Contained in this folder is a congressional district proposal for the state of Ohio that is demonstrably better than Senate Bill 258, the current congressional district plan working its way at lightning speed through the Ohio General Assembly.

Partisan Fairness and Competitiveness

According to copious amounts of testimony submitted to legislative committees tasked with congressional redistricting, Ohioans largely define the unduly favoring or disfavoring of a political party, as outlined in Article XIX, Section 1(F)(3)(a) of the Ohio Constitution, as being one in which, in a normal election year, one party would be expected to win a significantly larger percentage of districts than that party's statewide candidates have received votes in recent statewide elections. It has largely been accepted among Ohioans, as evidenced by their testimony, that based on recent statewide elections, Republicans would be expected to win in 8 districts while Democrats would be expected to win in 7 districts in a normal election year. This is not to say that the split should always be 8-7. In fact, there should be districts that are likely to change party control depending on the candidates that are running and the issues that are important to the residents of a particular district at the time of a particular election. Using partisan indexing averaged over recent changes in political preferences can almost assure that a district that narrowly favors one party over the other can and likely will be won by the other party in the appropriate political climate. However, as has been suggested by Senator McColley in his testimony in support of SB 258, any such district that favors a party by some arbitrarily small amount cannot be discounted in determining whether or not a congressional district plan unduly favors or disfavors a political party because in a normal election year, any such district would be expected to be won by whichever party it favors, regardless of how much it favors that party. This undue favoritism is clearly evident in SB 258, as it would create a 12-3 split in favor of Republicans in Ohio's congressional delegation in a normal election year, which is far out of line with the 8-7 split that countless Ohioans have stated they would expect in a normal election year.

To assess the partisan breakdown of this Better Plan and SB 258, I utilized the election results from the 2020 Presidential election, the 2018 Ohio gubernatorial election, the 2018 Ohio Attorney General election, the 2018 U.S. Senate election, the 2016 U.S. Senate election, and the 2016 Presidential election, which are the elections available in Dave's Redistricting App. The breakdown of each of these elections by proposed congressional districts can be seen in the appropriate spreadsheets in this folder. I would have liked to use a more comprehensive dataset, but that information is not publically available in an easy to use format. Without shapefiles for the voting precincts of prior elections, it is impossible for me to decompose the precinct-level election results publically available from the secretary of state. It is worth noting, however, that the statewide partisan breakdown of the two party vote in these six elections is approximately 53.6%-46.4% in favor of Republicans, which is very consistent with the overall breakdown of about 54%-46% in favor of Republicans across all statewide partisan elections over the last decade. For this reason, I contend that this data set available in Dave's Redistricting captures a reasonable picture of Ohio's recent statewide political trends, with 2016 being a strong year for Republicans, evidenced by Donald Trump's victory and Rob Portman's substantial victory, and 2018 being a rather strong year for Democrats, with Sherrod Brown winning the state with a higher percentage of the vote than any Democrat in the last decade and Republicans Mike DeWine and Dave Yost claiming only narrow victories in their respective races.

Based on the aforementioned six statewide elections, the number of districts that favor each of the two major political parties is depicted in Table 1 below for each of the two proposals. For the purpose of this analysis, "favoring" one party over the other is defined as having even the slimmest advantage. Additionally, the number of districts that have a margin of less than 8% in favor of one party over the other is depicted in Table 1. For the sake of simplicity, I will refer to such districts as "competitive" districts since that is what Senator McColley has done when discussing such districts in SB 258. The number of safe (i.e. not competitive) and competitive districts favoring each party is also depicted in Table 1.

Table 1: Partisan lean of districts in each proposal

Plan	R-favoring districts	D-favoring districts	Competitive districts	R-favoring competitive districts	D-favoring competitive districts	Safe R districts	Safe D districts
SB 258	12	3	4	3	1	9	2
Better Plan	8	7	6	2	4	6	3

It is worth noting that, despite Senator McColley's claim that SB 258 is extremely competitive, my Better Plan has 50% more competitive districts, according to his own definition of competitive. Furthermore, the competitive districts in my Better Plan do not skew heavily to have a large number of them favor one party over the other and certainly not to favor the party the already has a disproportionate advantage among the safe districts. Additionally, my Better Plan scores higher on Dave's Redistricting's competitiveness metric, as shown below in Figure 1.

Another metric Dave's Redistricting uses is proportionality, which is generally a measure of partisan fairness. My Better Plan scores significantly better than SB 258 than this metric as well, suggesting it is much better at not unduly favoring or disfavoring a political party. This can also be seen below in Figure 1.
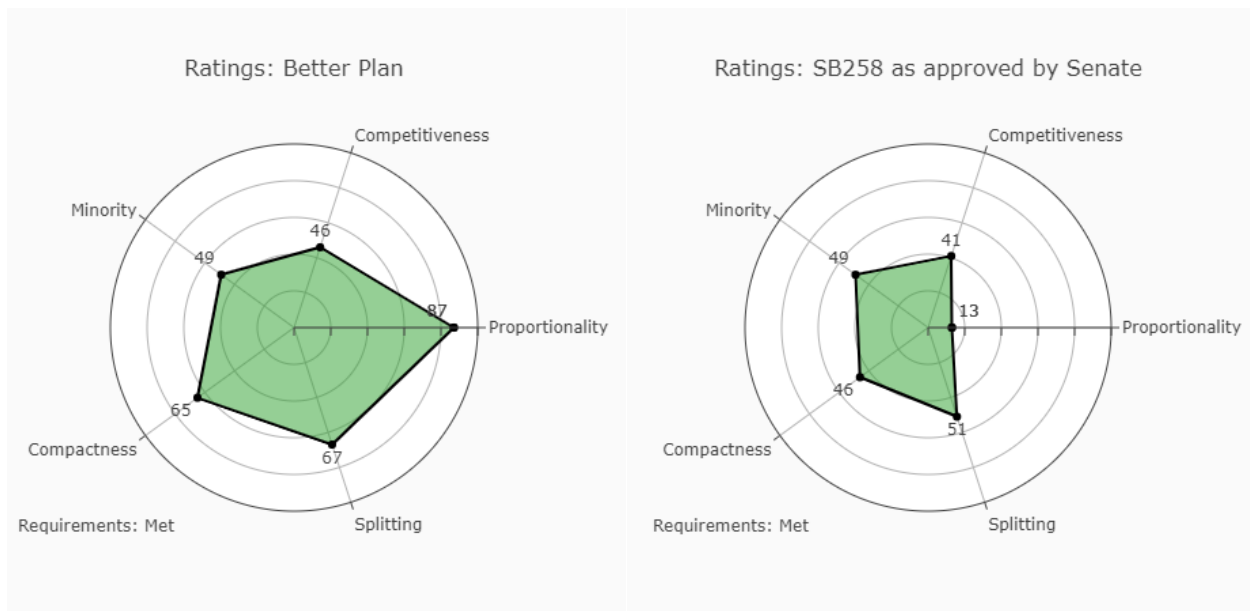
Figure 1: SB 258 compared to Better Plan based on various metrics calculated by Dave's Redistricting App. SB 258 scores 41/100 on competitiveness while the Better Plan scores 46/100. Similarly, SB 258 scores 13/100 on proportionality while the Better Plan scores 87/100.

Despite the stark differences between these two proposals, both plans have eight districts that have been won by statewide candidates from only one of the two major political parties over the six statewide elections used for this analysis. The remaining seven have been won by statewide candidates of both major parties. Furthermore, the breakdown of these eight districts that have only been won by statewide candidates from one party are the same: 6 of them have voted only for Republican statewide candidates while two have voted only for Democratic statewide candidates. However, when the number of times statewide candidates from a given party has won any of the proposed districts is investigated, there is a very large discrepancy between the two plans. Given six statewide elections and fifteen districts, there have been 90 district-level elections. Given a statewide vote split of 53.6%-46.4% in favor of Republicans between these six elections, it would be expected, based on a proportional statewide vote to seat share argument, for Democrats to win something close to 46.4% of the district-level elections and Republicans to win something close to 53.6% of the district-level elections. For the 90 district-level elections, this breakdown works out to 48-42 in favor of Republicans. My Better Plan, while still favoring Republicans more than would be expected, comes much closer to this split with a 51-39 split in favor of Republicans than Senate Bill 258 does with a 65-25 split in favor of Republicans. This can be visualized in Figure 2 below.
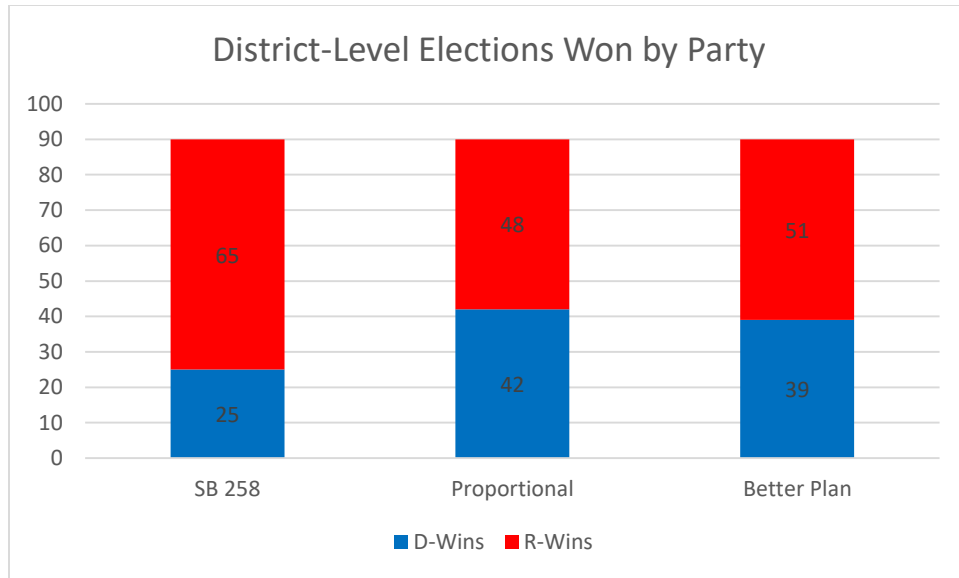
Figure 2: District-level statewide elections won by each party under each of the two proposals as well as what would be expected if district-level elections proportionally followed the statewide vote. It is clear that both proposals favor Republicans over the proportional expectation, but SB 258 does so much more than the Better Plan.

Compactness

The assertion that SB 258 creates districts that are compact is laughable. Senator McColley's claim that it is necessary to mix residents of densely-populated urban areas with sparsely-populated rural areas in order to ensure districts are compact is even more ludicrous. While this method will certainly minimize the total area of the largest district, that does not ensure compactness. In fact, I argue that a large district can be compact. Compact does not necessary mean small. Compact is more a reference to shape rather than size. In fact, my Better Plan scores better on each of two commonly used metrics to measure the compactness of voting districts than Senate Bill 258, as shown in Table 2 below.

The first of these two compactness metrics, the Reock degree of compactness, measures the ratio of the area of a district to the smallest circle that can completely enclose it. By the nature of its definition, the value of this metric ranges from 0 to 1, with 1 being a "perfectly" compact district, or a perfect circle, and 0 being the limiting case of a district that covers none of the area of the smallest circle that can enclose it, or a district that requires an infinitely large circle to enclose it. The second of these compactness metrics, the Polsby-Popper test, utilizes a sort of area to perimeter ratio to determine compactness. Like the Reock degree of compactness, the Polsby-Popper test ranges in value from 0 to 1, with 1 being a "perfectly" compact district, and 0 being a district that completely lacks compactness.

Table 2: Two commonly used compactness measures of each of the two proposals showing the the Better Plan is more compact than SB 258.

Plan	Reock Compactness Metric	Polsby-Popper Compactness Metric
SB 258	0.3639	0.2815
Better Plan	0.4314	0.3226

Additionally, my Better Plan scores better on Dave's Redistricting App's compactness score than SB 258, as can be seen in Figure 1 above, with the Better Plan scoring 65/100 and SB 258 scoring 46/100.

Splitting of Political Subdivisions

Given fifteen districts, it is almost certainly necessary to split (as defined in Article XIX of the Ohio Constitution) counties fourteen times and municipal corporations and/or townships fourteen times to achieve exactly equal populations in each district. This is because of the random nature of the populations of each of these political subdivisions in the sense that they do not sum nicely to the congressional ratio of representation. Both my Better Plan and SB 258 split counties fourteen times and townships and/or municipal corporations fourteen times. However, Article XIX, Section 1(F)(3)(b) of the Ohio Constitution explicitly states that there is a preference to keeping townships whole over municipal corporations. Because townships and municipal corporations are distinct, independent political subdivisions, it is possible to split only 14 townships while splitting zero municipal corporations or zero townships while splitting 14 municipal corporations. The wording of this constitutional provision suggests that no townships should be split in a congressional district plan. However, of its 14 county subdivision splits, SB 258, has multiple township splits, in clear violation of this constitutional provision. My Better Plan, on the other hand, splits zero townships. It is worth noting that SB 237 also has zero township splits.

Favoring/disfavoring of incumbents

The Ohio Constitution, while it states a congressional district plan cannot unduly favor or disfavor a particular political parties' incumbents, it says nothing about neglecting incumbents that may not be running for reelection. Currently, Representatives Anthony Gonzalez and Tim Ryan are still incumbents to Ohio's delegation to the U.S. House of Representatives. Consequently, neither of these representatives can be unduly favored or disfavored under a congressional district plan, regardless of any intentions they may or may not have to seek reelection. Since Ohio has 16 incumbent representatives and there will only be 15 districts for the next election, there will be one fewer districts than there are incumbents. Using Senator McColley's logic that the homes of incumbents should not be drawn into the same district unless required by constraints outside the mapmakers control, only Representatives Chabot's and Wenstrup's homes should be drawn into the same district. However, Representative Ryan's home in Trumbull County is drawn into the same district as Representative Bill Johnson's home in Marietta. From a simple eyeball test, I can tell that at least four incumbent representatives live closer to Representative Johnson than Representative Ryan does. Additionally, there are at least five incumbent representatives that live closer to Representative Ryan than Representative Johnson does. Why is it, then, that the homes of these two representatives were paired in the same district? It is clear that great effort was taken by the mapmakers to avoid drawing the homes of the following pairs of incumbent representatives into the same districts despite their close proximity to each other: Kaptur and Latta, Brown and Gonzalez, Brown and Joyce, Davidson and Turner, Davidson and Jordan, Carey and Beatty, Johnson and Balderson, Balderson and Gibbs. Why was there no effort not to draw the homes of Representative Ryan and Representative Johnson into the same district, especially because the numbers worked out such that only one pair of incumbents' homes would need to be drawn into the same district, and Representatives Chabot and Wenstrup are constitutionally required to have their homes drawn into the same district?

In addition to this small issue in how Senator McColley discusses incumbent members of congress, I fundamentally disagree with his assertion for the need to ensure as many incumbents live in a district that in which no other incumbents live. In a way, this is preserving the gerrymandered districts

that both the General Assembly and Ohio voters decisively rejected in 2018 through a constitutional amendment by dictating where district line cannot be drawn. Additionally, there is no requirement that a candidate for U.S. Congress lives in the district for which they are seeking office. In fact, Christina Hagan mounted the most successful Republican challenge to Representative Ryan in his tenure in the current 13th district despite Hagan living outside of the 13th district. Senator McColley's argument is further flawed by neglecting the fact that Ohio's congressional incumbents exist in a disproportionate number that favors the Republican Party. That is to say that by ensuring each incumbent member of Congress lives in a district in which no other incumbent lives, the map drawers are inherently giving an undue advantage to the Republican Party simply because their incumbents exist in such a ratio that is far out of line with the way the Ohio voters tend to vote for Republican candidates. In essence, while trying to (and, in my opinion, failing to) explain how SB 258 does not favor or disfavor of incumbents of a particular political party, as outlined in Article XIX, Section 1(F)(3)(a) of the Ohio Constitution, he simultaneously violates the provision that states a congressional district plan cannot unduly favor or disfavor a political party, as outline in that very same section of the Ohio Constitution.

Conclusion

Through my independent analysis, I cannot find any measurable quantity that suggests that SB 258 is a better, more constitutional plan than the plan that I have outlined in this proposal. Furthermore, there are countless metrics that indicate other proposals that were considered by the Ohio General Assembly are also demonstrably better than SB 258.