014, and 2016 elections, respectively. A pro-Democratic uniform swing of -1.04% (in November 2012), -2.25% (in November 2014), and -4.14% (in November 2016) would have been required for Democrats to win one-half (55 of 110) of all House districts. Together, these results demonstrate that not only did Republicans win a majority of all districts in each of these seven sets of elections, but this Republican majority control would also have been durable even under a reasonable range of alternative electoral conditions.

Table 5 describes all of these uniform swing calculations using the actual election results of the Congressional, State Senate, and State House elections held during 2012-2016, and in Appendix C, Figures C1 through C7 illustrate the district-by-district breakdowns of these uniform swing calculations.

Single-District Comparisons of Enacted Plan and Simulated Plan Districts

Appendix D presents single-district comparisons of the enacted plan and the computer-simulated plans for Michigan's Congressional delegation, State Senate, and State House. I compare the partisanship of single districts from the enacted plan and the computer-simulated plans in order to identify the specific districts that were 'cracked' and 'packed', thus explaining why each of the enacted plans were partisan outliers when compared to the computer-simulated plans created using the partisan-neutral statutory redistricting guidelines.

In the single-district comparisons that appear in Appendix D, I compare districts from the enacted and the computer-simulated plans in two ways. First, I align the districts from each enacted and computer-simulated plan from least to most Republican. I then directly compare, for example, the partisanship of the most Republican Congressional district from the enacted plan to the partisanship of the most Republican district from each of the 1,000 simulated Congressional plans. I then compare the second-most Republican enacted district to the second-most Republican district from each of the 1,000 simulated Congressional plans. And so on.

A second method of comparison presented in Appendix D is based on district geography. I directly compare each enacted district to the district from each computer-simulated plan that geographically overlaps the most with the enacted district. These comparisons allow me to identify partisan differences between the enacted and the simulated plans in terms of how each region of Michigan was districted.

In general, whenever an enacted district is a partisan outlier compared to the simulated districts that cover the same geographic area, I can infer that the enacted plan's boundaries in this area were manipulated in a manner inconsistent with Michigan's statutory redistricting guidelines. When viewed in the broader context of the entire plan, these single-district comparisons reveal the precise districts that were 'cracked' or 'packed,' thus allowing the enacted plan to create an outlying partisan outcome compared to the computer-simulated plans.

For example, Figures D1 through D3 allow me to identify the precise districts within the enacted Congressional plan that were "cracked" or "packed". These figures compare the partisanship of each enacted Congressional district to the partisanship of the computer-simulated districts that cover the same geographic area. These comparisons thus allow me to identify, for example, what the partisanship of Kalamazoo's congressional district would have been if districts in southwest Michigan had been drawn according to the statutory redistricting guidelines.

These figures reveal, for example, that Congressional District 5 (Saginaw, Flint, and Bay City) had the effect of packing together Democrats to an unnatural degree, creating a 62% Democratic district. Not a single computer-simulated congressional district covering this general area of Saginaw, Flint, and Bay City would have packed together Democrats so heavily. Every computer-simulated congressional district in this region would have been between 50-60% Democratic. The figures also show that Congressional Districts 9 and 12 were similarly packed with Democratic voters.

On the other hand, the figures reveal that Congressional Districts 4, 7, 8, and 10 had the effect of 'cracking' Democratic voters, thus resulting in safer Republican majorities in each of these four districts. For each of these four enacted districts, the figures reveal that computer-simulated districts covering the same area would have created either a more partisan-competitive district or perhaps even a slightly Democratic-leaning district. But in the enacted plan, these four enacted districts were made safer for Republicans by removing Democratic voters and concentrating them in the 'packed' districts identified above.

Similarly, Figures D4 through D7 present single-district comparisons of the enacted Senate plan to the computer-simulated Senate plans. Figures D8 through D16 present single-district comparisons of the enacted House plan to the computer-simulated House plans.

For the enacted Congressional, Senate, and House plans, I determine whether each enacted district is a partisan outlier compared to the simulated districts that overlap geographically with the enacted district. Specifically, when determining whether a district is a partisan outlier, I use the district's Republican vote share across all 2012-2016 statewide elections to measure the district's partisanship, as described earlier in this report. I calculate whether the enacted district's partisanship is outside of the middle 95% range of the simulated geographically overlapping districts. I consider only geographically overlapping simulated

districts that overlap with at least 50% of the total population of the enacted district. Using this method, I identify the following districts as partisan outliers:

In the enacted Congressional plan, Congressional Districts 1, 4, 5, 8, 9, 10, 11, and 12 are partisan outliers when compared to their respective computer-simulated geographically overlapping districts.

In the enacted Senate plan, Senate Districts 8, 9, 18, 22, 24, 27, and 32 are partisan outliers when compared to their respective computer-simulated geographically overlapping districts.

In the enacted House plan, House Districts 11, 12, 14, 16, 19, 20, 21, 30, 31, 32, 36, 43, 44, 45, 51, 52, 53, 55, 57, 60, 62, 63, 65, 69, 75, 76, 80, 87, 91, 92, 94, 98, 103, 105, 106, and 107 are partisan outliers when compared to their respective computer-simulated geographically overlapping districts.

Absent some other explanation, this analysis strongly suggests that these outlier districts listed above are the most effectively cracked and packed districts in the enacted maps. In addition, when an enacted district has zero computer-simulated districts that overlap with 50% of enacted district's population, such a finding indicates that the enacted district was drawn in a manner that did not follow Michigan's statutory redistricting guidelines.

Table 5:
Share of Districts and Share of Statewide Vote Won by Republican Candidates In the 2002-2016 Congressional, House, and Senate Elections.

	Congressional Elections, 2012-2016			
Election Year	Republican Vote Share in the 7th-Most Democratic Congressional District:	Size of Uniform Swing Necessary for Democrats to Win One-Half (7 of 14) of Congressional Districts:	Statewide Republican Vote Share in Congressional Elections	Statewide Republican Vote Share After Applying Uniform Swing (From 2nd Column):
Nov. 2012	53.37%	-3.37%	47.60%	44.23%
Nov. 2014	56.45%	-6.45%	49.11%	42.66%
Nov. 2016	57.81%	-7.81%	50.55%	42.74%

	State Senate Elections, 2014			
Election Year	Republican Vote Share in the 19th-Most Democratic Senate District:	Size of Uniform Swing Necessary for Democrats to Win One-Half (19 of 38) of Senate Districts:	Statewide Republican Vote Share in Senate Elections	Statewide Republican Vote Share After Applying Uniform Swing (From 2nd Column):
Nov. 2014	56.40%	-6.4%	50.73%	44.33%

	State House Elections, 2012-2016			
Election Year	Republican Vote Share in the 55th-Most Democratic House District:	Size of Uniform Swing Necessary for Democrats to Win One-Half (55 of 110) of House Districts:	Statewide Republican Vote Share in Congressional Elections	Statewide Republican Vote Share After Applying Uniform Swing (From 2nd Column):
Nov. 2012	51.04%	-1.04%	46.82%	45.78%
Nov. 2014	52.25%	-2.25%	48.78%	46.53%
Nov. 2016	54.01%	-4.01%	50.03%	46.02%

Executed this 1st day of June 2018.

Signed:

Jowei Chen

Appendix A:
Michigan's Statutory Redistricting Guidelines
And the Computer-Simulated Districting Algorithm

Michigan has two redistricting statutes - MCL § 4.261 et seq (Act 463 of 1996) and MCL § 3.63 et seq (Act 221 of 1999) – that describe in detail the criteria to be followed in the drawing of the state's Congressional, Senate, and House districts. The statutes describe five criteria to be followed in producing each districting plan: 1) Contiguity; 2) Equal population thresholds; 3) Minimizing county breaks; 4) Minimizing municipal breaks; and 5) Geographic compactness. Furthermore, the statutes even establish a hierarchy specifying which criteria are to be prioritized over others when drawing districts: Both statutes are clear that district contiguity is an absolutely inviolable principle and that county and municipal lines may be broken only for the purpose of satisfying the district population threshold requirements. This statutory hierarchy thus establishes a clear order of priority for the five districting criteria. For example, a districting plan may not create additional county or municipal breaks for the sake of improving district compactness; nor may a plan deviate from the district population thresholds for the sake of avoiding a county or municipal break.

Furthermore, both statutes state that the list of districting guidelines detailed in each statute is exhaustive. MCL § 4.261 mandates that House and Senate plans "shall be enacted using only the following guidelines," while MCL § 3.63 similarly requires that the drawing of Congressional plans must follow "only these guidelines in the following order of priority." Hence, it is clear that both statutes not only specify the five districting criteria and their order of priority, but they also prohibit any other considerations, such as the partisan composition of districts or the protection of incumbents.

Because of the clarity, specificity, and exhaustiveness of MCL § 4.261 and MCL § 3.63 regarding the five districting criteria, as well as their order of priority, programming the districting simulation algorithm to produce Congressional, Senate, and House plans for Michigan was a purely technical exercise, with no subjective judgment or guesswork needed. I simply followed the criteria detailed by the two redistricting statutes and instructed the computer algorithm to adhere strictly to these criteria, with no other considerations permitted.

The simulation algorithm proceeds as follows: First, the algorithm begins with a set of base geographies to be used as building blocks for constructing a simulated plan. In creating State House plans, I use Voting Tabulation District (VTD) boundaries as the building blocks. In

creating State Senate and Congressional plans, I use municipal (MCD) boundaries as the building blocks for simulated plans. Second, the algorithm randomly divides up these geographies into the appropriate number of contiguous districts (eg, 38 State Senate districts), each of roughly equal population; at this point, these districts are unlikely to be of perfectly equal population. Third, the algorithm then considers each of 10 million randomly-proposed, iterative changes to the various boundaries between the districts. Each of these proposed iterative changes is randomly generated, with no partisan or racial considerations considered. Each proposed iterative change is accepted only if the resulting districts 1) Would be within the 5% population deviation threshold statutorily mandated for Senate and House districting plans; 2) Would not increase the number of county breaks across the entire plan; and 3) Would not increase the number of municipal breaks across the entire plan. By considering and selectively implementing a large number of random iterative changes to the districts' boundaries, the algorithm thus gradually decreases the number of county and municipal breaks in the plan. These iterative changes result in a plan in which county and municipal breaks occur only when absolutely necessary to comply with the equal population and contiguity mandates of Michigan's redistricting guidelines.

In simulating Congressional plans, the algorithm contains one additional step not used when simulating Senate and House plans: Unlike State House and Senate districts, Congressional districts are required to contain perfectly equal populations. Thus, after the aforementioned steps, the algorithm randomly selects municipalities to be broken only when necessary for equalizing the populations of all Congressional districts. The algorithm considers a large number of possible breaks of the municipality, and the possible break that maximizes district compactness is selected. This final step results in Congressional districts that contain a population of either 705,974 or 705,975, while otherwise minimizing county and municipal breaks and preserving district contiguity.

Below, I describe in detail these five districting criteria in order of priority and explain how each criterion is implemented by the computer algorithm in producing simulated plans for Michigan's Congressional, Senate, and House districts:

1) ***District Contiguity:*** Michigan statute requires Congressional, Senate, and House districts to be "contiguous by land," while specifying that contiguity cannot be achieved through "areas that meet only at points of adjoining corners" (MCL 3.63(i) and MCL 4.261(c)).

Therefore, the computer simulation algorithm I use for this report requires districts to be contiguous by land, with no point contiguity. In other words, a district that combines two areas is considered contiguous only if those two areas share common border of non-zero length. For example, a district consisting only of West Bloomfield Township and Southfield Township is not considered contiguous because the two townships meet only at a single point and thus do not share a common border of non-zero length. On the other hand, a district consisting of West Bloomfield Township and White Lake Township is considered contiguous because these two townships share a very short common border of non-zero length at the southern end of Williams Lake Road.

The simulation algorithm also considers the Mackinac Bridge, which connects Michigan's Lower and Upper Peninsulas, to be land for the purposes of determining district contiguity. Census Bureau maps of Michigan do not recognize the Mackinac Bridge as land. Thus, the Lower and Upper Peninsulas are not connected by any Census Bureau-recognized land mass. However, it would be mathematically impossible to avoid drawing districts that cross the Mackinac Bridge while simultaneously complying with the Michigan statutory requirements regarding population equality. If the Mackinac Bridge were not treated as land, then any district that includes portions of both Peninsulas, including Congressional District 1, Senate District 37, and House District 107 of Michigan's current enacted plans, would violate the land contiguity requirement.

The simulation algorithm thus allows the Lower and Upper Peninsulas to be connected in ways similar to how the enacted plans connect the Peninsulas. Specifically, a district that connects Mackinac County (Upper Peninsula) with either Wawatam Township or Mackinaw Township (Lower Peninsula) is considered to be contiguous, even though the contiguity of such a district is obviously achieved only via the Mackinac Bridge.

2) *Population Equality:* Michigan's 2010 Census population was 9,883,640, so Michigan statute requires the state's Congressional, Senate, and House plans to meet the following thresholds for population equality:

Each of Michigan's 14 Congressional districts has an ideal district population of 705,974.3. MCL 3.63 requires "precise mathematical equality of population" for congressional districts, meaning that each district's deviation from the ideal district population must be less than 1 person. Hence, the computer simulation algorithm requires that simulated congressional

plans are populated such that exactly ten districts have a population of 705,974, while the remaining four districts have a population of 705,975.

Each of Michigan's 38 State Senate districts has an ideal district population of 260,095.8. MCL 4.261(d) requires district populations to fall between 95% to 105% of the ideal district population, meaning that each Senate district must have a population no smaller than 247,091 and no greater than 273,100. Hence, the computer simulation algorithm requires that each of the 38 districts in each computer-simulated Senate plan has a population within this range.

Each of Michigan's 110 State House districts has an ideal district population of 89,851.27. MCL 4.261(d) requires district populations to fall between 95% to 105% of the ideal district population, meaning that each House district must have a population no smaller than 85,359 and no greater than 94,343. Hence, the algorithm requires that each of the 110 districts in each computer-simulated House plan has a population within this range.

A special population requirement for State House and Senate districts is outlined by MCL 4.261(i), which states that when a city is populous enough to contain multiple Senate or House districts, then district lines must be drawn to achieve "a population range of 98% to 102% of absolute equality between districts within that city." This special requirement applies to House and Senate districts within Detroit, as well as House districts within Grand Rapids.

To illustrate how this special population requirement is applied by the computer simulation algorithm, consider Grand Rapids, which has a population of 188,040. In any House districting plan that seeks to respect the city boundaries of Grand Rapids, the city will be divided into exactly two full House districts. As defined by MCL 4.261(i), "absolute equality between districts" within Grand Rapids would mean both districts having populations of precisely 94,020. Thus, the MCL 2.61(i) requirement of "a population range of 98% to 102% of absolute equality" means that the two House districts within Grand Rapids must have a population between 92,140 and 95,900. However, as explained earlier, MCL 4.261(d) also requires House districts to not exceed 105% of the "ideal district size" for House districts, thus prohibiting any State House district with a population larger than 94,343. Therefore, the computer simulation algorithm collectively applies both of these statutory requirements by requiring that the two House districts within Grand Rapids contain populations of no less than 92,140 and no greater than 94,343.

3) ***Minimizing County Breaks:*** After ensuring district contiguity and compliance with the population thresholds, the simulation algorithm then seeks to minimize the number of county

breaks in each simulated districting plan, using the definition of county breaks outlined in the previous section of this report. Michigan statutory law requires that districting plans minimize the total number of county breaks (e.g., "Congressional district lines shall break as few county boundaries as is reasonably possible," MCL § 3.63(c)(ii)). Therefore, the simulation algorithm allows county breaks to occur only when absolutely necessary to avoid non-contiguous districts or violating the equal population thresholds outlined above. The computer algorithm used in this report was thus able to produce simulated Congressional plans containing 10 county breaks, simulated Senate plans containing 5 county breaks, and simulated House plans containing 14 county breaks.

4) ***Minimizing Municipal Breaks:*** After ensuring district contiguity, compliance with the population thresholds, and the minimization of county breaks, the simulation algorithm then seeks to minimize the number of municipal breaks in each simulated districting plan, using the definition of municipal breaks outlined in the previous section of this report. Michigan statutory law requires that districting plans minimize the total number of municipal breaks (e.g., "Congressional district lines shall break as few city and township boundaries as is reasonably possible," MCL § 3.63(c)(iv)). Therefore, the simulation algorithm allows municipal breaks to occur only when absolutely necessary to avoid non-contiguous districts or violating the equal population thresholds outlined above. The algorithm seeks to minimize the total number of municipal breaks in any plan, with equal weight given to city and township breaks. The computer algorithm used in this report was thus able to produce simulated Congressional plans containing either 10 or 11 municipal breaks, simulated Senate plans containing zero municipal breaks, and simulated House plans containing either 13 or 14 municipal breaks.

5) ***Geographic Compactness:*** Both MCL § 3.63(c)(vii) and MCL § 4.261(j) specify compactness as one of the guidelines to be followed in the drawing of plans, but compactness is clearly lowest on the order of priority of the five criteria. Neither statute calls for compactness to take priority over any of the four aforementioned criteria.

Both statutes are extremely specific and technically detailed regarding how district compactness is to be precisely measured in the districts where compactness is required. The statutes do not use a common measure of compactness, such as Reock score. Instead, both statutes mandate that:

> Compactness shall be determined by circumscribing each district within a circle of minimum radius and measuring the area, not part of the Great Lakes and not part of another state, inside the circle but not inside the district (MCL § 3.63(c)(vii) and MCL § 4.261(j)).

The simulation algorithm thus seeks to achieve compactness where required only after prioritizing the four aforementioned criteria. Thus, after prioritizing district contiguity, equality of population, and the minimization of county and municipal breaks, the algorithm then favors districts that minimize the Michigan land area inside of each district's circumscribing circle but outside of the district itself.

In this report, I compare the relative compactness of the enacted plan and the computer-simulated plans using two quantitative measures: One measure simply sums up, across all districts in a particular plan, the total Michigan land area inside of each district's circumscribing circle but outside of the district itself; using this measure, a lower total area indicates greater geographic compactness. A second measure calculates, for all districts in a particular plan, the average ratio of each district's land area to the total land area inside the district's circumscribing circle; using this measure, a higher average ratio indicates greater geographic compactness.

I additionally evaluate the compactness of each enacted and simulated plan by calculating the average "Reock score" of the districts within each plan. The Reock score for each individual district is calculated as the ratio of the district's area to the area of the smallest bounding circle that can be drawn to completely contain the district. The Reock score for an entire plan is simply the average ratio for all the districts in the plan. Hence, the Reock measure of compactness is similar, though not identical, to the measure of compactness detailed in Michigan's two redistricting statutes. I report this measure for all plans because the Reock score is how political scientists and redistricting scholars commonly compare the relative compactness of various districting plans under consideration.

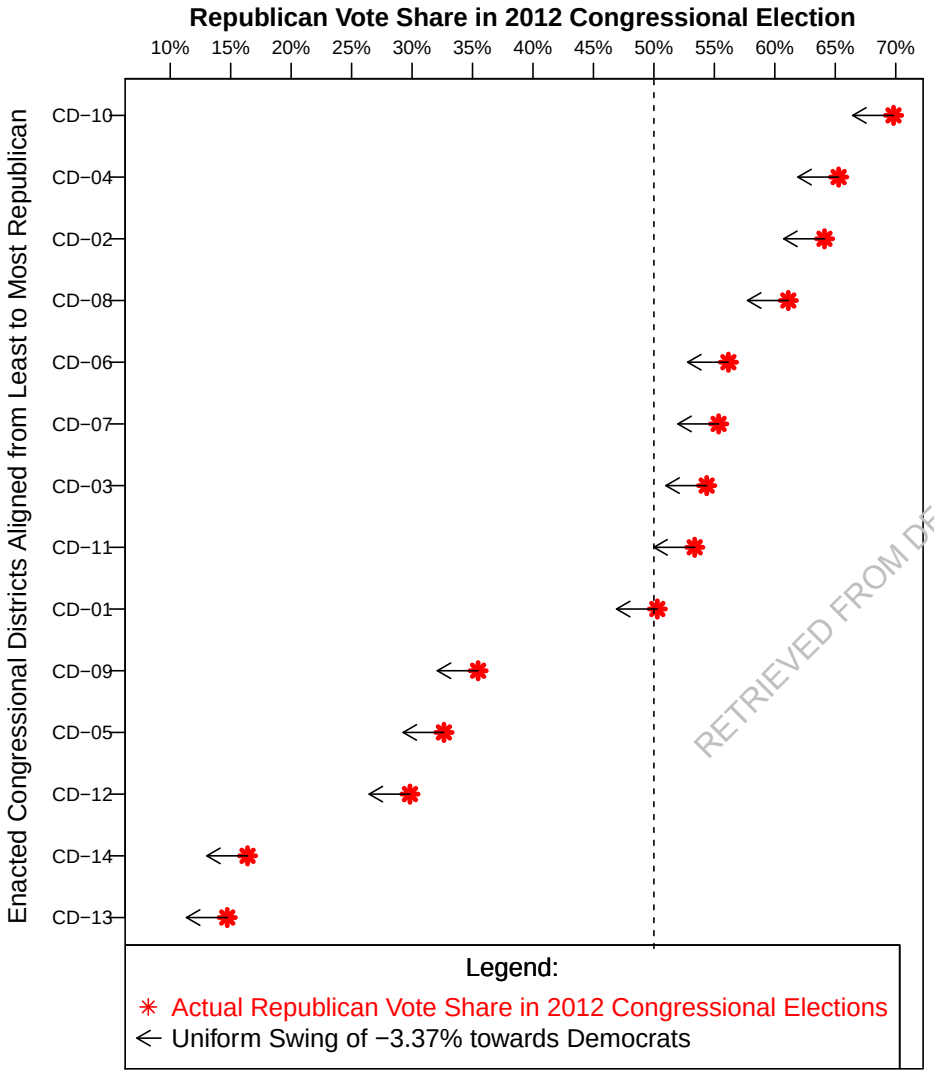
Appendix B:
Share of Districts and Share of Statewide Vote Won by Republican Candidates In the 2002-2016 Congressional, House, and Senate Elections.

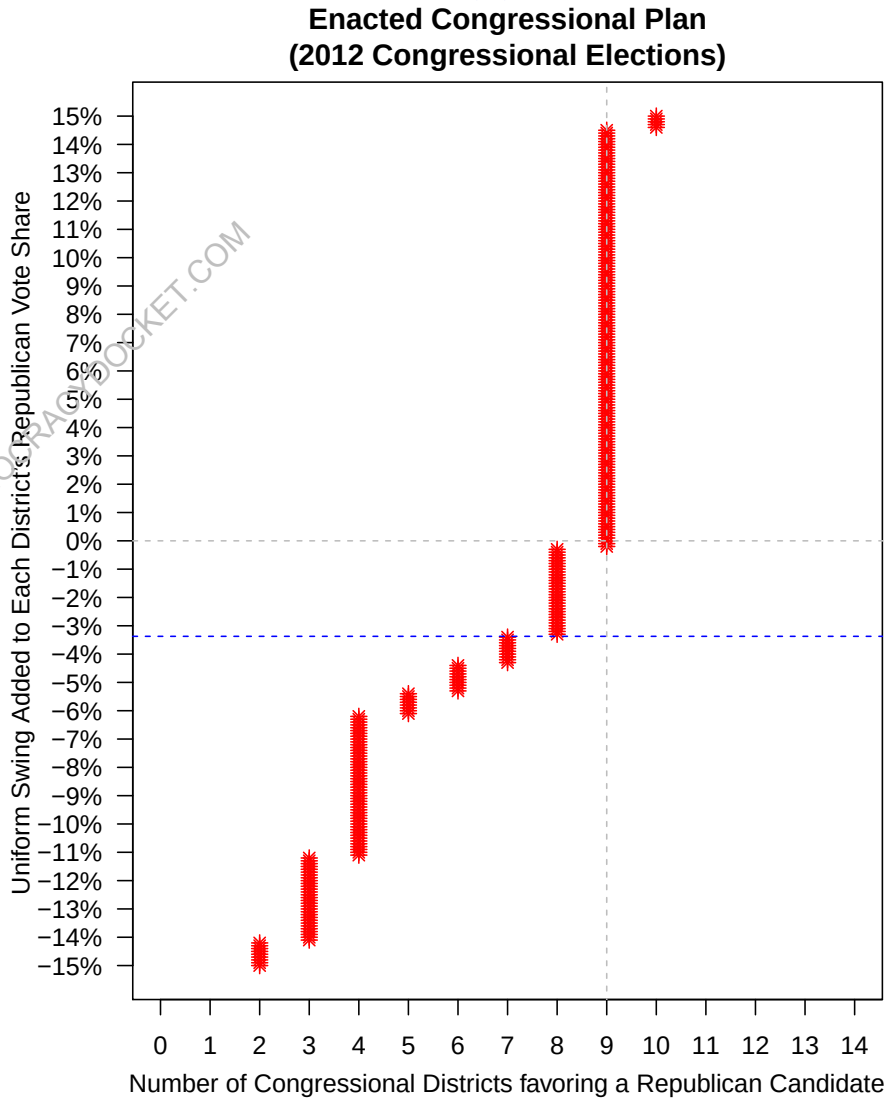
Election Year	Statewide Republican Vote Share in Congressional Elections	Share of Congressional Districts Won by Republicans
2002	49.44%	60% (9 of 15)
2004	50.51%	60% (9 of 15)
2006	45.80%	60% (9 of 15)
2008	45.65%	46.7% (7 of 15)
2010	54.15%	60% (9 of 15)
2012	47.60%	64.3% (9 of 14)
2014	49.11%	64.3% (9 of 14)
2016	50.55%	64.3% (9 of 14)

Election Year	Statewide Republican Vote Share in State Senate Elections	Share of State Senate Districts Won by Republicans
2002	50.42%	57.9% (22 of 38)
2006	45.58%	55.3% (21 of 38)
2010	54.48%	68.4% (26 of 38)
2014	50.73%	71.1% (27 of 38)

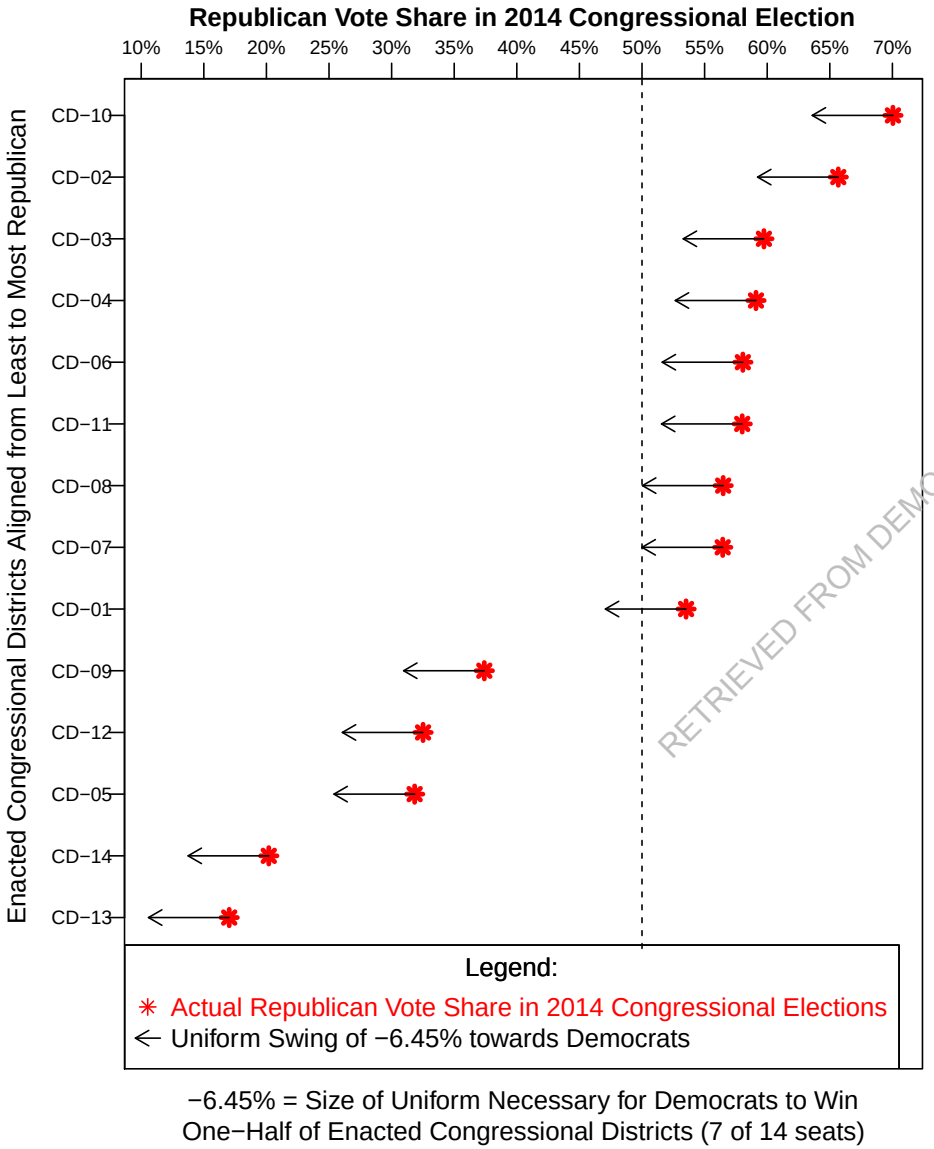
Election Year	Statewide Republican Vote Share in State House Elections	Share of State House Districts Won by Republicans
2002	50.48%	57.3% (63 of 110)
2004	48.59%	52.7% (58 of 110)
2006	45.11%	47.3% (52 of 110)
2008	42.25%	39.1% (43 of 110)
2010	53.86%	57.3% (63 of 110)
2012	46.82%	53.6% (59 of 110)
2014	48.78%	57.3% (63 of 110)
2016	50.03%	57.3% (63 of 110)

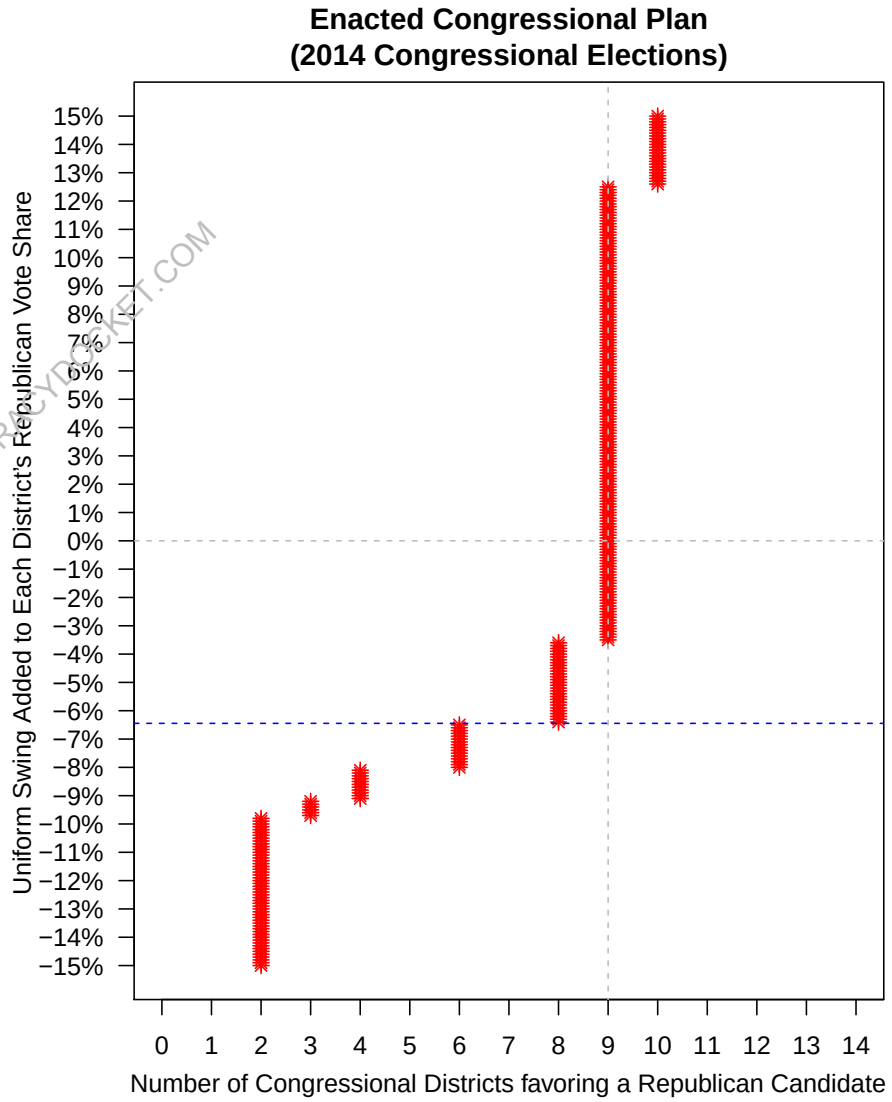
Appendix C, Figure C1:



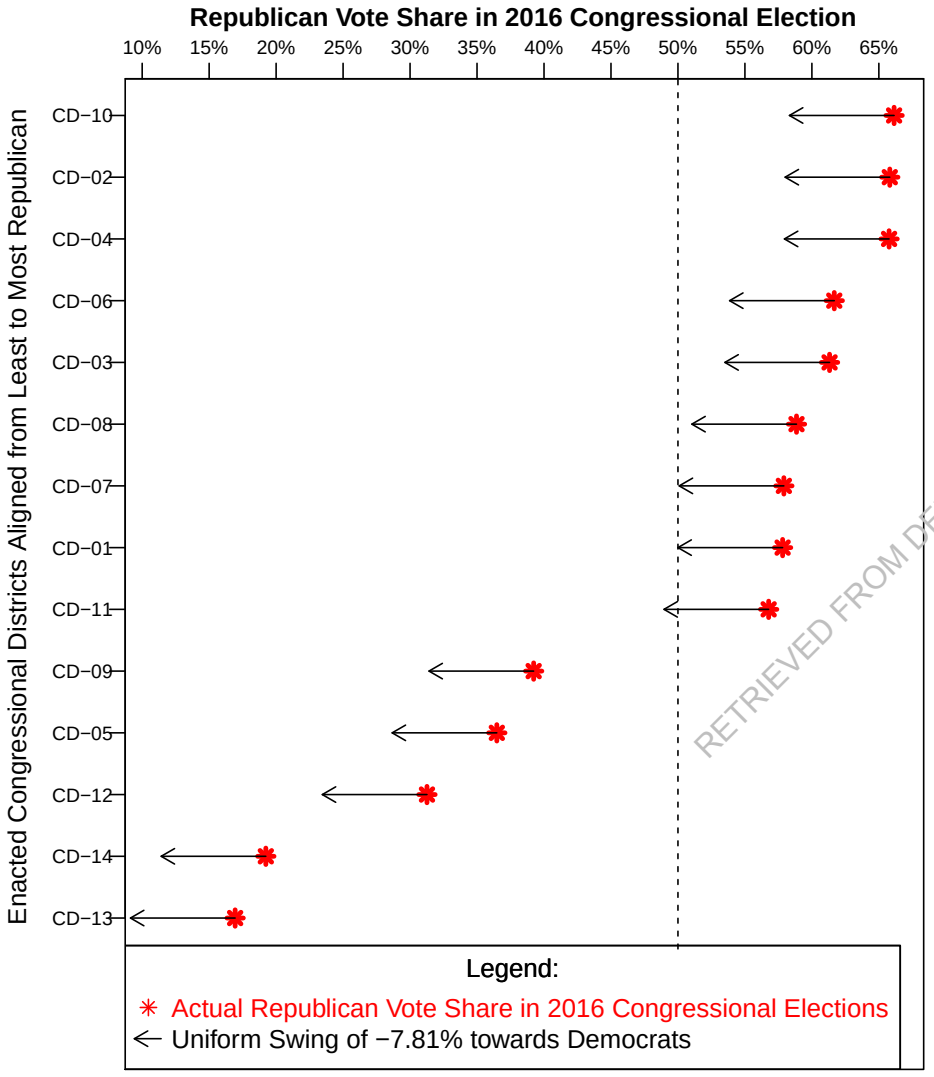


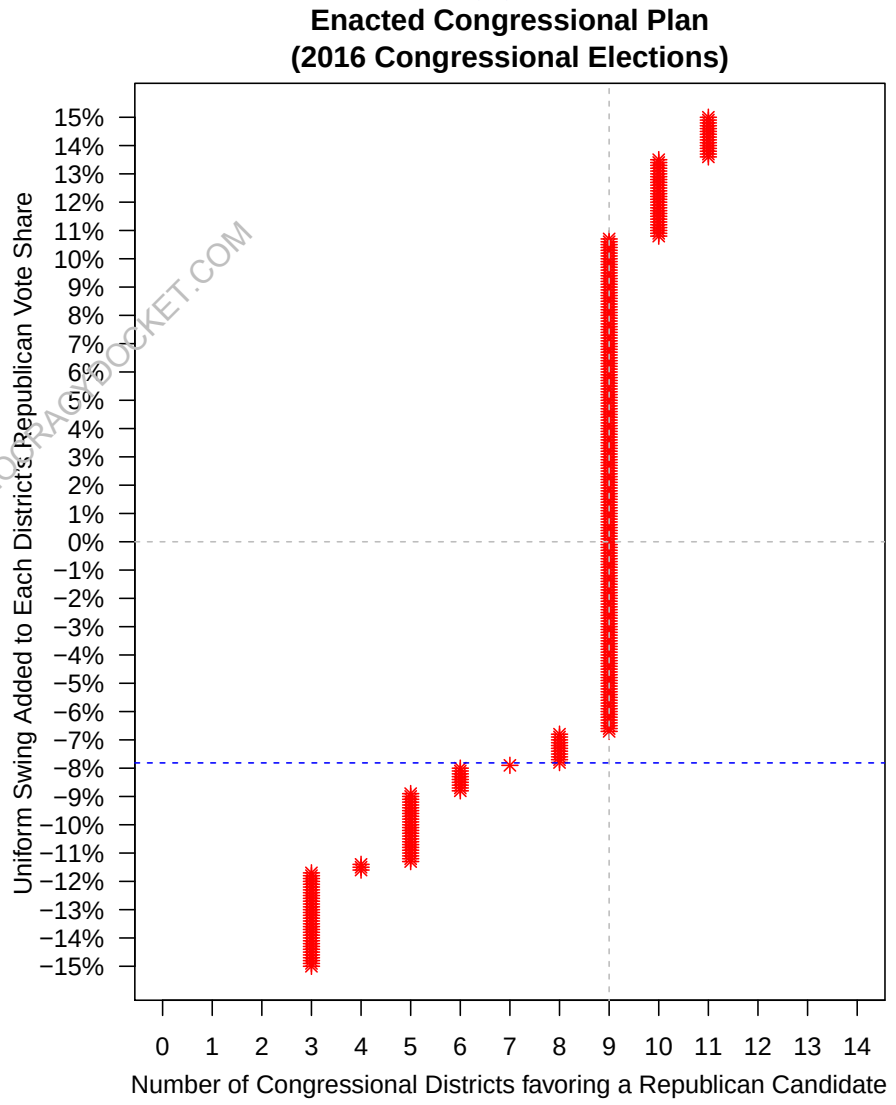
Appendix C, Figure C2:



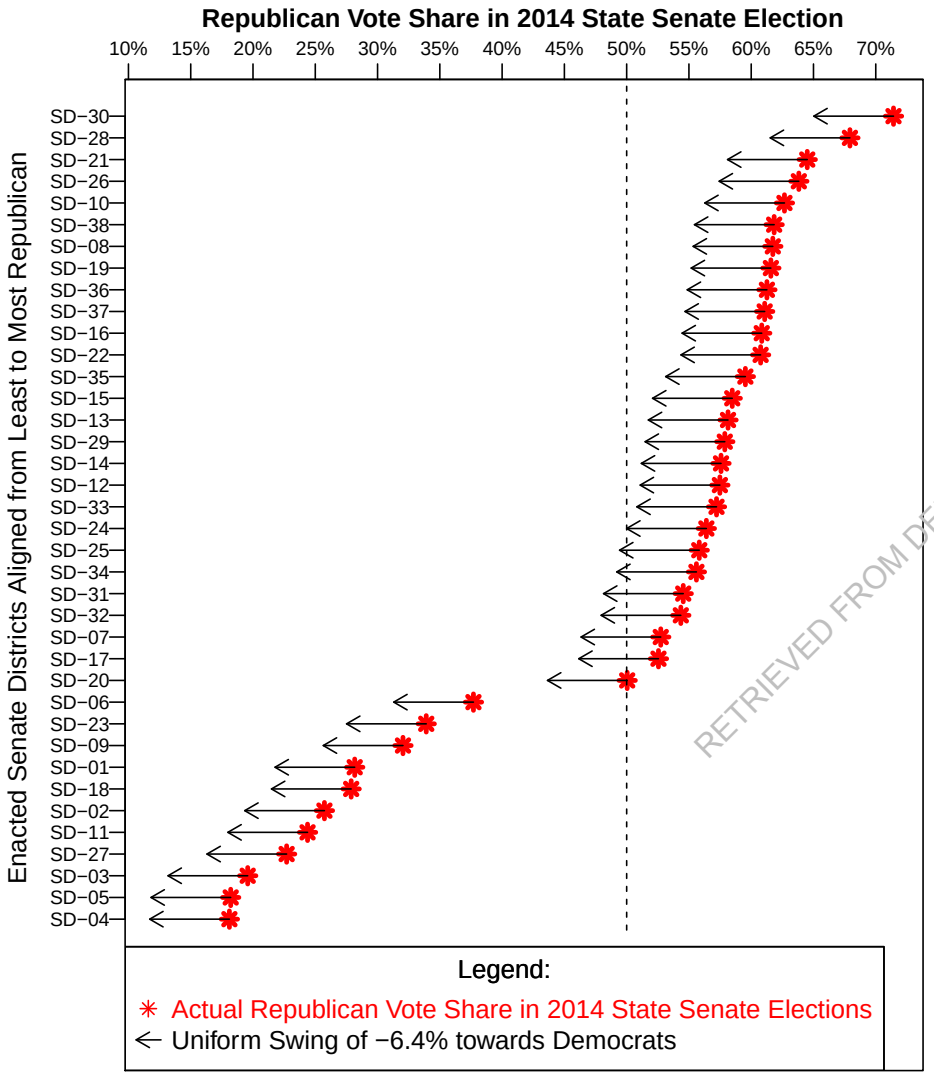


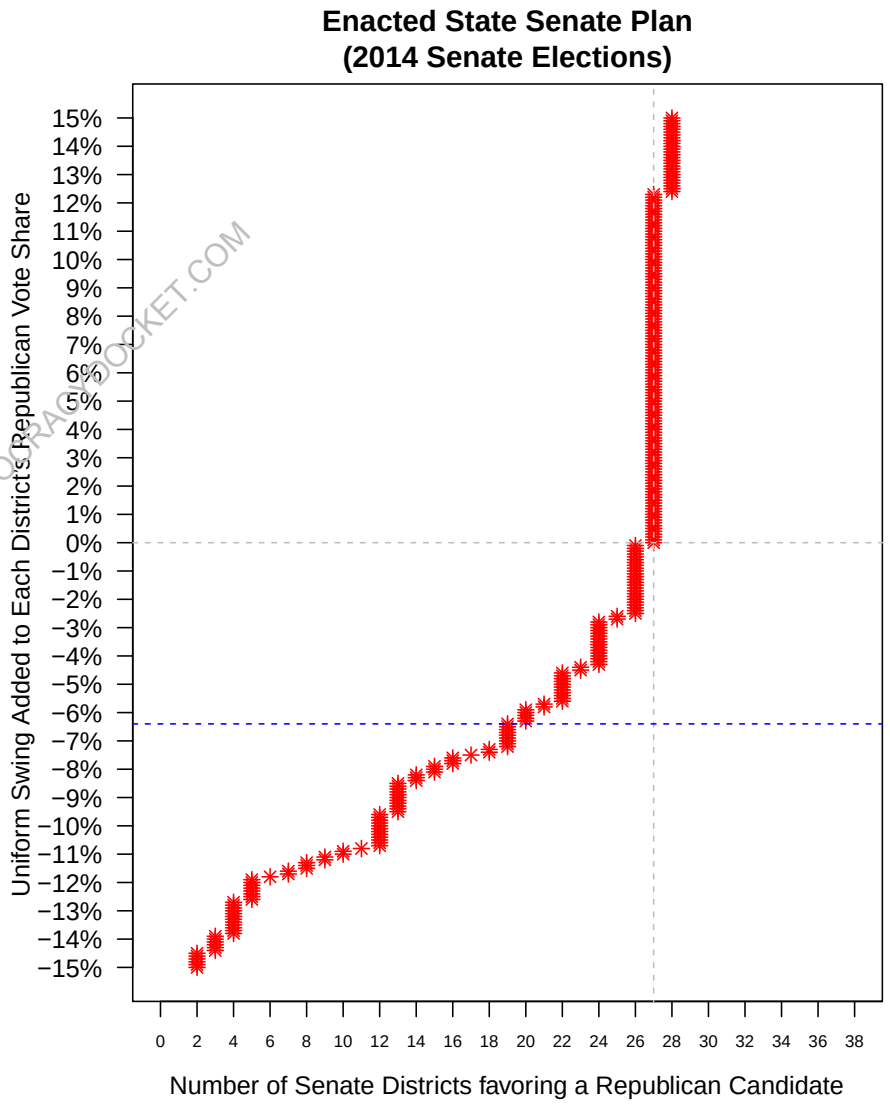
Appendix C, Figure C3:



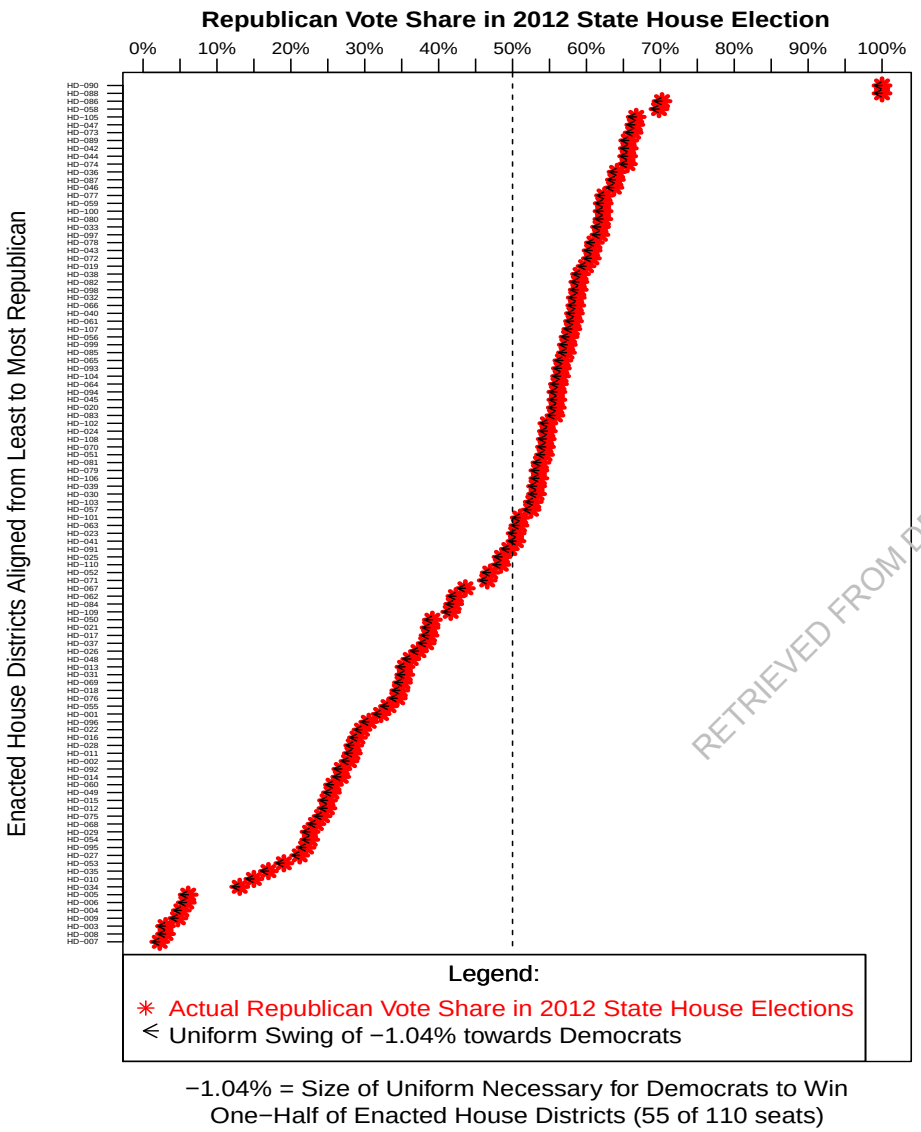


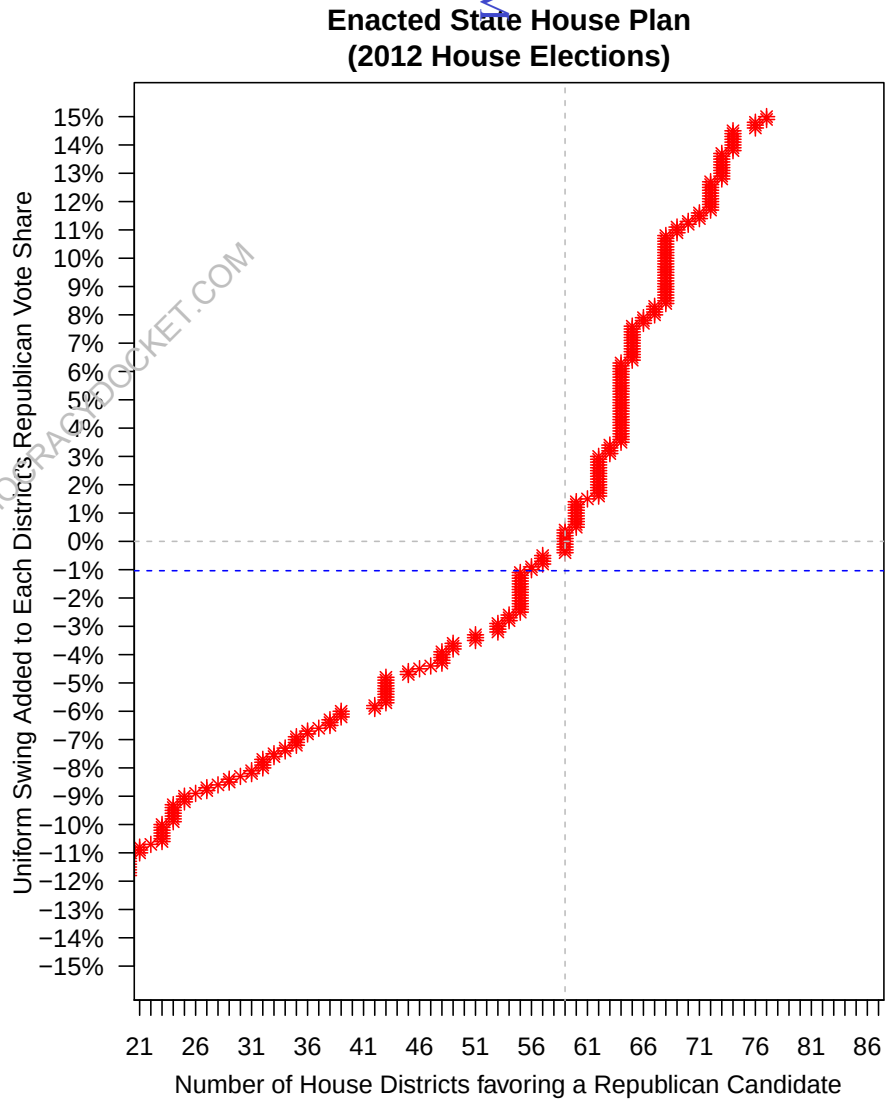
Appendix C, Figure C4:



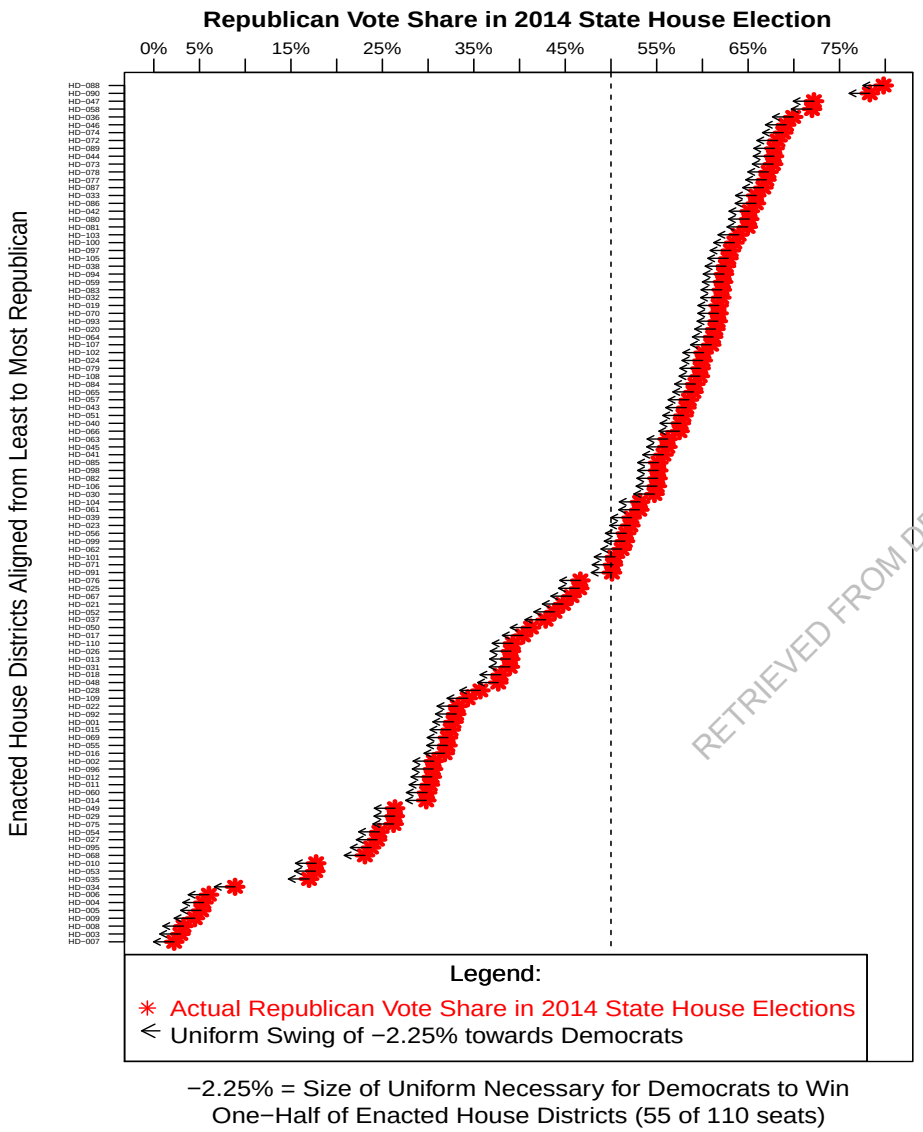


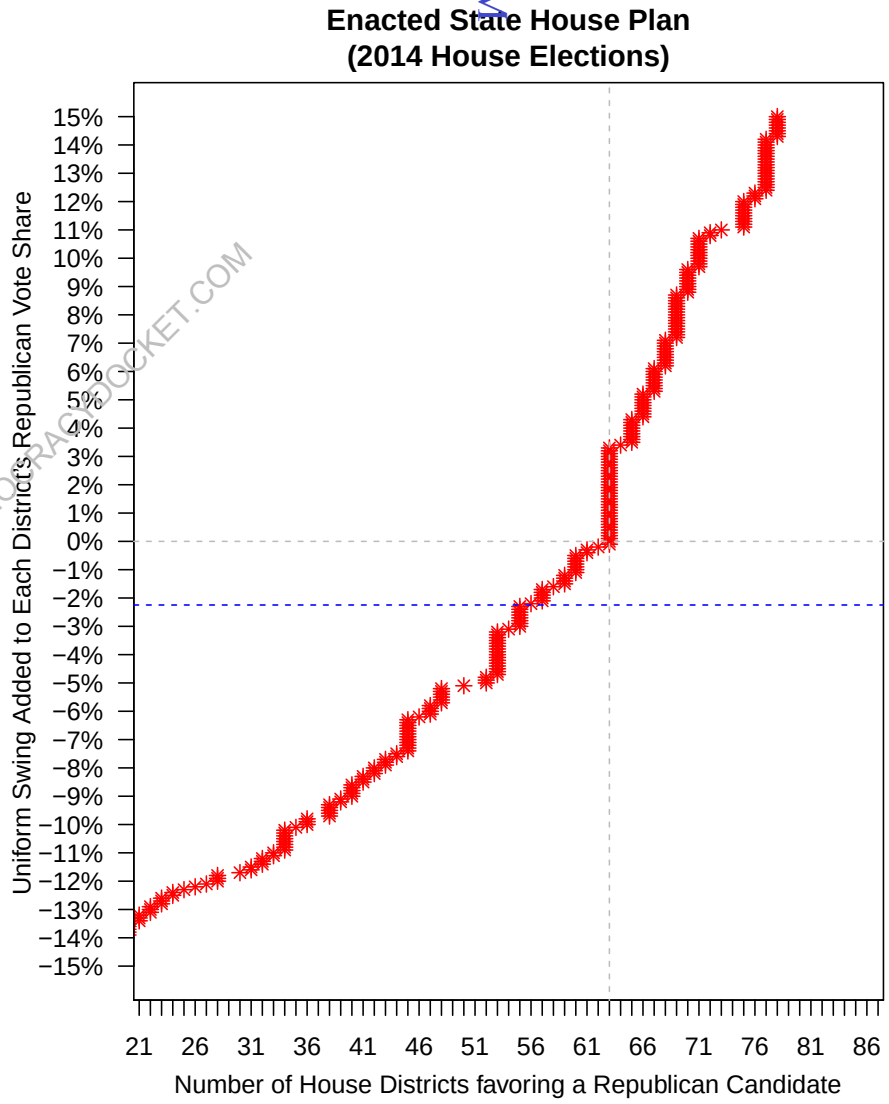
Appendix C, Figure C5:



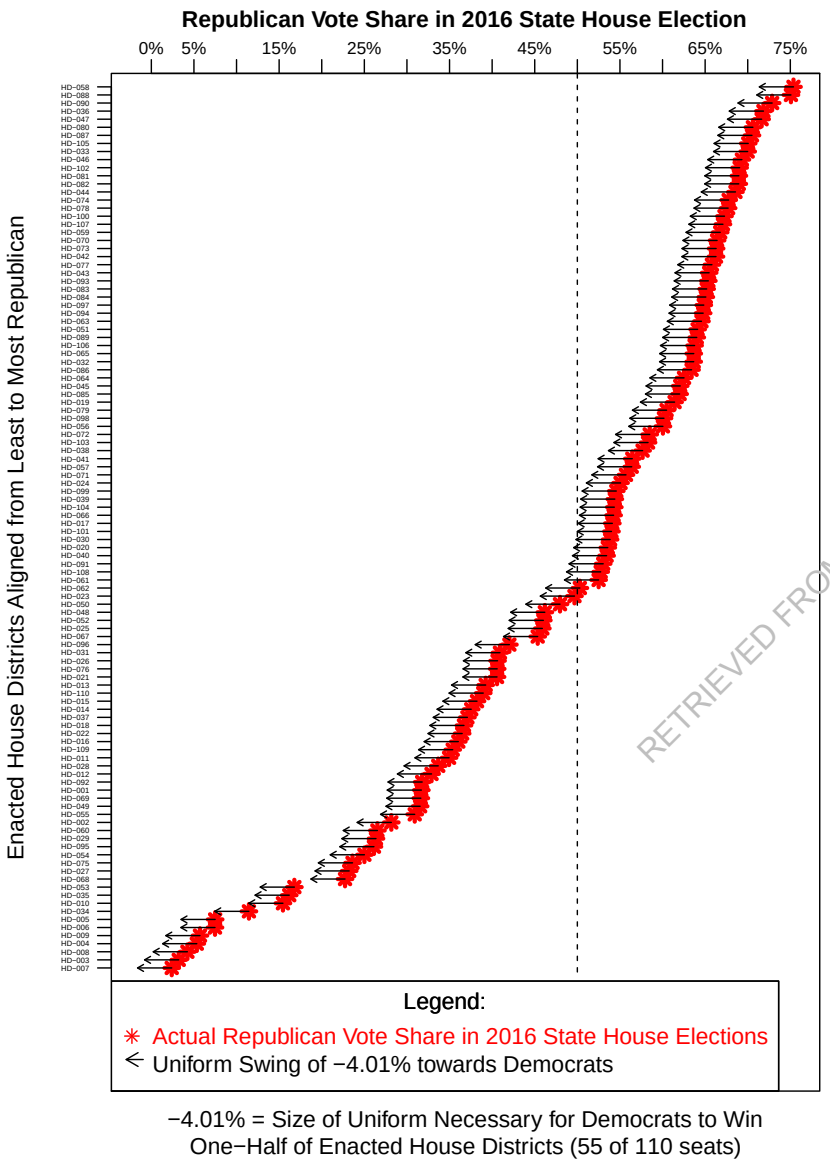


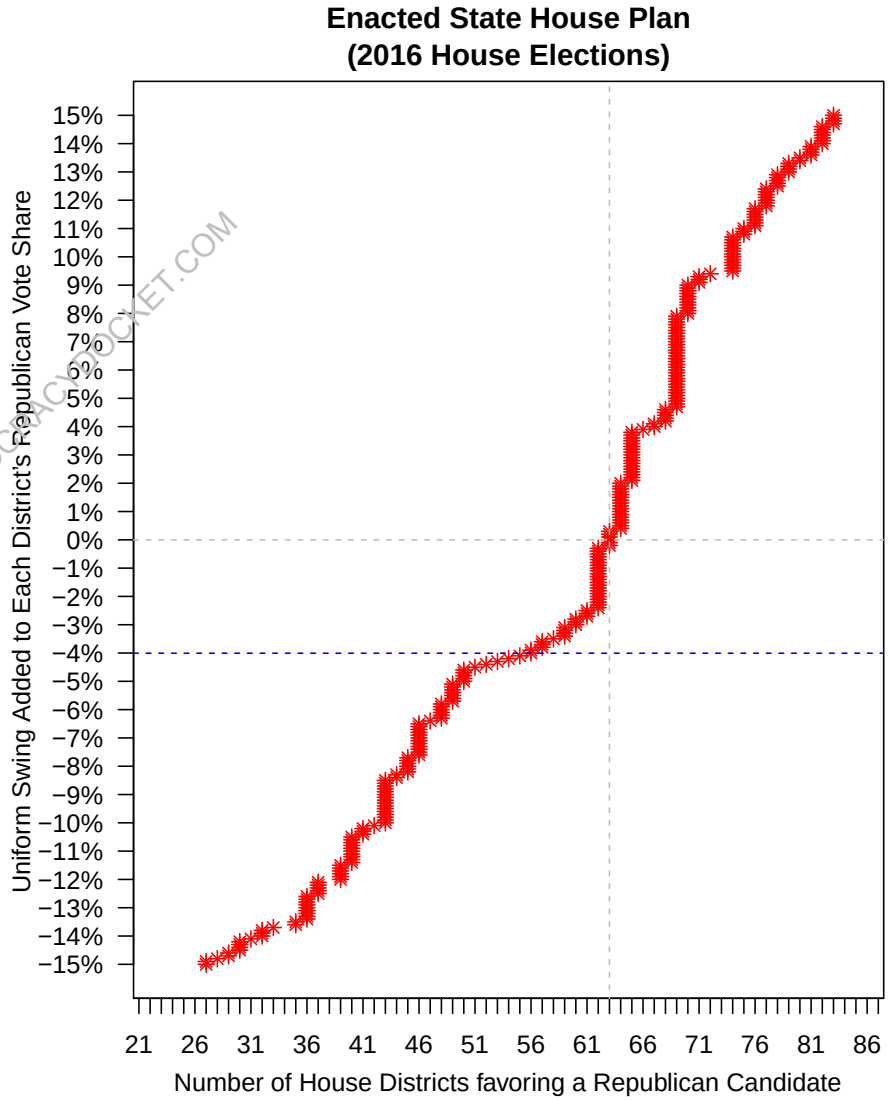
Appendix C, Figure C6:





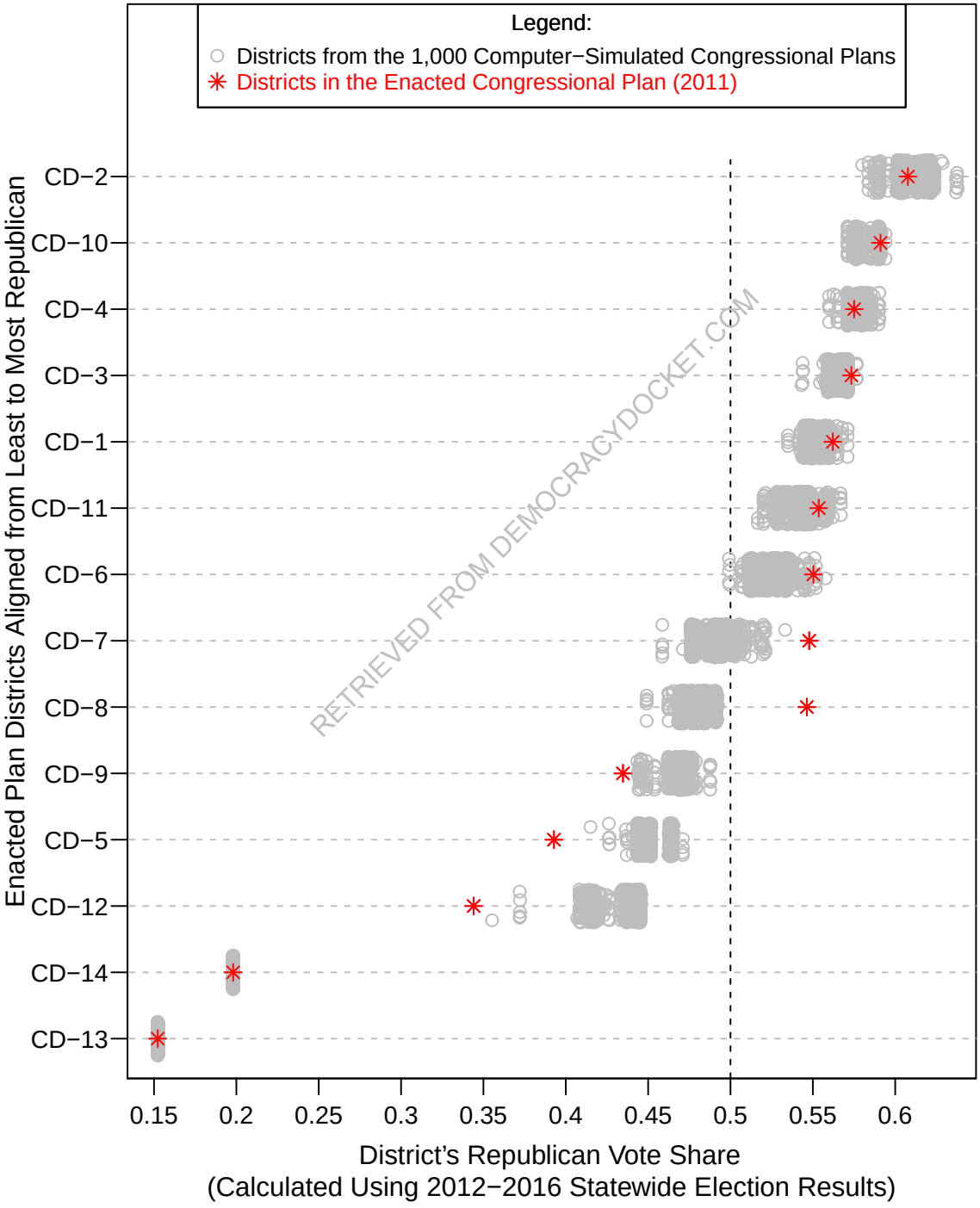
Appendix C, Figure C7:





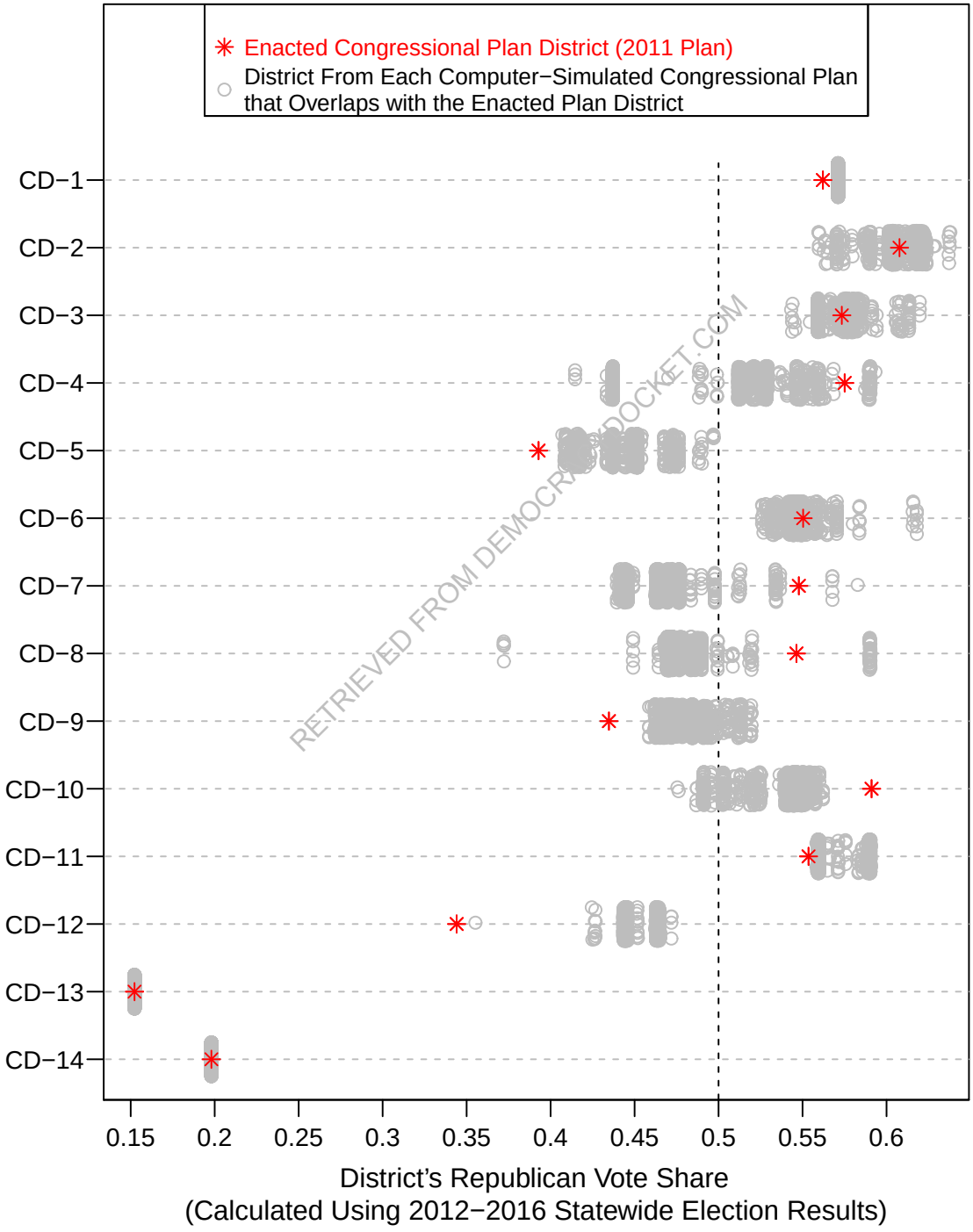
Appendix D1:

Each Congressional Plan's Districts Aligned from Least to Most Republican



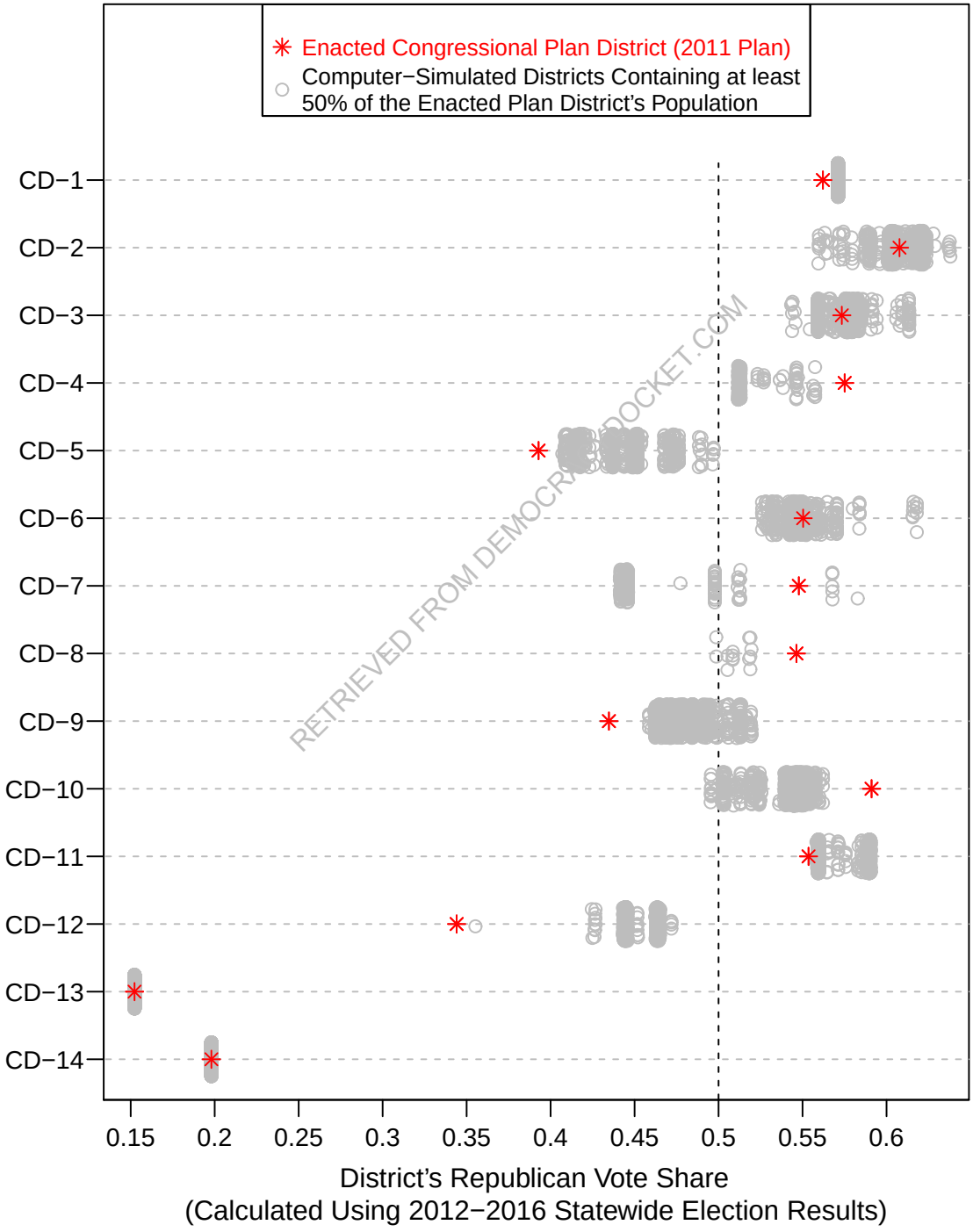
Appendix D2:

Comparison of Each Enacted Plan District to the District from Each Simulated Plan that Geographically Overlaps Most with the Enacted District

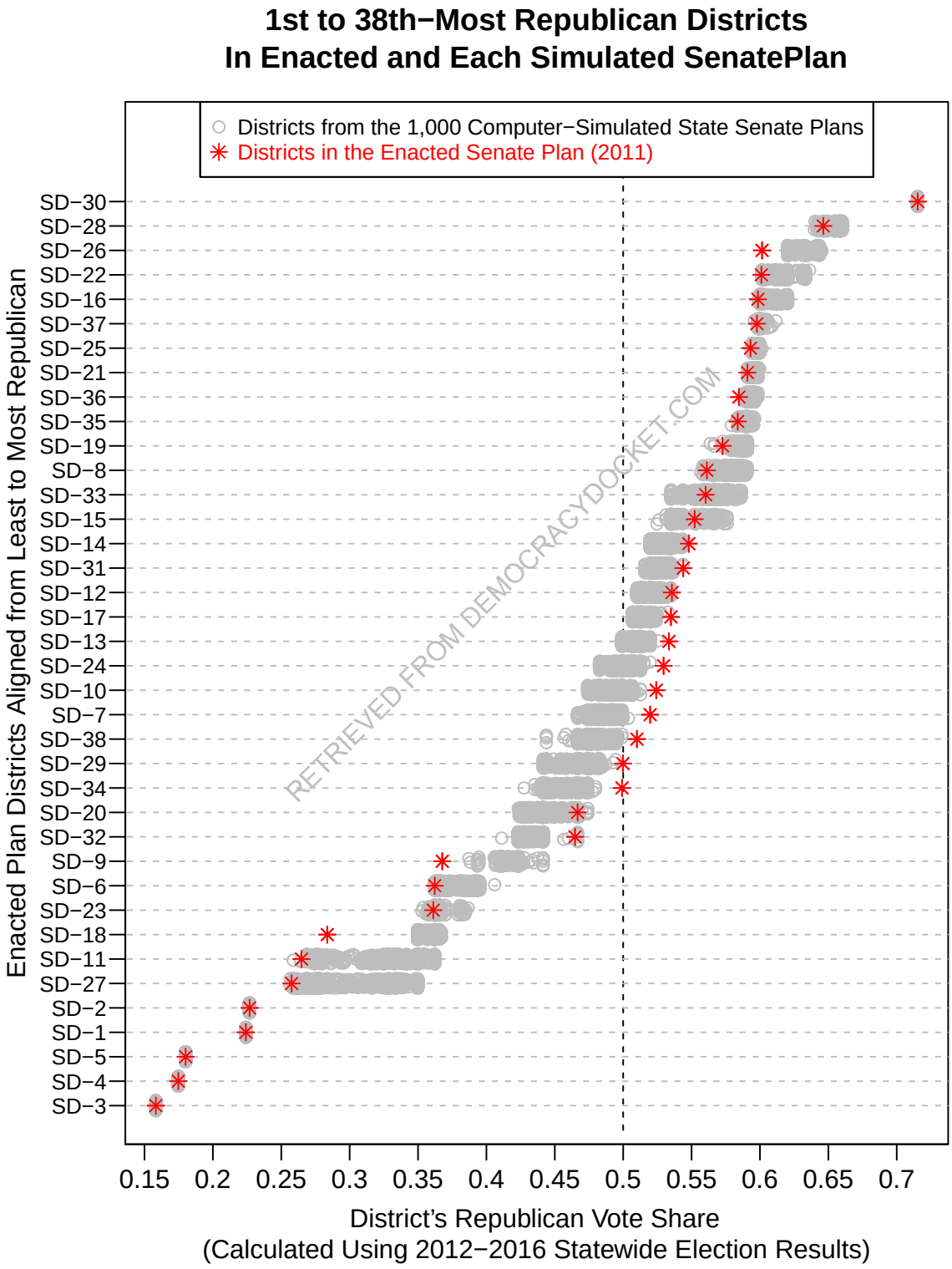


Appendix D3:

Comparison of Each Enacted Plan District to Simulated Districts Containing at least 50% of Enacted District's Population

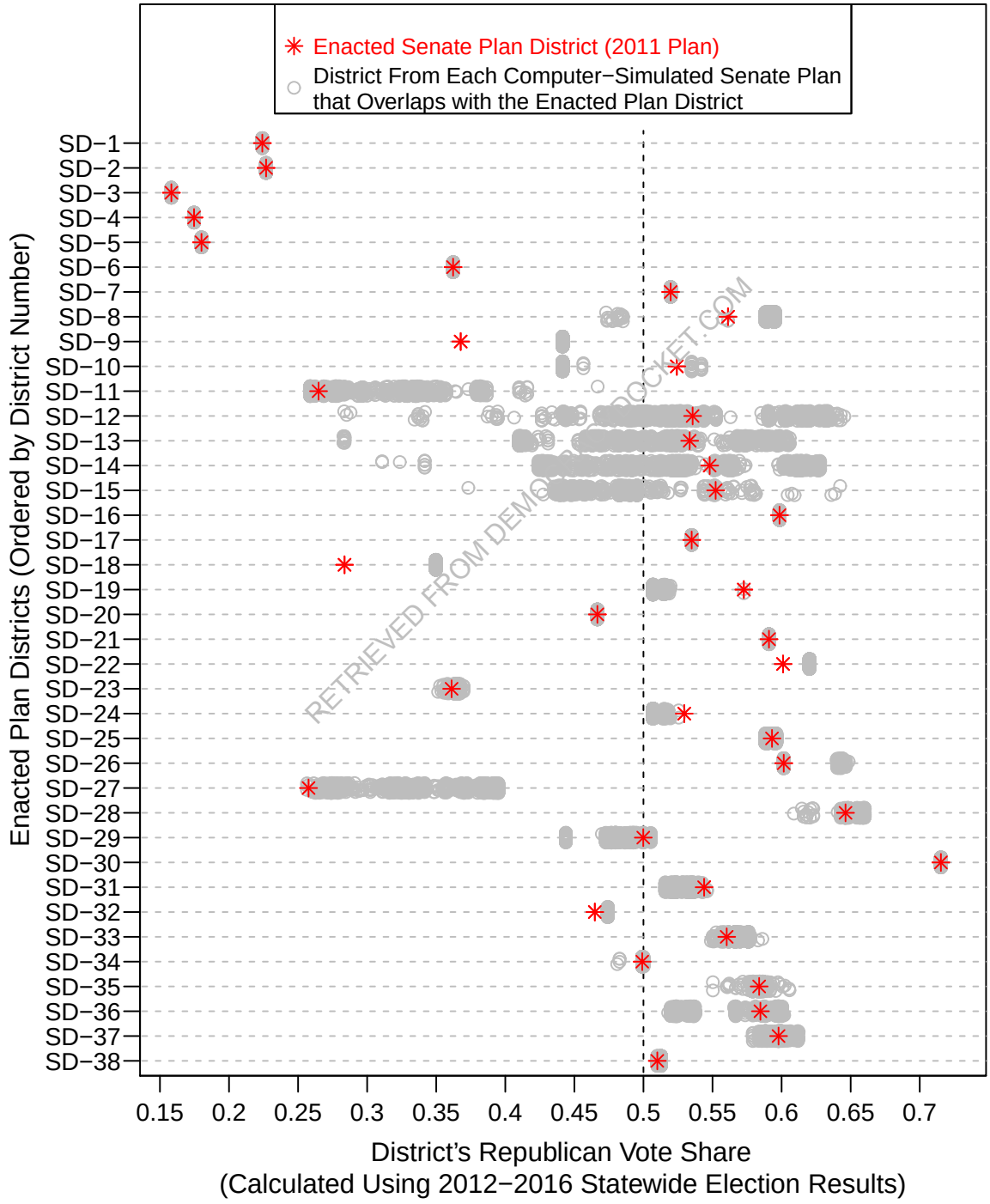


Appendix D4:



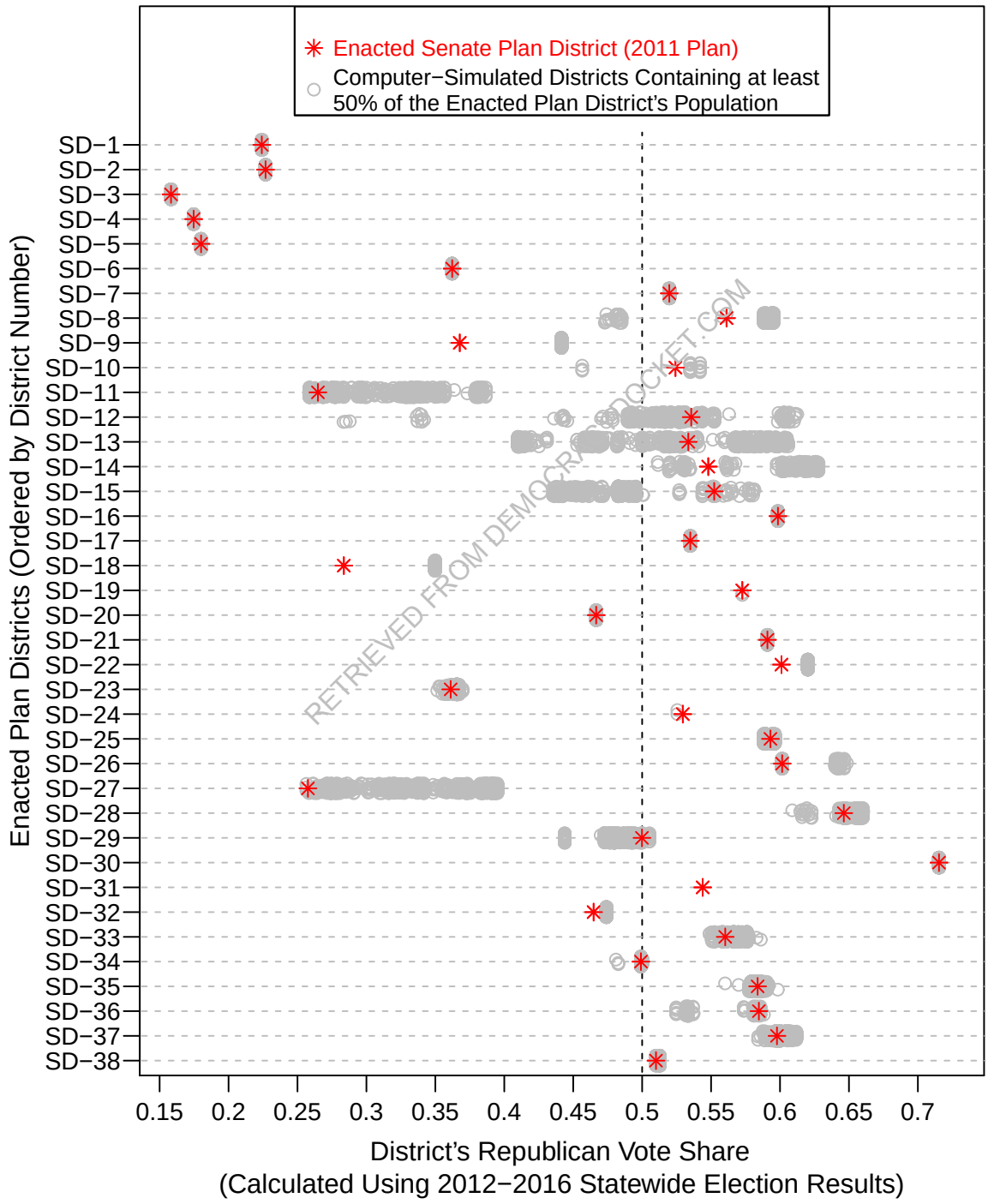
Appendix D5:

Comparison of Each Enacted Senate Plan District to the District from Each Simulated Senate Plan that Geographically Overlaps Most with the Enacted District

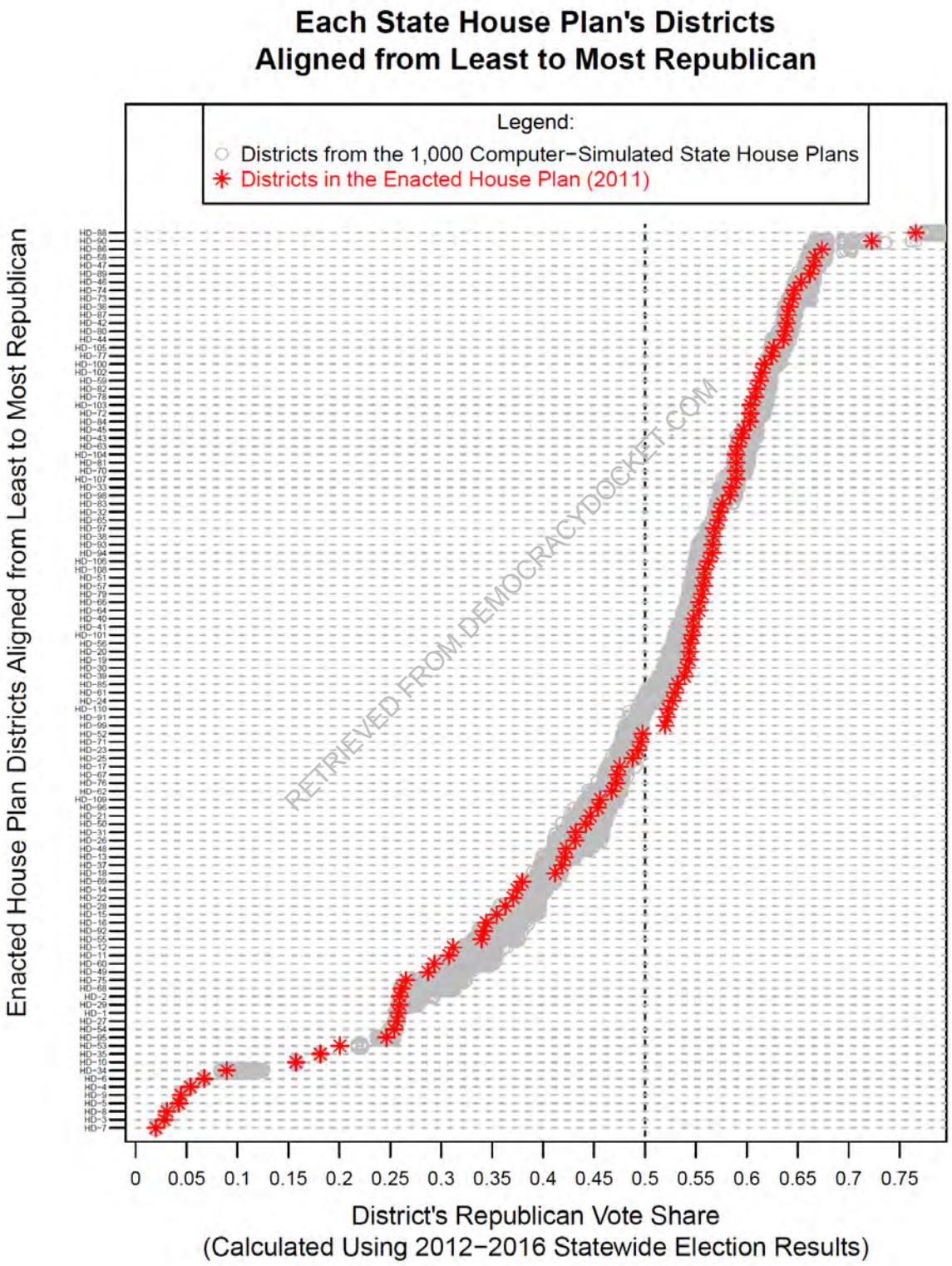


Appendix D6:

Comparison of Each Enacted Senate Plan District to Simulated Senate Districts Containing at least 50% of Enacted District's Population

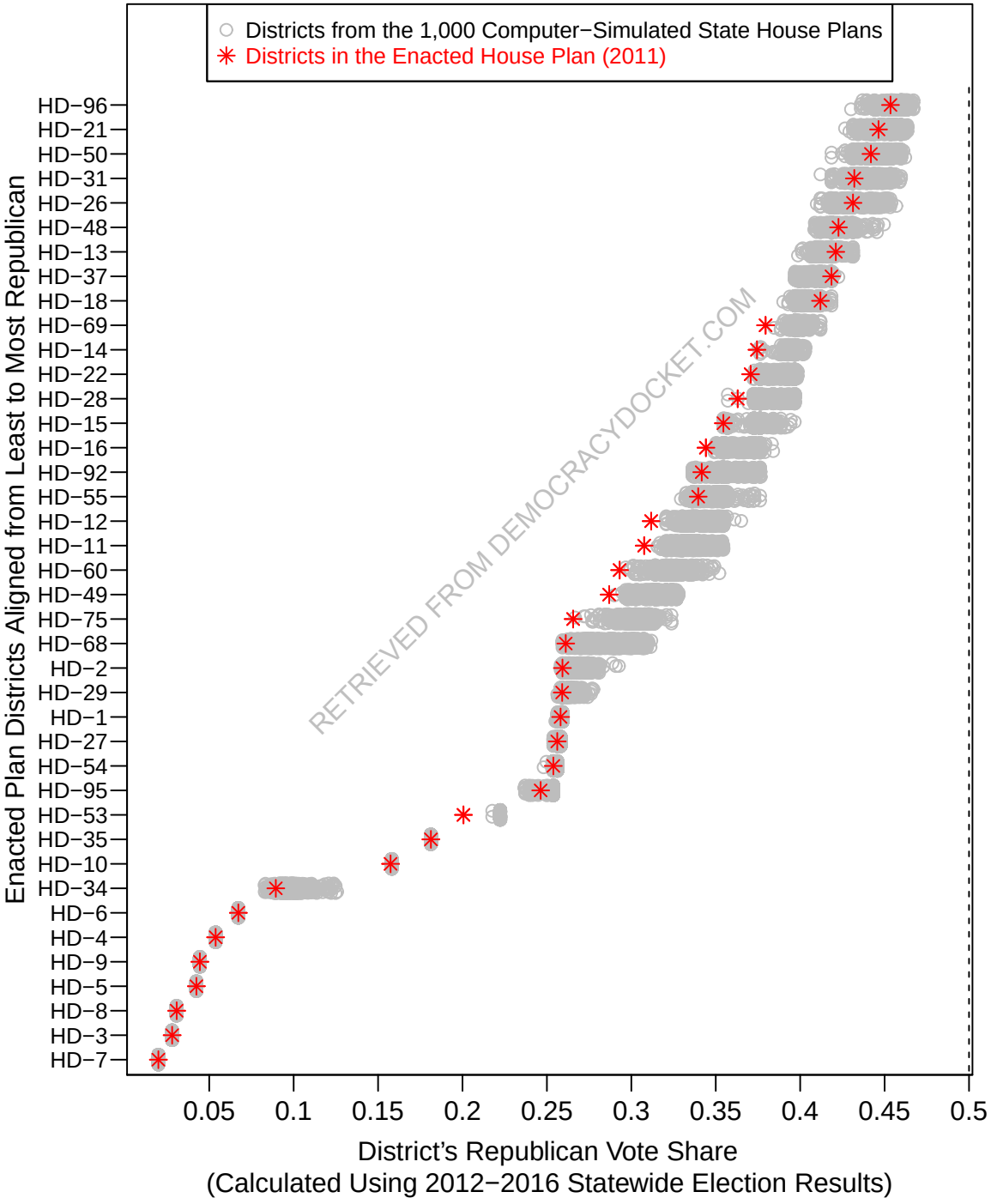


Appendix D7:

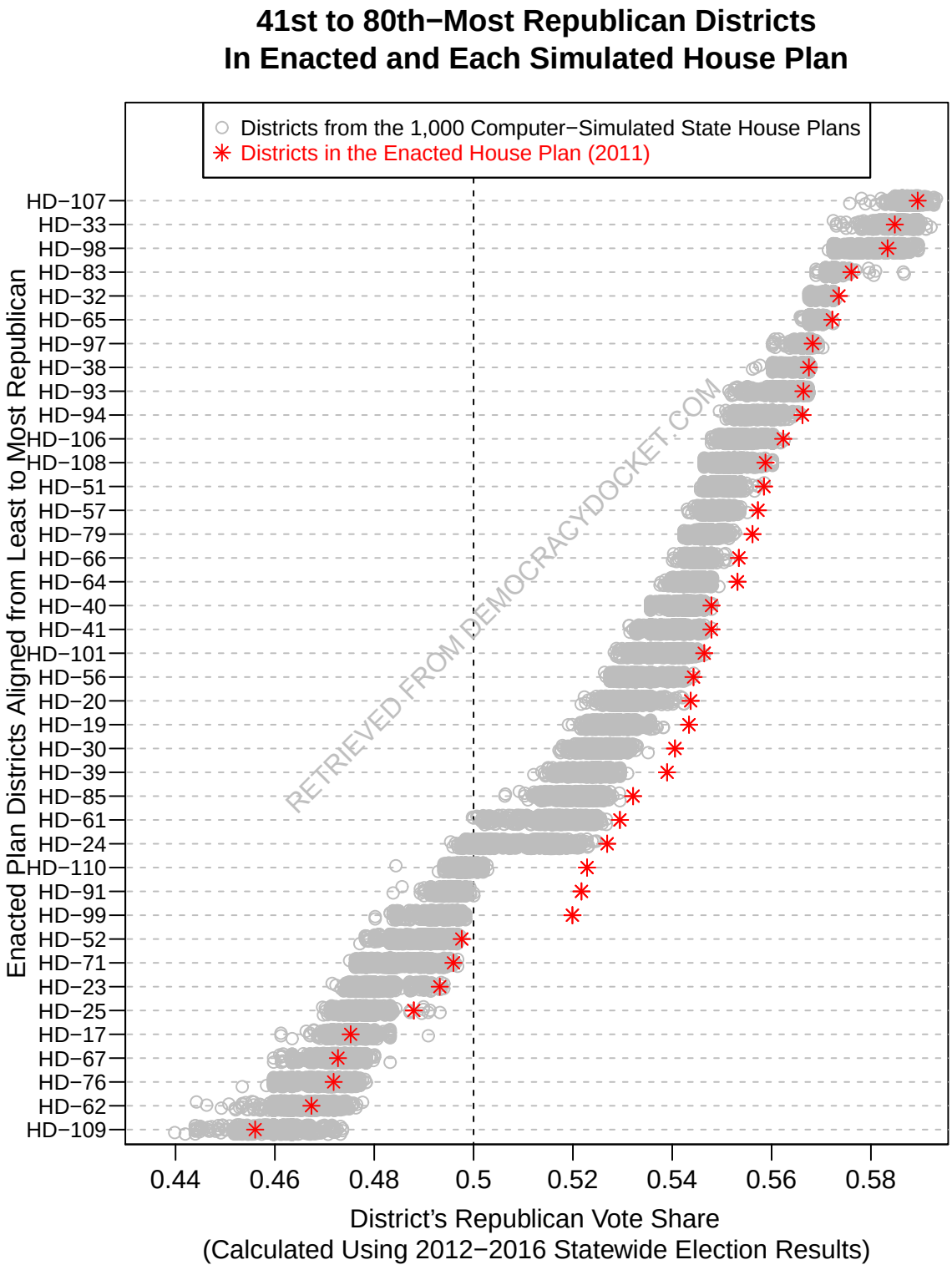


Appendix D8:

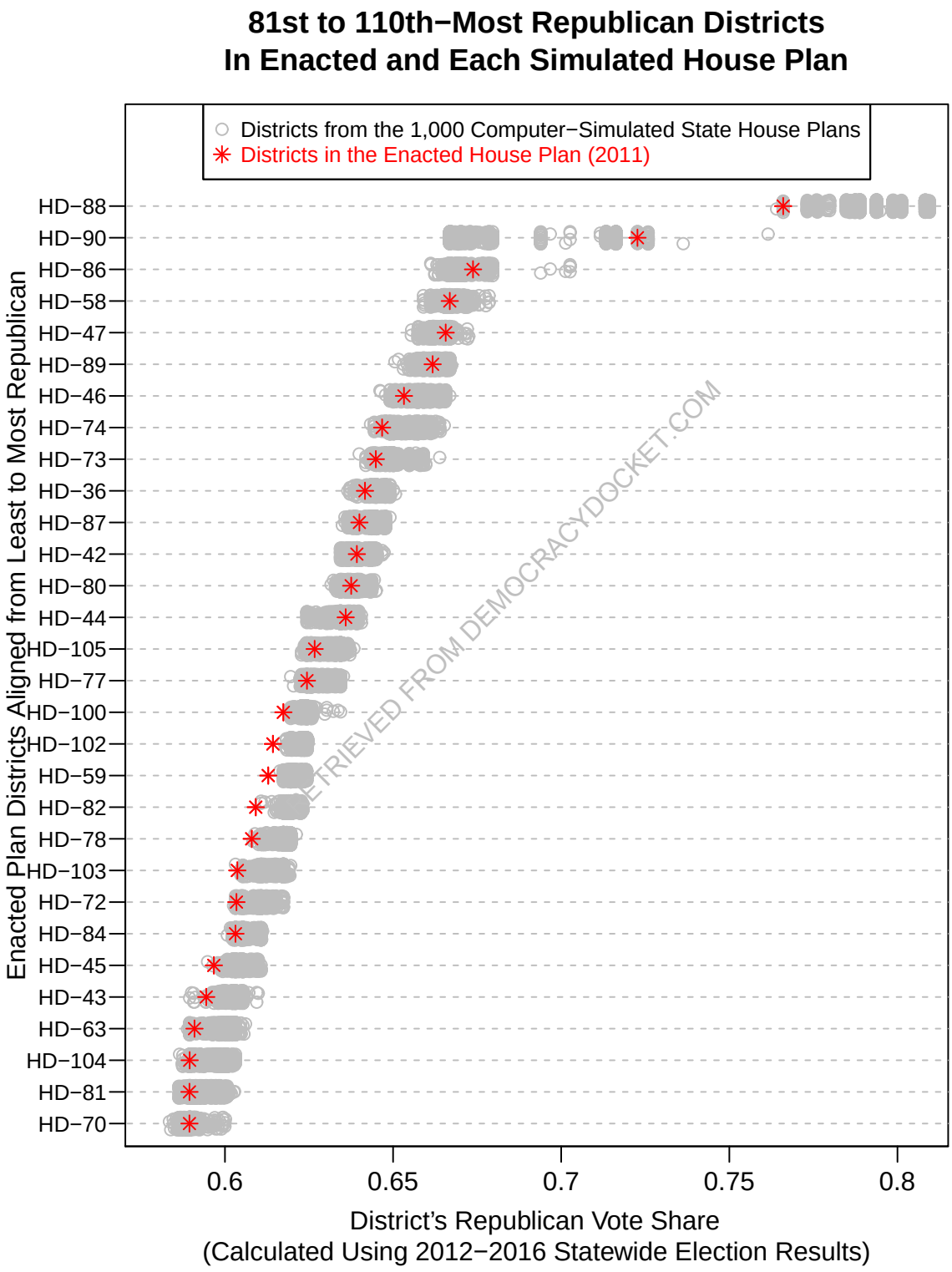
1st to 40th−Most Republican Districts In Enacted and Each Simulated House Plan



Appendix D9:

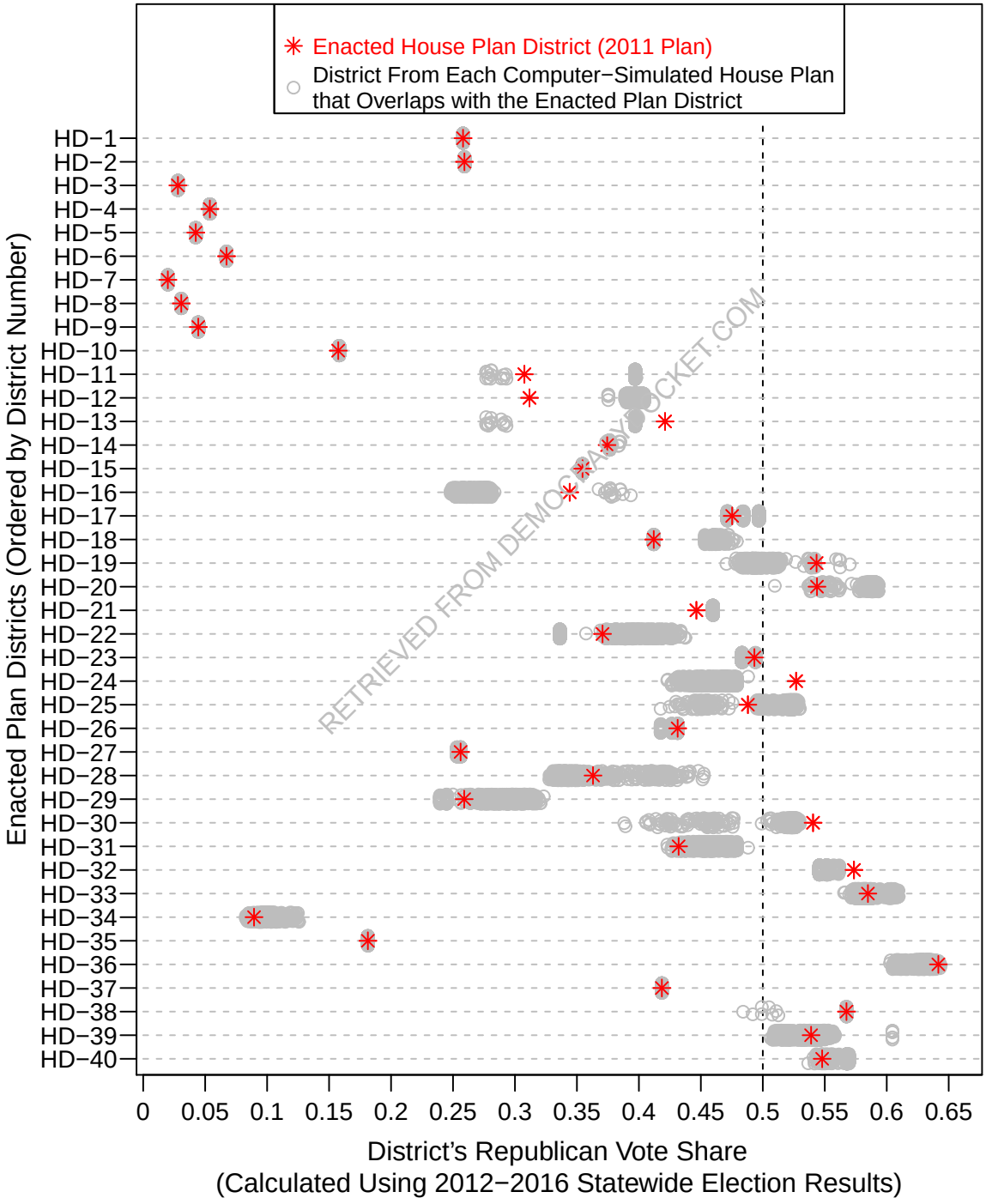


Appendix D10:



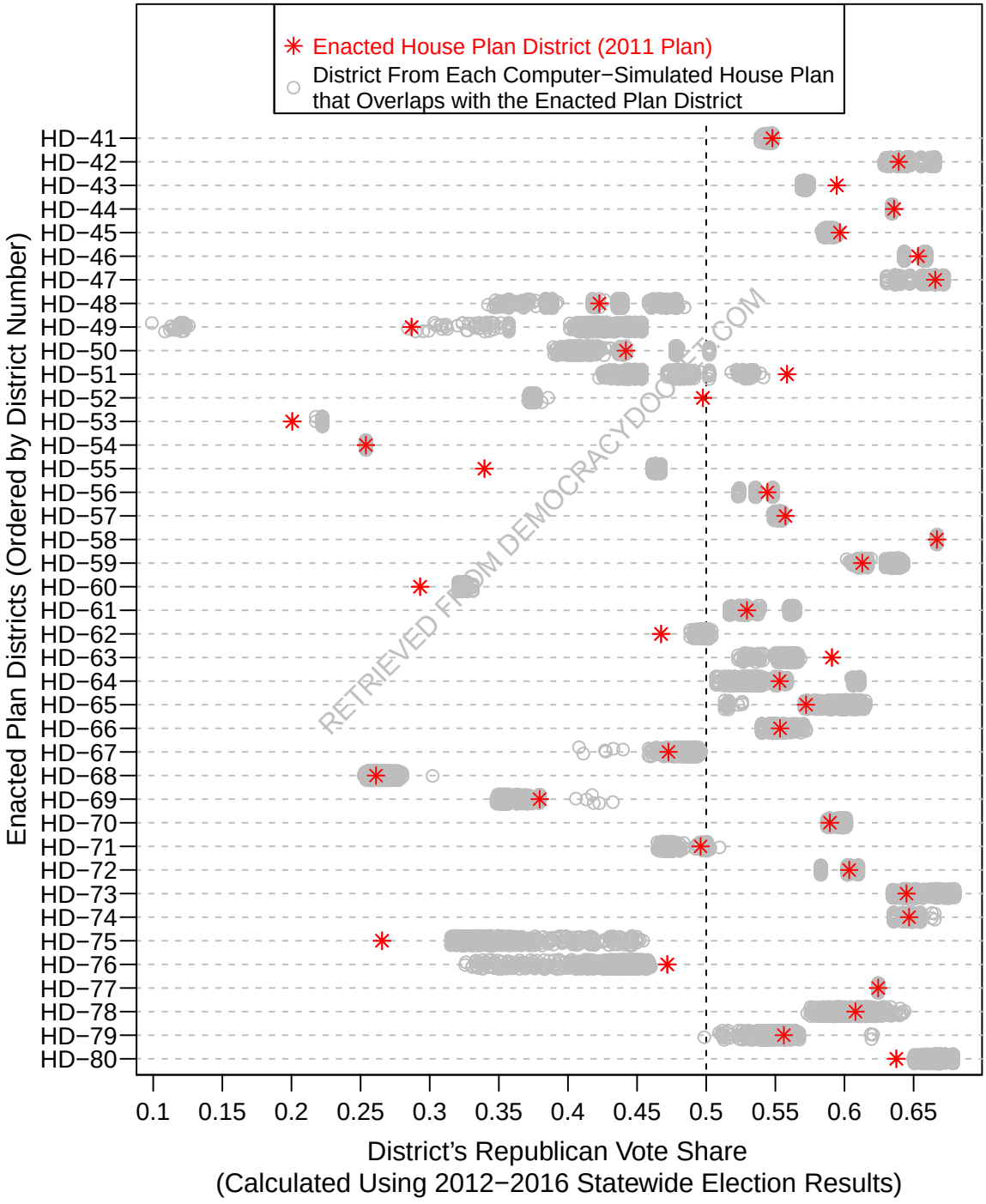
Appendix D11:

Comparison of Each Enacted House Plan District to the District from Each Simulated House Plan that Geographically Overlaps Most with the Enacted District



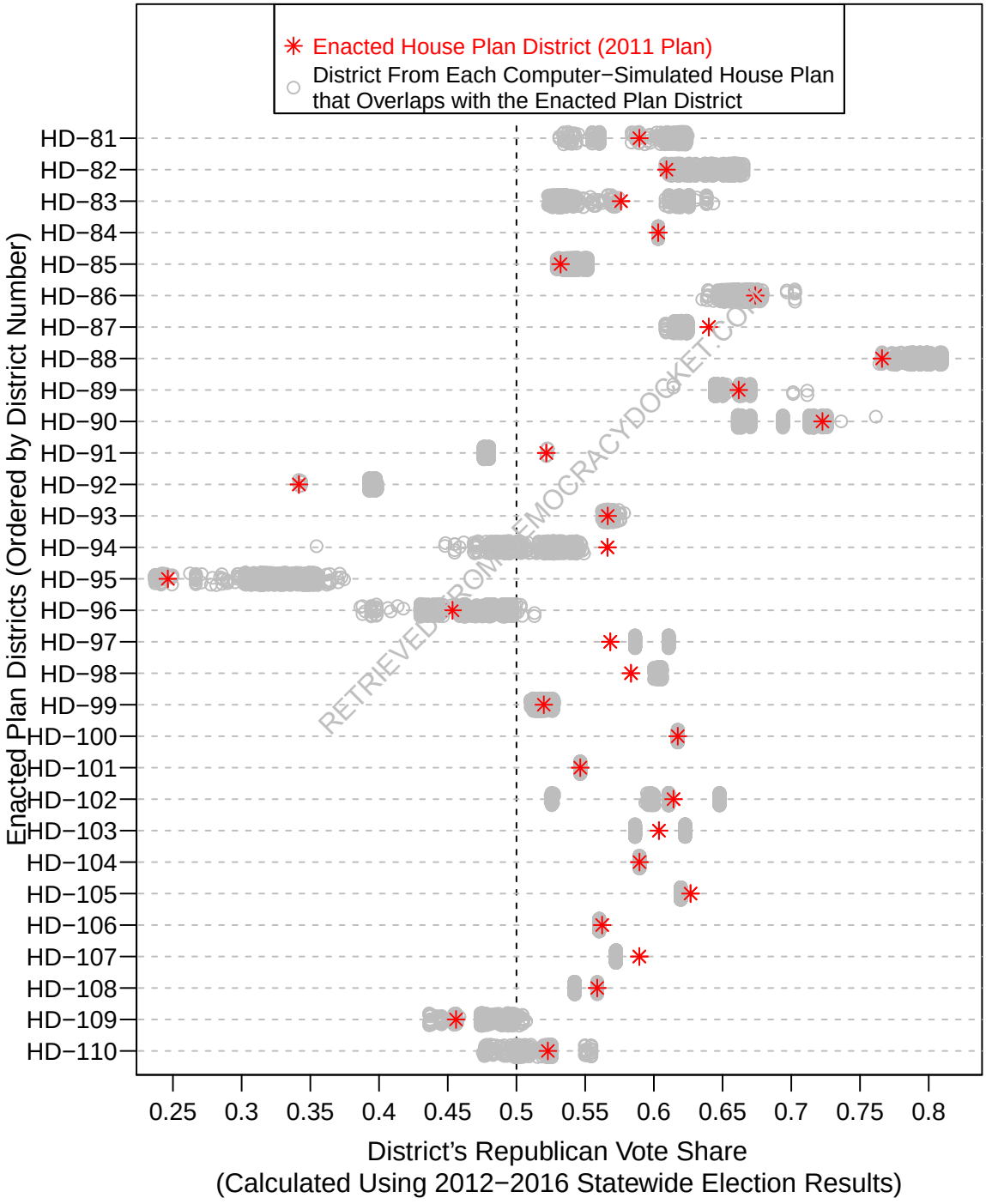
Appendix D12:

Comparison of Each Enacted House Plan District to the District from Each Simulated House Plan that Geographically Overlaps Most with the Enacted District



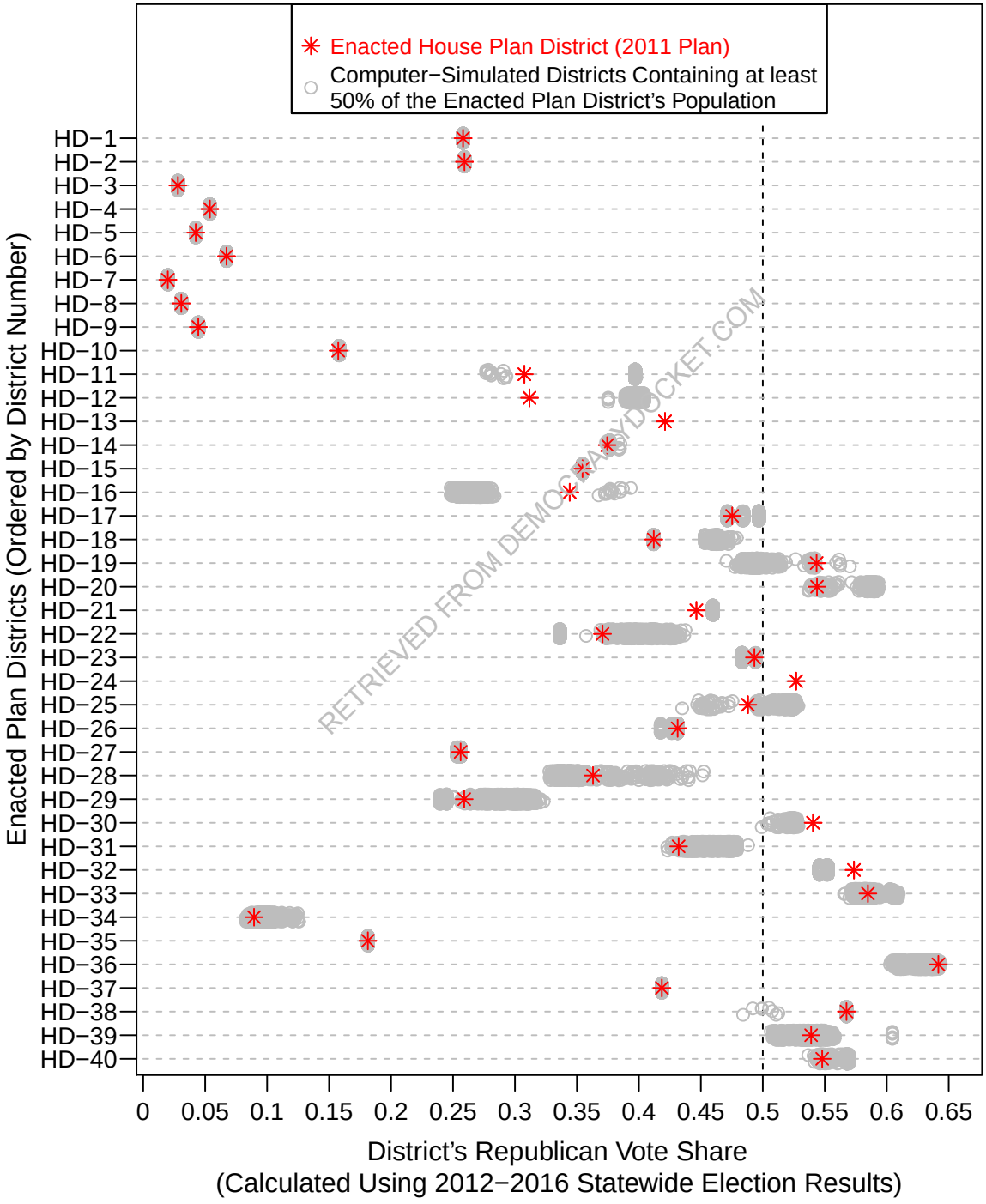
Appendix D13:

Comparison of Each Enacted House Plan District to the District from Each Simulated House Plan that Geographically Overlaps Most with the Enacted District



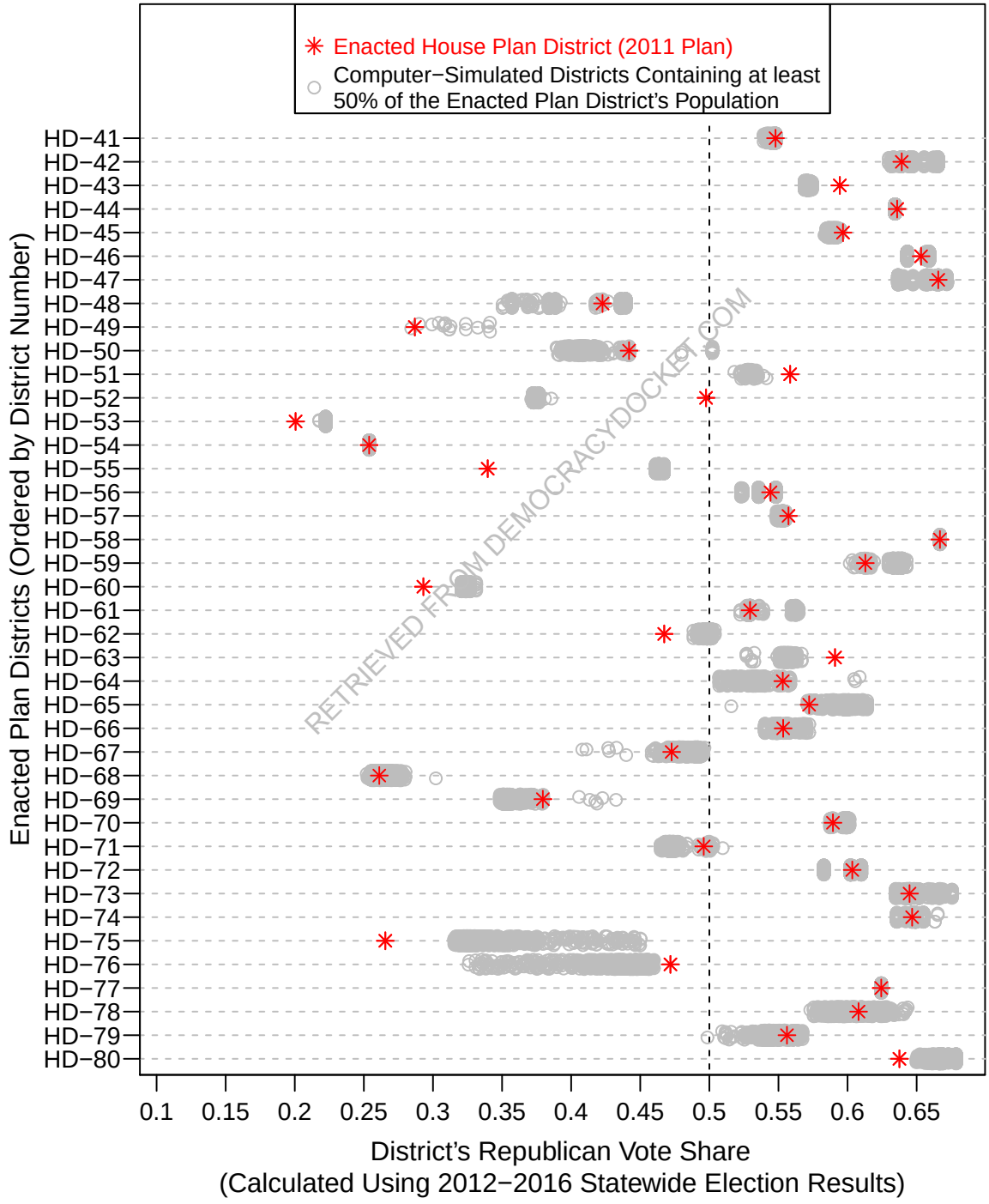
Appendix D14:

Comparison of Each Enacted House Plan District to Simulated House Districts Containing at least 50% of Enacted District's Population



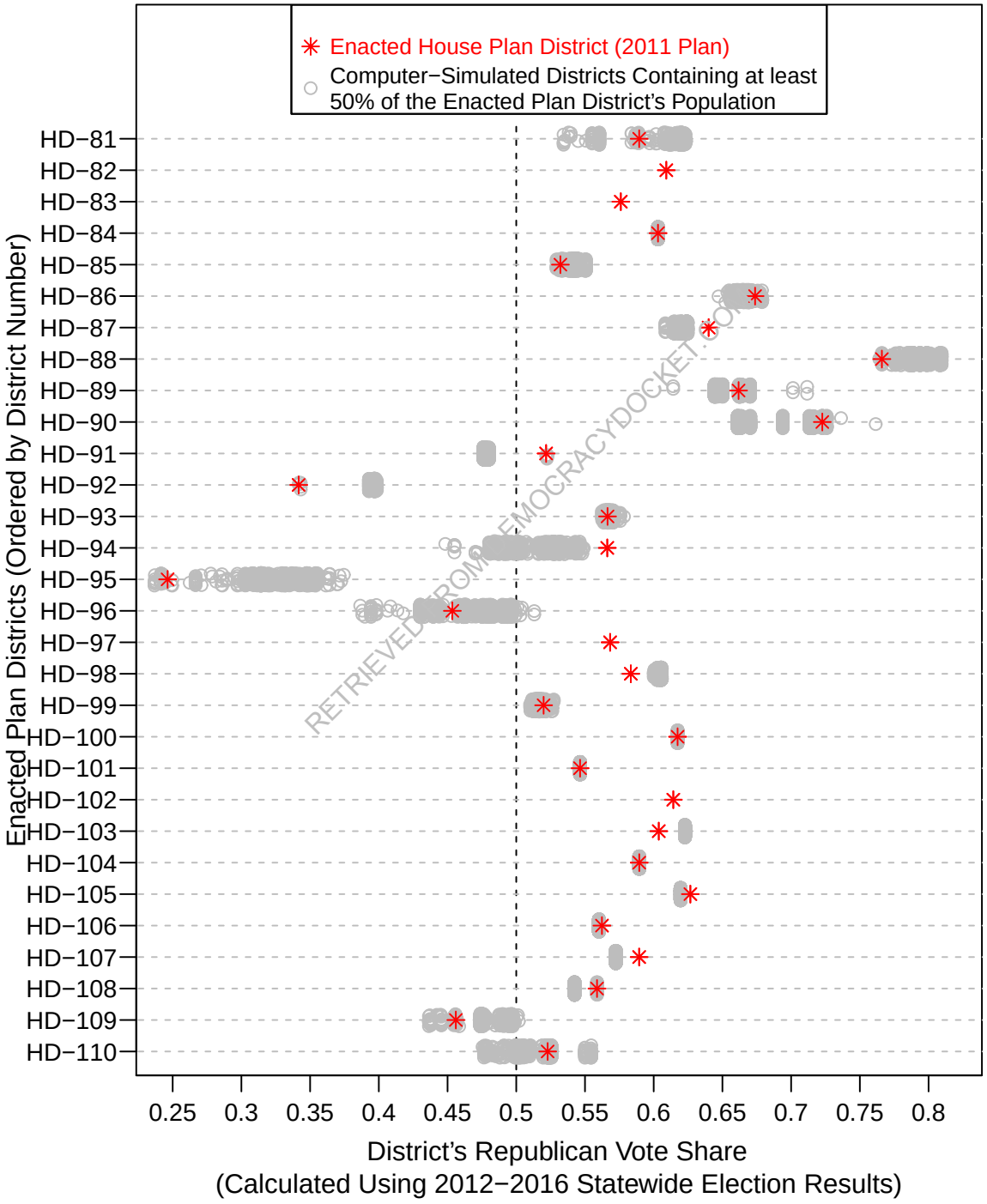
Appendix D15:

Comparison of Each Enacted House Plan District to Simulated House Districts Containing at least 50% of Enacted District's Population



Appendix D16:

Comparison of Each Enacted House Plan District to Simulated House Districts Containing at least 50% of Enacted District's Population



Jowei Chen
Curriculum Vitae

Department of Political Science
University of Michigan
5700 Haven Hall
505 South State Street
Ann Arbor, MI 48109-1045
Phone: 917-861-7712, Email: jowei@umich.edu
Website: http://www.umich.edu/~jowei

Academic Positions:
Associate Professor (2015-present), Assistant Professor (2009-2015), Department of Political Science, University of Michigan.
Faculty Associate, Center for Political Studies, University of Michigan, 2009 – Present.
W. Glenn Campbell and Rita Ricardo-Campbell National Fellow, Hoover Institution, Stanford University, 2013.
Principal Investigator and Senior Research Fellow, Center for Governance and Public Policy Research, Willamette University, 2013 – Present.

Education:
Ph.D., Political Science, Stanford University (June 2009)
M.S., Statistics, Stanford University (January 2007)
B.A., Ethics, Politics, and Economics, Yale University (May 2004)

Publications:

Chen, Jowei and Neil Malhotra. 2007. "The Law of k/n: The Effect of Chamber Size on Government Spending in Bicameral Legislatures."
***American Political Science Review*. 101(4): 657-676.**

Chen, Jowei, 2010. "The Effect of Electoral Geography on Pork Barreling in Bicameral Legislatures."
***American Journal of Political Science*. 54(2): 301-322.**

Chen, Jowei, 2013. "Voter Partisanship and the Effect of Distributive Spending on Political Participation."
***American Journal of Political Science*. 57(1): 200-217.**

Chen, Jowei and Jonathan Rodden, 2013. "Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures"
***Quarterly Journal of Political Science*, 8(3): 239-269.**

Bradley, Katharine and Jowei Chen, 2014. "Participation Without Representation? Senior Opinion, Legislative Behavior, and Federal Health Reform."
***Journal of Health Politics, Policy and Law*. 39(2), 263-293.**

Chen, Jowei and Tim Johnson, 2015. "Federal Employee Unionization and Presidential Control of the Bureaucracy: Estimating and Explaining Ideological Change in Executive Agencies."
***Journal of Theoretical Politics*, Volume 27, No. 1: 151-174.**

Bonica, Adam, Jowei Chen, and Tim Johnson, 2015. "Senate Gate-Keeping, Presidential Staffing of 'Inferior Offices' and the Ideological Composition of Appointments to the Public Bureaucracy."
***Quarterly Journal of Political Science*. Volume 10, No. 1: 5-40.**

Chen, Jowei and Jonathan Rodden, 2015. "Redistricting Simulations and the Detection Cutting through the Thicket: of Partisan Gerrymanders."
***Election Law Journal*. Volume 14, Number 4: 331-345.**

Chen, Jowei and David Cottrell, 2016. "Evaluating Partisan Gains from Congressional Gerrymandering: Using Computer Simulations to Estimate the Effect of Gerrymandering in the U.S. House."
***Electoral Studies*. Volume 44 (December 2016): 329-340.**

Chen, Jowei, 2017. "Analysis of Computer-Simulated Districting Maps for the Wisconsin State Assembly."
Forthcoming 2017, *Election Law Journal*.

Non-Peer-Reviewed Publication:

Chen, Jowei and Tim Johnson. 2017. "Political Ideology in the Bureaucracy."
***Global Encyclopedia of Public Administration, Public Policy, and Governance*.**

Chen, Jowei. October 4, 2017. Time Magazine Op-Ed.
http://time.com/4965673/wisconsin-supreme-court-gerrymandering-research/

Chen, Jowei and Jonathan Rodden. January 2014. New York Times Op-Ed.
https://www.nytimes.com/2014/01/26/opinion/sunday/its-the-geography-stupid.html

Research Grants:

Principal Investigator. National Science Foundation Grant SES-1459459, September 2015 – August 2018 ($165,008). "The Political Control of U.S. Federal Agencies and Bureaucratic Political Behavior."

"Economic Disparity and Federal Investments in Detroit," (with Brian Min) 2011. Graham Institute, University of Michigan ($30,000).

"The Partisan Effect of OSHA Enforcement on Workplace Injuries," (with Connor Raso) 2009. John M. Olin Law and Economics Research Grant ($4,410).

Invited Talks:

September, 2011. University of Virginia, American Politics Workshop.
October 2011. Massachusetts Institute of Technology, American Politics Conference.
January 2012. University of Chicago, Political Economy/American Politics Seminar.
February 2012. Harvard University, Positive Political Economy Seminar.
September 2012. Emory University, Political Institutions and Methodology Colloquium.
November 2012. University of Wisconsin, Madison, American Politics Workshop.
September 2013. Stanford University, Graduate School of Business, Political Economy Workshop.
February 2014. Princeton University, Center for the Study of Democratic Politics Workshop.
November 2014. Yale University, American Politics and Public Policy Workshop.

December 2014. American Constitution Society for Law & Policy Conference: Building the Evidence to Win Voting Rights Cases.
February 2015. University of Rochester, American Politics Working Group.
March 2015. Harvard University, Voting Rights Act Workshop.
May 2015. Harvard University, Conference on Political Geography.
Octoer 2015. George Washington University School of Law, Conference on Redistricting Reform.
September 2016. Harvard University Center for Governmental and International Studies, Voting Rights Institute Conference.
March 2017. Duke University, Sanford School of Public Policy, Redistricting Reform Conference.
October 2017. Willamette University, Center for Governance and Public Policy Research
October 2017, University of Wisconsin, Madison. Geometry of Redistricting Conference.

Conference Service:

Section Chair, 2017 APSA (Chicago, IL), Political Methodology Section
Discussant, 2014 Political Methodology Conference (University of Georgia)
Section Chair, 2012 MPSA (Chicago, IL), Political Geography Section.
Discussant, 2011 MPSA (Chicago, IL) "Presidential-Congressional Interaction."
Discussant, 2008 APSA (Boston, MA) "Congressional Appropriations."
Chair and Discussant, 2008 MPSA (Chicago, IL) "Distributive Politics: Parties and Pork."

Conference Presentations and Working Papers:

"Ideological Representation of Geographic Constituencies in the U.S. Bureaucracy," (with Tim Johnson). 2017 APSA.

"Incentives for Political versus Technical Expertise in the Public Bureaucracy," (with Tim Johnson). 2016 APSA.

"Black Electoral Geography and Congressional Districting: The Effect of Racial Redistricting on Partisan Gerrymandering". 2016 Annual Meeting of the Society for Political Methodology (Rice University)

"Racial Gerrymandering and Electoral Geography." Working Paper, 2016.

"Does Deserved Spending Win More Votes? Evidence from Individual-Level Disaster Assistance," (with Andrew Healy). 2014 APSA.

"The Geographic Link Between Votes and Seats: How the Geographic Distribution of Partisans Determines the Electoral Responsiveness and Bias of Legislative Elections," (with David Cottrell). 2014 APSA.

"Gerrymandering for Money: Drawing districts with respect to donors rather than voters." 2014 MPSA.

"Constituent Age and Legislator Responsiveness: The Effect of Constituent Opinion on the Vote for Federal Health Reform." (with Katharine Bradley) 2012 MPSA.

"Voter Partisanship and the Mobilizing Effect of Presidential Advertising." (with Kyle Dropp) 2012 MPSA.

"Recency Bias in Retrospective Voting: The Effect of Distributive Benefits on Voting Behavior." (with Andrew Feher) 2012 MPSA.

"Estimating the Political Ideologies of Appointed Public Bureaucrats," (with Adam Bonica and Tim Johnson) 2012 Annual Meeting of the Society for Political Methodology (University of North Carolina)

"Tobler's Law, Urbanization, and Electoral Bias in Florida." (with Jonathan Rodden) 2010 Annual Meeting of the Society for Political Methodology (University of Iowa)

"Unionization and Presidential Control of the Bureaucracy" (with Tim Johnson) 2011 MPSA.

"Estimating Bureaucratic Ideal Points with Federal Campaign Contributions" 2010 APSA. (Washington, DC).

"The Effect of Electoral Geography on Pork Spending in Bicameral Legislatures," Vanderbilt University Conference on Bicameralism, 2009.

"When Do Government Benefits Influence Voters' Behavior? The Effect of FEMA Disaster Awards on US Presidential Votes," 2009 APSA (Toronto, Canada).

"Are Poor Voters Easier to Buy Off?" 2009 APSA (Toronto, Canada).

"Credit Sharing Among Legislators: Electoral Geography's Effect on Pork Barreling in Legislatures," 2008 APSA (Boston, MA).

"Buying Votes with Public Funds in the US Presidential Election," Poster Presentation at the 2008 Annual Meeting of the Society for Political Methodology (University of Michigan).

"The Effect of Electoral Geography on Pork Spending in Bicameral Legislatures," 2008 MPSA.

"Legislative Free-Riding and Spending on Pure Public Goods," 2007 MPSA (Chicago, IL).

"Free Riding in Multi-Member Legislatures," (with Neil Malhotra) 2007 MPSA (Chicago, IL).

"The Effect of Legislature Size, Bicameralism, and Geography on Government Spending: Evidence from the American States," (with Neil Malhotra) 2006 APSA (Philadelphia, PA).

Reviewer Service:

American Journal of Political Science
American Political Science Review
Journal of Politics
Quarterly Journal of Political Science
American Politics Research
Legislative Studies Quarterly
State Politics and Policy Quarterly
Journal of Public Policy
Journal of Empirical Legal Studies
Political Behavior
Political Research Quarterly

Political Analysis
Public Choice
Applied Geography

Detroit Free Press

MICHIGAN

Proposal 2 in Michigan: Pros and cons, what gerrymandering is

Paul Egan
Detroit Free Press

Published 6:00 a.m. ET Sept. 21, 2018 | **Updated 11:18 a.m. ET Nov. 2, 2018**

LANSING — When Arizona voters approved a bipartisan commission of citizens to handle redistricting in 2000, it was over the objections of the state Republican Party.

But in the 2002 election, the first time the commission's redrawn political lines were used, Republicans regained control of the state Senate, prompting complaints and a lawsuit from Democrats.

The next time the commission drew lines, after the 2010 census, Republicans claimed its redistricting plan favored the Democrats. They also went to court.

And Arizona Latinos have expressed concerns that a commission intended to eliminate gerrymandering has drawn lines that water down their political voice.

If the Arizona experience tells Michigan anything ahead of the state's Nov. 6 vote on whether to approve an independent redistricting commission of its own, it's that nobody should expect the commission — if approved — to end the debates and rancor over how the lines are drawn.

"No one is satisfied, and it does not seem to have resolved anyone's idea of a problem in Arizona," said Stan Barnes, a Phoenix political consultant and former state senator.

More: Democratic group gives $250K to redistricting initiative

More: Anti-gerrymandering group defies odds with 2018 ballot drive

Andi Minkoff, a Scottsdale Democrat who sat on Arizona's first redistricting commission, said the change was a step forward because it made the process transparent and gave citizens

a chance to be heard. But partisan politics infected the commission's work and affected the maps it drew, she said.

In 2001, "we were very clearly manipulated" by a Republican-leaning consultant the commission hired, Minkoff said. "It was one of the most gratifying and frustrating experiences I ever had."

Michigan and Arizona are worlds apart politically, and there are notable differences between Arizona's bipartisan redistricting commission and Michigan's Proposal 2 put forward by the citizens' group Voters Not Politicians.

Michigan's commissioners will be more randomly selected and the greatest number of them will be people who say they identify with neither political party. And to approve a plan, the Michigan commission will have to get buy-in from commissioners from both parties, plus independents.

But Nancy Wang, an Ann Arbor attorney who helped draft the Michigan proposal and is president of Voters Not Politicians, said she wouldn't be surprised if there were angry reactions to the proposed Michigan commission's first maps because no politician of any political stripe will want to give up the power they now have to draw lines to benefit themselves and their parties.

"It's certainly not going to be a panacea, but it's a big step forward," said Wang. "Compared to what we have now, it's night and day. It's infinitely better."

Competitive districts?

Arizona is one of 13 states that has a commission to draw political lines for state House and Senate and/or congressional districts. But it's one of only a handful where — as is proposed in Michigan — the commissioners are citizens who aren't the handpicked choices of partisan officials, such as legislative leaders, or the governor.

California approved a Citizens' Redistricting Commission in 2008. Its work after the 2010 Census has drawn public praise along with criticism from lawmakers. A 2013 study by the nonpartisan group FairVote found that it did not increase the competitiveness of California's political districts, which is one of the goals of the commission.

Like Michigan, Missouri and Utah will have redistricting commission proposals on their November ballots, too.

In Arizona, the commission consists of two Democrats, two Republicans and an independent chairperson. The partisan appointees are selected by legislative leaders from both parties but have to be picked from a pool of 25 nominees selected by the state's commission on appellate court appointees.

"I don't think it's made any difference in Arizona," said James Huntwork, a Phoenix attorney who sat as a Republican on the first commission.

With the possible exception of a couple of congressional districts, it didn't create more competitive voting districts, as intended, he said. And while more competitive districts were supposed to result in more moderate politicians getting elected, "we definitely saw ... a far more partisan Legislature than we'd ever seen before."

Greater transparency

Jason Barraza, a Democratic political consultant in Phoenix, agreed the commission has not reduced extreme partisanship in Arizona politics. But, like Minkoff, he believes the transparency and public participation built into the redistricting commission is an improvement.

Like Huntwork, he said there's only so much a commission can do to draw new political lines, given the fact that people often tend to live close to others who share common characteristics, including political leanings. Rather than making wholesale changes, the commission ends up working at the edges of existing districts, he said.

A common concern in Arizona — one that the Legislature is now trying to address — is that the five-member commission put too much power in the hands of the single independent commissioner who chairs the body, because that chairman inevitably casts the crucial tie-breaking vote when Republicans and Democrats on the commission are deadlocked. Minkoff said the first independent chair leaned Republican, and the second one leaned Democratic.

Michigan's proposed commission should avoid the problem of vesting too much power in one independent commissioner by having a larger commission with more independent members, Wang said.

It's beyond dispute that gerrymandering has played a role in the way many political lines have been drawn in Michigan over the last several decades.

Republicans and Democrats have agreed — though not necessarily at the same time — that gerrymandering is a problem.

Through Proposal 2, Michigan voters will be asked whether a citizens redistricting commission is an effective way of solving the problem.

The pros

Proponents say the Voters Not Politicians constitutional amendment would take the drawing of political maps out of the political back rooms and into the light of day. Voters should choose their elected representatives, they say, not the other way around.

Proponents say moving redistricting decisions away from partisan operatives will assure more fairness by having the makeup of the Legislature and Michigan's congressional delegation better reflect the will of voters.

They say it will help reduce divisiveness and tackle the state's many problems because when Republicans and Democrats are packed into separate districts, elected representatives have less incentive to listen to or appeal to views from the other side.

The cons

Opponents say the plan, though presented as nonpartisan, is a thinly veiled Democratic effort to gain partisan advantage.

They say it will move decision-making away from elected officials to people who are not accountable and have no relevant experience. They say the way Michigan's political lines are drawn is largely dictated by federal and state law and the geographical reality that Republican and Democratic voters are concentrated in different areas.

Oddly-shaped congressional districts, they say, are a product of a federal requirement to preserve two majority black districts as Detroit's population has declined and more blacks have left the city for the suburbs.

Gerrymandering is real

Democrats, who since the 2000 Census have endured maps drawn when the House, Senate and governor's office were all controlled by Republicans, have done most of the screaming in recent years.

One reason why? In the last three elections, Republicans have won between 54 percent and 57 percent of state House seats. In each case, in 2012, 2014, and 2016, that share of seats was

7 to 8 percentage points higher than the percentage of votes GOP House candidates received statewide.

Emails and other documents made public as a result of a 2017 federal lawsuit bolster Democrats' long-standing assertions that partisan considerations were of paramount concern when Republicans drew boundary lines for state House and Senate and congressional districts.

"We've spent a lot of time providing options to ensure we have a solid 9-5 (congressional) delegation in 2012 and beyond," Republican consultant Robert LaBrant said in an email about the closed-door process of drawing the maps.

A Republican congressional aide, Jack Daly, crowed that the process "in a glorious way ... makes it easier to cram ALL of the Dem garbage in Wayne, Washtenaw, Oakland and Macomb counties into only four districts."

Democrats do it, too

But Republicans haven't always been in control in Michigan.

In 1981, Democrats controlled both the Michigan House and Senate when the lines were drawn.

In the 1982 election, former Democratic congressman turned newspaper columnist Otis Pike noted that neither Reaganomics nor a depressed auto industry defeated U.S. Rep. Jim Dunn, an East Lansing Republican. Dunn, who had ousted a Lansing-area Democrat, U.S. Rep. Bob Carr, in 1980, was beaten by "the Democratic Legislature of Michigan," which added considerable Democratic territory to what was then the 6th Congressional District, Pike said.

Former state Rep. Mickey Knight, a Republican, was first elected to the state House in 1980 to represent a district that included both Muskegon and Muskegon Heights. Democrats who controlled redistricting after the 1980 census redrew his district to split the urban area by removing Muskegon Heights, in an effort to create one safe Democratic seat and another that the Democrats had a realistic chance of winning.

"If you were a Democrat drawing up the districts, that's how you drew them," Knight said.

The present system

As in most states, Michigan's political lines are drawn by state lawmakers, meaning the party that controls the Legislature also controls the process. Much of the work goes on behind closed doors.

Michigan's 1963 constitution called for a commission to draw the state's political lines. But that commission had eight members — four Republicans and four Democrats — which led to gridlock. Also, the 1963 standards for drawing up the districts were thrown out in 1964 because they did not meet the one-person, one-vote test enshrined by the U.S. Supreme Court. In 1982, the Michigan Supreme Court appointed former state elections director Bernard Apol to apply redistricting standards — similar population size, compactness, respect for county and other municipal lines — to the 1980 census results and devise a plan the court would approve, following a public hearing.

But the court allowed for the Legislature to override its decision, and it's the Legislature that has been driving the redistricting bus ever since.

Following the 1980 census, Democrats controlled the House and the Senate, but Michigan had a Republican governor in William Milliken. After the 1990 census, Democrats controlled the House, but Republicans held the Senate and the governor's office. After both the 2000 and 2010 census, Republicans controlled the House, the Senate and the governor's office.

What's proposed

Voters Not Politicians would create a 13-member independent citizens redistricting commission in the legislative branch, made up of four Republicans, four Democrats, and five people who identify with neither party.

"These nonaligned commissioners will hold significant power to incent commissioners attached to a political party to design redistricting plans that are attractive enough to win their votes," according to a recent analysis by the nonpartisan Citizens Research Council.

Commissioners would each be paid about $40,000 a year. To qualify, in the previous six years, they must not have been a candidate for office; an elected official; a political party official; a political consultant; an employee of the Legislature; a lobbyist or someone who works for a lobbyist, or a political appointee to state government. They also can't be closely related to anyone disqualified for those reasons.

Choosing the commissioners

How would you become a commissioner? You would apply.

The secretary of state would make applications available and also mail applications to randomly selected voters. Applicants would have to state whether they identify with one of the two major parties, or with neither of them.

The secretary of state would randomly select 200 qualified applicants — a mix of Democrats, Republicans, and nonaligned candidates, selected randomly but with consideration to regional representation — and submit them to the four Republican and Democratic leaders in the House and Senate. Each would be able to strike five names, for a total of 20 strikes.

The secretary of state would then randomly draw from the remaining pools of applicants four Democrats, four Republicans, and five candidates who identify with neither party.

Coming up with a plan

The commission would convene by Oct. 15 each census year and adopt a redistricting plan by Nov. 1 of the following year. The commission would be required to hold at least 10 public hearings around the state prior to coming up with a proposed plan, and at least five more public hearings to receive feedback after publishing a proposed plan.

Adoption of a plan would require a majority vote by the commission, including the votes of at least two commissioners from each political party and two nonaligned commissioners. In the event of a deadlock, the proposal calls for commissioners to assess proposals put forward by their colleagues using a ranked voting system, with the winning proposals requiring bipartisan support.

In the event of another tie, the plan would be selected from the finalists at random by the secretary of state.

An adopted redistricting plan becomes law 60 days after publication.

Once court challenges to the plan are completed, the commissioners' terms would expire.

Though the Michigan Supreme Court would have the power to send the plan back to the commission for further work, "in no event shall any body, except the independent citizens redistricting commission ... promulgate and adopt a redistricting plan."

Factors to consider

Districts will be of roughly equal population and comply with the Voting Rights Act and other federal laws. That means a district that has a majority of voters who are black or members of another racial minority can't be redrawn in such a way that white voters become the majority.

"Districts shall reflect the state's diverse population and communities of interest." "Communities of interest," include, but are not limited to, "populations that share cultural or historical characteristics or economic interests." Communities of interest do not include "relationships with political parties, incumbents, or political candidates."

Districts "shall not provide a disproportionate advantage to any political party," and disproportionate advantage will be measured "using accepted measures of partisan fairness."

Districts shall be "reasonably compact," not favor or disfavor a candidate, and "reflect consideration of county, city and township boundaries."

Wang said that just as was the case in Arizona, a Michigan redistricting commission won't change the fact that some seats will be considered safe for Republicans and others safe for Democrats, based on the fact far more Republicans than Democrats live in Allegan and far more Democrats than Republicans live in Detroit.

But, she said, they will no longer be gerrymandered to favor incumbent politicians and political parties.

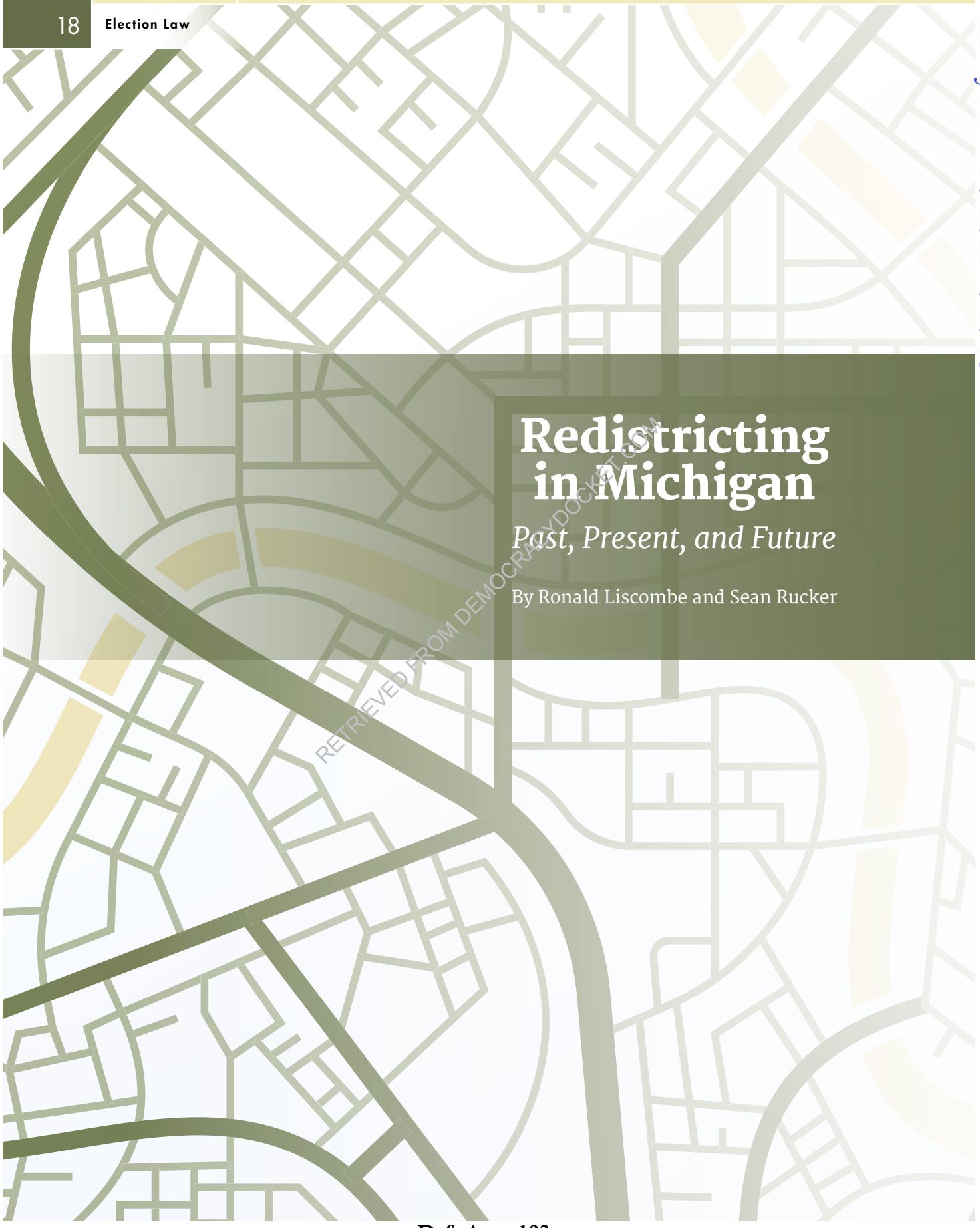
It will cost more

The secretary of state will provide all technical services the commission needs, but the commission, which will meet in public, will have the power to set its own procedural rules and the power to spend money and sign contracts, including expert consultants and attorneys.

Moving to a commission will cost more than the present system does.

According to the Citizens Research Council, Michigan's 2011 redistricting cost $878,000, not including the cost of legal challenges. Proposal 2 would provide for $4.6 million for each year of work, the council said.

Contact Paul Egan: 517-372-8660 or pegan@freepress.com. Follow him on Twitter @paulegan4,



Redistricting in Michigan

Past, Present, and Future

By Ronald Liscombe and Sean Rucker

The year 2020 marks another United States Census. Michigan's population will be counted, and state legislative and congressional districts will be reapportioned in accordance with the results. This article explores the history of that process—known as redistricting—in Michigan and traces the evolution of and rules applicable to redistricting and apportionment from the adoption of the Michigan Constitution of 1963 to the passage of Proposal 2 in 2018, which amended the constitution to create an Independent Citizens Redistricting Commission that is responsible for redistricting following this year's census and beyond.

At a Glance

Assuming the process works as intended, the new redistricting plan mandated by the passage of Proposal 2 will create a far more fair and transparent redistricting and apportionment model; no longer will partisan politicians and their lobbyists and consultants wield primary responsibility and authority with respect to redrawing their own election districts. Instead, the constitutional amendment occasioned by Proposal 2's passage places the redistricting power in the hands of a balanced, diverse group of Michigan citizens.

Redistricting in Michigan before 1982

With respect to redistricting and apportionment, the Michigan Constitution of 1963 originally provided, in part, that:

> following the decennial census, the Commission on Legislative Apportionment shall establish House and Senate districts in accordance with rules there prescribed for districting and apportionment. If a majority of the commission cannot agree upon a reapportionment plan, then, upon submission of plans to this Court by members of the commission, this Court shall determine which plan complies most accurately with 'the constitutional requirements' and order its adoption.[1]

Substantively most important, the 1963 constitution prescribed a weighted land area/population formula for districting and apportioning; the constitutional provisions explicitly provided that "in districting the state for the purpose of electing senators, each county is assigned apportionment factors which are based on 20% on land area and 80% on population."[2] Redistricting for the election of House members was based on a similar formula.[3]

The redistricting paradigm immediately ran into trouble. In 1964, the United States Supreme Court held that a similar weighted land area/population formula violated the Equal Protection Clause of the Fourteenth Amendment to the United States Constitution.[4] This decision resulted in Michigan's redistricting process marching on in a bifurcated manner for the next two decades, with the Commission on Legislative Apportionment continuing to procedurally function.[5] Finally, in *In re Apportionment of State Legislature—1982*, the Michigan Supreme Court declared the entire scheme unconstitutional, holding that the procedural reapportionment provisions and the substantive criteria are "inextricably interdependent" and, thus, not severable.[6] Consequently, the Commission on Legislative Apportionment was disbanded.[7]

The Michigan Supreme Court's 1982 decision—in the absence of a new scheme implemented by the legislature or the people—also created a new redistricting and apportionment scheme to be provided "in compliance with federal constitutional requirements and in a manner most consistent with the constitutional history of this state."[8] The Court's new scheme, known as the Apol Standards after former Michigan director of elections Bernard Apol, provided for a divergence from the one person-one vote principle that had been at the heart of the original 1963 redistricting plan—within the federally mandated maximum population divergence range of 16.4 percent[9]—while adhering to the state's "constitutional history" of "commitments to contiguous, single-member districts drawn along the boundary lines of local units of government which, within those limitations, are as compact as feasible."[10]

Redistricting post-1982

After the Court's decision in *In re Apportionment of State Legislature—1982*, redistricting in Michigan was accomplished through a legislative process; following the results of the U.S. Census in 1990, 2000, and 2010, the legislature itself determined the redistricting plan with approval from the governor.[11] So long as the legislature's plan adhered to the Michigan Supreme Court's articulated guidelines, the legislature was essentially free to draw district maps as it saw fit. Given that the plan was established by the legislature following each census year, Michigan's redistricting scheme of the last three decades facilitated gerrymandering—defined as "the practice of dividing or arranging a territorial unit into election districts in a way that gives one political party an unfair advantage in elections"[12]—as the legislature often decided on rules and subsequently drew district maps to support the election of candidates of the controlling political party.[13]

Michigan's new redistricting scheme

Enter Voters Not Politicians (VNP), the nonpartisan, grassroots advocacy organization founded in 2017 to end the practice of partisan gerrymandering in Michigan. The group "works to strengthen democracy by engaging people across

Michigan in effective citizen action."[14] In 2018, VNP successfully placed a citizen-led ballot initiative before Michiganders in the November election; Proposal 2 was presented as a constitutional amendment to create an independent citizens redistricting commission to, as the group put it, "put the power to draw our election district maps in the hands of the voters—not politicians."[15]

Proposal 2 stated that it would, if passed, "establish a commission of citizens with exclusive authority to adopt district boundaries for the Michigan Senate, Michigan House of Representatives and U.S. Congress, every 10 years."[16] Proposal 2 further provided that it would:

- Create a commission of 13 registered voters randomly selected by the secretary of state: four each who self-identify as affiliated with the two major political parties and five who self-identify as unaffiliated with major political parties.
- Prohibit partisan officeholders and candidates, their employees, certain relatives, and lobbyists from serving as commissioners.
- Establish new redistricting criteria including geographically compact and contiguous districts of equal population, reflecting Michigan's diverse population and communities of interest. Districts shall not provide disproportionate advantage to political parties or candidates.
- Require an appropriation of funds for commission operations and commissioner compensation.[17]

On November 6, 2018, Proposal 2 passed with 61 percent of the vote.[18] It amended Article 4, Section 6 of the Michigan Constitution of 1963, most pertinently, by creating Michigan's Independent Citizens Redistricting Commission and mandating the following guidelines—in order of priority, as listed—for the drawing of district lines:

(a) Districts shall be of equal population as mandated by the United States Constitution, and shall comply with the voting rights act and other federal laws.

(b) Districts shall be geographically contiguous. Island areas are considered to be contiguous by land to the county of which they are a part.

(c) Districts shall reflect the state's diverse population and communities of interest. Communities of interest may include, but shall not be limited to, populations that share cultural or historical characteristic or economic interests. Communities of interests do not include relationships with political parties, incumbents, or political candidates.

(d) Districts shall not provide a disproportionate advantage to any political party. A disproportionate advantage to a political party shall be determined using accepted measures of partisan fairness.

(e) Districts shall not favor or disfavor an incumbent elected official or a candidate.

(f) Districts shall reflect consideration of county, city, and township boundaries.

(g) Districts shall be reasonably compact.[19]

With respect to the first requirement—that the commission follow all federal laws related to redistricting—Proposal 2 requires the commission, in drawing district maps, to ensure that districts "contain close to an equal number of Michiganders to meet the 'equal population' requirement in the U.S. Constitution."[20] This "equal population" requirement is articulated in Article I, Section 2 of the U.S. Constitution, which requires that all districts be as nearly equal in population as practicable.[21] Additionally, the Equal Protection Clause of the Fourteenth Amendment applies to state legislative districts, mandating that they be substantially equal.[22] Further, the commission must adhere to the dictates of the Voting Rights Act, which provides that redistricting shall not result in dilution of minority votes.[23] While redistricting must be done in compliance with federal law, the commission is allowed under the Michigan Supreme Court's 1982 decision to diverge from the goal of equality of population to the extent necessary to achieve other rational goals as articulated in the criteria.[24]

According to VNP, the third criterion (communities of interest) means that the commission is "required to hold a series of public hearings to get feedback from real Michigan citizens about what they feel their shared values—also known as communities of interest—are."[25] The commission must "draw district lines while keeping shared cultural, historical, or economic interests in mind based on the feedback they receive from the public."[26]

Although VNP has provided guidelines, any articulation of what constitutes a community of interest in the relevant caselaw is opaque at best; the United States Supreme Court has discussed communities of interest but never provided a concrete definition or analytical framework. Indeed, the Court has opined that districts must be drawn to reflect "actual shared interests."[27] Further, it has provided that communities of interest are evidenced by "for example, shared broadcast and print media, public transport infrastructure, and institutions such as schools and churches."[28] Additionally, "socio-economic status, education, employment, health, and other characteristics" may factor into the applicable analysis.[29] Given that communities of interest have been vaguely articulated, courts are left to determine whether districts respect those communities on a case-by-case basis.

Commissioners must also ensure that there is no clear party advantage as a result of a potential redistricting plan.[30] Specifically, the commission may not "draw maps where a district gives an unfair or disproportionate advantage to any political party."[31] Nonetheless, the United States Supreme Court has held that "districting for some level of partisan advantage

Notably, the commission's working process includes extensive opportunities for public participation: The commission is required to hold at least 10 public hearings across the state before drawing maps and at least another five public hearings to present proposed maps before adoption.

is not unconstitutional"; determining that lines were drawn on the basis of partisanship does not indicate that the districting was improper. A permissible intent—securing partisan advantage—does not become constitutionally impermissible, like racial discrimination, when that permissible intent "predominates."[32] Further, the Court noted that it has "never struck down a partisan gerrymander as unconstitutional—despite various requests over the past 45 years."[33] While "excessive partisan gerrymandering" is "not condone[d]" by the Court, Chief Justice John Roberts noted that some level of partisan advantage is acceptable under the U.S. Constitution, concluding that the issue is best left to the states and observing Michigan's then-recent approval of Proposal 2.[34] With this in mind, it is unlikely that a judicial challenge to this provision would ultimately prove successful.

Finally, while the commission must draw districts that are reasonably compact, commissioners do have the authority to decide how they will measure compactness.[35]

Notably, the commission's working process includes extensive opportunities for public participation: The commission is required to hold at least 10 public hearings across the state before drawing maps and at least another five public hearings to present proposed maps before adoption. Commissioners must publicly present and publish why and how they drew maps that met the prescribed criteria. Michiganders also have the ability to submit their own maps to the commission for its required consideration.[36] Further, the commission must make all resources used during its meetings available to the public; this includes "reference documents, data, software used to draw maps, identity of consultants and staff, and any other information relating to the Commission's work."[37]

Seven of the 13 commissioners must vote to adopt a plan, and that majority must include at least two Democrats, two Republicans, and two unaffiliated commissioners.[38] Further, the commission shall publish the plan within 30 days after adoption.[39] An adopted redistricting plan becomes law 60 days after its publication.[40] Original jurisdiction is vested in the Michigan Supreme Court to direct the secretary of state or the commission to perform their respective duties and to review a challenge to any plan adopted by the commission, requiring a remand of the plan to the commission for further action if the plan fails to comply with applicable requirements.[41]

The future of redistricting in Michigan

As mentioned at the outset, the year 2020 marks another U.S. Census—the first since Proposal 2 passed—and the application process to be on Michigan's inaugural Independent Citizens Redistricting Commission wrapped up on June 1. The Michigan Secretary of State's Office has processed nearly 6,000 applications from registered voters in 82 of the state's 83 counties.[42] From those applicants, 200 finalists will be selected; finalists must consist of 60 voters who identify as Democrats, 60 who identify as Republicans, and 80 who identify as unaffiliated with either major political party.[43] The process will also use an algorithm (which will be publicly available) to ensure that the finalists reflect Michigan's age, gender, and racial composition, and that the state's geographical regions are proportionately represented.

Democrats and Republicans in the House and Senate each have the power to strike up to five applicants from the initial 200 finalists; by July 1, 2020, those 200 finalists will have been trimmed down to 180.[44] On September 1, 2020, the 13 commissioners will be selected by random drawing from the 180 remaining, and the commission will begin its work by October 15, 2020, to be completed in time for the 2022 election cycle.[45]

Assuming the process works as intended, the new redistricting plan mandated by the passage of Proposal 2 will create a far more fair and transparent redistricting and apportionment model; no longer will partisan politicians and their lobbyists and consultants wield primary responsibility and authority with respect to redrawing their own election districts. Instead, the constitutional amendment places the redistricting power in the hands of a balanced, diverse group of Michigan citizens. The Independent Citizens Redistricting Commission is bound to follow a public process in which it must present its work and proposed maps to the people, holding the commission accountable. Michiganders are now far more involved in the drawing of their election districts, and the state's electoral process—as well as its representative democracy—should be better for it. ■

Ronald Liscombe is a principal in Miller Canfield's Public Finance Group. He assists public-sector clients with a range of issues, including public finance and governance matters, and has deep knowledge of state and local government, having worked in a variety of policy and program management roles before joining the firm.

Sean Rucker is an associate in Miller Canfield's Public Finance Group. He also worked as a law clerk for Hon. Victoria A. Roberts in the United States District Court for the Eastern District of Michigan.

ENDNOTES

1. *In re Apportionment of State Legislature—1982*, 413 Mich 96, 105–106; 321 NW 2d 565 (1982) (citing Const 1963, art 4, § 6).
2. *Id.* at 107, n 3.
3. *Id.*
4. *Reynolds v Sims*, 377 US 533; 84 S Ct 1362; 12 L Ed 2d 506 (1964).
5. *In re Apportionment*, 413 Mich at 110–111.
6. *Id.* at 138–139.
7. *Id.*
8. *Id.* at 140.
9. *Id.* at 118, 142. See also *Mahan v Howell*, 410 US 315; 93 S Ct 979; 35 L Ed 2d 320 (1973).
10. *Id.* at 140.
11. *Redistricting in Michigan after the 2020 census*, Ballotpedia <https://ballotpedia.org/Redistricting_in_Michigan_after_the_2010_census> [https://perma.cc/V6PP-UAKU]. All websites cited in this article were accessed July 8, 2020.
12. Definition of "gerrymander," Merriam-Webster, available at <https://www.merriam-webster.com/dictionary/gerrymander>.
13. *Issues—Redistricting Matters*, League of Women Voters of Michigan <https://www.lwvmi.org/issues/redistricting.html> [https://perma.cc/GPC5-CVBD].
14. *About Voters Not Politicians*, Voters Not Politicians <https://votersnotpoliticians.com/> [https://perma.cc/WW4S-VF4F].
15. *We Ended Gerrymandering in Michigan*, Voters Not Politicians <https://votersnotpoliticians.com/redistricting/> [https://perma.cc/H7NE-J3R2].
16. *Proposal 2—100 Word Summary*, Voters Not Politicians <https://votersnotpoliticians.com/language/> [https://perma.cc/27VY-W8QM].
17. *Amendment Language*, Voters Not Politicians <https://votersnotpoliticians.com/language/> [https://perma.cc/GP6C-D35Q].
18. *We Ended Gerrymandering in Michigan*.
19. Const 1963, art 4, § 6.
20. *Redistricting Amendment Criteria*, Voters Not Politicians <https://votersnotpoliticians.com/redistricting-amendment-criteria/> [https://perma.cc/FW9Q-FBVY].
21. *Karcher v Daggett*, 462 US 725, 730; 103 S Ct 2653; 77 L Ed 2d 133 (1983).
22. US Const Am XIV, § 2.
23. *League of United Latin American Citizens v Perry*, 548 US 399, 425; 126 S Ct 2594; 165 L Ed 2d 609 (2006).
24. *Redistricting Amendment Criteria*.
25. *Id.*
26. *Id.*
27. *Miller v Johnson*, 515 US 900, 916; 115 S Ct 2475; 132 L Ed 2d 762 (1995).
28. *Bush v Vera*, 517 US 952, 964; 116 S Ct 1941; 135 L Ed 2d 248 (1996).
29. *League of United Latin American Citizens*, 548 US at 424.
30. *Redistricting Amendment Criteria*.
31. *Id.*
32. *Rucho v Common Cause*, 139 S Ct 2484, 2503; 204 L Ed 2d 931 (2019).
33. *Id.* at 2507.
34. *Id.*
35. *Redistricting Amendment Criteria*.
36. *Id.*
37. *Id.*
38. Const 1963, art 4, § 6(14).
39. Const 1963, art 4, § 6(15).
40. Const 1963, art 4, § 6(17).
41. Const 1963, art 4, § 6(19).
42. *Redistricting Commission Offers Break with Corrupt Past*, Detroit Free Press (May 24, 2020) <https://www.freep.com/story/opinion/editorials/2020/05/24/citizens-redistricting-commission-membership-deadline-michigan/5244685002/> [https://perma.cc/KJT3-48BM].
43. *Id.*
44. *Id.*
45. *Id.*

We literally sent some maps to Moon on Sunday to get her involved.
So this is a very quick turn around and we are pleased to have the districter with us.
Now we can see it but you are on mute.
We can see it now but you are on mute.
>> Moon: Not muted.
Okay, and not sharing, is it?
Yeah, okay that is okay.
What I will do is.
>> Matt: It looks good now.
>> Moon: What I will do is just I won't get to show you kind of fancy animations but that is okay.
I think you will be able to see the screen and I apologize for the Zoom woes so I think you can see this now I just want to go into full screen mode does that look like evaluating plans?
Okay great.
All right so your task redistricting Michigan, so it's great news that Michigan has an independent citizens redistricting Commission.
But there is still a whole lot of work to do and obviously you started to see all the complexity that there is in the redistricting problem.
So some of that complexity comes from having a large number of criteria.
In your case you have the advantage of the criteria are stipulated and they are ranked so you have equal population and the Voting Rights Act, congruity, communities of interest, partisan fairness, don't pay attention to incumbency.
Respect county and municipal boundaries which is generally jurisdictional boundaries and then at the bottom this thing called compactness.
I spent a lot of time thinking about these criteria and how to make them precise and how to kind of think about the ways that they interact.
So I'm happy to take questions on kind of any of it, the quantification, what goes wrong when you take quake one of them too literally but generally just to say you are already at an advantage for having your list specified.
When it comes to plan evaluation though there are some challenges.
So one is that the central challenge even is that since you have these multiple criteria that we just talked about on the last slide you have to look for plans that are good in a number of different ways.
So I think the first thing that's really challenging about that is operationalization.
And this is something that I would say is often under appreciated.
So what that means to make something operational is first you have this nice idea so like going back to my last slide, let's say congruity.
That sounds like a nice idea.

But then you have to operationalize it that means you have to say what it means precisely in your context, in you know, on the ground.

And so, for instance, contiguity across water is something you might have to think about what is connected to what across water.

Or the pieces themselves you are building out of if the pieces are disconnected than what counts as a connected assemblage of pieces.

So each of these turns out to be kind of subtle.

And some of them like the Voting Rights Act have, you know, half century of case law around them, right, so figuring out how to make them precise is going to be one of your challenges.

So that's what those of us in math and computer science call operationalizing.

You take English or legal rule and you turn it into something quantitatively precise.

Beyond that going to have to handle tradeoffs and so if you look over here in my plot, I've got just an abstract schematic and maybe this is one thing you are trying to do well on and this is another priority you are trying to do well on.

And what you will find is that there is some sort of frontier where if you do better on one it might make you do worse on the other, you have a tradeoff.

You have two priorities that are kind of intentional.

And so one of your challenges will be to try to get to frontier to make things as good as possible and then your other challenge will be to sort of decide how to accept tradeoffs among those criteria.

So these are the basic challenges.

What how do you make the rules concrete and then once they are concrete how do you handle the tradeoffs?

Okay so one of the things that I wanted to spend a little time on today is partisan fairness metrics so there are many, many, many of these in the literature.

You know I will also mention I won't emphasize this today but this is also true of compactness or the idea that the district shapes should be sort of pleasing to the eye. Compactness has 30 odd definitions in the literature from the last if you low this many years. And partisan metrics, well, maybe it's not quite at 30, but there are a whole lot. There are a lot of competing ways that people have advanced ideas for how to measure whether you are treating the parties in a way that is equitable.

So the most basic one is proportionately so that one doesn't I don't need to attribute that to everyone because it seems to everyone because it seems to be a pretty universal intuition of fairness.

So the proportionality is the idea that the seat share you get should be about like the vote share that you get.

And if you follow popular press coverage of the criteria, or of gerrymandering actually very, very often when people are up in arms about an egregious gerrymander, it's on the basis of a failure proportionately. They might say why did 63% of the vote turn into

75% of the seats? So this is the public intuition of what is wrong with gerrymandering, I would say.

Okay, but then many, many others in the literature have tried to come up with metrics that make kind of an end run around this proportionality idea.

So one big family of examples is called partisan symmetry.

So symmetry just sounds like you know you treat do on to others as you would have do on to you and that is what Gary king and other coauthors of his over the years have had in mind for partisan symmetry.

It's a table turning idea.

It's that if you exchange the roll of the two parties you should exchange their fates, right?

If one party gets 75% with of the seats with 53% of the votes, then the other party should also get 75% of the seats when they get 53% of the votes.

That is the idea of partisan symmetry.

As a -- I can tell you, you know, lots more, if you have any questions, please I can tell you lots more about how it's actually carried out.

But you probably have heard phrases like partisan bias and the mean median score and those all fit in the partisan symmetry family.

I'm just trying to kind of situate the partisan fairness metrics.

Okay so then there is another kind of metric called the efficiency gap and I have another slide I will say a little bit more about efficiency gap.

It was introduced circa 2015 by a law professor and a political scientist.

And the idea of efficiency gap is the idea that when an election is carried out and the winners are tabulated district by district, some votes are wasted.

If you have lots of access winning votes like maybe you won the district with 90% of the votes, that was wasted votes.

Those are voters supports of yours who could have actually made a difference in neighboring districts but instead they were concentrated into one.

You know and unduly leasing votes are kind of wasted votes because they did not contribute to your representation so the idea behind efficiency gap is one party's wasted votes across the whole state should be about the same as the other party's wasted votes.

This sounds nice.

I'm going to try to argue that it's hard to interpret these in a vacuum.

I'll give you some pictures and some demonstrations but that is the idea.

Let me quickly point out a lot of people think efficiency app sounds like another symmetry metric.

But in the technical sense in the literature it isn't.

Because efficiency gap is not about turning the tables between the two parties.

It's just about checking if they have the same number of wasted votes so those don't always point in the same direction.

There are a lot of others with names, so Greg Warranton proposed something called declination. I think you are going to hear from Professor Idea today about artificial partisan advantage.

And there are a host of others.

If you buy mapping software, for instance, if you buy Maptitude for redistricting, it will have many of these preprogrammed in it to and you can just have item computed for your plan.

I'm going to try to show you by looking at your Ohio maps that sometimes that can give you kind of confusing and contradictory information. And I'm here to help you kind of feel reassured there are reasonable ways to put all that information in context.

Okay, I'm just going to ask if there is any questions at this point because I'm going to be a professor and do that.

Okay, hearing no questions, so let's just look at one example efficiency gap.

All though I promise not to turn this into a big lecture on the metrics.

So efficiency gap is just what I mentioned on the last slide.

It's like taking the wasted votes for two parties and looking at the difference divided by the whole number of votes.

So the idea is that what sounds like fair is equal waste adjust so EG = 0.

The authors proposed that a plan with more than 8% efficiency gap should be a presumption gerrymander it's probably bad.

It would have to have a really good reason to have such a high gap.

So what was nice about that was that people thought it could just be a litmus test. You could just take a plan and here is a score and it would tell you pretty much right away just with a single indicator whether this is probably a gerrymander.

What's more because this is done as dem wasted votes minus republican it's a science score so if this comes out the way that I wrote it here if this comes out negative it's because republicans wasted more votes so that is a democratic gerrymander and if it can comes out positive it's because democrats wasted more votes so that is a republican gerrymander.

So the science plus or minus is supposed to tell you which party got advantage from the map.

Okay that sounds really good, that sounds really neat and actually I'm not here to as Nate efficiency gap but here to give you some caveats.

One is that it turns out if you just sort of crunch the numbers this works out to an ideal that the winning party should get a double bonus.

I will show you what I mean by that on the next slide.

So if you actually just do the athletic and sort of work out, what efficiency gap does it does something that may be a little surprising that is one kind of reality punch line but

the other one which is you will see when I show you your maps is that efficiency gap 0 might be a nice abstract ideal but it may not even be achievable.
It may not even be possible in the real political geography of an actual state.

Equal waste adjust sounds nice but you may not be able to do it.

Okay so here is a cartoon of the proportionality test, the efficiency gap test, and the symmetry test all on the same slide. And so proportionality, so what I'm showing you here is an access for the votes that were obtained by a party and another access for the seats that were obtained by a party.

So, for instance, if you have a 50/50 election, that would be halfway up the vote scale.
And if it gave a 50/50 seats outcome that would be right here in the middle.
We would think that was pretty fair.
But if about a 50/50 election gave a you know a 3-1 advantage to one party that would be pretty fair from middle.
Proportionality tells you the votes and the seats should be equal and should track each other.

Efficiency gap I told you on the last slide turns out if you do the math, that's what I'm here for I guess do the math efficiency gap just turns out to have a different slope.
Instead of saying for every additional point of vote support you should get a point of seat support, it says that for every additional point of vote support you should get two points of seats support, so double bonus.

So in a state where a party has 60% support, efficiency gap prefers that it has 70% of the seats.
And that's a little unintuitive, like why should we prefer something with a double bonus.

Symmetry is a little different. And remember symmetry was a table turning thing. And says however well I do with a certain share, you should do that well if the tables had been turned. So what that amounts to is just preferring something that is symmetrical like this S shape.
If I flip it over the center, the top lobe and the bottom lobe agree.
Okay, so that is the comparison of those three.

All right. So how does this play out?
So I'm just going to give you one other vision of what it would mean to put things in context and this is something that my research group has been studying for the last five years.

So the idea that we had following others in this space you know several other teams of researchers have tried to do this as well.
Is that instead of comparing to an ideal we should compare it to the realistic alternatives.
Right and so the notion of how to do that is build lots and lots of different possible districting plans that follow all the rules.

So build lots of plans that are population balanced that a compact that are contiguous, that respect political boundaries, that follow all the rules.
And when you build those lots of plans, that gives you a sense of what would be possible.
So quick example I'm just going to show you just for a second how this works out in Michigan.
So in Michigan you know as you heard from Matt, I just got asked to come speak to you in the last few days so yesterday we made a 20,000 step Michigan run.
So we just built an ensemble of 20,000 districting plans for Michigan over dinner yesterday.
Okay and then when we do here is what we see.
If we take the Presidential race in Michigan from 2016, as you all know that was razor thin. And if you just looked at the two party votes it was 50.1% republican.
So for proportionality, out of 14 seats, proportionality says that the ideal outcome is an even split. And efficiency gap also says that the ideal outcome is an even split. Right, and just recall why that is, proportionality inefficiency gap, go through the middle, so does symmetry, all the different standards all say a 50/50 vote should give you a 50/50 seat split.
Right.
You all with me?
Okay, but so the inactive map is 9-5 when you lay it over this voting pattern.
Okay so in other words if you take how people voted between Clinton and Trump, you take the current inactive current play plan in Michigan and lay it over there you get a 9-5 outcome. And an efficiency gap of over 15 percent.
Remember 8% efficiency gap was supposed to be gerrymander. So this sounds like it's saying that the enacted plan is a giant gerrymander. But I want to tell you that that doesn't take into account the world of possibility.
So the world of possibility is 20,000 neutrally made plans that weren't made with any partisan advantage have this split.
There is some with six seats for republicans and 7, 8, 9, 10.
And the enacted plan clocks in here at nine.
It no longer looks like a giant gerrymander when you put it in the context of alternatives of what else would have been possible.
And like wide that efficiency gap of over 15%, that sounds terrible in the abstract. But here is a histogram that shows you the 20,000 neutral plans. And now you can see the enacted map no longer looks that atypical.
It looks as though it was made without any intent, without any kind of recourse to partisan data, right because my comparator ensemble was made without recourse to partisan data.
Okay. So let's see that in your Ohio maps.

All right, so here is what I did hastily in the last couple days, last day or two.
I received from your submissions six different districter plans of Ohio here. They are ABCDEF.
These pictures actually cheat a little bit because many of those plans were incomplete. They had not assigned all of the units in Ohio.
And so I went in by hand and I finished them up as closely as I could just to have complete plans so I could give you an analysis.
So everything I'm about to say take it with that grain of salt I had to go this and complete these plans so they are not exactly as they were submitted but here, they are.
Six plans that you made, you know, asterisk a little boost by me.

All right, so what do we see?
Here I'm showing you efficiency gap and kind of partisan symmetry measure.
And the pale red means that you're flagged as a republican as what the efficiency gap could consider to be a republican gerrymander.
Something important that is going on, on this slide I'm emphasizing that in order to consider whether you're gerrymandered have to consider you against some election data, right?
And so I've used two sets of different election data the Presidential race from 2016 and the Senate race from 2016.

Okay so what do we have? We have of these plans, a few of them look like you know republican gerrymanders and one of them looks like a serious republican gerrymander.
And a couple of them have small efficiency gaps so the efficiency gap thinks they are kind of fair.
And that's on the Presidential data.
If I do partisan symmetry on the Presidential data, I'm not going to go into the definitions of that exactly how it's computed unless you want me to. But I'll just say most of these have a fairly high partisan asymmetry, but plan C has kind of a reasonable one.

So if you were just looking at the Presidential race from 2016, if you were just looking at that set of load data, plan C looks pretty good and some of the others look questionable.

But then, you know, here is the daily mall, if you switch to a second election, the Senate race from 2016, that was conducted on the same day, voted on by the same people and present on the same ballot, the picture changes quite dramatically.
And now plan C, which used to look like very fair, all the sudden looks like a big republican gerrymander from the point of view of the efficiency gap.

Okay. And so, you know, this might seem a little much to try to reconcile those, which is right, we are just giving you the right story.

For good measure I threw some compactness metrics here at the bottom. So I threw in what is called the poll popular metric kind of asking how plump the districts are. And I

threw in something called the cut edges metric, which is kind of asking how simple is the plan to cut out.
And I marked that, you know, these metrics plan D shows up as looking really good.
It's the one that is measured as having the most compact districts.
You know, and then others vary.
So like cut edges, in terms of cut edge is a higher score is a little bit worse. And so this Plan F it's very nicely population balanced.
I did not put that on the slide but that is true.
But its compactness is a little bit worse.
And I hope you see the tradeoff dynamic I was talking before is starting to emerge here. So you can sort of try to get very good on one thing and that might cost you in another.
In this case you might try to get very good on compactness, but over here you are very good on population balance. And you have to start weighing those things against each other.
Any questions about this for now before I try to do the move of putting these in context?
Okay. So now I'm going to argue that if you want to understand these and get a bit of a more coherent picture, you should compare them to what was possible.
So I'll do that on the next two slides.
So here is this Presidential race from 2016 and in Ohio that was a 54.3% republican outcome, and that republican in that race was of course Donald Trump.
And now if I take those plans from before, so I'm going to toggle back and forth just quickly, if I look at the Presidential outcomes, remember, you know, this is what I was seeing before, B and C looked good.
E was really -- looked like a really strong republican gerrymander.
But now that I put them in context, I can see actually all of them are in the reasonable range when you compare them to actual alternatives.
Does that make sense, everybody?
So like, yeah, it can sound like E was a huge efficiency gap number, but if you look at all the different things that were possible, that's what you're seeing in this histogram. And you are saying E looks now fairly normal, putting context of the alternatives.
It's no longer an out liar,
If that makes sense.
Okay. So actually none of the plans that you drew look like gerrymanders, which I guess is good news for you, right?
None of the plans that's you drew look like gerrymanders when you compare them to the world of alternatives.
And that's true whether you just consider the number of seats one, whether you consider the efficiency gap or any of the other metrics.

Okay, questions about that?

So now let me shift.

This is the Presidential race.

It's -- one of the points I would really like to make for you today is that if you change the election that you're using as the background voting pattern, it can change somewhat how the plans perform.

Right?

So now I'm shifting to the Senate race, which that year in Ohio was 61% republican. And that of course elected department and let he she you by the way please notice if you see the red and blue map over here notice these don't look very different from each other, these two maps but they are fairly different. One is 54.3 and the other is 61%. So it's a little bit invisible to the naked eye.

And, of course, you're seeing a characteristic pattern of blue in the cities and red in the more rural areas.

Okay. And then, once again, if you take a look at these plans, look at how they perform with respect to the Senate data.

You see, well, none of them is a gerrymander when compared to the world of alternatives.

Now A and F are kind of interesting.

They have a smaller number of republican seats than the rest of this kind of bell curve. And so you have to ask yourself, and this is a question that I would pose to you as you think about fairness, these have a lot fewer republican seats than what happened if you closed your eyes and drew districts completely at random, which is what my comparator ensemble lets us think about.

But, on the other hand, they are closest to proportionality.

They are the closest to, you know, having the partisan symmetry scores and the efficiency gap scores potentially. They might be all the way over on the side of the bell curve that gives us the best scores.

And so a question for you to think about, and this is not a question anyone else can answer for you, this is a question for you to deliberate and think about, is: What's the highest value for you when it comes to partisan fairness?

Is it to perform as though you were drawing with no partisan data? Or is it to secure the most proportionate outcome you can secure?

Those are not quite the same.

Hopefully that makes some sense.

Same question over here.

How about the efficiency gap?

Well, these are the ones in blue that you can get from these random plans. And you can see all the plans, ABCDE, all perform very much as though made completely at random.

F though is a bit off to the side.
But which side?
It's F is the one that sits right about at efficiency gap 0.
Okay. So this raises the same question, to some that just repeat the question to you again, so that question is: What's the highest value when it comes to partisan fairness? Is it to look as though you were drawing without attempting to get partisan advantage? Or is it to get the most proportional or the most symmetric outcome that you can find? This is a question that can only be answered by democratic deliberation.

Okay, so I'll close this part with some drawing tips. And just say here is what I saw when I looked at your plans.
When it comes to drawing, it takes practice, practice, practice.
You have to make sure you assign all the units. And we do have a feature in districter that lets you see where all your unassigned units are so you can locate and pain them in.

We have a feature where you can turn on county boundaries, so you can use those as a guide while you draw.
You can also turn on district numbers so that you can see how they are numbered while you draw.

If you shoot for a population balance within 1%, this can be tuned to perfect balance later by your mapping consultant. But it should be possible to get within 1% even using the units that are available to you in districter.

And then, finally, there is a VRA dashboard coming to districter soon that will help you think about some of your VRA questions.

Okay, I'd like to show you some of these things in demo form but I think I've been going on a little long. And so maybe I will stop there.

>> Matt: All right. We designed it so Moon would go first and cover the most.
So you should see some of these same terms repeated.

I just want to add two reminders. Number one, is that, obviously, what we can develop a metric for does not necessarily mean it's the highest priority.
So you're going to see a lot of partisan metrics today because there is a lot of research in that area.
But, of course, it's lower than some, that it's a lot harder to quantify today in Ohio without the communities of interest present, for example.

So I just don't necessarily want you to think that we have shortchanged that.
We just don't have the data on Ohio communities of interest for you.

And then the second is just that when we use terms about partisan bias, we are not necessarily talking about intentionality.
So we are not accusing anyone of making a map that was favorable towards republicans or democrats on purpose.
These are not the measures about their potential effects.

What has struck me is that many people as you know are really focused on communities of interest.
And that being a real priority.
It's a high priority on your redistricting criteria.
But coupled with that criteria in the same sentence is districts shall reflect the state's diverse population.
Well what does that mean? And how does that interact with racial gerrymandering for example? The Voting Rights Act? And all kinds of other issues that we have not discussed.
So that's something that I think is a very important topic to talk about.
So your state criteria, your how they interact with Federal law, how they interact on their own, you know, as we know this is brand new in Michigan.
These criteria are brand new.
Not every state has a criterion for diversity for example.
So as I said, what does that mean? So that's something I would like, I think we can discuss with you.
As your attorney, I think we need to have a really wholesome, uninterrupted lengthier conversation about these issues so that is something that I really respectfully encourage and hopefully that is something we can do before the end of the summer.

>> COMMISSIONER WITJES: Dr. Handley?

>> DR. LISA HANDLEY: I apologize I have not heard all of the meetings so I don't know what is going on.
And relative to one topic that I'm worried about, and that is one of your priorities, redistricting priorities and the pyramid I made the other day is partisan fairness.
And I'm unsure of whether you have thought about how you're going to do this.
Political scientists have a variety of ways of measuring this.
And I don't know if you have been thinking about this particular component.
It falls below things like communities of interest.
But way above things like compactness for example.
Has anybody given any thought? Are you thinking about this at all?

>> COMMISSIONER WITJES: Thinking about it? Yes.
Knowing how to go about doing what's in my head? No.
Because we have been hearing a lot about people saying we want as many competitive districts as possible so my mind is like let's make it close to 50/50 as possible but of course that is going to be difficult to do so and again I'm not an expert in this area, I was just thinking about it in very simplistic kind of terms.
Commissioner Lange?

>> COMMISSIONER LANGE: I've thought about it a lot and then when I think about the political fairness then I think about the constituent fairness.

There has been different public comment about joining like rural with urban and, you know, when we look at communities of interest and you know, here is where the lines start to blur for me from political fairness and being fair to people and when you say the you know one voice, one vote, having it all correlate together, it just I don't even know how it's going to all correlate together honestly.

But the political fairness, yes, I definitely have thought about because you can look at a map of Michigan and the voting history of Michigan which I have gone back myself and looked at 2016 and 2012 election maps.

And you can see there is distinct areas that have voted a particular way.

So is the political fairness breaking up those areas to combine them with other areas to make it 50/50? Or is there another way or interpretation of political fairness?

Dr. Handley actually, I will direct that question to you.

>> COMMISSIONER WITJES: Go ahead.

>> DR. LISA HANDLEY: I will tell you as a political scientist that there are dozens of ways to determine political fairness mathematically is to determine political fairness from the very sophisticated let's make a million maps approach and compare our map to these million other maps to some very relatively straightforward ways to measure fairness.

And my own favorite is the efficiency gap which we could have talked to Kim briefly about the possibility of talking to Fred about building this into your software package.

It doesn't require a lot of competitive districts.

What it requires is if you build really, if you have a lot of wasted votes in some districts that you have an equal number of wasted votes in another.

So if you are going to recognize that there are places where these districts are going to be heavily republican because that's all that lives there, then you can recognize there are areas that are heavily democratic because all the voters live there and it tries to balance this out.

And it tries to ensure that you're not wasting more votes of one party than the other but that some districts will be heavily one way and other District also be heavily another way.

But I think that some time should be spent at some point determining how you want to go about looking at political fairness.

I think that this needs to be explored and as a political scientist, I think that you could use my assistance or you can bring in I don't specialize in this but you could bring in a political scientist that might help with this.

But political fairness is different than competitiveness.

>> COMMISSIONER WITJES: What about and this is another way I was thinking about it, I probably should have mentioned it, I looked at some of the public comment we received in District R and I can go and take a look at the analytics of everything for the most part and would a better way to look at political fairness instead of looking at

competitive districts is the seat differential because some of them are close to 49, 50, 52, 48% split.
However, the total number of seats are swayed way in one different political parties favor at least in Lansing.
Now would a way to determine political fairness is to make that aspect as close to even as possible rather than looking at a District so if you have one District that could be let's say 20% democrat, 80% republican and maybe a couple of those, however, by doing that you can draw districts so that the total seat split in Lansing would be closer to 50/50.
Is that a better way to determine fairness?
>> DR. LISA HANDLEY: In a way efficiency gap catches that.
I think that the question is broader.
And, Bruce, I think will talk to you more about the broadness of the question.
I'm talking about the possibility of some simple measures that could guide you and that the courts have looked at, courts have not agreed on what a measure is, but I'm thinking things that you could look at quickly to determine what it is that you're interested in.
Like I said there is a host of partisanry and partisan bias measured and we could talk I mean we could use more than one and you could, you know, look at the things that you think are right and wrong about these various measures.
All of them have their supporters and all of them have their critics and you should probably know what these measures are good for and what they are less good for.
But you probably should start thinking about that in a quick and easy way.
But, again, I'm going to tell you that Bruce will tell you the question is possibly bigger than that but there are mathematical there are political science means of looking at this question.
>> COMMISSIONER WITJES: Bruce did you want to add anything?
>> MR. BRUCE ADELSON: A couple things and also this topic and I take you know kind of piggybacking off what Lisa said and Commissioner Lange said all of these considerations are obviously contained in the criteria, but one of the things that we faced in Arizona a lot of pressure to make politically competitive districts.
Well at some point that may run up against the Voting Rights Act or that may run up against one person, one vote and that's a subordinate criteria to the Federal one.
But one of the things that I two issues I like to talk about quickly we have not discussed how the Federal courts are viewing or have viewed in their decisions these competitiveness political fairness statistical models.
Some have been rejected.
Some have been criticized.
I think we need to talk about that.
Is that something, do you want to use a measure that the courts have considered not the best let's say? Let's talk about that.

And also the one of the strategies we did in Arizona and I'm not suggesting that this may work here, we under populated a lot of districts.
We under populated majority, minority districts in order to buttress the strength of those districts again historical voting discrimination in Arizona.
And significant racially polarized voting.
We documented that.
That very heavily, that was part of the challenge to the legislative plan, Supreme Court and the lower Federal Court rejected that.
And said the record clearly shows that they did this to comply with the Voting Rights Act.
So there is no one person one vote violation, no constitutional issue, nothing.
Compliance with the Voting Rights Act is legitimate state Government consideration and redistricting that allows some play with the state legislative District population deviations.
I think I might have mentioned that a little bit in the memo that I did but that is also something I like to have for a conversation with you in person.
So we could go through this.
Because I agree with what Commissioner Lange said about it just kind of like blows your mind in a sense all these factors, all the things that your public hearing commenters have said.
And they really are eloquent, great, great comments.
And they have been very clear and from what I've seen and what are their priorities.
Well, what does that mean? How does that intersect with everything else? And I agree, this is something to think about and it's something to start talking about and figuring out what direction to go.
But remembering that this is a subordinate criteria to the Federal criteria and that may not be competitiveness may not always be possible.
So I wanted to throw out both of those.

>> COMMISSIONER WITJES: Commissioner Eid?

>> COMMISSIONER EID: So this is something that I think about every day.
You know, how do we find the perimeters for what is defined as politically fair? And there is no real, you know, over all accepted definition of this from my understanding, unless some things happened recently that I'm unaware of.
So given that, and probably it would be best to use a whole lot of different data points.
Whether it be efficiency gap or wasted votes or I'll remind everyone when we submitted those practice Ohio maps our friends at our University partners here in Michigan gave us pretty detailed analysis of those maps with more, you know, analytical data points than just those two being efficiency gap and wasted votes.
And those are all useful tools that we can use, you know, to help guide us.

Now, you know as far as competitive fairness goes, as Bruce just eloquently stated, we may not be able to do that for every District.
And I'm not sure if that is something we even want to do.
I mean, if, you know, if 80% of the people in Detroit vote democratically why would we want to make their District 50/50? If 80% of the people in the U P vote, you know, for republicans, why would we want to make their District 50/50? I think what's most important though and what has been echoed in the public comments is the idea of proportionality.
Whereas if you know especially considering you know we are in Michigan.
This is a swing state.
We tend to you know 2016, one party won in 2020 and another party won and that tends to happen here.
So the goal in my eyes should be to make it proportional.
If one party wince a certain election, that party should get the amount of seats that is proportional to the amount of votes they got.
No matter which party it is.
And to me that's what is fair.

Now, I think the efficiency gap data point, you know, the main purpose of it is to address like that is specifically what it addresses as far as my understanding of it goes, but I'm sure there are plenty of other ones that do as well.

>> COMMISSIONER WITJES: Mr. Brace?

>> KIM BRACE: I'll unmute myself, sorry about that.

What we are always looking at data items to see what they could tell us.
And I'm one of those that would like to have more data than anybody else because they can tell different things.
But certainly in terms of like the competitiveness thing, I would go back to giving you an example coming out of California.
California is a long and skinny kind of state and in order to create competitive seats, because the cost is democratic and the middle and the eastern edge of the state is republican, for a competitive seats you would have to create districts that are stacked going back and forth.
Now, is that fair? Is that reflecting? There are a lot of conflicting ideas in terms of that.
Certainly you would have to be crossing mountain ranges.
Is that good? What you find in redistricting is there is enormous, different competing interests and factions.
Just front a conceptual standpoint.
And it will be up to you guys to ultimately decide how you want to configure it, but be cognizant from the data side we can really show a whole bunch of different things. And Lisa is right, she and I have been talking about what can be done and what can be shown.

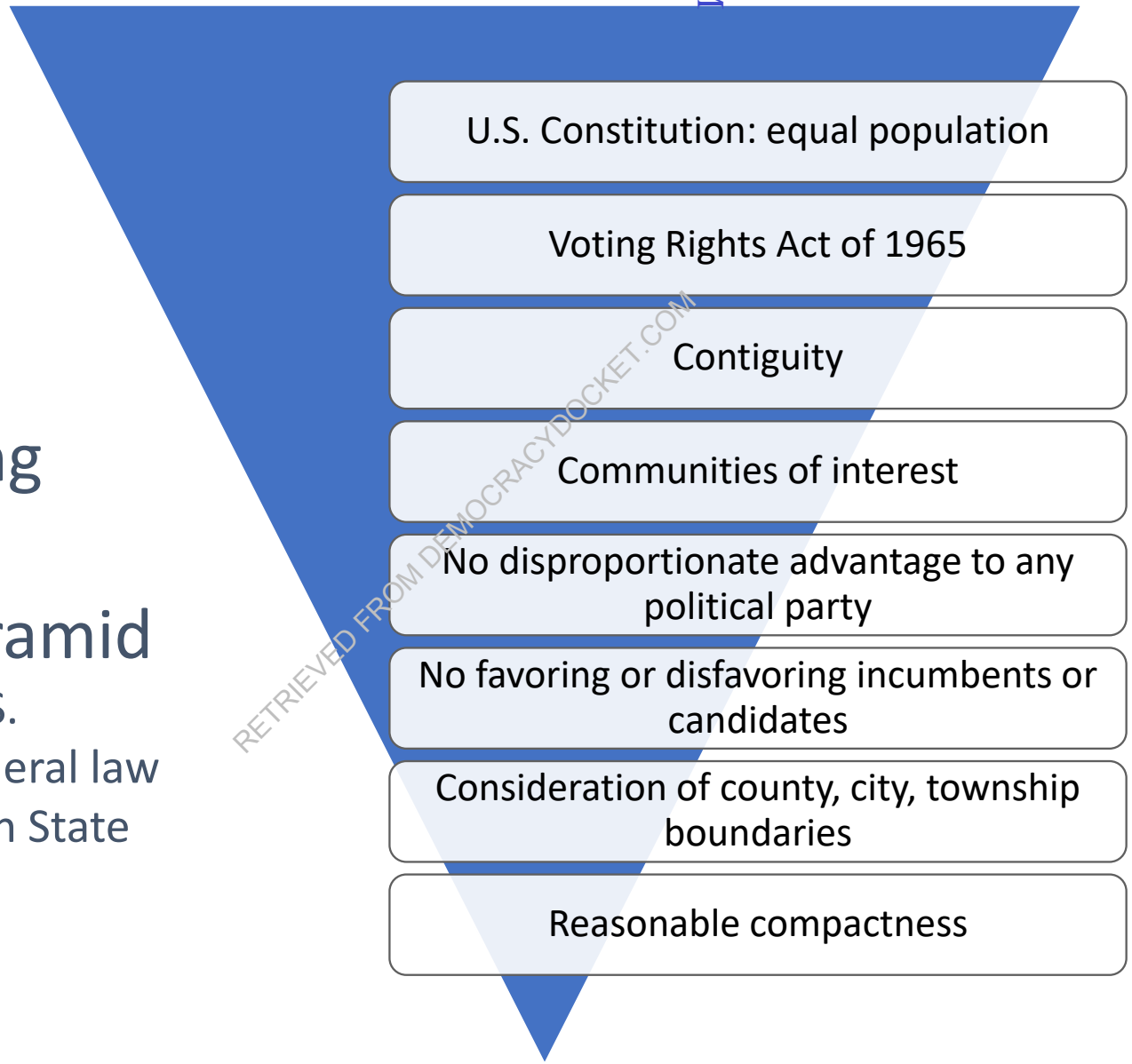
So that we could see that and somewhat real time and, in some instances, and at other points in time it may come as a result of taking a plan and then running a report off of it kind of a thing.
So there is a variety of different aspects that can be done here.
>> COMMISSIONER WITJES: Dr. Handley?
>> DR. LISA HANDLEY: In terms of Michigan law actually, the point is not competitiveness.
And so I don't think we have to think about that.
It's no disproportionate advantage to any political party.
So the issue of competitiveness unless you believe lots of competitive districts equals the disproportionality or doesn't.
So I think there are a host of political science measures that should be discussed and considered and determined whether we could use any of these in an easy way or whether you want to bring in someone who is going to do something.
But it is part of the Constitution.
And it isn't certainly one person, one vote in the Voting Rights Act and communities of interest are above that.
But other things like compactness and boundaries are below that so it's something you have to think about among all the other things that you have to think about, there is another one.
>> COMMISSIONER WITJES: One second Anthony, I have a real quick question here because I want to get on to the question about the actual continuing education here at this point.
Mr. Adelson, you stated that you like to potentially have a lengthy discussion with us.
Off the top of your head, how long would this lengthy discussion potentially be? So we can try and get this added.
>> MR. BRUCE ADELSON: Yes, I appreciate that.
I think I'm flexible as far as time.
I don't have any rigid amount of time it has to be.
I'm more concerned that we have an attorney/client conversation which is uninterrupted where we can discuss the issues that we are briefly touching on today in more detail as well as some issues we have not discussed.
So how much time would that be? That might be an hour and a half.
It might be two hours.
It would be great if we could -- if we had more of an open ended opportunity.
But you know I'm always very flexible about time.
So I would suggest off the top of my head hour-and-a-half minimum, two hours might be more optimal.
Because as you have seen just in our 25 minute or so conversation there are a lot of issues and there are more issues that we have not talked about.

Measuring Partisan Fairness

Dr. Lisa Handley

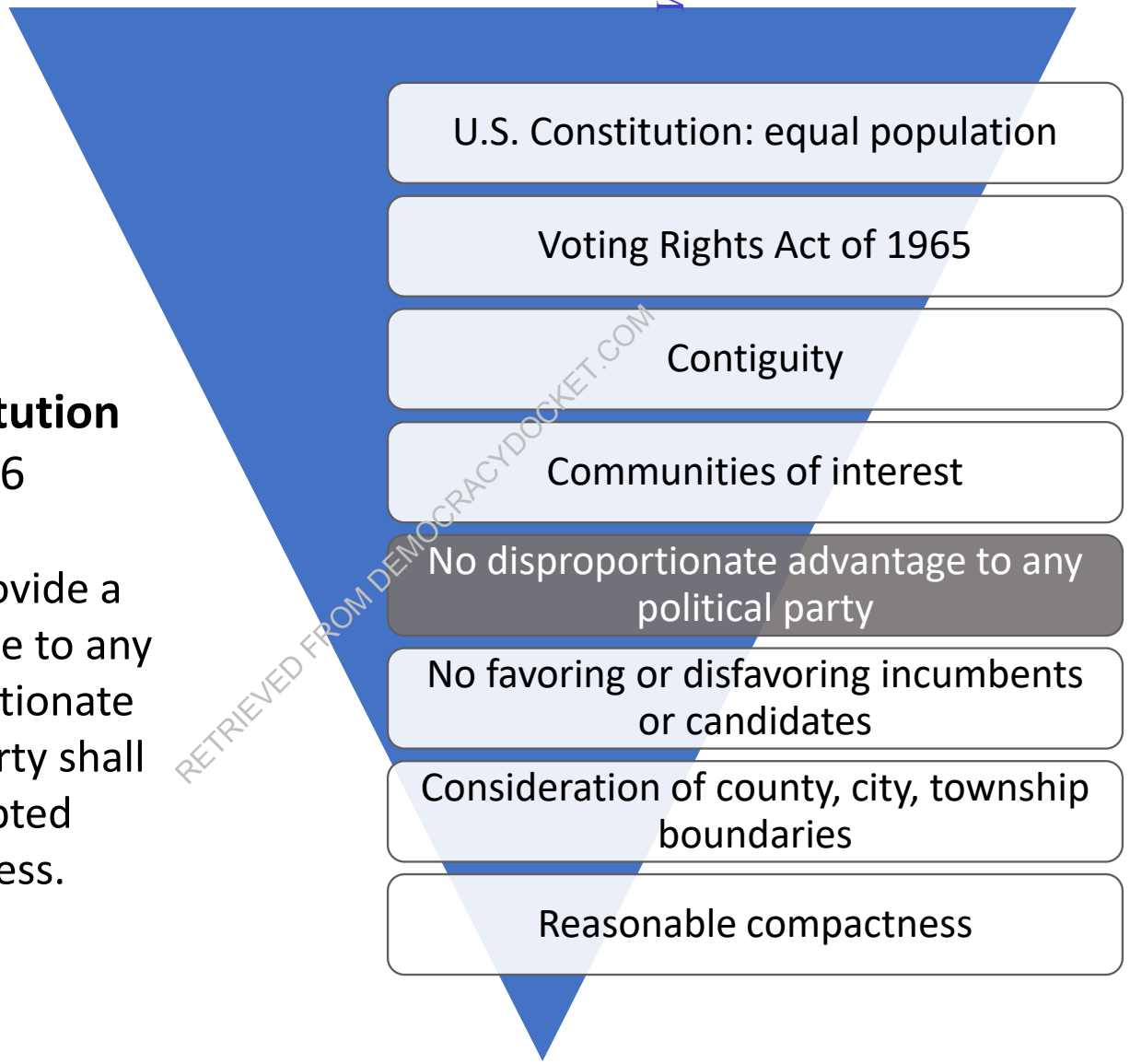
Redistricting Criteria Priority Pyramid

based on the U.S. Constitution, federal law and the Michigan State Constitution



Michigan State Constitution
Article IV, Section 6

13(d) Districts shall not provide a disproportionate advantage to any political party. A disproportionate advantage to a political party shall be determined using accepted measures of partisan fairness.



Election Results

				Percent of Votes	
District	Party A	Party B	Total Votes	Party A	Party B
1	279	120	399	69.9%	30.1%
2	172	198	370	46.5%	53.5%
3	167	192	359	46.5%	53.5%
4	148	212	360	41.1%	58.9%
5	185	180	365	50.7%	49.3%
6	139	193	332	41.9%	58.1%
7	169	201	370	45.7%	54.3%
8	179	206	385	46.5%	53.5%
9	234	99	333	70.3%	29.7%
10	178	199	377	47.2%	52.8%
TOTAL	1850	1800	3650	50.7%	49.3%

- 10 districts of equal populations – 500 persons per district.
- Turnout varies some across the 10 districts, from 332 to 399 voters.

Comparing Votes to Seats

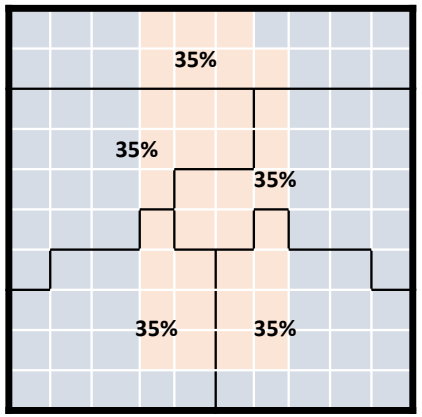
				Percent of Votes	
District	Party A	Party B	Total Votes	Party A	Party B
1	279	120	399	69.9%	30.1%
2	172	198	370	46.5%	53.5%
3	167	192	359	46.5%	53.5%
4	148	212	360	41.1%	58.9%
5	185	180	365	50.7%	49.3%
6	139	193	332	41.9%	58.1%
7	169	201	370	45.7%	54.3%
8	179	206	385	46.5%	53.5%
9	234	99	333	70.3%	29.7%
10	178	199	377	47.2%	52.8%
TOTAL	1850	1800	3650	50.7%	49.3%

- Party A wins 3 seats with 50.7% of the vote.
- Party B wins 7 seats with 49.3% of the vote.

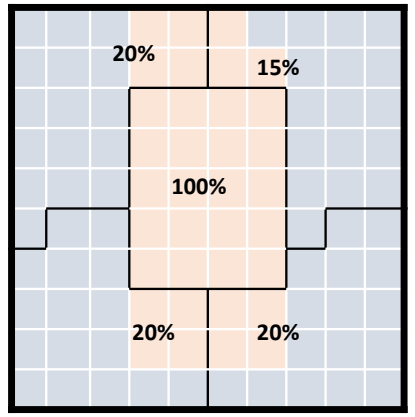
How is Partisan Bias Introduced?

- ***Cracking*** – spreading a party's supporters across many districts relatively thinly so that their votes are all cast for losing candidates

- ***Packing –*** concentrating a party's supporters into a few districts so that their votes will elect candidates with far more than 50% plus one vote threshold required to win



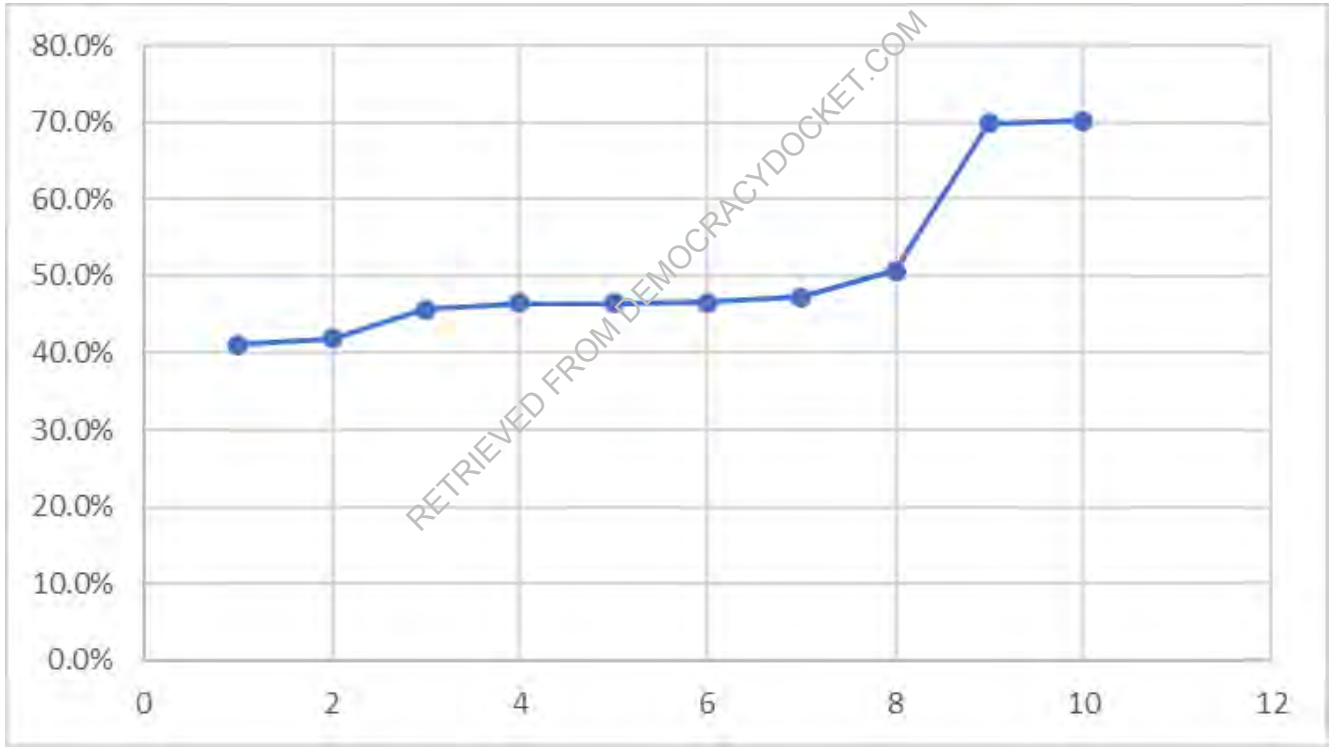
Plan that cracks Party A supporters across 5 districts



Plan that packs Party A supporters into single district

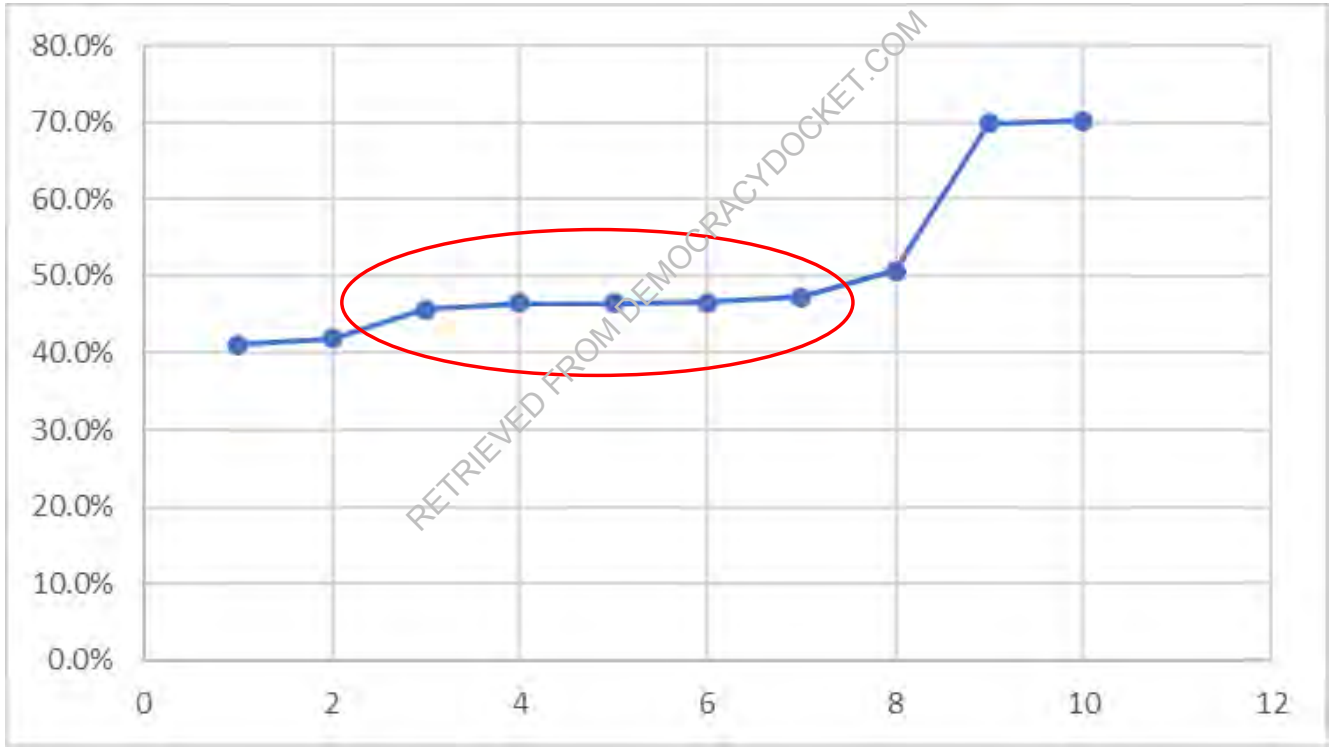
Vote Share for Party A

Sorted by % of Party A Vote



Vote Share for Party A

Sorted by % of Party A Vote



Vote Share for Party A

Sorted by % of Party A Vote

Lopsided Margins Test

				Percent of Votes		Party Wins	
District	Party A	Party B	Total Votes	Party A	Party B	Party A	Party B
1	279	120	399	69.9%	30.1%	69.9%	
2	172	198	370	46.5%	53.5%		53.5%
3	167	192	359	46.5%	53.5%		53.5%
4	148	212	360	41.1%	58.9%		58.9%
5	185	180	365	50.7%	49.3%	50.7%	
6	139	193	332	41.9%	58.1%		58.1%
7	169	201	370	45.7%	54.3%		54.3%
8	179	206	385	46.5%	53.5%		53.5%
9	234	99	333	70.3%	29.7%	70.3%	
10	178	199	377	47.2%	52.8%		52.8%
TOTAL	1850	1800	3650	50.7%	49.3%	63.6%	54.9%

- Party A is winning districts with a much higher average vote (63.6%) than Party B (54.9%).
- This indicates Party A supporters are packed into a few districts; Party B is winning (more) districts with lower vote margins.

Winning Margin = Party A average winning vote share – Party B average winning vote share

63.6 – 54.9 = 8.7

Mean-Median Difference

Party A	Percentages by District (sorted)
	41.1%
	41.9%
	45.7%
	46.5%
	46.5%
	46.5%
	47.2%
	50.7%
	69.9%
	70.3%
District median percentage	46.5%
Statewide mean percentage	50.7%
Mean-Median Difference	4.2%

Mean-Median Difference =
Party's Mean Vote – Party's Median Vote

- A difference between a party's vote share in the median district and its vote share statewide is a measure of skewness. If the median score is lower, that party must win more votes to win an equal number of districts.
- Party A's median vote share (46.5%) is 4.2% lower than its mean vote share of 50.7%, indicating the districts are skewed in favor of Party B.
- Party A would have had to win 54.2% (50.0 + 4.2) of the statewide vote to win 50% of the seats.

Mean-Median Difference Scores

Georgia 2006

Under Georgia's 2006-2010 congressional plan, the median Republican vote share was 11% higher than the mean Republican vote share.

Kentucky 1972

Under Kentucky's 1972-1980 congressional plan, the median Democratic vote share was 10% higher than the mean Democratic vote share.

From Plan Score at https://planscore.org/metrics/meanmedian/

Efficiency Gap

Efficiency gap measures the difference in the wasted votes of the two parties.

Wasted votes:

- Lost votes = votes cast for losing candidate
- Surplus votes = votes cast for winning candidate in excess of the 50% needed to win

$$\text{Efficiency Gap} = \frac{\text{Wasted Votes for Party A} - \text{Wasted Votes for Party B}}{\text{Total Number of Votes Statewide}}$$

The efficiency gap is interpreted as the percentage of seats the favored party wins over what it would have won with a redistricting map that is politically unbiased.

Calculating the Efficiency Gap

				Lost Votes		minimum	Surplus Votes		Total Wasted Votes	
District	Party A	Party B	Total Votes	Party A	Party B	to win	Party A	Party B	Party A	Party B
1	279	120	399	0	120	200	79	0	79	120
2	172	198	370	172	0	185	0	13	172	13
3	167	192	359	167	0	180	0	12	167	12
4	148	212	360	148	0	180	0	32	148	32
5	185	180	365	0	180	183	2	0	2	180
6	139	193	332	139	0	166	0	27	139	27
7	169	201	370	169	0	185	0	16	169	16
8	179	206	385	179	0	193	0	13	179	13
9	234	99	333	0	99	167	67	0	67	99
10	178	199	377	178	0	189	0	10	178	10
TOTAL	1850	1800	3650	1152	399		148	123	1300	522

1300-522/3650 = 778/3650 = .2131

Efficiency Gap in favor of Party B is 21.3 %

This is interpreted as the percentage of seats Party B won above what would be expected in a politically neutral map.

Efficiency Gap Scores

North Carolina 2012

Under North Carolina's 2012-2014 congressional plan, votes for Republican candidates were wasted at a rate 20.3% lower than votes for Democratic candidates.

Texas 1992

Under Texas's 1992-1994 congressional plan, votes for Democratic candidates were wasted at a rate 20.3% lower than votes for Republican candidates.

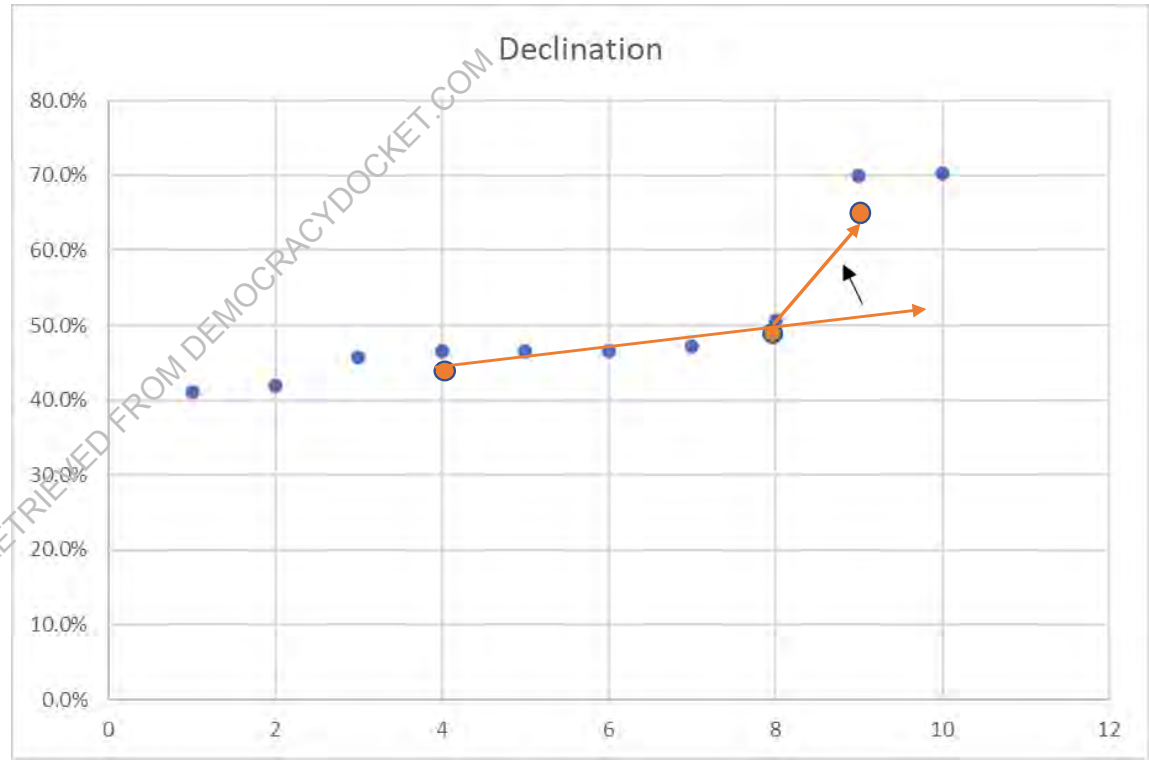
From Plan Score at https://planscore.org/metrics/efficiencygap/

Conclusion

- Each of these measures have advantages and disadvantages associated with them. Using more than one measure is highly advisable.
- I have only described a small set of the available measures – those that are simple to understand and easy to calculate using a spreadsheet.
- No mathematical measures of partisan fairness are universally accepted, nor are they likely to produce a universally accepted yes-or-no as to whether a redistricting plan unacceptably favors one political party over the other. (The measures themselves occasionally disagree.)
- The Michigan State Constitution requires the use of accepted measures of partisan fairness. Using these measures brings some precision to the process of determining if a map is politically fair.

Declination

Vote for Party A sorted	Mean Loss and Win Percentages
41.1%	
41.9%	
45.7%	
46.5%	
46.5%	45.1%
46.5%	
47.2%	
50.7%	
69.9%	63.6%
70.3%	



You're going to have to pick a statewide election because things like Congressional elections don't cover the whole state and you could possibly be drawing a Congressional District that goes outside of a previous Congressional District.
So you're going to choose some statewide elections.
And you're going to recompile them.
Well, the software is going to recompile them for you.
So you can see how your candidates did in each of these elections.

So this is how the three measures that I chose worked.
I want to go back and tell you why I chose the three measures that I did.
The first reason is they are easy to understand.
When you look at the score, you know the direction and the magnitude of the partisan bias.
It's straightforward to calculate.
You can do this with your calculator.
You can even do it in your head.
If you use a simple example like the one that I've done here.
So it's straightforward to calculate.
It's easy to incorporate into a redistricting software.
My belief is that when you get the updated software you will have this package.
You will have this included.
You will be able to run reports automatically, say I want to look at these recompiled elections for these particular statewide offices.
And you will get a report that will tell you how those candidates did in each of those districts.
And finally the particular three measures that I pointed to, that I've discussed have been accepted by Federal and state courts.
And I think that you're going to hear from Bruce at some point and your attorney here about what the courts have had to say about this.

And then just real quickly, first thing you're going to do, you're going to get your -- you're going to choose your election or your series of elections.
You probably want to choose more than one statewide election and you will run the report and it will tell you based on the boundaries you drew you will be able to compare the seats to the votes.
You will know what the statewide vote is and you will see how many seats each party gains in that particular election.
This allow you to do the lopsided margins test that we talked about.
As well as the mean median difference test that we talked about.
And the efficiency gap.

Now, these three measures measure slightly different things.
I think you should be using all three of those measures.

You might even consider using some other measures if you want to bring in another expert to help you with this.
But these three measures should be automatic.
You should be able to press a button and say I want this plan analyzed using these elections.
And that's all I have to say.
I would be happy to answer any questions you might have.
>> VICE CHAIR SZETELA:
>> CHAIR KELLOM: Director Hammersmith?
>> MS. SUANN HAMMERSMITH: So I like your comment that should be automatic. So I just want to confirm with Kim that these measures can be built into the existing software so they indeed are automatic.
>> KIM BRACE: Yes, they are being done.
In fact, it will be even more automatic than what Lisa said.
Because what you will have if you remember on your screen, you've got total population, you've got racial population.
You've got different ACS and ESRY right now, all those different tabs.
Well we will be adding additional tabs that have the election results.
And so as you draw, you will see those election results change.
As you, you know, move the District going this way, it will change.
If you move the District going that way it will change.
So you'll actually see immediately what the political impact of your District drawing is going to do using these recompiled election results that Lisa had talked about.
Now, we will also be putting in the reports like what she has been talking about too and we've been working with Fred to generate those.
So those are the kinds of reports that, yes, you can when you finish your plan or you think you want to see, you can hit that and it will generate reports off of that.
But more importantly, you'll see it as you're drawing.
Depending upon looking at the various tabs that you'll have because it's all recompiled election results like what Lisa was talking about.
So that you will end up seeing this immediately.
>> DR. LISA HANDLEY: You will see recompiled election results what you won't see without hitting the report button is things like in the mean median difference so you do need to run reports to do that.
But you know running your report in the software is very, very easy but you're not going to do it every time you move a District boundary.
>> CHAIR KELLOM: Go ahead and jump in and Commissioner Rothhorn if you have a question.

>> Some of the stuff you are seeing up here this aggregation of votes down to the block level and then it's reaggregated as you draw the plan, that goes back, we did that in 1990.
The efficiency gap is fairly new in relation to correct.
But some of the -- we did that in Virginia in 1990.
It's not new.
It's not magic.
It's across the board, standard process now in redistricting.
>> CHAIR KELLOM: Commissioner Orton?
>> COMMISSIONER ORTON: So I understand that the totals will change as we move things around.
We have a target number of population that we need in each District, are we going to have a target to know what we need to reach as far as partisan?
>> DR. LISA HANDLEY: No, you're not.
What you're going to be able to do is compare the plans that you produce to each other, to previous plans, to plans across the country because there are websites that give this to you, so you will have an idea of say for example you calculate, you produce a plan and you get an efficiency gap of 21.3%.
That's really high.
You're going to want to get it much further down.
But there is no bright line.
And you don't need it at zero.
But 21.3 is too high.
5% is probably okay.
But no bright lines I'm afraid.
>> CHAIR KELLOM: Go ahead Commissioner Clark?
>> COMMISSIONER CLARK: 21.3% is too high, what is the acceptable tolerance?
>> DR. LISA HANDLEY: There isn't one.
I can tell you that when the courts have looked at this and decided that something was a partisan gerrymander in part because of an impact like that, the numbers were more like 21.3%.
And were not like 3 or 4%.
But the courts are the ones that are going to guide us on this.
Also I will say is there is a website that looks at all of the plans that have been put into place in the last 30 or 40 years.
And you can compare your scores to those scores and see if you're an out liar and if you're an out liar you are going to think again about the plan you are putting forward but no bright lines, I'm afraid.
>> KIM BRACE: But what you do have as Lisa says you have this long history of what calculations have been.

Okay so what we are talking about down in Monroe, in that area, it's where the African/American population is.
Let me bring in and what do we want to call this plan so that we've got a blank plan to start with?
>> South central.
>> VICE CHAIR SZETELA: Yes, just southeast.
>> KIM BRACE: Southeast, okay.
And we are drawing State Senate?
>> VICE CHAIR SZETELA: Yes.
>> Rebecca.
>> VICE CHAIR SZETELA: Yes Mr. Rothhorn?
>> COMMISSIONER ROTHHORN: I'm thinking one of the things I feel like we have been trying to decide and thinking about the naming convention and seems like if we are going to try to draw competitive districts or draw districts we will have to take or carve out pieces of the democratic cities, right, spread them with the rural republicans in general.
And the other and feels like that is one sort of way to go about it.
And it feels like the other way to go about it as a plan is to try to actually one of the things that the communities of interest have tried to respect, we also want to have cities whole and rural areas separated.
So I guess what I'm thinking about it feels there are two ways to go about it and thinking how we might want to, yeah, I guess I want to try two different ways to do it and see if we can like what it looks like.
I guess I'm thinking about it right now and may be useful to sort of set that up or think hey we are doing to draw two different types if you will.
Like we are going to try to achieve I don't know, I don't want to call it competitiveness because that is not a criteria, we are trying to go for but I do want to try to respect what the public comments are which is to draw as many competitive districts as possible something like that and we are thinking of the plan names.
>> VICE CHAIR SZETELA: No disproportionate advantage to any political party which gets in the concept of competitiveness so I wouldn't say that it's not something that's in our criteria.
It's just below communities of interest.
And I think that makes sense to have like two versions.
One that is more focused on incorporating communities of interest and also maintaining a partisan balance and then also one where we are focused more on possibly focusing more on the communities of interest at the expense of partisan balance.
I mean do two plans and General Counsel is saying no.
>> MS. JULIANNE PASTULA: I hit my red button so fast.

It was I think that is the fastest I've ever done it when Commissioner Rothhorn started talking about the partisanship issue.
So again the criteria, the ranked criteria in the Constitution the equal population, the contiguous, the diverse population communities of interest and the partisan fairness analysis being the fourth criteria, I would strongly encourage the Commission to not even consider that until you've already worked your way through the higher ranking criteria.
Because that's what will be guiding your District drawing decisions.
And then when that data layer is activated in the active matrix for the partisan data, then you will be able to see kind of where you are and what modifications may be required or discussed that might be modified.
And I do know that we've had discussions with Mr. Morgan on the partisan fairness issue.
And the importance of being able to weigh kind of where you are.
But as that criteria comes up.
So the fear would be or the reason that I wouldn't recommend doing kind of those kinds of alternate maps is because you don't want them to be competing against the data competing with one another.
So if you view or if you approach the mapping with the criteria in the ranked order you just keep adding more and more data to what you are doing to assist you in your efforts.
And for partisan fairness, that's one, again, that is measured more on the statewide level.
The responsiveness of the maps, if the maps are symmetrical so it's looking at it by District doesn't give you the full picture of how that measure is normally calculated.

>> VICE CHAIR SZETELA: Go ahead Executive Director Hammersmith.

>> MS. SUANN HAMMERSMITH: At one point and somehow it disappeared we had the naming conventions and the quorum document.
So what we had suggested is the first number would be the region number that we are working in.
The type of District then the Commissioner initials or in this case it would be the committee and the version.
So this would be the naming would be 5 State Senate Commission 1.
So because that's the region we are in.
Oh, it's two I'm sorry.

>> VICE CHAIR SZETELA: Are we starting with five or two.

>> MS. SUANN HAMMERSMITH: It's two I'm sorry.

I'm with you now it's two, I had two choices and I picked the wrong one, right? So, yes, two State Senate COMM for Commission. I mean we can abbreviate one.
And then you can go home and look at that one and say, do you know what? I like that but I think it would be better this way.

>> VICE CHAIR SZETELA: All right I'm not seeing any additional comments in the room.
Erin did you want to change anything or do you want to leave it as it is?
>> COMMISSIONER WAGNER: I want to leave it as is.
Recommendation for MDOS is keeping the border counters together as much as possible while also respecting the I-75 corridor and population count as well.
One question I did want to ask is when are we doing the partisan to see where we are at with that? If anybody can answer that?
>> VICE CHAIR SZETELA: I don't know.
Julianne, can you answer that General Counsel?
>> MS. JULIANNE PASTULA: Yes, thank you so much Madam Chair.
And the response to Commissioner Wagner's question the partisan fairness algorithms that are loaded into the EDS software, those functions can be performed when the complete statewide plan is completed and that will provide that information at that time.
The partisan fairness cannot be run on individual districts.
>> Commissioner Szetela?
>> VICE CHAIR SZETELA: Yes, Department of State has some questions for you.
>> How did you take communities of interest into account?
>> COMMISSIONER WAGNER: Well, I thought with the border counties that was one community of interest and the I-75 corridor I answered that as well.
Plus community of interest in that area.
>> How did you take account reflection of the state's diverse populations when drawing this District?
>> COMMISSIONER WAGNER: I honestly don't know how diverse the population is in this District.
I honestly have no clue as to the diversity in this District.
I would imagine there is some, but I could not speak to what it exactly is.
>> VICE CHAIR SZETELA: All right thank you for that Commissioner Wagner.
Are you satisfied Department of State?
>> Yes, unless another Commissioner wants to weigh in with the answer or response, sorry.
>> VICE CHAIR SZETELA: Commissioner Rothhorn did you have something you wanted to add?
>> COMMISSIONER ROTHHORN: I was going to offer I think Commissioner Lett did a nice job modeling it.
We do have a matrix there Commissioner Wagner, in 28 we do have the right, the representation of the diversity for the District.
And that is you know that we are looking at that.
And that was used when you were drawing it.
I think is probably a pretty good model.

Michigan Independent Citizens Redistricting Commission

Hybrid Meeting held in-person and via Zoom Webinar due to the ongoing Covid-19 pandemic, pursuant to 2020 PA 254 (MCL 15.263 and 15.263a), and in compliance with Section 6(10) of Article 4 of Michigan's 1963 Constitution

Full agenda, presentations, transcripts, and video recordings are available at www.michigan.gov/micrc

Thursday, September 23, 2021
10:31 AM – 3:31 PM
at
Central Michigan University
Plachta Auditorium, Warriner Hall
1200 S. Franklin Street
Mount Pleasant, MI 48858

MINUTES

PRESENT:
Douglas James Clark
Juanita Curry (attending remotely from Detroit, MI)
Anthony Eid
Rhonda Lange (attending remotely from Reed City, MI)
Steven Terry Lett
Cynthia Orton
MC Rothhorn
Rebecca Szetela (attending remotely from Wayne County, MI)
Janice Vallette
Erin Wagner (attending remotely from Charlotte, MI)
Richard Weiss
Dustin Joseph Witjes

ABSENT: Brittni Kellom

OTHERS PRESENT: Suann Hammersmith, Executive Director

Julianne V. Pastula, General Counsel
Edward Woods III, Communications and Outreach Director
Michigan Department of State ("MDOS") staff
Bruce Adelson, Federal Compliance Consulting
Election Data Services ("EDS") staff

CALL TO ORDER AND WELCOME

Commissioner Szetela, Chair, called the meeting of the Michigan Independent Citizens Redistricting Commission (MICRC) to order at 10:31 AM.

ROLL CALL

MDOS staff called roll. A quorum was met.

Commissioner Clark left the meeting at 1:35 PM and returned at 1:48 PM.

Commissioner Lange left the meeting at 1:53 PM.

ADOPTION OF THE AGENDA

MOTION: Commissioner Szetela, Chair, called for a motion to approve the agenda. **Motion by Commissioner Witjes. Supported by Commissioner Lett. Commissioner Szetela, Chair, held a vote by show of hands. MOTION UNANIMOUSLY APPROVED.**

UNFINISHED BUSINESS

a. Complete any Unfinished Business from the Previous Meeting – Drafting State House Districts in the Metro Detroit Region. The Commission continued mapping State House Districts, primarily in the Metro Detroit region.

RECESS

At 11:53 PM, Commissioner Szetela, Chair, put the motion "to recess for 67 minutes until 1:00 PM" which was adopted.

CALL TO ORDER

Commissioner Szetela, Chair, called the meeting of the Michigan Independent Citizens Redistricting Commission back to order at 1:02 PM.

ROLL CALL

MDOS staff called roll. A quorum was met.

PRESENT: Douglas James Clark
Juanita Curry (attending remotely from Charlotte, MI)
Anthony Eid
Rhonda Lange (attending remotely from Reed City, MI)
Steven Terry Lett
Cynthia Orton
MC Rothhorn
Rebecca Szetela (attending remotely from Wayne County, MI)
Janice Vallette
Erin Wagner (attending remotely from Charlotte, MI)
Richard Weiss
Dustin Joseph Witjes

ABSENT: Brittni Kellom

PUBLIC COMMENT PERTAINING TO AGENDA TOPICS

Commissioner Szetela, Vice-Chair, put the motion "to begin the public comment pertaining to agenda topics portion of the agenda" which was adopted. 15 individuals provided in-person public comment: Jon Zang, Michael Fields, Christine Gerace, Wendy Hovey, Recia Crawford, Dennis Quehl, Nathanael Bills, Ciara Lowe, Josua Weese, John Dinse, Katie Ellison, Jennifer Austin, Molly Morrissey, Ron Parmele, and Cathy Leikhim. 11 individuals provided remote public comment: Anthony Scannell, Michael Van Weiren, Michael Colucci, Reem Killawi, James Gallant, Claudia Warren, Kathleen, Daz'Shavon Hall, Monica Day, Sam Alasri, and Amador Ybarra.

A full inventory of live and written public comment is available at www.michigan.gov/micrc.

UNFINISHED BUSINESS (CONTINUED)

a. Complete any Unfinished Business from the Previous Meeting – Drafting State House Districts. The Commission continued mapping State House Districts in the Metro Detroit Region.

NEW BUSINESS

a. Revised Appendix C for the Election Data Services (EDS) Contract. General Counsel Pastula and Executive Director Hammersmith

provided an overview of the DRAFT Revised Appendix C for the Election Data Services (EDS) Contract. The Commission asked MICRC staff questions and held a discussion on the additional requested services for EDS.

> **MOTION**: Move the Adoption of Revised Appendix C for the Election Data Services (EDS) Contract. **Motion by Commissioner Lett. Supported by Commissioner Eid. Commissioner Szetela, Chair, held a vote by show of hands. MOTION UNANIMOUSLY APPROVED.**

APPROVAL OF MINUTES

There were no minutes to review and approve.

STAFF REPORTS

a. Communication and Outreach Director. Communication and Outreach Director Edward Woods III provided a report.

MDOS UPDATES

There were no updates.

CORRESPONDENCE

There was no discussion on correspondence. All correspondence received is included in the public comment provided to the Commission.

FUTURE AGENDA ITEMS

There are no future agenda items.

ANNOUNCEMENTS

There were no announcements.

ADJOURNMENT

There being no further business, Commissioner Szetela, Chair, called for a motion to adjourn.

> **MOTION**: Adjourn the Meeting. **Motion by Commissioner Witjes. Supported by Commissioner Rothhorn. Commissioner Szetela, Chair, held a vote by show of hands. MOTION UNANIMOUSLY APPROVED.**

The meeting was adjourned at 3:31 PM.

So you folks can see this in real time. Just remember if you are following the rules. That's why I'm advocating for everybody and trying to protect everyone here, equally. The rules, make a motion, second it, discussion and vote every time.

>> CHAIR SZETELA: Thank you for addressing the Commission.

This concludes our public comment for this afternoon. However, I'd like to mention that all e-mail and mailed public comment is provided to the Commission before each meeting. And Commissioners also review the public comment portal on our www.Michigan.gov/MICRC website on a regular basis. We appreciate everyone who provides public comment in whatever way you choose and invite you to keep sharing your thoughts communities of interests and maps.

At this point we are going to return to our unfinished business agenda item which is continuing to draft the State House districts.

I believe the next Commissioner in line is Commissioner Eid. And, once again, I'm going to ask the Vice Chair, MC Rothhorn, to facilitate discussion since he is present in the room and I am not.

Please take it over, MC, and Commissioner Eid.

>> VICE CHAIR ROTHHORN: Thank you Chair Szetela.

Commissioner Eid you have the floor.

>> COMMISSIONER EID: Okay, let's bring the map up.

>> MR. MORGAN: Just a minute and I will bring the map up.

Thank you.

>> MS. JULIANNE PASTULA: Mr. Vice Chair.

>> VICE CHAIR ROTHHORN: Thank you General Counsel you have the floor.

>> MS. JULIANNE PASTULA: While Mr. Morgan is pulling up that map, I wanted to highlight again for the benefit of the Commission as well as the public the constitutional criteria regarding partisan fairness which reads districts shall not provide a disproportionate advantage to any political party.

A disproportionate advantage to a political party shall be determined using accepted measures of partisan fairness.

So partisan gerrymandering is when District lines are drawn intentionally to favor or disfavor a political party, a candidate, incumbent.

Measuring partisan fairness using acceptable standards of partisan fairness those are very distinct legal concepts and statistical concepts that are done on a statewide level.

So you can't measure partisan fairness on a District by District level.

That would be going towards a criteria of focused on competitiveness which is not included in the Michigan Constitution.

So to have a competitiveness criteria being considered Michigan's Constitution would need to be amended again.

So what we do have in front of the Commission in the ranked criteria is again the partisan fairness.

So a map without substantial partisan bias would provide both parties similar opportunities to win elections.
And I know back in February and throughout the last series of months we've talked again and again about partisan fairness is measured on a statewide plan.
So you need all of the districts drawn either in the Senate, the house or the Congressional to be able to run those statistical analyses.
The ways of measuring the mean median distance difference excuse me lopsided margins proportional representation, declination, efficiency gap and would note your expert Dr. Lisa Handley her memo on the measures of partisan fairness is posted on the MICRC website.
It would be under the August 6th meeting materials tab.
And again the measures that Dr. Handley is proposing for the Commission and will hopefully be doing that work for the Commission.
I know that is later on the agenda, but she would look at the mean median, the efficiency gap and lopsided margins tests.
What partisan fairness does is it measures symmetry and responsiveness of a Districting plan. So whether votes to seats are so for a map to be symmetrical the voters success for both parties is translates into the same electoral success.
So if you win more votes, you should win more seats that would be symmetrical.
If it's a responsive map, when the electoral outcomes change, again, if you win more votes than your seat then your seats should also increase.
Again, competitiveness is not a criteria in Michigan.
I cannot state this more simply, more plainly.
We have as a criteria that the maps shall not provide a disproportionate advantage.
Not any advantage, a little advantage, make it equal.
It's a disproportionate advantage and those measures, those fairness measures and those statistical tools that Dr. Handley will be using again will inform the Commission about how the maps that they are drawing score on those scales.
And I wanted to also highlight and I know I have in the past that we don't have competitiveness in our Constitution but Arizona does.
And I was hoping that Bruce could maybe say a few words in his experience working directly with Arizona on what that criteria looks like when -- to assist the Commission and the viewing public with that distinction between those two criteria.
Thank you, Mr. Chair.

>> VICE CHAIR ROTHHORN: Bruce would you like to add?

>> MR. BRUCE ADELSON: Yes, thank you first I'd like to restate my agreement with General Counsel and all of her paints and I wanted to discuss very quickly the experience in Arizona.
General Counsel said that as you know in Arizona the Arizona Constitution specifically uses the words competitive districts.

Now I can see into the room.
Rhonda Lange?
>> COMMISSIONER LANGE: Present; attending remotely from Reed City, Michigan.
>> MS. SARAH REINHARDT: Steve Lett?
>> COMMISSIONER LETT: Present.
>> MS. SARAH REINHARDT: Cynthia Orton?
>> COMMISSIONER ORTON: Present.
>> MS. SARAH REINHARDT: MC Rothhorn?
>> COMMISSIONER ROTHHORN: Present.
>> MS. SARAH REINHARDT: Rebecca Szetela?
>> CHAIR SZETELA: Present.
>> MS. SARAH REINHARDT: Janice Vallette?
>> COMMISSIONER VALLETTE: Present, here.
>> MS. SARAH REINHARDT: Erin Wagner?
>> COMMISSIONER WAGNER: Present; attending remotely from Charlotte, Michigan.
>> MS. SARAH REINHARDT: Richard Weiss?
>> COMMISSIONER WEISS: Present.
>> MS. SARAH REINHARDT: Dustin Witjes?
>> COMMISSIONER WITJES: Present.
>> MS. SARAH REINHARDT: All Commissioners are present.
And there is a quorum.
>> CHAIR SZETELA: Thank you Ms. Reinhardt.
All right we are going to move on to unfinished business agenda 5A without objection to continue draft mapping adjustment but before we do that our General Counsel did have a comment for us or something for us so General Counsel.
>> MS. JULIANNE PASTULA: So much Madam Chair I will be brief because I know the Commission has lots of work to get to. And I did want to do for the benefit of the listening public as well as the Commission a brief compare and contract again on the issue of partisan data, partisan fairness and maps.
The compare and contrast is between proportionality, which Ohio and Missouri have the statewide proportion of districts based on statewide elections during the last ten years favor political parties that correspondence closely to the statewide preferences of the voters.
So that is proportionality the seats have to be proportional to the election results of the past.
Contrasting it also with competitiveness which is another theme the public is urging the MICRC to follow.
Competitiveness is when they have even partisan balance making competition more likely than not to happen.

Competitiveness is also achieved by looking at election data during the drafting process.
There are five states that have competitiveness in their redistricting criteria Arizona, Missouri has it for legislative only, Colorado, New York and Washington state.
So and Arizona their competitiveness, they just selected at the beginning of August the metrics they are using to determine competitiveness.
One uses the results from statewide races over the past three election cycles to determine how closely average vote is.
Proposed District would have been and the other uses measurements to see how the pro-districts would have changed hands between democrats and republicans.
This is what the Commission is being advocated to use.
This is not what is in the Michigan Constitution.
The language in the Michigan Constitution and again the courts have held that using election results to determine partisan fairness is improper.
It is not acceptable.
What the Michigan Constitution has is a partisan fairness requirement.
And not only does it have the language of districts shall not provide a disproportionate advantage to a political party it specifies to be measured using accepted measures of partisan fairness.
They have specific legal meanings.
These are specific tools and metrics that have been approved by the courts used to determine that on statewide plans.
So again what is going to happen tomorrow is the Commission's expert Dr. Lisa Handley will come and present the partisan fairness measures that she has run on the statewide maps that the Commission has been working on.
Obtain the results and then the Commission will be advised on how if there is a disproportionate advantage how that can be remedied or mitigated or reduced.
And so that is the plan.
But I did again really for the benefit of the public to highlight that the Michigan Constitution does not allow for competitiveness, proportionably and MICRC has to adhere to the language in the Michigan Constitution in its work and will continue to do so to bring the written word of proposal 18-2 to life as it was adopted by the voters.
Thank you so much Madam Chair.

>> CHAIR SZETELA: Thank you for that explanation, are there any questions or comments for our General Counsel? All right so at this point we are going to return to our mapping.
I believe let me see where is my chart, I thought Commissioner Lange was next yeah, Commissioner Kellom just finished so Commissioner Lange would be next.
Commissioner Lange on?

>> COMMISSIONER LANGE: I'm here.

And those are both votes cast in access to what is needed to win.
And losing votes.
So if you are losing a lot of districts by a little amount, that's cracking.
If you are winning districts by a large amount, that's packing.
And the efficiency gap tries to get at both of those.
So we can see columns B and C again are our composite index.
Then we are going to go over and we are going to look at in columns E and F the number of votes that were cast for the losing column. For the losing candidate.
So for example, in District 1 the republican lost.
So those are all 74, I can't see it any way all of those are wasted votes because they were cast for a losing candidate, right? So if you go over to the surplus column for H, an H those are the number of votes cast over what was needed in B to win.
So it's calculating both of those things for us.
Anything over 50% is considered surplus.
And we've done that for all 38 districts and we've added up the surplus, plus the lost votes and we've compared how the two parties faired in what are called wasted votes.
So wasted votes are surplus, plus lost votes for each party compared.
Okay, so, the percentage of wasted votes for the dems democrat is 21.98 and republicans it's 20.82 so we have efficiency gap of 8.4%.
>> MS. JULIANNE PASTULA: Madam Chair? So we are talking about the efficiency gap for the proposed State Senate plan that the Commission, the MICRC has drawn.
And we are in complete agreement that the courts have not set a number for these -- for this measure.
What we can use is again we have the League of Women Voters versus Benson case which was a partisan gerrymandering case where the Federal Court held certain -- and I would offer that we look at them as ranges.
Just to give an idea to the Commission of what the numbers looked like in the past.
So for these Senate District and just to be clear that what -- where this information has come from is from the Federal Court's opinion that was issued April 25th of 2019.
So in that opinion the Plaintiffs, the Plaintiffs experts they had three experts and for the efficiency gap for the Senate, anything more than a negative 16.6 which was characterized as heavily partisan, and that number was looking at the 2012-2016 statewide elections only.
So again, this is a negative benchmark as how far to go.
I know we are looking at the positive number.
Unfortunately the maps that the old maps or the current maps I should say the state has all the numbers were running in the negative.
But for the efficiency gap of 8.4 that is also above the goal where the Commission would want to be.

So we have again, it's using these metrics trying to go back in and make those adjustments to have an impact on these scores would be advisable.

>> DR. LISA HANDLEY: So what the efficiency gap is doing is telling us the difference.

So you -- this it depend on whether you subtract republicans from democrats or the other way around as to whether you get a negative number.

We made it easy and just tell you with this so I don't think you get any negative numbers.

I think it's just reflected that it's a republican bias.

Because it will show up different.

Like if you go to the one website it will take republicans and subtract it from the democrats and if you go to another website, it would be the opposite.

So the sign doesn't matter.

It's the difference, the size of the difference.

So as I understand what Julianne just said, that size of the difference was 16 something.

16 something.

So you're half of what was the case in the Court case, in the partisan gerrymandering Court case.

You are not at 0 but not at 16 either.

How the Court did it.

>> MS. JULIANNE PASTULA: Thank you Dr. Handley.

I think what I neglected to say 0 is the goal and the further from 0 on either direction is what the Commission wants to be sensitive to.

>> COMMISSIONER ORTON: Is 0 possible?

>> MS. JULIANNE PASTULA: Yeah, and I will let Dr. Handley qualify the 0 and put the 0 in context because that is critical.

>> DR. LISA HANDLEY: It is possible.

It might not be possible if you have a whole lot of other criteria that you want to consider.

But mathematically it's certainly possible and there have been plans that come in near 0 however you have other concerns here to deal with.

So I'm not saying that you could do that here.

But especially, again, you have the Voting Rights Act and other things you have to consider.

But certainly lower scores are possible.

>> COMMISSIONER ORTON: So I have a follow-up question or thought to that.

So I'm thinking as we are talking about this, this is what we have been waiting for.

We are glad you are here.

So as we are talking about this, I'm trying to think in my mind then how do we use this information? It sounds like 0 would be ideal.
But we have total population, Voting Rights Act.
We have you know, our constitutional criteria our ranked 12 and 3 and have to take communities of interest into effect as well.
And then partisan fairness.
How do we do all that in a ranked order is what I'm not sure on?

>> DR. LISA HANDLEY: Again this is probably a legal question more, but it seems to me the Constitution does prioritize for you.
And you know what comes first and what comes next.
I would try and get these numbers down, but if I found that I couldn't do it because of voting rights concerns is much you know it may be the case that I mean certainly you could defend something in Court that you said, for example, you know I can't get it to 0 because there are a lot of democrats in some of these districts that are drawn for voting rights purposes.
Now.

>> MR. BRUCE ADELSON: Excuse me, if we could just expand on that a minute.
I think Commissioner Orton this is similar to what we did with the Voting Rights Act compliance.
That it's testing to see what can work and we certainly agree with you that you have ranked priority criteria.
I think it has been explained that as Dr. Handley said 0 as you said might be ideal.
But that's not a legal benchmark requirement.
So working towards the Commission's, working forward as Dr. Handley said to try to reduce the margin that is reflected on the screen will involve trial and error, compromises.
We will certainly be talking about the ranked criteria and what the priorities are.
But we certainly concur that the score can be lowered.
How far it can be lowered of course is yet to be determined.
And that's going to be of course up to the Commission.
So we will be continuing the trial and error process that we really locked into gear this week, thank you.

>> DR. LISA HANDLEY: Okay, let's go to mean median difference.
This looks at the mean of the District votes, going across all the districts, the mean vote, and the median.
If the median is lower than the mean, the party who has the median that is lower than the mean is advantaged.
It's a skewed distribution.

>> CHAIR SZETELA: Yes, General Counsel.

>> MS. JULIANNE PASTULA: Thank you so much while Mr. Morgan is assisting the Commission and running those, I wanted to circle back on this partisan fairness issue.
Again the goal for the Commission is to achieve scores that are low as possible without sacrificing other criteria.
The constitutional language is very clear that competitiveness and proportionality are not criteria.
Accepted partisan fairness the Commission is about to look at what the Constitution provides there shall not be a disproportionate advantage.
I know that there has been very passionate public comment about the goal is 0%.
What the Constitution speaks to is again disproportionate advantage.
So that 0% threshold.
Remember the Federal Court has found a Federal Court found our current maps in Michigan were heavily partisan gerrymandered.
And they used both political and election data to achieve that result.
Again the goal is to have that as low as possible but without sacrificing the other criteria.
And I'm sorry please excuse the delay.
The other thing I know that Dr. Handley highlighted when she was with us last week, and I wanted to up lift again is that the data that is in the active matrix we are looking at with the draft plans that the Commission is currently working on, these are projected election results.
So in the League of Women Voters versus Benson case I was highlighting the other day, those results and those fairness measures were based off of actual elections that the Plaintiffs used to prove partisan gerrymandering.
So I wanted to make sure and make that distinction once again.
But the Commission again is adhering to the constitutional criteria as written and will continue to do so.
Thank you.

>> CHAIR SZETELA: General Counsel, could you clarify for me what kind of the bumpers are we are looking for? I don't believe lopsided margin was one of the ones considered by the League of Women Voters and is there a range we should be looking for you can direct us on what is legally permissible I thought it was negative six up to five for mean median but what is the range for efficiency gap and if there is anything for lopsided margins as well.

>> MR. MORGAN: While they are discussing that for a moment, I wanted to point out I saved the plan with today's date version one CD so that is what we will be running these on and at the end of the day or whenever you choose to, we will upload this to the website.

>> CHAIR SZETELA: Thank you and if you want to go ahead and run that report while she is responding and we are sorting this out that would be helpful.

So because we do not currently have that on our agenda if we want to, I mean my understanding is Dr. Handley has done some additional analysis on partisan fairness and she would desire to bring it before us.
We would need a motion to amend our agenda to add that on to allow it.
>> COMMISSIONER WITJES: Make our motion to allow Dr. Handley to speak.
>> CHAIR SZETELA: Motion made by Commissioner Witjes seconded by Commissioner Lett is there any debate or discussion on the motion? All right hearing none we have a motion to amend the meeting agenda to allow additional presentation by Dr. Handley to continue her analysis of partisan fairness.
All in favor please raise your hand and say aye.
All opposed please raise your hand and say nay.
So we will just give her a second to get logged on and we will get started with her additional analysis and data.
Good evening, Dr. Handley please proceed when you are ready.
>> DR. LISA HANDLEY: Can you hear me?
>> CHAIR SZETELA: Yes, we can.
>> DR. LISA HANDLEY: Can I share my screen?
>> VICE CHAIR ROTHHORN: Yes, please.
Okay your legal staff asked for some direction in terms of what are acceptable scores.
And as I mentioned to you when I was there, there are no bright line acceptable scores.
But I quickly went through the Court cases and the literature today.
And I thought I would try and give you some sort of idea, mostly about the scores that courts considered high enough to reject the plans.
And determined that they were a partisan gerrymander at least in part on these scores.
And that will give you an idea of at least what is too high.
Almost going to point to a couple things in the literature what the developers of these scores have said these things are too high.
If that is amenable.
There is only six slides I think it will take me ten minutes I know you all are tired but does that sound like a plan?
>> CHAIR SZETELA: That sounds fantastic.
>> DR. LISA HANDLEY: Okay let me do this, there are four cases in which I can clearly identify some of the partisan measures that we have been talking about.
So there was a challenge to the 2011 Congressional plan in Ohio and this is the site for the case of Ohio and full of Randolph institute versus householder and these are the scores that the Court case, the opinion itself identify.
So I don't have access to the actual expert reports presented to the Court by the expert witnesses.
So this is a little spotty.

But these are the efficiency gap scores for the Congressional plan and the mean median scores for the Congressional plan when they cited them.
As you know the core as I think I mentioned the Court determined that this plan, the Congressional plan was a partisan gerrymander.
Now, let me add a caveat to this.
And this is an existing plan.
So these are -- this was an existing plan when it was challenged it was 2018, they had Congressional elections to look at.
So this is not the composite score that we are dealing with because we are dealing with plans in the future, predicting what could happen.
But these are actual Congressional election scores.
And this is what the Court determined was too high.
Of course I'm going to leave you with the PowerPoint so you have reference to the scores but here are some scores they thought were too high.
Here is a Pennsylvania challenge.
And this was also a challenge to Congressional plans.
This is the League of Women Voters of Pennsylvania and these are some of the scores I found in the Court case.
We have seats votes, so for example in 2012, in terms of the Congressional elections 50.8% of the votes went to democratic candidates and they garnered 27.8% of the seats.
In 2014, it was 44.5% of the vote.
27.8% of the seats.
2016, 45.9%.
Also getting 27.8%.
The mean median over the entire period this was challenged between 2016 and 2018 which I don't have 2018 scores.
You can see it's 5.9.
And you can see that the efficiency scores range from 15 to 24.
So these were considered too high by the Court and they did find that this Congressional plan was an unconstitutional partisan gerrymander.
Now, as the -- as your lawyers will explain to you, of course all of this is irrelevant with the more recent Supreme Court case.
But this is when the Court is considering these kinds of measures as relevant to partisan gerrymandering.
Okay, let's see if I can figure out how to Page down.
Here is the Wisconsin challenge to the state assembly plan.
You can see the seats votes ratios 51.4% of the vote got them 39.4% of the seats.
You can see the efficiency gaps, 13.3 and 10 points.
The Wisconsin Court held this was an unconstitutional gerrymander.

So returned and again this was challenged apparently before they were in 2016 contests.
So these would be scores that are on the high side.
Okay, now here is the Michigan case.
And these I gathered from the case itself.
This was a challenge to all three plans.
The Congressional plan, the State Senate and the State House plan.
And these are the scores that were recorded in the opinion.
So you can see you got a seats votes ratio where I did this very quickly.
I might have copied that over and that might be from a slide earlier.
Yeah, it is.
Okay the seats votes ratio there is incorrect.
It's maybe it's not.
Any way so there are your efficiency gap scores and the mean median scores and again all three plans were declared to be partisan gerrymanders.
So these are the kinds of scores that got the plans in trouble.
Now this again looks at the actual election results but for comparison sake I took the existing or current plan and I analyzed them using the composite score index that we are using.
And this is what I found, so the current plan would yield the following seats with the ratio you can see it's 52, no, again this is the statewide vote.
I think that John and I talked to you about this, it's a composite score and the same across the state 52.3 in Congress that produced 35.7% of the seats in the State Senate 44.7.
In the State House, the picture is blocking it, oops, 45 something.
Let's see.
45.5%.
Efficiency gap, 21.2 in Congress 10.9 in State Senate, 11.6 in the State House.
The mean median difference 5.5, 5.1, 6.1, I should say all of these are in favor of the republicans.
In fact, every score that I've given you so far has been in favor of the republicans.
So I didn't put pluses and minuses.
It just meant the difference favored the republicans.
The lopsided margins are 13.1 Congress.
8.6 in State Senate.
And 10.1 in the house.
And then I just have one more slide where I'm going to talk about what some of the authors of or developers of these scores have said.
So Stephanopoulos and efficiency gap argued that any that 8% threshold and said any efficiency gap, 8% or above should be considered presumptively unconstitutional.

Now, I don't believe that the Wisconsin Court with this was argued accepted this argument.
But that's what they argued.
Simon Jackman, an expert who does these kind of cases, and, in fact, showed up in all of the cases that I just described to you argued that 7% should be considered legally significant.
And the reason was that his research showed him he started out the decade with 7%. You would control all of the seats no matter what happened in terms of the votes for the rest of the decade that is how he came up with 7.
So this is what I just pulled together very, very quickly.
But I wanted to give you some idea of what might be typical because I did not do that when I was there before and I guess you might be struggling with that.
And so if you have any questions, I'd be happy to answer them if I could.
>> CHAIR SZETELA: All right let me look around the room here thank you Dr. Handley.
Commissioner Orton?
>> COMMISSIONER ORTON: Well, I just really appreciate this information. It does help know what we're looking at when we are trying to figure out where we should be.
So I can't remember the exact numbers of our plans that we went over, but they are better than this.
>> MS. JULIANNE PASTULA: Madam Chair, for the benefit of Dr. Handley who I know is engaged in other meetings today, first thank you for your time.
And the information and the clarifications.
But also to let Dr. Handley know that none of the plans that the MICRC has put through have come close to those numbers whether they were Benson numbers that we had in the state or the out state numbers that provide additional clarity so that is very good news for the Commission indeed.
>> CHAIR SZETELA: Any additional comments? Questions, Commissioner Eid, can you also identify where you are dialing in remote from?
>> COMMISSIONER EID: Yes, hello I've returned I'm remotely attending from Detroit, Michigan.
>> CHAIR SZETELA: Go ahead with your question Mr. Eid?
>> COMMISSIONER EID: This is kind of a legal question or more about interpretation of the law question.
And please let me know if it's hard to hear me my mouth is a little numbed up right now so if it is let me know.
Did any of these states where these cases happened have like a rule on the book that says there should be a disproportionate advantage like how we do here now in Michigan?

>> DR. LISA HANDLEY: Several of them do now but Ohio did not at the time.
I know that part.
Wisconsin did not.
They use the state Constitution but they used grounds like equal protection.
And I think the lawyers are going to have to expand on that.
But I don't believe that any of them had anything akin to what you have now.
But I think that at least one of them and maybe two of them now do.
>> CHAIR SZETELA: Go ahead General Counsel.
>> MS. JULIANNE PASTULA: So first of all I agree with Dr. Handley.
I don't recall either that, I know Ohio for sure now does as well.
But I don't believe even the disproportionate advantage language, what the numbers that are being presented demonstrate.
They are demonstrating what is considered a partisan gerrymander.
And again we've had Supreme Court cases since that time that again indicate that the Federal courts will not entertain these types of cases but I think that these numbers are still extremely useful benchmarks for the Commission.
And really the disproportionate advantage speaks more to in contrast with the competitive criteria or proportionality criteria of how the balance is evaluated.
And so I think what we are looking at here speaks a little bit differently to those.
I'm not sure if one of the states had the disproportionate advantage that based on the way the cases would be brought, we would use the information any differently.
>> CHAIR SZETELA: Commissioner Rothhorn?
>> VICE CHAIR ROTHHORN: Lisa, I'm thinking about the lopsided margins.
I don't think we got any sort of numbers for lopsided and that is okay I just want to make sure there is no sort of target area in particular for lopsided.
We just have for if mean median efficiency gap and the seats votes.
>> DR. LISA HANDLEY: That's correct.
The issue came up indirectly.
And in at least two of the cases but they didn't actually produce a different score.
They didn't look at the difference in the winning margins.
But didn't produce an actual score.
So it is something that is considered relevant by the courts but I'm afraid I could not give you any measures.
And it's a little bit complicated because of the need if voting is polarized as it is in many places in Michigan to draw districts that will provide minorities with an opportunity to elect candidates of choice.
Those tend to be heavier democratic districts than might otherwise be the case.
>> VICE CHAIR ROTHHORN: Thank you so should we also just consider primarily the mean median efficiency and seats votes? Is that also what I'm hearing you say?

Because we have a target area, we should focus on those? Or can you help us understand if we should use the lopsided margin.
I know why we have it in our mix.
I'm just wondering if you can help us sort of understand how we might continue to use it or potentially just have it lesser of the priority so to speak.

>> DR. LISA HANDLEY: The lopsided margin is half of the efficiency gap, right, so the efficiency gap looks at how many wasted votes there are, that is how many votes in surplus of what it takes to win and how many votes you lose by.
So it's essentially half of the efficiency gap.
And it helps you identify areas where you have packed democrats.
And, again, to me it's an easy place to start.
But there is always the caveat of the minority opportunity districts.
But the reason that I suggested we put it in there is number one the cases did all at least two of them did refer to them just in a different sort of way.
And it's an easy place to start.

>> VICE CHAIR ROTHHORN: Thank you.
That's helpful.

>> CHAIR SZETELA: Commissioner Lange or Commissioner Wagner have any comments because I can't see them just want to make sure they are good.

>> COMMISSIONER LANGE: I'm good thank you.

>> CHAIR SZETELA: Are there any additional questions for Dr. Handley? All right if not thank you very much for this presentation, Dr. Handley.
I would very much appreciate it if you could send it to our Executive Director so she can circulate it out to everybody so we have it.
I know we are all frantically scribbling while you are talking but helpful to have a hard copy.
Thank you very much for taking the time and popping in.
I know you are very busy they and appreciate you working on this for us.

>> DR. LISA HANDLEY: Very good. Good-bye.
Have a good night.

>> CHAIR SZETELA: All right so at this point I think we are going to go back to the mapping that we were doing and we left off with.

>> VICE CHAIR ROTHHORN: Okay.

>> CHAIR SZETELA: We left out with Commissioner Orton and now we are going to MC.

>> VICE CHAIR ROTHHORN: All right and I think we were trying to figure out I think we are going to go with look at the maps and we are staying with the V RA compliance and we are looking and north of Detroit area in the Saginaw area right where you landed us, thank you, John.
So Flint area, 2726.

>> COMMISSIONER WITJES: That's true but if you were to make changes disregarding communities of interest first, you're just going to have to change it back afterwards to comply with the communities of interest.
So why do it in that order?
>> VICE CHAIR ROTHHORN: Commissioner Lett?
>> COMMISSIONER LETT: Well, theoretically at least when we drew these districts, we considered communities of interest.
>> COMMISSIONER CLARK: That's correct.
>> COMMISSIONER LETT: We did not go down to the precinct level necessarily on communities of interest.
We did it as a District.
So we have done all that.
Now we are to the point of having to deal with partisan fairness.
That's where we are at in the process.
We did populations, number one, we packed I don't know what number two is.
Communities of interest and partisan fairness so we have to deal with partisan fairness.
If we get all that done and want to go back then and tweak our communities of interest, I think that would be appropriate.
>> COMMISSIONER CLARK: I agree.
>> COMMISSIONER LETT: But we have to do one or the other at one time.
>> VICE CHAIR ROTHHORN: Go ahead Commissioner Witjes.
>> COMMISSIONER CLARK: I thought the objective was getting our numbers in compliance.
>> VICE CHAIR ROTHHORN: I think Commissioner Witjes and Commissioner Orton bring up the sort of priority and criteria and what Commissioner Lett is trying to address.
>> COMMISSIONER WITJES: I have a question for you General Counsel so if we considered communities of interest while we were drawing the commission maps, and now we are adjusting for partisan fairness, if we split up communities of interest would that be okay to do because we have considered communities of interest before we started messing with numbers to get partisan fairness now?
>> MS. JULIANNE PASTULA: Through the Vice Chair to Commissioner Witjes that is an excellent question and brings us back to tension and conflict with the criteria.
One of the reasons your partisan fairness measures are demonstrating the scores that they are is because the geography of Michigan and the preservation of the communities of interest.
So, yes, if you improve the partisan fairness measures, if you take steps to do that it will impact other criteria.
And that is for the Commission to decide to the extent it wants to do so, if at all.
And, again, make a clear record of why the changes are being made and in the rationale for doing so.

>> COMMISSIONER EID: I mean I think we can do both, respect Communities of Interest and achieve partisan fairness.
In regards to Ann Arbor, Commissioner Szetela, you were speaking about in the Senate configuration for all the maps; is that correct?
>> CHAIR SZETELA: I believe so and I believe in the house too.
I would have to look at individual maps.
>> COMMISSIONER EID: I agreement I think also if we did do that, we heard voices at the Detroit public hearing from the west Bloomfield area that they weren't really happy with being with northern Oakland County and they would rather be with southern Oakland County and that's one of the ways of doing that by changing the configuration of Ann Arbor and you would open more room for that type of configuration.
I really like this debriefing session and I think this is good and I agree with Commissioner Lett that this should keep going.
>> CHAIR SZETELA: Commissioner Lange.
>> COMMISSIONER LANGE: I agree about the keep going but I want to make a point to Doug's point.
In the Constitution it says nothing about the efficiency gap.
We had Dr. Handley give us guidelines that stated if we stayed within a certain range these would be acceptable measures as it says in the Constitution.
So this idea of getting this efficiency gap down to zero, while tearing apart certain areas that have asked to be remained, Communities of Interest, as I've seen, as I've spoken out about, is about acceptable in my opinion and I just wanted to add that on to what Commissioner Clark was saying.
>> CHAIR SZETELA: Commissioner Witjes.
>> COMMISSIONER WITJES: I totally disagree with that statement.
We have to take partisan fairness into account.
It doubt specifically say efficiency gap but it does say we take into furs of fairness --
>> CHAIR SZETELA: So they definitely fall within the criteria of things we have to consider.
>> COMMISSIONER LANGE: Can I get legal counsel to comment on that so that I have a clear understanding, then?
>> CHAIR SZETELA: General Counsel did you follow what was just said?
>> MS. JULIANNE PASTULA: Thank you so much Madame Chair.
Good morning.
Yes, Commissioner Lange that was an accurate statement that those have been accepted by the courts.
>> CHAIR SZETELA: Commissioner Lange did you have a follow-up?
>> COMMISSIONER LANGE: That's not my question.
My question is as far as the reading of the Constitution, do we have to get the efficiency gap as close to zero to the Constitution.

>> CHAIR SZETELA: Just to clarify, that's not what I said and I didn't suggest that.

>> MS. JULIANNE PASTULA: Certainly and that's an excellent question Commissioner Lange and I'm sorry I didn't answer that first but I did agree with the summary of the Chairperson.

Based on accepted measures of partisan fairness the Commission cannot provide a disproportionate advantage.

There is no language mandating zero political bias.

It is again not to give disproportionate advantage based on those accepted measures of partisan fairness which are expert identified the measures that have been accepted by the courts and offered to the Commission for its use.

And, again, it's disproportionate advantage are the keywords.

Is that helpful, Commissioner Lange?

>> COMMISSIONER LANGE: Yes, it is.

Thank you.

>> CHAIR SZETELA: Commissioner Clark, did you have a response to that?

>> COMMISSIONER CLARK: I do.

The Constitution doesn't use the words efficiency gap but we hired a consultant and asked for her advice and Dr. Handley offered us a number of ways to measure partisan fairness and one of those being the efficiency gap and she explained to us the significance and how it's been used in the courts and how they've looked at it.

I think in my opinion what Dr. Handley has given us is an acceptable number for us to actually measure partisan fairness and I know there's other approaches but she got it down to four of the simplest and ones that have been used in the courts and I think we should accept that and move forward even though verbiage doesn't say specifically efficiency gap or any other criteria she identified for us.

I have the utmost respect for Dr. Handley and her advice to us regarding this matter.

Thank you.

>> CHAIR SZETELA: Thank you Commissioner Clark.

Commissioner Orton.

>> COMMISSIONER ORTON: I'm not sure the thought is still here.

So okay.

After all that was said, Dr. Handley did analyze our collaborative maps and she was impressed that was done without any partisan fairness work at all.

That was what we came up with using the top three criteria and she said there was probably room for a little improvement and we've gotten guidance on that.

We have made improvement.

And I think as we -- I don't know how to say it -- but started chasing that zero efficiency gap, it all kind of got a little imbalanced and we were just chasing that to get that lower when that was kind of Commissioner Lett's saying -- we were chasing the perfect and messing up the good.

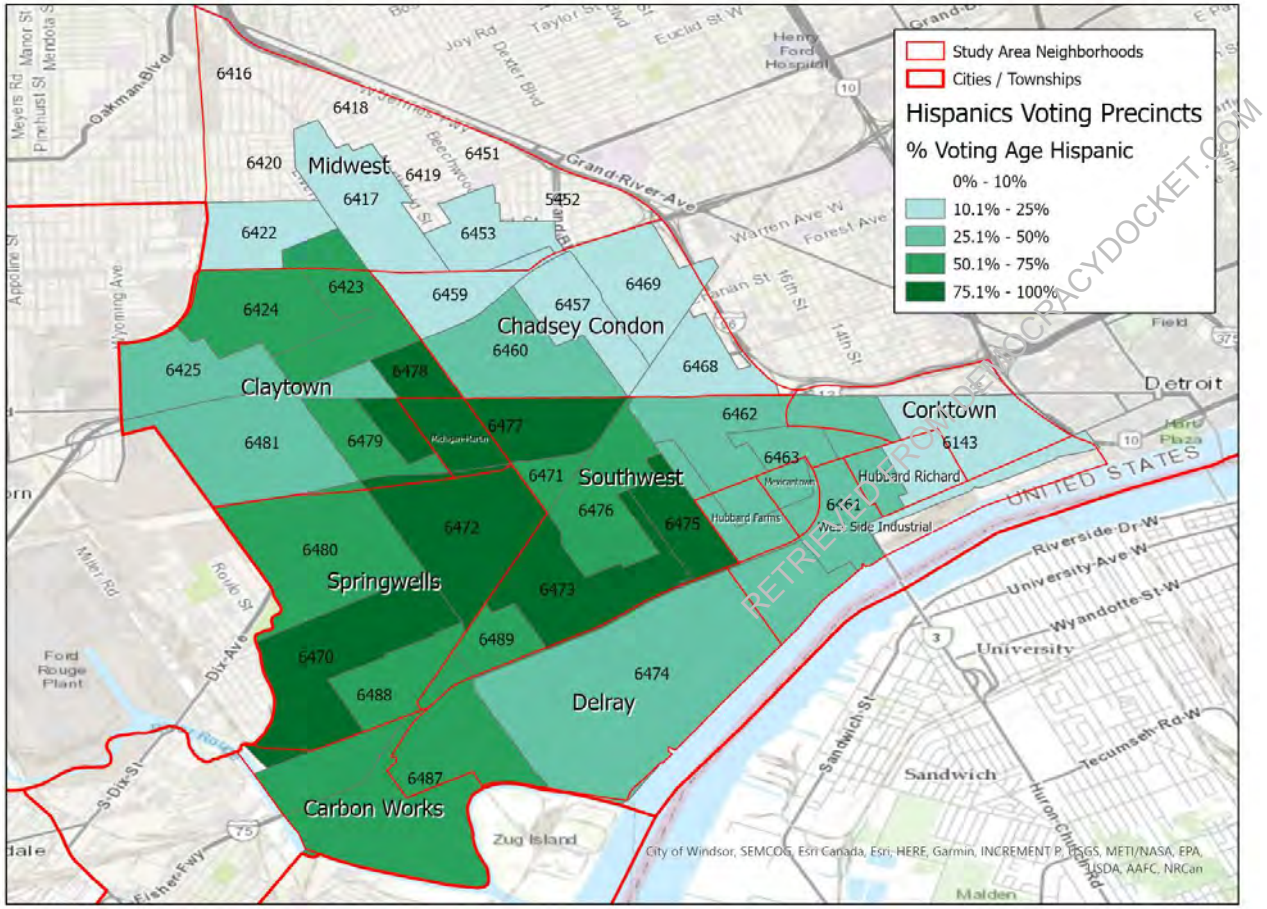
I think we need to take all of those measures.
There's the seat vote count and I would say that's the most important, that number.
We take all of those measures into account and not keep chasing the zero and cutting up all the good work that we did in the communities.
>> CHAIR SZETELA: All right.
Any additional comments? Okay.
So-so we've sort of dealt with the metro Detroit area.
Do we want to move on to Lansing area? Any thoughts about Lansing? Commissioner Eid?
>> COMMISSIONER EID: I heard a few things in Lansing.
Overall they seemed quite happy with our Congressional maps and that included the Tri County maps.
By my account was Birch and Juniper and those both have the arrangement of District five.
So this was probably the most positive feedback I've heard of all of our Public Hearings.
As far as the house Districts, I heard a lot of people saying we should unpack the Lansing area.
There was a lot of mention of unpacking Lansing into five Districts instead of the current four that we have.
With you also heard a lot of comment outpost map as in regard total Battle Creek and Albion.
There was a few comments to that and there were a few that wanted Kalamazoo to be with Battle Creek.
That's what I heard.
>> CHAIR SZETELA: Commissioner Clark.
>> COMMISSIONER CLARK: I heard one other thing and that's dealt Township in the Eaton area that I believe they wanted or expected those to be together.
So I think that's one we should add to the list.
Thank you.
>> CHAIR SZETELA: Commissioner Rothhorn and then Commissioner Orton.
>> VICE CHAIR ROTHHORN: This is where the Native American -- band of Potawatomi were giving us maps and asking us to shift and I have not had a chance to look at those but I have had a chance to look at the five maps and that those were drawn by Chris Andrews and he had given Public Comment here a couple of times.
I drew it, I tried to draw it and my computer crashed and my software doesn't preserve it and it's unfortunate.
It does preserve a lot of the Counties.
We have Communities of Interest. Whatever we're doing, there are Counties that are getting quote unquote carved up and it's just real sort of dilemma to make it better and I think we have to decide if it's worth it, so to speak, and then, again, that has to do with

Voting Patterns of Select Minority Groups in Michigan

Dr. Lisa Handley

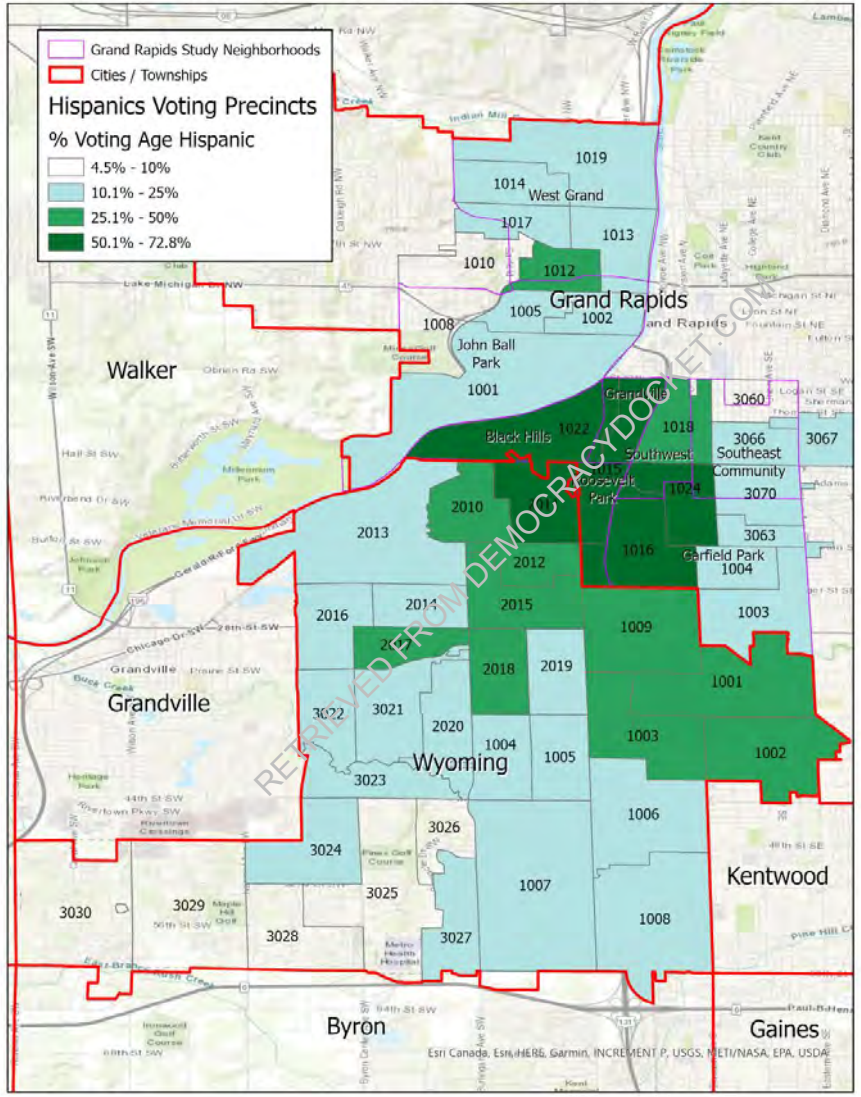
Hispanic voting patterns: Detroit area

Areas included in Analysis of Voting Patterns - Hispanics (Detroit)



Detroit area			Estimates for Hispanics	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	75.4	76.0
Donald Trump	R	W	24.3	23.9
others			0.3	0.2
votes for office			*13.9*	*14.8*
U.S. Senate				
Gary Peters	D	W	73.6	74.8
John James	R	W	22.6	21.9
others			3.8	3.2
votes for office			*13.5*	*14.6*
2018 General				
Governor				
Gretchen Whitmer	D	W	83.1	80.0
Bill Schuette	R	W	15.3	14.8
others			1.5	1.8
votes for office			*3.5*	*5.1*
Secretary of State				
Jocelyn Benson	D	W	84.0	82.6
Mary Treder Lang	R	W	14.4	13.5
others			1.7	14.0
votes for office			*3.3*	*4.4*
Attorney General				
Dana Nessel	D	W	80.1	78.9
Tom Leonard	R	W	16.4	15.2
others			3.4	3.7
votes for office			*3.4*	*4.8*
U.S. Senate				
Debbie Stabenow	D	W	82.5	82.2
John James	R	W	16.4	17.1
others			1.3	0.0
votes for office			*3.3*	*4.5*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	55.5	58.5
Shri Thanedar	D	A	13.6	12.7
Gretchen Whitmer	D	W	30.8	28.7
votes for office			-2.0	1.0

Hispanic voting patterns: Grand Rapids area

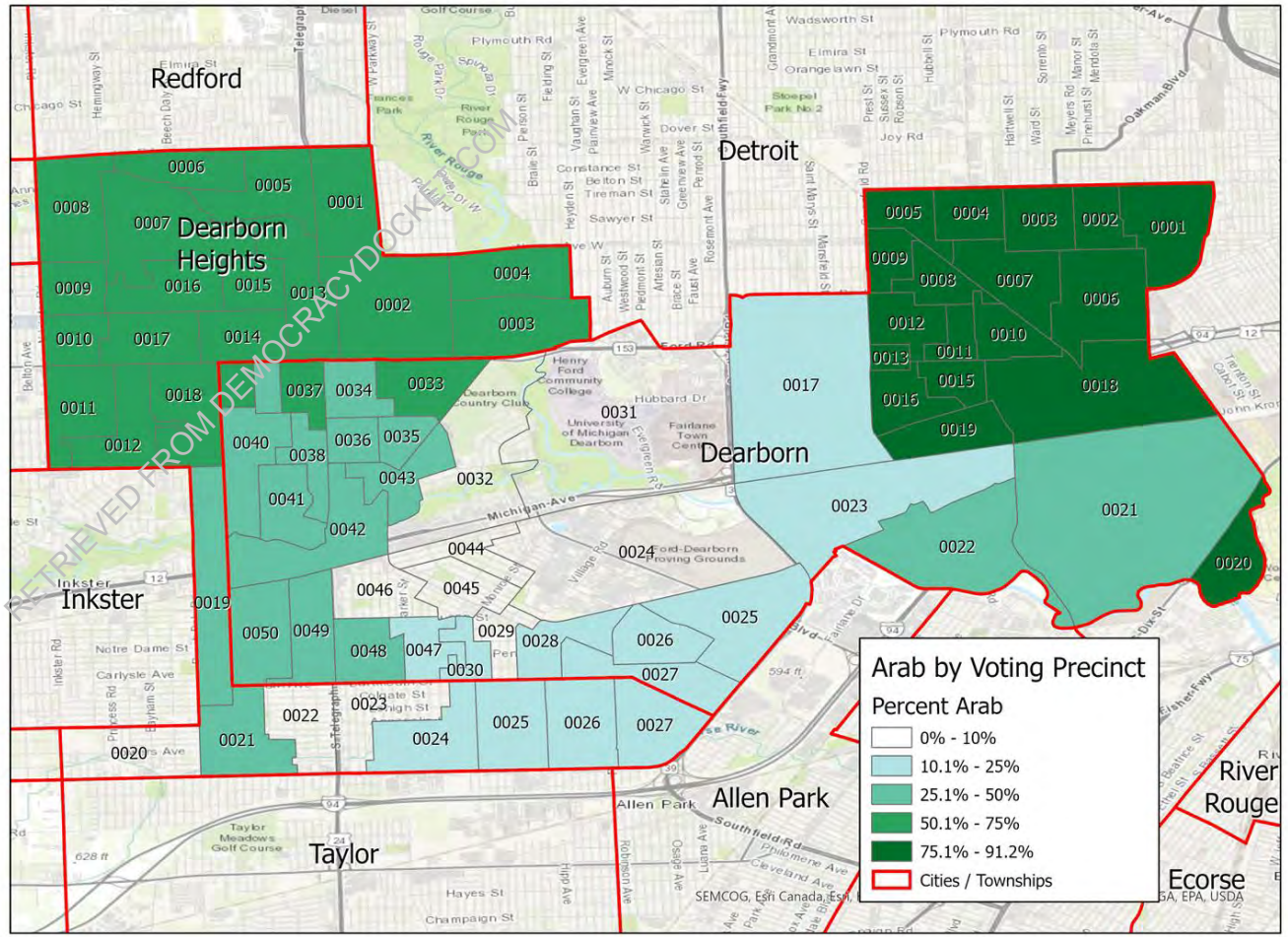


Grand Rapids area			Estimates for Hispanics	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	98.6	94.8
Donald Trump	R	W	0.5	0.1
others			1.0	1.3
votes for office			*0.0*	*8.6*
U.S. Senate				
Gary Peters	D	W	96.1	93.3
John James	R	W	-1.6	3.2
others			5.3	9.2
votes for office			*0.0*	*7.3*
2018 General				
Governor				
Gretchen Whitmer	D	W	99.5	95.0
Bill Schuette	R	W	-4.5	1.6
others			5.6	6.1
votes for office			*-9.0*	*1.1*
Secretary of State				
Jocelyn Benson	D	W	102.1	97.0
Mary Treder Lang	R	W	-5.3	1.1
others			3.3	6.9
votes for office			*-9.0*	*0.3*
Attorney General				
Dana Nessel	D	W	97.2	93.1
Tom Leonard	R	W	-6.4	1.2
others			9.3	9.8
votes for office			*-9.0*	*0.8*
U.S. Senate				
Debbie Stabenow	D	W	97.2	93.2
John James	R	W	-3.4	2.0
others			6.2	10.4
votes for office			*-9.0*	*1.1*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	51.1	51.3
Shri Thanedar	D	A	39.8	42.4
Gretchen Whitmer	D	W	8.9	11.9
votes for office			-2.3	0.1

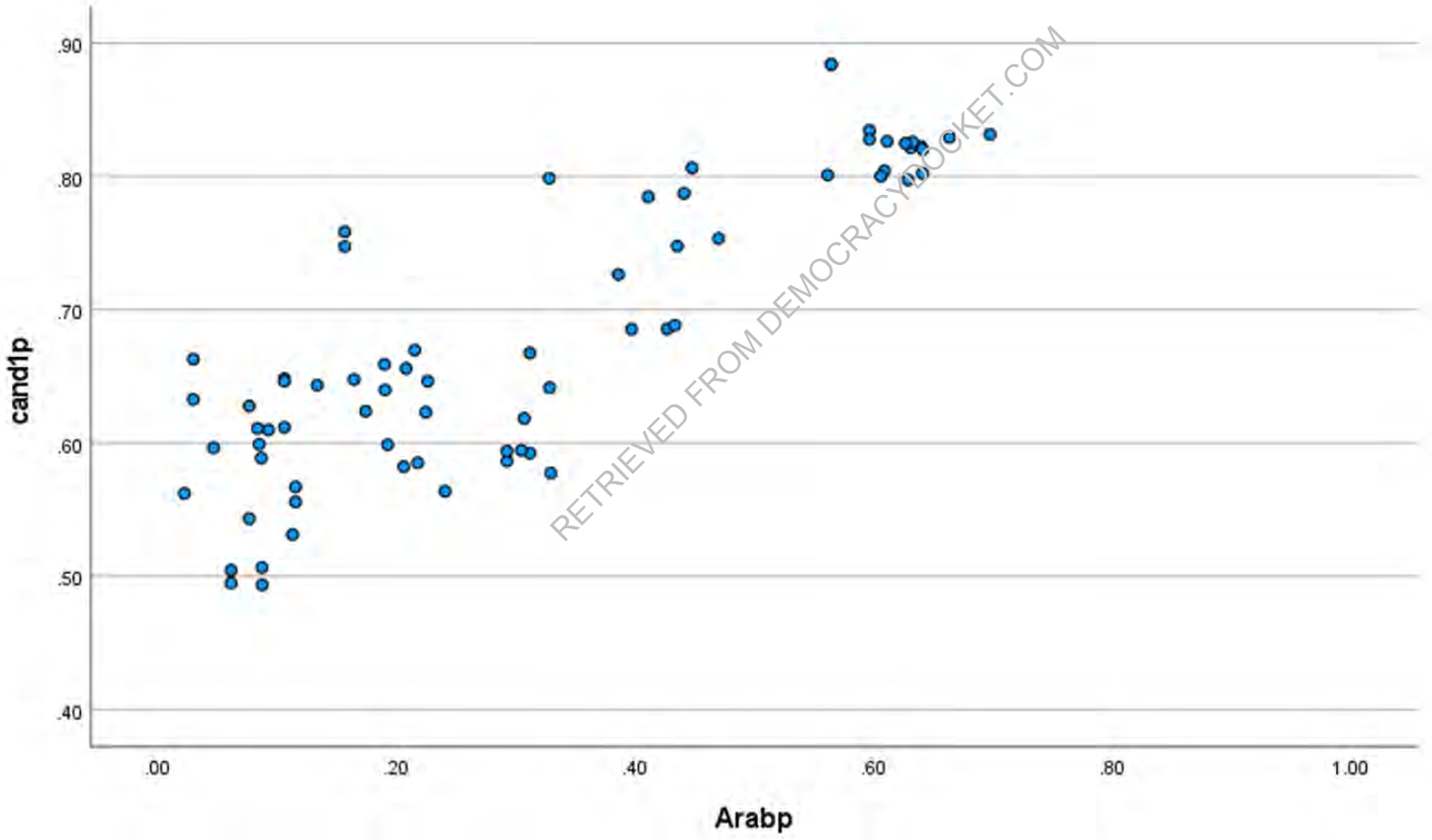
Arab American voting patterns

			Estimates for Arab Americans	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	98.3	98.9
Donald Trump	R	W	1.3	0.8
others			0.6	1.0
votes for office			*24.1*	*26.7*
U.S. Senate				
Gary Peters	D	W	100.7	99.0
John James	R	W	-2.9	0.8
others			2.1	2.1
votes for office			*22.2*	*24.9*
2018 General				
Governor				
Gretchen Whitmer	D	W	103.9	99.3
Bill Schuette	R	W	-6.2	1.1
others			2.5	2.1
votes for office			*8.6*	*10.3*
Secretary of State				
Jocelyn Benson	D	W	104.7	99.3
Mary Treder Lang	R	W	-6.3	0.9
others			1.7	1.7
votes for office			*8.5*	*9.8*
Attorney General				
Dana Nessel	D	W	106.8	99.5
Tom Leonard	R	W	-8.0	0.6
others			1.3	1.3
votes for office			*8.6*	*10.1*
U.S. Senate				
Debbie Stabenow	D	W	107.2	99.1
John James	R	W	-9.0	1.1
others			1.9	1.9
votes for office			*8.4*	*10.0*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	116.4	92.8
Shri Thanedar	D	A	-0.3	0.2
Gretchen Whitmer	D	W	-16.0	0.6
votes for office			15.0	15.1

Areas included in Analysis of Voting Patterns - Arabs in Dearborn/Dearborn Heights

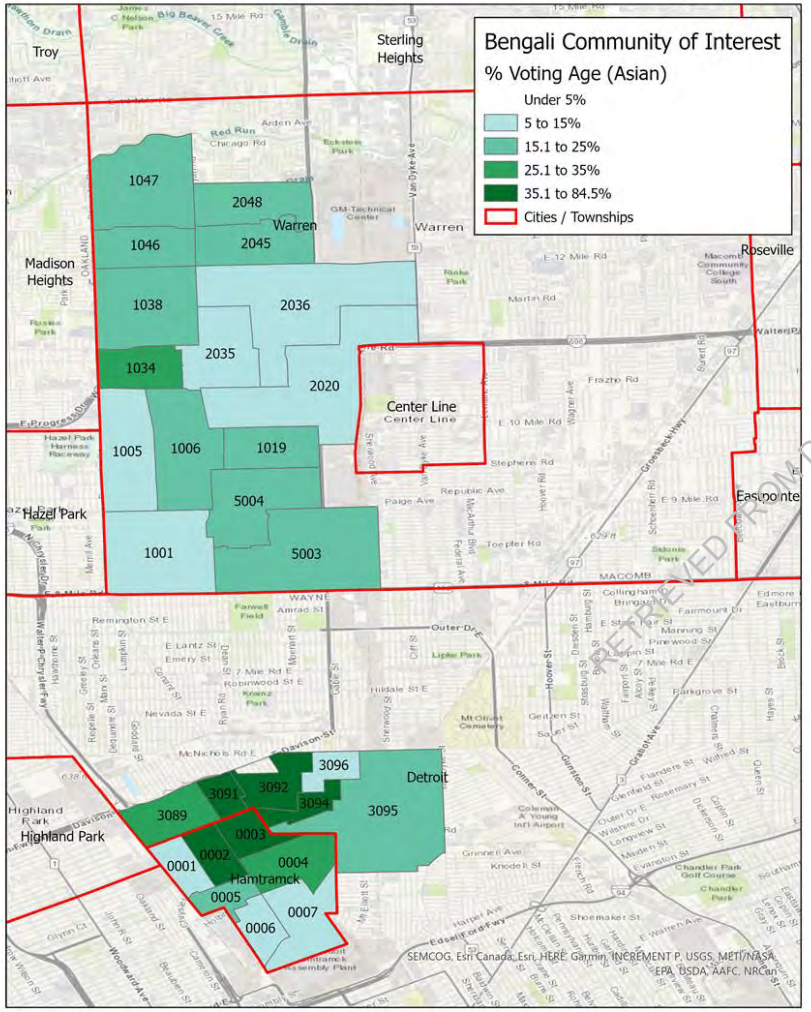


Scatterplot of proportion Arab American and proportion of votes for Biden in 2020



Bengali American voting patterns

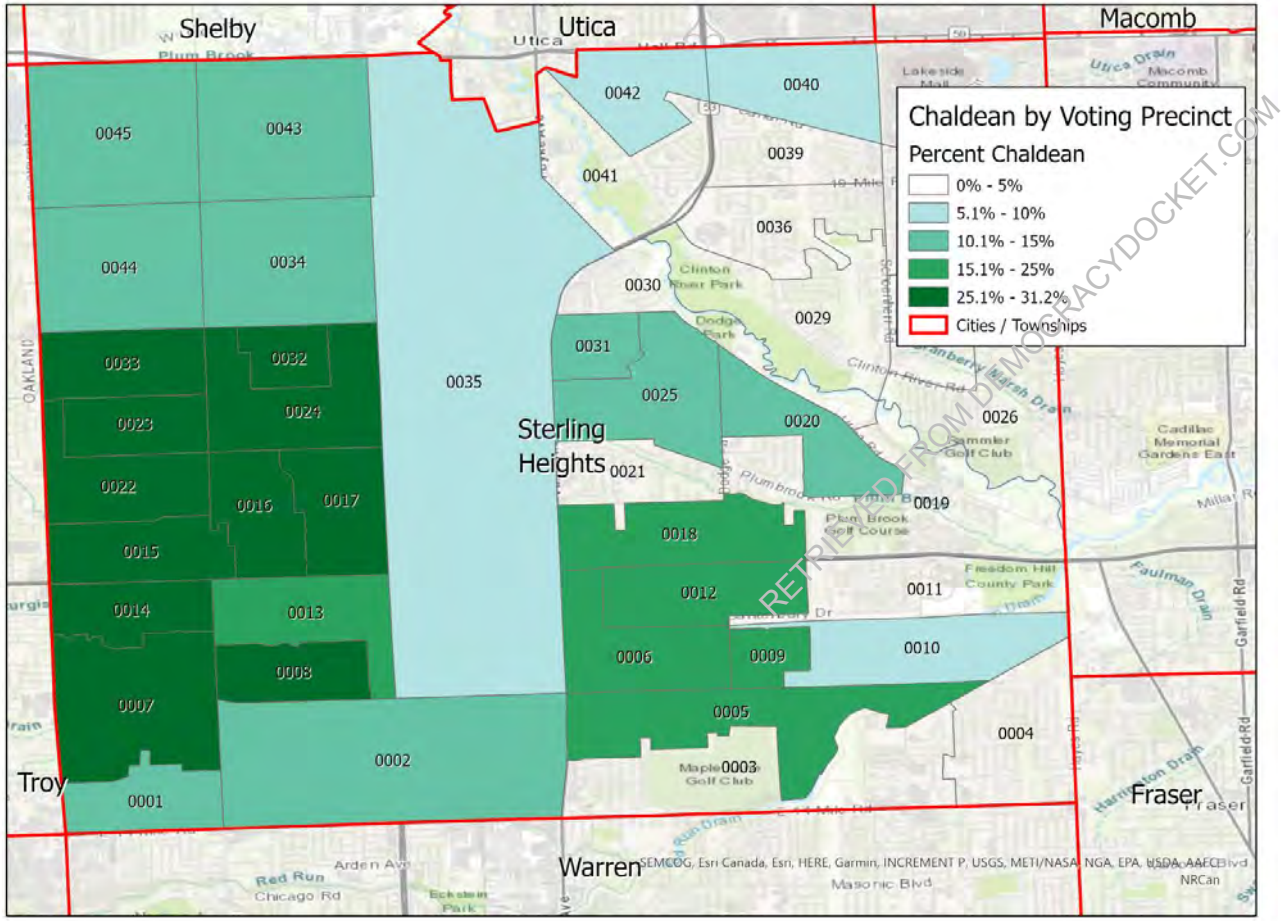
Areas included in Analysis of Voting Patterns - Bengali Language



			Estimates for Bangladeshi Americans	
	Party	**Race**	**ER**	**EI 2x2**
2020 General				
U.S. President				
Joseph Biden	D	W	104.7	96.1
Donald Trump	R	W	-4.4	3.2
others			0.1	0.1
votes for office			*31.6*	*25.2*
U.S. Senate				
Gary Peters	D	W	104.4	96.2
John James	R	W	-5.2	3.3
others			0.9	1.1
votes for office			*31.6*	*24.6*
2018 General				
Governor				
Gretchen Whitmer	D	W	105.7	99.1
Bill Schuette	R	W	-7.4	1.1
others			1.1	1.1
votes for office			*13.7*	*18.7*
Secretary of State				
Jocelyn Benson	D	W	105.7	98.9
Mary Treder Lang	R	W	-7.1	1.3
others			2.5	2.4
votes for office			*13.9*	*19.3*
Attorney General				
Dana Nessel	D	W	107.5	98.2
Tom Leonard	R	W	-8.0	0.7
others			2.3	2.3
votes for office			*13.8*	*19.2*
U.S. Senate				
Debbie Stabenow	D	W	107.1	99.1
John James	R	W	-7.7	0.9
others			1.7	0.7
votes for office			*13.9*	*18.4*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	98.8	97.3
Shri Thanedar	D	A	6.5	5.1
Gretchen Whitmer	D	W	-5.2	4.5
votes for office			16.4	14.7

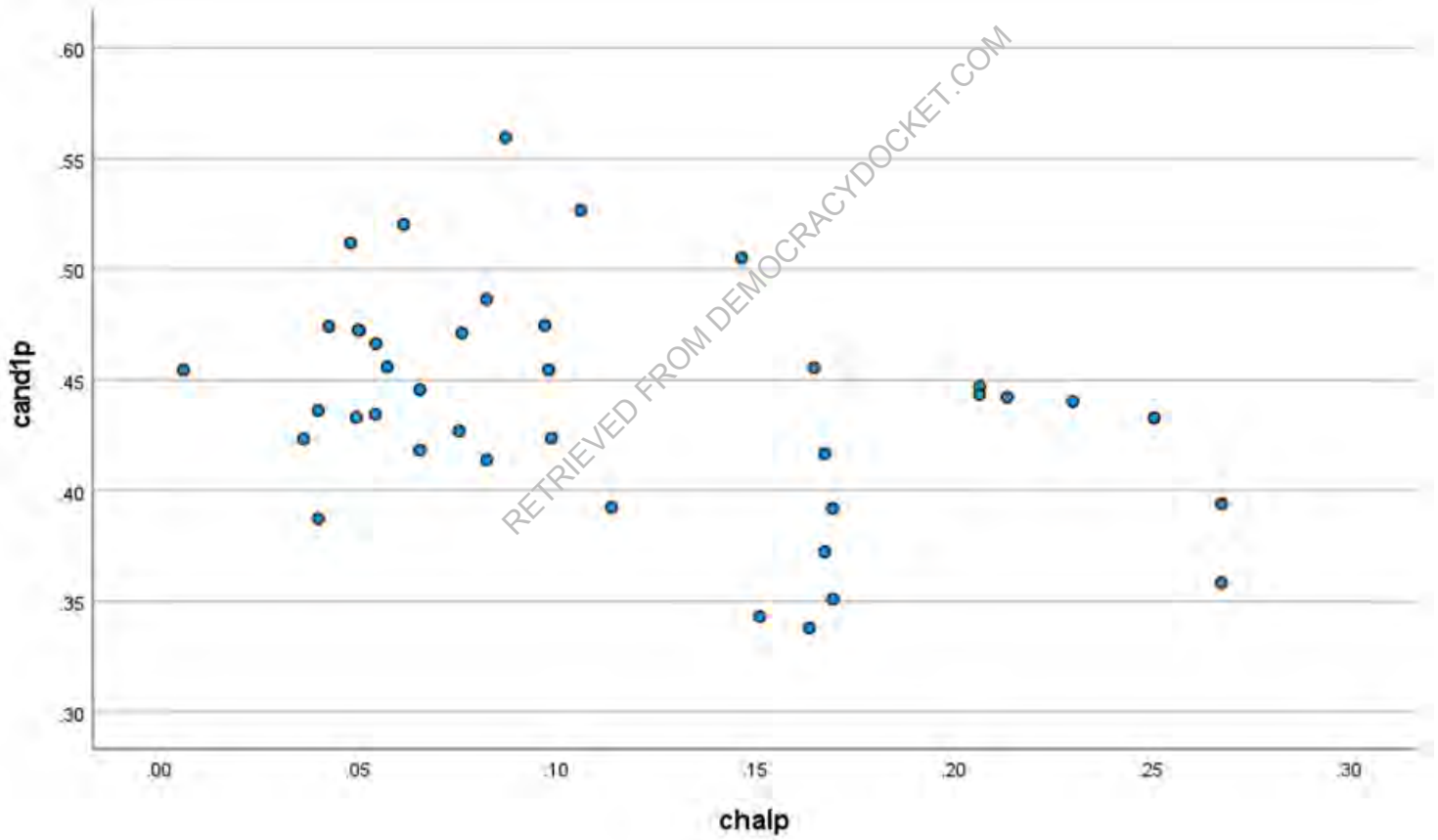
Chaldean voting patterns

Areas included in Analysis of Voting Patterns - Chaldeans in Sterling Heights



			Estimates for Chaldeans	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	19.5	20.5
Donald Trump	R	W	81.9	80.3
others			-0.8	2.0
votes for office			*31.2*	*29.6*
U.S. Senate				
Gary Peters	D	W	26.3	26.2
John James	R	W	74.0	72.8
others			-0.6	0.2
votes for office			*27.9*	*27.2*
2018 General				
Governor				
Gretchen Whitmer	D	W	52.9	48.9
Bill Schuette	R	W	47.9	47.4
others			0.2	8.0
votes for office			*-12.2*	*0.0*
Secretary of State				
Jocelyn Benson	D	W	55.3	53.7
Mary Treder Lang	R	W	44.7	42.0
others			0.4	7.9
votes for office			*-10.8*	*0.3*
Attorney General				
Dana Nessel	D	W	52.5	48.0
Tom Leonard	R	W	47.4	47.4
others			0.4	0.1
votes for office			*-10.3*	*2.5*
U.S. Senate				
Debbie Stabenow	D	W	55.2	55.6
John James	R	W	43.2	44.0
others			0.7	0.9
votes for office			*-11.4*	*0.4*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	50.1	*na*
Shri Thanedar	D	A	11.2	*na*
Gretchen Whitmer	D	W	38.7	*na*
votes for office			-1.1	0.1

Scatterplot of proportion Chadlean and proportion of votes for Biden in 2020



>> CHAIR SZETELA: All right let's do that.
>> MR. KENT STIGALL: To 32.
>> CHAIR SZETELA: Uh-huh. Then I think to kind of keep that east-west split we currently have, I want to bring 28 down into that area of 25 that is coming underneath it.
>> MR. KENT STIGALL: This area.
>> CHAIR SZETELA: Does that work Anthony?
>> COMMISSIONER EID: How about we bring up the data from yesterday that has a map that Dr. Handley identified as being Chaldean? Then use that? Somebody have that map.
>> CHAIR SZETELA: It was e-mailed to everybody today.
>> MR. KENT STIGALL: I'm not everybody. You're not everybody and you are not good with that. It shows Chaldean being the west side of Sterling Heights with a little bit trickling over.
>> COMMISSIONER EID: Kind of reflects them out.
>> MR. KENT STIGALL: 23 is the destination and why don't we get 23 population right and you can work it all out in there. Or does that make sense.
>> CHAIR SZETELA: Trying to add 20,000 to 23 which we do across the border of 25.
>> MR. KENT STIGALL: Not much room.
>> CHAIR SZETELA: Let's start grabbing.
>> MR. KENT STIGALL: I don't know how you want to achieve that.
>> CHAIR SZETELA: Start grabbing the eastern edge of 25.
>> VICE CHAIR ROTHHORN: So 23 is not our Chaldean District so we want to grab the non-Chaldean sort of areas is that fair to say?
>> CHAIR SZETELA: Cross one bridge at a time and just start there. All right so that is 15,000.
>> MR. KENT STIGALL: It needs more than that.
>> CHAIR SZETELA: Grab that one in.
>> MR. KENT STIGALL: That is 20,000.
>> CHAIR SZETELA: Grab one Branch under Sterling Heights.
>> MR. KENT STIGALL: 23 right there is the number we need.
>> CHAIR SZETELA: We only need 20,000 I was looking at 28 go ahead and assign that.
>> MR. KENT STIGALL: Yes, so let me do this.
>> CHAIR SZETELA: We have to fix the balance between 25 and 28.
>> MR. KENT STIGALL: And 25 looks to me if this is the Chaldean community in here looks like it's going to be now 25.
>> CHAIR SZETELA: What I'm thinking although it's going to cut in a little to the Chaldean community, we bring 25 through Utica and over and bring 28 down unless you can think of something else and we can grab more of Sterling Heights.

>> COMMISSIONER EID: I would take that part of Sterling heights that kind of in between 28 and 25 right now right where it says Sterling Heights on the map where it's displayed add on 25 that precinct and a couple of those precincts.

>> CHAIR SZETELA: Yep so, the yellow areas that are currently in between like the dis-contiguities basically.

>> MR. KENT STIGALL: I'm just going to highlight it and you all say if that is the correct look. That is 7,000 in 25 is that what was suggested.

>> VICE CHAIR ROTHHORN: 7,000 in 25.

>> CHAIR SZETELA: Go ahead and assign that. Pull out and take a look a little bit.

>> MR. KENT STIGALL: Looking at this little bit of area.

>> CHAIR SZETELA: That's what I'm thinking. Into 44 if you realize 28 is getting cutoff.

>> COMMISSIONER EID: Add that to Utica into 25. Any thoughts.

>> CHAIR SZETELA: Try it. Make it more of a.

>> MR. KENT STIGALL: That is 13,000. So you still need more.

>> CHAIR SZETELA: Go ahead and add it.

>> VICE CHAIR ROTHHORN: Based on Dr. Lisa Handley the Chaldean is largely in District 28 so I think we are it's pretty good.

>> MR. KENT STIGALL: I think it's getting transferred into 25.

>> CHAIR SZETELA: The bulk of it is. All right. So right now we are at 9,000 under in 25 and we are -- I'm very confused.

>> MR. KENT STIGALL: 3,000 over in 28.

>> CHAIR SZETELA: Take a little more from 28 and what you have 3,000 right there.

>> MR. KENT STIGALL: 3680, yes.

>> CHAIR SZETELA: So go ahead and assign that and then we will see where we are at.

>> MR. KENT STIGALL: 28 is good but 23 could give up a little more.

>> COMMISSIONER EID: Why don't we add some of those precincts go precinct at a time and add to 28 because 28 needs a little more. 25 has a little less. So try to normalize those a little bit.

In fact, do you see that bottom right District that is currently in 28? Let's put that in 25.

Now, the edge you just made put some of that into 28. The question is which precincts.

>> MR. KENT STIGALL: Or you can split this precinct. Most of the population up here will be over here.

>> CHAIR SZETELA: You are cutting off Warren, and that creates another problem and you can't do it.

>> COMMISSIONER EID: Any preferences for what precincts to go from 25 to 28?

>> COMMISSIONER KELLOM: I do not, that is why I have not said anything. I don't have a preference as of right now.

Kent, would you mind sharing your screen again. And I think what we wanted to do is rather than have this hole in the middle of Flint can we for District 26 select all of Flint and see what the numbers are with that? .

>> MR. KENT STIGALL: I don't know if that is all of Flint proper, but.

>> CHAIR SZETELA: Still under by 6,000.

>> MR. KENT STIGALL: Under by 6,000, 54.96 non-Hispanic black and 57 is under by 10 and probably 100,000 people that need to be reassigned.

>> CHAIR SZETELA: All right so.

>> MR. KENT STIGALL: That may be more than Flint and I don't know.

>> CHAIR SZETELA: So can we start if that makes sense to everybody in the area around that little arm that is coming out, select that Township around so we don't have that how many people are in the area.

>> MR. KENT STIGALL: The hammer.

>> CHAIR SZETELA: The little hammer there.

>> COMMISSIONER CLARK: I believe that is a reservoir.

>> CHAIR SZETELA: Cursley.

>> MR. KENT STIGALL: That precinct is 1200 and but it's here.

>> CHAIR SZETELA: The area around it would that be logical with Flint since we need 6,000 more people? .

>> MR. KENT STIGALL: That area is 2600, 2500.

>> CHAIR SZETELA: Do we want to put on the thematic dots or which ones do we have? Those are Hispanic, yes.

>> MR. KENT STIGALL: Shall I assign it to 26.

>> CHAIR SZETELA: What does everybody think any thoughts? We can look at other areas can we put back on the African/American thematic dots and a Township around the little hammer Kent go ahead and assign it

>> COMMISSIONER WITJES: I would.

>> CHAIR SZETELA: It's part of Flint but it's just odd.

>> VICE CHAIR ROTHHORN: West to 27.

>> CHAIR SZETELA: Grab the precinct right underneath that has a pretty high like what is that little precinct underneath.

>> MR. KENT STIGALL: 2600 but 34 percent.

>> CHAIR SZETELA: Would we want to do that? That is going to.

>> VICE CHAIR ROTHHORN: My memory is that Burton said they are a separate City from Flint.

>> CHAIR SZETELA: So Commissioner Witjes?

>> COMMISSIONER WITJES: This could be a question for Bruce. Wouldn't this be packing the City of Flint?

>> MR. BRUCE ADELSON: Thank you for your question. The responding to the request from the community, from the public hearing and my recollection is that most of

the community both Black and white wanted the City as a whole to be part of one District for the purpose of electing a Flint resident to represent them. Regardless of candidate of choice. And regardless of race. This was a community of interest concern from the folks in Flint.

>> COMMISSIONER WITJES: Correct couldn't you make the, well, wouldn't that still technically then be a violation if they say do it any way isn't that still a violation of the Voting Rights Act? Because what would be to stop someone from let's say the UP filing a complaint against what we are doing here because they are saying that we are packing the Black voting age population into one particular area.

>> MR. BRUCE ADELSON: Let's talk about that a little bit. That is in addition to concerns from the community that were not Voting Rights Act based. That is as you recall Dr. Handley's analysis. The percentage at which the Black VAP percentage was 40-45%. So that has been achieved. The additional population is not connected to being able to elect candidates of choice. It's a response to community concern. Yes, someone can claim that this is packing. But the record of this Commission shows 100% the other way. So I could give you examples of redistricting bodies where they did talk about packing explicitly. But that's one of the key differences. And it's an important difference. Because that's not what this is about. This is about uniting a community in response to community -- exactly community-based concerns. Thank you.

>> CHAIR SZETELA: Commissioner Rothhorn?

>> VICE CHAIR ROTHHORN: Where Kent is right now mount Morris, I do remember them suggesting they do want to be part of Flint. They are a suburban area part of Flint. So I mean if we want to add population heading towards north towards mount Morris again because of the community of interest it may be a good choice.

>> CHAIR SZETELA: So where he was north you meant what he just highlighted or what he has highlighted now.

>> MR. KENT STIGALL: I'm bopping around looking at stuff for everybody to look at. No, I had this highlighted.

>> CHAIR SZETELA: I see where you're talking about.

>> VICE CHAIR ROTHHORN: Up to mount Morris.

>> MR. KENT STIGALL: That area more or less if you want to be more inclusive and just do all with that area.

>> VICE CHAIR ROTHHORN: And do we.

>> CHAIR SZETELA: That is 8,000.

>> VICE CHAIR ROTHHORN: Thank you Mr. Stigall we have the City of Flint and around the reservoir.

>> CHAIR SZETELA: We can take it back off because it's just 2000 people if we want to go to mount Morris, we can take that off because there is no.

>> VICE CHAIR ROTHHORN: I think it makes sense to keep it around the reservoir.

>> CHAIR SZETELA: Commissioner Orton?

>> CHAIR SZETELA: Can we just put it back in 50? That should solve that error.
>> MR. KENT STIGALL: Yes.
>> CHAIR SZETELA: If you can just put that into 23.
>> MR. KENT STIGALL: Okay.
Deviation now is below 5%.
>> CHAIR SZETELA: Can we scroll out so everybody can see what I did.
>> MR. KENT STIGALL: What we looking at.
>> CHAIR SZETELA: The Ann Arbor so people can see around Ann Arbor. A little further west there you go. I just broke up Ann Arbor a little differently broke it in four and then tried to bring in that east Asian I'm sorry east Ann Arbor Asian community. Went up into Brighton. And I mean, any comments, thoughts, questions? I'm sure they will be and Brighton will be. Can we run the partisan fairness and see if it makes a difference? Commissioner Eid?
>> COMMISSIONER EID: Check the Asian American demographic population in 23.
>> CHAIR SZETELA: I did not Commissioner Curry?
>> COMMISSIONER CURRY: We had comments this morning saying they did not want Ann Arbor split especially four ways. They didn't want it split. I don't know how they were going to keep them on but someone made a comment that they did not want Ann Arbor split.
>> MR. KENT STIGALL: This plan has the lopsided Madam Chair the lopsided margin is 5.3% in favor of republicans.
>> CHAIR SZETELA: Okay.
>> MR. KENT STIGALL: The mean median is 2.7% in favor of republicans. The efficiency gap is 4.3 percent in favor of republicans.
>> CHAIR SZETELA: Okay.
>> MR. KENT STIGALL: Seats to votes ratio is .5% and the democrats have the seats 57-53.
>> CHAIR SZETELA: Okay so by comparison the base plan, the lopsided margins is 5.7, we have 5.3 here. The mean median is 2.9 on the base plan we have 2.7 here. The efficiency gap is 5.4 on the base and this is 4.3 here. And then the seats vote is, was 56-51 with a negative 1.4 positive 1.4 lean. This one is 57 over 53 with a negative half percent over positive half percentage favoring republicans. It improved all the metrics which is what I thought it would do Commissioner Witjes?
>> COMMISSIONER WITJES: Lopsided of the mean median again.
>> CHAIR SZETELA: Uh-huh bless you.
>> MR. KENT STIGALL: Lopsided margin 5.3% in favor of republicans. Mean median difference MMD, is 2.7% favoring republicans.
>> CHAIR SZETELA: Commissioner Witjes?
>> COMMISSIONER WITJES: Since I do it all the time and the numbers are decent, I believe this map be moved forward to the 45 day public comment period.

>> COMMISSIONER KELLOM: Second.

>> CHAIR SZETELA: We have a motion by Commissioner Witjes, seconded by Commissioner Kellom to move this map forward for the 45 day public comment period. Is there any discussion or debate? Commissioner Eid?

>> COMMISSIONER EID: Well I think we should check more numbers before we do that. We like how we did for the base map we should check 2020, 2018 and 2016 to see what that does. I was going to mention now this configuration of the map is almost identical in partisan fairness measurements to the Pine version five map that we adopted yesterday. So I think we should make that comparison as well to that Pine map before we vote.

>> MS. JULIANNE PASTULA: Madam Chair.

>> CHAIR SZETELA: General Counsel.

>> MS. JULIANNE PASTULA: Thank you so much Madam Chair. For clarity can you identify the map name being advanced by motion.

>> CHAIR SZETELA: Magnolia1.1 but prefer to change it if we are going to advance it so I don't know if we do that now or we do that later. General Counsel do we do that now or later the name change or go with Magnolia1.1 for now and change it.

>> MS. JULIANNE PASTULA: That is entirely up to the discretion of the Commission and Mr. Stigall may have an opinion on that.

>> CHAIR SZETELA: Yes.

>> MR. KENT STIGALL: What the Commission has been doing so far if a plan passes to be published, it gets you know a tree name.

>> CHAIR SZETELA: Okay.

>> MR. KENT STIGALL: Before we were using names and digits and dates and then as it carried forward so if this passes then I would change it. Otherwise it doesn't matter.

>> CHAIR SZETELA: Okay all right so do we want to run other numbers or do we want to just go ahead and vote?

>> COMMISSIONER CURRY: The numbers.

>> CHAIR SZETELA: More numbers so let's do the Trump Biden race. Can we do this or the motion first?

>> MS. JULIANNE PASTULA: Madam Chair, the individual members have to be recognized to call the question so if you want to recognize the Commissioner Witjes. My comment was going to be you have a motion made by Commissioner Witjes seconded by Commissioner Kellom on the table to move Magnolia1.1 or what name the Commissioner will choose move the map to 45 day public comment, move that map be published for the 45 day public comment period is on the table and pending.

>> CHAIR SZETELA: We should not look at other numbers right now? Is that accurate?

>> MS. JULIANNE PASTULA: Correct.

>> CHAIR SZETELA: Let's go ahead Commissioner Lett call the question. Commissioner Witjes called the question I thought it was Commissioner Lett. All in favor of advancing this map to the 45 day public comment.

>> COMMISSIONER WITJES: Roll call.

>> CHAIR SZETELA: Is there more discussion or debate on the motion.

>> COMMISSIONER CURRY: Are we running the numbers Madam Chair.

>> CHAIR SZETELA: General Counsel is telling us that is not appropriate at this point.

>> MS. JULIANNE PASTULA: To clarify the motion can be withdrawn or amended but what I'm saying as it stands now you have a motion to forward this map to the table so if the Commission would like to do something different, a motion to amend to get more numbers could be made. The motion could be withdrawn. The motion could be modified. There is a variety of options before the Commission at this point. I was merely pointing out that you do have a pending motion.

>> CHAIR SZETELA: Thank you General Counsel.

>> COMMISSIONER LETT: I have a question.

>> CHAIR SZETELA: Yes.

>> COMMISSIONER LETT: General Counsel wouldn't it be part of discussion if members wanted to compare the numbers prior to the vote?

>> MS. JULIANNE PASTULA: Through the Chair to Commissioner Lett the Commissioner could certainly continue that conversation if it chose. But the discussion and debate is on the base the actual motion is whether to move the map forward or not. So again talking about the fairness numbers and that might be seen as an extension of the actual motion. But the motion is to adopt not to examine further.

>> COMMISSIONER LETT: I understand that but I think the discussion from the Commissioners is to take a look at those before the vote. So are you.

>> CHAIR SZETELA: Does anyone object to that? If no one objections I say run the numbers the data is good, right, okay so this is the 2020 election.

>> MR. KENT STIGALL: 2020 election between president Biden and former president Trump. So the lopsided margin is 5% favoring republican. The mean median difference is 2.4% favoring republican. And the efficiency gap is 5.2% favoring republican. And the proportionality bias is 2.3% favoring republicans with the republicans having 56 and the democrat having 54 seats.

>> CHAIR SZETELA: Okay can we look at 2016? .

>> MR. KENT STIGALL: Yes. Wasn't there a 28? 2016 is Clinton and former president so lopsided margins in 2016 Presidential election.

>> CHAIR SZETELA: 5.6.

>> MR. KENT STIGALL: 5.6 favoring republicans mean median difference 3.7 favoring republicans. Efficiency gap is 9.2%. Favoring republicans. Proportionality

bias was 8.1% favoring republicans with republicans winning having 64 seats and the democrats 46 seats.

>> CHAIR SZETELA: Okay and then can we run the 2018 Whitmer Schuette election? .

>> MR. KENT STIGALL: Lopsided margin 6.4% favor of republicans. The mean median difference is 1.8% favoring republicans. The efficiency gap was .5% favoring republicans. The seats to votes favored the democrats by proportionality bias 5.5% in favor of democrats. Number of seats favor democrats 66-44.

>> CHAIR SZETELA: For comparison purposes can we bring up was it Pine three that we advanced? .

>> MR. KENT STIGALL: Pine five.

>> CHAIR SZETELA: Okay Pine five. I don't think we ran all this analysis on Pine five before we adopted it. We only did the composite so we have more data so can we just is this the composite for Pine five that you have? That would be the only one we had on it.

>> MR. KENT STIGALL: I believe it is.

>> CHAIR SZETELA: Composite for Pine five is efficiency gap of 5.3. And let's look at the mean median.

>> VICE CHAIR ROTHHORN: Lopsided margin.

>> CHAIR SZETELA: I misspoke.

>> MR. KENT STIGALL: I will run it again and have it sitting in front of you.

>> CHAIR SZETELA: Okay.

>> MR. KENT STIGALL:

>> CHAIR SZETELA: You are running this again for Magnolia.

>> MR. KENT STIGALL: 1.1.

>> CHAIR SZETELA: Okay.

>> MR. KENT STIGALL: Magnolia1.1 is above Pine V5 they have the same lopsided margin of 5.3%.

>> CHAIR SZETELA: Okay.

>> MR. KENT STIGALL: Same mean median difference of 2.7%.

>> CHAIR SZETELA: Okay.

>> MR. KENT STIGALL: The efficiency gap is the same for both at 4.3%. And they have the same proportionality bias of .5% favoring the democrats favoring the republicans with the democrats having 57-53 seats for republicans.

>> CHAIR SZETELA: Do we need to see more or they are identical. Any other discussion or debate? Let's go ahead and vote again Mr. Eid?

>> COMMISSIONER EID: Sorry guys, lot to say today evidently. Getting some laughs, huh? So I just I don't know what the rush is, right. This map whatever we are going to call it it's just a slight improvement over the previous one. So why have both? Right. And my only fear is we are going to keep improving it which we should do try to

keep improving it if we can but we will have a whole bunch of maps what are everyone's thoughts? Are we going to retract Magnolia one and only have this one? Are we going to have both of them? You know in my eyes it's the same map just slightly improved. The data shows it is very slightly improved. It's about .1 to .3 on the…every measure respective of the election years they are in. For example let's just take 2020 Presidential election 5.1 to 5.0. We take the that is for lopsided margins and for efficiency gap wait I'm sorry it goes 5.3 to 5.2 so again that is a .01 change so it's pretty much the same. All of the seats to votes ratios for each election were also the same. So again I just don't know how many maps we want to have. It's just a slight improvement over the previous configuration.

>> CHAIR SZETELA: Commissioner Orton and I can address it. Commissioner Clark.

>> COMMISSIONER ORTON: Well I think this was done for partisan fairness reasons. It does make a very slight change but it does not make a slight change to some of these areas. It's some significant change to a few areas so I don't see the harm in putting it out there and getting public comment on both ways.

>> CHAIR SZETELA: Commissioner Clark?

>> COMMISSIONER CLARK: I'm not looking at it from a data perspective. I'm looking at it from a community of interest perspective. Ann Arbor now is split three ways. And you really feel that they are going to accept that very well? In Brighton? You may, I don't.

>> CHAIR SZETELA: Working there you know spending a lot of time there, yeah, I don't think so.

>> COMMISSIONER CLARK: And I think Dustin had some concern over Brighton being changed as well. So I'm kind of looking at it from that perspective. And like Anthony indicated you know the numbers are basically the same as one of the other maps. So I think that's what we have to take into account when we vote. That as well as the numbers.

>> CHAIR SZETELA: So what I would say on that is Pine version five which is the first map we approved does have the same metrics. However, Pine version five does not include the changes to Detroit. So this map includes the changes to Detroit and then alters the Ann Arbor area to achieve the same numbers we originally had with Pine verse five. So I think this is an improvement because we are keeping those Detroit changes that the people in Detroit spoke so eloquently about wanting. And also maintaining the partisan fairness balance we had with the Pine version five. So I think this is improvement and it is different and I think it's worthy of submitting to the public for their consideration because I think people wanted changes this Detroit but I think people also want partisan fairness. We've heard about both. So this is giving them both. All right let's vote do you want to do a roll call?

>> COMMISSIONER WAGNER: Madam Chair this is Commissioner Wagner, I have a point of clarification because I'm on audio.
>> CHAIR SZETELA: Go ahead.
>> COMMISSIONER WAGNER: What did we do with Livingston County in the map.
>> CHAIR SZETELA: It is split.
>> COMMISSIONER WAGNER: Thank you.
>> CHAIR SZETELA: This is the only map we split Livingston County into three. All right Sarah Reinhardt can you go ahead and call the roll call vote?
>> MS. SARAH REINHARDT: Commissioners, please indicate your support of the motion with a yes or a no. I will call on Commissioners in alphabetical order starting the Brittini Kellom?
>> COMMISSIONER KELLOM: Yes.
>> MS. SARAH REINHARDT: Rhonda Lange?
>> COMMISSIONER LANGE: No.
>> MS. SARAH REINHARDT: Steve Lett?
>> COMMISSIONER LETT: Yes.
>> MS. SARAH REINHARDT: Cynthia Orton?
>> COMMISSIONER ORTON: Yes.
>> MS. SARAH REINHARDT: MC Rothhorn?
>> VICE CHAIR ROTHHORN: Yes.
>> MS. SARAH REINHARDT: Rebecca Szetela?
>> CHAIR SZETELA: Yes.
>> MS. SARAH REINHARDT: Janice Vallette?
>> COMMISSIONER VALLETTE: Yes.
>> MS. SARAH REINHARDT: Erin Wagner?
>> COMMISSIONER WAGNER: No.
>> MS. SARAH REINHARDT: Richard Weiss?
>> COMMISSIONER WEISS: Yes.
>> MS. SARAH REINHARDT: Dustin Witjes?
>> COMMISSIONER WITJES: I have to say no.
>> MS. SARAH REINHARDT: Doug Clark?
>> COMMISSIONER CLARK: Yes.
>> MS. SARAH REINHARDT: Juanita Curry?
>> COMMISSIONER CURRY: Yes.
>> MS. SARAH REINHARDT: Anthony Eid?
>> COMMISSIONER EID: Yes.
>> MS. SARAH REINHARDT: By a vote of 10 yes to 3 no, the motion carries.
>> CHAIR SZETELA: All right. So considering we have adopted moving this forward for the 45 day public comment period I want to rename it hickory. I library it. It's strong. Produces delicious nuts, what is not to like? If you are ever in a survival situation you

Report to the Michigan Independent Citizens Redistricting Commission

Dr. Lisa Handley

Preface

This report outlines the analyses I conducted on behalf of the Michigan Independent Citizens Redistricting Commission (MICRC) and relays my findings. I also briefly explain the partisan fairness measures I advised the MICRC to adopt as a component of the redistricting software and why I made these recommendations. The legal implications of my findings and the assessment of any proposed plans have been left to the MICRC legal team.

I. The Voting Rights Act and Racially Polarized Voting

The Voting Rights Act of 1965 prohibits any voting standard, practice or procedure – including redistricting plans – that result in the denial or dilution of minority voting strength. Section 2 of the Voting Rights Act was amended in 1982 to establish that intentional discrimination need not be proven (as the Supreme Court determined was required under the 15th Amendment to the Constitution). The U.S. Supreme Court first interpreted the amended Act in *Thornburg v. Gingles*,[1] a challenge to the 1982 North Carolina state legislative plans. In this case the U.S. Supreme Court held that plaintiffs must satisfy three preconditions to qualify for relief:

- The minority group must be sufficiently large and geographically compact to form a majority in a single-member district
- The minority group must be politically cohesive
- Whites must vote as a bloc to usually defeat the minority-preferred candidates

What do we mean when we say minority voters must be politically cohesive? And how do we know if white voters usually vote as a bloc to defeat the candidates preferred by minority voters? According to the Court, racially polarized voting is the "evidentiary linchpin" of a vote dilution claim. Voting is racially polarized if minorities and whites consistently vote for different candidates. More specifically, if minorities consistently support the same candidates, they are said to be politically cohesive. If whites are consistently *not* supporting these candidates, they are said to be bloc voting against the minority-preferred candidates.

[1] 478 U.S. 30 (1986).

The Voting Rights Act requires a state or local jurisdiction to create districts that provide minority voters with an opportunity to elect their candidates of choice if voting is racially polarized and the candidates preferred by minority voters usually lose. If districts that provide minority voters with the opportunity to elect their preferred candidates already exist, these must be maintained.

A. Analyzing Voting Patterns by Race

An analysis of voting patterns by race serves as the foundation of two of the three elements of the "results test" as outlined in *Gingles*: a racial bloc voting analysis is needed to determine whether the minority group is politically cohesive; and the analysis is required to determine if whites are voting sufficiently as a bloc to usually defeat the candidates preferred by minority voters. The voting patterns of white and minority voters must be estimated using statistical techniques because direct information the race of the voters is not, of course, available on the ballots cast.

To carry out an analysis of voting patterns by race, an aggregate level database must be constructed, usually employing election precincts as the units of observation. Information relating to the demographic composition and election results in these precincts is collected, merged and statistically analyzed to determine if there is a relationship between the racial composition of the precincts and support for specific candidates across the precincts.

Standard Statistical Techniques Three standard statistical techniques have been developed over time to estimate vote choices by race: homogeneous precinct analysis, ecological regression, and ecological inference.[2] Two of these analytic procedures – homogeneous precinct analysis and ecological regression – were employed by the plaintiffs' expert in *Gingles*, have the benefit of the Supreme Court's approval in that case, and have been used in most subsequent voting rights cases. The third technique, ecological inference, was developed after the *Gingles* decision and was designed, in part, to address some of the disadvantages associated with ecological regression analysis. Ecological inference analysis has been introduced and accepted in numerous court proceedings.

[2] For a detailed explanation of homogenous precinct analysis and ecological regression see Bernard Grofman, Lisa Handley and Richard Niemi, *Minority Representation and the Quest for Voting Equality* (Cambridge University Press, 1992). See Gary King, *A Solution to the Ecological Inference Problem* (Princeton University Press, 1997) for a more detailed explanation of ecological inference.

Homogeneous precinct (HP) analysis is the simplest technique. It involves comparing the percentage of votes received by each of the candidates in precincts that are racially or ethnically homogeneous. The general practice is to label a precinct as homogeneous if at least 90 percent of the voting age population is composed of a single race.[3] In fact, the homogeneous results reported are not estimates – they are the actual precinct results. However, most voters in Michigan do not reside in homogeneous precincts and voters who reside in homogeneous precincts may not be representative of voters who live in more racially diverse precincts. For this reason, I refer to these percentages as estimates.

The second statistical technique employed, ecological regression (ER), uses information from all precincts, not simply the homogeneous ones, to derive estimates of the voting behavior of minorities and whites. If there is a strong linear relationship across precincts between the percentage of minorities and the percentage of votes cast for a given candidate, this relationship can be used to estimate the percentage of minority (and white) voters supporting the candidate.

The third technique, ecological inference (EI), was developed by Professor Gary King. This approach also uses information from all precincts but, unlike ecological regression, it does not rely on an assumption of linearity. Instead, it incorporates maximum likelihood statistics to produce estimates of voting patterns by race. In addition, it utilizes the method of bounds, which uses more of the available information from the precinct returns as well as providing more information about the voting behavior being estimated.[4] Unlike ecological regression, which can produce percentage estimates of less than 0 or more than 100 percent, ecological inference was designed to produce only estimates that fall within the possible limits. However, EI does not guarantee that the estimates for all of the candidates add to 100 percent for each of the racial groups examined.

In conducting my analysis of voting patterns by race in statewide elections in Michigan, I also used a more recently developed version of ecological inference, which I have labeled "EI

---

[3] If turnout or registration by race is available, this information is used to identify homogenous precincts.

[4] The following is an example of how the method of bounds works: if a given precinct has 100 voters, of whom 75 are Black and 25 are white, and the Black candidate received 80 votes, then at least 55 of the Black voters voted for the Black candidate and at most all 75 did. (The method of bounds is less useful for calculating estimates for white voters in this example as anywhere between none of the whites and all of the whites could have voted for the candidate.)

RxC" in the summary tables found in the Appendices at the end of the report. EI RxC expands the analysis so that more than two racial/ethnic groups can be considered simultaneously. It also allows us to take into account differences in the relative rates of minority and white turnout when, as is the case in Michigan, we do not have turnout by race but instead must rely on voting age population by race to derive estimates of minority and white support for each of the candidates.

Database To analyze voting patterns by race using aggregate level information, a database that combines election results with demographic information is required. This database is almost always constructed using election precincts as the unit of analysis. The demographic composition of the precincts is based on voter registration or turnout by race/ethnicity if this information is available; if it is not, then voting or citizen voting age population is used. Michigan does not collect voter registration data by race and therefore voting age population (VAP) by race and ethnicity as reported in the PL94-171 census redistricting data was used for ascertaining the demographic composition of the precincts.[5]

The precinct election returns for the general elections, as well as precinct shape files, census block-to-precinct assignment files,[6] and election results disaggregated to the block level were supplied by the Michigan Secretary of State. The Democratic primary results had to be collected county by county and were either downloaded directly or cut and pasted from pdf files.

Geographic areas Producing reliable estimates of voting patterns by race requires an adequate number of minority and white voters, an adequate number of election precincts, and sufficient variation in the percentage of minority and white voters across the precincts. Only a few counties in Michigan satisfied these conditions, and only for one group of minority voters – Black voters. It was not possible to produce reliable statewide or countywide estimates for Hispanic or Asian voters in Michigan. However, estimates for Hispanics, as well as some additional minority groups, were produced for very localized areas in Michigan and this analysis is discussed below in a separate section entitled "Voting Patterns of Minority Voters other than Black Voters." As a

[5] Since the only minority group sufficiently large enough in the State of Michigan to produce estimates of voting patterns is Black residents and there is not a high non-citizenship rate to account for when conducting the analysis, estimates of citizen voting age population by race were not included in the database.

[6] Shape files and block-to-precinct equivalency files made it possible to account for changes in precinct boundaries, and therefore precinct demographics, over time.

consequence of the three limitations listed above, I was able to reliably estimate the voting patterns of Blacks and whites statewide and in the four counties: Wayne, Oakland, Genesee, and Saginaw.

Elections analyzed All statewide elections held in the State during the preceding decade (2012-2020) were analyzed, both for voters within the state as a whole and in the four counties that had a sufficient number of Black VAP conduct the analysis – Wayne, Oakland, Genesee, and Saginaw. The general elections analyzed included: U.S. President (2012, 2016, 2020), U.S. Senate (2012, 2014, 2018, 2020), and the statewide offices of Governor, Secretary of State, and Attorney General in 2014 and 2018.

Four of these contests included African American candidates:[7] the 2012 presidential election, the 2014 election contest for Secretary of State, and the U.S. Senate contests in 2018 and 2020. Only two of these four contests included African American candidates supported by Black voters, however: Barack Obama in his bid for re-election in 2012 and Godfrey Dillard in his race for Secretary of State in 2014. John James, an African American Republican who ran for U.S. Senate in 2018 and 2020, was not the candidate of choice of Black voters. In addition, two election contests included African American candidates as running mates: the 2018 gubernatorial race in which Garlin Gilchrist ran for Lieutenant Governor and Gretchen Whitmer as Governor, and the 2020 presidential race in which Kamala Harris ran for Vice President. Both sets of running mates were strongly supported by Black voters.

There was only one statewide Democratic primary for statewide office the previous decade: the 2018 race for governor. I analyzed this Democratic primary (as well as congressional and state legislative Democratic primaries) and not Republican primaries because the overwhelming majority of Black voters who choose to vote in primaries cast their ballots in Democratic rather than Republican primaries. As a consequence, Democratic primaries are far more probative than Republican primaries for ascertaining the candidates preferred by Black voters.[8] Moreover, this

[7] Courts consider election contests that include minority candidates more probative than contests that include only white candidates for determining if voting is racially polarized. This is because it is not sufficient for minority voters to be able to elect their candidates of choice only if these candidates are white. On the other hand, it is important to recognize that not all minority candidates are the preferred candidates of minority voters.

[8] In addition, producing reliable estimates for Black voters in Republican primaries would not have been possible.

primary included two minority candidates: Abdul El-Sayed, who is of Egyptian descent, and Shri Thanedar, who is Indian-American.

In addition to these statewide elections, I also analyzed recent congressional and state legislative elections in districts that fell within Wayne, Oakland, Saginaw and Genesee Counties and had a Black VAP that was large enough to produce reliable estimates.[9] Because of the very substantial changes in district boundaries between the current district boundaries and any of the proposed district plan boundaries, these election contests cannot be considered indicative of voting patterns in any proposed districts. However, they are important for at least two reasons. First, although few minority candidates ran for office statewide, there were many who ran in legislative elections, especially in Wayne County. Second, while there was only one statewide Democratic primary conducted over the course of the previous decade, there have been numerous recent Democratic primaries for congressional and state legislative office.

B. Statewide and County Results

Table 1, below, lists the number of statewide election contests that were racially polarized, both for Michigan as a whole, and for each of the four counties considered individually. This tabulation is based on the racial bloc voting summary tables found in Appendix A. The second column indicates the number of contests that included African American candidates that were polarized (over the total number of contests with African American candidates), the third column is the number of statewide general elections (out of the 13 analyzed) that were polarized and the final column reports the results of the only statewide Democratic primary.

Statewide, all election contests other than the 2012 US. Senate race won by Debbie Stabenow were racially polarized. (Her 2018 election contest, however, was racially polarized.) The candidate who obtained the lowest vote percentage statewide was African American candidate for Secretary of State in 2014, Godfrey Dillard. This was because he received less white crossover votes than any other candidate – the percentage of Black voters supporting him was comparable to the percentage of Black voters supporting the other Democratic candidates competing statewide.

[9] In some state house districts, there was not enough whites of voting age to conduct an analysis of voting patterns by race.

Table 1: Number of Statewide Elections Analyzed that were Polarized

	General Elections with Minority Candidates	All Statewide General Election Contests	Statewide Democratic Primary
Statewide	6/6	12/13	1/1
Genesee	5/6	9/13	1/1
Saginaw	6/6	11/13	1/1
Oakland	6/6	13/13	0/1
Wayne	3/6	7/13	1/1

Every statewide general election contest analyzed was polarized in Oakland County – only in the Democratic primary for Governor in 2018 did Black and white voters support the same candidate (Gretchen Whitmer). Voting in Saginaw County was nearly as polarized: two U.S. Senate contests (2012 and 2014) were not polarized, but the gubernatorial primary was polarized. Black and white voters agreed on the same candidates slightly more often in Genesee County – in addition to supporting U.S. senate candidates Debbie Stabenow in 2012 and Gary Peters in 2014, they both supported Barack Obama in 2012 and Democrat Mark Schauer for Governor in 2014.

Voting in Wayne County was considerably less racially polarized than statewide or in the other three counties studied. However, slightly more than half of the general election contests and the one statewide Democratic primary analyzed were polarized, with Black and white voters supporting the same candidates in 2012, disagreeing on the three statewide offices, but supporting the same U.S. Senate candidate in 2014, supporting different candidates for U.S. President in 2016 and 2020, and voting for most of the same candidates in 2018.

C. Congressional and State Legislative Election Results

This section provides a summary of my racial bloc voting analysis of recent congressional and state legislative districts in the four-county area of Wayne, Oakland, Genesee and Saginaw. I analyzed 2018 and 2020 general elections, and the 2018 and 2020 Democratic primaries if at least one African American candidate competed in the election contest. However, for a number of state

legislative elections, there were too many candidates and too few votes cast to obtain reliable estimates. In addition, there were three state house districts – districts 3, 7, 8 – where there were an insufficient number of white voters to produce reliable estimates. The summary tables reporting each of estimates for these contests are found in Appendix B.

Table 2, below, summarizes the congressional district results for congressional districts 5, 9, 12, 13 and 14.[10] In most instances, voting was not racially polarized – in 80% of the general elections and 75% of the contested Democratic primaries analyzed, Black and white voters supported the same candidates. Three of the contests analyzed were, however, polarized. The Black-preferred candidate won two of these contests: Districts 5 and 13 in the 2020 general election. The other polarized contest was the 2018 bid for the Democratic nomination for full two-year term the in District 13. Six candidates competed in this contest, four African American candidates, including the candidate of choice of a plurality of Black voters, Brenda Jones; Bill Wild, a white candidate; and Rashida Tlaib, an American of Palestinian descent. White voters divided their votes between Wild and Tlaib. Tlaib won the nomination with 27,841 votes (31.17%), and Benda Jones came in a close second with 26,941 votes (30.16%).[11]

Table 2: Summary of Congressional District Racial Bloc Voting Analysis

Congress District	Location	Percent BVAP	2018 Democratic primary	2018 General election	2020 Democratic primary	2020 General election
5	Genesee & Saginaw, plus	16.63	no contest	not polarized	no contest	polarized - won
9	Oakland & Macomb	13.83	only white candidates	not polarized	no contest	not polarized
12	Wayne & Washtenaw	11.73	no contest	not polarized	not polarized	not polarized

[10] Congressional District 11, which is also located in the area of interest (Oakland and Wayne), as well as Districts 8 (partially in Oakland) and 4 (partially in Saginaw), had too few Black voters to produce reliable estimates of their vote choices.

[11] A special election for filling the partial term for District 13 – left vacant when John Conyers resigned – was conducted at the same time with many of the same candidates. Brenda Jones won this contest with 32,769 (37.75%) votes; Rashida Tlaib came in second with 31,121 (35.85%) votes.

Congress District	Location	Percent BVAP	2018 Democratic primary	2018 General election	2020 Democratic primary	2020 General election
13	Wayne	54.78	polarized - lost	not polarized	not polarized	polarized - won
14	Wayne & Oakland	55.16	no contest	not polarized	not polarized	not polarized

The results of my analysis recent state senate elections is found in Table 3, below. There were no Democratic primaries in two districts (12 and 27), and no minority candidates competed in a third (District 32). In addition, there was one Democratic primary in which 11 candidates competed – too many to produce reliable estimates. Of the 16 contests analyzed, 10 were not polarized (three primaries and seven general elections), four were polarized but the Black-preferred candidate won (two primaries and two generals), and two were polarized and the candidates of choice of Black voters lost. One of these contests was the general election in District 32, which has only 13.45% BVAP.[12] The other polarized contest that the Black-preferred candidate lost was the Democratic primary in State Senate District 1 in 2018. Six candidates competed in this election. The plurality choice of Black voters was African American candidate, Alberta Tinsley Talabi. A very large majority of white voters supported the Asian candidates, Stephanie Chang, who was the second choice of Black voters. Chang won with 49.8% of the vote (Talabi received 26.4%).

Table 3: Summary of State Senate District Racial Bloc Voting Analysis

State Senate District	Location	Percent BVAP	2018 Democratic primary	2018 General election
1	Wayne	44.68	polarized - lost	not polarized
2	Wayne	50.82	*na* (11 candidates)	not polarized

[12] The Black VAP percentages listed throughout this report are from the MICRC redistricting GIS active matrix tab labeled "5A," which indicates the percentage of non-Hispanic voting age population who indicated they were Black or Black in combination with any other race. This produces the maximum number of individuals within each racial group, including Black, but will result in totals over 100% since persons identifying as more than one race will be counted more than once.

State Senate District	Location	Percent BVAP	2018 Democratic primary	2018 General election
3	Wayne	48.14	polarized - won	not polarized
4	Wayne	47.00	not polarized	not polarized
5	Wayne	54.25	polarized - won	not polarized
6	Wayne	21.29	not polarized	polarized - won
11	Oakland	35.48	not polarized	not polarized
12	Oakland	14.87	no contest	polarized - won
27	Genesee	30.42	no contest	not polarized
32	Genesee & Saginaw	13.45	no minority candidates	polarized - lost

The final table in this section, Table 4, summarized the results of my analysis of recent state house election. A number of the cells in the table have "na" as an entry because estimates are not available. This was for one of two reasons: there were too many candidates and too few votes cast to obtain reliable estimates, or there were an insufficient number of white voters to produce reliable estimates (state house districts 3, 7, 8).

It was possible to produce estimates for 54 contests. The majority of these contests were not polarized – in 37 contests (68.5%), white and Black voters supported the same candidates. In another 13 contests, voting was polarized but the candidate preferred by Black voters won. There were four contests – all Democratic primaries – that were racially polarized and the Black-preferred candidate lost. In three of these contests, the BVAP of the districts was less than 30% (Districts 12, 16, and 37). The Black-preferred candidates also lost the 2018 Democratic primary in House District 29, which has a 36.04% BVAP. All six of the candidates competing were African Americans. The plurality choice of Black voters was Kermit Williams; Brenda Carter was the candidate of choice of a majority of white voters. Carter won with 30.7% of the vote and Williams came in second with 24.7% of the vote.

Table 4: Summary of State House District Racial Bloc Voting Analysis

State House District	Location	Percent BVAP	2018 Democratic primary	2018 General election	2020 Democratic primary	2020 General election
1	Wayne	64.76	not polarized	polarized - won	no contest	polarized - won
2	Wayne	57.70	*na* (7 candidates)	not polarized	not polarized	not polarized
3	Wayne	90.93	*na*	*na*	*na*	*na*
4	Wayne	47.27	*na* (15 candidates)	not polarized	*na* (13 candidates)	not polarized
5	Wayne	54.12	polarized - won	not polarized	not polarized	not polarized
6	Wayne	52.86	*na* (10 candidates)	not polarized	polarized - won	no contest
7	Wayne	94.27	*na*	*na*	*na*	*na*
8	Wayne	92.42	*na*	*na*	*na*	*na*
9	Wayne	74.22	not polarized	not polarized	polarized - won	not polarized
10	Wayne	67.41	not polarized	not polarized	*na* (8 candidates)	not polarized
11	Wayne	26.53	polarized - won	not polarized	no contest	not polarized
12	Wayne	26.97	polarized - lost	polarized - won	not polarized	polarized - won
16	Wayne	23.25	polarized - lost	not polarized	no contest	not polarized
27	Oakland	24.35	not polarized	not polarized	*na* (8 candidates)	not polarized

State House District	Location	Percent BVAP	2018 Democratic primary	2018 General election	2020 Democratic primary	2020 General election
29	Oakland	36.04	polarized - lost	not polarized	no contest	not polarized
35	Oakland	62.50	polarized - won	not polarized	not polarized	not polarized
37	Oakland	17.91	no contest	not polarized	polarized - lost	not polarized
34	Genesee	60.96	not polarized	polarized - won	not polarized	polarized - won
49	Genesee	29.47	not polarized	not polarized	no contest	not polarized
95	Saginaw	35.50	no contest	not polarized	polarized - won	polarized - won

D. Voting Patterns of Minority Voters other than Black Voters

As noted above, it was not possible to produce estimates of voting patterns by race for any groups other than Blacks and whites (more specifically, non-Hispanic whites) statewide or by county. However, by localizing the analysis in geographic areas much smaller than counties, it was possible to derive estimates for several additional minority groups: Hispanics, Arab Americans, Chaldeans, and Bangladeshi Americans.[13] Because these estimates could not be generated statewide, it is difficult to know if the voters included in the analysis are representative of the group as a whole statewide. The summary tables reporting the estimates for these groups can be found in the Appendix C.

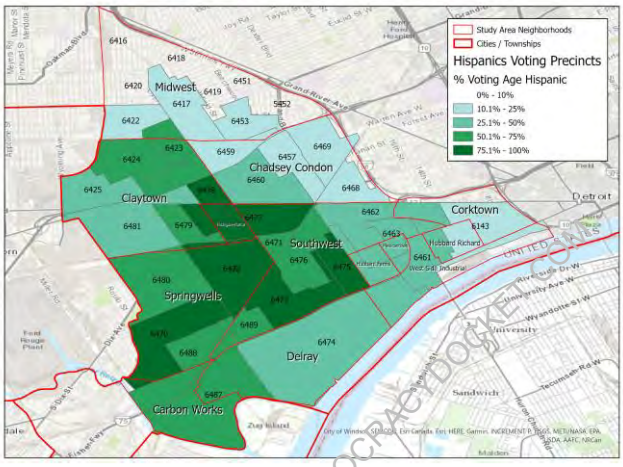
Hispanic Voters Hispanics live in large enough concentrations to produce estimates in two areas of Michigan. Because these concentrations are in different areas of the state, I did not combine them. Instead, I have produced estimates for Hispanics living in the area of Detroit depicted in the first map below ("Areas included in Analysis of Voting Patterns – Hispanics

[13] Interest in the voting patterns of Arab Americans, Chaldeans and Bangladeshi Americans was prompted by comments received in public hearings and on the public portal.

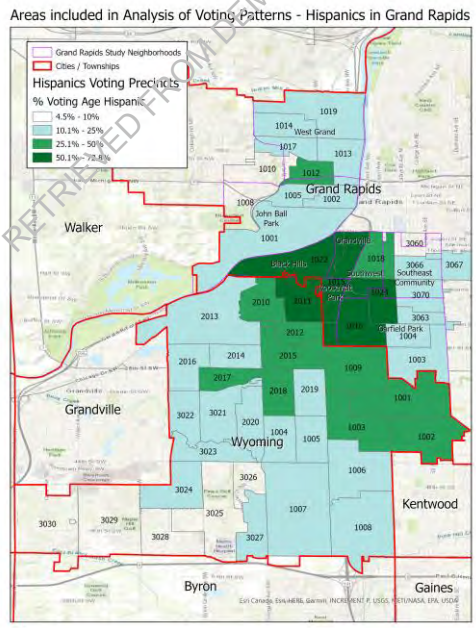
(Detroit)") and in the Grand Rapids area depicted in the second map ("Areas included in Analysis of Voting Patterns – Hispanics in Grand Rapids"). In both maps, the precincts are shaded based on the percentage Hispanic in the precinct.[14]

While the voting patterns do not appear to be very different – both groups provide strong support for Democratic candidates in general elections – the turnout levels differ. In the Grand Rapids area, turnout among Hispanics of voting age is lower than it is in the Detroit area.

Areas included in Analysis of Voting Patterns - Hispanics (Detroit)



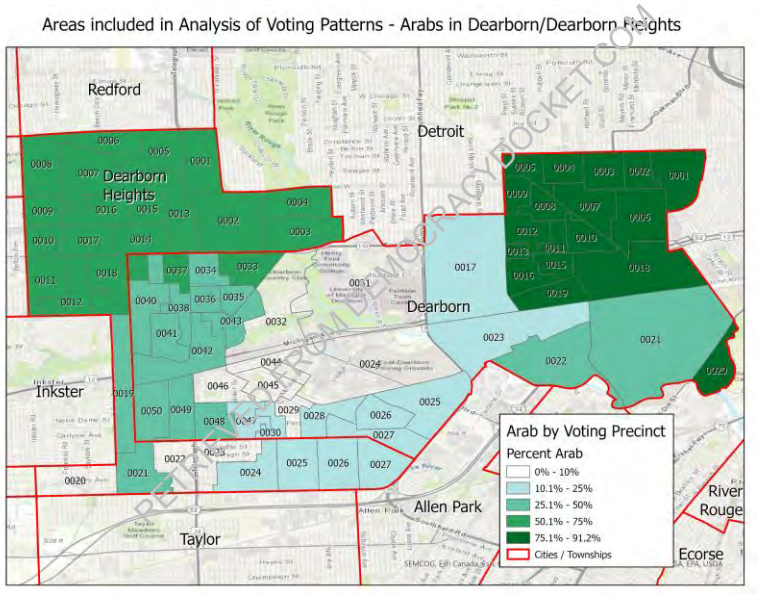
Areas included in Analysis of Voting Patterns - Hispanics in Grand Rapids



[14] The Hispanic VAP used for shading the map and conducting the racial bloc voting analysis was derived from the 2020 94-171 census redistricting data, which reports Hispanic VAP by census block. This data was then aggregated up to the precinct level.

Arab American Voters Approximately 38% of the Arab American population in Michigan is concentrated in the Dearborn and Dearborn Heights area. Localizing the racial bloc voting analysis to this specific area offered sufficient variation across the precincts to produce estimates of the voting behavior of this group. The map below indicates the geographic area included in the analysis; the precincts are shaded by the percentage of residents who are Arab American.[15]

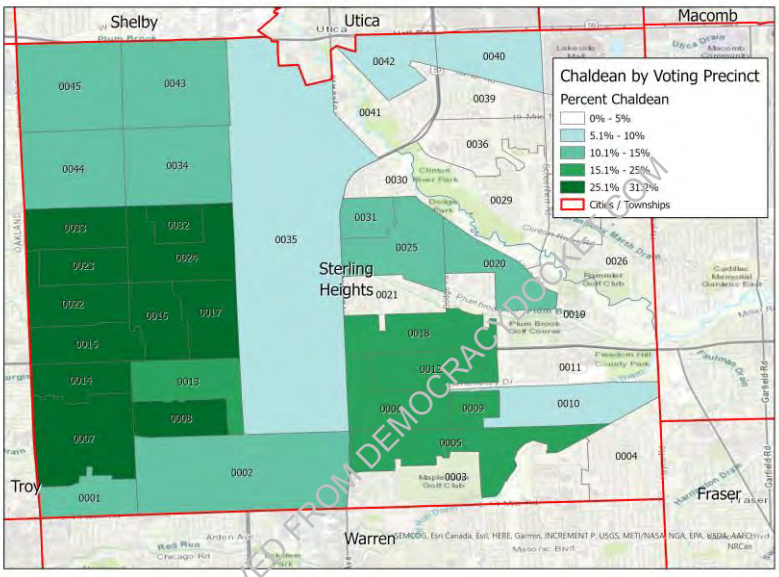
Arab Americans voters, at least in this area of Michigan, strongly support Democratic candidates in general elections – over 80% consistently supported the Democratic candidate in the six 2018-2020 general elections examined. These voters, unlike other groups of voters studied, were also very cohesive in 2018 Democratic primary for Governor – they strongly supported of Abdul El-Sayed in his bid for the nomination.



[15] The Arab American data was derived from the U.S. Census Bureau's American Community Survey (ACS), Table B04004, "People Reporting Single Ancestry." This data, reported at the census tract level, was attributed down to the census block level and then aggregated up to the election precinct level.

Chaldeans, like Arab Americans in Michigan, tend to reside in a geographically concentrated area of Michigan – in this instance, Sterling Heights. Over 40% of the Chaldean population cand be found here.[16] Localizing the voting analysis to Sterling Heights produced reliable estimates of the voting patterns of this community. Chaldeans are not nearly as cohesive as Arab Americans – they consistently divided their support between the Democratic and Republican candidates. However, a clear majority of Chaldean voters supported Donald Trump in his bid for re-election in 2020.

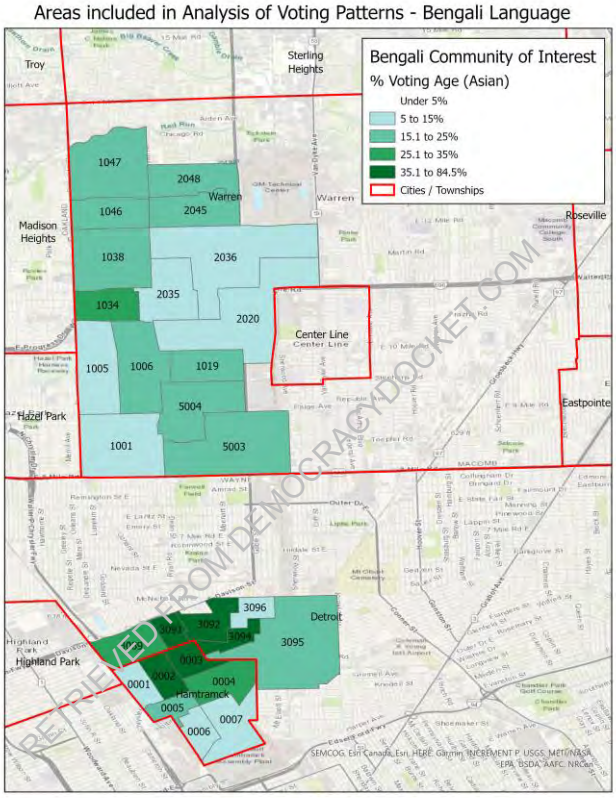
Areas included in Analysis of Voting Patterns - Chaldeans in Sterling Heights



[16] The Chaldean data was derived from the U.S. Census Bureau's American Community Survey (ACS), Table B04004, "People Reporting Single Ancestry" using the Assyrian/Chaldean/Syriac designation. This census tract level data was attributed down to the census block level and then aggregated up to the election precinct level.

Bangladeshi American Voters Using a map identifying the Bangladeshi American community of interest submitted to the MICRC,[17] this localized analysis focused on West Warren and Hamtramck to produce estimates of the vote choices of this group. Bangladeshi American voting patterns are very similar to Arab American voting patterns.[18] Both groups provided strong support for Democratic candidates in general elections and both groups were cohesive in their support of Abdul El-Sayed in the 2018 Democratic primary for Governor.

Areas included in Analysis of Voting Patterns - Bengali Language



[17] The map was submitted on the public comment portal on 9/8/2021 by Hayg Oshagan with the following comment "This is the Bengali community of SE MI. The area around Hamtramck (to the South) is most densely populated and is the center of the community."

[18] Asian VAP by census block as reported by the 2020 94-171 census redistricting data was used to create the shading on the map and the racial bloc voting database.

II. Drawing Minority Opportunity Districts

Because voting in Michigan is racially polarized, districts that provide minority voters with an opportunity to elect their candidates of choice must be drawn. If they already exist – as many do in Michigan – they must be maintained. But maintaining minority opportunity districts does not necessarily require that the districts be redrawn with the same percentage minority voting age population. In fact, many of the minority districts in the current plan are packed with far more Black VAP than needed to elect candidates of choice, as indicated by the percentage of votes the minority candidates are garnering. (See Tables 9 and 10, in the next section of this report, for the Black VAP of the current state house and senate districts, the current incumbents and their race and party, and the percentage of votes each of the incumbents received in 2020.)

An analysis must be undertaken to determine if a proposed district is likely to provide minority voters with an opportunity to elect their candidates of choice to office. This analysis must be district-specific – that is, must recognize there are likely to be differences in participation rates and voting patterns in districts across the state – and it must be functional – that is, it must be based on actual voting behavior of whites and minorities. There is no single universal or statewide demographic target that can be applied for Black voters to elect their candidates of choice in Michigan.[19]

There are two related approaches to conducting a district-specific, functional analysis, both of which take into account the relative turnout rates and voting patterns of minorities and whites. The first approach uses estimates derived from racial bloc voting analysis to calculate the percent minority population needed in a specific area for minority-preferred candidates to win a district in that area.

The second approach relies on election results from previous contests that included minority-preferred candidates (as identified by the racial bloc voting analysis) to determine if these candidates would win election in the proposed districts. The election results for these "bellwether elections" – racially polarized elections that include minority candidates who are preferred by minority voters – are disaggregated down from the election precinct to the census block level and then recompiled to reflect the boundaries of the proposed district. If the minority-

[19] Establishing a demographic target (e.g., 55% black voting age population) for all minority districts across the jurisdiction was, in fact, expressly forbidden by the U.S. Supreme Court in *Alabama Legislative Black Caucus v. Alabama,* 575 U.S. 254 (2015).

preferred candidates in these bellwether elections win in the proposed district, this district is likely to provide minority voters with an opportunity to elect their candidates of choice. This latter approach can be used only if proposed district boundaries have been drawn. The former approach can be carried out before any new boundaries are drafted.

A. Calculating the Black VAP Needed to Elect Black-Preferred Candidates

The percentage of minority voting age population needed in a district to provide minority voters with the opportunity to elect minority-preferred candidates to congress or to the state legislature varies. Using the estimates produced from the racial bloc voting analysis, I calculated the Black VAP percentages needed to elect minority-preferred candidates in each of the general elections included in the summary tables in the Appendix. This calculation takes into account the relative participation rates of age eligible Blacks and whites, as well as the level of Black support for the Black-preferred candidate (the "cohesiveness" of Black voters), and the level of whites "crossing over" to vote for the Black-preferred candidate.

Equalizing minority and white turnout Because Blacks who are age eligible to vote often turn out to vote at lower rates than white voters in Michigan, the Black VAP needed to ensure that Black voters comprise at least half of the voters in an election is often higher than 50%. Once the respective turnout rates of Black and Whites eligible to vote have been estimated using the statistical techniques described above (HP, ER and EI), the percentage needed to equalize Black and white voters can be calculated mathematically.[20] But equalizing turnout is

[20] The equalizing percentage is calculated mathematically by solving the following equation:

Let
M = the proportion of the district's voting age population that is Black
W = 1-M = the proportion of the district's voting age population that is white
A = the proportion of the Black voting age population that turned out to vote
B = the proportion of the white voting age population that turned out to vote

Therefore,
M(A) = the proportion of the population that is Black and turned out to vote (1)
(1-M)B = the proportion of total population that is white and turned out to vote (2)

To find the value of M that is needed for (1) and (2) to be equal, (1) and (2) are set as equal and we solve for M algebraically:

M(A) = (1 – M) B
M(A) = B – M(B)
M(A) + M(B) = B
M(A + B) = B
M = B/ (A+B)

only the first step in the process – it does not take into account the voting patterns of Black and white voters. If voting is racially polarized but a significant number of white voters typically "crossover" to vote for Black voters' preferred candidate, it may be the case that crossover voting can more than compensate for depressed Black turnout.

Incorporating Minority Cohesion and White Crossover Voting Even if Black citizens are turning out at lower rates than whites, and voting is racially polarized, if a relatively consistent percentage of white voters support Black-preferred candidates, the candidates preferred by Black voters can be elected in districts that are less than majority Black. On the other hand, if voting is starkly polarized, with few or no whites crossing over to vote for the candidates supported by Black voters, it may be the case that a district that is more than 50% Black VAP is needed to elect Black-preferred candidates. A district-specific, functional analysis should take into account not only differences in turnout rates, but also the voting patterns of Black and white voters.[21]

To illustrate this mathematically, consider a district that has 1000 persons of voting age, 50% of who are Black and 50% of who are white. Let us begin by assuming that Black turnout is lower than white turnout in a two-candidate general election. In our hypothetical election example, 42% of the Black VAP turn out to vote and 60% of the white VAP vote. This means that, for our illustrative election, there are 210 Black voters and 300 white voters. Further suppose that 96% of the Black voters supported their candidate of choice and 25% of the white voters cast their votes for this candidate (with the other 75% supporting her opponent in the election contest). Thus, in our example, Black voters cast 200 of their 210 votes for the Black-preferred candidate and their other 8 votes for her opponent; white voters cast 75 of their 300 votes for the Black-preferred candidate and 225 votes for their preferred candidate:

Thus, for example, if 39.3% of the Black population turned out and 48.3% of the white population turned out, B= .483 and A = .393, and M = .483/ (.393+.483) = .483/.876 = .5513, therefore a Black VAP of 55.1% would produce an equal number of Black and white voters. (For a more in-depth discussion of equalizing turnout see Kimball Brace, Bernard Grofman, Lisa Handley and Richard Niemi, "Minority Voting Equality: The 65 Percent Rule in Theory and Practice," *Law and Policy*, 10 (1), January 1988.)

[21] For an in-depth discussion of this approach to creating effective minority districts, see Bernard Grofman, Lisa Handley and David Lublin, "Drawing Effective Minority Districts: A Conceptual Framework and Some Empirical Evidence," *North Carolina Law Review*, volume 79 (5), June 2001.

	VAP	turnout	voters	support for Black-preferred candidate	votes for Black-preferred candidate	support for white-preferred candidate	votes for white-preferred candidate
Black	500	0.42	210	0.96	202	0.04	8
White	500	0.60	300	0.25	75	0.75	225
			510		277		233

The candidate of choice of Black voters would receive a total of 277 votes (202 from Black voters and 75 from white voters), while the candidate preferred by white voters would receive only 233 votes (8 from Black voters and 225 from white voters). The Black-preferred candidate would win the election with 55.4% (277/500) of the vote in this hypothetical 50% Black VAP district. And the Black-preferred candidate would be successful despite the fact that the election was racially polarized and that Blacks turned out to vote at a lower rate than whites.

The candidate of choice of Black voters would still win the election by a very small margin (50.9%) in a district that is 45% Black with these same voting patterns:

	VAP	turnout	voters	support for Black-preferred candidate	votes for Black-preferred candidate	support for white-preferred candidate	votes for white-preferred candidate
Black	450	0.42	189	0.96	181	0.04	8
White	550	0.60	330	0.25	83	0.75	248
			519		264		255

In a district with a 40% BVAP, however, the Black-preferred candidate would garner only 47.5% of the vote in this example.

Percent Black VAP needed to win recent general elections in Michigan Counties

Tables 5, 6, 7, and 8 utilize the results of the racial bloc voting analysis (see Appendix A) to indicate the percentage of vote a Black-preferred candidate would receive, given the turnout rates of Blacks and whites and the degree of black cohesion and white crossover voting for each

general election contests examined, in a 55%, 50%, 45%, 40% and 35% BVAP district in Wayne, Oakland, Genesee, and Saginaw Counties.[22] Because voting patterns vary by county, the percentage of votes the Black-preferred candidates would receive also varies. However, in no county is a 50% BVAP district required for the Black-preferred candidates to carry the district in a general election.

Table 5 reports the percentage of votes the Black-preferred candidate would receive in Wayne County, given voting patterns in previous general elections, The Black-preferred candidate would win every general election in a district with a BVAP of 35% or more, and would win with at least 54.4% of the vote – and in most election contests, a substantially higher percentage of the vote. The variation in the percentage of votes received by the Black-preferred candidate is due to the variation in the white vote rather than the Black vote because in in every election contest considered at least 95% of Black voters supported the Black-preferred candidate. The Black-preferred candidate of choice who would receive the lowest percentage of the vote would be African American Godfrey Dillard, a candidate for Secretary of State in 2014.

The voting patterns by race, and therefore the percent BVAP needed to win general elections is very similar in Genesee County, as shown in Table 6. Unlike Wayne County, however, the percentage of vote the Black-preferred candidate would garner in a 35% BVAP district in this county is declining slightly over the course of the decade – although the Black-preferred candidate would still win every general election in a 35% BVAP district.

In Oakland County, the Black-preferred candidate does not win every general election contest in a 35% BVAP district. It is not until the 40% BVAP column in Table 7 that the candidate of choice of Black voters wins every election examined. The most challenging election is again the race for Secretary of State in 2014. And even at 40% BVAP, Dillard would receive only 51.3% of the vote.

Saginaw County (Table 8) is similar to Oakland County in that it is only at 40% that the Black-preferred candidate wins every general election contest – and at 40% a couple of the contests are very close. Not only are the winning percentages for the Black-preferred candidates consistently lower in Saginaw County than they are for Oakland County, they have been decreasing over the course of the decade.

[22] Tables 5, 6, 7, and 8 are generated using EI RxC estimates reported in the racial bloc voting tables in the Appendix.

Table 5: Percent BVAP Needed to Win, Wayne County

WAYNE COUNTY Percent Black VAP needed to win	race of B-P candidate	turnout rate for office and percent vote for black-preferred candidates						percent of vote B-P cand would have received if district was 55% black VAP	percent of vote B-P cand would have received if district was 50% black VAP	percent of vote B-P cand would have received if district was 45% black VAP	percent of vote B-P cand would have received if district was 40% black VAP	percent of vote B-P cand would have received if district was 35% black VAP
		Black votes			White votes							
		votes cast for office	B-P	all others	votes cast for office	B-P	all others					
GENERAL ELECTIONS												
2020 President	W	58.0	97.5	2.5	76.6	47.5	52.5	71.5	69.0	66.6	64.3	62.0
2020 US Senate	W	57.8	95.2	4.8	75.6	47.2	52.8	70.4	68.0	65.7	63.4	61.2
2018 Governor	W	33.2	97.0	3.0	63.2	53.5	46.5	70.5	68.5	66.6	64.8	63.1
2018 Secretary of State	W	33.1	97.0	3.0	62.2	53.6	46.4	70.7	68.7	66.8	65.0	63.3
2018 Attorney General	W	32.7	95.5	4.5	61.3	49.4	50.6	67.6	65.4	63.4	61.5	59.7
2018 US Senate	W	33.1	95.8	4.2	63.1	52.3	47.7	69.3	67.3	65.4	63.6	61.9
2016 President	W	57.0	98.4	1.6	64.0	39.7	60.3	70.3	67.4	64.4	61.6	58.7
2014 Governor	W	35.8	96.5	3.5	47.7	41.3	58.7	67.7	65.0	62.3	59.7	57.2
2014 Secretary of State	AA	35.5	96.8	3.2	46.1	36.8	63.2	65.9	62.9	60.0	57.2	54.4
2014 Attorney General	W	35.3	95.7	4.3	45.9	41.0	59.0	67.5	64.8	62.1	59.5	57.0
2014 US Senate	W	35.7	98.0	2.0	46.8	53.4	46.6	74.9	72.7	70.5	68.4	66.4
2012 President	AA	60.4	99.0	1.0	65.7	51.9	48.1	76.8	74.5	72.1	69.8	67.5
2012 US Senate	W	59.9	98.1	1.9	64.4	57.6	42.4	79.1	77.1	75.1	73.1	71.1

Table 6: Percent BVAP Needed to Win, Genesee County

GENESEE COUNTY Percent Black VAP needed to win	race of B-P candidate	turnout rate for office and percent vote for black-preferred candidates						percent of vote B-P cand would have received if district was 55% black VAP	percent of vote B-P cand would have received if district was 50% black VAP	percent of vote B-P cand would have received if district was 45% black VAP	percent of vote B-P cand would have received if district was 40% black VAP	percent of vote B-P cand would have received if district was 35% black VAP
		Black votes			White votes							
		votes cast for office	B-P	all others	votes cast for office	B-P	all others					
GENERAL ELECTIONS												
2020 President	W	53.0	96.1	3.9	79.6	42.1	57.9	66.3	63.7	61.1	58.7	56.4
2020 US Senate	W	56.6	95.0	5.0	78.7	43.5	56.5	67.6	65.0	62.6	60.2	57.9
2018 Governor	W	45.1	95.3	4.7	59.8	46.2	53.8	69.8	67.3	64.9	62.6	60.4
2018 Secretary of State	W	44.9	95.2	4.8	58.6	48.0	52.0	70.8	68.5	66.2	64.0	61.8
2018 Attorney General	W	44.6	94.1	5.9	58.4	41.1	58.9	66.7	64.0	61.5	59.0	56.5
2018 US Senate	W	45.1	95.2	4.8	59.6	45.8	54.2	69.5	67.1	64.7	62.4	60.1
2016 President	W	59.0	96.4	3.6	67.3	37.4	62.6	67.9	65.0	62.0	59.2	56.3
2014 Governor	W	35.8	95.8	4.2	47.5	51.8	48.2	72.9	70.7	68.6	66.5	64.5
2014 Secretary of State	AA	35.9	95.6	4.4	46.1	46.2	53.8	70.3	67.8	65.4	63.1	60.8
2014 Attorney General	W	35.9	95.6	4.4	45.5	45.2	54.8	69.9	67.4	65.0	62.6	60.2
2014 US Senate	W	36.1	95.6	4.4	47.1	58.6	41.4	76.5	74.7	72.9	71.1	69.4
2012 President	AA	61.0	97.6	2.4	68.4	53.7	46.3	76.6	74.4	72.2	70.1	67.9
2012 US Senate	W	60.7	96.7	3.3	67.5	60.2	39.8	79.3	77.5	75.7	73.9	72.1

Table 7: Percent BVAP Needed to Win, Oakland County

OAKLAND COUNTY Percent Black VAP needed to win	race of B-P candidate	turnout rate for office and percent vote for black-preferred candidates						percent of vote B-P cand would have received if district was 55% black VAP	percent of vote B-P cand would have received if district was 50% black VAP	percent of vote B-P cand would have received if district was 45% black VAP	percent of vote B-P cand would have received if district was 40% black VAP	percent of vote B-P cand would have received if district was 35% black VAP
		Black votes			White votes							
		votes cast for office	B-P	all others	votes cast for office	B-P	all others					
GENERAL ELECTIONS												
2020 President	W	71.6	93.4	6.6	86.4	45.9	54.1	69.8	67.4	65.1	62.8	60.6
2020 US Senate	W	71.4	92.1	7.9	85.4	43.5	56.5	68.1	65.6	63.2	60.9	58.6
2018 Governor	W	53.2	94.1	5.9	68.8	47.4	52.6	70.1	67.8	65.5	63.3	61.1
2018 Secretary of State	W	53.1	94.2	5.8	67.7	47.5	52.5	70.4	68.0	65.8	63.5	61.4
2018 Attorney General	W	52.5	93.8	6.2	67.0	43.0	57.0	67.9	65.3	62.8	60.4	58.1
2018 US Senate	W	53.2	93.0	7.0	68.7	45.5	54.5	68.6	66.2	63.9	61.7	59.5
2016 President	W	65.6	95.1	4.9	73.5	39.1	60.9	68.3	65.5	62.7	60.0	57.3
2014 Governor	W	46.3	94.8	5.2	54.6	30.6	69.4	63.3	60.1	56.9	53.8	50.7
2014 Secretary of State	AA	45.9	94.6	5.4	53.1	26.4	73.6	61.4	58.0	54.7	51.3	48.1
2014 Attorney General	W	45.8	94.1	5.9	52.6	32.9	67.1	64.5	61.4	58.4	55.4	52.4
2014 US Senate	W	46.5	95.0	5.0	53.7	46.7	53.3	71.5	69.1	66.7	64.4	62.1
2012 President	AA	68.9	95.7	4.3	75.7	42.1	57.9	70.3	67.6	65.0	62.3	59.7
2012 US Senate	W	67.8	95.8	4.2	74.0	47.6	52.4	73.1	70.6	68.3	65.9	63.5

Table 8: Percent BVAP Needed to Win, Saginaw County

SAGINAW COUNTY Percent Black VAP needed to win	race of B-P candidate	turnout rate for office and percent vote for black-preferred candidates						percent of vote B-P cand would have received if district was 55% black VAP	percent of vote B-P cand would have received if district was 50% black VAP	percent of vote B-P cand would have received if district was 45% black VAP	percent of vote B-P cand would have received if district was 40% black VAP	percent of vote B-P cand would have received if district was 35% black VAP
		Black votes			White votes							
		votes cast for office	B-P	all others	votes cast for office	B-P	all others					
GENERAL ELECTIONS												
2020 President	W	48.6	95.3	4.7	79.6	36.3	63.7	61.5	58.7	56.0	53.4	50.9
2020 US Senate	W	48.4	93.8	6.2	78.7	37.5	62.5	61.7	58.9	56.3	53.9	51.5
2018 Governor	W	37.7	93.6	6.4	63.0	40.9	59.1	63.2	60.6	58.2	55.9	53.7
2018 Secretary of State	W	38.0	93.7	6.3	61.4	39.2	60.8	62.7	60.0	57.5	55.1	52.8
2018 Attorney General	W	37.6	93.4	6.6	61.0	33.3	66.7	59.1	56.2	53.4	50.8	48.3
2018 US Senate	W	37.8	93.5	6.5	62.8	39.3	60.7	62.3	59.7	57.2	54.8	52.6
2016 President	W	52.3	95.0	5.0	70.2	30.6	69.4	61.3	58.1	55.0	52.0	49.0
2014 Governor	W	32.7	94.1	5.9	50.8	42.2	57.8	65.1	62.5	60.1	57.8	55.6
2014 Secretary of State	AA	32.6	94.4	5.6	49.2	36.3	63.7	62.3	59.5	56.7	54.1	51.6
2014 Attorney General	W	32.4	94.1	5.9	50.1	32.6	67.4	59.8	56.8	53.9	51.1	48.5
2014 US Senate	W	32.7	94.1	5.9	50.1	50.6	49.4	69.9	67.8	65.7	63.8	61.9
2012 President	AA	56.2	95.7	4.3	70.3	42.9	57.1	69.0	66.4	63.8	61.3	58.8
2012 US Senate	W	55.7	95.4	4.6	68.7	52.3	47.7	73.8	71.6	69.5	67.4	65.4

It is important to remember that winning office in the United States usually requires winning two elections: a primary and a general election. The tables above consider only general election contests. Producing a comparable set of tables for Democratic primaries is not possible. First, there was only one statewide Democratic primary – the 2018 primary contest for Governor. There were three candidates competing in this election and because 50% of the vote was not required to win the election, a mathematical equation setting the percentage needed to win 50% of the vote does not work. Second, Black voters were not cohesive in support of any one of these three candidates. In fact, the candidate preferred by even the plurality of Black voters was not the same in the four counties examined. Drawing a district that Black-preferred candidate could win this primary is not possible when there is no Black-preferred candidate.

In areas where most of the white voters are likely to vote in Republican primaries, the inability to calculate the percent needed to win in Democratic primaries is not particularly important. Black voters will dominate the Democratic primary unless they make up only a very small portion of the voters in the district. However, in the counties examined in Michigan, many white voters elect to participate in the Democratic primary, especially in Wayne County. As the percentage Black VAP of proposed districts decreases, it may become more challenging for Black-preferred candidates to win not only the general election but the Democratic primary – but only if voting in Democratic primaries is racially polarized. Unfortunately, it is not possible to ascertain exactly how much more difficult it would be – or even if it would be more difficult – given the lack of Democratic primary election data.

B. Threshold of Representation in the Current State House and Senate Districts

A useful check on the percent needed to win estimates found in Tables 5-8 that can be done prior to drawing any districts is to produce what have been referred to by some political scientists as "threshold of representation" tables. These tables are designed to identify the lowest minority percentage above which minority candidates are consistently elected. Tables 9 and 10, below, report the BVAP of the current Michigan state house and senate districts with over 20% BVAP, and indicate the race and party of the candidate elected to represent the district.[23] Sorted

[23] There are no African American state senators or representatives elected from districts that are less than 20% Black in VAP. However, there are other minority candidates (Hispanic, Asian, and Middle Eastern) elected to state house districts with considerably less than 20% BVAP.

by the percent BVAP, the tables can sometimes provide evidence of a clear breakpoint between those districts that are probably electing candidates of choice and those that are not.[24]

An examination Table 9 indicates that every Michigan state house district with a BVAP of at least 35% elects a minority representative to the state house. In fact, every district with a BVAP of more than 26.53% elects a minority to office with the exception of District 49 in Genesee County. And the racial bloc voting analysis of House District 49 indicates that the white incumbent, John Cherry, is the candidate of choice of Black voters, even in the 2018 Democratic primary when he faced several African American candidates.

Table 9: Threshold of Representation for State House Districts, 2021

State House District	Total VAP	Black VAP	Percent Black VAP	Name	Party	Race	Percent of Vote 2020
7	60347	57256	94.27%	Helena Scott	D	Black	93.00%
8	62448	58042	92.42%	Stephanie A. Young	D	Black	96.70%
3	54130	49536	90.93%	Shri Thanedar	D	Asian	93.30%
9	62529	46806	74.22%	Karen Whitsett	D	Black	94.20%
10	69209	46977	67.41%	Mary Cavanagh	D	Hispanic	84.80%
1	59788	38993	64.76%	Tenisha R. Yancey	D	Black	75.80%
35	78306	49325	62.50%	Kyra Harris Bolden	D	Black	82.90%
34	49491	30419	60.96%	Cynthia R. Neeley	D	Black	86.70%
2	57031	33142	57.70%	Joe Tate	D	Black	74.10%
5	49290	27190	54.12%	Cynthia A. Johnson	D	Black	93.40%
6	67505	36182	52.86%	Tyrone Carter	D	Black	100.00%
4	68749	32761	47.27%	Abraham Aiyash	D	ME	89.80%
29	72319	26621	36.04%	Brenda Carter	D	Black	72.90%
95	58640	21320	35.50%	Amos O'Neal	D	Black	70.10%
49	64844	19308	29.47%	John D. Cherry	D	White	68.90%
54	72426	21212	28.79%	Ronnie Peterson	D	Black	77.70%
12	73883	20207	26.97%	Alex Garza	D	Hispanic	62.40%
11	73586	19760	26.53%	Jewell Jones	D	Black	65.20%
92	66135	16957	25.34%	Terry J. Sabo	D	White	65.30%
27	73337	18051	24.35%	Regina Weiss	D	White	74.40%
16	74617	17556	23.25%	Kevin Coleman	D	White	62.50%
75	76956	18127	22.56%	David LaGrand	D	White	74.60%
68	71672	16808	22.44%	Sarah Anthony	D	Black	75.90%
18	75251	16519	21.76%	Kevin Hertel	D	White	60.30%
22	68758	14588	21.00%	Richard Steenland	D	White	59.90%
60	74176	15887	20.97%	Julie M. Rogers	D	White	71.40%

[24] Without the confirmation provided by a racial bloc voting analysis, it could conceivably be the case that the minority legislator is not the candidate of choice of minority voters.

Interpreting Table 10, for the Michigan state senate, is less straightforward. The four districts with BVAP percentages over 47% elect African Americans to office. However, Stephanie Chang, the state senator in District 1, which is 44.68% BVAP, was not the candidate of choice of Black voters in the 2018 Democratic primary, though she is the candidate of choice in the general election.

Table 10: Threshold of Representation for State Senate Districts, 2021

State Senate District	Total VAP	Black VAP	Percent Black VAP	Name	party	race	Percent of vote 2018
5	203828	111418	54.25%	Betty Alexander	D	Black	77.4%
2	169357	86961	50.82%	Adam Hollier	D	Black	75.7%
3	186758	90737	48.14%	Sylvia Santana	D	Black	81.8%
4	180199	85691	47.00%	Marshall Bullock	D	Black	78.3%
1	193087	87075	44.68%	Stephanie Chang	D	Asian	72.0%
11	229870	82336	35.48%	Jeremy Moss	D	White	76.7%
27	175918	54071	30.42%	Jim Ananich	D	White	71.2%
9	219325	50800	22.95%	Paul Wojno	D	White	65.9%
6	217734	46997	21.29%	Erika Geiss	D	Black	61.4%

C. Recompiled Election Results

As noted above, once draft districts have been drawn, there is a second approach available for ascertaining whether a proposed district is likely to provide minority voters with an opportunity to elect their candidates of choice to legislative or congressional office. This approach relies on recompiling election results from previous elections to see if the candidates preferred by minority voters would win in the draft district. This process entails (1) identifying "bellwether" elections, (2) disaggregating the precinct level results for these elections down to the census block level and then (3) re-aggregating the results up to conform to proposed district boundaries to determine if the minority-preferred candidate would win. This recompilation can only be done

for elections that cover a broad enough area to encompass all of the draft districts, hence only statewide elections can be used for this exercise. "Bellwether" elections are statewide elections that included minority candidates who were the candidates of choice of minority voters but were not supported by white voters.

Although there were six statewide general elections that included African American candidates or running mates, the African American was the candidate of choice of Black voters in only four of these contests: U.S. President in 2012 and 2020, Secretary of State in 2014, and Governor in 2018. All of these contests were racially polarized statewide, but only the 2014 Secretary of State contest was polarized in all four counties. This election contest was also the contest in which the candidate strongly preferred by Black voters garnered the least amount of white crossover votes. Thus, while recompiled elections results for all four elections provide important information for determining if a proposed district would provide Black voters with an opportunity to elect their preferred candidates in general elections, the single best "bellwether" contest for that purpose is the vote for Godfrey Dillard in 2014.

The redistricting software used by MICRC automatically included recompiled election results for all draft districts for all four of these elections – in fact, it included this information for every statewide general election conducted between 2012 and 2020. Ascertaining if the African American candidates of choice of Black voters, especially Dillard in 2014, carried a proposed district provides evidence that the proposed district in a draft plan will provide Black voters with an opportunity to elect their candidates of choice in general elections.

The redistricting software also reported recompiled election results for the one statewide Democratic primary conducted in the past decade: the 2018 race for Governor. However, because there were three candidates and because Black voters were not cohesive in supporting any of these candidates, these recompiled results are not particularly useful in ascertaining whether a proposed district would provide minority voters with an opportunity to elect their preferred candidates in Democratic primaries.

III. Measuring Partisan Fairness in Redistricting Plans

According to 13(d) of Article IV, Section 6 of the Michigan State Constitution: "Districts shall not provide a disproportionate advantage to any political party. A disproportionate advantage to a political party shall be determined using accepted measures of partisan fairness." A number of objective mathematical measures have been developed by social scientists and mathematicians to determine if an existing or proposed redistricting map disadvantages one political party relative to the other. Using these measures, we can compare an existing or proposed redistricting map to a large set of other possible maps to determine if the proposed map exhibits more or less political bias. The maps used for comparative purposes can be previous redistricting maps used in the state, or the redistricting maps of other states, or they can be computer simulated maps.

I proposed incorporating three measures of partisan fairness measures into the redistricting software used by the MICRC to draw redistricting maps. The reasons for my choice were as follows:

- The measures are easy to understand and straightforward to calculate. They produce scores that indicate both the direction and the magnitude of any political bias in the redistricting map.
- Because I easily calculated the scores for each of these measures in excel, I knew it would be possible to incorporate an automated report function into the redistricting software that could provide these scores for any draft plans drawn.
- Although these three measures have only recently been developed, they have all have been introduced and accepted by federal and state courts as useful tools for determining if a redistricting map is politically fair.

The three partisan fairness measures I selected are the lopsided margins test, the mean-median difference, and the efficiency gap.

In addition to these three measures, a simple metric for indicating whether a redistricting plan is fair is to compare the proportion of the statewide vote each party receives to the proportion of the districts each party wins or is likely to win under the proposed plan. The proportionality of a redistricting plan is calculated by subtracting the percentage of votes won by the party from the percentage of seats that party won (or would win) in congressional and state

legislative elections. So, for example, if Party A won 52.3% of the vote statewide but only won 44.7% of the seats in the state senate, the proportionality bias would be 44.7 – 52.3 or -7.6 in favor of Party B.

Each of these measures use historical election results to evaluate the partisan fairness of redistricting plans. However, in the case of proposed districts, previous election results must be reconfigured to conform to the proposed district boundaries to evaluate the partisan fairness of the proposed plans.[25] A composite election index was constructed using the statewide general elections between 2012 and 2020 – all 13 of the election contests included in the GIS redistricting database and analyzed in the racial bloc voting analysis. The composite index was weighted to give each election cycle equal weight in the index. However, the partisan fairness report function in the redistricting software was designed so that any of the individual 13 elections could be substituted for the composite index in calculating the partisan fairness scores.

A. Lopsided Margins Test

In a perfectly fair plan – at least in a state in which the two political parties are competitive (closely divided) – we would expect a mix of districts, some strongly partisan districts, some moderately reliable districts, and some tossups – but each party would have a roughly similar mix. If one party has a smaller number of victories with larger margins of victory that the other party, this is an indication that one party is being disfavored over the other in the map. This pattern of outcomes can be quantified by sorting the districts into two groups, by winning party. Each party's winning vote share can then be compared to see if one party has significantly higher margin of victories than the other.[26] The following is an example of how this is calculated:

[25] Both the efficiency gap and the mean-median difference have been used to evaluate computer simulated alternative redistricting maps for comparative purposes in partisan gerrymandering challenges. Election results for select statewide elections were reconfigured to determine how the candidates in these elections would have fared in the alternative districts.

[26] This measure was first discussed in Sam Wang, "Three Tests for Practical Evaluation of Partisan Gerrymandering," *Stanford Law Journal*, 16, June 2016. Available at: https://www.stanfordlawreview.org/print/article/three-tests-for-practical-evaluation-of-partisan-gerrymandering/)

				Percent of Votes			Party Wins	
District	Party A	Party B	Total Votes	Party A	Party B		Party A	Party B
1	279	120	399	69.9%	30.1%		69.9%	
2	172	198	370	46.5%	53.5%			53.5%
3	167	192	359	46.5%	53.5%			53.5%
4	148	212	360	41.1%	58.9%			58.9%
5	185	180	365	50.7%	49.3%		50.7%	
6	139	193	332	41.9%	58.1%			58.1%
7	169	201	370	45.7%	54.3%			54.3%
8	179	206	385	46.5%	53.5%			53.5%
9	234	99	333	70.3%	29.7%		70.3%	
10	178	199	377	47.2%	52.8%			52.8%
TOTAL	**1850**	**1800**	**3650**	**50.7%**	**49.3%**		**63.6%**	**54.9%**

Party A in the example is winning districts with a much higher average vote (63.6%) than Party B (54.9%) – and the difference between the two percentages is 8.7 (63.6 – 54.9). This indicates that Party A supporters are packed into a few districts that it wins by large margins. Party B, on the other hand, is winning substantially more districts with substantially lower vote margins.

B. Mean-Median Difference

Comparing a dataset's mean and median is a common statistical analysis used to assess how skewed the dataset is – if the dataset is balanced, the mean will be very close in value to its median. As a dataset becomes more skewed, the mean and median begin to diverge; looking at the difference between the two can be used determine the extent to which the data is skewed.

Based on this principle, the mean-median district vote share difference compares a party's mean district vote share to its median district vote share:[27]

- Mean = average party vote share across all districts
- Median = party vote share in the median district when districts are sorted on share of party vote

[27] This approach to ascertaining political bias in redistricting maps was proposed by Michael D. McDonald and Robin Best in "Unfair Partisan Gerrymanders in Politics and Law: A Diagnostic Applied to Six Cases," *Election Law Journal* 14(4), 2015 (available at: https://www.liebertpub.com/doi/abs/10.1089/elj.2015.0358). It was further quantified by Wang (see full citation above).

The difference between the mean and median vote shares provides a measure of whether the redistricting map produces skewed election results. The following is an example of how this is calculated:

Party A	Percentages I
	41.1%
	41.9%
	45.7%
	46.5%
	46.5%
	46.5%
	47.2%
	50.7%
	69.9%
	70.3%
District median percentage	46.5%
Statewide mean percentage	50.7%
Mean-Median Difference	4.2%

In this example, Party A received 50.7% of the statewide vote. Party A's median vote share (46.5%) is 4.2% lower than its mean vote share of 50.7%. This indicates that Party A must win more districts than Party B to win half of the seats – the redistricting map in skewed in favor of Party B. In fact, Party A would have had to win 54.2% (50.0 + 4.2) of the statewide vote to win 50% of the seats.

C. Efficiency Gap

This measure, introduced by University of Chicago law professor Nick Stephanopoulos and Public Policy Institute of California research fellow Eric McGhee, looks at the number of "wasted votes" across districts.[28]

In any election, nearly 50 percent of votes are wasted: all votes cast for a losing candidate, and any votes cast for a winning candidate beyond the threshold needed to win (50 percent in a two-candidate contest). In a hypothetical map with perfect partisan symmetry, both

[28] Nicholas O. Stephanopoulos and Eric M. McGhee, "Partisan Gerrymandering and the Efficiency Gap," *University of Chicago Law Review*: Vol. 82 (2), 2015. Available at: https://chicagounbound.uchicago.edu/uclrev/vol82/iss2/4.

parties would waste the same number of votes. A large difference between the parties' wasted votes indicates one party is treated more favorably than the other by the redistricting map. This is because the plan packs and cracks one party's supporters more than the other party's supporters.

The efficiency gap is calculated by taking one party's total wasted votes in an election, subtracting the other party's total wasted votes, and dividing this by the total number of votes cast. It captures in a single number the extent to which district lines waste the two parties votes unequally.

$$\text{Efficiency Gap} = \frac{\text{[Party A wasted votes]} - \text{[Party B wasted votes]}}{\text{total number of votes cast statewide}}$$

Example:

				Lost Votes		minimum	Surplus Votes		Total Wasted Votes	
District	Party A	Party B	Total Votes	Party A	Party B	to win	Party A	Party B	Party A	Party B
1	279	120	399	0	120	200	79	0	79	120
2	172	198	370	172	0	185	0	13	172	13
3	167	192	359	167	0	180	0	12	167	12
4	148	212	360	148	0	180	0	32	148	32
5	185	180	365	0	180	183	2	0	2	180
6	139	193	332	139	0	166	0	27	139	27
7	169	201	370	169	0	185	0	16	169	16
8	179	206	385	179	0	193	0	13	179	13
9	234	99	333	0	99	167	67	0	67	99
10	178	199	377	178	0	189	0	10	178	10
TOTAL	1850	1800	3650	1152	399		148	123	1300	522

In this example, supporters of Party A cast 1152 votes for losing candidates and 148 surplus votes – votes beyond what was necessary to elect Party A candidates. Supporters of Party B, on the other hand, cast only 399 of their votes for losing candidates and 522 surplus votes. Adding together these two sets of votes, Party A had a total of 1300 wasted votes; Party B had a total of only 522 votes. The efficiency gap is therefore calculated as 21.3% (1300-522/3650 = 778/3650 = .213). This efficiency gap in favor of Party B can be interpreted as the percentage of seats Party B won above what would be expected in a politically fair or neutral map.

D. Court Acceptance of these Measures

These three measures have all been developed within the last decade and therefore do not have a long history of consideration by the courts. However, they have been introduced recently

in the context of partisan gerrymandering challenges. While recognizing each of the measures have some disadvantages, the courts in each instance relied on these measures (in addition to other measures introduced) to find the plans before them were politically biased towards one of the political parties at the expense of the other.[29]

[29] Examples of court cases relying on at least one of the measures of political fairness described in this report include*: League of Women Voters of Michigan v. Benson*, in which the federal court held the congressional and state legislative plans in Michigan to be an unconstitutional gerrymander; *Ohio A. Philip Randolph Institute v. Householder*, which held the Ohio congressional map to be an unconstitutional partisan gerrymander; *League of Women Voters of Pennsylvania v. Commonwealth of Pennsylvania* in which the State Supreme Court held the Pennsylvania congressional districts to be in violation of the Pennsylvania Constitution; *Whitford v. Gill* in which the federal court determined the Wisconsin state assembly districts were unconstitutional; *Common Cause v. Rucho* in which the federal court found the North Carolina congressional district plan adopted in 2016 was an unconstitutional partisan gerrymander. This North Carolina decision, along with the Maryland case, *Lamone v. Benisek*, was later overturned by the U.S. Supreme Court on unrelated grounds, but grounds that served to moot all of the federal decisions discussed above. However, in a separate challenge before the North Carolina Superior Court, *Common Cause v. Lewis*, the court held that the state legislative districts violated the North Carolina State Constitution.

APPENDIX A

Statewide				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
2012 General											
U.S. President											
Barack Obama	D	AA	54.2%	98.6	106.5	99.2	97.8	44.0	42.7	43.3	44.5
Mitt Romney	R	W	44.7%	1.2	-6.6	0.4	1.2	54.8	55.9	55.3	54.6
others				0.2	0.2	1.1	1.1	1.3	13.8	1.2	1.0
votes for office				*62.1*	*57.3*	*59.1*	*59.1*	*69.2*	*66.1*	*68.1*	*68.1*
U.S. Senate											
Debbie Stabenow	D	W	58.8%	97.3	103.8	99.2	96.8	50.1	49.4	49.1	50.6
Peter Hoekstra	R	W	38.0%	1.2	-5.3	0.5	1.1	46.5	46.9	46.9	46.2
others				1.5	1.5	1.7	2.0	3.4	3.7	3.6	3.2
votes for office				*61.6*	*56.9*	*58.8*	*58.8*	*68.0*	*64.9*	*66.9*	*66.9*
2014 General											
Governor											
Mark Schauer	D	W	46.9%	94.4	101.3	97.4	95.7	38.7	37.1	36.2	38.4
Rick Snyder	R	W	50.9%	4.8	-2.2	2.1	2.5	58.9	60.2	61.3	59.4
others				0.8	0.8	1.4	1.8	2.4	2.7	2.5	2.1
votes for office				*36.9*	*31.6*	*35.1*	*35.1*	*49.6*	*46.7*	*49.1*	*49.1*
Secretary of State											
Godfrey Dillard	D	AA	42.9%	94.4	102.0	97.6	95.8	33.8	31.9	31.3	33.5
Ruth Johnson	R	W	53.5%	4.2	-3.3	1.5	2.1	62.3	63.9	64.7	62.9
others				1.4	1.3	1.2	2.1	3.9	4.3	4.0	3.6
votes for office				*36.5*	*31.3*	*34.8*	*34.8*	*48.3*	*45.4*	*47.8*	*47.8*
Attorney General											
Mark Totten	D	W	44.2%	93.3	101.3	97.0	95.2	34.7	32.8	33.0	35.0
Bill Schuette	R	W	52.1%	5.2	-2.9	2.1	2.5	61.3	62.8	62.9	61.2
others				1.5	1.6	1.2	2.2	4.0	4.4	4.1	3.8
votes for office				*36.4*	*31.2*	*34.6*	*34.6*	*48.3*	*45.5*	*47.8*	*47.8*

Statewide				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate											
Gary Peters	D	W	54.6%	96.8	103.9	99.1	96.5	46.2	44.8	45.1	47.3
Terry Lynn Land	R	W	41.3%	2.0	-5.0	0.5	1.6	49.4	50.3	50.2	48.5
others				1.2	1.1	1.0	2.0	4.5	4.8	4.6	4.2
votes for office				*36.8*	*31.5*	*35.0*	*35.0*	*48.9*	*46.1*	*48.5*	*48.5*
2016 General											
U.S. President											
Hillary Clinton	D	W	47.3%	96.8	106.3	98.9	97.3	33.6	30.2	32.0	34.3
Donald Trump	R	W	47.5%	2.0	-7.4	0.3	1.1	61.0	63.9	61.6	60.0
others				1.2	1.2	0.8	1.6	5.4	6.0	6.2	5.7
votes for office				*58.9*	*53.6*	*54.1*	*54.1*	*68.2*	*65.8*	*67.2*	*67.2*
2018 General											
Governor											
Whitmer/Gilchrist	D	W/AA	53.3%	95.6	104.3	98.6	95.3	41.1	38.9	40.6	44.8
Schuette/Lyons	R	W/W	43.8%	2.5	-6.4	0.6	1.8	56.0	57.9	56.2	52.8
others				1.9	2.1	2.6	2.9	2.9	3.2	2.9	2.5
votes for office				*36.6*	*31.6*	*35.2*	*35.2*	*61.9*	*61.7*	*63.3*	*63.3*
Secretary of State											
Jocelyn Benson	D	W	52.9%	95.7	104.7	98.7	95.6	40.1	38.0	39.9	43.9
Mary Treder Lang	R	W	44.0%	2.4	-6.6	0.6	1.8	56.5	58.3	56.4	53.1
others				1.9	1.9	1.7	2.7	3.4	3.7	3.5	2.9
votes for office				*36.4*	*31.6*	*35.1*	*35.1*	*60.9*	*60.7*	*62.2*	*62.2*
Attorney General											
Dana Nessel	D	W	49.0%	94.1	103.3	97.7	94.4	36.1	33.6	35.3	39.4
Tom Leonard	R	W	46.3%	2.4	-6.9	0.5	1.7	59.0	61.1	59.3	55.9
others				3.5	3.6	3.0	3.9	4.9	5.3	5.2	45.9
votes for office				*36.0*	*31.2*	*34.6*	*34.6*	*60.4*	*60.1*	*61.7*	*61.7*

Statewide				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate											
Debbie Stabenow	D	W	52.3%	93.9	102.5	97.5	94.3	40.3	38.1	39.5	43.7
John James	R	AA	45.8%	3.8	-5.1	1.1	2.0	57.8	59.9	58.4	55.1
others				2.3	2.5	2.4	3.7	1.9	2.0	1.7	1.2
votes for office				*36.5*	*31.5*	*35.0*	*35.0*	*61.8*	*61.6*	*63.1*	*63.1*
2020 General											
U.S. President											
Joseph Biden	D	W	50.6%	95.4	105.0	98.4	96.2	37.0	34.7	36.9	40.0
Donald Trump	R	W	47.8%	3.8	-5.4	1.1	1.9	61.5	63.6	61.2	59.1
others				0.8	0.8	1.3	1.9	1.6	1.7	1.6	1.0
votes for office				*61.2*	*53.3*	*55.2*	*55.2*	*79.1*	*77.7*	*79.0*	*79.0*
U.S. Senate											
Gary Peters	D	W	49.9%	93.4	102.3	97.2	93.9	36.9	34.8	36.4	39.4
John James	R	AA	48.2%	3.8	-5.6	1.1	1.7	61.5	63.5	61.7	59.8
others				2.7	3.1	3.7	4.4	1.6	1.6	1.4	0.9
votes for office				*59.9*	*53.0*	*55.0*	*55.0*	*78.3*	*76.8*	*78.1*	*78.1*

County: Genesee			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
2012 General										
U.S. President										
Barack Obama	D	AA	99.0	107.0	99.5	97.6	52.9	52.7	52.8	53.7
Mitt Romney	R	W	0.7	-6.7	0.5	1.3	46.1	46.0	46.0	45.5
others			0.2	0.3	0.7	1.1	1.1	1.3	0.9	0.8
votes for office			*64.1*	*57.4*	*61.0*	*61.0*	*70.1*	*65.1*	*68.4*	*68.4*
U.S. Senate										
Debbie Stabenow	D	W	97.8	103.9	99.7	96.7	59.7	59.8	59.4	60.2
Peter Hoekstra	R	W	0.9	-5.3	0.5	1.3	36.7	36.3	36.5	35.2
others			1.3	1.3	1.1	2.0	3.6	3.9	3.8	32.2
votes for office			*63.7*	*57.3*	*60.7*	*60.7*	*69.2*	*64.4*	*67.5*	*67.5*
2014 General										
Governor										
Mark Schauer	D	W	97.1	104.2	99.3	95.8	50.7	50.5	49.5	51.8
Rick Snyder	R	W	2.0	-5.0	0.6	2.3	46.5	46.5	47.5	45.8
others			0.9	0.9	1.1	1.9	2.8	3.0	2.8	2.4
votes for office			*37.6*	*31.4*	*35.8*	*35.8*	*48.8*	*44.6*	*47.5*	*67.5*
Secretary of State										
Godfrey Dillard	D	AA	96.1	104.3	99.0	95.6	45.3	45.8	44.2	46.2
Ruth Johnson	R	W	2.6	-5.3	0.3	2.2	50.7	50.5	51.5	50.2
others			1.3	1.1	1.1	2.2	4.1	4.3	4.1	3.6
votes for office			*37.4*	*31.5*	*35.9*	*35.9*	*47.4*	*43.3*	*46.1*	*46.1*
Attorney General										
Mark Totten	D	W	95.2	103.4	98.7	95.6	44.2	43.9	43.3	45.2
Bill Schuette	R	W	3.7	-4.4	0.8	2.4	52.6	52.6	53.3	51.9
others			1.1	1.1	0.9	2.0	3.3	3.5	3.3	2.9
votes for office			*37.3*	*31.4*	*35.9*	*35.9*	*46.8*	*42.8*	*45.5*	*45.5*

County: Genesee			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Gary Peters	D	W	97.2	103.9	99.5	95.6	57.0	57.0	56.4	58.6
Terry Lynn Land	R	W	1.7	-4.8	0.6	2.2	38.7	38.3	39.0	37.5
others			1.2	0.9	0.8	2.2	4.3	4.6	4.4	3.9
votes for office			*37.6*	*31.5*	*36.1*	*36.1*	*48.3*	*44.3*	*47.1*	*47.1*
2016 General										
U.S. President										
Hillary Clinton	D	W	97.5	106.0	99.5	96.4	37.8	34.5	35.3	37.4
Donald Trump	R	W	1.5	-7.0	0.4	1.7	57.0	59.4	58.5	57.1
others			1.0	1.1	1.0	1.9	5.2	6.1	6.1	5.5
votes for office			*70.6*	*59.8*	*59.0*	*59.0*	*70.9*	*63.5*	*67.3*	*67.3*
2018 General										
Governor										
Whitmer/Gilchrist	D	W/AA	96.2	103.6	99.2	95.3	46.7	45.5	45.8	46.2
Schuette/Lyons	R	W/W	2.2	-5.5	0.2	2.0	50.5	50.9	50.5	50.8
others			1.6	1.9	1.7	2.7	2.8	3.6	3.2	3.0
votes for office			*54.2*	*43.5*	*45.1*	*45.1*	*62.6*	*57.0*	*59.8*	*59.8*
Secretary of State										
Jocelyn Benson	D	W	96.5	103.7	99.2	95.2	45.7	44.7	44.9	48.0
Mary Treder Lang	R	W	2.0	-5.8	0.3	2.0	50.9	51.2	50.8	48.7
others			1.5	2.1	1.4	2.8	3.4	4.2	3.7	3.4
votes for office			*53.9*	*43.5*	*44.9*	*44.9*	*61.3*	*55.7*	*58.6*	*58.6*
Attorney General										
Dana Nessel	D	W	94.5	102.3	98.6	94.1	39.9	37.6	37.9	41.1
Tom Leonard	R	W	2.3	-5.8	0.6	2.0	55.3	56.3	55.9	53.7
others			3.2	3.5	3.8	3.9	47.7	6.0	5.1	5.1
votes for office			*53.7*	*43.2*	*44.6*	*44.6*	*61.0*	*55.6*	*58.4*	*58.4*

County: Genesee			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Debbie Stabenow	D	W	95.3	103.2	98.9	95.2	43.8	42.6	42.8	45.8
John James	R	AA	3.0	-5.3	0.7	2.1	54.3	54.8	54.6	52.6
others			1.7	2.2	1.7	2.8	1.9	2.6	1.8	1.6
votes for office			*54.2*	*43.8*	*45.1*	*45.1*	*62.4*	*56.8*	*59.6*	*59.6*
2020 General										
U.S. President										
Joseph Biden	D	W	96.5	104.4	99.3	96.1	39.9	37.7	38.6	42.1
Donald Trump	R	W	3.0	-5.1	0.5	2.1	58.7	60.5	59.6	56.7
others			0.5	0.7	0.9	1.8	1.4	1.8	1.8	1.2
votes for office			*67.3*	*54.8*	*53.0*	*53.0*	*81.5*	*75.4*	*79.6*	*79.6*
U.S. Senate										
Gary Peters	D	W	95.1	103.0	98.9	95.0	41.1	39.7	40.1	43.5
John James	R	AA	3.2	-5.3	0.7	1.8	57.4	58.4	57.6	55.5
others			1.7	2.1	2.7	3.2	1.6	2.0	1.5	1.1
votes for office			*67.1*	*54.8*	*56.6*	*56.6*	*80.6*	*74.4*	*78.7*	*78.7*

County: Saginaw			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
2012 General										
U.S. President										
Barack Obama	D	AA		114.3	99.5	95.7	41.6	39.2	41.1	42.9
Mitt Romney	R	W		-14.8	0.4	2.5	57.0	59.1	57.1	55.9
others				0.2	0.6	1.8	1.5	1.7	1.7	1.2
votes for office				*56.7*	*56.2*	*56.2*	*71.4*	*69.5*	*70.3*	*70.3*
U.S. Senate										
Debbie Stabenow	D	W		111.0	99.5	95.4	51.0	49.0	50.1	52.3
Peter Hoekstra	R	W		-11.6	0.7	2.2	46.0	47.6	46.3	44.9
others				0.7	0.0	2.4	2.9	3.3	3.3	2.8
votes for office				*56.3*	*55.7*	*55.7*	*69.9*	*67.7*	*68.7*	*68.7*
2014 General										
Governor										
Mark Schauer	D	W		11.2	99.6	94.1	41.1	38.4	39.1	42.2
Rick Snyder	R	W		-12.3	0.5	3.0	56.3	58.9	58.1	55.7
others				1.0	0.7	2.8	2.6	2.7	2.6	2.1
votes for office				*31.1*	*32.7*	*32.7*	*51.5*	*49.9*	*50.8*	*50.8*
Secretary of State										
Godfrey Dillard	D	AA		111.3	99.2	94.4	35.3	32.6	33.5	36.3
Ruth Johnson	R	W		-12.5	0.5	2.8	60.5	63.0	62.0	59.9
others				1.1	0.9	2.8	4.2	4.5	4.4	3.8
votes for office				*31.4*	*32.6*	*32.6*	*49.9*	*48.4*	*49.2*	*49.2*
Attorney General										
Mark Totten	D	W		110.7	98.6	94.1	32.1	28.9	29.8	32.6
Bill Schuette	R	W		-12.1	0.5	2.9	65.2	68.2	67.2	65.1
others				1.3	1.1	3.0	2.7	3.0	2.9	23.3
votes for office				*31.0*	*32.4*	*32.4*	*50.8*	*49.3*	*50.1*	*50.1*

County: Saginaw			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Gary Peters	D	W		110.3	99.5	94.1	48.3	46.7	47.6	50.6
Terry Lynn Land	R	W		-10.6	0.7	3.0	47.8	49.2	47.9	45.8
others				0.5	0.4	2.9	3.9	4.3	4.2	3.5
votes for office				*31.2*	*32.7*	*32.7*	*50.8*	*49.2*	*50.1*	*50.1*
2016 General										
U.S. President										
Hillary Clinton	D	W		116.7	99.6	95.0		25.1	28.1	30.6
Donald Trump	R	W		-17.2	0.5	2.5		69.0	66.1	64.0
others				0.4	0.0	2.5		5.8	5.6	5.4
votes for office				*55.5*	*52.3*	*52.3*		*69.0*	*70.2*	*70.2*
2018 General										
Governor										
Whitmer/Gilchrist	D	W/AA		112.4	99.4	93.6		34.8	36.4	40.9
Schuette/Lyons	R	W/W		-14.2	0.6	2.9		62.4	60.3	56.9
others				1.8	1.6	3.5		2.8	2.5	2.2
votes for office				*38.9*	*37.7*	*37.7*		*61.5*	*63.0*	*63.0*
Secretary of State										
Jocelyn Benson	D	W		113.3	99.6	93.7		33.6	35.4	39.2
Mary Treder Lang	R	W		-14.9	0.6	3.2		62.8	60.6	57.7
others				3.5	1.2	3.1		3.6	3.3	3.0
votes for office				*39.7*	*38.0*	*38.0*		*60.0*	*61.4*	*61.4*
Attorney General										
Dana Nessel	D	W		112.5	99.0	93.4		27.6	29.0	33.3
Tom Leonard	R	W		-15.5	0.5	2.6		66.8	64.6	61.7
others				3.0	2.1	4.0		5.6	5.5	5.0
votes for office				*38.7*	*37.6*	*37.6*		*59.7*	*61.0*	*61.0*

County: Saginaw			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Debbie Stabenow	D	W		110.6	99.3	93.5		33.7	34.6	39.3
John James	R	AA		-13.0	0.8	2.9		64.5	63.0	59.6
others				2.4	2.2	3.6		1.8	1.8	1.2
votes for office				*39.2*	*37.8*	*37.8*		*61.5*	*62.8*	*62.8*
2020 General										
U.S. President										
Joseph Biden	D	W		114.2	99.0	95.3		29.3	32.0	36.3
Donald Trump	R	W		-14.9	0.6	2.7		69.0	66.2	62.6
others				0.6	1.1	2.0		1.6	1.5	1.1
votes for office				*50.7*	*48.6*	*48.6*		*78.3*	*79.6*	*79.6*
U.S. Senate										
Gary Peters	D	W		112.5	99.5	93.8		31.1	33.1	37.5
John James	R	AA		-14.7	0.6	3.0		67.3	65.0	61.6
others				2.1	2.8	3.2		1.5	1.2	0.9
votes for office				*50.7*	*48.4*	*48.4*		*77.2*	*78.7*	*78.7*

County: Oakland			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
2012 General										
U.S. President										
Barack Obama	D	AA	98.2	111.7	99.4	95.7	43.9	39.5	40.7	42.1
Mitt Romney	R	W	1.6	-11.8	0.5	2.3	55.0	59.4	58.1	57.2
others			0.3	0.2	1.7	2.1	1.1	1.1	1.0	0.6
votes for office			*78.9*	*69.2*	*68.9*	*68.2*	*75.7*	*74.8*	*75.7*	*75.7*
U.S. Senate										
Debbie Stabenow	D	W	97.3	110.5	99.1	95.8	48.4	44.5	45.7	47.6
Peter Hoekstra	R	W	1.6	-11.4	0.0	1.9	47.9	51.8	50.3	49.2
others			1.1	0.9	0.8	2.3	3.7	3.7	3.5	3.2
votes for office			*78.3*	*69.2*	*67.8*	*67.8*	*74.0*	*73.0*	*74.0*	*74.0*
2014 General										
Governor										
Mark Schauer	D	W	94.5	108.9	99.1	94.8	33.9	27.9	28.2	30.6
Rick Snyder	R	W	5.0	-9.5	0.8	2.8	64.1	70.1	69.8	68.1
others			0.5	1.9	1.0	2.5	2.0	2.0	1.9	1.3
votes for office			*51.5*	*44.4*	*46.3*	*46.3*	*54.5*	*53.6*	*54.6*	*54.6*
Secretary of State										
Godfrey Dillard	D	AA	93.3	109.7	99.1	94.6	29.1	23.5	24.3	26.4
Ruth Johnson	R	W	5.4	-9.5	0.4	2.7	67.9	73.5	72.7	71.4
others			1.3	1.9	1.2	2.7	2.9	3.0	2.7	2.2
votes for office			*51.1*	*44.4*	*45.9*	*45.9*	*53.2*	*52.1*	*53.1*	*53.1*
Attorney General										
Mark Totten	D	W	93.0	107.5	98.8	94.1	35.0	30.1	30.3	32.9
Bill Schuette	R	W	5.6	-8.8	0.8	3.0	61.3	66.2	65.9	64.0
others			1.4	1.3	1.5	2.9	3.7	3.7	3.5	3.1
votes for office			*51.1*	*44.2*	*45.8*	*45.8*	*52.7*	*51.7*	*52.6*	*52.6*

County: Oakland			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Gary Peters	D	W	96.8	110.6	99.4	95.0	46.9	43.0	44.0	46.7
Terry Lynn Land	R	W	2.0	-10.9	0.0	2.4	48.7	52.6	51.5	49.7
others			1.2	0.3	0.5	2.6	4.4	4.4	4.4	3.6
votes for office			*51.5*	*44.7*	*46.5*	*46.5*	*53.7*	*53.7*	*53.7*	*53.7*
2016 General										
U.S. President										
Hillary Clinton	D	W	95.2	108.8	99.4	95.1	36.0	34.2	34.3	39.1
Donald Trump	R	W	3.4	-9.7	0.8	2.4	58.6	59.8	59.6	55.8
others			1.4	0.7	0.1	2.5	5.4	6.0	6.0	5.1
votes for office			*73.0*	*61.1*	*65.6*	*65.6*	*74.6*	*72.4*	*73.5*	*73.5*
2018 General										
Governor										
Whitmer/Gilchrist	D	W/AA	95.3	107.6	99.3	94.1	44.2	42.4	42.2	47.4
Schuette/Lyons	R	W/W	3.5	-9.0	0.7	2.7	53.3	55.0	54.6	50.7
others			1.2	1.3	1.4	3.3	2.5	2.6	2.6	1.9
votes for office			*62.5*	*51.6*	*53.2*	*53.2*	*69.6*	*68.2*	*68.8*	*68.8*
Secretary of State										
Jocelyn Benson	D	W	95.2	108.1	99.1	94.2	44.3	42.4	42.3	47.5
Mary Treder Lang	R	W	3.4	-9.4	0.7	2.7	53.0	54.7	54.5	50.5
others			1.4	1.3	1.3	3.1	2.7	2.8	2.6	2.0
votes for office			*62.1*	*51.5*	*53.1*	*53.1*	*68.7*	*67.1*	*67.7*	*67.7*
Attorney General										
Dana Nessel	D	W	93.8	107.3	99.2	93.8	40.2	37.9	37.5	43.0
Tom Leonard	R	W	3.5	-9.7	0.6	2.6	55.4	96.8	57.5	53.0
others			2.7	2.4	2.0	3.6	4.4	0.5	4.4	4.0
votes for office			*61.4*	*50.7*	*52.5*	*52.5*	*67.9*	*66.4*	*67.0*	*67.0*

County: Oakland			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Debbie Stabenow	D	W	93.8	106.5	98.7	93.0	42.7	41.1	40.9	45.5
John James	R	AA	4.8	-8.4	0.8	2.8	55.9	57.5	57.5	53.6
others			1.5	1.7	1.6	4.2	1.4	1.4	1.5	0.9
votes for office			*62.5*	*51.5*	*53.2*	*53.2*	*69.5*	*68.1*	*68.7*	*68.7*
2020 General										
U.S. President										
Joseph Biden	D	W	94.2	105.1	99.0	93.4	42.0	41.6	41.2	45.9
Donald Trump	R	W	5.3	-5.7	1.3	3.6	56.4	56.8	57.2	53.1
others			0.6	1.6	1.7	3.0	1.5	1.6	1.6	1.0
votes for office			*76.1*	*64.6*	*71.6*	*71.6*	*85.7*	*84.9*	*86.4*	*86.4*
U.S. Senate										
Gary Peters	D	W	93.1	104.5	98.8	92.1	40.7	39.9	39.4	43.5
John James	R	AA	5.2	-6.7	0.8	2.9	57.9	58.9	59.3	55.7
others			1.8	2.2	2.2	5.0	1.4	1.2	1.2	0.8
votes for office			*75.7*	*64.7*	*71.4*	*71.4*	*84.8*	*84.1*	*85.4*	*85.4*

County: Wayne			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
2012 General										
U.S. President										
Barack Obama	D	AA	98.6	102.2	99.5	99.0	51.1	51.2	51.1	51.9
Mitt Romney	R	W	1.2	-2.4	0.5	0.6	48.0	47.8	47.7	47.3
others			0.2	0.2	0.3	0.4	0.9	1.1	0.9	0.8
votes for office			*61.3*	*58.3*	*60.4*	*60.4*	*68.9*	*63.4*	*65.7*	*65.7*
U.S. Senate										
Debbie Stabenow	D	W	97.3	100.2	98.9	98.1	56.8	57.2	56.6	57.6
Peter Hoekstra	R	W	1.2	-1.6	0.4	0.6	39.6	38.8	39.1	38.6
others			1.5	1.5	1.5	1.3	3.6	4.0	4.0	3.8
votes for office			*60.8*	*57.8*	*59.9*	*59.9*	*67.6*	*62.1*	*64.4*	*64.4*
2014 General										
Governor										
Mark Schauer	D	W	94.2	97.8	96.4	96.5	41.1	41.2	39.2	41.3
Rick Snyder	R	W	5.0	1.4	2.9	2.6	56.9	56.3	58.4	56.6
others			0.8	0.8	0.7	0.9	2.0	2.5	2.3	2.0
votes for office			*36.3*	*33.0*	*35.8*	*35.8*	*50.7*	*44.1*	*47.7*	*47.7*
Secretary of State										
Godfrey Dillard	D	AA	94.3	98.4	96.7	96.8	36.8	36.6	35.0	36.8
Ruth Johnson	R	W	4.3	0.3	2.1	1.9	59.7	59.2	61.2	59.6
others			1.4	1.4	1.3	1.3	3.4	4.1	3.8	3.6
votes for office			*35.9*	*32.7*	*35.5*	*35.5*	*49.0*	*42.5*	*46.1*	*46.1*
Attorney General										
Mark Totten	D	W	93.2	97.0	95.5	95.7	41.0	40.7	39.1	41.0
Bill Schuette	R	W	5.3	1.5	3.2	2.9	55.4	54.9	56.8	55.1
others			1.5	1.5	1.4	1.4	3.7	4.4	4.1	3.9
votes for office			*35.7*	*32.5*	*35.3*	*35.3*	*48.8*	*42.3*	*45.9*	*45.9*

County: Wayne			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Gary Peters	D	W	96.8	100.0	98.5	98.0	52.8	52.7	51.4	53.4
Terry Lynn Land	R	W	2.0	-1.1	0.6	1.0	42.7	42.0	43.4	41.8
others			1.2	1.1	1.0	1.1	4.5	5.3	5.0	4.7
votes for office			*36.2*	*32.9*	*35.7*	*35.7*	*49.8*	*43.2*	*46.8*	*46.8*
2016 General										
U.S. President										
Hillary Clinton	D	W	96.8	101.0	99.0	98.4	47.1	39.1	38.2	39.7
Donald Trump	R	W	2.0	-2.1	0.6	0.7	47.8	54.8	55.4	54.4
others			1.2	1.1	1.0	0.9	5.1	6.1	6.0	5.9
votes for office			*57.7*	*55.7*	*57.0*	*57.0*	*72.2*	*61.6*	*64.0*	*64.0*
2018 General										
Governor										
Whitmer/Gilchrist	D	W/AA	95.6	99.0	97.6	97.0	53.4	49.7	47.9	53.5
Schuette/Lyons	R	W/W	2.5	1.0	0.9	1.1	44.6	47.3	49.1	44.0
others			2.0	2.0	2.1	1.9	2.0	3.0	2.8	2.5
votes for office			*33.9*	*30.9*	*33.2*	*33.2*	*67.2*	*59.8*	*63.2*	*63.2*
Secretary of State										
Jocelyn Benson	D	W	95.7	99.0	97.7	97.0	53.1	50.0	49.1	53.6
Mary Treder Lang	R	W	2.4	-1.0	1.0	1.1	44.7	46.8	48.5	43.6
others			2.0	2.0	2.0	1.8	2.2	3.2	3.2	2.8
votes for office			*33.7*	*30.8*	*33.1*	*33.1*	*66.2*	*58.8*	*62.2*	*62.2*
Attorney General										
Dana Nessel	D	W	94.1	97.7	96.3	95.5	49.6	45.6	43.6	49.4
Tom Leonard	R	W	2.4	-1.3	0.8	1.0	47.2	49.9	51.8	46.6
others			3.6	3.6	3.5	3.5	3.3	44.9	4.3	4.1
votes for office			*33.3*	*30.4*	*32.7*	*32.7*	*65.4*	*58.0*	*61.3*	*61.3*

County: Wayne			Estimates for Black Voters				Estimates for White Voters			
	Party	Race	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
U.S. Senate										
Debbie Stabenow	D	W	93.8	97.1	95.9	95.8	52.4	48.9	47.1	52.3
John James	R	AA	3.8	0.4	1.9	1.5	46.5	49.4	52.2	46.5
others			2.4	2.5	2.4	2.7	1.1	1.7	1.4	1.3
votes for office			*33.7*	*30.8*	*33.1*	*33.1*	*67.2*	*59.6*	*63.1*	*63.1*
2020 General										
U.S. President										
Joseph Biden	D	W	95.4	99.0	97.9	97.5	53.3	45.9	44.5	47.5
Donald Trump	R	W	3.8	0.2	1.6	1.5	45.4	52.6	53.9	51.3
others			0.8	0.8	0.8	0.9	1.3	0.8	1.5	1.3
votes for office			*59.2*	*55.6*	*58.0*	*58.0*	*81.3*	*74.1*	*76.6*	*76.6*
U.S. Senate										
Gary Peters	D	W	93.3	967.0	95.3	95.2	51.7	46.6	44.4	47.2
John James	R	AA	3.8	0.3	1.7	1.6	47.0	52.1	53.7	51.5
others			2.8	3.0	2.9	3.2	1.3	1.9	1.8	1.4
votes for office			*58.9*	*55.3*	*57.8*	*57.8*	*80.6*	*73.0*	*75.6*	*75.6*

2018 Democratic Primary for Governor				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
STATEWIDE											
Abdul El-Sayed	D	ME	30.2%	21.0	24.2	23.5	26.0	25.7	27.1	30.2	28.5
Shri Thanedar	D	A	17.7%	42.5	44.2	42.2	39.0	15.8	12.9	10.8	9.4
Gretchen Whitmer	D	W	52.0%	36.5	31.6	33.5	35.0	58.6	60.0	59.4	62.0
votes for office				*23.0*	*22.5*	*24.5*	*24.5*	*13.9*	*12.0*	*14.0*	*14.0*
Genesee											
Abdul El-Sayed	D	ME	22.9%	16.5	18.6	17.9	21.0	22.3	24.8	24.2	23.5
Shri Thanedar	D	A	23.6%	46.0	49.9	47.2	43.4	15.7	13.6	13.3	11.5
Gretchen Whitmer	D	W	53.4%	37.5	31.6	34.5	35.7	62.0	61.6	61.9	65.1
votes for office				*26.9*	*23.4*	*25.9*	*25.9*	*15.5*	*13.3*	*14.8*	*14.8*
Saginaw											
Abdul El-Sayed	D	ME	22.2%		18.9	17.5	21.0		21.9	23.6	21.0
Shri Thanedar	D	A	24.7%		51.5	51.1	44.7		16.8	14.7	14.5
Gretchen Whitmer	D	W	53.1%		29.6	31.3	34.4		61.4	61.8	64.5
votes for office					*19.7*	*20.7*	*20.7*		*12.4*	*13.2*	*13.2*
Oakland											
Abdul El-Sayed	D	ME	32.5%	23.2	24.1	23.2	25.3	29.8	34.2	36.0	34.9
Shri Thanedar	D	A	13.4%	32.7	38.5	37.5	34.7	8.4	4.3	4.3	3.0
Gretchen Whitmer	D	W	54.1%	44.1	37.5	39.0	40.0	61.8	61.4	61.0	62.1
votes for office				*31.4*	*33.3*	*35.0*	*35.0*	*20.8*	*16.1*	*18.2*	*18.2*
Wayne											
Abdul El-Sayed	D	ME	32.0%	21.2	20.8	21.0	22.2	43.4	41.3	41.3	41.6
Shri Thanedar	D	A	24.3%	42.8	45.6	43.8	42.5	7.5	4.8	5.4	3.9
Gretchen Whitmer	D	W	43.7%	36.1	33.7	34.8	35.3	49.2	53.9	54.0	54.5
votes for office				*22.4*	*21.1*	*23.5*	*23.5*	*19.3*	*16.0*	*17.4*	*17.4*

APPENDIX B

Congressional District General Elections				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
Congressional District 5											
2018 General											
Daniel Kildee	D	W	59.5%	96.2	104.4	99.1	95.0	48.4	46.5	47.5	50.5
Travis Wines	R	W	35.9%	1.3	-7.8	0.2	1.7	47.0	48.3	46.9	44.9
others				2.5	3.3	3.2	3.3	4.6	5.2	4.9	4.7
votes for office				*53.8*	*42.7*	*43.8*	*43.8*	*59.2*	*56.5*	*58.3*	*58.3*
2020 General											
Daniel Kildee	D	W	54.5%	95.4	105.2	99.0	95.0	41.6	39.6	41.0	44.2
Tim Kelly	R	W	41.8%	2.1	-8.4	0.6	1.6	54.8	56.3	54.4	52.3
others				2.6	3.2	3.0	3.4	3.6	4.1	3.9	3.5
votes for office				*67.1*	*54.5*	*54.5*	*54.5*	*76.6*	*73.8*	*76.0*	*76.0*
Congressional District 9											
2018 General											
Andy Levin	D	W	59.7%		95.2	98.2	71.5		50.2	48.9	55.7
Candius Stearns	R	W	36.8%		3.5	0.3	62.9		47.5	47.4	43.2
others					8.4	9.4	22.2		2.4	2.3	1.1
votes for office					*17.9*	*17.5*	*17.5*		*66.2*	*66.4*	*66.4*
2020 General											
Andy Levin	D	W	57.7%		92.6	96.6	74.7		48.3	45.9	52.0
Charles Langworthy	R	W	38.4%		-0.6	0.5	5.6		48.8	50.0	46.7
others					7.9	8.1	19.7		3.0	2.7	1.3
votes for office					*37.9*	*27.6*	*27.6*		*80.2*	*82.7*	*82.7*
Congressional District 12											
2018 General											
Debbie Dingell	D	W	68.1%		91.9	97.3	75.5		58.4	57.5	63.3
Jeff Jones	R	W	28.9%		3.1	1.8	9.8		38.6	38.9	35.6
others					5.0	4.4	14.7		3.0	3.0	1.1
votes for office					*33.4*	*37.1*	*37.1*		*58.9*	*62.4*	*62.4*

Congressional District General Elections				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
2020 General											
Debbie Dingell	D	W	66.4%		91.2	95.9	75.3		56.4	55.3	58.7
Jeff Jones	R	W	30.7%		4.2	2.7	11.4		40.6	41.6	40.0
others					4.3	4.2	13.2		3.0	3.2	1.3
votes for office					*50.3*	*58.2*	*58.2*		*73.8*	*75.0*	*75.0*
Congressional District 13											
2018 General											
Rashida Tlaib	D	ME	84.2%	93.4	95.5	94.8	95.2		64.2	64.5	65.6
others				6.6	4.5	5.4	4.8		35.7	35.7	34.4
votes for office				*32.5*	*32.3*	*34.7*	*34.7*		*39.1*	*41.3*	*41.3*
2020 General											
Rashida Tlaib	D	ME	78.1%	94.6	97.8	96.5	96.1		46.5	47.0	46.9
David Dudenhoefer	R	W	18.7%	2.7	-0.4	1.1	1.2		49.2	48.7	49.0
others				2.7	2.7	2.6	2.7		4.4	4.2	4.1
votes for office				*587.0*	*57.5*	*60.0*	*60.0*		*59.0*	*61.1*	*61.1*
Congressional District 14											
2018 General											
Brenda Lawrence	D	AA	80.9%	96.3	99.3	98.1	96.7	40.8	51.3	52.3	61.1
Marc Herschfus	R	W	17.3%	1.7	-1.4	0.5	1.6	58.1	46.9	40.9	36.9
others				2.0	2.1	1.8	1.7	1.1	1.8	2.2	2.1
votes for office				*36.1*	*33.8*	*40.0*	*40.0*	*74.3*	*72.6*	*74.5*	*74.5*
2020 General											
Brenda Lawrence	D	AA	79.3%	95.0	97.9	96.6	96.5	41.6	49.3	50.3	55.6
Robert Vance Patrick	R	W	18.3%	2.6	-0.3	0.9	1.3	56.4	48.2	47.5	41.7
others				2.4	2.5	2.2	2.2	2.0	2.5	2.4	2.6
votes for office				*59.9*	*57.4*	*61.7*	*61.7*	*90.7*	*85.0*	*86.3*	*86.3*

2018 General: State Senate Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 1 (Wayne)											
Stephanie Chang	D	A	72.0%	91.3	97.8	94.1	93.2	47.2	49.0	48.8	53.3
Pauline Montie	R	W	24.2%	2.1	-4.2	0.8	1.1	51.0	49.4	48.6	44.6
others			3.8%	6.1	6.4	6.3	5.6	1.8	1.6	1.6	2.1
votes for office				*33.3*	*27.8*	*31.0*	*31.0*	*66.6*	*54.7*	*57.3*	*57.3*
District 2 (Wayne)											
Adam Hollier	D	AA	75.7%	96.4	99.5	98.0	97.9	37.7	47.7	46.5	52.8
Lisa Papas	R	W	24.3%	3.6	0.5	2.0	2.1	62.3	52.2	53.4	47.2
votes for office				*31.3*	*28.0*	*30.9*	*30.9*	*74.1*	*69.6*	*73.3*	*73.3*
District 3 (Wayne)											
Sylvia Santana	D	AA	81.8%	94.2	95.6	95.4	95.6	78.8	67.9	64.4	66.3
Kathy Stecker	R	W	15.3%	2.5	1.1	1.5	1.3	18.9	29.3	32.6	31.0
others			2.9%	3.9	3.3	3.3	3.1	2.3	2.8	2.7	2.7
votes for office				*30.7*	*29.2*	*30.0*	*30.0*	*38.7*	*42.8*	*45.4*	*45.4*
District 4 (Wayne)											
Marshall Bullock	D	AA	78.3%		97.0	100.2	98.7		45.3	46.1	51.1
Angela Savino	R	W	21.7%		3.0	-0.1	1.3		54.7	53.9	48.9
votes for office				*32.4*	*30.6*	*32.2*	*32.2*		*50.2*	*51.2*	*51.2*
District 5 (Wayne)											
Betty Jean Alexander	D	AA	77.4%	93.4	95.5	95.4	95.3		49.9	48.9	50.7
DeShawn Wilkins	R	AA	18.2%	3.3	1.2	1.6	1.6		43.7	44.5	43.1
others			4.4%	3.3	3.3	3.2	3.1		6.4	6.5	6.2
votes for office				*34.9*	*36.2*	*39.4*	*39.4*		*44.2*	*44.1*	*44.1*
District 6 (Wayne)											
Erika Geiss	D	AA	61.4%		107.3	99.4	92.8		42.6	43.8	47.8
Brenda Jones	R	AA	38.7%		-7.2	0.5	7.2		57.4	56.4	52.3
votes for office					*38.3*	*35.9*	*35.9*		*50.0*	*52.9*	*52.9*

2018 General: State Senate Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 11 (Oakland)											
Jeremy Moss	D	W	76.7%		99.0	99.2	96.3	80.9	60.2	56.9	60.2
Boris Tuman	R	W	20.9%		0.0	0.4	2.0	17.5	36.0	39.2	36.6
others			12.4%		1.0	1.0	1.7	1.6	3.7	3.8	3.2
votes for office					*60.6*	*63.4*	*63.4*	*83.7*	*59.9*	*60.1*	*60.1*
District 12 (Oakland)											
Rosemary Bayer	D	W	49.4%		122.0	99.6	87.9		33.2	33.3	42.1
Michael D. McCready	R	W	48.6%		-23.8	0.6	4.6		64.9	64.2	56.7
others			2.0%		1.7	2.0	7.4		2.0	2.0	1.2
votes for office					*14.5*	*25.6*	*25.6*		*75.1*	*74.4*	*74.4*
District 27 (Genesee)											
Jim Ananich	D	W	71.2%	97.6	103.0	99.3	97.7	53.9	53.3	54.2	55.6
Donna Kekesis	R	W	28.8%	2.4	-3.0	0.7	2.3	46.1	46.7	45.8	44.4
votes for office				*53.7*	*46.5*	*50.5*	*50.5*	*58.7*	*46.9*	*49.9*	*49.9*
District 32 (Genesee and Saginaw)											
Phil Phelps	D	W	44.5%		113.0	99.7	96.1		29.5	30.1	33.5
Ken Horn	R	W	55.5%		-13.0	0.4	3.9		70.5	69.9	66.5
votes for office					*37.9*	*37.6*	*37.6*		*61.4*	*62.3*	*62.3*

2018 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 1 (Wayne)											
Tenisha Yancey	D	AA	72.9%	96.3	101.0	99.1	97.3		33.3	36.2	47.0
Mark Corcoran	R	W	25.0%	2.2	-2.5	0.5	1.7		63.8	59.7	49.5
others			2.1%	1.5	1.5	1.6	0.9		2.9	3.9	3.5
votes for office				*30.5*	*28.8*	*30.1*	*30.1*		*81.0*	*80.4*	*80.4*
District 2 (Wayne)											
Joe Tate	D	AA	73.5%	97.4	101.5	98.8	98.8	41.6	46.8	47.2	53.0
John Palffy	R	W	26.5%	2.6	-1.4	1.1	1.2	58.5	53.1	53.1	47.0
votes for office				*33.9*	*26.9*	*28.3*	*28.3*	*74.0*	*77.0*	*78.2*	*78.2*
District 3 (Wayne)											
Wendell L. Byrd	D	AA	96.7%		97.4	97.8	98.8		89.6	87.3	80.4
Dolores Brodersen	R		3.3%		2.6	2.2	1.2		10.5	12.3	19.6
votes for office					*28.5*	*32.0*	*32.0*		*76.7*	*67.4*	*67.4*
District 4 (Wayne)											
Isaac Robinson	D	W	94.6%	97.6	97.3	97.7	97.2		89.5	86.3	85.5
Howard Weathington	R	AA	5.4%	2.4	2.7	2.2	2.8		10.4	13.6	14.5
votes for office				*27.0*	*30.1*	*30.3*	*30.3*		*24.5*	*24.1*	*24.1*
State House District 5											
Cynthia A. Johnson	D	AA	92.5%	97.0	97.8	98.2	97.7		72.4	62.2	na
Dorothy Patterson	R		5.5%	3.0	2.2	2.0	2.4		27.8	37.8	na
votes for office				*29.8*	*30.2*	*31.3*	*31.3*		*na*	*na*	
District 6 (Wayne)											
Tyrone Carter	D	AA	91.1%	95.6	98.4	98.2	96.3		66.3	65.0	66.0
Linda Sawyer	R	W	8.9%	4.4	1.7	1.9	3.7		33.5	35.0	34.0
votes for office				*34.9*	*35.3*	*38.2*	*38.2*		*18.2*	*25.3*	*25.3*

2018 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 7 (Wayne)				insufficient white voters to produce estimates of voting patterns by race							
LaTanya Garrett	D	AA	97.6%								
Marcelis Turner	R	AA	2.4%								
others											
votes for office											
District 8 (Wayne)				insufficient white voters to produce estimates of voting patterns by race							
Sherry Gay Dagnogo	D	AA	96.4%								
Valerie R. Parker	R	AA	3.7%								
others											
votes for office											
District 9 (Wayne)											
Karen Whitsett	D	AA	95.1%		97.5	97.7	98.5		85.2	84.1	78.8
James Stephens	R		4.9%		2.5	2.3	1.5		14.8	16.0	21.2
votes for office					*30.8*	*31.4*	*31.4*		*18.1*	*17.6*	*17.6*
District 10 (Wayne)											
Leslie Love	D	AA	84.0%		99.1	98.7	96.7		48.3	48.8	59.3
William Brang	R	W	14.2%		-0.3	0.6	2.2		47.8	46.1	37.5
others			1.8%		1.2	1.2	1.2		3.9	3.6	3.3
votes for office					*33.4*	*34.8*	*34.8*		*65.1*	*69.4*	*69.4*
District 11 (Wayne)											
Jewell Jones	D	AA	66.9%		106.0	99.2	96.2		50.4	51.0	51.9
James Townsend	R	W	33.1%		-6.0	0.8	3.8		49.8	49.1	48.1
votes for office					*37.9*	*38.9*	*38.9*		*44.9*	*45.2*	*45.2*
District 12 (Wayne)											
Alex Garza	D	H	66.6%		104.7	98.8	90.6		43.9	46.3	49.0
Michelle Bailey	R	W	33.4%		-4.7	1.1	9.4		56.1	54.1	51.0
votes for office					*47.8*	*48.0*	*48.0*		*41.8*	*42.8*	*42.8*

2018 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 16 (Wayne)											
Kevin Coleman	D	W	67.3%		111.8	99.1	***81.5***		50.2	51.5	***60.1***
Jody Rice-White	R	W	32.8%		-11.9	1.1	***18.5***		49.8	48.9	***39.9***
votes for office					*18.3*	*48.0*	***18.7***		*56.1*	*57.0*	***57.0***
District 27 (Oakland)											
Robert Wittenberg	D	W	78.5%		96.3	97.6	93.0	75.4	71.2	70.3	73.8
Janet Flessland	R	W	18.5%		1.7	1.0	3.0	22.5	35.6	26.2	24.3
others			3.0%		2.1	2.1	4.0	2.0	3.2	3.4	1.9
votes for office					*53.6*	*58.1*	*58.1*	*78.1*	*67.4*	*65.8*	*65.8*
District 29 (Oakland)											
Brenda Carter	D	AA	74.1%		114.5	99.2	94.5		36.7	41.8	***54.6***
Timothy D. Carrier	R	W	25.9%		-14.5	1.1	5.5		63.1	58.3	***45.4***
votes for office					*32.8*	*46.3*	*46.3*		*54.5*	*52.1*	***52.1***
District 34 (Genesee)											
Sheldon A. Neeley	D	AA	90.0%		101.5	99.5	98.7		58.9	64.0	***46.7***
Henry Swift	R		10.0%		-1.4	0.5	9.3		41.1	0.5	***53.4***
votes for office					*52.6*	*54.7*	*54.7*		*18.8*	*22.1*	***22.1***
District 35 (Oakland)											
Kyra Harris Bolden	D	AA	85.5%		102.7	99.6	98.2		53.5	57.2	63.1
Theodore Alfonsetti III	R	W	14.6%		-2.7	0.3	1.8		46.5	42.9	36.9
votes for office					*56.1*	*55.6*	*55.6*		*74.5*	*77.2*	*77.2*
District 37 (Oakland)											
Christine Greig	D	W	67.2%		111.4	98.2	69.5		59.6	61.5	68.2
Mitch Swoboda	R	W	32.8%		-11.2	2.2	30.5		40.6	38.7	31.8
votes for office					*34.8*	*35.6*	*35.6*		*85.0*	*82.3*	*82.3*

2018 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 49 (Genesee)											
John D. Cherry	D	W	72.4%		104.9	99.2	94.1		55.6	57.2	61.4
Patrick Duvendeck	R	W	27.6%		-5.0	0.8	6.0		44.4	42.7	38.7
votes for office					*40.0*	*42.3*	*42.3*		*53.0*	*57.8*	*57.8*
District 95 (Saginaw)											
Vanessa Guerra	D	H	73.1%		109.8	99.0	96.0		43.3	47.3	50.5
Dorothy Tanner	R	W	26.9%		-9.9	0.8	4.0		56.7	52.8	49.5
votes for office					*44.9*	*46.1*	*46.1*		*50.1*	*49.4*	*49.4*

2020 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 1 (Wayne)											
Tenisha R. Yancey	D	AA	75.8%	94.9	99.4	97.3	98.3		38.0	42.2	46.9
Latricia Ann Lanier	R	AA	22.2%	3.7	-0.7	1.5	0.9		59.0	55.7	49.5
others			2.0%	1.4	1.3	1.0	0.8		3.0	3.1	3.6
votes for office				*53.8*	*52.3*	*53.0*	*53.0*		*94.2*	*92.4*	*92.4*
District 2 (Wayne)											
Joe Tate	D	AA	74.1%	93.5	96.8	95.0	95.9	46.0	50.7	50.9	54.6
Mayra Rodriguez	R	H	23.8%	3.2	-0.2	1.3	1.0	53.1	48.7	47.9	44.4
others			2.1%	3.3	3.5	3.5	3.0	1.0	0.7	0.7	1.1
votes for office				*55.8*	*51.5*	*51.9*	*51.9*	*89.8*	*92.0*	*92.9*	*92.9*
District 3 (Wayne)											
Shri Thanedar	D	A	93.3%		95.0	95.0	97.7		73.1	72.9	55.4
Anita Vinson	R	AA	4.0%		3.3	3.3	1.4		12.3	12.6	25.1
others			2.7%		1.6	1.8	0.9		14.5	12.9	19.5
votes for office					*50.8*	*55.8*	*55.8*		*117.2*	*97.7*	*97.7*
District 4 (Wayne)											
Abraham Aiyash	D	ME	89.8%		95.9	96.7	95.5		92.9	90.3	86.6
Howard Weatherington	R	AA	5.7%		1.1	1.3	1.8		5.7	7.6	8.7
others			4.5%		3.0	3.0	2.8		1.3	1.4	4.7
votes for office					*89.7*	*90.1*	*90.1*		*57.7*	*68.1*	*68.1*
District 5 (Wayne)											
Cynthia A. Johnson	D	AA	93.0%	97.3	98.0	98.0	98.3		73.2	69.1	na
Harold M. Day	R		2.3%	2.7	2.1	2.0	1.7		27.1	32.7	na
votes for office				*54.3*	*55.7*	*56.9*	*56.9*		*na*	*na*	
District 6 (Wayne)											
Tyrone Carter	D	AA	100%								
votes for office											

2020 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 7 (Wayne)				insufficient white voters to produce estimates of voting patterns by race							
Helena Scott	D	AA	93.0%								
Ronald Cole	R		2.3%								
others			4.7%								
votes for office											
District 8 (Wayne)				insufficient white voters to produce estimates of voting patterns by race							
Stephanie A. Young	D	AA	96.7%								
Miroslawa Teresa Gorak	R	W	3.3%								
votes for office											
District 9 (Wayne)											
Karen Whitsett	D	AA	94.2%		96.5	96.5	97.2		83.7	83.4	75.4
James Stephens	R		5.8%		3.5	3.4	2.8		16.3	16.1	24.5
votes for office					*56.3*	*57.3*	*57.3*		*29.7*	*27.1*	*27.1*
District 10 (Wayne)											
Mary Cavanagh	D	H	84.8%		99.1	98.9	98.3		51.1	50.8	53.7
Cathy L. Alcorn	R		15.3%		0.9	1.1	1.7		48.9	49.4	46.3
votes for office					*62.9*	*65.3*	*65.3*		*69.1*	*68.3*	*68.3*
District 11 (Wayne)											
Jewell Jones	D	AA	65.2%		104.7	99.0	96.9		48.8	48.5	50.7
James C. Townsend	R	W	34.8%		-4.6	1.0	3.1		51.2	51.5	49.3
votes for office					*53.0*	*53.5*	*53.5*		*62.1*	*63.2*	*63.2*
District 12 (Wayne)											
Alex Garza	D	H	62.4%		103.0	99.4	91.8		38.2	38.8	41.4
Michelle Bailey	R	W	37.7%		-3.0	0.6	8.2		61.8	60.9	58.6
votes for office					*64.7*	*66.4*	*66.4*		*57.9*	*57.9*	*57.9*

2020 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 16 (Wayne)											
Kevin Coleman	D	W	62.5%		111.3	99.0	84.8		44.4	45.6	54.2
Emily Bauman	R	W	37.5%		-11.4	1.0	15.2		55.7	54.4	45.8
votes for office					*29.9*	*33.5*	*33.5*		*75.1*	*76.0*	*76.0*
District 27 (Oakland)											
Regina Weiss	D	W	74.4%		95.4	97.3	93.3	68.7	64.2	63.4	66.4
Elizabeth Goss	R	W	22.4%		2.6	1.5	3.9	28.8	32.0	32.5	30.6
others			3.2%		1.7	1.6	2.8	2.5	3.9	4.1	33.0
votes for office					*73.8*	*76.6*	*76.6*	*88.1*	*77.7*	*77.4*	*77.4*
District 29 (Oakland)											
Brenda Carter	D	AA	72.9%		111.1	99.1	94.7		37.1	38.8	51.3
S. Dave Sullivan	R	W	27.1%		-11.0	0.8	53.3		62.7	61.5	48.7
votes for office					*47.6*	*61.1*	*61.1*		*67.5*	*61.5*	*61.5*
District 34 (Oakland)											
Cynthia R. Neeley	D	AA	86.7%		100.5	99.2	98.3		51.6	56.1	45.9
James Miraglia	R	W	13.3%		-4.8	0.7	1.7		48.4	43.8	54.1
votes for office					*65.6*	*67.6*	*67.6*		*32.5*	*36.8*	*36.8*
District 35 (Oakland)											
Kyra Harris Bolden	D	AA	82.9%		99.8	99.4	97.2		51.5	51.2	58.5
Daniela Davis	R	AA	15.9%		-0.4	0.3	2.3		46.4	46.2	39.3
others			1.0%		0.6	0.5	0.5		2.1	2.4	2.2
votes for office					*70.1*	*68.4*	*68.4*		*93.4*	*94.5*	*94.5*
District 37 (Oakland)											
Samantha Steckloff	D	W	63.9%		106.1	96.4	***57.5***		56.8	56.9	***66.4***
Mitch Swoboda	R	W	34.1%		-8.7	0.8	***34.2***		41.7	40.8	***32.2***
others			2.0%		2.5	6.3	***8.3***		1.7	1.3	***1.4***
votes for office					*55.5*	*54.9*	***54.9***		*106.2*	*94.0*	***94.0***

2020 General: State House Districts				Estimates for Black Voters				Estimates for White Voters			
	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
District 49 (Genesee)											
John D. Cherry	D	W	68.9%		104.3	98.8	94.8		50.2	51.9	56.6
Bryan Lutz	R	W	31.1%		-4.3	1.0	5.2		49.8	48.3	43.6
votes for office					*52.5*	*60.7*	*60.7*		*68.0*	*69.1*	*69.1*
District 95 (Saginaw)											
Amos O'Neal	D	AA	70.1%		111.7	99.2	96.6		34.7	41.1	42.7
Charlotte DeMaet	R	W	29.9%		-11.5	0.9	3.4		65.2	58.9	57.3
votes for office					*59.0*	*60.6*	*60.6*		*62.9*	*61.5*	*61.5*

Recent Democratic Primaries: Congress			Estimates for Black Voters			Estimates for White Voters		
	Race	Vote	HP	ER	EI	HP	ER	EI
2018								
Congressional District 13								
Ian Conyers	B	6.6	8.3	9.1	9.3		1.3	1.1
Shanelle Jackson	B	5.4	7.7	7.1	7.5		1.6	1.2
Brenda Jones	B	30.2	42.5	43.7	43.5		2.9	5.3
Rashinda Tlaib	ME	31.2	22.3	21.3	22.4		48.1	45.3
Bill Wild	W	14.1	1.6	-1.4	0.7		46.2	43.9
Coleman Young II	B	12.5	17.7	20.1	18.9		-0.3	1.1
turnout of VAP			*23.0*	*22.2*	*24.3*		*12.2*	*14.1*
2020								
Congressional District 12								
Debbie Dingell	W	80.9		81.4	81.2		87.9	87.7
Solomon Rajput	A	19.1		18.9	19.0		12.1	12.2
turnout of VAP				*18.8*	*24.2*		*13.6*	*13.1*
Congressional District 13								
Brenda Jones	B	33.7	37.8	37.7	37.3		27.0	27.9
Rashida Tlaib	ME	66.3	62.2	62.3	62.7		72.9	72.1
turnout of VAP			*28.0*	*26.7*	*29.5*		*14.1*	*15.8*
Congressional District 14								
Brenda Lawrence	B	93.2	92.7	92.7	92.8	92.1	91.6	92.0
Terrance Morrison		6.8	7.3	7.3	7.5	7.9	8.4	8.7
turnout of VAP			*25.9*	*23.7*	*28.0*	*22.4*	*13.3*	*18.5*

Recent Democratic Primaries: 2018 State Senate			Estimates for Black Voters			Estimates for White Voters		
	Race	Vote	HP	ER	EI	HP	ER	EI
State Senate District 1 (Wayne)								
Stephanie Chang	A	49.8	24.6	23.5	27.1	71.6	79.2	76.7
James Cole	B	5.2	6.2	7.8	6.2	4.3	3.6	3.9
Nicholas Rivera	H	2.9	1.3	0.9	0.8	4.3	5.9	5.2
Stephanie Roehm		4.4	2.1	1.0	1.5	8.6	9.9	8.7
Bettie Cook Scott	B	11.2	18.2	17.9	15.7	6.6	17.0	6.1
Alberta Tinsley Talabi	B	26.4	47.7	48.9	47.1	4.7	-2.7	2.9
turnout of VAP			*20.0*	*20.9*	*23.3*	*17.4*	*13.3*	*13.9*
State Senate District 3 (Wayne)								
Anita Belle	B	14.3	23.7	25.5	25.4	4.9	1.9	1.9
Terry Burrell	W	5.5	8.5	8.6	8.4	3.9	2.1	2.2
Sylvia Santana	B	41.5	56.6	60.2	60.3	20.2	19.9	18.7
Gary Woronchak	W	38.7	11.2	5.7	8.0	71.0	76.2	76.0
turnout of VAP			*18.7*	*16.8*	*17.9*	*17.2*	*17.3*	*17.8*
State Senate District 4 (Wayne)								
Marshall Bullock	B	44.3	46.8	44.5	47.2		39.2	38.6
Fred Durhal	B	38.3	39.4	42.6	40.6		30.8	31.3
Carron Pinkins	B	17.5	13.8	12.8	12.6		30.0	29.1
turnout of VAP			*21.5*	*21.8*	*26.3*		*8.7*	*10.5*
State Senate District 5 (Wayne)								
Betty Jean Alexander	B	54.5	66.9	69.1	68.1		27.2	27.5
David Knezek	W	45.5	33.1	30.9	31.9		72.8	72.6
turnout of VAP			*22.2*	*21.6*	*23.1*		*10.7*	*11.4*
State Senate District 6								
Erika Geiss	B	65.4		86.1	89.5		55.6	55.9
Robert Kosowski	W	34.6		13.9	10.3		44.4	44.0
turnout of VAP				*19.5*	*18.0*		*12.4*	*14.3*
State Senate District 11 (Oakland)								
Crystal Bailey	B	21.2	36.6	27.0	24.9	7.9	16.7	17.3
Jeremy Moss	W	51.8	35.4	49.0	53.1	78.1	51.9	51.0
Vanessa Moss	B	18.5	20.2	17.5	16.2	10.2	20.4	20.3
James Turner	B	8.6	7.8	6.5	5.8	3.7	11.0	10.9
turnout of VAP			*29.0*	*30.8*	*33.4*	*43.3*	*20.5*	*20.6*

APPENDIX C

Detroit area			Estimates for Hispanics	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	75.4	76.0
Donald Trump	R	W	24.3	23.9
others			0.3	0.2
votes for office			*13.9*	*14.8*
U.S. Senate				
Gary Peters	D	W	73.6	74.8
John James	R	W	22.6	21.9
others			3.8	3.2
votes for office			*13.5*	*14.6*
2018 General				
Governor				
Gretchen Whitmer	D	W	83.1	80.0
Bill Schuette	R	W	15.3	14.8
others			1.5	1.8
votes for office			*3.5*	*5.1*
Secretary of State				
Jocelyn Benson	D	W	84.0	82.6
Mary Treder Lang	R	W	14.4	13.5
others			1.7	14.0
votes for office			*3.3*	*4.4*
Attorney General				
Dana Nessel	D	W	80.1	78.9
Tom Leonard	R	W	16.4	15.2
others			3.4	3.7
votes for office			*3.4*	*4.8*

Detroit area			Estimates for Hispanics	
	Party	Race	ER	EI 2x2
U.S. Senate				
Debbie Stabenow	D	W	82.5	82.2
John James	R	W	16.4	17.1
others			1.3	0.0
votes for office			*3.3*	*4.5*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	55.5	58.5
Shri Thanedar	D	A	13.6	12.7
Gretchen Whitmer	D	W	30.8	28.7
votes for office			-2.0	1.0

Grand Rapids area			Estimates for Hispanics	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	98.6	94.8
Donald Trump	R	W	0.5	0.1
others			1.0	1.3
votes for office			*0.0*	*8.6*
U.S. Senate				
Gary Peters	D	W	96.1	93.3
John James	R	W	1.6	3.2
others			5.3	9.2
votes for office			*0.0*	*7.3*
2018 General				
Governor				
Gretchen Whitmer	D	W	99.5	95.0
Bill Schuette	R	W	-4.5	1.6
others			5.6	6.1
votes for office			*-9.0*	*1.1*
Secretary of State				
Jocelyn Benson	D	W	102.1	97.0
Mary Treder Lang	R	W	-5.3	1.1
others			3.3	6.9
votes for office			*-9.0*	*0.3*
Attorney General				
Dana Nessel	D	W	97.2	93.1
Tom Leonard	R	W	-6.4	1.2
others			9.3	9.8
votes for office			*-9.0*	*0.8*

Grand Rapids area			Estimates for Hispanics	
	Party	Race	ER	EI 2x2
U.S. Senate				
Debbie Stabenow	D	W	97.2	93.2
John James	R	W	-3.4	2.0
others			6.2	10.4
votes for office			*-9.0*	*1.1*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	51.1	51.3
Shri Thanedar	D	A	39.8	42.4
Gretchen Whitmer	D	W	8.9	11.9
votes for office			-2.3	0.1

			Estimates for Arab Americans	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	98.3	98.9
Donald Trump	R	W	1.3	0.8
others			0.6	1.0
votes for office			*24.1*	*26.7*
U.S. Senate				
Gary Peters	D	W	100.7	99.0
John James	R	W	-2.9	0.8
others			2.1	2.1
votes for office			*22.2*	*24.9*
2018 General				
Governor				
Gretchen Whitmer	D	W	103.9	99.3
Bill Schuette	R	W	-6.2	1.1
others			2.5	2.1
votes for office			*8.6*	*10.3*
Secretary of State				
Jocelyn Benson	D	W	104.7	99.3
Mary Treder Lang	R	W	-6.3	0.9
others			1.7	1.7
votes for office			*8.5*	*9.8*
Attorney General				
Dana Nessel	D	W	106.8	99.5
Tom Leonard	R	W	-8.0	0.6
others			1.3	1.3
votes for office			*8.6*	*10.1*

			Estimates for Arab Americans	
	Party	**Race**	**ER**	**EI 2x2**
U.S. Senate				
Debbie Stabenow	D	W	107.2	99.1
John James	R	W	-9.0	1.1
others			1.9	1.9
votes for office			*8.4*	*10.0*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	116.4	92.8
Shri Thanedar	D	A	-0.3	0.2
Gretchen Whitmer	D	W	-16.0	0.6
votes for office			15.0	15.1

			Estimates for Chaldeans	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	19.5	20.5
Donald Trump	R	W	81.9	80.3
others			-0.8	2.0
votes for office			*31.2*	*29.6*
U.S. Senate				
Gary Peters	D	W	26.3	26.2
John James	R	W	74.0	72.8
others			-0.6	0.2
votes for office			*27.9*	*27.2*
2018 General				
Governor				
Gretchen Whitmer	D	W	52.9	48.9
Bill Schuette	R	W	47.9	47.4
others			0.2	8.0
votes for office			*-12.2*	*0.0*
Secretary of State				
Jocelyn Benson	D	W	55.3	53.7
Mary Treder Lang	R	W	44.7	42.0
others			0.4	7.9
votes for office			*-10.8*	*0.3*
Attorney General				
Dana Nessel	D	W	52.5	48.0
Tom Leonard	R	W	47.4	47.4
others			0.4	0.1
votes for office			*-10.3*	*2.5*

			Estimates for Chaldeans	
	Party	**Race**	**ER**	**EI 2x2**
U.S. Senate				
Debbie Stabenow	D	W	55.2	55.6
John James	R	W	43.2	44.0
others			0.7	0.9
votes for office			*-11.4*	*0.4*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	50.1	na
Shri Thanedar	D	A	11.2	na
Gretchen Whitmer	D	W	38.7	na
votes for office			-1.1	0.1

			Estimates for Bangladeshi Americans	
	Party	Race	ER	EI 2x2
2020 General				
U.S. President				
Joseph Biden	D	W	104.7	96.1
Donald Trump	R	W	-4.4	3.2
others			0.1	0.1
votes for office			*31.6*	*25.2*
U.S. Senate				
Gary Peters	D	W	104.4	96.2
John James	R	W	-5.2	3.3
others			0.9	1.1
votes for office			*31.6*	*24.6*
2018 General				
Governor				
Gretchen Whitmer	D	W	105.7	99.1
Bill Schuette	R	W	-7.4	1.1
others			1.1	1.1
votes for office			*13.7*	*18.7*
Secretary of State				
Jocelyn Benson	D	W	105.7	98.9
Mary Treder Lang	R	W	-7.1	1.3
others			2.5	2.4
votes for office			*13.9*	*19.3*
Attorney General				
Dana Nessel	D	W	107.5	98.2
Tom Leonard	R	W	-8.0	0.7
others			2.3	2.3
votes for office			*13.8*	*19.2*

			Estimates for Bangladeshi Americans	
	Party	**Race**	**ER**	**EI 2x2**
U.S. Senate				
Debbie Stabenow	D	W	107.1	99.1
John James	R	W	-7.7	0.9
others			1.7	0.7
votes for office			*13.9*	*18.4*
2018 Democratic Primary				
Governor				
Abdul El-Sayed	D	ME	98.8	97.3
Shri Thanedar	D	A	6.5	5.1
Gretchen Whitmer	D	W	-5.2	4.5
votes for office			16.4	14.7

VOTERS NOT POLITICIANS

VOLUNTEER DONATE

Michigan's redistricting reform amendment provides an exciting opportunity to engage the people of Michigan in a fair, impartial, and transparent redistricting process. Voters overwhelmingly decided to take the power of drawing our election district maps out of the hands of politicians and special interests and give it to the people through an **Independent Citizens Redistricting Commission**.

This process is new and unique to Michigan, so we know there will be questions along the way. Click on a frequently asked question below to learn more. You can read the full amendment language at here.

If you have any concerns or feedback, please email info@votersnotppoliticians.com.

Redistricting 101

- What is redistricting?
- What is "gerrymandering?"

Applying to Serve on the Commission

VOTERS NOT POLITICIANS

VOLUNTEER DONATE

- How long will Commissioners serve?
- Could my pension, social security or other benefits be affected by my salary earned from serving on the Commission?
- Am I eligible to serve if I was a partisan convention delegate?

The Map Drawing Process

- How will the Commission draw maps?
- How will ordinary citizens provide input in the new process?
- What are communities of interest and how will the Commission incorporate them into maps?
- How will the Commission approve a map?
- What is the timeline for implementing the Redistricting Reform Amendment?
- How can a Commission represent ALL the people of Michigan's

VOTERS NOT POLITICIANS

VOLUNTEER DONATE

- What is the role of the Secretary of State in the proposed process?
- How will the Commission be protected from the Legislature and the Executive branch?
- What is the role of the Judiciary in the process?
- How is the Commission protected against applicants misrepresenting themselves and gaming the system?
- How is the Commission protected against Commissioners not doing their job?
- Do other states have independent redistricting commissions?
- How much will the Independent Citizens Redistricting Commission cost?

Help Voters Not Politicians engage and empower more volunteers to strengthen our democracy by making a contribution today!

Michigan Proposal 2, Independent Redistricting Commission Initiative (2018)

Elections in Michigan, 2018

- General election: Nov. 6
- Voter registration deadline: Oct. 9
- Early voting: N/A
- Absentee voting deadline: Nov. 6

- Online registration: No
- Same-day registration: No
- Voter ID: Photo ID requested
- Poll times: 7:00 a.m. to 8:00 p.m.

On the ballot: U.S. Senate • U.S. House • Congressional special elections • Governor • Attorney General • Secretary of State • State executive offices • State Senate • State House • Special state legislative • Supreme court • Appellate courts • Local judges • State ballot measures • Local ballot measures • School boards • Municipal • Recalls • Democratic primaries • Republican primaries

Michigan Proposal 2, the **Independent Redistricting Commission Initiative**, was on the ballot in Michigan as an initiated constitutional amendment on November 6, 2018.[1] The measure was **approved**.

A **"yes"** vote supported transfering the power to draw the state's congressional and legislative districts from the state legislature t independent redistricting commission.

A **"no"** vote opposed transfering the power to draw the state's congressional and legislative districts from the state legislatu independent redistricting commission.

Election results

Michigan Proposal 2

Michigan Proposal 2

Ballotpedia Editor from Ballotpedia

What lines are being drawn in 2022 primaries?

Subscribe to our weekly digest of the most essential primary election news.

Email address

Submit

Result	Votes	Percentage
✔ **Yes**	**2,519,975**	61.27%
No	1,592,910	38.73%

Results are officially certified.
Source

Type Constitutional amendment

Origin Citizens

List of Michigan measures

Submit

Overview

Before Proposal 2, what was the congressional redistricting system in Michigan?

Redistricting is the process by which new congressional and state legislative district boundaries are drawn. As of 2018, the Michigan State Legislature was responsible for drawing congressional and state legislative district boundaries. These boundaries were subject to the governor's veto power. Adopting congressional or state legislative redistricting plans required a simple majority vote in both chambers of the state legislature. Prior to 2018, the last time that the legislature adopted congressional maps was in 2011, which followed the 2010 U.S. Census. Republicans controlled the state Senate, state House, and governor's office, thus holding a trifecta in state government.

What did Proposal 2 change about congressional redistricting?

Proposal 2 transferred the power to draw the state's congressional and legislative districts from the state legislature to a 13-member independent redistricting commission. The ballot initiative required four of the commissioners to be Democrats, four to be Republicans, and five to be independents or members of third parties. The affirmative votes of at least seven members, including a minimum of two Democrats, two Republicans, and two members not affiliated with the major parties, were to be needed to pass a redistricting plan. Proposal 2 required commissioners to prioritize specific criteria, including compliance with federal laws; equal population sizes; geographic contiguousness; demographics and communities of similar historical, cultural, or economic interests; no advantages to political parties; no advantages to incumbents; municipal boundaries; and compactness.[1]

Who was behind the campaigns surrounding the ballot initiative?

The committee **Voters Not Politicians** led the campaign in support of Proposal 2. Voters Not Politicians raised $16.60 million, including $6.02 million from the Sixteen Thirty Fund and $5.11 million from the Action Now Initiative.[2]

Opponents organized the **Citizens Protecting Michigan's Cor i Rights**. The opposition committees had raised $393,180, includir Commerce PAC.[3]

What states voted on redistricting measures in 2018

In 2018, voters decided six ballot measures in five states designe legislative districts, or both types are drawn following the decenn number of redistricting-related ballot measures in a single year si ballot. Joshua Silver, CEO of the organization Represent.Us, descr we've seen in decades."[4] The ballot measures followed the U.S. S case *Gill v. Whitford*, which addressed the claim of partisan gerryr

Ballotpedia Editor from Ballotpedia

What lines are being drawn in 2022 primaries?

Subscribe to our weekly digest of the most essential primary election news.

Email address

Submit

Supreme Court ruled that plaintiffs failed to demonstrate standing. Therefore, the justices did not address the broader question of whether partisan gerrymandering claims can be brought to trial under the U.S. Constitution.[5] The following measures were on the ballot in 2018:

Measure	Description	Status
Colorado Amendment Y	Create an independent commission for congressional districts	Approved ✔
Colorado Amendment Z	Create an independent commission for state legislative districts	Approved ✔
Michigan Proposal 2	Create an independent commission for congressional and state legislative districts	Approved ✔
Missouri Amendment 1	Create the position of state demographer to draw state legislative districts	Approved ✔
Ohio Issue 1	Change state legislative requirements to approve maps of congressional districts	Approved ✔
Utah Proposition 4	Create an independent commission for to recommend congressional and state legislative districts	Approved ✔

Initiative design

Click on the arrows (▼) below for summaries of the different provisions of Proposal 2.

►**Commission Membership Application:** application process to be considered for a position as commission member

►**Commission Membership Selection:** selection of individuals to serve on redistricting commission

►**Commencement, Public Hearings, and Meetings:** requirements for public hearings before and meetings

►**Redistricting Criteria:** criteria to be considered when drawing district maps

►**Adopting Redistricting Plans:** rules and requirements for adopting redistricting plans

Aftermath

Lawsuits

Daunt v. Benson

On July 30, 2019, Michigan Freedom Fund Executive Director T[illegible]n filed a lawsuit in the U.S. District Court for Western Michigan seek commission. Michigan Secretary of State Jocelyn Benson (D) was fundamental question of Michigan citizens' ability to participate ir for that participation. This commission flips that on its head and s active, you're not allowed to serve on this and neither are your fan most egregious and ridiculous part of that. Simply by virtue of bei you're prohibited, even if you have 180-degree-opposed political

Jamie Lyons-Eddy of Voters Not Politicians, which sponsored the politicians who directly benefit from drawing their own election m undermine the voice of voters again. Now that citizens are in char

redistricting process, we know that some politicians who will lose power to draw maps in secret for their own benefit will make a last-ditch effort to hold on to it."[6]

Attorney General Dana Nessel (D), representing Secretary of State Benson, asked the U.S. District Court to dismiss the complaint. Attorney General Nessel said, "This is essentially no different than excluding people from jury duty who have a relationship to the parties or have a stake in the outcome of the case."[7]

On November 25, 2019, Judge Janet Neff decided that the court would not enjoin Secretary of State Benson from implementing Proposal 2 while the case is being considered.[8]

Michigan Republican Party v. Benson

On August 22, 2019, the Michigan Republican Party filed a lawsuit in the U.S. District Court for Western Michigan seeking to block Proposal 2. Laura Cox, chairperson of the state Republican Party, said Proposal 2 violated the party's freedom of association as the amendment prevented parties from picking their own members to serve on the redistricting commission.[9]

Proposal 2 requires candidates for the redistricting commission to attest under oath regarding their partisan affiliation. However, Proposal 2 does not require the state department to confirm individuals' partisan affiliation. As of 2019, voters in Michigan do not have an option to declare their partisan affiliation on voter registrations.[9]

Proposal 2 was designed to allow the legislative leaders from the two major parties to strike up to five applicants each (between the leaders, 20 strikeouts total) from the pool of 60 Republicans, 60 Democrats, and 80 non-affiliated applicants. Thereafter, a random selection from each partisan pool takes place, with four Republicans, four Democrats, and five non-affiliated applicants being selected.[9]

The Michigan GOP's legal complaint said applicants could self-affiliate with the Republican Party "without any involvement or consent of the applicable political party and without any specific consideration of the applicants' past or current political activity, expression, or involvement." The process, according to attorneys Gary Gordon and Charlie Spies, could allow Democrats to self-affiliate as Republicans "in an effort to alter the party's selection process and weaken its representation on the commission by individuals who genuinely affiliate with MRP." Stu Sandler, general counsel for the Michigan GOP, said, "In every other system that's been created like this, political parties or legislative leaders have had the ability to select, or there's been a strong history of voter registration so that you can tell who's been a part of the party and who hasn't."[9]

Former Wisconsin Gov. Scott Walker (R), finance chairperson for the National Republican Redistricting Trust, commented on the litigation, saying, "Proposition 2 punishes people for exercising their constitutionally protected rights – among them the right to associate with a political party."[10]

Responding to the Michigan GOP filing the lawsuit, Attorney General Dana Nessel (D) said, "Our position on this matter has not changed. Our office will continue to vigorously defend Secretary of State Jocelyn Benson and the legality of the redistricting commission, preserving the will of the people and their right to adopt amendments to Michigan's Constitution at the polls."[11]

Consolidation of Daunt and MI Republican Part

On September 11, 2019, *Daunt v. Benson* and *Michigan Republica* single case before the court. On November 25, 2019, the U.S. Dist States Court of Appeals for the Sixth Circuit denied requests for t injunction.[13] The Sixth Circuit said that plaintiffs complaints were to serve on the Commission after their six-year period of ineligibil or regulation of pure speech, and (3) the absence of any fundame

On July 6, 2020, U.S. District Judge Janet Neff dismissed the case Plaintiffs have failed to state plausible claims for relief under the I dismissal of this case is warranted."[14]

The Michigan Republican Party appealed the ruling to the 6th U.S. Circuit Court of Appeals. On April 15, 2020, the appellate court upheld the lower court ruling.[15] On May 27, 2021, the 6th Circuit dismissed the case.[16]

Text of measure

Ballot title

The ballot title was as follows:[17]

> “Proposal 18-2. A proposed constitutional amendment to establish a commission of citizens with exclusive authority to adopt district boundaries for the Michigan Senate, Michigan House of Representatives and U.S. Congress, every 10 years.[18]”

Ballot summary

The ballot summary was as follows:[17]

> “This proposed constitutional amendment would:
>
> - Create a commission of 13 registered voters randomly selected by the Secretary of State:
>   - 4 each who self-identify as affiliated with the 2 major political parties; and
>   - 5 who self-identify as unaffiliated with major political parties.
> - Prohibit partisan officeholders and candidates, their employees, certain relatives, and lobbyists from serving as commissioners.
> - Establish new redistricting criteria including geo… equal population, reflecting Michigan's diverse popu… shall not provide disproportionate advantage to poli…
> - Require an appropriation of funds for commission o… Should this proposal be adopted?
>
> Should this proposal be adopted?
>
> [ ] YES
>
> [ ] NO[18]

Constitutional changes

See also: Article IV, Michigan Constitution

The measure amended Sections 1, 2, 3, 4, 5, and 6 of Article IV, Sections 1, 2, and 4 of Article V, and Sections 1 and 4 of Article VI. The following underlined text was added and ~~struck-through~~ text was deleted:[1]

Note: Use your mouse to scroll over the below text to see the full text.

Article IV - Legislative Branch, Section 1

Except to the extent limited or abrogated by Article IV, Section 6 or Article V, Section 2, the legislative power of the State of Michigan is vested in a senate and a house of representatives.

Article IV - Legislative Branch, Section 2

Senators, Number, Term

The senate shall consist of 38 members to be elected from single member districts at the same election as the governor for four-year terms concurrent with the term of office of the governor.

Readability score

See also: Ballot measure readability scores, 2018

Using the Flesch-Kincaid Grade Level (FKGL) and Flesch Reading Ease (FRE) formulas, Ballotpedia scored the readability of the ballot title and summary for this measure. Readability scores are designed to indicate the reading difficulty of text. The Flesch-Kincaid formulas account for the number of words, syllables, and sentences in a text; they do not account for the difficulty of the ideas in the text. The state board wrote the ballot language for this measure.

The FKGL for the ballot title is grade level 21, and the FRE is -2.0. The word count for the ballot title is 31, and the estimated reading time is 8 seconds.

In 2018, for the 167 statewide measures on the ballot, the average ballot title or question was written at a level appropriate for those with between 19 and 20 years of U.S. formal education (graduate school-level of education), according to the FKGL formula. Read Ballotpedia's entire 2018 ballot language readability report here.

Voters Not Politicians, also known as **Yes on 2**, led the campaign in support of Proposal 2.[19] Katie Fahey, founder of Count MI Vote, was the executive director of Voters Not Politicians.[20]

Supporters

Officials

- Sen. Steve Bieda (D-9)[21]
- Rep. Jon Hoadley (D-60)[21]
- Rep. Jeremy Moss (D-35)[21]
- Mayor Rosalynn Bliss (D), Grand Rapids[21]
- Commissioner Ruth Kelly, Grand Rapids[21]
- Mayor Andy Schor (D), Lansing[21]
- Councilmember Peter Spadafore (D), Lansing[21]
- Councilmember Aaron Stephens, East Lansing[21]

Former officials

- Gov. Arnold Schwarzenegger (R-California)[21]
- U.S. Sen. Carl Levin (D)[21]
- U.S. Rep. Joe Schwarz (R)[21]
- Rep. Bill Bobier (R)[21]
- Rep. Nancy Crandall (R)[21]
- Rep. Pan Godchaux (R)[21]
- Rep. Jon Jellema (R)[21]
- Rep. Rick Johnson (R)[21]
- Rep. Mickey Knight (R)[21]
- Rep. Rick Johnson (R)[22]

Municipalities

- Marquette County Board[21]
- Humboldt Township Board[21]
- Meridian Township Board[21]
- Powell Township Board[21]

Organizations

- National Democratic Redistricting Committee[23]
- Our Revolution[24]

Labor organizations

- A. Philip Randolph Institute
- American Federation of Teachers - Michigan[21]
- Michigan Education Association[21]
- Michigan Nurses Association[21]
- Michigan State Utilities Worker Council[21]
- State Employees Retirees Association[21]
- United Auto Workers[21]
- United Steelworkers[21]

Individuals

- Jennifer Lawrence, actress[25]

Arguments

Voters Not Politicians stated the following about the initiative ca

> On election day, we, the voters of Michigan, deserve to have our say. We expect our elections to be fair and transparent so that our votes matter and our voices are heard.
>
> Politicians don't agree. They manipulate our voting maps to keep themselves in power. They draw voting maps that directly benefit themselves, instead of putting community interests and voter needs first. This allows politicians the power to choose their voters, instead of giving the voters the power to choose their politicians. This process gives us inattentive, ineffective, and unpopular representatives who keep getting re-elected over and over.[18]

Rep. Rick Johnson (R), former Speaker of the Michigan House of Representatives and convention delegate for Donald Trump in 2016, said:[22]

> We need change. This might not be the only change, but I hope it's something. This country and this state can't continue down the road we're on right now because we'll all be broke. There won't be a legitimate unit of government that can stand this stuff that's going on.[18]

Opposition

The **Committee to Protect Voters Rights** led the campaign in opposition to Proposal 2.[26]

Opponents

Officials

- Rep. Eric Leutheuser (R-58)[27]

Parties

- Michigan Republican Party[22]

Organizations

- Michigan Freedom Fund[28]

Arguments

Robert LaBrant, a Republican political strategist, said that under the initiative commissioners would be "absolute neophytes... not having a clue about redistricting."[29] He also said:[26]

> I don't think there's anything wrong with having an independent r icting commission. My concerns probably focus on two areas: One, the very convoluted wa th commission gets created, and then the criteria for drawing th
>
> It's so limited to people who have really no experience either some would see that to be a virtue. Well, I think all we have to to see that inexperience is not necessarily a virtue.[18]

Sarah Anderson, a Michigan Republican Party spokesperson, sta

> VNP [Proposal 2] places the power of redistricting out of the accountable to voters and into the hands of a randomly selec unaccountable with no qualifications, eliminating checks and

Media editorials

Support

- ***Detroit Free Press***: "But the major parties have utterly failed to collaborate on a redistricting process that serves the interests of voters, especially independents who don't consistently gravitate to one party's candidates. VNP's ballot initiative offers voters a practical way to assure fairer representation and encourage more robust political competition in a state that needs both. That's why the Free Press recommends a YES vote on Proposal 2."[30]
- ***Lansing State Journal***: "Because of this structured approach that puts a premium on balance and fairness, the LSJ Editorial Board supports Proposal 2. It's time for all voices to be heard, and that's a tall order in districts that are so red or so blue that a dissenting opinion barely registers. It disenfranchises voters and puts in office legislators who are safe to cater to their base rather than represent the interests of all of their constituents."[31]
- ***Traverse City Record Eagle***: "Michigan's current system of legislative redistricting looks a bit like the old-school game of Tetris. Spin the shape to make it fit; amass lines of fit-together shapes for points. ... We're ready for more fair play, one that might add more democracy, and subtract lobbyists, donors and self-interested parties from making the rules."[32]

Opposition

- ***The Detroit News***: "If Prop 2 fails to deliver on its promise of eliminating gerrymandering, the fix would require another ballot measure. A better solution would be for Democrats and Republicans to embrace the use of technology to draw balanced districts made up of voters with similar concerns without absurdly distorting the geographic map. In addition, the language defining how communities of interest should be grouped is vague and opens the door to endless litigation. Voters should say no to Prop 2."[33]

Campaign finance

See also: Campaign finance requirements for Michigan ballot measures

There was one ballot measure committee, **Voters Not Politicians Ballot Committee**, registered in support of the measure. The committee raised $16.60 million and expended $16.31 million.[2][34]

The top contributor to the support campaign was the Sixteen Thirty F which donated $6.02 million.[2]

There were two committees, **Citizens Protecting Michigan's Cor Rights**, registered in opposition to the measure. Citizens Protecti spent $393,501 (expenditures exceeded contributions), while the contributions or expenditures.[3]

The top contributor to the opposition campaign was the Michigar

Total campaign contributions:	
Support:	$16,604,573.07

Support

The following were the contribution and expenditure totals for the

Committees in support of Proposal 2				Totals in support	
Supporting committees	Cash contributions	In-kind services	Cash expenditures	Total raised:	$16,604,573.07
Voters Not Politicians Ballot Committee	$16,265,629.25	$338,943.82	$15,967,911.14	Total spent:	$16,306,854.96
Total	**$16,265,629.25**	**$338,943.82**	**$15,967,911.14**		

Donors

The following were the top five donors to the support committee:[2]

Donor	Cash	In-kind	Total
Sixteen Thirty Fund	$6,000,000.00	$17,250.00	$6,017,250.00
Action Now Initiative	$5,002,580.59	$110,500.00	$5,113,080.59
Kathryn Murdoch	$500,000.00	$0.00	$500,000.00
SEIU-UHW West	$500,000.00	$0.00	$500,000.00
Stacy Schusterman	$500,000.00	$0.00	$500,000.00

Opposition

The following were the contribution and expenditure totals for the committees in opposition to the initiative.[3]

Committees in opposition to Proposal 2				Totals in opposition	
Opposing committees	Cash contributions	In-kind services	Cash expenditures	Total raised:	$393,180.38
Citizens Protecting Michigan's Constitution	$305,000.00	$88,180.38	$305,320.33	Total spent:	$393,500.71
Committee to Protect Voters Rights	$0.00	$0.00	$0.00		
Total	**$305,000.00**	**$88,180.38**	**$305,320.33**		

Donors

The following were the top five donors to the opposition committees:[3]

Donor	Cash	In-kind	Total
Michigan Chamber PAC II	$135,000.00	$1,260.00	$ .00
John C. Kennedy	$100,000.00	$0.00	
Michigan Chamber Litigation Center	$0.00	$85,000.00	
Fair Lines America, Inc.	$50,000.00	$0.00	
Realtors PAC of Michigan II	$20,000.00	$0.00	

Reporting dates

Michigan ballot question committees filed a total of six campaign
reports were as follows:[35]

2017 campaign finance reporting dates	[show]

Methodology

To read Ballotpedia's methodology for covering ballot measure campaign finance information, click here.

Polls

See also: 2018 ballot measure polls

Michigan Proposal 2, Independent Redistricting Commission Initiative (2018) [hide]					
Poll	**Support**	**Oppose**	**Undecided**	**Margin of error**	**Sample size**
Glengariff Group 10/25/2018 - 10/27/2018	58.5%	26.5%	15.0%	+/-4.0	600
EPIC-MRA 10/18/2018 - 10/23/2018	59.0%	29.0%	12.0%	+/-4.0	600
The Glengariff Group 9/30/2018 - 10/2/2018	55.0%	22.7%	22.3%	+/-4.0	600
EPIC-MRA 9/21/2018 - 9/25/2018	48.0%	32.0%	20.0%	+/-4.0	600
The Glengariff Group 9/05/2018 - 9/07/2018	38.0%	31.0%	31.0%	+/-4.0	600
Target Insyght 6/24/2018 - 6/26/2018	47.0%	24.0%	29.0%	+/-3.0	800
AVERAGES	50.92%	27.53%	21.55%	+/-3.83	633.33

Note: The polls above may not reflect all polls that have been conducted in this race. Those displayed are a random sampling chosen by Ballotpedia staff. If you would like to nominate another poll for inclusion in the table, send an email to editor@ballotpedia.org.

Background

Redistricting in Michigan

See also: Redistricting in Michigan

Before 2018, the Michigan State Legislature was responsible for d
district boundaries. These lines were subject to the governor's ve
Supreme Court with exclusive jurisdiction to hear challenges to c
boundaries.[36]

Redistricting after the 2010 census

See also: Redistricting in Michigan after the 2010 census

In 2011, Republicans controlled both chambers of the Michigan State Legislature. Republicans also controlled six of the nine seats on the House Redistricting Commission and six of nine seats on the Senate Redistricting Commission. Maps for congressional and state legislature districts were passed along partisan lines, and Republican Gov. Rick Snyder signed off on bills for the maps.

Methods of redistricting in U.S.

In general, states vest one of the following three entities with redistricting authority:[37]

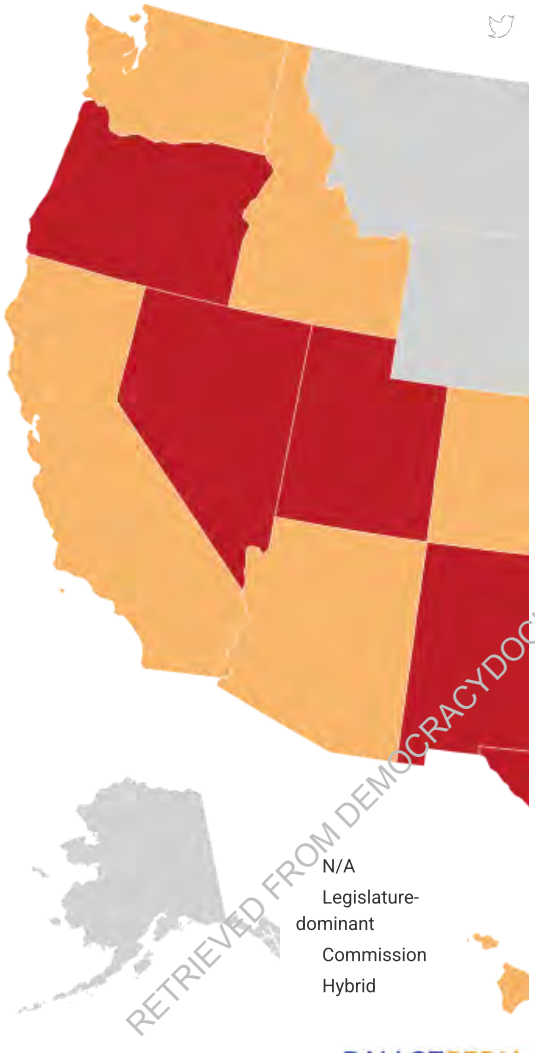
1. **State legislatures**: In 37 of the 43 states required to conduct congressional redistricting, state legislatures have the final authority to draft and implement congressional district maps.[38] Likewise, in 37 of the 50 states, state legislatures are primarily responsible for state legislative redistricting. In these states, legislatures typically adopt district lines by a simple majority vote in each chamber. A state's governor may usually veto the legislature's redistricting plan.[36]
2. **Independent commissions**: The composition of independent redistricting commissions varies from state to state. However, in all cases, the direct participation of elected officials is limited. Independent redistricting commissions exist in six states (in four of these states, independent commissions draw congressional and state legislative boundaries; in two, independent commissions draw only state legislative district boundaries).
3. **Politician commissions**: The composition of politician redistricting commissions varies from state to state. For example, in some states, specific officials (e.g., governors, secretaries of state, etc.) are de facto commission members; in others, legislative leaders appoint other legislators to serve as commissioners. In all cases, elected officials may participate directly by sitting on the commissions. In two of the 43 states required to conduct congressional redistricting, politician commissions are responsible for drawing the maps. In seven states, politician commissions are responsible for state legislative redistricting.

Procedures for congressional redistricting in U.S.

Most states are required to draw new congressional district lines every 10 years following completion of United States Census (those states comprising one congressional district are not required to redistrict). In 33 of these states, state legislatures play the dominant role in congressional redistricting. In eight states, commissions draw congressional district lines. In two states, hybrid systems are used, in which the legislatures share redistricting authority with commissions. The remaining states comprise one congressional district each, rendering redistricting unnecessary. See the map and table below for further details.[36][39]

Congressional redistricting methods in the United States

Hover over a state in the map below to learn more about congressional redistricting in that state.



Procedures for state legislative redistricting in U.S.

In 33 of the 50 states, state legislatures play the dominant role in state legislative redistricting. Commissions draw state legislative district lines in 14 states. In three states, hybrid [illegible]s are used, in which state legislature share redistricting authority with commissions. See the map a[illegible]

Ballotpedia Editor from Ballotpedia

What lines are being drawn in 2022 primaries?

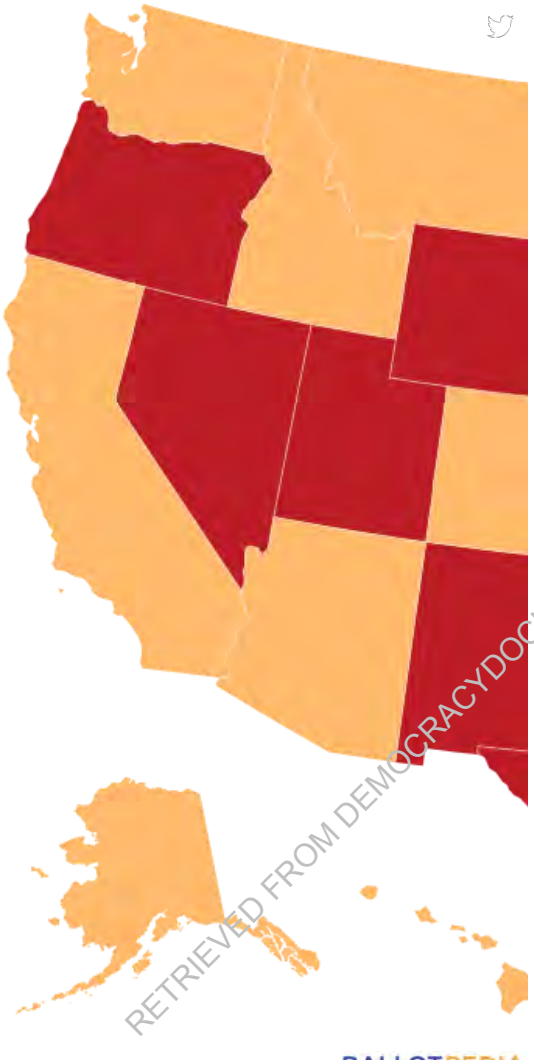
Subscribe to our weekly digest of the most essential primary election news.

Email address

Submit

State legislative redistricting methods in the United States

Hover over a state in the map below to learn more about state legislative redistricting in that state.



Michigan League of Women Voters v. Johnson

On December 22, 2017, the Michigan League of Women Voters (LMV), along with 11 registered Democratic voters, filed litigation to overturn the district maps for state legislativ ongressional races in the U.S. District Court for the Eastern District of Michigan. Secretary of State F defendant.[40][41]

LMV argued that the district maps enacted following the 2010 de to free speech and equal protection. The lawsuit said, "Michigan D intentionally places them in voting districts that reduce or elimina

On April 25, 2019, a three-judge federal panel ruled in favor of pla legislative districts were gerrymandered to benefit Republicans. T maps in agreement with Governor Gretchen Whitmer (D).[42] How Supreme Court.

On October 21, 2019, the U.S. Supreme Court stayed the lower co

Ballotpedia Editor from Ballotpedia

What lines are being drawn in 2022 primaries?

Subscribe to our weekly digest of the most essential primary election news.

Email address

Submit

Election policy on the ballot in 2018

Voters considered ballot measures addressing election policy in 15 states in 2018.

Redistricting:

See also: Redistricting measures on the ballot

- Ohio Issue 1, Congressional Redistricting Procedures Amendment (May 2018) ✔ - The Ohio State Legislature, through a bipartisan vote, referred Issue 1 to the ballot for the election on May 8, 2018. The measure was written to change the vote requirements to pass congressional redistricting maps and the standards used in congressional redistricting in Ohio. Voters approved Issue 1.
- Colorado Amendment Y, Independent Commission for Congressional Redistricting Amendment (2018) ✔ - The amendment was written to create a 12-member commission responsible for approving district maps for Colorado's congressional districts. Democrats and Republicans in the Colorado State Legislature voted to refer the measure. It was approved.
- Colorado Amendment Z, Independent Commission for State Legislative Redistricting Amendment (2018) ✔ - The amendment was written to create a 12-member commission responsible for approving district maps for Colorado's state House and state Senate. Democrats and Republicans in the legislature voted to refer the amendment. It was approved.
- Michigan Proposal 2, Independent Redistricting Commission Initiative (2018) ✔ - The organization Voters Not Politicians collected more than the required 315,654 signatures for the initiative. The initiative was designed to transfer the power to draw the state's congressional and legislative districts from the Michigan State Legislature to an independent redistricting commission. It was approved.
- Missouri Amendment 1, Lobbying, Campaign Finance, and Redistricting Initiative (2018) ✔ - The PAC Clean Missouri collected signatures to get the initiated amendment on the ballot. The measure made changes to the state's lobbying laws, campaign finance limits for state legislative candidates, and legislative redistricting process. The position of nonpartisan state demographer was created. Amendment 1 made the demographer responsible for drawing legislative redistricting maps and presenting them to the House and Senate apportionment commissions.
- Utah Proposition 4, Independent Advisory Commission on Redistricting Initiative (2018) ✔ - The measure created a seven-member independent redistricting commission to draft maps for congressional and state legislative districts. The committee for Responsive Government collected more than the required 113,143 signatures g

Voting requirements and ballot access:

- Arkansas Issue 2, Voter ID Amendment (2018) ✔ - Issue a valid photo ID to cast non-provisional ballots in person referred the measure to the ballot, with Republicans and the ballot. It was approved.
- Florida Amendment 4, Voting Rights Restoration for Felo Floridians for a Fair Democracy collected more than the Amendment 4 placed on the ballot. The measure was de

for people with prior felony convictions, except those convicted of murder or a felony sexual offense, upon completion of their sentences, including prison, parole, and probation. It was approved.

- Louisiana Amendment 1, Felons Disqualified to Run for Office for Five Years Amendment (2018) ✔ - This measure was put on the ballot by the state legislature. Louisiana voters approved Amendment 9 in 1998 to prevent convicted felons from seeking or holding public office for 15 years following the completion of their sentences. Amendment 9 was struck down by the Louisiana Supreme Court in 2016. It was approved.
- Maryland Question 2, Election-Day Voter Registration Amendment (2018) ✔ - Legislative Democrats voted to place the amendment the ballot. The measure was designed to authorize a process for registering qualified individuals to vote at a precinct polling place on election day. It was approved.
- Michigan Proposal 3, Voting Policies in State Constitution Initiative (2018) ✔ - Promote the Vote collected more than 315,654 valid signatures to get the initiative placed on the ballot. Proposal 3 was designed to add several voting policies to the Michigan Constitution, including straight-ticket voting, automatic voter registration, no-excuse absentee voting, and same-day voter registration. It was approved.
- Montana LR-129, Ballot Collection Measure (2018) ✔ - The Montana State Legislature voted to place the measure on the ballot, through the support of 80 of 91 Republicans and one of 59 Democrats. The measure was written to ban persons from collecting the election ballots of other people, with exceptions for certain individuals. It was approved.
- Nevada Question 5, Automatic Voter Registration via DMV Initiative (2018) ✔ - The measure was designed to provide for the automatic voter registration of eligible citizens when receiving certain services from the Nevada Department of Motor Vehicles (DMV). The Nevada Election Administration Committee, a project of iVote, collected more than the required 55,234 signatures to get Question 5 placed on the ballot. It was approved.
- North Carolina Voter ID Amendment (2018) ✔ - This amendment was referred to the ballot by the state legislature along party lines with Republicans voting in favor of it and Democrats voting against it. It created a constitutional requirement that voters present a photo ID to vote in person. It was approved.
- North Dakota Measure 2, Citizen Requirement for Voting Amendment Initiative (2018) ✔ - North Dakotans for Citizen Voting collected more than the required 26,904 valid signatures to qualify this initiative for the ballot. The measure was designed to clarify that only a U.S. citizen can vote in federal, state, and local elections in North Dakota. It was approved.

Arkansas Issue 3, a legislative term limits initiative, was certified for the ballot but was blocked by an Arkansas Supreme Court ruling. The measure would have imposed term limits of six years for members of the Arkansas House of Representatives and eight years for members of the Arkansas Senate. The ruling came too late to remove the measure from the ballot, but the supreme court ordered officials to not count or certify votes for Issue 3.

Campaign finance, political spending, and ethics:

- Colorado Amendment 75, Campaign Contribution Limits more than the required 136,328 valid signatures and me this initiative for the ballot. The measure would have esta directs (by loan or contribution) more than one million do every candidate for the same office in the same primary aggregate amount of campaign contributions normally a
- Massachusetts Question 2, Advisory Commission for An Corporate Personhood and Political Spending Initiative (

establish a 15-member citizens' commission to advocate for certain amendments to the United States Constitution regarding political spending and corporate personhood. It was approved.

- Missouri Amendment 1, Lobbying, Campaign Finance, and Redistricting Initiative (2018) ✔ - Besides the redistricting provisions of Amendment 1 described above, Missouri Amendment one also made changes to the state's lobbying laws and campaign finance limits for state legislative candidates.
- North Dakota Measure 1, Ethics Commission, Foreign Political Contribution Ban, and Conflicts of Interest Initiative (2018) ✔ - North Dakotans for Public Integrity collected more than the required 26,904 valid signatures to qualify this initiative for the ballot. Measure 1 established an ethics commission, ban foreign political contributions, and enact provisions related to lobbying and conflicts of interest. It was approved.
- South Dakota Constitutional Amendment W, State Campaign Finance and Lobbying Laws, Government Accountability Board, and Initiative Process Amendment (2018) ✘ - The committee Represent South Dakota collected more than the required 27,741 signatures to get the initiative certified for the ballot. The measure was designed to revise campaign finance and lobbying laws, create a government accountability board, and enact new laws governing the initiative and referendum process. It was defeated.
- South Dakota Initiated Measure 24, Ban Out-of-State Contributions to Ballot Question Committees Initiative (2018) ✔ - This citizen initiative banned out-of-state contributions to committees supporting or opposing ballot measures within South Dakota. Rep. Mark Mickelson (R-13), speaker of the South Dakota House of Representatives, sponsored the initiative. It was approved.

Path to the ballot

See also: Laws governing the initiative process in Michigan

Process in Michigan

In Michigan, the number of signatures required to qualify an initiated constitutional amendment for the ballot is equal to 10 percent of votes cast for governor in the last gubernatorial election. Signatures older than 180 days are invalid, which means all signatures must be collected within a 180-day window. Amendment petitions must be filed 120 days prior to the election.

The requirements to get an initiated constitutional amendment certified for the 2018 ballot:

- **Signatures**: 315,654 valid signatures were required.
- **Deadline**: The deadline to submit signatures was July [illegible]

Signature petitions are filed with the secretary of state and verifie
random sample method of verification.

Details on the initiative

On August 17, 2017, the Michigan Board of Canvassers voted 4-0
gathering.[44] On December 18, 2017, proponents of the initiative
signatures.[45]

The Michigan Bureau of Elections announced that an estimated 394,092 signatures were valid. On May 24, 2018, the Board of State Canvassers was planning to decide whether the initiative would be certified but canceled citing ongoing litigation.[46] On June 20, 2018, the Board of State Canvassers voted 3-0 to confirm that enough valid signatures had been collected, allowing the initiative to appear on the ballot for the election on November 6, 2018.

Cost of signature collection:
Ballotpedia found no petition companies that received payment from the sponsors of this measure, which means signatures were likely gathered largely by volunteers. A total of $0.00 was spent to collect the 315,654 valid signatures required to put this measure before voters, resulting in a total cost per required signature (CPRS) of $0.00. Sponsors hired Practical Political Consulting to check the validity of signatures, spending $151,591.66 or $0.48 per signature.

Citizens Protecting Michigan's Constitution v. Secretary of State

Lawsuit overview

Issue: Would the ballot measure violate the state's prohibition on initiatives that change the fundamental operation of state government?

Court: Michigan Supreme Court (appealed from the Michigan Court of Appeals)

Ruling: Ruled in favor of the defendants, keeping the measure on the ballot for the election on November 6, 2018

Plaintiff(s): Citizens Protecting Michigan's Constitution

Plaintiff argument:
The initiative would change "the fundamental operation of state government," which state law prohibited.

Defendant(s): Michigan Secretary of State and Michigan Board of Canvassers

Defendant argument:
The initiative does not violate the subject restriction on initiated constitutional amendments.

Source: Michigan Supreme Court

On April 25, 2018, a ballot measure committee, Citizens Protecting Michigan's Constitution (CPMC), that opposed the ballot initiative filed a lawsuit in the Michigan Court of Appeals to keep the proposal off the ballot in Michigan. CPMC argued that the initiative would change "the fundamental operation of state government," which state law prohibited.[47] The ballot measure committee Voters Not Politicians, which sponsored the signature drive for the initiative, motioned to intervene in the case, which was granted.[48]

On June 7, 2018, the state Court of Appeals, in a unanimous decisi[illegible] that the initiative "is not a general revision of the constitution, where it is narrowly tailored to addres[illegible] "Board [of Canvassers]... to take the necessary steps to place the [illegible] election."[49]

Citizens Protecting Michigan's Constitution appealed the ruling t[illegible] 2018, the state Supreme Cout agreed to take up the case. The jus[illegible]

On July 31, 2018, the Michigan Supreme Court, in a 4-3 decision, r[illegible] measure on the general election ballot.[52][53]

Justice David Viviano, writing for the court's four-justice majority, [illegible] alter or abolish the form or structure of our government" nor "pro[illegible] constitution." Therefore, according to Justice Viviano, the ballot ir[illegible]

Elizabeth Clement, Bridget McCormack, and Richard Bernstein concurred with Viviano's opinion.[52][53]

Chief Justice Stephen Markman wrote the three-justice dissenting opinion. He stated that the initiative "would affect the 'foundation' power of government by removing altogether from the legislative branch authority over redistricting and consolidating that power instead in an 'independent' commission made up of 13 randomly selected individuals who are not in any way chosen by the people, representative of the people, or accountable to the people." Justices Brian Zahra and Kurtis Wilder concurred with the dissenting opinion.[52][53]

Reactions

- **Katie Fahey**, executive director of Voters Not Politicians: "Our state Constitution begins with, 'All political power is inherent in the people.' The court's decision upholds our right as citizens to petition our government for positive change."[52]
- **Rich Studley**, CEO of the Michigan Chamber of Commerce: "The Michigan Chamber is very disappointed with the State Supreme Court decision that the redistricting ballot proposal met the legal requirements to appear on the November General Election ballot. Unfortunately, Michiganders are now left to wonder what the rules are for future petition drives and ballot proposals."[54]

How to cast a vote

See also: Voting in Michigan

Poll times

In Michigan, polls are open from 7 a.m. to 8 p.m. Eastern Time in most of the state. Dickinson, Gogebic, Iron, and Menominee counties in the Upper Peninsula are open from 7 a.m. to 8 p.m. Central Time. An individual who is in line at the time polls close must be allowed to vote.[55]

Registration requirements

To vote in Michigan, one must be a United States citizen and a resident of Michigan. A voter must be at least 18 years old by Election Day.[56]

Voters can register to vote by mail; at county, city, or township clerk's offices; or by visiting any state department branch office. Same-day registration is available.[56]

Automatic registration

Michigan automatically registers eligible individuals to vote when th for or update their driver's license or personal identification cards.

Online registration

See also: Online voter registration

Michigan has implemented an online voter registration system. Re website .

Same-day registration

Michigan allows same-day voter registration.

Residency requirements

Michigan law requires 30 days of residency in the state before a person may vote.

Verification of citizenship

See also: Laws permitting noncitizens to vote in the United States

Michigan does not require proof of citizenship for voter registration.

Verifying your registration

This page , administered by the Michigan Department of State, allows residents to check their voter registration status online.

Voter ID requirements

Michigan requires voters to present photo identification while voting.[57]

The following list of accepted ID was current as of November 2019. Click here for the Michigan Secretary of State page on accepted ID to ensure you have the most current information .

- Michigan driver's license
- Michigan personal identification card
- Current driver's license or personal ID card issued by another state
- Current federal or state government-issued photo ID
- Current U.S. passport
- Current military identification card with photo
- Current student identification with photo from a high school or an accredited institution of higher education
- Current tribal identification card with photo.

A voter who does not have an acceptable form of identification can cast a ballot by signing an affidavit.[58]

Voters can obtain a state identification card at a secretary of state branch office for $10. Voters over the age of 65, voters who are blind, and voters whose driving privileges have been terminated due to a physical or mental disability can obtain an identification card for free. Additionally, voters an present a reason for having the fee waived may also obtain an ID for free. Visit the Michigan secre (767-6424) for more information.[58]

See also

2018 measures **Michiga**

- 2018 ballot measures
- Redistricting measures on the ballot
- 2018 legislative sessions

- Michigan ballot measures
- Michigan ballot measure laws
- Redistricting in Michigan

- Ballot measure lawsuits
- Ballot measure readability
- Ballot measure polls

External links

- Text of the Initiative

Footnotes

1. *Michigan Secretary of State*, "Voters Not Politicians Initiative," accessed June 26, 2017
2. *Michigan Secretary of State*, "Voters Not Politicians Ballot Committee BQC," accessed December 13, 2017
3. *Michigan Secretary of State*, "Committee to Protect Voters Rights Ballot Committee BQC," accessed December 26, 2017
4. *New York Times*, "Drive Against Gerrymandering Finds New Life in Ballot Initiatives," July 23, 2018
5. *SCOTUSblog*, "Gill v. Whitford," accessed August 20, 2018