

MICHIGAN

LEAST CHANGE REDISTRICTING PLAN PROPOSAL

ZAC STOOR

# Introduction

## Criteria and Priorities of Plan:

This least change plan for Michigan was drawn with two priorities in mind. The first is compliance with all relevant federal law. This plan complies with both the one person, one vote requirement by achieving perfect population equality and with the Voting Rights Act (VRA).

The second priority is the “least change” aspect of the plan: redrawing Michigan’s districts to as closely match the maps drawn in 2010 as possible. Michigan lost a district following the 2020 Census, meaning that, with only 13 districts, drawing a least change map, especially one that complies with the VRA and one person, one vote, requires making sacrifices in terms of representation of communities of interest and county and municipality splits. It must be said that the 2010 map was significantly skewed towards Republicans, and already was rather poor at representing communities of interest. As such, this renders any map based on the 2010 districts a poor fit for communities of interests as well.

Michigan state law would almost certainly render this map unconstitutional. In the 2018 elections, Michigan voters passed the ballot initiative Proposal 18-2, which created the Michigan Independent Citizens Redistricting Commission (MICRC) and established in the state constitution criteria that must be used when the MICRC draws congressional and legislative maps. These criteria are, in order of priority:

- (a) Districts shall be of equal population as mandated by the United States constitution, and shall comply with the Voting Rights Act and other federal laws.
- (b) Districts shall be geographically contiguous. Island areas are considered to be contiguous by land to the county of which they are a part.
- (c) Districts shall reflect the state’s diverse population and communities of interest. Communities of interest may include, but shall not be limited to, populations that share cultural or historical characteristics or economic interests. Communities of interest do not include relationships with political parties, incumbents, or political candidates.
- (d) Districts shall not provide a disproportionate advantage to any political party. A disproportionate advantage to a political party shall be determined using accepted measures of partisan fairness.
- (e) Districts shall not favor or disfavor an incumbent elected official or a candidate.
- (f) Districts shall reflect consideration of county, city, and township boundaries.
- (g) Districts shall be reasonably compact.

The 2010 map would very likely violate the communities of interest and disproportionate partisan advantage requirements under the newly amended Constitution. As such, my proposal in this plan would likewise likely violate the communities of interest requirement, although it is less partisanly biased than the 2010 plan. In essence, this plan is meant as a hypothetical of what a least change plan would look like if Michigan law had not imposed the new requirements in 2018.

Avoiding county and municipal splits is not a major concern under this map as there are no requirements under federal law relating to county and municipal splits and the 2010 map was also not drawn with that priority in mind.

### Tensions between Criteria and Priorities:

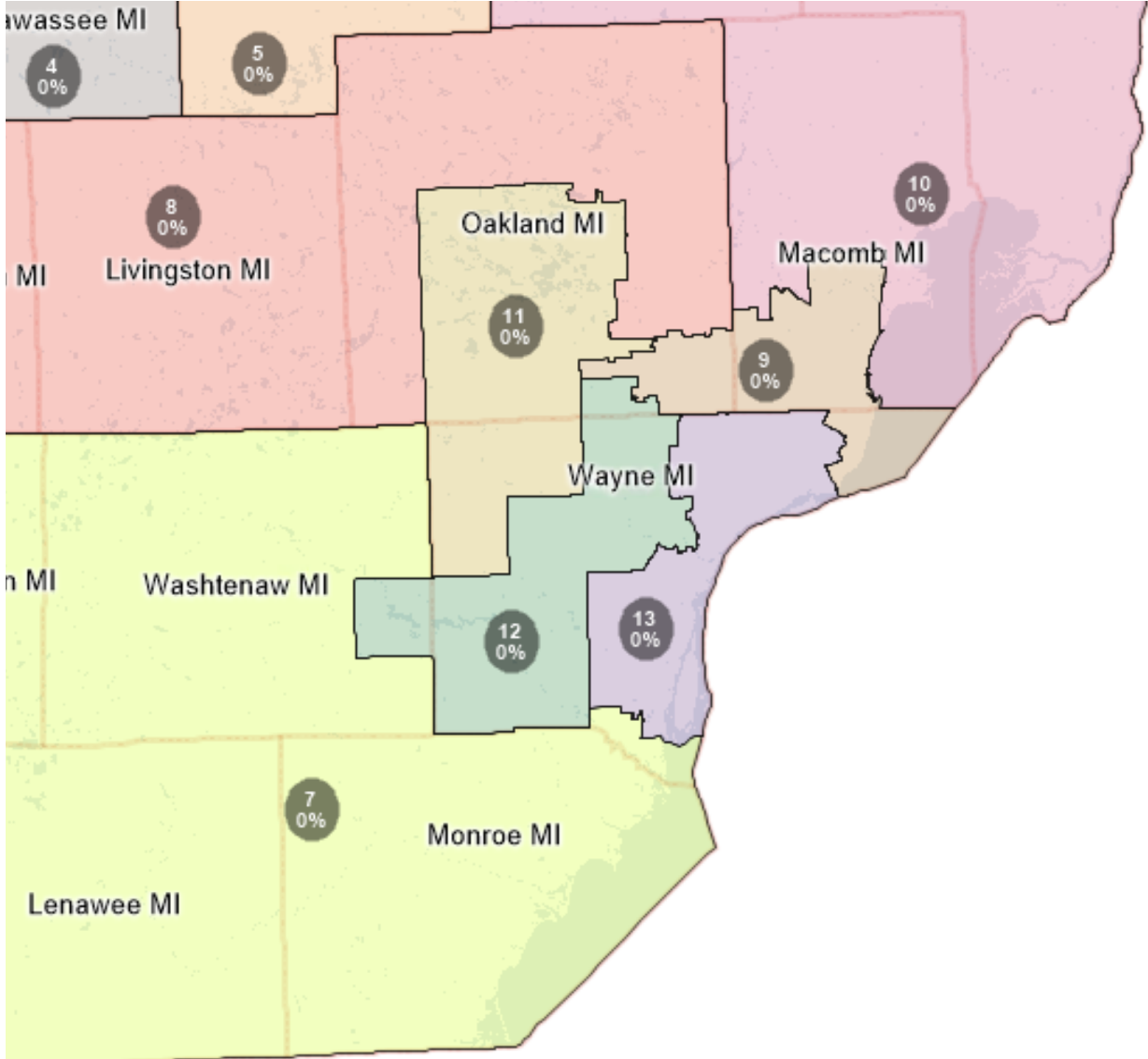
Since this plan is less concerned with state law, since a least change plan will almost always violate state law, the main point of tension between priorities in this plan is between meeting VRA and perfect population requirements while keeping districts similar to their current counterparts. Since federal law is the top priority in any redistricting plan, I needed to sacrifice some similarity between the 2010 map and mine in order to comply with it. This is especially true in the Detroit area, where the loss of Michigan's 14th congressional district meant that the two remaining VRA districts needed to be shaped quite differently. This means that the Detroit area is less similar to the 2010 plan than other regions of the state, but this was a necessary change to preserve VRA compliance.

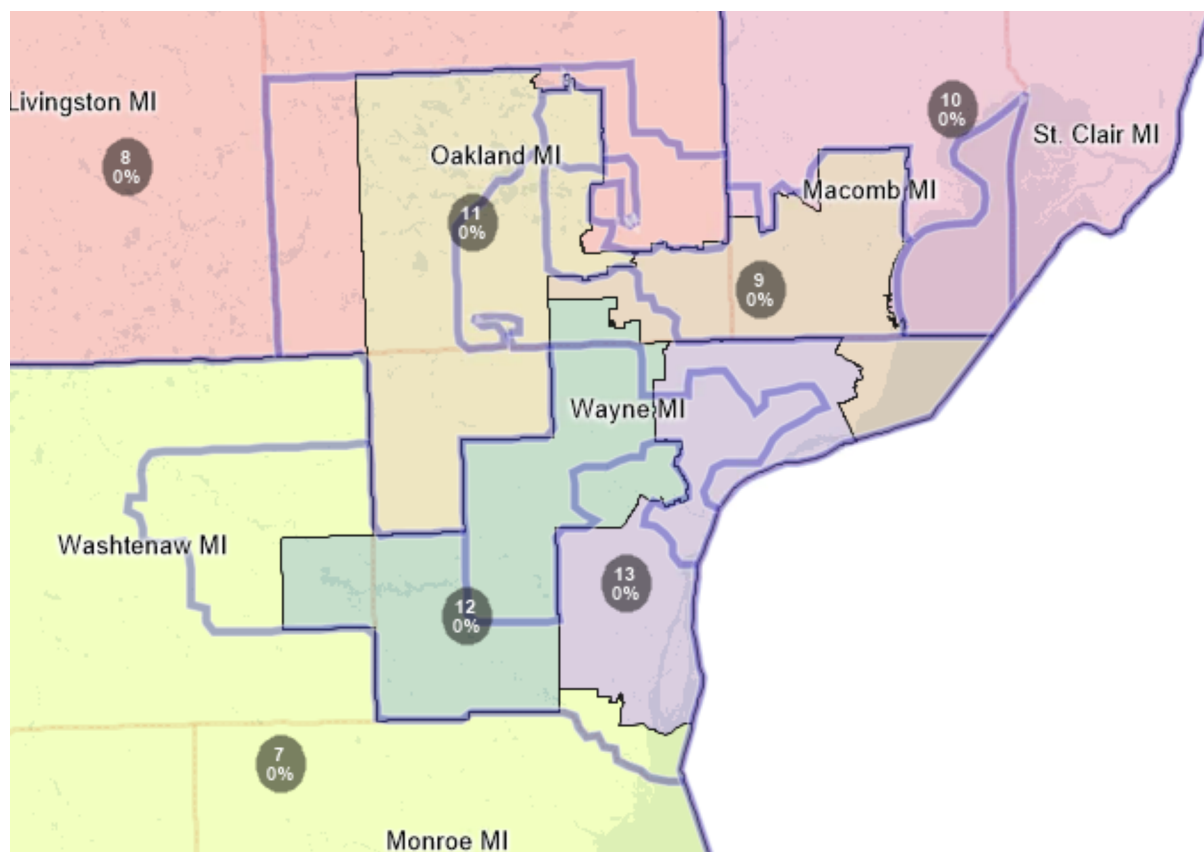
### Legal Compliance and Considerations:

#### One Person, One Vote:

All of the districts in the plan area are perfectly population balanced, meaning there is either a deviation of 0 or 1 from the ideal district population of 775,179. Districts with non-ideal population balances open the door to legal challenges to a plan under *Karcher v. Daggett*, which ruled that districts must be of equal population unless the population difference is necessary to achieve a "legitimate state objective." Since equal population is one of the main requirements under federal law, I determined that achieving population should be above all other priorities in drawing this map. This also helps avoid any legal challenges to the plan on the basis of population.

Detroit Metro Area:





### Voting Rights Act:

When I refer to the Detroit area in this report, I am not using the census definition of the Detroit Metropolitan Statistical Area, but rather Wayne, Oakland, Macomb, and Washtenaw Counties. This definition covers Wayne County, of which Detroit is the seat, and all of its neighbors save Monroe. This is the most densely populated region of Michigan, with 4 of the state's 13 districts being entirely within these 6 counties, and 2 others taking portions of the region. The main concern for redistricting in this area is the VRA, as Detroit is home to Michigan's only VRA districts. The current Michigan congressional plan contains two majority-Black districts in the Detroit area: District 13 which is 56.7% Black by total population and District 14 which is 56.9% Black by total population.

Under this least change proposal, two districts are VRA districts: District 12 (44.1% Black, 47.6% white) and District 13 (49.6% Black, 35.3% white, 10.2% Hispanic). While District 12 is plurality white, white voters are not a majority in the district. The main argument for why this district would not be illegal under the VRA is the relatively low amount of racially polarized voting in the Detroit metropolitan area. VRA districts need only have as much minority population as necessary to ensure they are able to regularly elect their candidates of choice. The lack of racially polarized voting in the Detroit area means that districts with lower percentages of Black voters can still comply with the Voting Rights Act. As an example of a lack of racially polarized voting, we can example the current MI-13's 2020 Democratic primary. As shown in the map below, in 2020 Representative Rashida Tlaib won by large margins against Detroit Councilwoman Brenda Jones, who is Black, while Tlaib is not. Even in Detroit, Tlaib

carried nearly every precinct, and while her margins are weaker in Black portions of Detroit, she maintains similar levels of support in Black areas of Inkster and River Rouge as in non-Black portions of the district. While the first race between the two in 2018, when Tlaib was not an incumbent, was much closer, the race was fundamentally different, as there were 6 major candidates running and Tlaib only won with 31.2% compared to Jones' 30.2%. Detroit's significant population of other minority groups and white voters who vote similarly to Black Detroiters means that Article 2 of the VRA does not necessarily require a majority of the population be Black to comply.

My proposed District 12 combines Black areas of Detroit, which must be split despite its population in order to avoid racial packing, with Inkster, Romulus, Ypsilanti in Washtenaw County, and portions of the Black community of Southfield in Oakland County, which unifies the main Black communities to the west of Detroit. It also incorporates Dearborn and its large Arab population as well as nearby white suburbs in Wayne County.

District 13 covers eastern Detroit and the Downriver suburbs in southern Wayne County, except for Flat Rock and Rockwood, which instead are a part of District 7. This combines the heavily Black cities of Detroit and River Rouge with the Hispanic community in southwest Detroit and the majority white Downriver suburbs. The resulting district is only 35.3% white, and the strength of Black voters, despite being slightly under 50% of the population, means that they will certainly elect their candidates of choice when factoring in the low racial polarization.

Figure 1: 2020 Democratic Primary in Current Michigan-13:

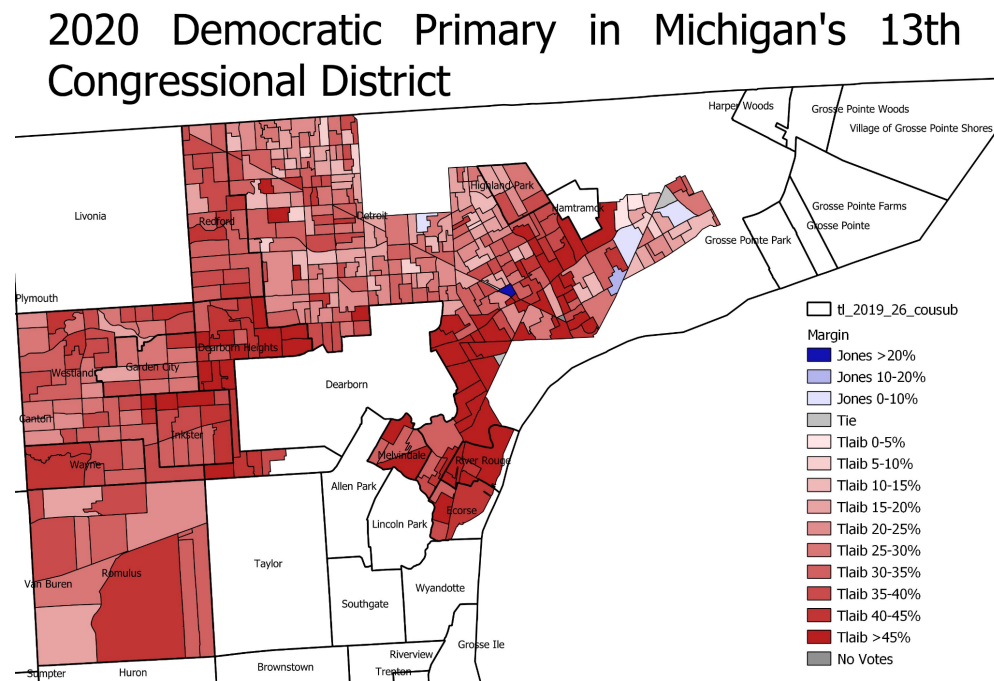
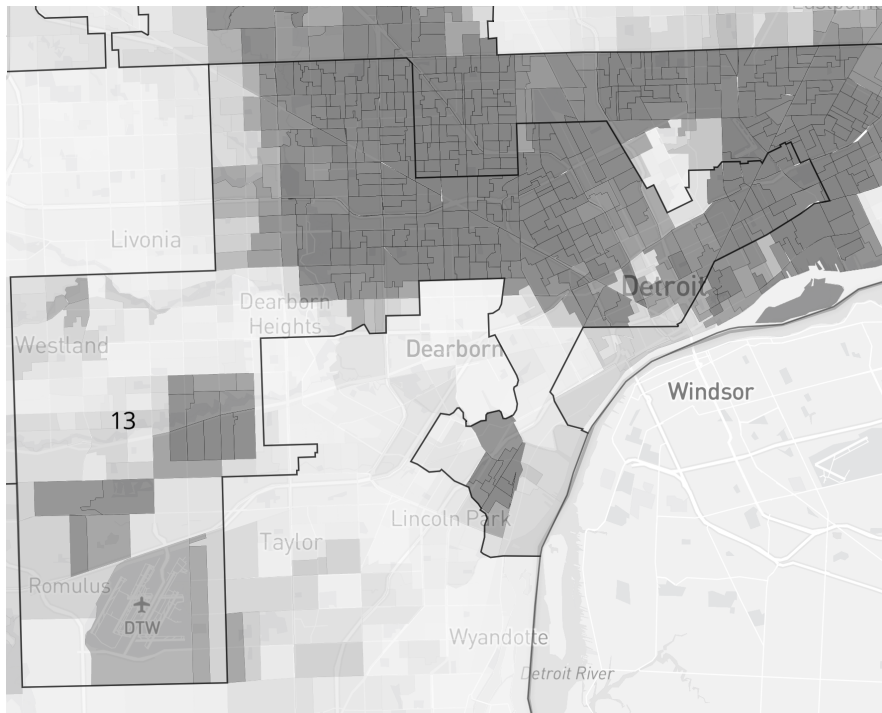


Image Credit: Twitter User @BrandyFromTX

Figure 2: Black Percentage by Precinct of Current Michigan-13:



#### Least Change Goals:

Since this plan is a least change plan, the Detroit area was quite difficult to draw. In order to comply with the VRA under a least change plan, there are two options in Michigan. The first is to make VRA districts in Detroit that deviate significantly from the current VRA district lines while following current lines more closely throughout the rest of the state. The second option is to follow the current VRA district lines more closely while deviating more significantly in the rest of the state. I opted for the former option, as not following the current VRA districts' lines allows the surrounding suburban Districts 9 and 11 as well as Districts 7 and 8 to absorb territory that does not deviate too far from their current lines. I found it more valuable to preserve the shapes of the other 11 districts in the state over the 2 VRA districts.

District 12 and 13 do not follow their current district lines closely at all, as previously stated. District 11 remains a primarily white suburban district that loops around District 12, incorporating Livonia and suburban western Wayne County as well as much of eastern Oakland County. This district quite closely resembles its current version, although it is more compact due to the incorporation of Pontiac, which was previously in District 14. However, my District 11 also loses some of its periphery territory to District 8. I chose to incorporate much of District 14's population into District 11 not only for its proximity, but also for its similar character. Much of the eastern portions of current District 14 are suburban in character, making it more natural to add these communities to similarly suburban District 11 rather than the more urban-focused Districts 12 or 13.

District 9 remains a primarily Macomb and Oakland County based district, incorporating small portions of Southfield and the Grosse Pointe cities from current District 14. By

incorporating the portions of Southfield into District 9, it helps balance population while still keeping the district anchored in Oakland County and avoiding overpopulating District 12 and cascading the shifts to other districts. The Grosse Pointe cities of Wayne County also fit well with District 12, in this case, however, it is not only for population purposes, but also for VRA purposes. The Grosse Pointe cities are predominantly white, meaning that including them in District 13 could jeopardize its VRA district status.

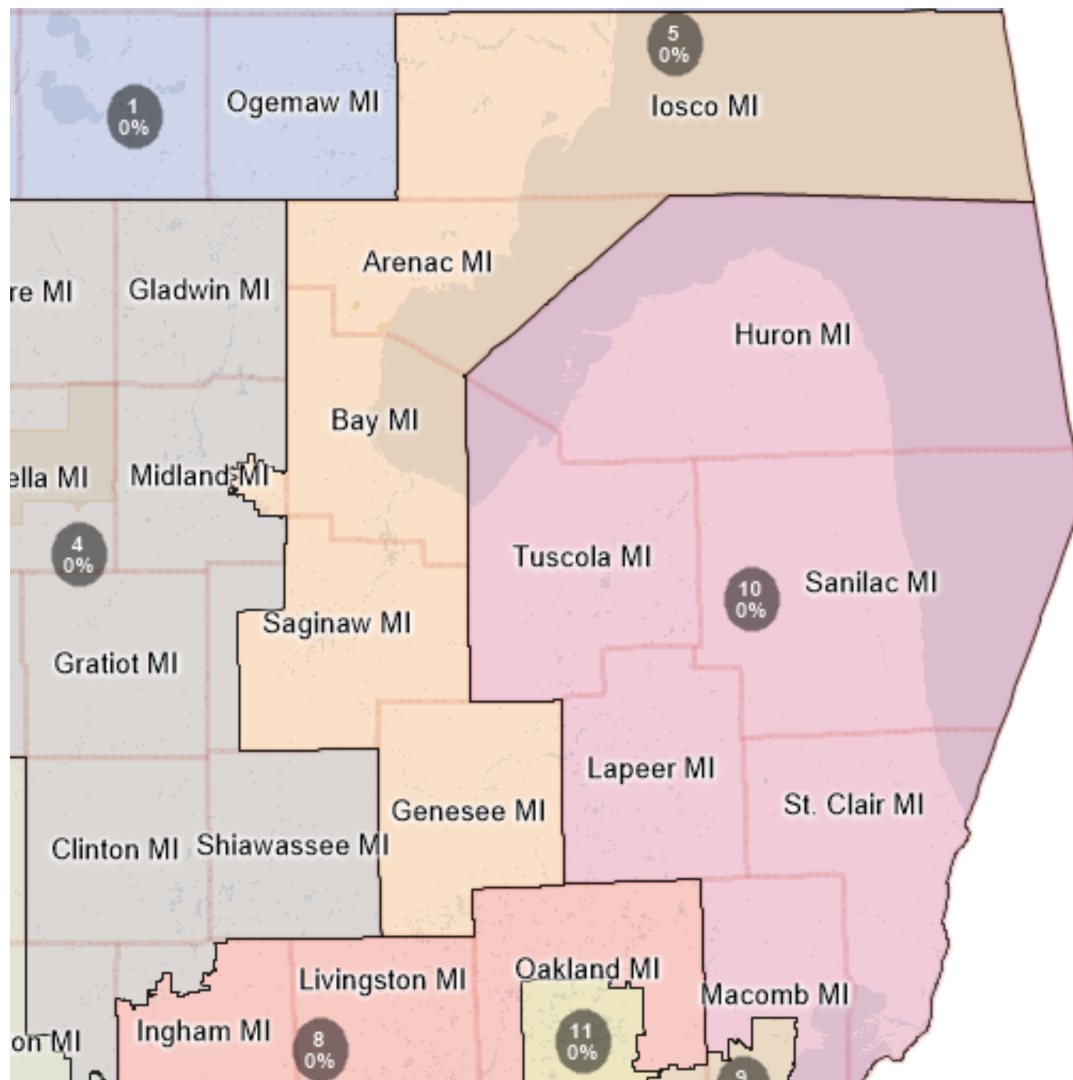
District 10 took small portions of current District 9 to achieve perfect population balance, but remains mostly based in the Thumb region.

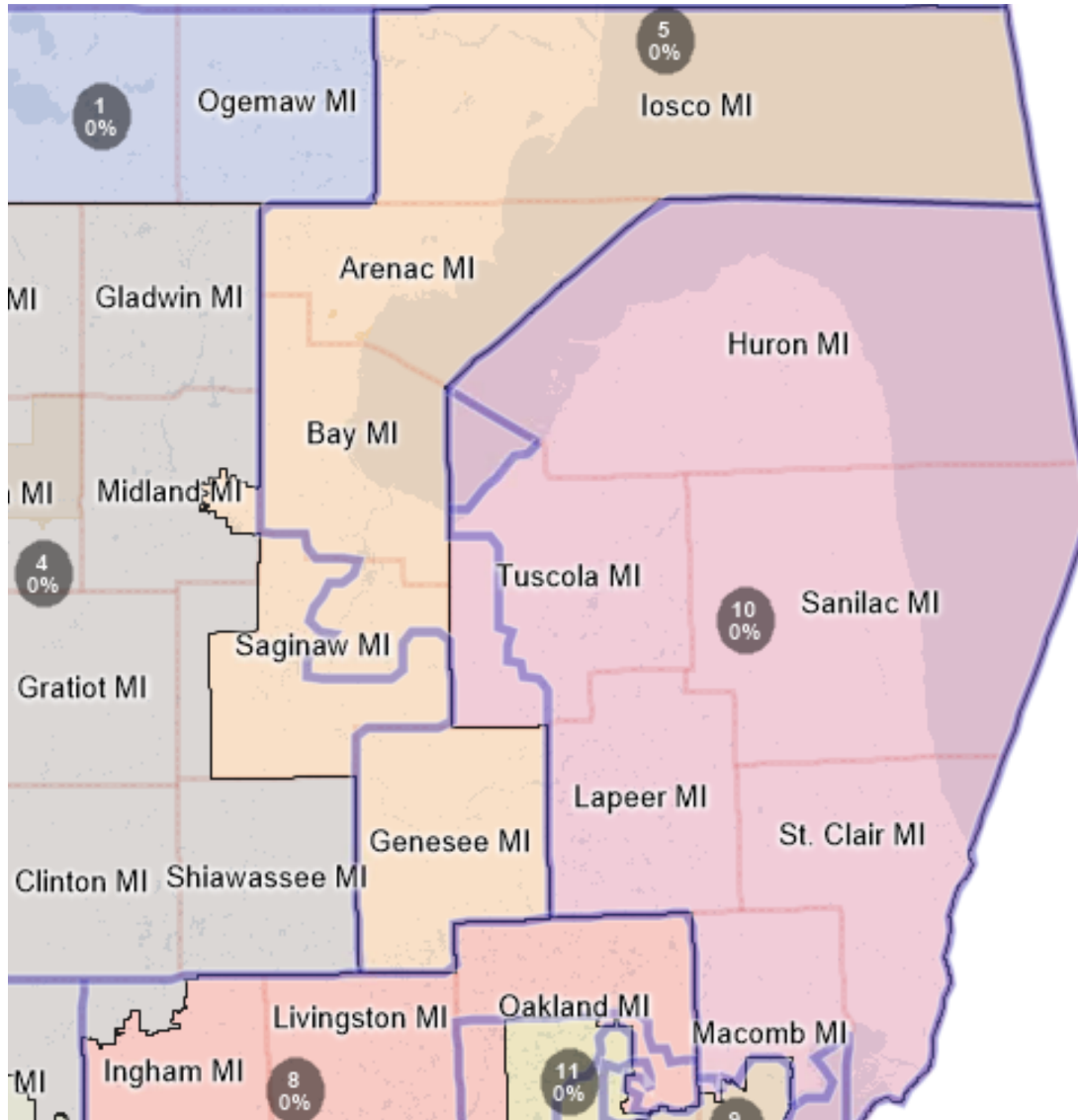
District 7 takes in Ann Arbor in Washtenaw County as well as Flat Rock and Rockwood in southern Wayne County from current District 12. This maintains the current configuration of District 7, being primarily based in southern Michigan. Adding Ann Arbor to District 7 is a significant shift in the character of the district due to the current District 7 being composed mostly of smaller cities like Monroe and Jackson as well as the surrounding rural counties. However, since the current District 7 already contains most of Washtenaw County outside of Ann Arbor, I opted to include the city despite the political shifts it would entail. The geographic character of the district, nevertheless, remains largely similar: smaller southern Michigan cities and surrounding areas.

District 8 takes in some outer edges of current Districts 11 and 14, shifting the geographic focus of the district more towards Oakland County instead of the Lansing metro, but preserving the overall shape of the district. District 8 will be discussed in more detail in the Mid-Michigan section.



The Thumb and Tri-Cities:





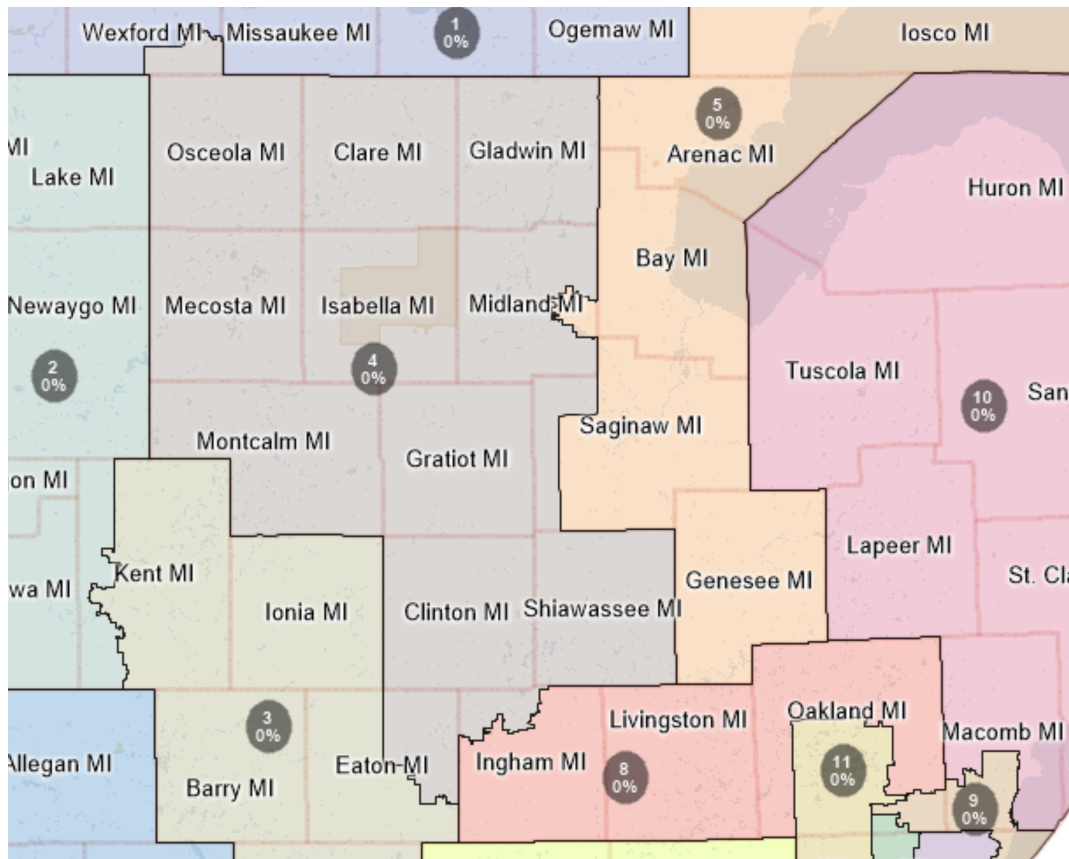
#### Least Change Goals:

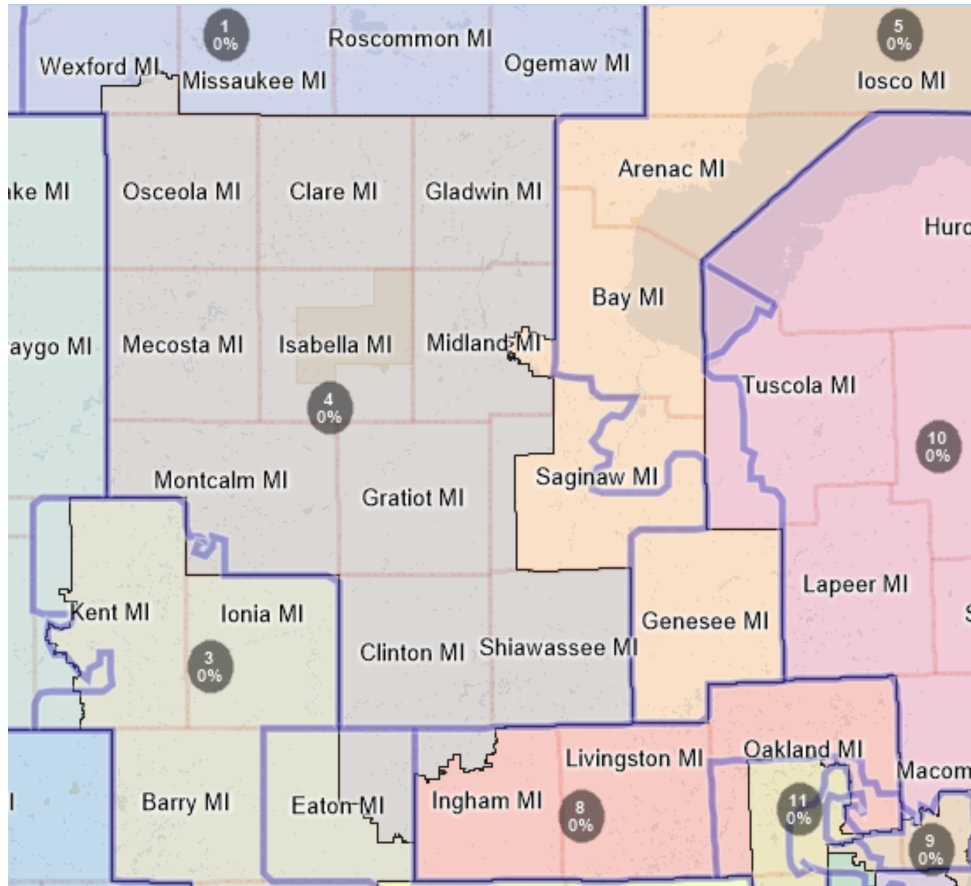
This region consists of 2 districts, District 10, based in the rural, agricultural “Thumb” region and District 5, based in the mid-sized cities of Flint, Bay City, Saginaw, Midland, and the Lake Huron coast. District 10 is nearly exactly the same as its current counterpart, only taking in small portions of Macomb County and some of Tuscola County. I chose to add these regions to remedy the Tuscola County split, reuniting it with the rural Thumb rather than the more urban District 5. The Macomb additions were quite small and were preferable to splitting off portions of northern Oakland County, which can otherwise be kept together under District 8. Additionally, portions of Macomb are already included in District 10, so adding slightly more does not change the district significantly.

District 5, on the other hand, remains fairly similar to its current configuration but with important differences. Most notable are the additions of suburban areas of Saginaw County and

the city of Midland, which do not significantly alter the shape or political character of the district but are necessary to ensure it reaches perfect population equality. Incorporating Midland and the suburbs of Saginaw makes sense due to the shared economic and geographic characteristics of the region. Midland, along with Bay City and Saginaw, is part of the Tri-Cities area, which shares economic development and tourism efforts along with key infrastructure like the MBS International Airport. The Tri-Cities and Flint are all smaller cities distinct from Detroit and Lansing, as well as Rust Belt cities suffering economic hardship post-2008. The similarities between these 4 cities makes the addition of Midland and the Saginaw suburbs the natural choice to achieve population equality while maintaining the overall district shape and character. The district retains its northern extension up the Lake Huron coast into Arenac and Iosco Counties. Overall, this region has remained quite similar to its previous district shapes.

### Lansing Metro/Mid-Michigan:





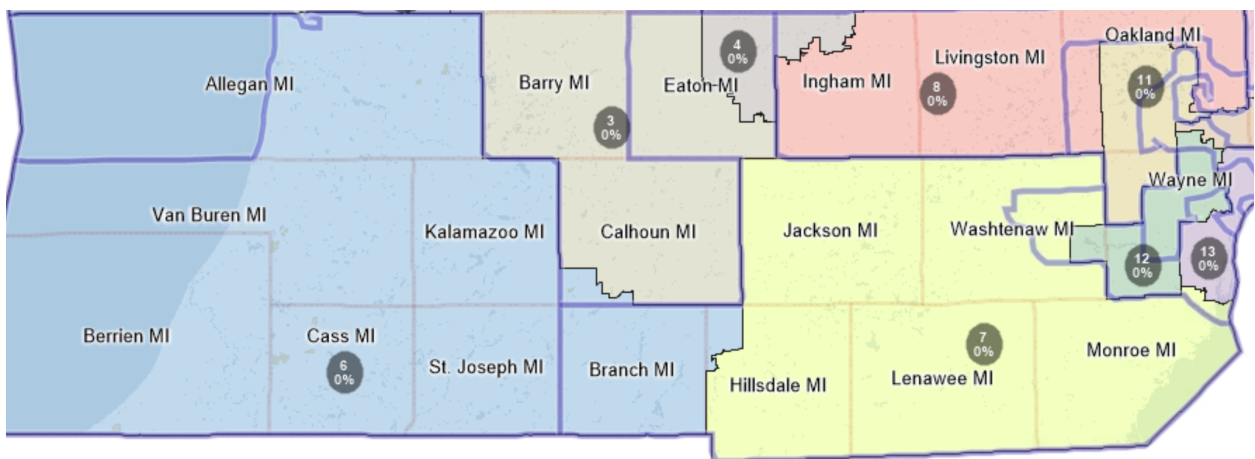
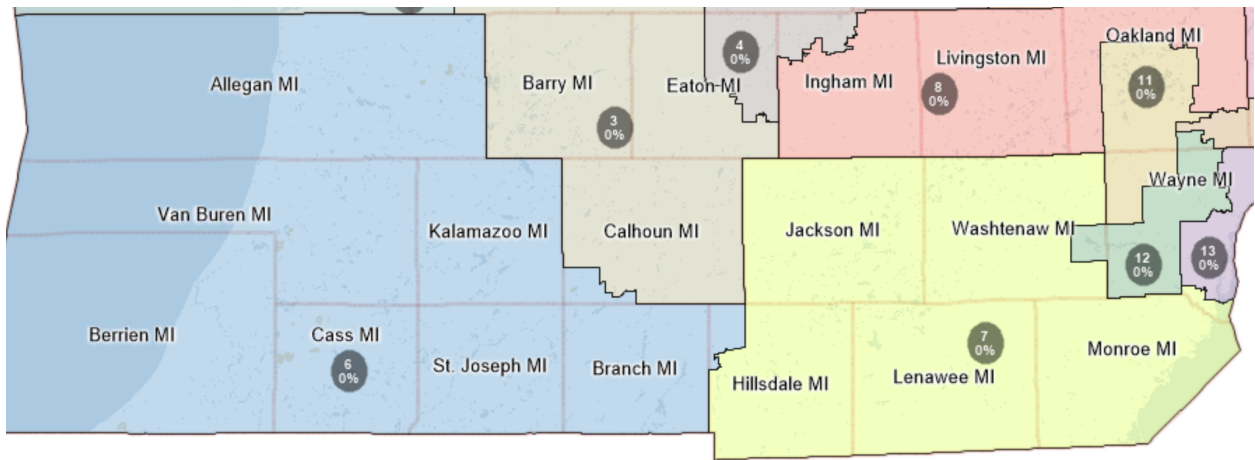
### Least Change Goals:

Outside of the Detroit area, this region had perhaps the most difficult decisions with regard to preserving the shape of the current map. The Lansing metropolitan area consists of three main counties, Ingham, Clinton, and Eaton, as well as the more peripheral Shiawassee County. Under the current map, the Lansing metro is split between Districts 4, 7, and 8. Under this least change plan, the 3 district split remains, however the core of the Lansing metro, i.e. Lansing and its most immediate suburbs, are united under District 4.

District 4, while similar in shape to its current iteration, is quite different in nature. The current District 4 as drawn is quite underpopulated, exacerbated by it being the most logical source of population for neighboring Districts 1 and 5. As such, District 4 required a significant amount of population to be added in order to achieve perfect population equality under one person, one vote. Lansing is the best source for this population. Since part of the Lansing metro is already included in District 4, I opted to incorporate the cities of Lansing and East Lansing and some surrounding suburbs. Leaving Lansing in District 8 would render it unable to incorporate more of Oakland County, which would likely require District 5 and 10 to significantly change in shape and character to compensate. The outer portions of Ingham County remain with District 8, retaining its shape and helping preserve its more suburban character overall. Eaton County, on the other hand, shifts from District 7 to being split between District 4 and District 3. Eaton's Lansing suburbs are understandably more linked to District 4, while more

rural Eaton County being incorporated into District 3 helps said district reach perfect population while also connecting the area to the surrounding rural communities. Overall, I believe the changes in the Lansing area to be justified. There is simply not enough population in the northern Lower Peninsula to form a solely-rural district. A district based in the rural central Lower Peninsula, like District 4, must either incorporate some of the Mid-Cities, Muskegon, or Lansing. I incorporated Lansing as it is by far the least disruptive to current district lines to include. Breaking up the Tri-Cities would force District 5 into the Thumb or Oakland County, areas with which it shares little and, most importantly, which are not close to its current boundaries. Adding Muskegon to District 4 would force District 2 either split Grand Rapids or shift significantly down the Lake Michigan coast, causing many more alterations to the current lines. Lansing is the best fit to add to District 4 to meet population requirements and keep district lines similar to their current state.

### Southern Michigan:



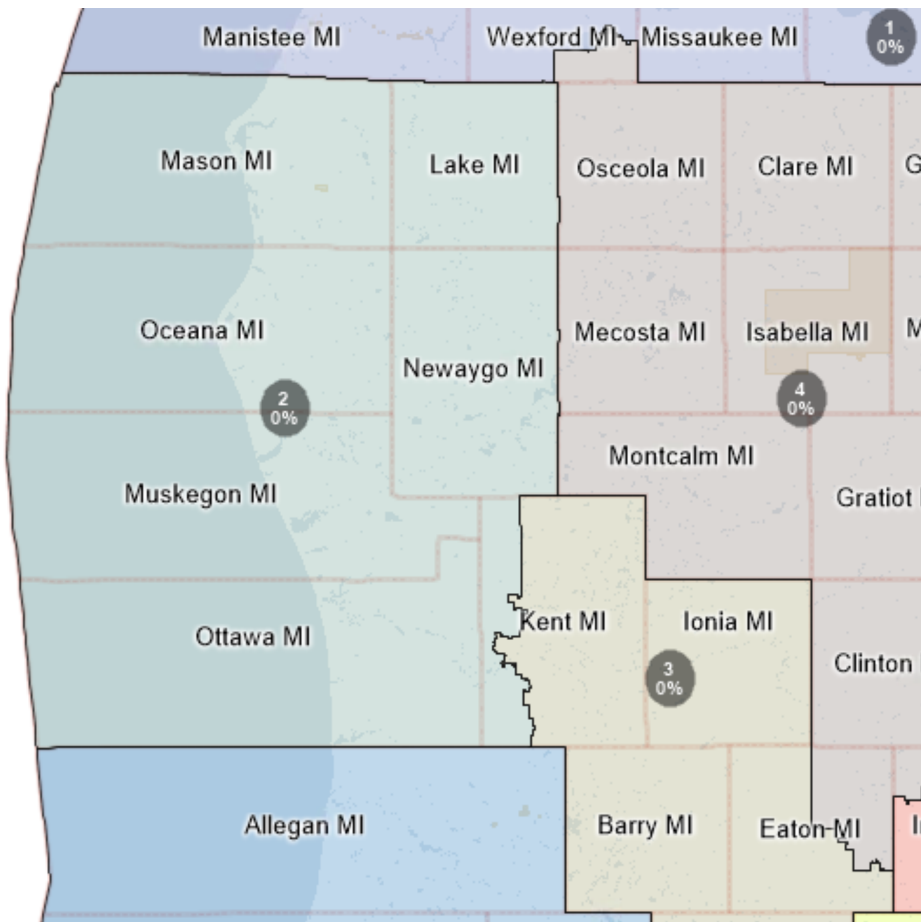
## Least Change Goals:

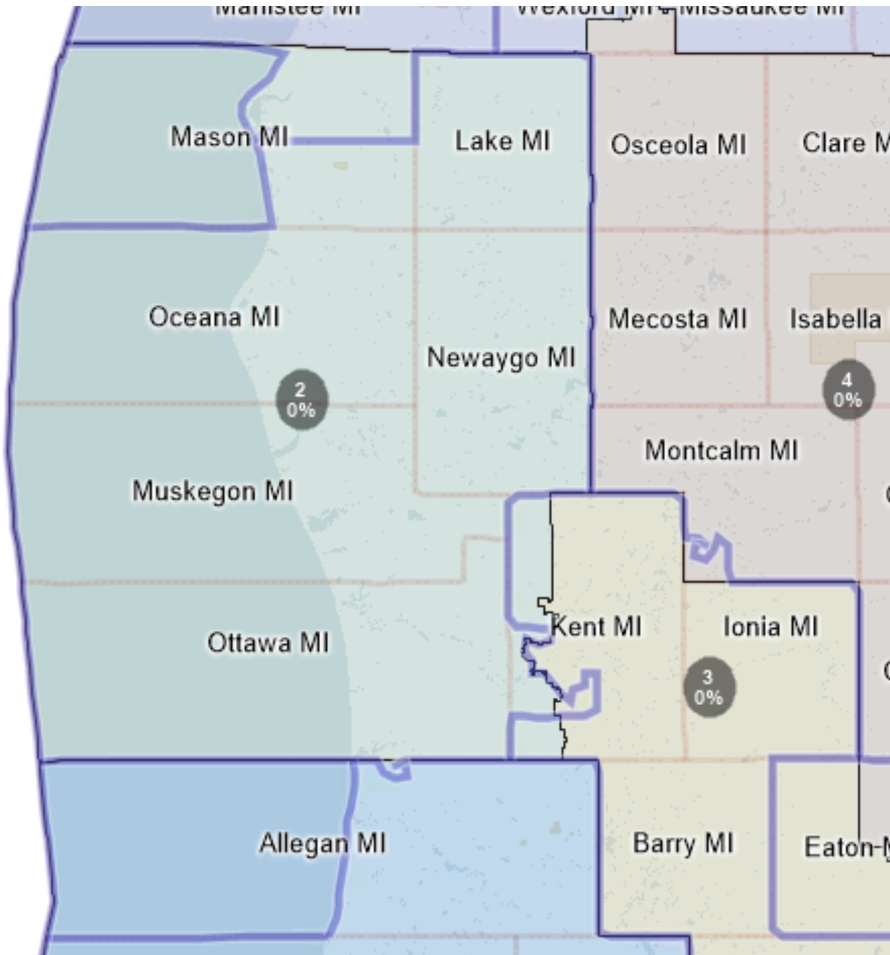
Southern Michigan contains two districts, Districts 6 and 7, and a portion of District 3. District 6 largely retains its previous shape, taking in the City of Holland in Allegan County as well as rural surrounding areas in Branch, Hillsdale, and Calhoun Counties. Since District 6 was underpopulated, it made the most sense to pull population from District 7, since the addition of Ann Arbor had made that district overpopulated. The portions of Branch, Calhoun, and Hillsdale Counties added to District 6 are quite similar to Cass and St. Joseph Counties, all of which are primarily agricultural rural counties less connected to surrounding metros. As such, their addition still maintains the overall shape and character of District 6.

District 7, as discussed earlier, takes in Ann Arbor, another mid-sized metropolitan area, and combines it with the smaller cities of Jackson and Monroe, in their eponymous counties. The district's small metro character remains largely the same (except its political orientation), and some more rural areas were ceded to District 6 to account for the added population.

The portion of District 3 in southern Michigan, namely Calhoun and Barry Counties, exists under the current map. The current District 3 links the cities of Grand Rapids and Battle Creek, in Kent and Calhoun Counties respectively, and also includes rural areas between the two. My proposed District 3 retains the link between Grand Rapids and Battle Creek while adding half of Eaton County to the district. Eaton County, currently part of District 7, is split between Districts 3 and 4 under my plan. District 3 incorporates the rural areas of Eaton County, which are economically similar and linked to neighboring Barry County, already a part of District 3. As such, it was the natural choice to take in this area. This also helps make my District 3 more compact than its current iteration.

West Michigan:





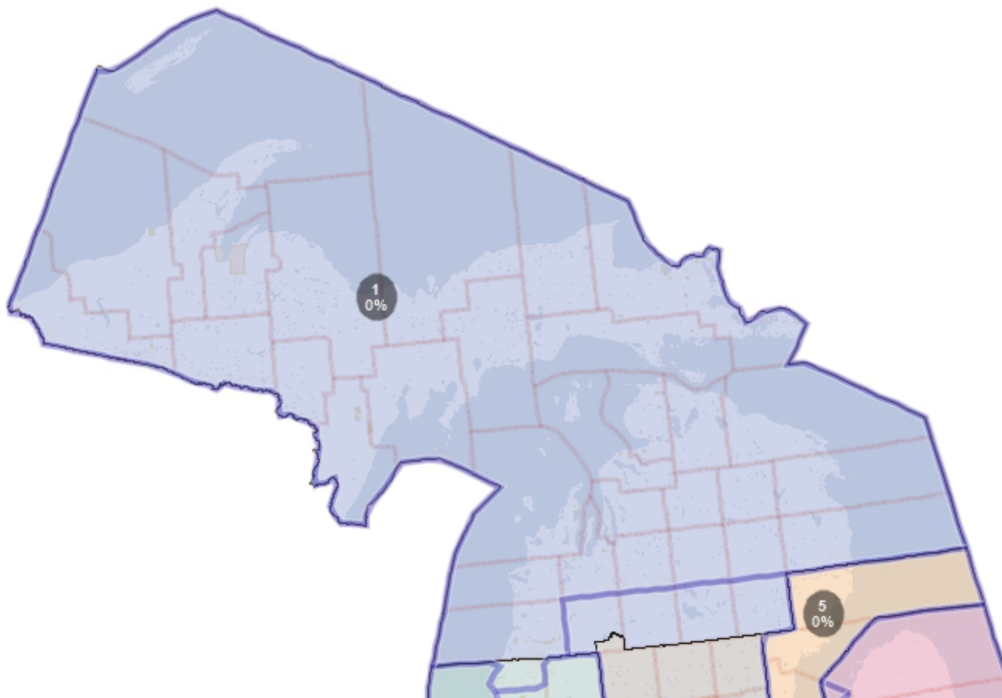
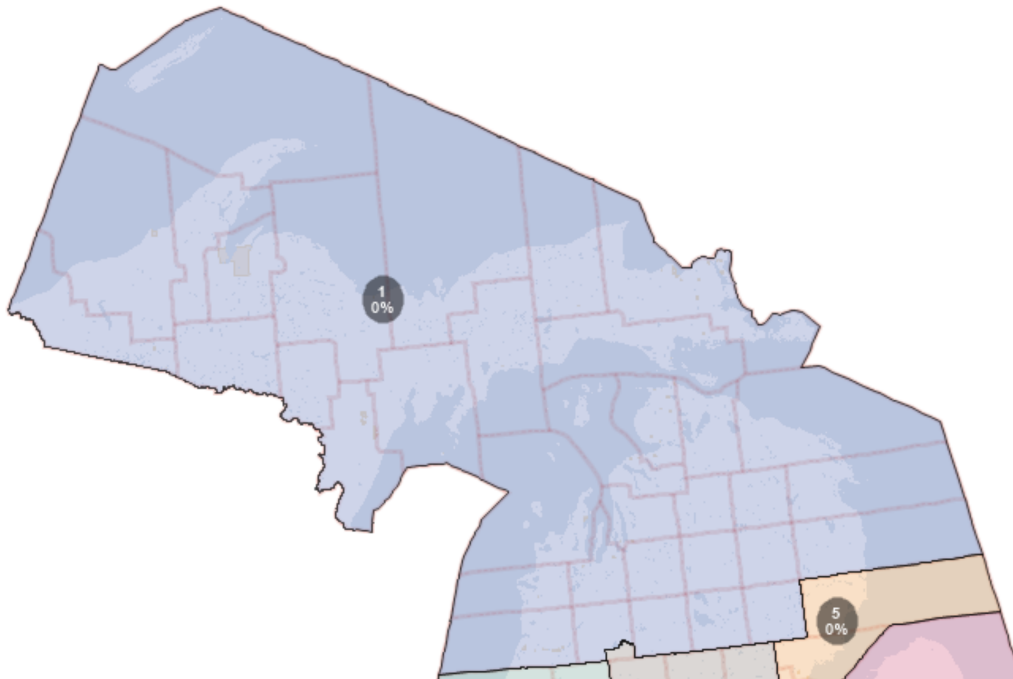
### Least Change Goals:

West Michigan, including the Grand Rapids area in Kent and Ottawa Counties, saw some slight changes under my plan. District 3 is the first major district here, containing the city of Grand Rapids itself and linking the city to Battle Creek. Under the current plan, District 2 nearly encircles the City of Grand Rapids itself, taking most of the largest suburbs and combining them with the Lake Michigan coast. My plan maintains the split between Grand Rapids and most of its suburbs, save for the city of Kentwood, which formed the most eastward appendage of current District 2. After shifting the small portion of the city of Holland in Allegan County to District 6, District 2 was underpopulated enough to require more shifting in the Grand Rapids area. I opted to trade Kentwood for more exurban portions of Kent County that helped make the border between the two districts more compact. Overall, this equalized the population of both districts while making the split between them more natural and clean.

District 2 also took in the remaining portion of Mason County from District 1, reunifying the county with only slight impacts on District 1, which would have still needed to split Wexford County to achieve perfect population regardless. Reunifying Mason County thus results in a slightly neater map that still closely follows the current district lines.



## Northern Michigan and Upper Peninsula:



### Least Change Goals:

There is little to say about this region, which contains only District 1. The current District 1 was underpopulated by about 70,000, which meant it must take in territory from a neighboring district. Of its neighbor's District 4 made the most sense not only for compactness reasons, but also for least change concerns. Shifting all of Missaukee, Roscommon, and Ogemaw Counties

as well as the majority of Wexford County into District 1 meets the population requirements while only requiring changes to one current district. If, instead, I had tried to incorporate the necessary population from current Districts 2 or 5's territory instead, it would either much more significantly alter the borders of those districts or require taking some of District 4's territory anyway. As such, I determined the best path to be taking entirely from District 4. All four counties impacted by the shift are very similar to District 1's existing forested, rural territory. Wexford County was chosen for the split between Districts 1 and 4 due to the city of Cadillac, which had just enough population to equalize the two districts, is close to the county line and could easily be shifted. Cities with enough population in the other three counties would either need to be split or require less compact lines. District 1 under my plan is overall quite close to its current shape.

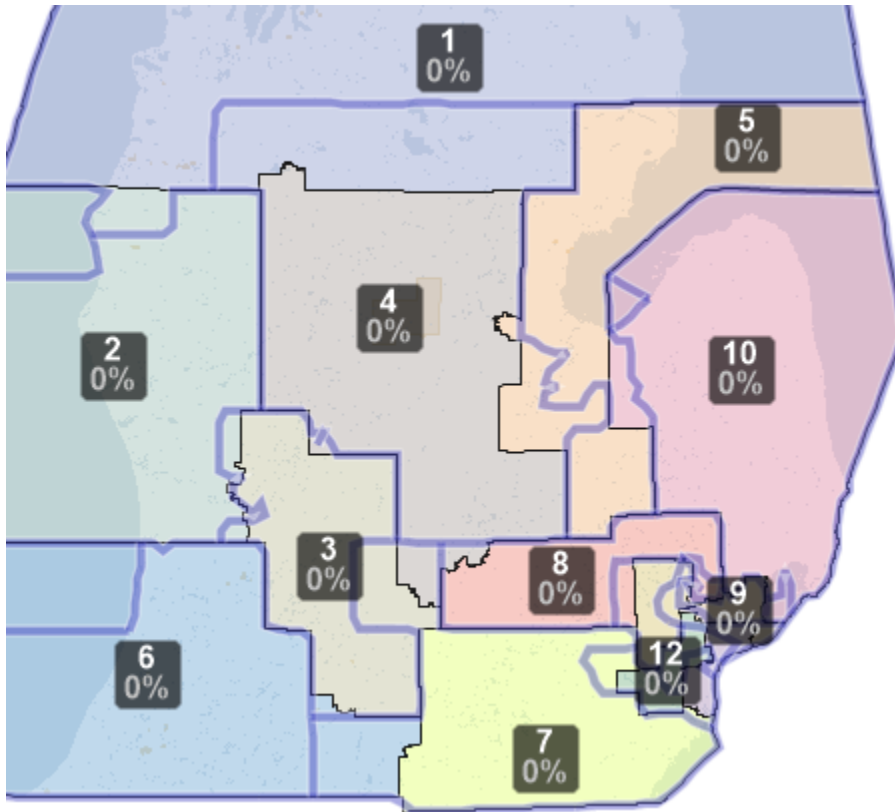
## Partisan Fairness Statistics:

Lisa Handley, the MICRC's chief partisan fairness advisor, used both mean-median gap and partisan efficiency gap to measure partisan fairness for the Commission's maps. A mean-median gap measures the difference between a party's median vote share and its mean vote share. More divergence between the two indicates a bias towards one party in the map. Partisan efficiency gap measures the amount of inefficient or "wasted" votes (votes for a losing candidate or votes over 50% for a winning candidate) for one party. It is calculated by adding up one party's total inefficient votes, subtracting the other party's inefficient votes, and dividing by the total number of votes. Higher percentages of wasted votes can indicate unfair packing or cracking of districts.

Using this approach to evaluate this plan, we find a mean-median gap of 1.9% and an efficiency gap of 4.5%, both in favor of Republicans.

Overall, my map contains 6 districts won by Biden and 7 districts won by Trump in 2020. Planscore classifies 3 districts as safe Republican, 3 districts as safe Democratic, and 7 districts as competitive. Since partisan fairness was not a factor in the way I drew my plan, I did not intentionally aim to create an extremely competitive plan, it was simply a side effect of adapting the current map to a 13-district environment where many districts needed to incorporate significant amounts of new territory.

## Statewide Comparison with Current Map:



## Least Change Goals:

Overall, my plan does quite well at ensuring that proposed district lines closely follow the current districts. The one exception, which has already been discussed above, is in the Detroit area where VRA compliance required Districts 12 and 13 deviate significantly from their current configurations. Still, throughout the rest of the state, districts are recognizably based on their current iterations and almost always remain based around the same communities, with the exception of District 4, which is also discussed in detail above.

## Partisan Statistics:

The current map has a mean-median gap of 6.1% in favor of Republicans and an efficiency gap of 11.5% in favor of Republicans. Compared to my plan's mean-median gap of 1.9% and efficiency gap of 4.5% in favor of Republicans, my proposal is a significant improvement in terms of partisan fairness, despite this not being one of my priorities while drawing the plan. This is especially notable as an improvement due to the current map being a quite obvious Republican gerrymander, making it surprising that a map based on it could be so much more competitive. Still, the loss of a district in Michigan necessitated the addition of more territory to most districts, which is what caused such a significant shift.

## County and Municipal Splits:

Although avoiding county and municipal splits was not a primary factor in drawing my plan, it was sometimes used as a factor in deciding which counties or districts to draw population from over others. The current plan splits 10 counties, 24 cities, towns, and census-designated places, and 34 precincts. My plan splits 12 counties, 20 cities, towns, and census-designated places, and 48 precincts. Both plans split around the same amount of subdivisions, with my plans splitting far more precincts. Both plans also achieve perfect population equality.

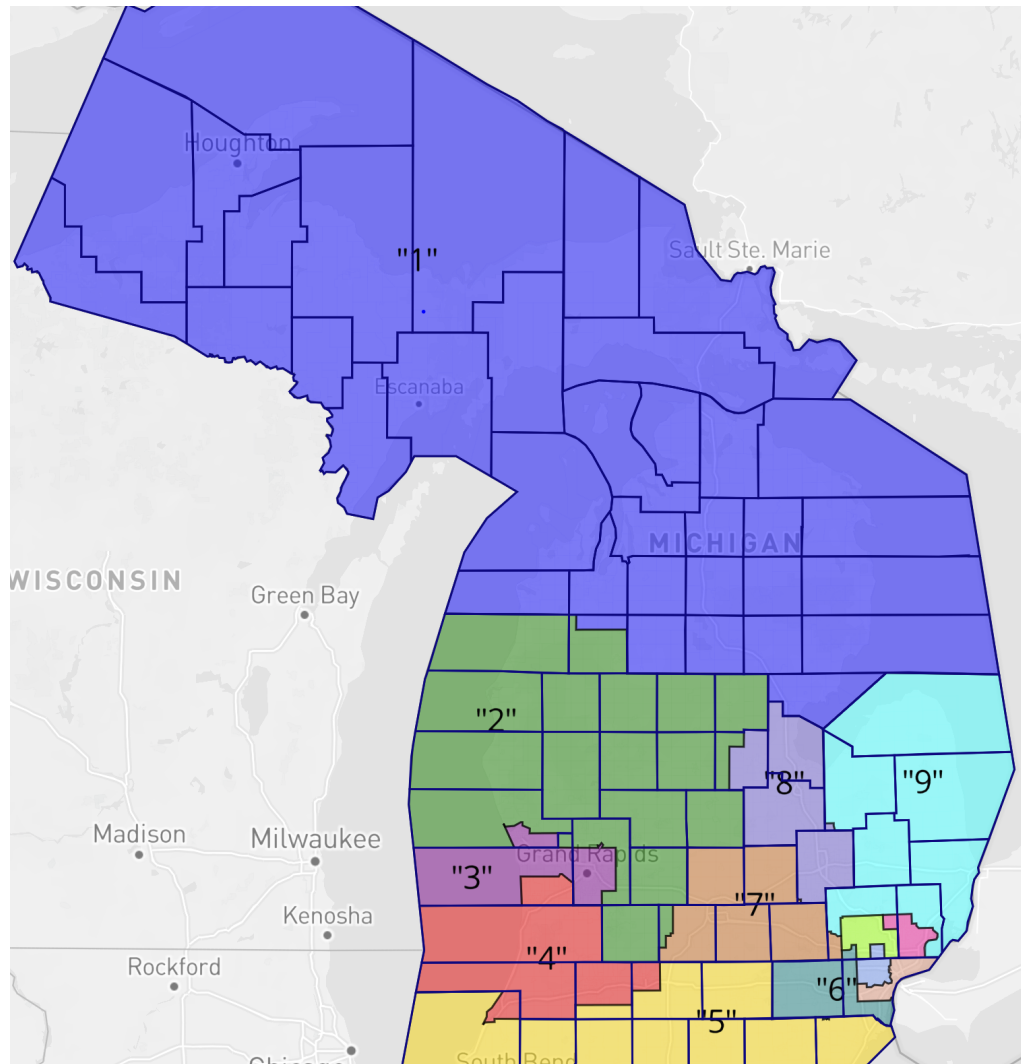
## Comparison with MICRC Proposals:

The MICRC narrowed their pool of maps down to three proposals, before voting to adopt the Chestnut plan on December 30, 2021. Still, comparing with their three proposals is useful due to the significant differences between the three plans themselves and between the MICRC proposals and my own least change plan. The three proposals are pictured below and are named Chestnut, Birch V2, and Apple V2.

Obviously, my map and the MICRC's maps were drawn with quite different priorities in mind. As stated in the introduction, my map likely would not meet the requirements set out under Michigan's Constitution, whereas these maps were drawn explicitly with all of the new constitutional requirements in mind. As such, I will only be briefly comparing the MICRC's maps with my own.

Another important note is that none of the MICRC's plans are balanced to ideal district population. As such, they are more vulnerable to challenge under *Karcher v. Daggett* and the one person, one vote principle.

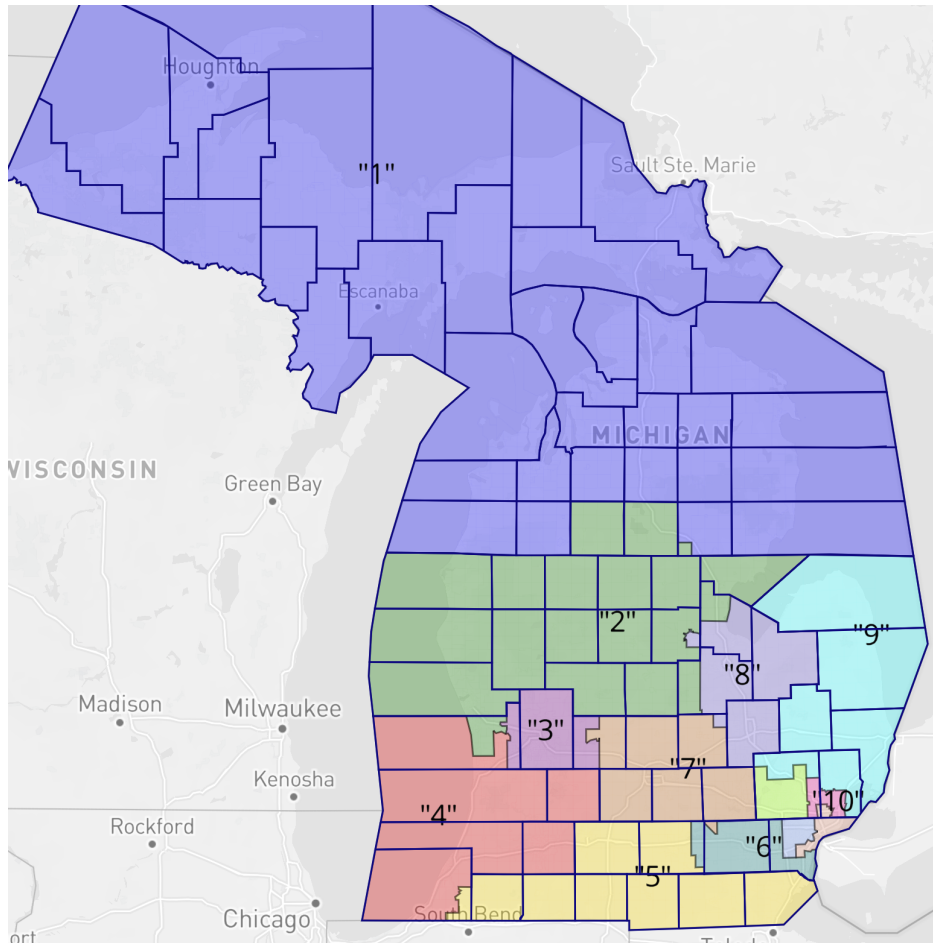
## Chestnut (Plan officially adopted by MICRC):



Beyond the different considerations in drawing districts leading to wildly different district shapes in most cases, the largest difference between the newly adopted Chestnut plan and my least change proposal is in the VRA districts in Detroit. Chestnut's Detroit districts stay almost entirely within Wayne County, with District 12 only taking in Southfield. Chestnut's Districts 12 and 13 are both only plurality-Black as well (46.4% and 47.5% Black by total population, respectively). This shows that the Commission was either quite confident that the lack of significant racially polarized voting in Detroit means that it would not violate *Thornburg v. Gingles* and Section 2 of the VRA to have districts with less than 50% Black population, or it violated the VRA. Chestnut's District 12 is 2.2% higher in Black population than my own, which is only 44.1% Black. However, Chestnut's District 13 has a Black population 2.1% lower than my own, which is 49.6% Black. Overall, it is unclear if either map is necessarily better at complying with the VRA. The lack of racially polarized voting in Detroit makes the determination difficult, especially without access to professional evaluations within the various communities in each district. Still, it is quite likely that either map would/will face legal challenges due to the switch from two Black majority districts in the current map to two only majority-minority districts.

Chestnut is unsurprisingly more partisanly fair than my proposed map, seeing as it took partisan fairness into consideration during the drawing process. The Chestnut plan's mean-median difference is 1.2% pro-Republican and its efficiency gap is 2.8% pro-Republican. This is a slightly better mean-median difference and a significantly better efficiency gap than my plan's 1.9% in favor of Republicans and 4.5% in favor of Republicans, respectively.

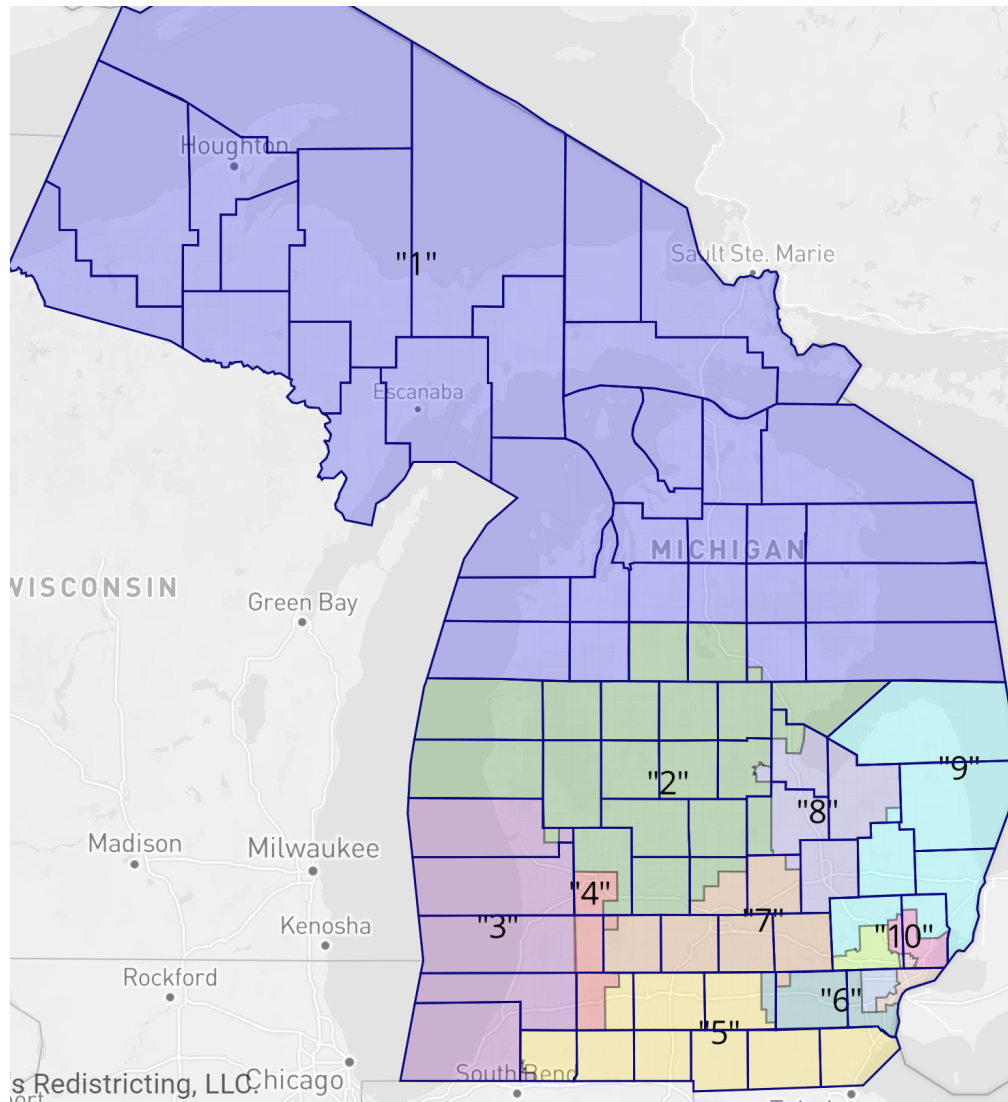
## Birch V2:



The Birch V2's configuration of VRA districts is somewhat similar to my proposal's. Under Birch V2, District 12 is in fact plurality-white at 48.8% white, 44.1% Black. District 13 is plurality-Black, but only at 43.5% Black and 41.9% white. My proposal's District 12 is also plurality-white (44.1% Black, 47.6% white), but has a slightly lower white percentage. In a VRA case, this slight difference could be significant. My proposal's District 13 is, however, considerably less white (49.6% Black, 35.3% white, 10.2% Hispanic). Even though both the Birch V2 plan and my own include one plurality-white VRA district and one plurality-Black one, the higher percentages of Black voters in plan's districts makes it less susceptible to VRA challenges, especially since both districts are less than 45% Black under Birch V2.

Birch V2 has a mean-median difference of 1.2% in favor of Republicans and an efficiency gap of 2.8% in favor of Republicans. Both of these are better than my plan's fairness statistics, the efficiency gap especially.

## Apple V2:



Apple V2 and Birch V2 share the same configuration of VRA districts and the concerns that come with them.

Apple V2's mean-median gap is 1.6% in favor of Republicans and its efficiency gap is 3.4% in favor of Republicans. This is still better than my plan's partisan fairness statistics, however it is the lowest partisan fairness of the three MICRC plans.

## Conclusions

This least change plan achieves its goals of complying with federal law while remaining as faithful as possible to the current district lines. The main concern of this map, in terms of federal law, is compliance with the VRA. With one plurality-white VRA district and another district just slightly under 50% Black, there is the possibility for this map to be challenged under *Thornburg v. Gingles* and Section 2 of the VRA. However, given the MICRC's willingness to

draw and adopt maps with similar configurations, in the case of Birch V2 and Apple V2 with lower percentages than either of my VRA districts, I am confident that my map is still compliant. My map is not clearly better than the newly adopted Chestnut plan on VRA concerns, but is clearly more likely to be upheld than Birch V2 and Apple V2. I believe the reasoning for sub-50% Black VRA districts in Detroit is sound, however courts will be the ultimate decision makers. While there have been some mentions of challenging the MICRC's maps for VRA reasons, most of these concerns focus on the state legislative plans rather than the Chestnut plan. As such, I am even more confident that my map would be accepted.

The other aspect of my plan is its lack of compliance with state law. As stated in the introduction, this is by design. The 2010 map currently in place was not designed to respect partisan fairness or communities of interest (often quite the opposite), thus my map cannot respect these interests to an acceptable degree while still following old district lines. Still, it is a useful tool in examining what a least change map could look like absent the MICRC and Proposal 18-2's amendments to the state constitution.



# Appendices

Figure 3: Detailed Map of District 1

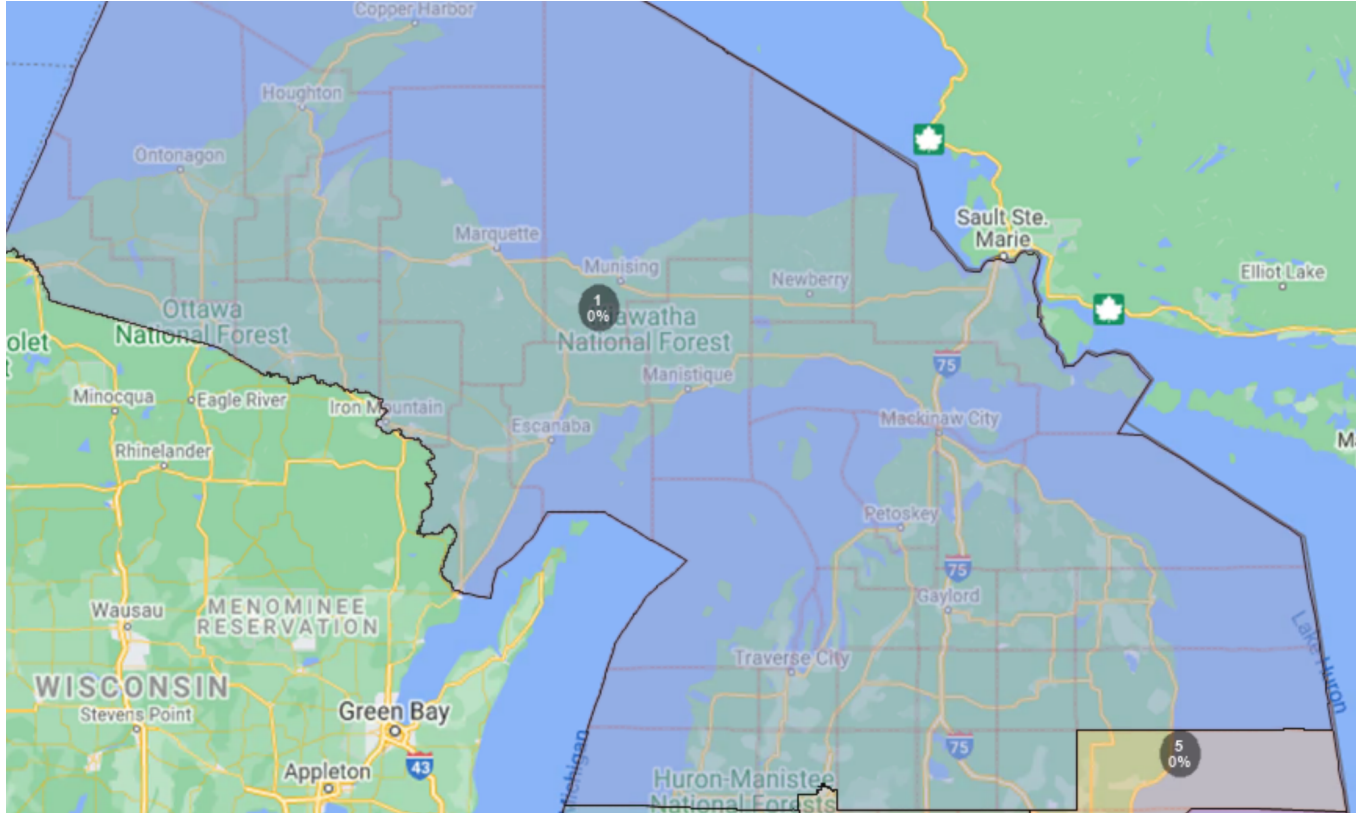


Figure 4: Detailed Map of District 2

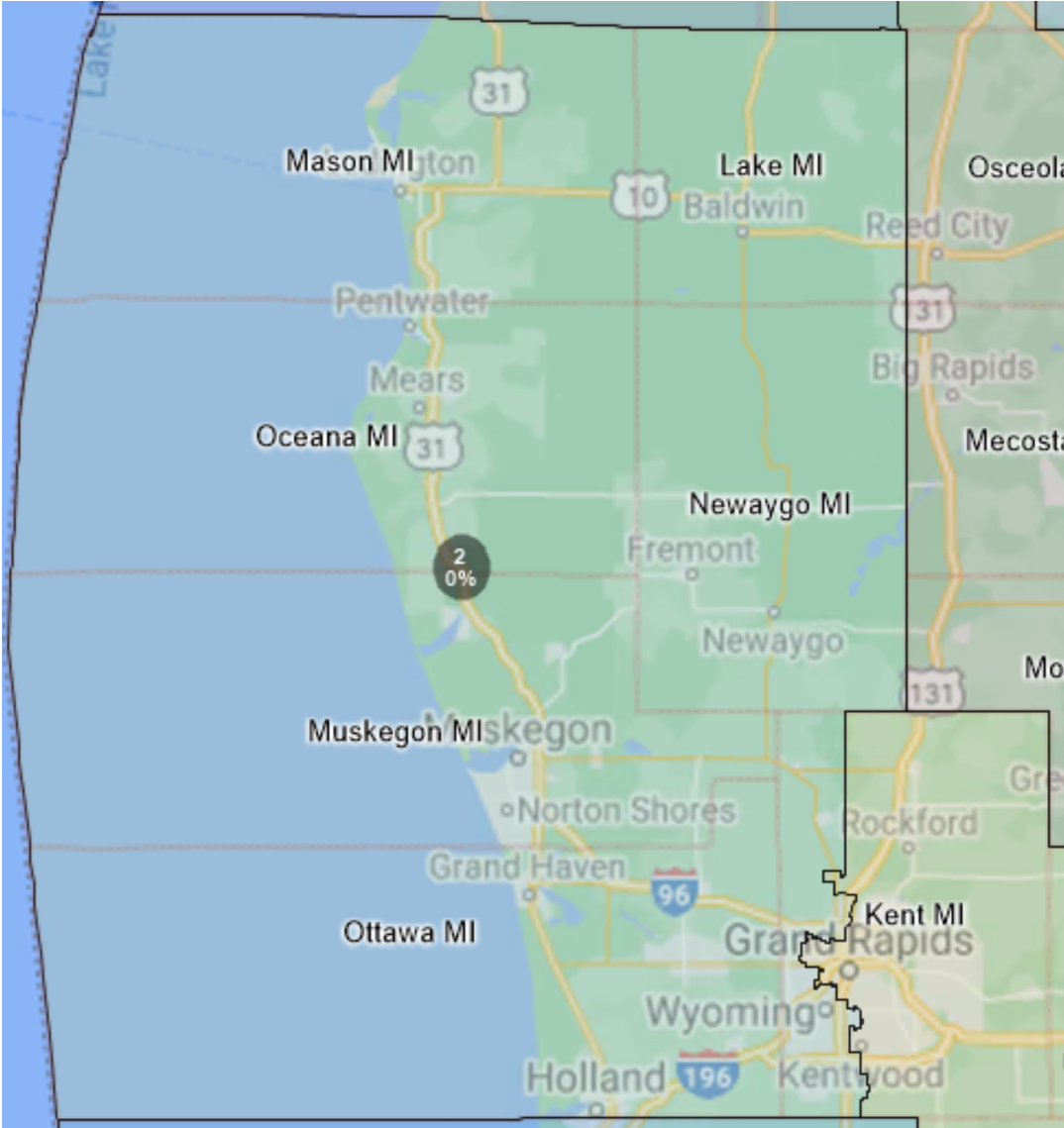


Figure 5: Detailed Map of District 3

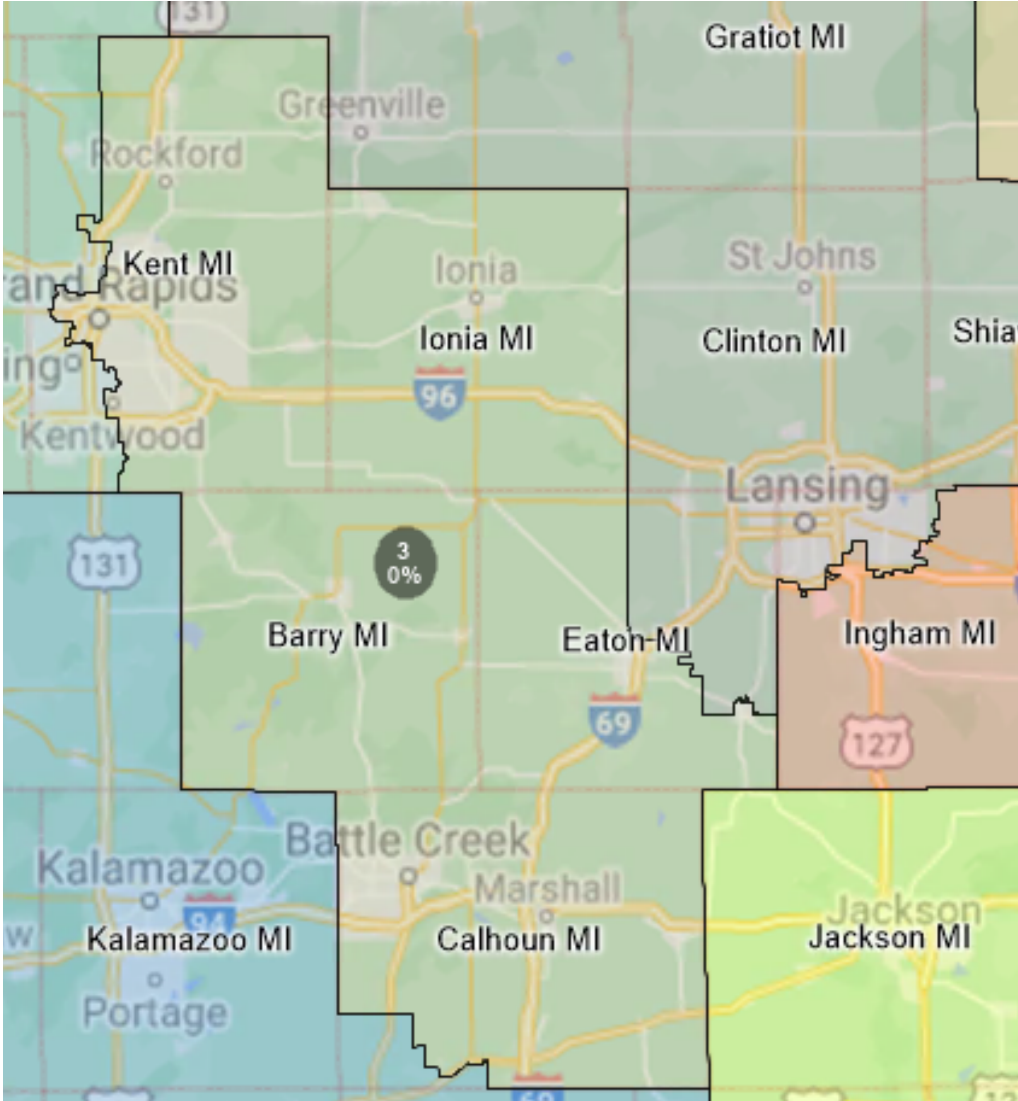


Figure 6: Detailed Map of District 4

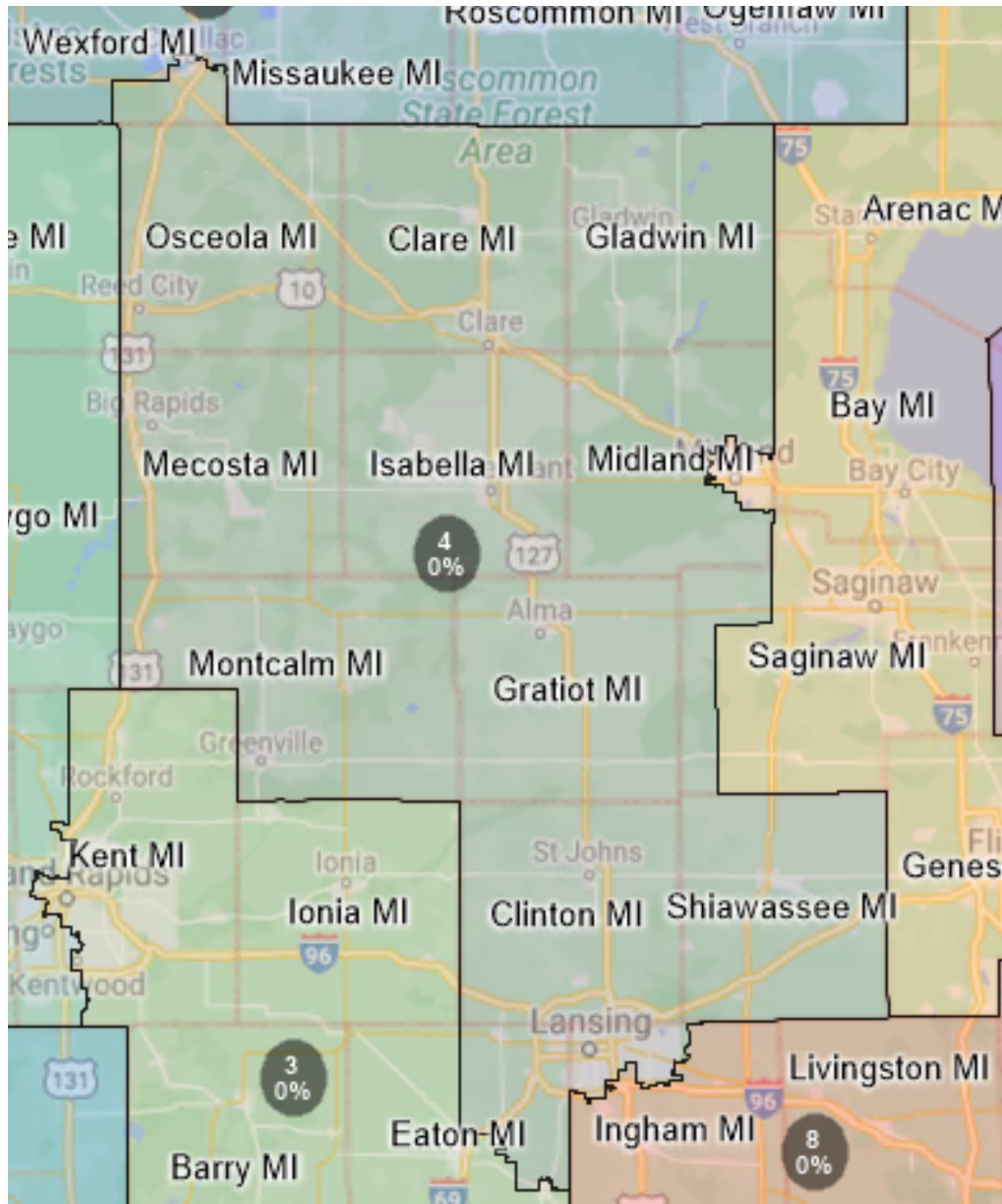


Figure 7: Detailed Map of District 5

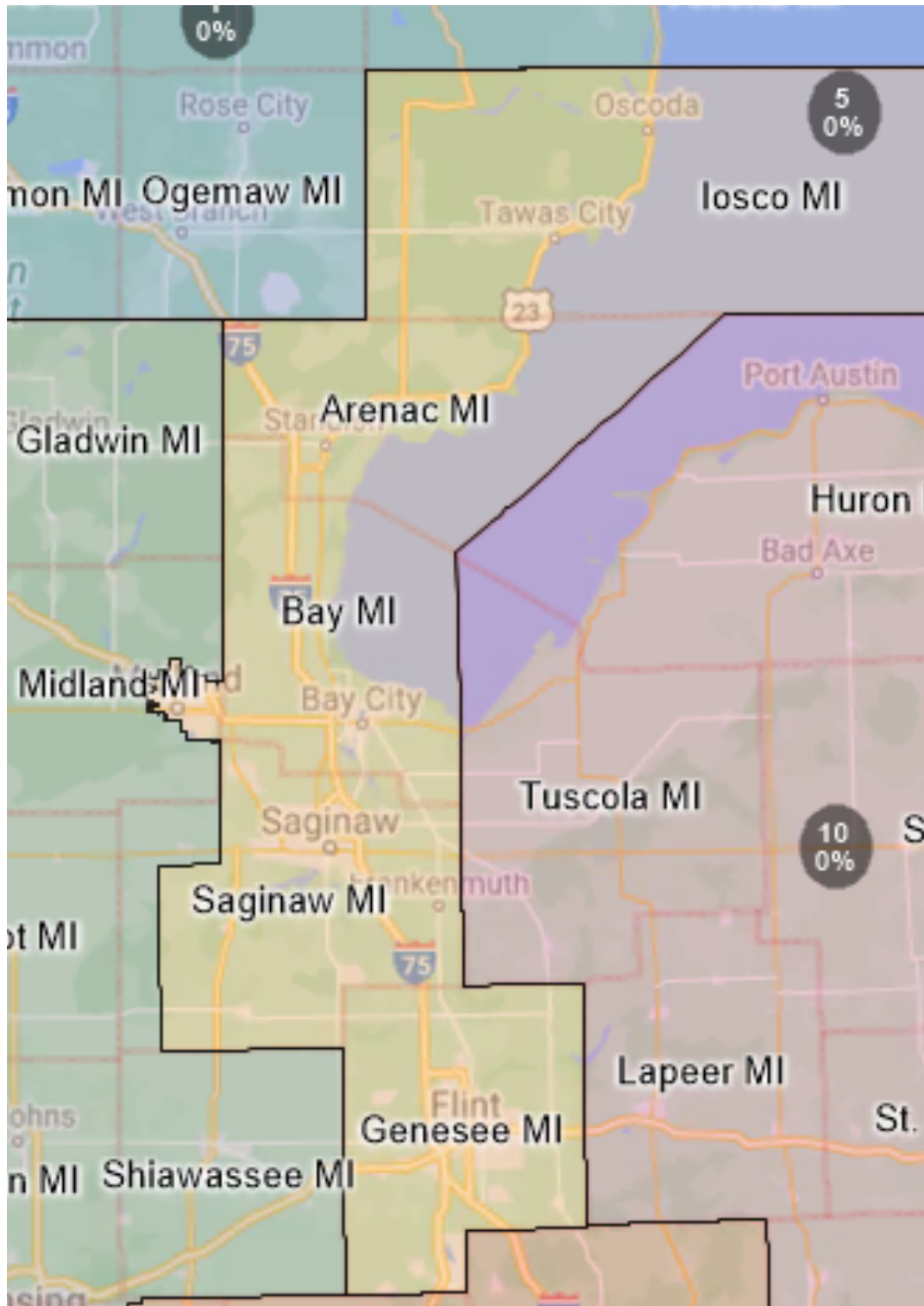


Figure 8: Detailed Map of District 6

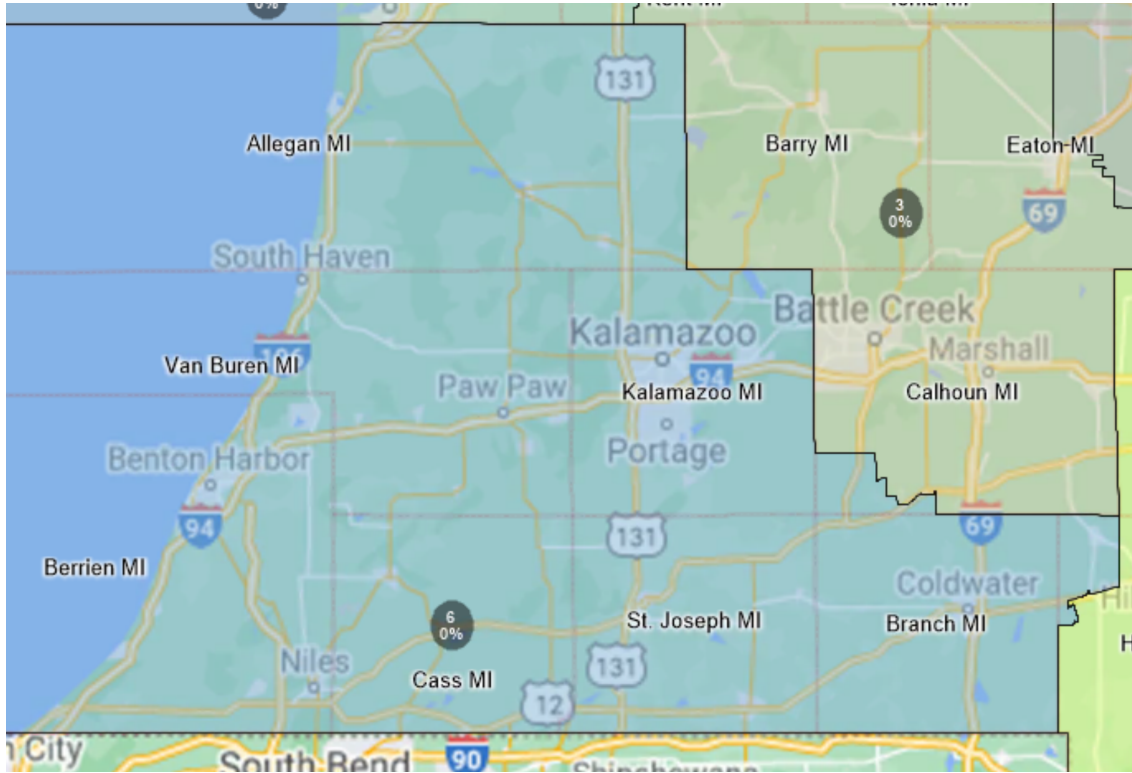


Figure 9: Detailed Map of District 7

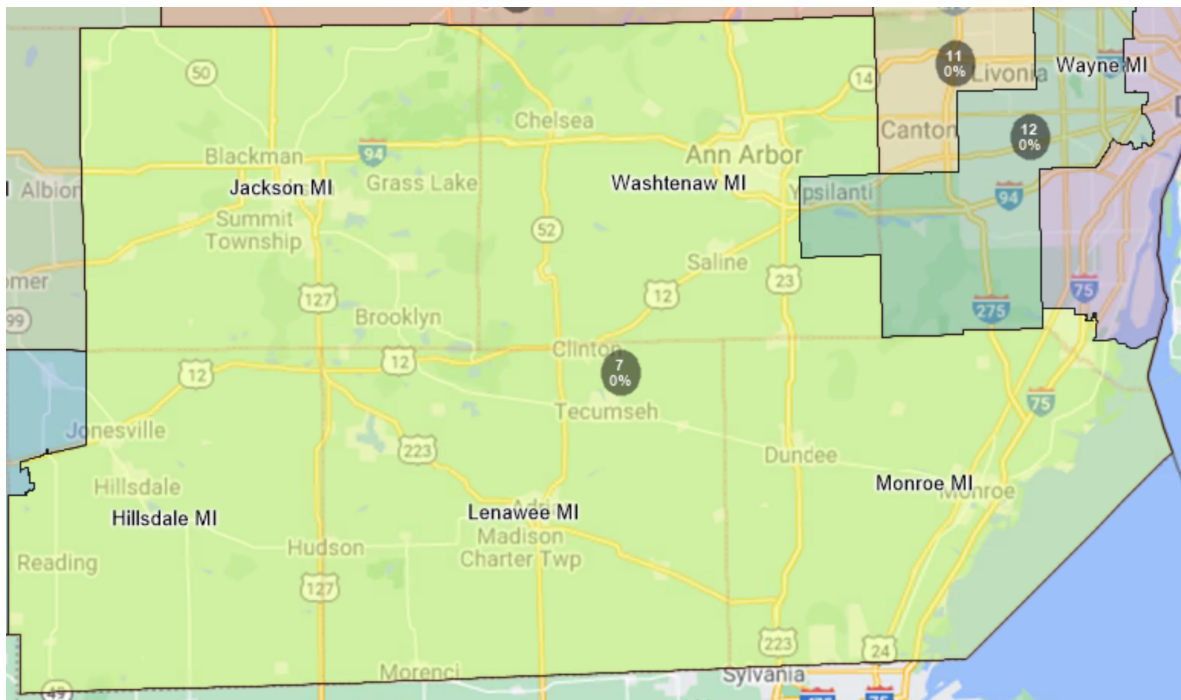


Figure 10: Detailed Map of District 8

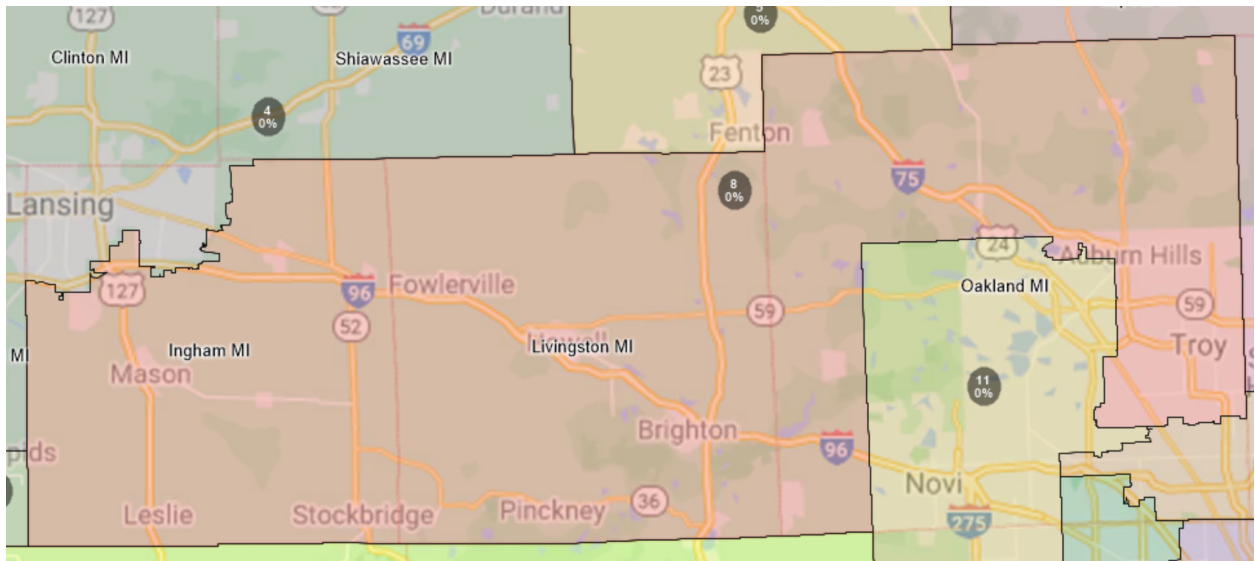


Figure 11: Detailed Map of District 9

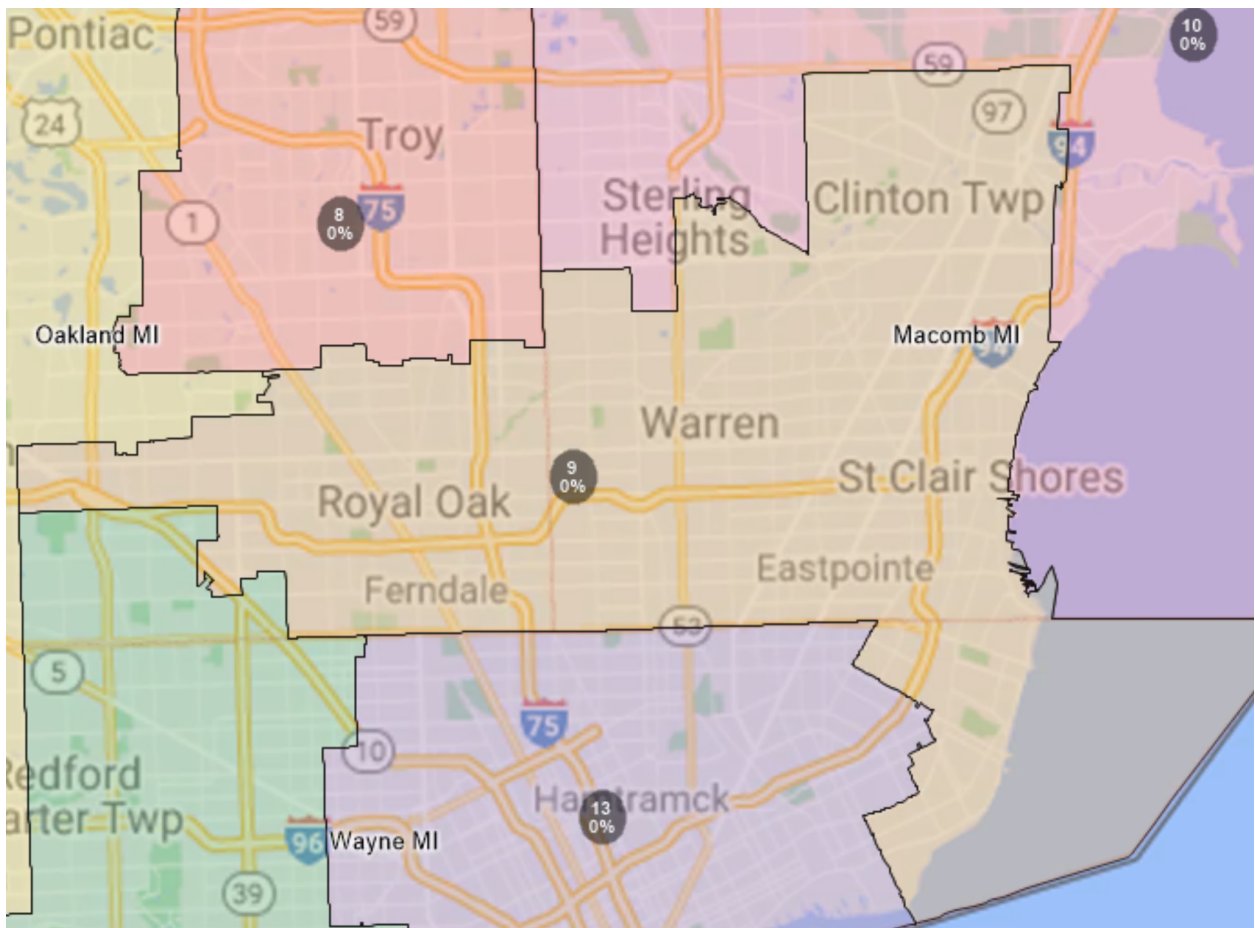


Figure 12: Detailed Map of District 10

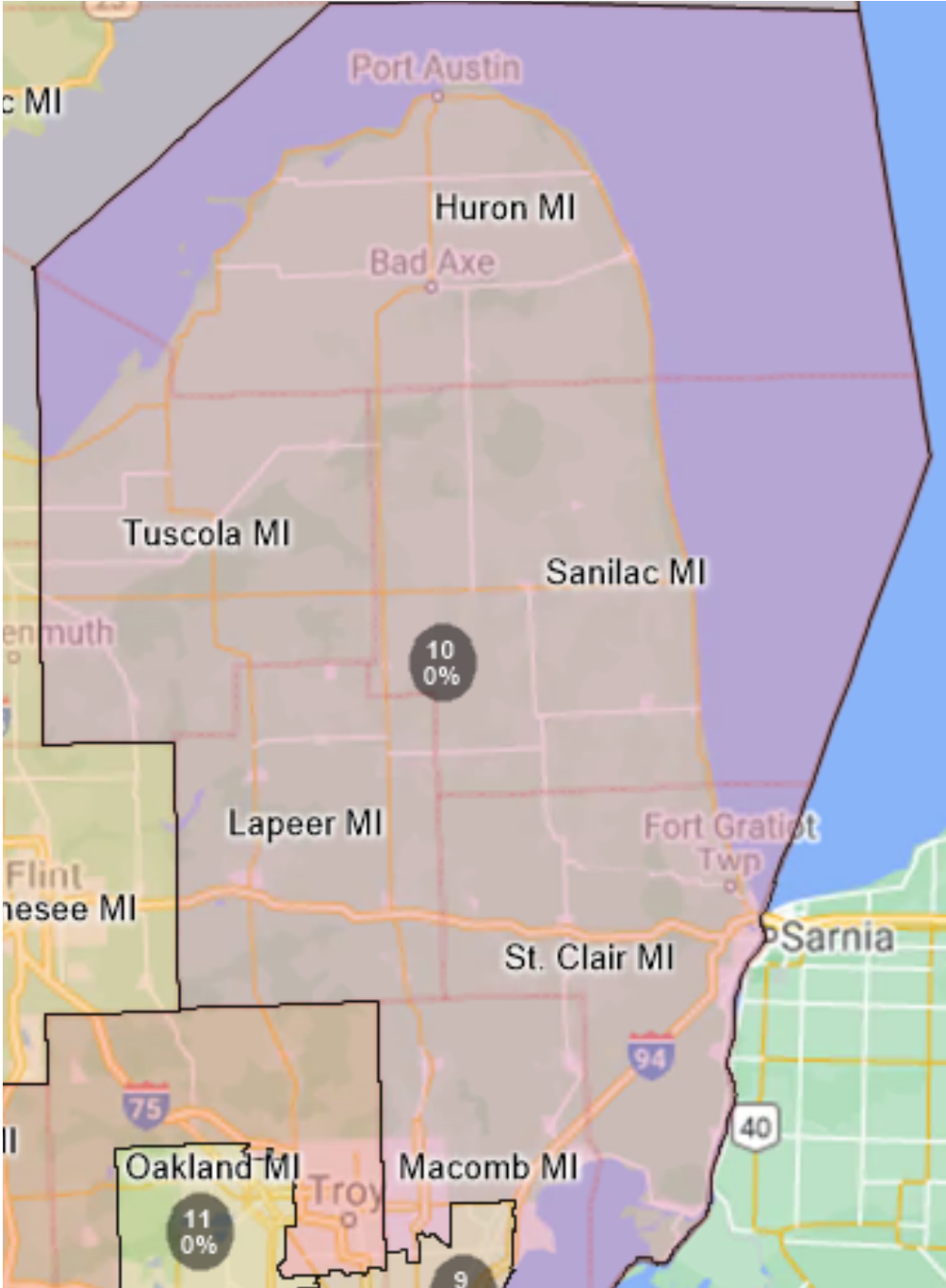




Figure 13: Detailed Map of District 11

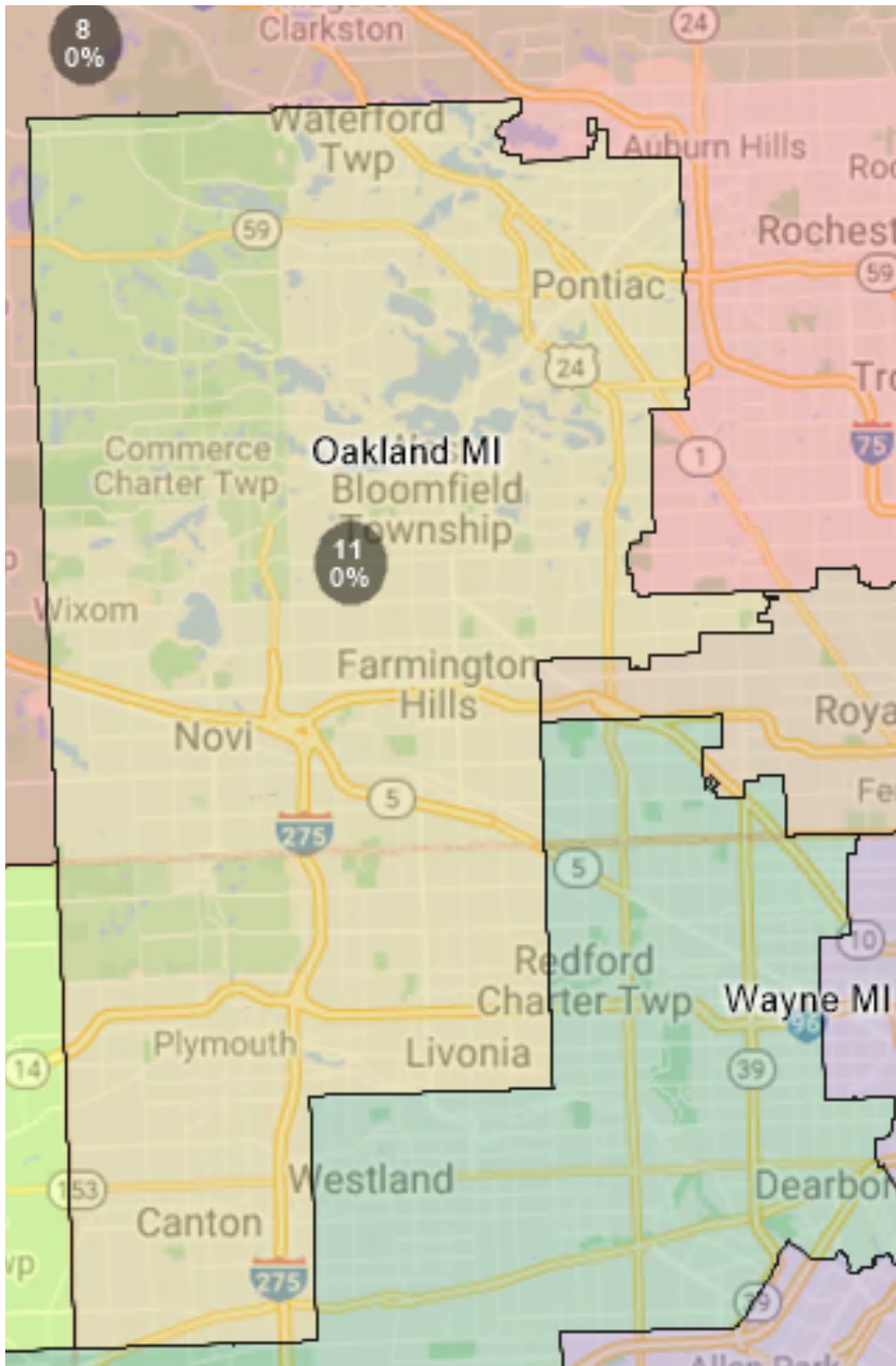


Figure 14: Detailed Map of District 12

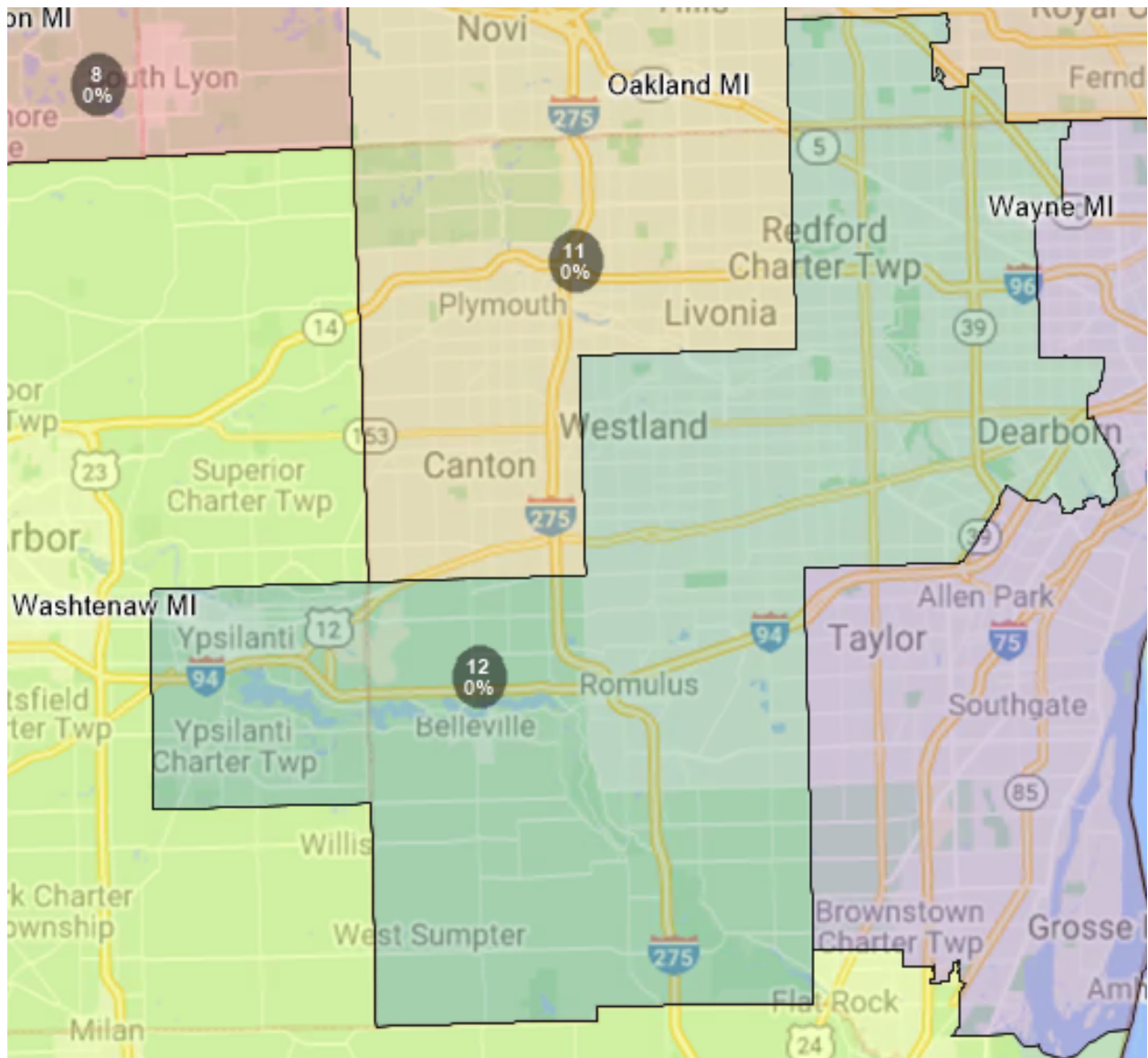


Figure 15: Detailed Map of District 13

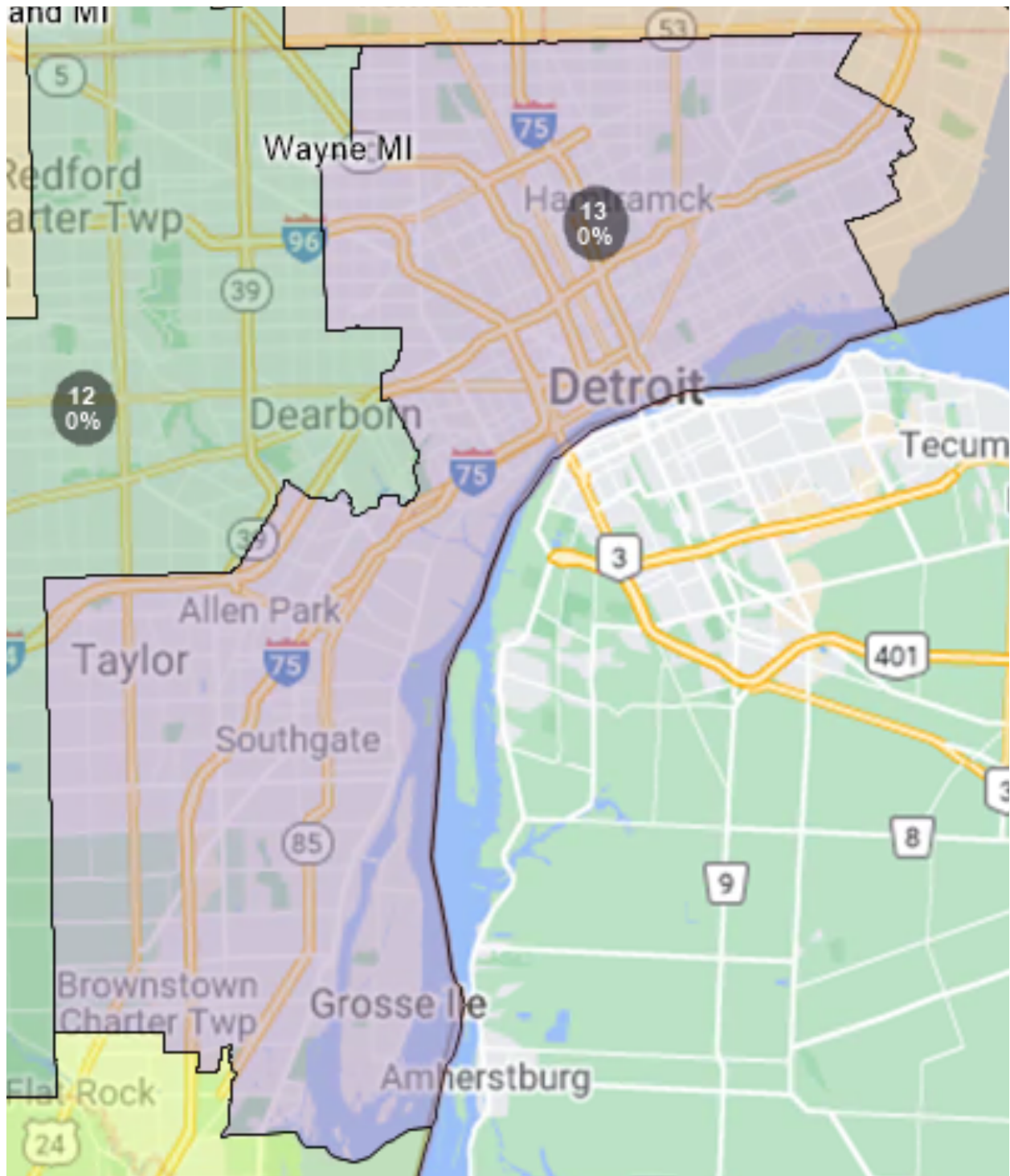


Figure 16: Statewide Partisan Map (2020 Election)

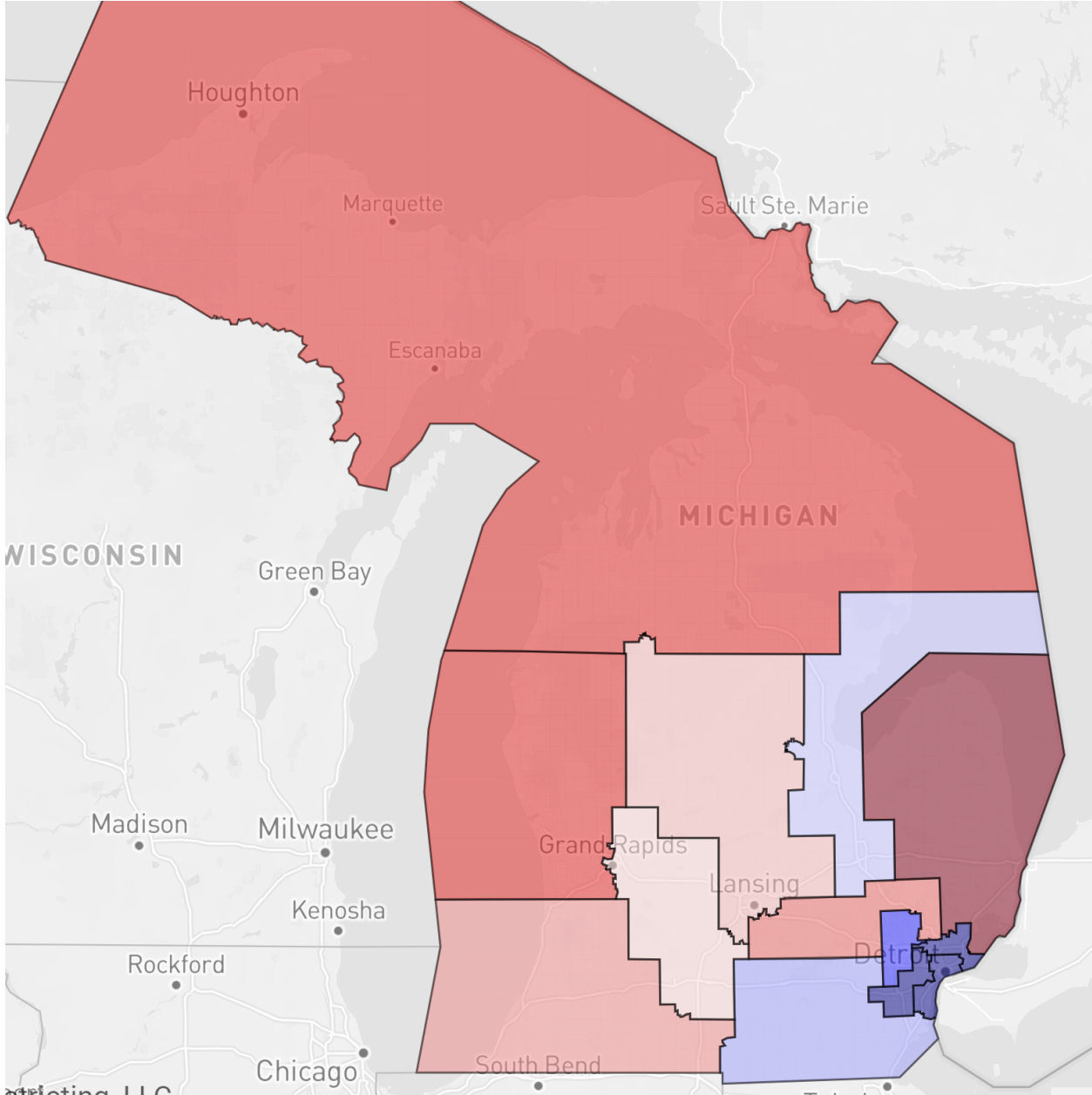


Figure 17: Current Districts Statewide Partisan Map (2020 Election)

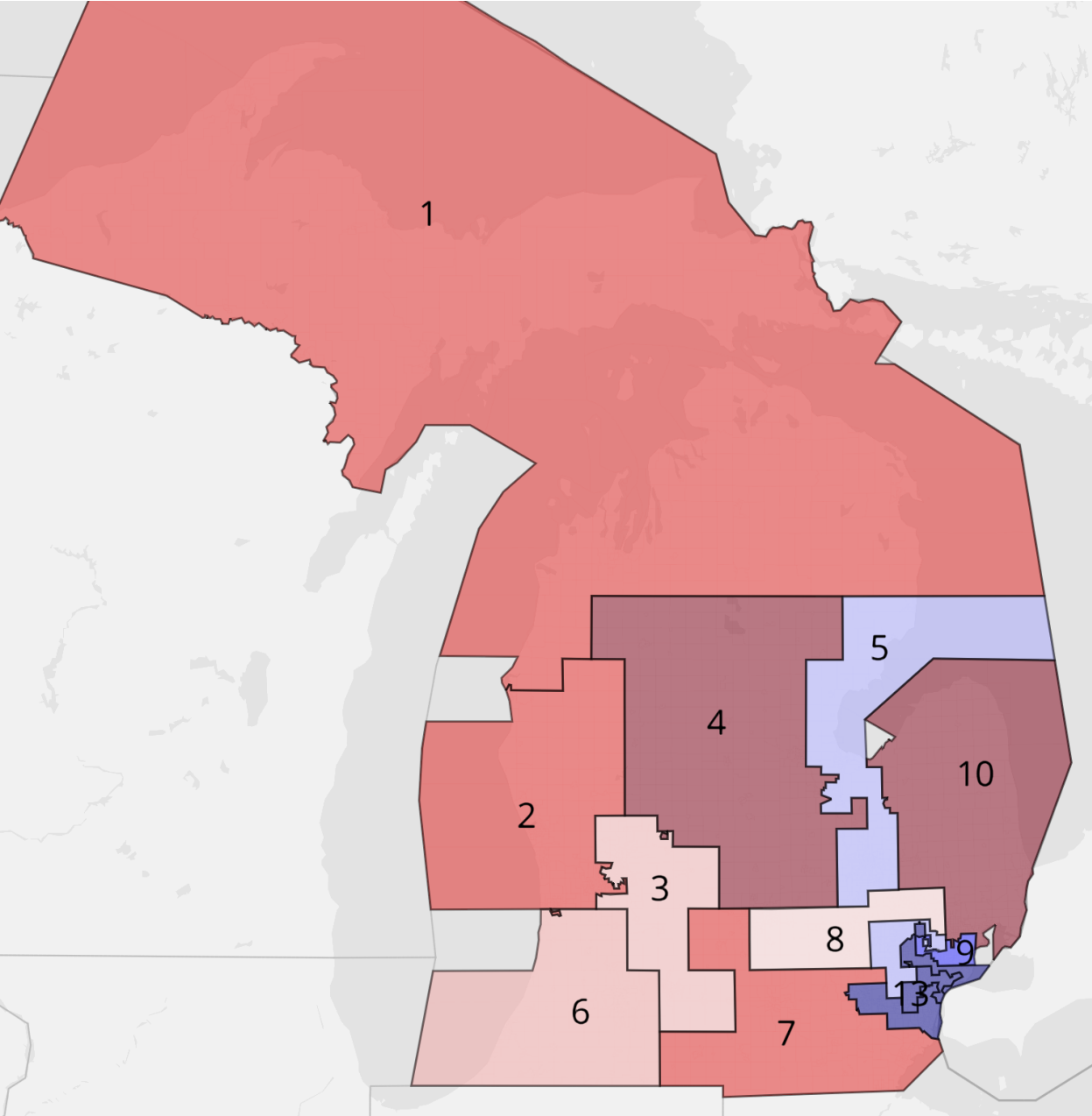


Figure 18: Detroit Area Partisan Map (2020 Election)

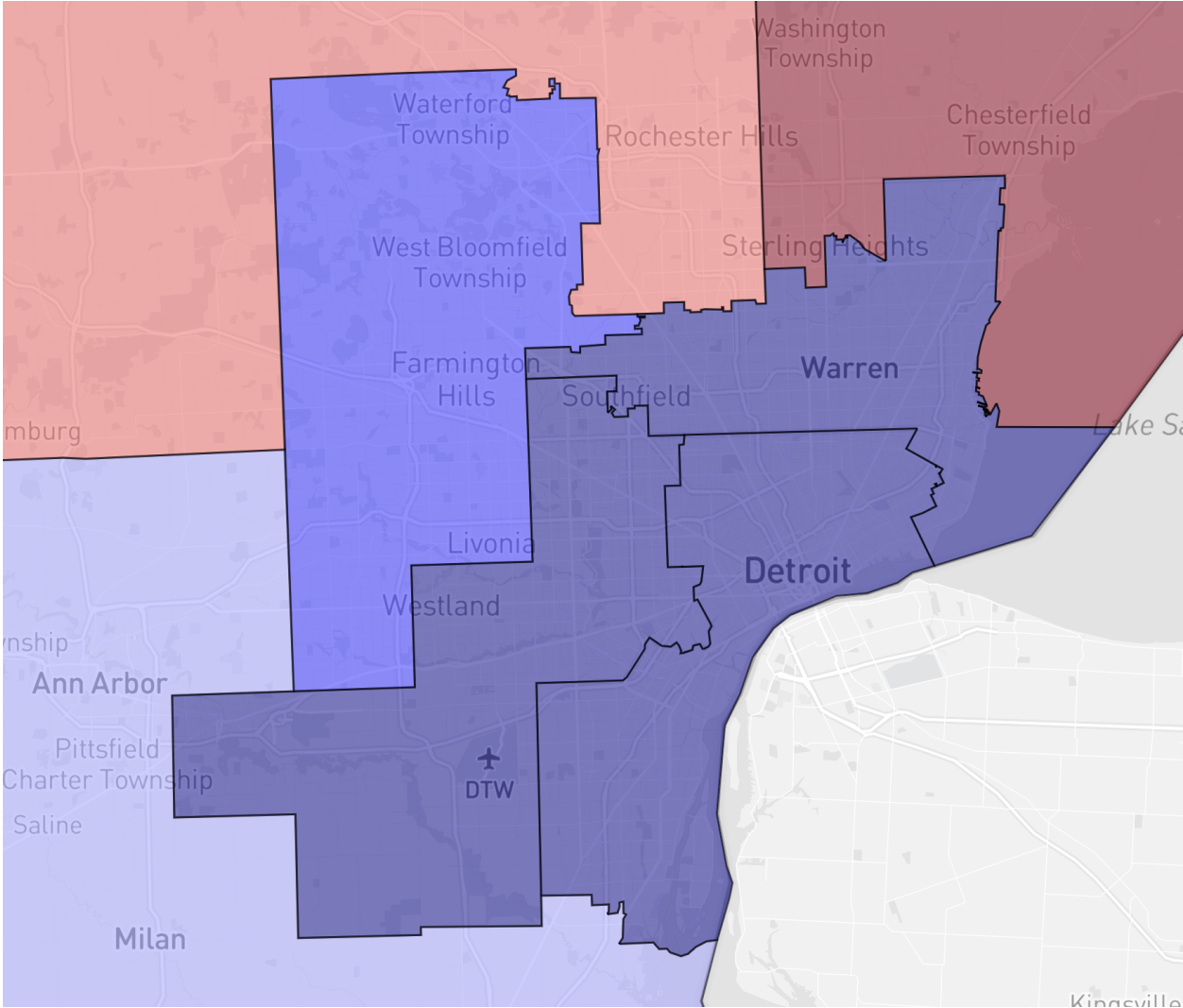


Figure 19: Current Districts Detroit Area Partisan Map (2020 Election)

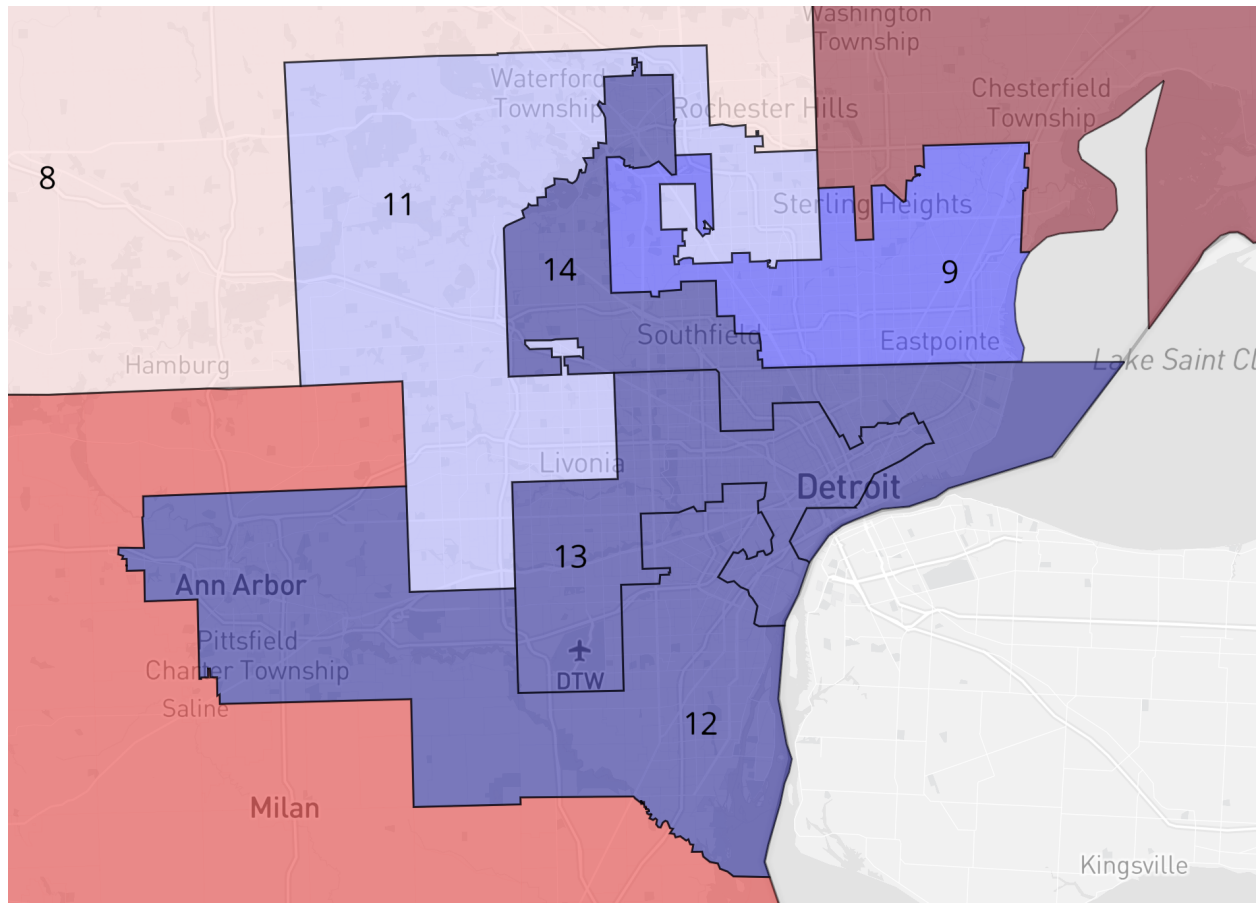


Figure 20: District Total Population Demographic Statistics

District	Population	NH_Wht	AP_BlK	Hispanic Origin	AP_Asn	AP_Ind	AP_Hwn	AP_Oth
1	775179	691978	12599	16127	7632	40855	1090	18354
2	775179	603150	54920	77845	20313	19211	1049	61922
3	775179	584229	86745	61249	26946	17650	963	51043
4	775179	618356	63822	44297	26991	21078	918	34734
5	775179	569128	132510	41363	12550	19173	802	32064
6	775179	605719	75539	52677	17677	21139	914	47632
7	775179	617830	54169	38966	42871	18144	815	33420
8	775179	636156	27355	30339	60475	14815	734	31347
9	775180	519962	177626	21886	40015	14322	756	22629
10	775180	673649	32635	27381	20382	15665	640	26861
11	775180	532647	99126	41520	87245	12569	674	38980
12	775180	369251	342367	31110	20270	15232	911	29362
13	775179	273596	384709	79662	28561	16605	989	64920

Figure 21: District Voting Age Population Demographic Statistics

District	18+_Pop	NH18+_Wht	18+_AP_Bl	H18+_Pop	18+_AP_Asn	18+_AP_Ind	18+_AP_Hwn	18+_AP_Oth
1	632301	573504	9010	10396	5334	28594	671	13321
2	596221	481429	35832	49774	14006	13495	661	41594
3	595821	468016	57741	38654	18435	12416	613	33925
4	616949	504123	44914	29812	20399	15328	615	25353
5	607846	463656	91983	26858	9023	14198	502	22920
6	599884	486391	49930	32741	12538	14968	596	31805
7	619422	504505	38309	26080	33603	13396	613	23654
8	604699	507495	18824	19625	42968	10795	503	21378
9	624734	437618	129561	15144	29601	10864	528	16309
10	613807	543182	22025	17735	14819	11297	416	18802
11	615528	439331	73148	27590	63525	9324	484	27184
12	593890	294293	252696	21053	15417	11459	615	20974
13	593500	225253	287533	52183	20772	12337	686	43828

Figure 22: District Total Population Demographic Percentages

District	% NH_Wht	% AP_Bl	% AP_Ind	% AP_Asn	% AP_Hwn	% AP_Oth	% Hispanic Origin
1	0.892669	0.016253	0.052704	0.009845	0.001406	0.023677	0.020804
2	0.778078	0.070848	0.024783	0.026204	0.001353	0.079881	0.100422
3	0.75367	0.111903	0.022769	0.034761	0.001242	0.065847	0.079013
4	0.797694	0.082332	0.027191	0.034819	0.001184	0.044808	0.057144
5	0.734189	0.170941	0.024734	0.01619	0.001035	0.041363	0.053359
6	0.781392	0.097447	0.02727	0.022804	0.001179	0.061446	0.067955
7	0.797016	0.069879	0.023406	0.055305	0.001051	0.043113	0.050267
8	0.820657	0.035289	0.019112	0.078014	0.000947	0.040438	0.039138
9	0.670763	0.229142	0.018476	0.05162	0.000975	0.029192	0.028233
10	0.869023	0.0421	0.020208	0.026293	0.000826	0.034651	0.035322
11	0.687127	0.127875	0.016214	0.112548	0.000869	0.050285	0.053562
12	0.476342	0.441661	0.01965	0.026149	0.001175	0.037878	0.040133
13	0.352946	0.496284	0.021421	0.036844	0.001276	0.083748	0.102766



Figure 23: District Voting Age Population Demographic Percentages

District	% NH18+_Wht	% 18+_AP_Bl	% 18+_AP_Ind	% 18+_AP_Asn	% 18+_AP_Hwn	% 18+_AP_Oth	% H18+_Pop
1	0.907011	0.01425	0.045222	0.008436	0.001061	0.021067	0.016442
2	0.807467	0.060099	0.022634	0.023491	0.001109	0.069763	0.083482
3	0.785498	0.09691	0.020838	0.030941	0.001029	0.056938	0.064875
4	0.817123	0.0728	0.024845	0.033064	0.000997	0.041094	0.048322
5	0.762785	0.151326	0.023358	0.014844	0.000826	0.037707	0.044186
6	0.810808	0.083233	0.024951	0.020901	0.000994	0.053019	0.054579
7	0.814477	0.061846	0.021627	0.054249	0.00099	0.038187	0.042104
8	0.839252	0.03113	0.017852	0.071057	0.000832	0.035353	0.032454
9	0.700487	0.207386	0.01739	0.047382	0.000845	0.026106	0.024241
10	0.884939	0.035883	0.018405	0.024143	0.000678	0.030632	0.028893
11	0.713747	0.118838	0.015148	0.103204	0.000786	0.044164	0.044823
12	0.495535	0.425493	0.019295	0.025959	0.001036	0.035316	0.035449
13	0.379533	0.48447	0.020787	0.034999	0.001156	0.073847	0.087924

Figure 24: Current Districts Total Population Demographic Statistics

District	Population	NH_Wht	AP_Bl	AP_Ind	AP_Asn	AP_Hwn	AP_Oth	Hispanic Origin
1	704350	626274	11994	39061	7147	1004	16582	14560
2	757321	574635	62499	18746	24651	991	61809	77904
3	753623	576427	78482	17199	22320	972	50379	60241
4	697854	617526	19946	18623	10743	773	22817	25943
5	670703	480069	128090	17172	9116	636	27858	36545
6	721654	559700	73681	19861	17049	861	44491	49139
7	715305	604396	42451	18207	11947	611	29223	35478
8	739881	582289	55344	16364	41925	862	36585	42038
9	720428	523707	115579	13276	44477	707	21591	20841
10	725177	631059	30706	14924	17224	593	25577	26088
11	757811	562664	50246	12583	96725	629	31525	31297
12	747156	525064	98968	16673	51661	1107	46454	53662
13	674566	217244	382609	14079	13892	797	45946	53997
14	691502	214597	393527	9690	43051	712	32431	36689

Figure 25: Current Districts Voting Age Population Demographic Statistics

District	18+_Pop	NH18+_Wht	18+_AP_Bl	18+_AP_Ind	18+_AP_Asn	18+_AP_Hwn	18+_AP_Oth	H18+_Pop
1	575056	519770	8689	27259	5028	632	12011	9443
2	583072	460589	41036	13157	17207	622	41549	49936
3	577826	459879	52102	12073	15042	616	33369	37870
4	552375	495662	14215	13489	7662	472	16368	16756
5	525385	392021	88780	12756	6591	393	19958	23719
6	559330	450890	48578	14037	12137	567	29745	30594
7	561886	485894	28709	13340	8137	422	20204	22560
8	582313	470943	37876	12055	30526	604	25860	28086
9	580535	439233	81252	10011	32942	495	15543	14363
10	574438	509084	20859	10746	12370	382	17885	16908
11	601028	461204	36453	9326	69157	454	22102	21049
12	593020	429328	71294	12663	40785	787	33196	36975
13	512844	177111	283635	10349	10821	553	30824	34897
14	535494	177188	298028	7210	32035	504	22433	24489

Figure 26: Current Districts Total Population Demographic Percentages

District	% NH_Wht	% AP_Bl	% AP_Ind	% AP_Asn	% AP_Hwn	% AP_Oth	% Hispanic Origin
1	0.889152	0.017028	0.055457	0.010147	0.001425	0.023542	0.020672
2	0.758773	0.082526	0.024753	0.03255	0.001309	0.081615	0.102868
3	0.764874	0.10414	0.022822	0.029617	0.00129	0.066849	0.079935
4	0.884893	0.028582	0.026686	0.015394	0.001108	0.032696	0.037175
5	0.71577	0.190979	0.025603	0.013592	0.000948	0.041536	0.054488
6	0.775579	0.1021	0.027521	0.023625	0.001193	0.061651	0.068092
7	0.844949	0.059347	0.025453	0.016702	0.000854	0.040854	0.049598
8	0.787004	0.074801	0.022117	0.056665	0.001165	0.049447	0.056817
9	0.726939	0.160431	0.018428	0.061737	0.000981	0.02997	0.028929
10	0.870214	0.042343	0.02058	0.023751	0.000818	0.03527	0.035975
11	0.742486	0.066304	0.016604	0.127637	0.00083	0.0416	0.041299
12	0.70275	0.13246	0.022315	0.069144	0.001482	0.062174	0.071822
13	0.32205	0.567193	0.020871	0.020594	0.001182	0.068112	0.080047
14	0.310335	0.56909	0.014013	0.062257	0.00103	0.046899	0.053057

Figure 27: Current Districts Voting Age Population Demographic Percentages

District	% NH18+_Wht	% 18+_AP_Bl	% 18+_AP_Ind	% 18+_AP_Asn	% 18+_AP_Hwn	% 18+_AP_Oth	% H18+_Pop
1	0.90386	0.01511	0.047402	0.008743	0.001099	0.020887	0.016421
2	0.789935	0.070379	0.022565	0.029511	0.001067	0.071259	0.085643
3	0.795878	0.090169	0.020894	0.026032	0.001066	0.057749	0.065539
4	0.897329	0.025734	0.02442	0.013871	0.000854	0.029632	0.030334
5	0.746159	0.168981	0.024279	0.012545	0.000748	0.037987	0.045146
6	0.806125	0.08685	0.025096	0.021699	0.001014	0.05318	0.054698
7	0.864755	0.051094	0.023741	0.014482	0.000751	0.035957	0.04015
8	0.808745	0.065044	0.020702	0.052422	0.001037	0.044409	0.048232
9	0.7566	0.139961	0.017244	0.056744	0.000853	0.026774	0.024741
10	0.88623	0.036312	0.018707	0.021534	0.000665	0.031135	0.029434
11	0.767359	0.060651	0.015517	0.115065	0.000755	0.036774	0.035022
12	0.723969	0.120222	0.021353	0.068775	0.001327	0.055978	0.06235
13	0.345351	0.553063	0.02018	0.0211	0.001078	0.060104	0.068046
14	0.330887	0.556548	0.013464	0.059823	0.000941	0.041892	0.045732

Figure 28: Detroit Area Black Voting Age Population Map

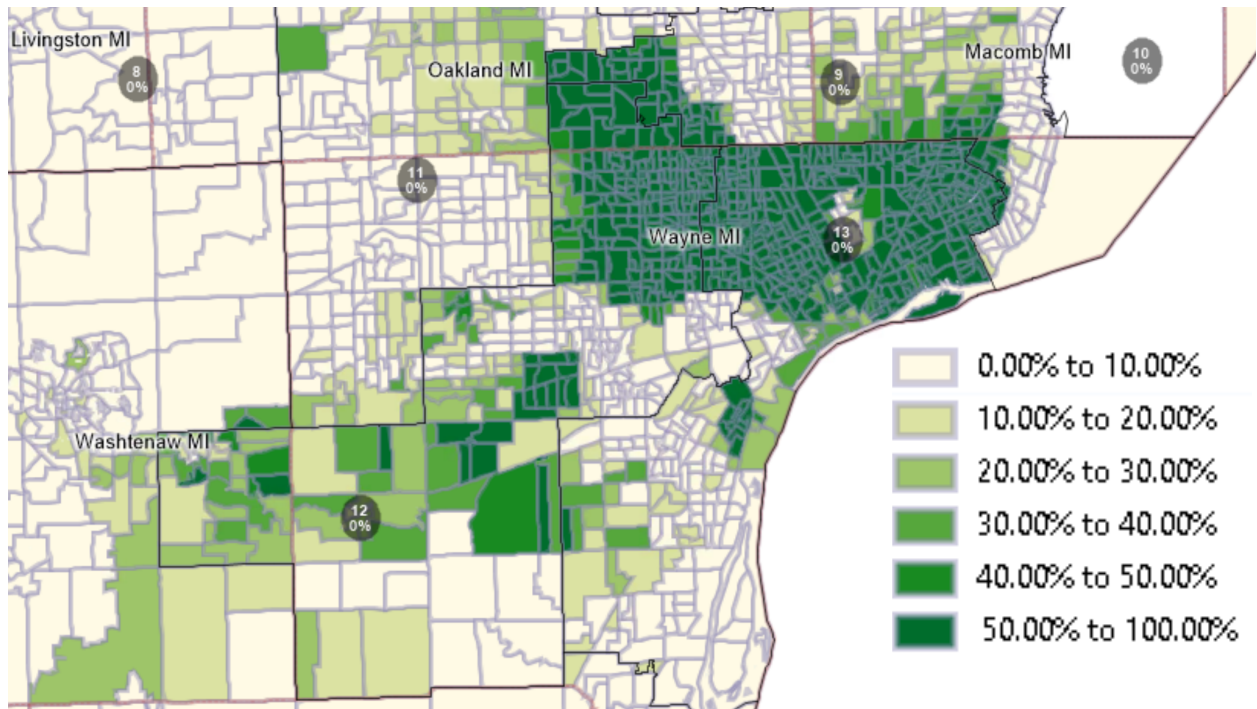


Figure 29: Detroit Area Hispanic Voting Age Population Map

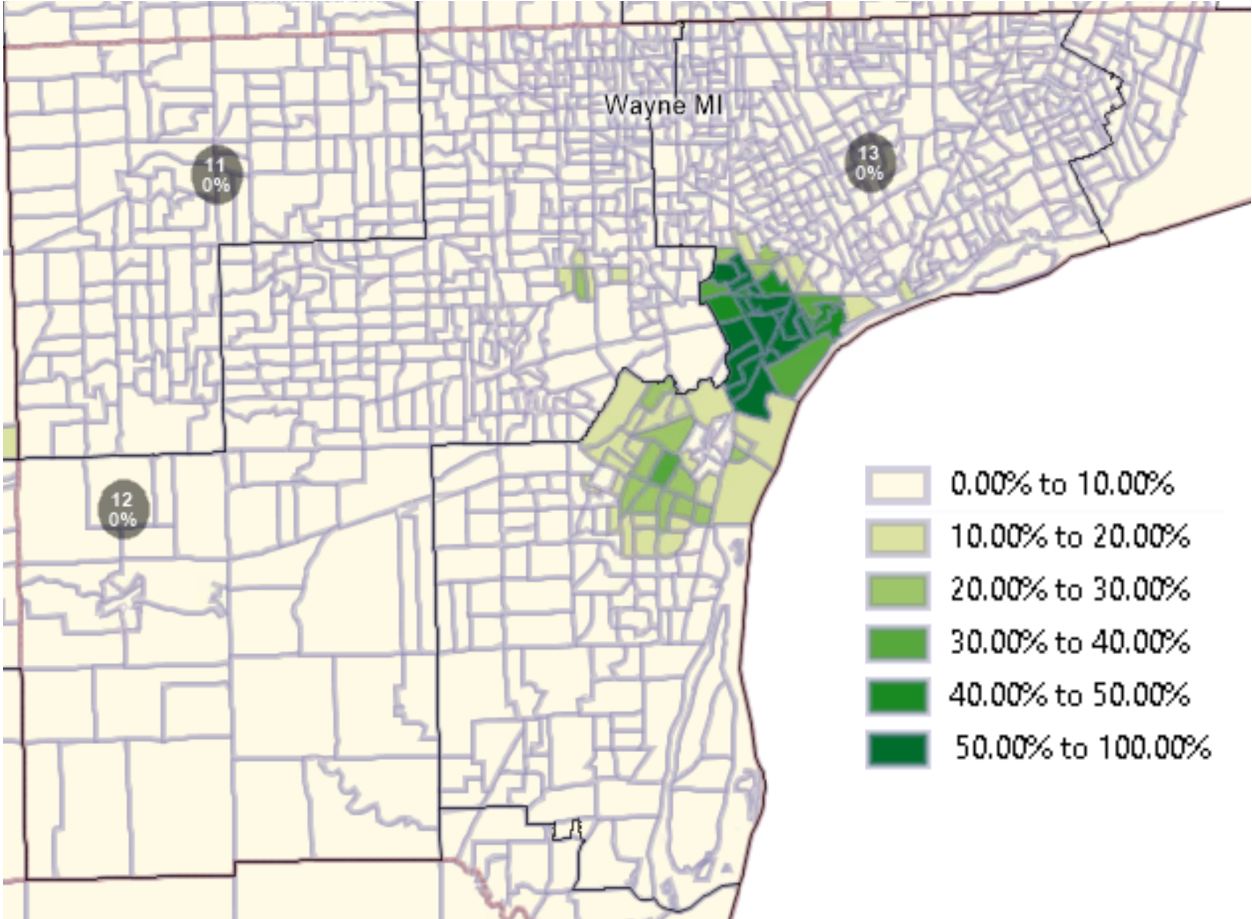


Figure 30: Compactness Measures

	Reock	Schwartzberg	Alternate Schwartzberg	Polsby-Popper	Population Polygon	Area/Convex Hull	Population Circle	Ehrenburg	Perimeter	Length-Width
Sum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,745.37	N/A
Min	0.28	1.21	1.23	0.19	0.57	0.54	0.20	0.19	N/A	1.04
Max	0.62	2.19	2.28	0.66	0.95	0.98	0.55	0.69	N/A	101.21
Mean	0.42	1.62	1.66	0.40	0.74	0.79	0.39	0.43	N/A	31.39
Std. Dev.	0.10	0.29	0.30	0.14	0.11	0.13	0.08	0.17	N/A	27.05
District	Reock	Schwartzberg	Alternate Schwartzberg	Polsby-Popper	Population Polygon	Area/Convex Hull	Population Circle	Ehrenburg	Perimeter	Length-Width
1	0.40	1.49	1.61	0.39	0.95	0.85	0.42	0.30	1,348.90	101.21
2	0.62	1.21	1.23	0.66	0.75	0.98	0.55	0.67	370.98	18.17
3	0.38	1.62	1.64	0.37	0.80	0.80	0.37	0.37	312.55	25.85
4	0.46	1.69	1.72	0.34	0.74	0.79	0.32	0.50	479.78	38.98
5	0.28	1.97	2.00	0.25	0.80	0.54	0.37	0.19	477.67	15.86
6	0.46	1.29	1.35	0.55	0.85	0.89	0.41	0.56	393.66	58.38
7	0.51	1.36	1.38	0.53	0.67	0.90	0.35	0.60	286.30	37.08
8	0.31	1.82	1.85	0.29	0.57	0.81	0.20	0.31	265.35	45.01
9	0.31	2.19	2.28	0.19	0.69	0.62	0.39	0.25	116.36	9.90
10	0.55	1.29	1.31	0.58	0.60	0.93	0.33	0.69	378.07	38.56
11	0.44	1.50	1.54	0.42	0.79	0.84	0.41	0.48	104.95	12.13
12	0.40	1.80	1.81	0.31	0.63	0.64	0.44	0.36	114.44	1.04
13	0.33	1.77	1.80	0.31	0.77	0.66	0.48	0.28	96.36	5.88

## Figure 31: County Splits

### *County*

Cases where an area is split among 2 Districts: 10

Cases where an area is split among 4 Districts: 1

Cases where an area is split among 5 Districts: 1

### *Voting District*

Cases where an area is split among 2 Districts: 48

<b>County</b>	<b>District</b>	<b>Population</b>
<i>Split Counties:</i>		
Calhoun MI	3	131,389
Calhoun MI	6	2,921
Eaton MI	3	41,959
Eaton MI	4	67,216
Hillsdale MI	6	2,793
Hillsdale MI	7	42,953
Ingham MI	4	205,834
Ingham MI	8	79,066
Kent MI	2	185,370
Kent MI	3	472,604
Macomb MI	9	480,380
Macomb MI	10	400,837
Midland MI	4	40,591
Midland MI	5	42,903
Oakland MI	8	502,247
Oakland MI	9	229,967
Oakland MI	11	509,127
Oakland MI	12	33,054
Saginaw MI	4	8,154
Saginaw MI	5	181,970
Washtenaw MI	7	295,940
Washtenaw MI	12	76,318
Wayne MI	7	21,688
Wayne MI	9	64,833
Wayne MI	11	266,053
Wayne MI	12	665,808
Wayne MI	13	775,179
Wexford MI	1	19,127
Wexford MI	4	14,546

Figure 32: City/Census Designated Places Splits

City/Town	District	Population	%
Beverly Hills MI	11	9,496	89.7
Beverly Hills MI	9	1,088	10.3
Cadillac MI	1	0	0.0
Cadillac MI	4	10,371	100.0
Clawson MI	8	7,159	62.9
Clawson MI	9	4,230	37.1
Detroit MI	12	200,270	31.3
Detroit MI	13	435,978	68.2
Detroit MI	9	2,863	0.5
Fenton MI	5	12,014	99.7
Fenton MI	8	36	0.3
Grand Rapids MI	2	0	0.0
Grand Rapids MI	3	198,917	100.0
Harper Woods MI	13	0	0.0
Harper Woods MI	9	15,492	100.0
Holland MI	2	26,648	77.5
Holland MI	6	7,730	22.5
Hubbardston MI	3	336	91.1
Hubbardston MI	4	33	8.9
Lansing MI	4	112,644	100.0
Lansing MI	8	0	0.0

Lennon MI	4	393	77.2
Lennon MI	5	116	22.8
Otter Lake MI	10	359	84.3
Otter Lake MI	5	67	15.7
Reese MI	10	1,237	98.1
Reese MI	5	24	1.9
Southfield MI	12	33,054	43.1
Southfield MI	9	43,564	56.9
St. Clair Shores MI	10	0	0.0
St. Clair Shores MI	9	58,874	100.0
Sterling Heights MI	10	73,820	55.0
Sterling Heights MI	9	60,526	45.1
Troy MI	8	87,292	100.0
Troy MI	9	2	0.0
Whitmore Lake MI	7	4,919	64.9
Whitmore Lake MI	8	2,665	35.1

## Summary Statistics

Number of City/Town not split	723
Number of City/Town split	20
Number of City/Town split in 2	19
Number of City/Town split in 3	1
Total number of splits	41



Figure 33: Precinct Splits

*Split VTDs:*

Calhoun MI	3	1,480
Calhoun MI	6	477
Eaton MI	3	1,799
Eaton MI	4	372
Hillsdale MI	6	370
Hillsdale MI	7	1,232
Ingham MI	4	36
Ingham MI	8	929
Ingham MI	4	65
Ingham MI	8	849
Ingham MI	4	2,121
Ingham MI	8	0
Ingham MI	4	1,275
Ingham MI	8	1
Ingham MI	4	2,788
Ingham MI	8	101
Ingham MI	4	1,936
Ingham MI	8	195
Ingham MI	4	4,705
Ingham MI	8	37
Ingham MI	4	1,107
Ingham MI	8	1,332
Kent MI	2	967
Kent MI	3	460
Kent MI	2	2,791
Kent MI	3	66
Kent MI	2	966
Kent MI	3	288
Kent MI	2	1,196
Kent MI	3	1,962
Macomb MI	9	17
Macomb MI	10	2,634
Macomb MI	9	0
Macomb MI	10	2,489
Macomb MI	9	3,789
Macomb MI	10	77
Macomb MI	9	3,056
Macomb MI	10	116
Macomb MI	9	2,404
Macomb MI	10	1,392

Macomb MI	9	63
Macomb MI	10	1,856
Macomb MI	9	0
Macomb MI	10	0
Midland MI	4	1,204
Midland MI	5	50
Midland MI	4	1,594
Midland MI	5	7
Midland MI	4	1,944
Midland MI	5	115
Midland MI	4	1,456
Midland MI	5	85
Midland MI	4	2,490
Midland MI	5	0
Midland MI	4	1,938
Midland MI	5	285
Oakland MI	8	22
Oakland MI	11	2,845
Oakland MI	8	2,251
Oakland MI	11	0
Oakland MI	8	2,499
Oakland MI	11	24
Oakland MI	8	799
Oakland MI	9	1,157
Oakland MI	8	1,984
Oakland MI	9	61
Oakland MI	8	1,844
Oakland MI	9	72
Oakland MI	9	1,509
Oakland MI	12	184
Oakland MI	9	45
Oakland MI	12	2,121
Oakland MI	9	599
Oakland MI	11	520
Oakland MI	9	489
Oakland MI	11	777
Oakland MI	8	3,995
Oakland MI	9	0
Oakland MI	8	677
Oakland MI	9	2
Oakland MI	8	0
Oakland MI	11	3,546
Wayne MI	7	756
Wayne MI	13	2,087
Wayne MI	12	64
Wayne MI	13	1,852
Wayne MI	12	69

Wayne MI	13	758
Wayne MI	9	76
Wayne MI	13	1,627
Wayne MI	12	2
Wayne MI	13	1,760
Wayne MI	9	0
Wayne MI	13	8
Wexford MI	1	714
Wexford MI	4	1,707

### *Voting District*

Cases where an area is split among 2 Districts: 48

Figure 34: Dave's Redistricting App Evaluation

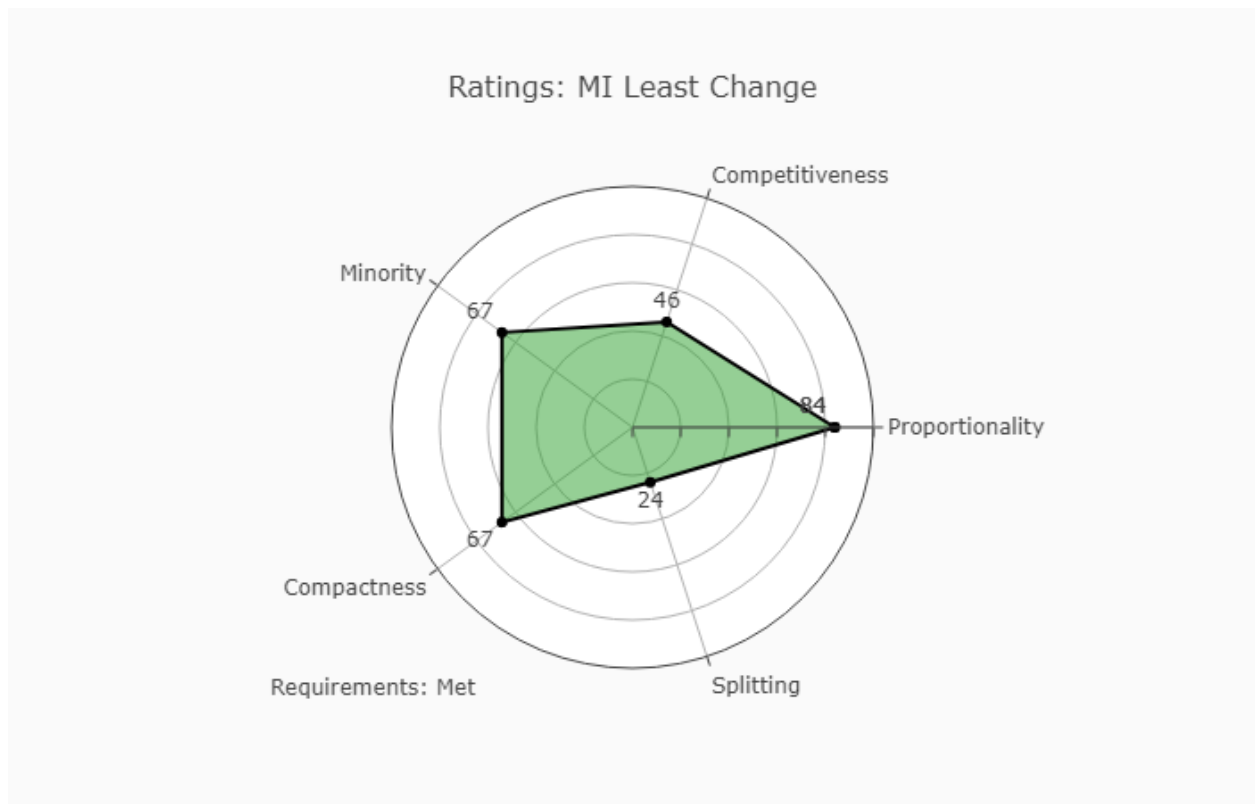


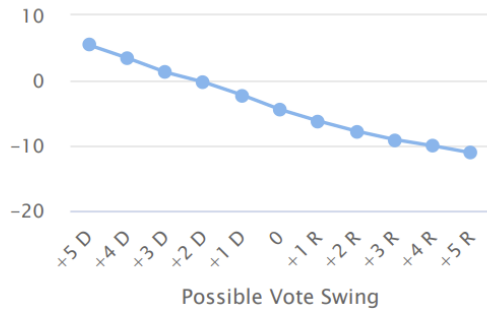
Figure 35: PlanScore Evaluation

Efficiency Gap: 4.5%



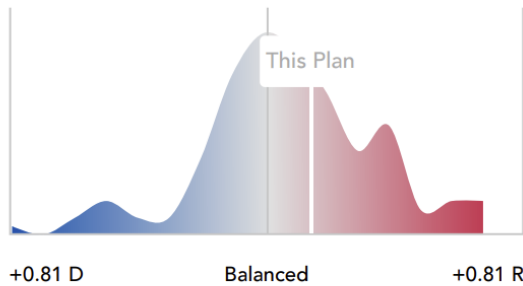
Votes for Republican candidates are expected to be inefficient at a rate 4.5% lower than votes for Democratic candidates, favoring Republicans in 71% of predicted scenarios.\* [Learn more](#) >

## Sensitivity Testing



Sensitivity testing shows us a plan's expected efficiency gap given a range of possible vote swings. It lets us evaluate the durability of a plan's skew.

## Declination: 0.14



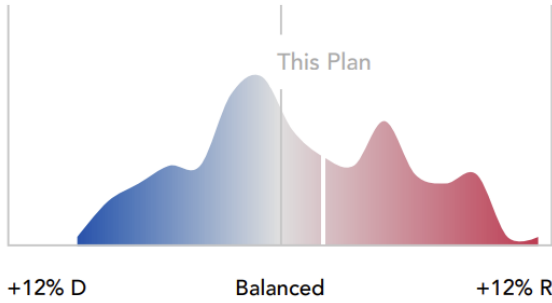
The mean Democratic vote share in Democratic districts is expected to be 3.6% higher than the mean Republican vote share in Republican districts. Along with the relative fraction of seats won by each party, this leads to a declination that favors Republicans in 77% of predicted scenarios.\* [Learn more](#) >

## Partisan Bias: 7.6%



Republicans would be expected to win 7.6% extra seats in a hypothetical, perfectly tied election, favoring Republicans in 86% of predicted scenarios.\* [Learn more](#) >

## Mean-Median Difference: 1.9%



The median Republican vote share is expected to be 1.9% higher than the mean Republican vote share, favoring Republicans in 86% of predicted scenarios.\* [Learn more](#) >

Figure 36: Chestnut Plan District Statistics

ID	Total Pop	Devation	Dem	Rep	Oth	Total VAP	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0	0	0	0	0	0	0	0	0	0	0	0	0
1	775375	0.0003	0.3967	0.5721	0.0313	633080	0.9086	0.0914	0.0162	0.0135	0.0085	0.0447	0.0011
2	774997	-0.0002	0.3598	0.6037	0.0366	606868	0.8917	0.1083	0.0382	0.0275	0.0085	0.0263	0.0008
3	775414	0.0003	0.5008	0.465	0.0342	597448	0.74	0.26	0.0881	0.1172	0.0351	0.0211	0.0011
4	774600	-0.0007	0.4497	0.5159	0.0344	593972	0.7842	0.2158	0.0705	0.0898	0.0295	0.0234	0.0011
5	774544	-0.0008	0.3759	0.5897	0.0344	606306	0.8661	0.1339	0.0413	0.0488	0.0121	0.0249	0.0008
6	775273	0.0001	0.6116	0.3635	0.0249	619426	0.7151	0.2849	0.0434	0.1084	0.1111	0.018	0.0012
7	775238	0.0001	0.4918	0.4775	0.0307	611160	0.8203	0.1797	0.0477	0.068	0.0376	0.0219	0.0012
8	775229	0.0001	0.5084	0.4605	0.0311	606390	0.7623	0.2377	0.0444	0.1515	0.0149	0.0231	0.0008
9	774962	-0.0003	0.3557	0.616	0.0283	606770	0.8959	0.1041	0.0314	0.0273	0.0166	0.0203	0.0006
10	775218	0.0001	0.4944	0.4782	0.0274	620272	0.7573	0.2427	0.0256	0.1309	0.0646	0.0166	0.0009
11	775568	0.0005	0.5783	0.3956	0.0261	624065	0.7086	0.2914	0.0447	0.1361	0.0913	0.0153	0.0008
12	775247	0.0001	0.7339	0.2408	0.0253	596111	0.4746	0.5254	0.0285	0.457	0.0261	0.0159	0.0008
13	775666	0.0006	0.7424	0.2299	0.0277	592734	0.3955	0.6045	0.0877	0.4685	0.0347	0.021	0.0012
Summary	775178	0.0014	0.5032	0.4667	0.0301	608816	0.7491	0.2509	0.0465	0.1404	0.038	0.0225	0.0009

Figure 37: Chestnut Plan Partisan Map

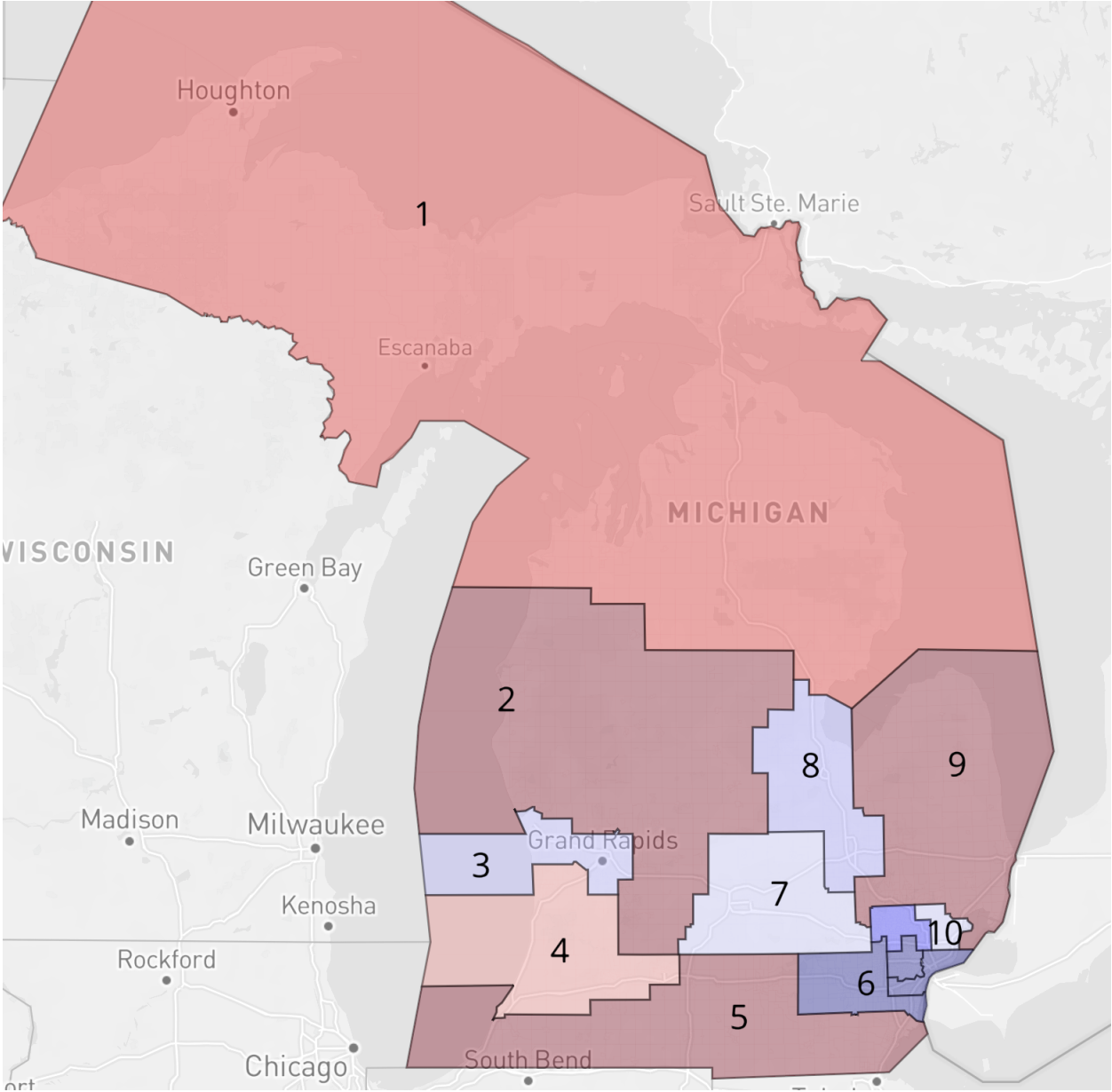


Figure 38: Birch V2 Plan District Statistics

ID	Total Pop	Devation	Dem	Rep	Oth	Total VAP	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0	0	0	0	0	0	0	0	0	0	0	0	0
1	775090	-0.0001	0.4345	0.5344	0.031	631504	0.9064	0.0936	0.0165	0.0145	0.0087	0.0453	0.001
2	774743	-0.0006	0.4297	0.5364	0.0339	611533	0.8685	0.1315	0.0394	0.0488	0.0093	0.0269	0.0008
3	775316	0.0002	0.4741	0.4956	0.0303	589785	0.771	0.229	0.086	0.0893	0.035	0.0195	0.0011
4	775553	0.0005	0.475	0.4923	0.0327	601198	0.7984	0.2016	0.0683	0.0782	0.0275	0.0233	0.0011
5	775638	0.0006	0.4239	0.5423	0.0338	604751	0.8523	0.1477	0.0429	0.0603	0.0133	0.0255	0.0007
6	774413	-0.001	0.6338	0.3435	0.0227	621993	0.731	0.269	0.0457	0.1067	0.0932	0.0194	0.0012
7	774284	-0.0012	0.5309	0.4401	0.029	612608	0.8185	0.1815	0.0484	0.072	0.0351	0.0219	0.0012
8	775413	0.0003	0.5469	0.4244	0.0286	606194	0.7617	0.2383	0.0448	0.1518	0.0147	0.0231	0.0008
9	774723	-0.0006	0.4019	0.5697	0.0285	609488	0.8896	0.1104	0.0305	0.033	0.0199	0.0192	0.0006
10	776324	0.0015	0.5803	0.3941	0.0256	624021	0.7462	0.2538	0.0268	0.1295	0.0771	0.0157	0.0008
11	775010	-0.0002	0.5845	0.394	0.0215	615679	0.6692	0.3308	0.0447	0.1852	0.0822	0.0153	0.0009
12	775694	0.0007	0.7395	0.2353	0.0251	591273	0.4881	0.5119	0.0316	0.4406	0.024	0.0173	0.0009
13	775130	-0.0001	0.7479	0.226	0.0261	594575	0.4185	0.5815	0.0819	0.4347	0.0516	0.0199	0.0011
Summary	775178	0.0026	0.5337	0.438	0.0283	608816	0.7491	0.2509	0.0465	0.1404	0.038	0.0225	0.0009



Figure 39: Birch V2 Plan Partisan Map

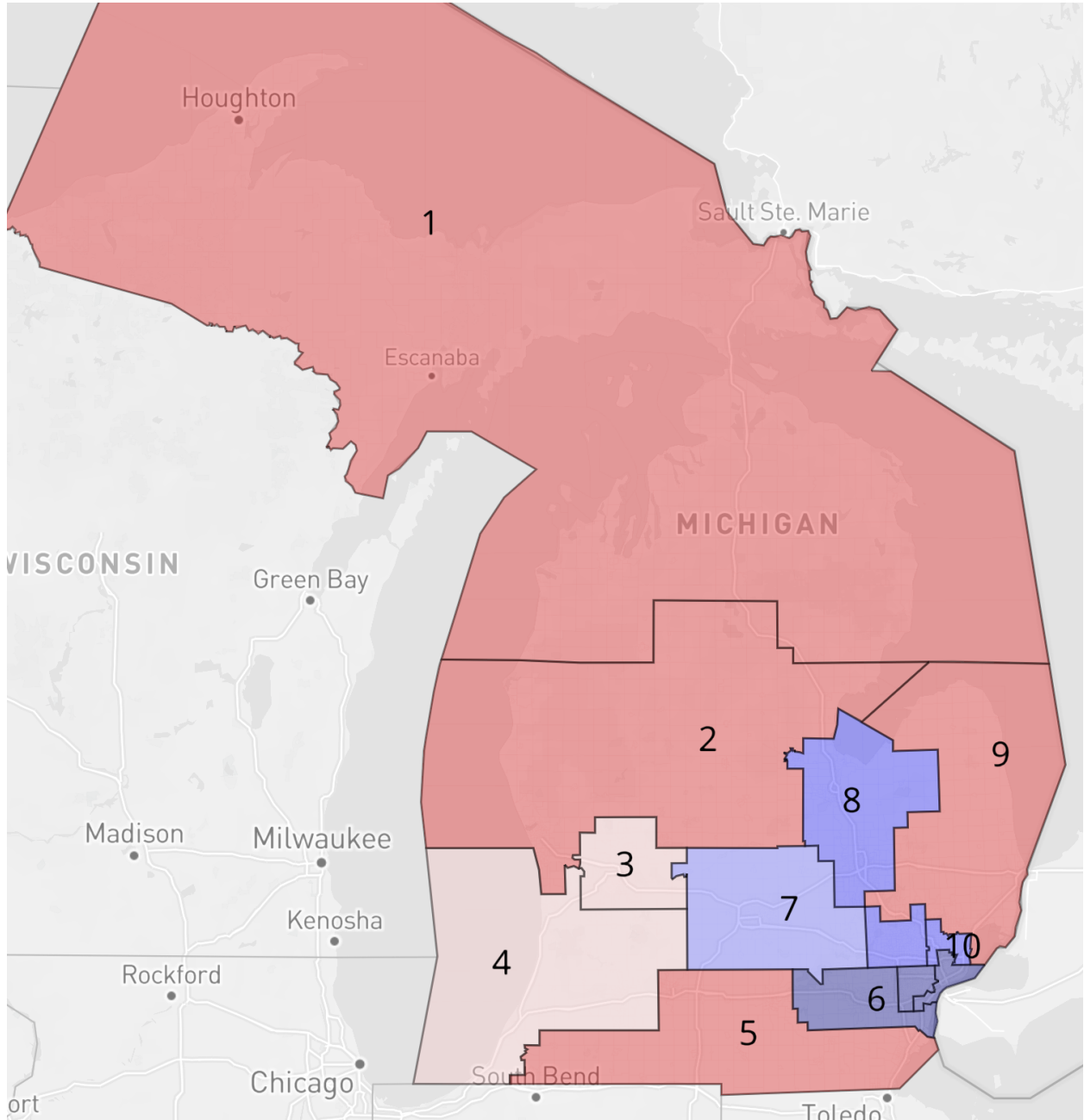


Figure 40: Apple V2 Plan District Statistics

ID	Total Pop	Devation	Dem	Rep	Oth	Total VAP	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0	0	0	0	0	0	0	0	0	0	0	0	0
1	775090	-0.0001	0.4345	0.5344	0.031	631504	0.9064	0.0936	0.0165	0.0145	0.0087	0.0453	0.001
2	774492	-0.0009	0.3951	0.5708	0.0341	608082	0.8941	0.1059	0.0382	0.027	0.009	0.0245	0.0008
3	775318	0.0002	0.4309	0.5379	0.0312	598200	0.8078	0.1922	0.0686	0.0739	0.0213	0.0232	0.0011
4	773985	-0.0015	0.5533	0.4155	0.0312	594807	0.7285	0.2715	0.0887	0.1221	0.0412	0.0218	0.0011
5	775261	0.0001	0.4264	0.5398	0.0338	604618	0.8544	0.1456	0.042	0.0589	0.0134	0.0254	0.0007
6	773186	-0.0026	0.634	0.3433	0.0227	620995	0.7307	0.2693	0.0457	0.1068	0.0934	0.0194	0.0012
7	776012	0.0011	0.5282	0.4425	0.0293	613823	0.8235	0.1765	0.0473	0.0673	0.0351	0.0222	0.0012
8	775621	0.0006	0.547	0.4244	0.0287	606371	0.7617	0.2383	0.0448	0.1517	0.0147	0.0231	0.0008
9	776935	0.0023	0.4074	0.5631	0.0295	608781	0.894	0.106	0.0309	0.029	0.0172	0.0204	0.0006
10	775046	-0.0002	0.5112	0.4638	0.025	618854	0.7654	0.2346	0.027	0.108	0.0788	0.0155	0.0008
11	775561	0.0005	0.6434	0.3354	0.0211	622719	0.6472	0.3528	0.0439	0.2095	0.0828	0.0144	0.0009
12	775694	0.0007	0.7395	0.2353	0.0251	591273	0.4881	0.5119	0.0316	0.4406	0.024	0.0173	0.0009
13	775130	-0.0001	0.7479	0.226	0.0261	594575	0.4185	0.5815	0.0819	0.4347	0.0516	0.0199	0.0011
Summary	775178	0.0048	0.5337	0.438	0.0283	608816	0.7491	0.2509	0.0465	0.1404	0.038	0.0225	0.0009

Figure 41: Apple V2 Plan Partisan Map

