Report to the Michigan Independent Citizens Redistricting Commission
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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.

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[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.

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[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

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[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

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[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

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[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.

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[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

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[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

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[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

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[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

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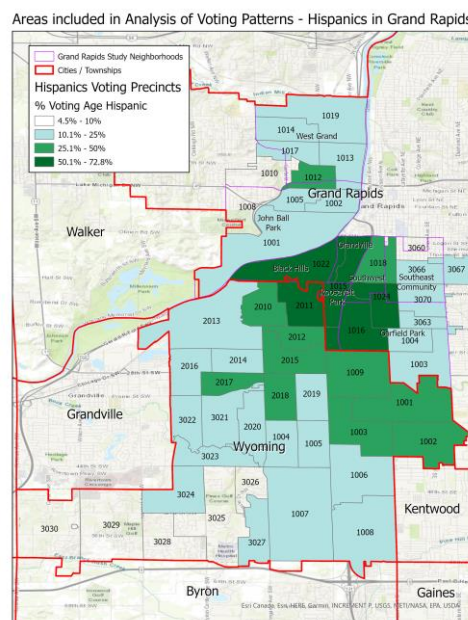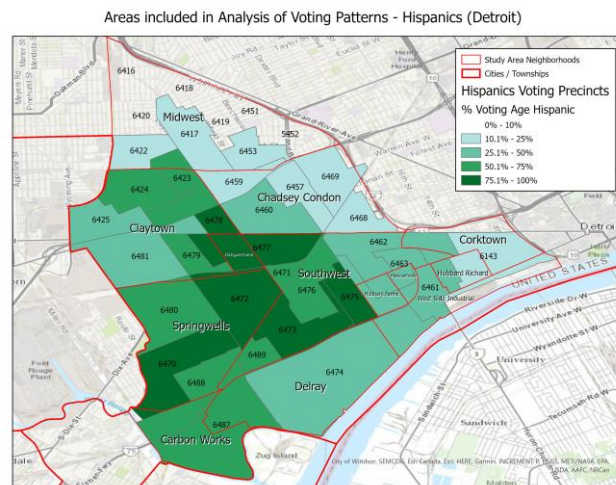
[14] The Hispanic VAP used for shading the map and conducting the racial bloc voting analysis was derived from the 2020 94-171 census redistricting data, which reports Hispanic VAP by census block. This data was then aggregated up to the precinct level.

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.

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

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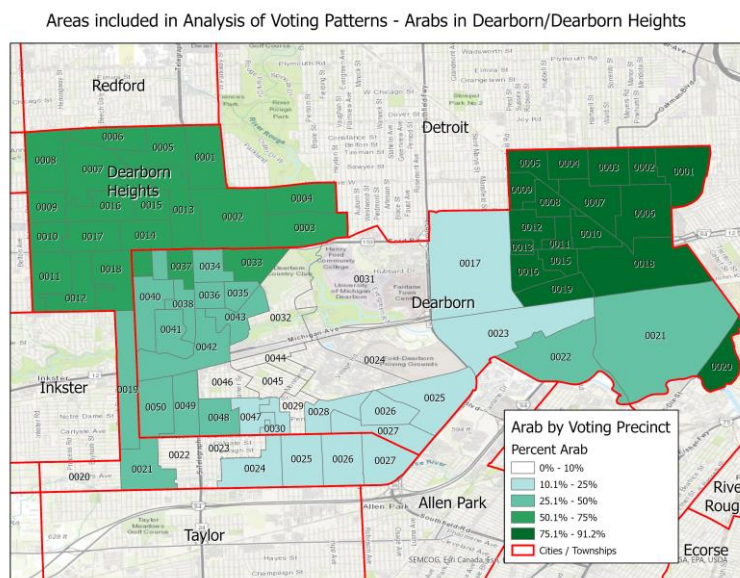
[15] The Arab American data was derived from the U.S. Census Bureau's American Community Survey (ACS), Table B04004, "People Reporting Single Ancestry." This data, reported at the census tract level, was attributed down to the census block level and then aggregated up to the election precinct level.

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

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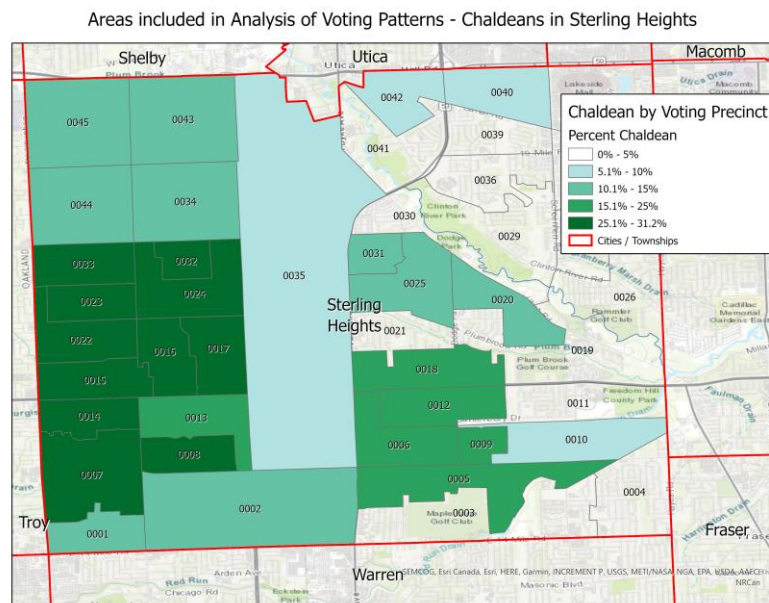
[16] The Chaldean data was derived from the U.S. Census Bureau's American Community Survey (ACS), Table B04004, "People Reporting Single Ancestry" using the Assyrian/Chaldean/Syriac designation. This census tract level data was attributed down to the census block level and then aggregated up to the election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

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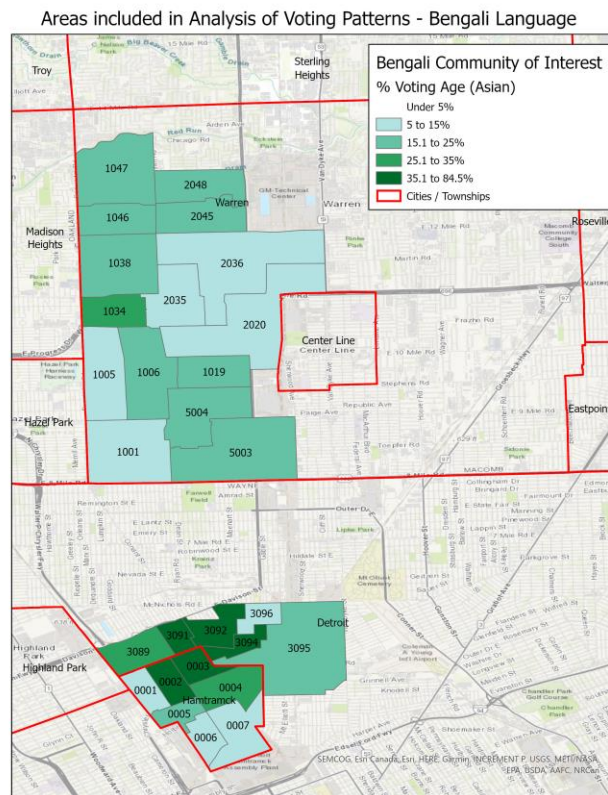
[17] The map was submitted on the public comment portal on 9/8/2021 by Hayg Oshagan with the following comment "This is the Bengali community of SE MI. The area around Hamtramck (to the South) is most densely populated and is the center of the community."

[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-

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[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

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[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.

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[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

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[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%

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[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:

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[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/)

District	Party A	Party B	Total Votes	Percent of Votes			Party Wins	
				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

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[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
	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

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[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]

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[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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Estimates for Black Voters				Estimates for White Voters			
			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	Party	Race	Estimates for Black Voters				Estimates for White Voters			
			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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	94.9	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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
				estimates for Black Voters				estimates for White Voters			

2018 General: State House Districts	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
					Estimates for Black Voters				Estimates for White Voters		
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	Party	Race	Vote	HP	ER	EI 2x2	EI RxC	HP	ER	EI 2x2	EI RxC
					Estimates for Black Voters				Estimates for White Voters		
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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Party	Race	Vote	Estimates for Black Voters				Estimates for White Voters			
				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	Race	Vote	Estimates for Black Voters			Estimates for White Voters		
			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	Race	Vote	Estimates for Black Voters			Estimates for White Voters		
			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*

	Party	Race	Estimates for Arab Americans	
			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*

	Party	Race	Estimates for Arab Americans	
			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*

| | Party | Race | Estimates for Chaldeans | |
			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*

	Party	Race	Estimates for Chaldeans	
			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*

	Party	Race	Estimates for Bangladeshi Americans	
			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*

	Party	Race	Estimates for Bangladeshi Americans	
			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