

IN THE SUPREME COURT OF PENNSYLVANIA

No. 11 MM 2022

KERRY BENNINGHOFF, INDIVIDUALLY
AND AS MAJORITY LEADER, Petitioner,

v.

2021 LEGISLATIVE REAPPORTIONMENT COMMISSION, Respondent.

ON REVIEW FROM AN APPEAL FROM THE FINAL PLAN OF THE
2021 LEGISLATIVE REAPPORTIONMENT COMMISSION

**BRIEF OF AMICUS CURIAE
CONCERNED CITIZENS FOR DEMOCRACY IN RESPONSE TO THE
PETITION FOR REVIEW OF MAJORITY LEADER BENNINGHOFF AND
OTHER APPEALS FROM THE FINAL PLAN OF THE
2021 LEGISLATIVE REAPPORTIONMENT COMMISSION**

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TABLE OF CONTENTS

INTEREST OF AMICUS CURIAE	4
INTRODUCTION AND SUMMARY OF ARGUMENT	4
I. IN CHOOSING LEGISLATIVE MAPS, THIS COURT SHOULD BE GUIDED BY THE CONSTITUTION’S OVERARCHING GOAL OF ACHIEVING <i>EQUAL</i> VOTING RIGHTS, WHICH REQUIRES CONSIDERATION OF THE PARTISAN FAIRNESS OF ANY PROPOSED MAP.	6
A. The Commonwealth’s Citizens Are Entitled to Free and Equal Participation in the Electoral Process by Maps That Are Free of Partisan Bias.	6
B. The Crucial Next Step in Evaluating Competing Maps is Ensuring Partisan Fairness.	9
C. Partisan Fairness Has Been Recognized in Other States as a Legitimate Basis for Drafting and Evaluating Electoral Maps.	11
D. Partisan Fairness Can Be Achieved by Requiring That the Anticipated Seat Share of a Proposed Map or Competing Maps Approximates the Vote Share of Any Political Party.	11
II. “COMMUNITIES OF INTEREST” IS NOT A PRIMARY DRAFTING CRITERION AND SHOULD NOT BE TREATED AS SUCH.	13
III. THIS COURT SHOULD ACCEPT THE LRC’S FINAL PLAN MAPS.	14
A. We Are a Constitutional Democracy.	15
B. Partisan Bias in Drafting Electoral Maps Vitiates Partisan Fairness and Cannot Be Allowed to Persist.	15
C. Democrats Have a Geographic Disadvantage in Redistricting Which Makes Them Vulnerable to Both Packing And Cracking; Article I, Section 5 Mandates Adjustments to Ensure Representative Democracy.	17
D. If the LRC Final Plan Maps Are Outliers, It Is Because Using Only the Four Initial Drafting Criteria Would Result in Unfair Redistricting.	18
E. The Final LRC Maps Favor Republican Voters, Not Democratic Voters.	18
F. The Final Plan Splits More Populous Communities of Interest, But This Is Not Nefarious.	19
G. Adjustments To Encourage Diverse Representation Are Permitted.	20

IV.	CCFD OFFERS A STEP-BY-STEP GUIDE TO NEUTRAL REDISTRICTING THAT CAN ASSIST THIS COURT IN EVALUATING THE PROPOSED MAPS.	21
	A. The History and Development of the CCFD Method	22
	B. A Step-by-Step Guide to Neutral Redistricting	25
V.	CONCLUSION	26

TABLE OF AUTHORITIES

Cases

<i>Agre v. Wolf</i> , 284 F. Supp. 3d 591 (E.D. Pa. 2018)	5
<i>Harper v. Hall</i> , NC Supreme Court Case No. 21 CVS 200085 (Feb. 4, 2022)	11
<i>League of Women Voters of Ohio v. Ohio Redistricting Comm.</i> , Slip Op. No. 2022-Ohio-65 (January 12, 2022)	12
<i>League of Women Voters of Pa. v. Commonwealth of Pa.</i> , 645 Pa. 1, 178 A.3d 737 (Pa. 2018) (“LWV”)	4, 6, 7, 8, 9, 10, 19, 22, 23, 26, 30
<i>Rucho v. Common Cause</i> , No. 18-422, 139 S. Ct. 2484, 2487, 588 U.S. ____ (2019)	30
<i>Vieth v. Jubelirer</i> , 541 U.S. 267, 307-308 (2004)	30
<i>Wesberry v. Sanders</i> , 376 U.S. 1 (1964)	24

Constitutional and Statutory Authorities

Pennsylvania Constitution, Article I, Section 1	16
Pennsylvania Constitution, Article I, Section 2	16
Pennsylvania Constitution, Article I, Section 5	4, 5, 7, 8, 9, 10, 11, 14, 15, 17, 21
Pennsylvania Constitution, Article I, Section 7	17
Pennsylvania Constitution, Article I, Section 20	17
Pennsylvania Constitution, Article II, Section 16	4, 5, 7, 8, 9, 14, 15, 18, 21
Voting Rights Act, 52 U.S. Code § 10101, et seq.	3, 20

INTEREST OF AMICUS CURIAE

Concerned Citizens for Democracy (“CCFD”) is a think-tank composed of lawyers, computer scientists, and engineers dedicated to developing nonpartisan, judicially manageable standards for redistricting in Pennsylvania. Since February 2017, CCFD, a 501(c)(3) non-partisan, Pennsylvania nonprofit association, has been studying partisan redistricting techniques and how to prevent their utilization. CCFD urges this Court to consider the neutral redistricting standards we describe in this amicus brief as this Court crafts its opinion in this case and the related Congressional redistricting case. These decisions together present a tremendous opportunity for this Court to end partisan gerrymandering.

INTRODUCTION AND SUMMARY OF ARGUMENT

This Court is on the verge of ending partisan gerrymandering in Pennsylvania and creating a set of principles and best practices for drafting and evaluating electoral maps in Pennsylvania. By articulating and making explicit those best practices, this Court can address the Benninghoff appeal by using a judicially manageable standard and framework.

This Court began this process when it issued its seminal ruling in *League of Women Voters of Pa. v. Commonwealth of Pa.*, 645 Pa. 1, 178 A.3d 737 (Pa. 2018) (“LWV”), holding that the four neutral criteria for drafting electoral districts – compactness, contiguity, population equality, and minimization of political subdivision splits – provided in Article II, Section 16 of the Pennsylvania Constitution set a constitutional floor for the fair drafting of electoral districts. But this Court recognized that these four factors, without more, might not be sufficient to ensure the fair representation of Pennsylvania’s citizens.

This Court can complete the process of establishing best principles and practices for fair redistricting with the following steps: (1) by making explicit what this Court’s language in *LWV* implied, that “partisan fairness” is a crucial fifth criterion for proposed electoral maps as mandated by Article I, Section 5 of the Pennsylvania Constitution, thereby satisfying Section 5’s concomitant requirement of “free and equal” elections; (2) by declaring that “partisan fairness” requires that the anticipated seat share of political parties (Democratic, Republican, or other parties) in a proposed electoral map will approximate the statewide vote share of each party, based on statewide elections over a reasonable time period; (3) by applying the Article II, Section 16 criteria for drafting electoral maps to (a) the Legislative Reapportionment Commission’s Final Plan Maps, and (b) the appeal of Leader Benninghoff from those maps, and then analyzing how, and how well, those maps achieve partisan fairness; and (4) promote transparency by always requiring a drafter of a proposed map to clearly set forth the reasons, and the legal bases therefor, where its map deviates from the four primary drafting criteria in order to further partisan fairness and any subordinate criteria (including “communities of interest”). By following these steps, CCFD believes this Court will conclude that it should accept the LRC maps as the best implementation of the five criteria for the next decade.

Finally, CCFD sets forth and explains the step-by-step methodology it has devised to create highly compact electoral districts with minimal split political subdivisions. If this Court explicitly adopts that or a similar methodology, all parties in the future will know the basic principles this Court requires for drafting and evaluating redistricting maps. Not only will this Court create a judicially manageable standard for evaluating redistricting maps, but by so doing, this Court also will streamline the decennial redistricting process, set guardrails minimizing partisan

gerrymandering, significantly minimize the politicization of the process, and finally guarantee a critical goal in the Commonwealth, free and equal elections.

I. IN CHOOSING LEGISLATIVE MAPS, THIS COURT SHOULD BE GUIDED BY THE CONSTITUTION’S OVERARCHING GOAL OF ACHIEVING *EQUAL* VOTING RIGHTS, WHICH REQUIRES CONSIDERATION OF THE PARTISAN FAIRNESS OF ANY PROPOSED MAP.

A. The Commonwealth’s Citizens Are Entitled to Free and Equal Participation in the Electoral Process by Maps That Are Free of Partisan Bias.

In *League of Women Voters*, this Court held that the Commonwealth’s citizens are entitled to free and equal participation in the electoral process and that electoral maps cannot be drawn to benefit one political party over another. This Court concluded that, contrary to the Pennsylvania Constitution’s guarantees of free and equal elections, the Congressional redistricting plan the State Legislature adopted in 2011 was an impermissible gerrymander. This Court created a judicially manageable standard in *LWV*, and the expert this Court appointed used that standard to create a fair, non-gerrymandered Congressional map.

For redistricting purposes, the two relevant provisions of the Pennsylvania Constitution are Article II, Section 16 and Article I, Section 5. Article II, Section 16 provides:

§ 16. Legislative districts.

The Commonwealth shall be divided into 50 senatorial and 203 representative districts, which shall be composed of compact and contiguous territory as nearly equal in population as practicable. Each senatorial district shall elect one Senator, and each representative district one Representative. Unless absolutely necessary no county, city, incorporated town, borough, township or ward shall be divided in forming either a senatorial or representative district. (Apr. 23, 1968, P.L. App. 3, Prop. No. 1)

The second provision, Article I, Section 5 – the Free and Equal Elections Clause (“FEEC”)

– is more general. It provides: “Elections shall be free and equal; and no power, civil or military, shall at any time interfere to prevent the free exercise of the right of suffrage.” This Court gave a full-throated support to the broadest possible interpretation of the FEEC. *See, e.g.*, 178 A.3d at 804, 814 (“the Clause should be given the broadest interpretation, one which governs all aspects of the electoral process . . .”)

This Court provided clear guidance for determining the minimum criteria that a legislative redistricting map must meet to satisfy constitutional requirements. This Court found that a legislative redistricting plan must:

- (1) be composed of compact and contiguous territory;
- (2) be as nearly equal in population as practicable; and
- (3) not divide any county, city, incorporated town, borough, township, or ward, except where necessary to ensure equality of population.

178 A.3d at 742 (citing 1/22/18 Order at ¶ “Fourth”). These four criteria essentially required compactness, contiguity, equal population, and minimization of divisions of political subdivisions.¹

After quoting from Article II, Section 16, this Court in *LWV* noted that, in addition to the four essential criteria, there were additional factors, such as the maintenance of prior district lines or incumbent protection, that historically had played a role in the drawing of districts. *LWV*, 178 A.3d at 817. This Court, however, held that such other factors, if they are considered, must be “wholly subordinate” to the four mentioned criteria. *Id.* These criteria provide a “floor of protection for an individual against the dilution of his or her vote” in the creation of legislative districts, and subordination of these neutral criteria to other considerations, particularly partisan gerrymandering,

¹ Although *LWV* dealt with Congressional districts that the Pennsylvania state legislature drew, the rationale and holdings of *LWV* apply to both state and federal redistricting.

creates a constitutional violation. *Id.* at 816-17.

This Court went on to explain that no extraneous considerations “such as gerrymandering for unfair political advantage” may play *any* role in the construction of a permissible electoral map.

As this Court noted:

When . . . it is demonstrated that, in the creation of congressional districts, these neutral criteria have been subordinated, in whole or in part, to extraneous considerations *such as gerrymandering for unfair partisan political advantage*, a congressional redistricting plan violates Article I, Section 5 of the Pennsylvania Constitution. . . . [T]his standard *does not* require a showing that the creators of congressional districts *intentionally* subordinated these traditional criteria to other considerations in the creation of the district in order for it to violate Article I, Section 5; rather, it is sufficient to establish a violation of this section to show that these traditional criteria were subordinated to other factors.

178 A.3d at 817 (emphasis added). This language, which highlights the requirement that the four criteria not be subordinated to other considerations, ensures that, as a practical matter, applying the four criteria must be the first step in constructing a map that adheres to constitutional requirements.

In *League of Women Voters*, this Court was keenly aware that satisfying the four criteria enumerated in Article II, Section 16 constituted the floor, not the ceiling, of what the Constitution requires.

These neutral criteria provide a “floor” of protection for an individual against the dilution of his or her vote As we have repeatedly emphasized throughout our discussion, the overarching objective of this provision of our constitution is to prevent dilution of an individual’s vote by *mandating that the power of his or her vote in the selection of representatives be equalized to the greatest degree possible with all other Pennsylvania citizens*. We recognize, then, that there exists the possibility that advances in map drawing technology and analytical software can potentially allow mapmakers, in the future, to engineer congressional districting maps, which, although minimally comporting with these neutral “floor” criteria, nevertheless operate to *unfairly dilute the power of a particular group’s vote* for a congressional representative.

178 A.3d at 817 (emphasis added).

When, as now, this Court has before it a proposed map of Majority Leader Benninghoff, and the LRC's Final Plan maps, which both apparently satisfy the four explicit "floor" criteria in Section 16, then this Court must determine what additional factor(s) will be necessary to satisfy Article I, Section 5's requirement of "free and equal" elections.

B. The Crucial Next Step in Evaluating Competing Maps is Ensuring Partisan Fairness.

The crucial next step for this Court to consider is partisan fairness.² Partisan fairness can be defined as attempting to ensure that the anticipated seat shares of the parties (Democratic, Republican, or other parties) of a proposed electoral map will approximate the statewide vote share of each party, based on statewide elections, over a reasonable period of time. For example, if the vote shares of two parties over the last decade have been 53% and 47%, respectively, then the anticipated statewide seat share of a fairly drawn 17-seat (Congressional) map, should be 9-8, but no more pronounced. Stated alternatively, a party's anticipated seat share should not exceed the party's vote share in statewide elections over that time period. There are several well-accepted mathematical and statistical metrics that can be used to measure the partisan fairness of a particular redistricting map. They are discussed in the attached expert report. *See Exhibit A.*

Some have argued that any attempt to minimize partisan advantage resulting from concentrations of a political party's likely voters in, for example, urban versus rural areas, violates the Free and Equal Elections Clause. *See infra.* Nothing in *LWV* supports such a conclusion. Indeed, as this Court noted, "any legislative scheme which has the *effect* of impermissibly diluting the

² Chair Nordenberg in his report uses the term "partisan bias." It is self-evident that as a map is redrawn to minimize partisan bias, it moves closer to partisan fairness.

potency of *an individual's vote* for candidates for elective office relative to that of other voters will violate the guarantee of 'free and equal' elections afforded by Article I, Section 5." *LWV*, 178 A.3d at 809 (emphasis added); *see also id.* at 812 ("The [FEEC] was specifically intended to equalize the power of voters in our Commonwealth's election process, and it explicitly confers this guarantee.").

Equalizing the voting power of individuals necessarily implies that each voter should have an equal opportunity to have his party obtain majority status in a legislature when a majority of the state's voters agree with his or her voting preference. Democracy is not well-served when (a) large numbers of like-minded voters are packed together in districts where their votes are likely to be wasted, and (b) control of the legislature systematically favors a small number of voters in a different geographic area. As this Court observed:

By placing voters preferring one party's candidates in districts where their votes are wasted on candidates likely to lose (cracking), or by placing such voters in districts where their votes are cast for candidates destined to win (packing), the non-favored party's votes are diluted. *It is axiomatic that a diluted vote is not an equal vote*, as all voters do not have an equal opportunity to translate their votes into representation. This is the antithesis of a healthy representative democracy. Indeed, for our form of government to operate as intended, each and every Pennsylvania voter must have the same free and equal opportunity to select his or her representatives.

178 A.3d at 814 (emphasis added). That is why, in *LWV*, this Court explicitly adopted a "broad interpretation" of Article I, Section 5 – to "guard[] against the risk of unfairly rendering votes nugatory, artificially entrenching representative power, and discouraging voters from participating in the electoral process because they have come to believe that the power of their individual vote has been diminished to the point that it 'does not count.'" 178 A.3d at 814.

In Pennsylvania, in the recent past, there has been a tendency for Democratic voters to self-pack in cities, suburbs, and factory towns, making them easy targets for packing and cracking. If this Court were to ignore this phenomenon and allow parties to carefully draw maps with subtle

gerrymanders that further pack Democratic voters into cities and towns, this would permanently dilute the equal power of these voters to influence both the state legislature and Congress.

C. Partisan Fairness Has Been Recognized in Other States as a Legitimate Basis for Drafting and Evaluating Electoral Maps.

Last month, the North Carolina Supreme Court, in *Harper v. Hall*, NC Supreme Court Case No. 21 CVS 200085 (Feb. 4, 2022), interpreting its analogous state constitution, agreed that partisan balance is a crucial determinant, not a subsidiary factor, in determining whether an individual’s equal voting right is infringed. That Court held unconstitutional a legislatively approved redistricting plan that “systematically makes it harder for one group of voters to elect a governing majority than another group of voters of equal size,” finding that the plan “unconstitutionally infringe[d] upon [the] fundamental right to vote.” Order at 5, para. 4. The Court noted that “[t]he fundamental right to vote includes the right to enjoy ‘substantially equal voting power and substantially equal legislative representation.’” *Id.*³

This Court should similarly hold that the FEEC prohibits redistricting maps that either are intended to incorporate, or have the effect of incorporating, a partisan advantage into them. Such a holding would require the drafter to make some level of adjustments to their maps (as in Step 6 of the CCFD method, *see infra*) to ensure that electoral districts do not confer unfair partisan advantage to any political party in violation of the FEEC.

³ *Cf. League of Women Voters of Ohio v. Ohio Redistricting Comm.*, Slip Op. No. 2022-Ohio-65 (January 12, 2022) (Ohio Constitution, as amended by voters, requires that “[t]he statewide proportion of districts whose voters, based on statewide state and federal partisan general election results during the last ten years, favor each political party shall correspond closely to the statewide preferences of the voters of Ohio.” Slip Op. at 4 (quoting Ohio Constitution, Article XI, Section 6)).

D. Partisan Fairness Can Be Achieved by Requiring That the Anticipated Seat Share of a Proposed Map or Competing Maps Approximates the Vote Share of Any Political Party.

When boundary adjustments are made to achieve partisan fairness, three principles must be respected. First, to further transparency in the map drawing process, the mapmaker should explicitly note and explain the basis of any adjustment, so that a reviewing court (or Commission) can see and understand the changes. Second, the adjustments should be limited to the minimum number and degree necessary to accomplish the goal of partisan fairness. Third, adjustments should be made to achieve a fair distribution of seats to all parties, but no more seats than needed to approximate the voting strength of any party on a statewide basis.

For example, adjustments to increase a political party's expected seat share can meet, but not exceed, a party's likely statewide vote share. In the prior 53% to 47% example, the party can make minor adjustments in boundary lines to seek an anticipated seat share of 53%, but not one seat higher. Thus, if we are looking at a proposed 203-seat Senate map, the party with a vote share of 53% should realize an anticipated seat share of 107 seats, whereas the other party (which has a 47% vote share) should realize an anticipated seat share of 96 seats. It is important for a reviewing court to carefully examine this step to ensure that a drafter has not engaged in stealth gerrymandering by over-adjusting in the name of "partisan fairness." As explained in the accompanying expert report, *see* Exhibit A, there are a number of numerical measures of partisan fairness in districting. Considering these measures enables a court or a commission to compare and choose among competing maps. By requiring transparency, a reviewing court or commission also can tell when a partisan drafter made adjustments to achieve fairness, or instead sought more than their party's fair share of seats.

CCFD suggests that a ten-year average of statewide voting contests (President, U.S. Senate, Governor, Attorney General, etc.) be used to establish a party's statewide vote share because multiple elections would yield a more stable figure on voting preferences than using one or two recent elections. This is an objective numerical standard that does not favor any party. If the statewide vote-share of any party were to substantially increase (or decrease) over a decade, that party would be entitled to additional (or fewer) anticipated seats in any decennial redistricting. In the meantime, any citizen's likelihood of electing a State Senate, State House, or a Congressional Delegation that reflected his or her policy views would remain free and equal. This is not to suggest that every voter has an equal chance of electing an individual representative that reflects one's policy views regardless of the partisan makeup of one's district. It is only to suggest that, on a statewide basis, all voters would have a more equal opportunity to influence legislation by electing a legislature that reflects their views, values, and legislative priorities.

II. "COMMUNITIES OF INTEREST" IS NOT A PRIMARY DRAFTING CRITERION AND SHOULD NOT BE TREATED AS SUCH.

"Communities of interest" ("COIs") are routinely used by various political factions to try to influence electoral maps. There is intuitive appeal to the concept that legislators should represent the values and perspectives of their communities. However, there are several problems with this approach. The first is that special drafting for COI's is often not needed to keep communities intact. People usually choose to live in particular communities. Where a boundary line does inadvertently divide a community, the line can be adjusted, as a final step in drafting a map, to keep a community intact, so long as the adjustment is not made for unfair partisan advantage.

The second problem is that COI's are too vague a term for a judicially manageable standard

and can be used to mask unfair partisan drafting. For example, COIs could be defined as cities together with their inner-ring suburbs. Taken to an extreme, a COI could be defined as people who are environmentalists or people who own guns, or more simply stated, conservative or liberal voters. If drafting were permitted along those lines, the requirements of Article I, Sections 5 and Article II, 16 could be ignored. The better approach to preserving COIs is using the neutral criteria already endorsed by this Court: the four floor criteria *plus* partisan fairness.

CCFD does not mean to suggest that keeping communities of interest intact is an impermissible secondary criterion in drafting electoral maps. Rather, keeping communities of interest intact simply cannot be a primary criterion.

III. THIS COURT SHOULD ACCEPT THE LRC'S FINAL PLAN MAPS.

The present case arises from a challenge to the constitutional validity of the LRC's Pennsylvania House and Senate maps. Majority Leader Benninghoff challenges the Final Plan maps on a variety of grounds, including that (1) they deviate from the map drafting criteria set forth in Article I, Section 16 of the Pennsylvania Constitution, (2) by incorporating partisan fairness, they deviate from the four drafting criteria, (3) they are an extreme outlier, according to an expert witness, (4) they are biased in favor of Democrats, (5) the state and federal Constitutions forbid adjustments to districting to favor diverse minority representation, (6) the LRC maps split certain populous communities of interest, and (7) there are population variations in districts that lean Democratic. CCFD now will address these grounds.⁴

⁴ For a technical, data driven analysis of Leader Benninghoff's claims, see the attached expert report (Exhibit A).

A. We Are a Constitutional Democracy.

The point of elections in Pennsylvania is to elect members of two legislative chambers that reflect the majoritarian views of the voters. This leads voters to believe that the process of lawmaking provides a fair and equal chance for one's views to be heard and translated into public policy. As part of a fair democratic process, voters believe that laws are binding on all citizens, even if a law does not reflect an individual's policy choices, because the system that created that law is fair and democratic. If this Court were to condone a set of rules for drawing legislative districts that permanently relegated the votes of a majority of citizens to second class status because, for example, they lived in cities and towns, this would fray the social contract and the foundational belief in the legitimacy of our laws. To be clear, if laws were written only by Republican majorities cemented in place due to a geographic advantage in redistricting, this scheme would undermine confidence in and respect for laws themselves.

The democratic nature of our state government is reflected in many of the provisions of Article I of the Pennsylvania Constitution, entitled "DECLARATION OF RIGHTS," including Sections 1 (Inherent rights of mankind), 2 (Political powers), 5 (Elections), 7 (Freedom of press and speech; libels), and 20 (Right of petition).

B. Partisan Bias in Drafting Electoral Maps Vitiates Partisan Fairness and Cannot Be Allowed to Persist.

Leader Benninghoff asserts that the Final Plan maps are biased in favor of Democrats. But this turns the concept of partisan bias on its head. First, the short answer to this claim that the LRC maps favor Democrats is that those maps actually likely will continue to result in Republican majorities in both the House and the Senate. *See Nordenberg Report at 55.* When Leader Benninghoff argues that the 2012 maps should be chosen instead of the LRC maps, his true view is

exposed. The 2012 maps *strongly* favored Republicans because the Republican majorities in the state legislature heavily gerrymandered those maps to cement in place those majorities. The LRC's attempts to rebalance those maps are simply the result of trying to lessen the magnitude of, albeit not eliminate, those majorities. Leader Benninghoff wants to preserve the status quo, but the status quo heavily favors Republicans. As Chair Nordenberg stated in his March 4, 2022 Report:

In fact, the map that the Commission adopted for the House as part of the Final Plan still leans in favor of Republicans. As Professor Warshaw explained, Republicans may not need a majority of the statewide vote share to win a majority of the seats. However, compared to the current maps, the Republican Party as a whole would need to come closer to that 50% threshold to keep control of the General Assembly. In other words, the Commission's Final Plan is still biased in favor of Republicans, just not to the same extent as previous maps.

Nordenberg Report at 55. Chair Nordenberg essentially has stated the obvious: one should not be heard to complain that a map is biased against one's party when it still favors one's party, but less so than previous electoral maps.

Indeed, in an ideal world redistricting maps should favor *neither* party; they should incorporate the four "floor" factors, and then try to achieve partisan fairness as required by Article I, Section 5. By definition these five criteria favor neither party but promote democracy. The fact that the LRC maps could not achieve perfect partisan fairness is the result of a number of interlocking and overlapping factors that limit the ability of any map drafter to achieve perfection in that regard. These constraints were demonstrated in both the Nordenberg Report and the CCFD expert report, attached as Exhibit A. It is beyond debate that there is no such thing as a perfect map.

C. Democrats Have a Geographic Disadvantage in Redistricting Which Makes Them Vulnerable to Both Packing and Cracking; Article I, Section 5 Mandates Adjustments to Ensure Representative Democracy.

It is generally acknowledged that because both cities and inner-ring suburbs tend to vote heavily Democratic, Democrats can be packed into overwhelmingly Democratic districts by adding such suburbs to highly Democratic cities. This super-packing of Democrats from inner-ring suburbs to cities has a two-fold advantage in vote packing: diluting votes of Democrats and simultaneously cleansing Democratic votes from the nearby suburban territory, thus allowing more distant suburbs and nearby rural areas to more easily elect Republican legislators.

Leader Benninghoff claims that the LRC maps apply partisan fairness to deviate from the four drafting criteria in Article 2, Section 16. While this is factually correct, it does not follow that the LRC maps are unconstitutional.

According to Leader Benninghoff, because Democrats have a structural disadvantage by choosing to reside in cities and larger towns (which concomitantly makes them vulnerable to packing and cracking), neither the LRC nor the courts should be able to attempt to rectify the consequences of that geography. But the result of a failure to address that is that Democratic votes will be diluted and count less than Republican votes, which violates Article I, Section 5. That Section 5 does not recognize any so-called “natural advantage” for one set of voters or one political party over another, and again nothing in *LWV* supports such a conclusion.

Finally, one Pennsylvania Constitutional provision has no superiority to another provision, and CCFD is not aware of anything in Pennsylvania law that says otherwise. Thus, Leader Benninghoff’s argument that Article II, Section 16, which sets forth the four floor criteria, is essentially superior to Article I, Section 5, which requires partisan fairness in map drawing, can find

no support in *LWV*, much less elsewhere in Pennsylvania law. As a result, drafters who start with a map that satisfies Section 16 must necessarily make adjustments to the initial district boundaries drawn to protect Democrats from vote dilution, in order to satisfy and effectuate Section 5.

This is not to suggest that giving any party one seat more than its vote share warrants is ever appropriate. CCFD suggests that parties may make only minor adjustments in their attempts to make a map achieve the seat share commensurate with their vote share.

Thus, the LRC's adjustment of district boundaries to reduce or eliminate "partisan bias" is eminently reasonable, given the dominant role Article I, Section 5 played in the reasoning and holding of this Court in *LWV*. Adjustments to compact districts are necessary to (1) reverse partisan use of compact districts to pack or crack Democratic voters, and (2) protect Democratic voters from vote dilution as a result of their living in cities where their votes are easily wasted.⁵

D. If the LRC Final Plan Maps are Outliers, It Is Because Using Only the Four Initial Drafting Criteria Would Result in Unfair Redistricting.

As for Leader Benninghoff's other criticisms, the Final Plan maps may be outliers of an array of maps drawn randomly by computers using only the four criteria in Article II, Section 16. However, using only the four drafting criteria would relegate Democrats to vote dilution forever, and are not a valid test of a fair electoral map.

E. The Final LRC Maps Favor Republican Voters, Not Democratic Voters.

Another Benninghoff criticism is that the LRC maps created an excessive number of districts that lean Democratic. Chair Nordenberg responded to this criticism in detail. Nordenberg

⁵ The CCFD expert report analyzes the 2012 Maps, the Benninghoff proposed maps, and the LRC Final Plan maps for partisan fairness, and shows that the LRC maps have the best partisan fairness. *See* Exhibit A.

Report at 70. Thus, just because an old electoral map was tilted more in a particular party's favor does not mean that the new map is biased toward the other party. It means only that adjustments were made to reduce the former's partisan advantage.

F. The Final Plan Split More Populous Communities of Interest, But This Is Not Nefarious.

As for the criticism that the LRC Final Plan maps split certain populous municipalities that allegedly were "communities of interest," sometimes it is necessary to split larger populous municipalities when needed to make adjustments for fair representation. It is axiomatic in redistricting that one political subdivision along a common boundary often must be divided to equalize population. But there is no basis for giving more weight to larger population political subdivisions, such as cities, than to smaller ones, such as townships or boroughs, when the need arises to decide which subdivisions along a common boundary should be divided. Conversely, carefully looping district boundaries around more populous cities, townships or other municipalities can be just another form of packing voters in a smaller number of districts.

In the course of months of listening to voters across the Commonwealth, Chair Nordenberg noted that smaller population political subdivisions cared more deeply than larger population political subdivisions about not being divided. As his Report explained:

Residents of less populous municipalities also tend to identify more closely with their municipalities. By contrast, residents of large municipalities often define their communities more in terms of neighborhoods. Therefore, residents of larger municipalities tend to accept being divided into multiple legislative districts more willingly than residents of smaller municipalities. These sentiments were often expressed by citizens living in these smaller communities, who were concerned that their voices would not be heard if their communities were divided among legislative districts.

Nordenberg Report at 49, note 28. In summary, because there are legitimate constitutional reasons

to divide more populous political subdivisions, this criticism has little merit.

G. Adjustments to Encourage Diverse Representation Are Permitted.

On the subject of adjustments to favor diverse or minority populations, CCFD points out (as did Leader Benninghoff) that creating compact districts in urban areas will usually keep minority communities intact and strengthen their voting power and their number of elected representatives. Since racial and linguistic minorities often live in compact communities, due to factors such as recent immigrant status, common language, socioeconomic status, and the desire to share common shopping districts, drawing compact electoral districts within minority communities will help to diversify a legislature. Usually, nothing more need be done to electoral maps to encourage diverse representation.

However, the exception to this rule is where a minority community is elongated due to linear settlement patterns. This might occur along a river, such as in the City of Pittsburgh, or along a street within a city, such as the Latinx population along North 5th Street in Philadelphia. In those instances, keeping a community of interest intact might well be a legitimate subordinate criteria for redistricting, so long as the reasons for the non-compact districting are clearly identified and expressed. Chair Nordenberg mentioned that in the Final Plan maps, where population shifted due to a growth in minority populations in the last decade, it would have been unfair not to draw new districts in a manner that reflected that growth.

Moreover, running for office is a civil right. Article I, Section 26 prohibits discrimination by the Commonwealth and its political subdivisions wherein it states, “[n]either the Commonwealth nor any political subdivision thereof shall deny to any person the enjoyment of any civil right, nor discriminate against any person in the exercise of any civil right.” This Pennsylvania Constitutional

provision suggests that affording political expression to growing minority populations should be accommodated in drawing decennial maps. These also appear to be legitimate subordinate criteria under *LWV* and were followed by the LRC. As Chair Nordenberg noted:

Representatives Manuel Guzman, Jr., Danillo Burgos, and Angel Cruz, the three Latino Representatives currently serving in the Pennsylvania House, applauded the work of the Commission in adopting a plan that they view as responsive to the growth of the Latino community... For the districts in Reading, in particular, Representative Guzman agreed that the Commission's Preliminary Plan "unpacks the Latino population in House Districts 126 and 127 and increases the Latino population in House District 129 to more than 35%. The effect of these changes is that the Latino community in Berks County will now have three opportunities to elect candidates of choice.

Nordenberg Report at 64-65 (citations omitted).

Chair Nordenberg also pointed out that the advantage of incumbency works against minority communities:

As was earlier noted, the Commission further recognized that incumbency is often a barrier that prevents minority voters from electing candidates of their choice. To counter that political reality, the Commission looked for opportunities where districts with sizeable minority communities could be drawn in ways that did not include an incumbent as a resident. To be clear, however, the Commission did so only when consistent with other traditional redistricting criteria and while also keeping in mind the requirements and prohibitions of the 14th Amendment to the U.S. Constitution.

Nordenberg Report at 60.

For all these reasons, CCFD urges this Court to uphold the LRC maps and reject the appeal of Leader Benninghoff.

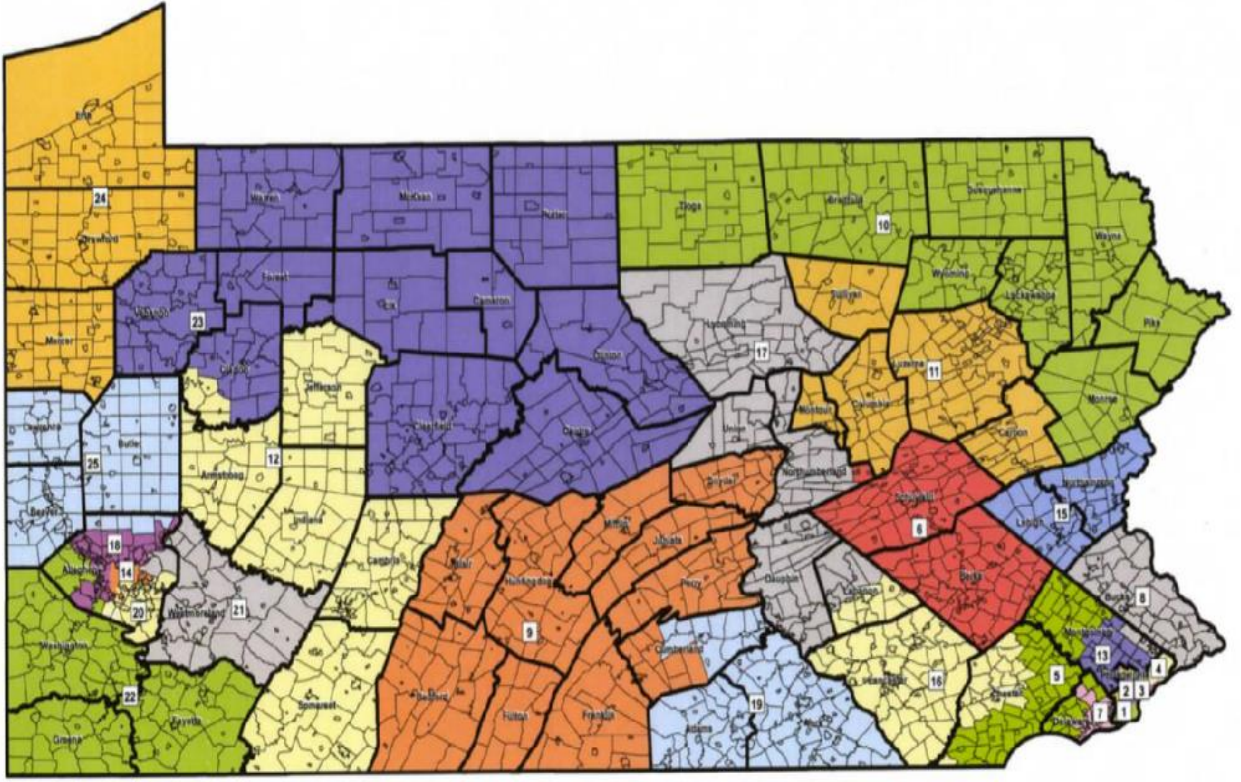
IV. CCFD OFFERS A STEP-BY-STEP GUIDE TO NEUTRAL REDISTRICTING THAT CAN ASSIST THIS COURT IN EVALUATING THE PROPOSED MAPS.

While compact districts can be abused, neutral drafting restrains more blatant forms of gerrymandering. CCFD offers drafters and the courts a method of redistricting that often results in a

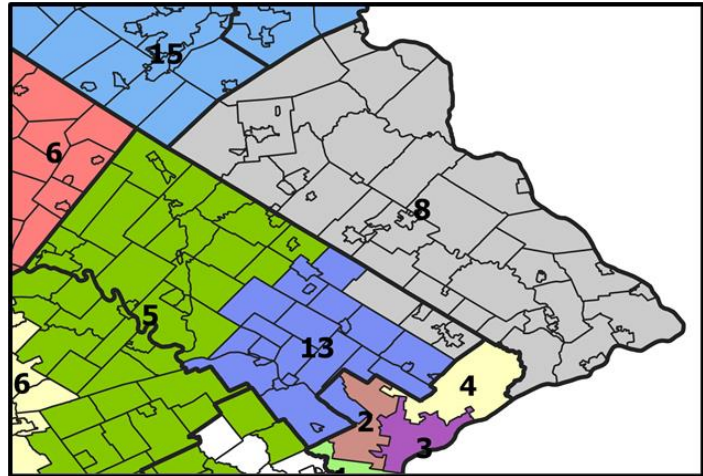
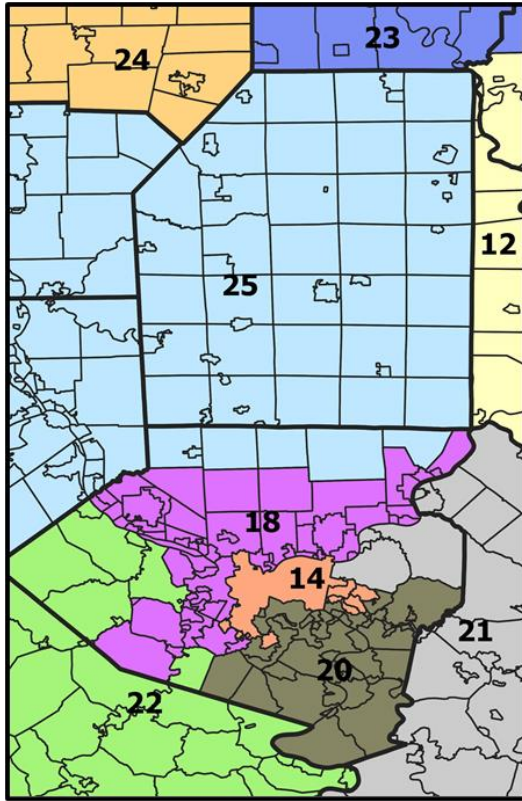
fair distribution of uniformly compact districts, requiring more minor adjustments, if any, for partisan fairness. The key to this method is making highly compact districts, without partisan agendas, as a map is created. The method assembles or divides larger political subdivisions compactly and then adds smaller whole municipalities, in layers, along a common boundary until equal population is achieved.

A. The History and Development of the CCFD Method

After the United States Supreme Court's decision in *Wesberry v. Sanders*, 376 U.S. 1 (1964), the Congressional maps consisted of districts composed of whole counties assembled compactly and portions of larger population counties divided compactly. The 1972 Pennsylvania Congressional map was the true inspiration for the CCFD method and is still relevant for ideal reapportionment.



Specifically, the boundary choices along the Bucks County-Montgomery County border and the Allegheny County-Butler County border in that map are still a model for redistricting today. *See* District 8 on the Eastern border in gray and District 25 on the western border in light blue.



In each of the above instances, equal population was achieved by adding territory composed of whole townships and other political subdivisions in layers along a common border.

Rooted in Article II, Section 16 of the Pennsylvania Constitution, the CCFD method requires that all districts be composed of compactly assembled counties or other larger political subdivisions, and then whole pieces consisting of the next smaller political subdivision be added in layers along the district boundaries until equal population is achieved.

To make the method easier for map drawers to apply, CCFD devised a step-by-step guide to neutral redistricting, which was submitted to this Court in two amicus briefs in 2018 during the *LWV* litigation and appears to have been followed in creating the 2018 Remedial Map.

B. A Step-by-Step Guide to Neutral Redistricting

As applied to Pennsylvania Senate and House Districts, the CCFD method utilizes the following step-by-step approach to neutral redistricting:

Step 1. The drafter of a new Pennsylvania Senate or House map should divide the state by the number of required districts based on the most recent decennial apportionment. In this case, 50 Senate districts and 203 House districts should be formed using whole counties or townships or other whole pieces of the largest political subdivisions in a visually compact manner.

For a political subdivision with a population larger than a single district, the drafter first must draw as many districts as possible within that political subdivision in a compact manner.

For a political subdivision with a population smaller than a single district, the drafter should begin by assembling larger political subdivisions compactly to create the required number of districts. If necessary to divide a larger political subdivision, it should not be divided between more than two districts.

Step 2. The drafter then should add or subtract whole territories of the next smaller political subdivisions along the borders of other larger political subdivisions in layers or in an otherwise compact manner.

In practice, this usually means that additional whole townships, towns, or boroughs are added along the whole length of a common boundary of a larger political subdivision (*e.g.*, counties or townships) before moving to the next layer of smaller political subdivisions. The drafter should continue to add whole political subdivisions of the next smaller size, in a layer-by-layer manner, until nearly equal population is achieved.

This layered method creates compact districts in the first instance and deprives the drafter of discretion to, for example, produce long “tentacles” or odd-shaped districts, reaching from one district into another for purposes of partisan gerrymandering.

Step 3. The drafter then should divide one, and only one, smaller political subdivision along the common border between two proposed districts to achieve the target population of each district.

Step 4. The drafter then should measure the compactness of the resulting districts using commonly accepted mathematical compactness measures such as Polsby-Popper,

Schwartzberg, and Reock scores. Districts that perform poorly when measured in this manner, given constraints imposed by other mandatory criteria, should be adjusted to bring them into compactness ranges considered acceptable for these measures.

Step 5. The drafter then should verify that the resulting map does not inadvertently divide racial or linguistic minority groups, and make adjustments as necessary to ensure that the map does not violate the Voting Rights Act, 52 U.S. Code § 10101, et seq. Often, little or no further adjustment will be required.

Step 6. The drafter then should make adjustments, if any, needed to achieve the fifth primary criterion—assuring partisan fairness. The drafter should make the most minimal adjustments necessary to achieve partisan fairness for all political parties. Adjustments to achieve subordinate goals, which do not result in partisan gerrymandering, can be made at this time.

The CCFD method is both transparent and provides for a judicially manageable redistricting standard. Such a standard results from this method because (a) all criteria can be measured numerically and maps can be compared for compliance with the five primary drafting criteria, and (b) non-compact districts with irregular boundaries will stand out. In such instances, a court can request an explanation of any non-conformity or direct the drafter to adjust the maps to be more compliant with this standard.

V. CONCLUSION

This Court is nearing the finish line of solving the problem of partisan redistricting with neutral and objective criteria for drafting electoral maps. The best weapon to end partisan gerrymandering is compliance with the four neutral criteria enumerated in Article II, Section 16 of the Pennsylvania Constitution, together with adjustments to allow for partisan fairness embodied in Article I, Section 5. In general, compact districts, composed of whole political subdivisions, restrain partisan gerrymandering. While it is possible to weaponize compactness as a tool to pack and crack Democratic concentrations of voters in cities, suburbs, and towns, in most instances only minor adjustments are needed to ensure a fair distribution of seats for all political parties.

CCFD has offered a definition of partisan fairness as anticipated seat-share versus state-wide vote share over a reasonable time. The point of representative democracy is to elect a legislature that reflects the majoritarian will of the people in making policy decisions and laws. This definition, like the four floor criteria, is numerical, quantifiable, and neutral.

Transparency in drafting electoral maps is also important. Ideally, all map makers should be required to disclose the reasoning behind their decisions to split political subdivisions and/or create non-compact districts. Indeed, Chair Nordenberg did so in his Report on the 2021 Legislative Reapportionment Commission's Final Plan Maps.

Majority Leader Benninghoff's challenges to the LRC's maps should be rejected. The LRC's Pennsylvania House and Senate maps satisfy the Pennsylvania Constitution's prerequisites: the Constitution's four floor criteria and its Free and Equal Elections Clause. Indeed, the LRC's maps are superior to Leader Benninghoff's proposed maps because the LRC's maps have attempted to achieve partisan fairness, *i.e.*, they are more likely to result in representation in the House and Senate chambers that reflects statewide party vote-shares, and in turn, the will of the voters.

Voters should be treated equally regardless whether they reside in urban or rural parts of the Commonwealth or vote as Democrats or Republicans or for other political parties. No map is perfect, but perfect should not be the enemy of the good.

The United States Supreme Court in *Vieth v. Jubelirer*, 541 U.S. 267, 307-308 (2004), and *Rucho v. Common Cause*, No. 18-422, 139 S. Ct. 2484, 2487 (2019), said it is impossible to create a judicially manageable standard to evaluate and judge partisan maps, but that is not the case. This Court already has created such a neutral, judicially manageable, redistricting standard in *LWV*. However, this Court should articulate that standard more clearly in this redistricting cycle. This

Court should continue to follow the drafting criteria in *LWV and* adopt “partisan fairness,” as implied by Article 1, Section 5, as an explicit additional primary criterion in drawing electoral maps. In doing so, this Court would preserve and utilize the most important tools for fighting partisan gerrymandering that any court in the United States has ever articulated.

Respectfully submitted,

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On behalf of
Concerned Citizens for Democracy

IN THE SUPREME COURT OF PENNSYLVANIA

No. 11 MM 2022

KERRY BENNINGHOFF, INDIVIDUALLY,
AND AS MAJORITY LEADER, Petitioner

v.

2021 LEGISLATIVE REAPPORTIONMENT COMMISSION, Respondent.

CERTIFICATE OF SERVICE

On this date, March 7, 2022, I served a true and correct copy of the foregoing pleading to all parties in this matter via e-filing with this Court's Unified PA Judicial website.

Respectfully submitted,

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On behalf of
Concerned Citizens for Democracy

INTEREST OF AMICUS CURIAE

The Amicus Brief of Concerned Citizens for Democracy was paid for by Concerned Citizens for Democracy, a 501(c)(3) non-partisan, Pennsylvania nonprofit association, that has been studying partisan redistricting techniques and how to prevent their utilization since February of 2017.

Labor to create the Brief and Expert Report was also donated by engineers, lawyers and activists who are citizens of Pennsylvania or New Jersey who oppose partisan gerrymandering.

WORD COUNT

The word count for the Concerned Citizens for Democracy Amicus Brief, excluding the Table of Contents, the Table of Authorities, and the Expert Report is 6.981 words.

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Exhibit A
Report on Proposed PA State Legislature Maps
by Concerned Citizens for Democracy

Rob Williams, Robert Hess and Anne Hanna
Benninghoff v. 2021 LRC, 11 MM 2022 (Supreme Court of Pennsylvania)
March 4, 2022

This report addresses the issues presented in the complaint to the Pennsylvania Supreme Court regarding the PA redistricting plans created by the Legislative Reapportionment Commission (LRC). Specifically, a complaint submitted by House Majority Leader Kerry Benninghoff is assessed to determine the veracity and validity of the claims presented therein.

1. Qualifications and Experience

Robert Williams analyzed the LRC House Final plan and Benninghoff Amendment plan with the focus on the objective of partisan fairness as a **primary** criterion for designing redistricting maps and evaluating the Benninghoff complaint. Mr. Williams has expertise in space geographic information systems (GIS), quantitative analysis, organizational strategy and program management. He earned a BS in Mechanical Engineering from Cornell University and a MS in Aerospace Engineering from the University of Southern California. Mr. Williams subsequently earned an MSE in Technology Management from the University of Pennsylvania Wharton and Engineering Colleges, and a MGIS in geospatial analysis from Pennsylvania State University.

Professionally, Mr Williams has more than 40 years of experience in technology and complex program management, and public service in technology policy and programs. He worked for The Boeing Company from 1989-2018 and the Office of Science & Technology Policy in Washington, DC from 1983-85. Mr. Williams is a cofounder of Concerned Citizens for Democracy (CCFD), where he has provided data analysis and mapping support since 2018. He won Honorable Mention for Draw the Lines in the Senate map competition, and is a volunteer member of the Draw the Lines Citizen Map Corps. Mr. Williams resides in Chester County, PA.

Robert Hess, Ph.D., CFA® analyzed partisan fairness and the efficiency gap. He is a research analyst and economist with more than 40 years' experience, specializing in regional economic analysis, regional impact analysis, and real estate

investing. He received his Ph.D. in Economics from the University of Colorado in 1978. He completed his undergraduate studies in physics at the Colorado School of Mines (1969). He holds an M.S. degree in Aerospace Engineering Sciences from the University of Colorado (1971). He became a Chartered Financial Analyst (CFA) charter holder in November 2000.

Dr. Hess retired in March 2010 from Prudential Real Estate Investors (now PGIM Real Estate) as a Principal, accumulating more than 16 years of experience providing expertise in the quantitative analysis of regional markets, market selection strategies and investment portfolio analysis. An active industry participant, he served as Chair of the Research Committee of the National Association of Real Estate Investment Fiduciaries (NCREIF) from 2007 to 2009 and served on the NCREIF-PREA (Pension Real Estate Association) Reporting Standards Council from 2011 to 2016. During his working career, he also served on staff research positions at several other financial institutions, consulting firms, and government offices. He has provided data analysis and mapping support to CCFD since 2017.

Anne Hanna provided explanations of partisan fairness measures. She is a data scientist who testified as an expert witness in *Agre v. Wolf*, 284 F. Supp. 3d 591 (E.D. Pa. 2018), the federal anti-gerrymandering case that challenged the 2011 Pennsylvania congressional map before a federal three-judge panel. Her education includes a B.S. in Physics (California Institute of Technology, 2001) and an M.S. in Physics (University of Illinois at Urbana-Champaign, 2005), and she is presently a Ph.D. student in mechanical engineering at the Georgia Institute of Technology, developing data-driven numerical modeling methods for the study of the material properties of composites with complex microstructures. She is a two-time winner of Draw the Lines Congressional mapping competitions. In addition to her work with CCFD, she is a volunteer member of the Draw the Lines Citizen Map Corps and provides mapping and analytical support to Fair Districts PA. She has lived in Philadelphia since 2009.

2. Data Sources and Tools

All map design and most analyses in this report were performed in Dave's Redistricting App (DRA), a free, publicly-available online redistricting mapping and analysis tool available at <http://www.davesredistricting.org>. The analyses utilize all eight Pennsylvania population datasets available in DRA.

3. Analysis of Partisan Fairness as an Additional Criteria

Chairman Nordenberg explained the approach the LRC took in creating the LRC Final House map with the following statement:

Our predominant purpose has been to create districts that comply in all respects with the requirements of the Pennsylvania Constitution, most notably, Article II, Section 16 (which sets forth requirements for legislative districts); Article I, Section 5 (also known as the “Free and Equal Elections” clause); and Article I, Section 29 (the racial and ethnic equality clause). Of course, we also were attentive to the requirements of the 14th Amendment to the United States Constitution and the Federal Voting Rights Act.¹

When circumstances permitted us to do so, and after ensuring compliance with state and federal law, we fashioned districts to create additional opportunities beyond the minimum requirements of the Voting Rights Act, positioning voters in racial and ethnic minority groups to influence the election of candidates of their choice. Going beyond those minimum requirements not only is consistent with the Voting Rights Act but is consistent with, and possibly required by, both the Free and Equal Elections clause and the Racial and Ethnic Equality Clause of the Pennsylvania Constitution... Again, we did so while being mindful of the traditional redistricting criteria of Article II, Section 16 and other constitutional mandates.²

The traditional neutral criteria are not the only factors in play in Pennsylvania redistricting. Concerns about vote dilution based on federal VRA considerations (racial, ethnic, or linguistic minority status) or on Pennsylvania Free and Equal Elections Clause (FEEC) considerations (other group memberships such as partisan preference) may also be present. As Chairman Nordenberg stated, the initial map was modified to address considerations beyond the traditional neutral criteria while maintaining the traditional neutral criteria statistics as much as possible.

¹ Statement by Chair, Pennsylvania Legislative Reapportionment Commission, “Meeting of the Pennsylvania Legislative Reapportionment Commission Approval of a Final Plan; Senate Hearing Room #1; February 4, 2022”, page 3, accessed at <https://www.redistricting.state.pa.us/resources/Press/2022-02-04%20Chairmans%20Statement.pdf> on March 2, 2022.

² Ibid., page 4.

As noted in the accompanying Amicus Brief of CCFD, CCFD believes that the Pennsylvania Supreme Court should explicitly adopt partisan fairness as a mandatory fifth criteria.

Measures for Partisan Fairness

At least three measures are available to test partisan fairness of a redistricting map – proportionality, responsiveness, and symmetry. Definitions for these tests are as follows:

- A map is “proportional” if the percentage of votes a party's candidates receive statewide can be expected to roughly match the percentage of seats it wins in a legislative body.
- A map is “responsive” if the number of seats a party wins in a legislative body increases when its statewide vote share increases and decreases when its statewide vote share decreases. Note that a map can be responsive, but not proportional --- a party's seat share may increase faster or slower than its vote share, or it may increase at the same rate as the vote share but always be a certain amount higher or lower than the vote share.
- A map is “symmetric” if both major parties would be expected to get the same seat outcomes from the same vote shares. For example, if Party A would get 40% of the seats when it gets 45% of the two-party vote share, then Party B should expect to get 40% of the seats if it gets 45% of the votes.

There are several mathematical metrics used to measure each of these attributes. While all are valuable, each gives slightly different information about the properties of a map. Consequently, it is important not to insist on selecting one favored metric to the exclusion of all others, but rather to seek maps which perform well on a broad variety of partisan fairness metrics. In addition, the results of any given metric will vary somewhat depending on the underlying election data used to evaluate it. Thus, it is important to examine maps relative to a wide variety of different election data in order to ensure that partisan fairness evaluations are robust across a wide variety of possible election outcomes.

The Vote Share – Seat Share Graph

A unified and rapid method to evaluate all three partisan fairness tests is found with a single graph – the “Vote Share – Seat Share” graph.

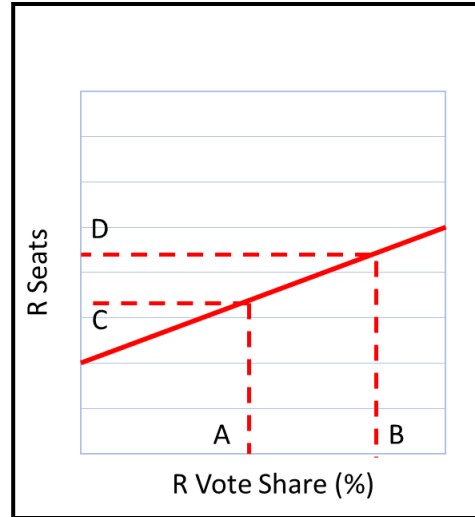


Figure 1 - Vote Share – Seat Share Graph

The Vote Share – Seat Share principle states that a political party’s statewide number of legislature seats should increase proportionally with the increase in statewide vote share. The solid red diagonal line in Figure 1 demonstrates this relationship. As the percentage of one party’s vote share (party R in this case) increases from left to right along the bottom y-axis (A--> B), the number of seats party R wins should increase in proportion (C --> D).

A Vote Share – Seat Share graph is populated with points, each representing the result from one actual past election. Votes are added up within the boundaries of every proposed district to determine the party that wins that district. The statewide seat share is then revealed.

The DRA application provides election results from eight (8) past Pennsylvania statewide elections. Some were big Republican wins (Sen. Toomey 2016) and some big Democratic wins (Gov. Wolf 2018). As a group, these eight elections provide a span of realistic representations for future elections. These eight datasets are used to generate the data points for the Vote Share – Seat Share graphs that are used to compare the partisan fairness of alternative redistricting maps.

Comparisons of Partisan Fairness for Proposed Maps

Partisan fairness of a redistricting map is evaluated using a Vote Share – Seat Share graph with three measures. These three measures are proportionality, responsiveness, and symmetry, as defined above. Comparing the partisan fairness of alternative maps is as easy as looking at the pattern of the points on the Vote Share – Seat Share graph.

In the Vote Share – Seat Share graph, the red diagonal line represents pure proportionality – the percentage of vote share produces a proportional percentage of seats. For example, 40% of the vote share yields 40% of the seats. Similarly, 60% of the vote share yields 60% of the seats. In a perfect world, all the points generated from all elections would fall on the red diagonal line in the graph.

For each map analyzed, though, the eight election dataset points will be positioned above or below the red diagonal line, each point representing one of the past election datasets. This means this particular map produces more or fewer seats for the two parties than strict proportionality would yield.

Examining the set of eight points on each map's Vote Share – Seat Share graph reveals the partisan fairness for all three measures, as follows:

Proportionality

When the graphed points for Map A are closer to the red diagonal line than the points for Map B, then Map A is more proportional. The resultant seat share percentage of Map A is more proportional than that of Map B for the same election data. The broad span of eight points should be compared from graph to graph to ascertain whether one map is consistently better than the other maps.

Responsiveness

Responsiveness likewise can be compared by viewing map graphs side-by-side. The responsiveness measure is seen as the angle (or slope) of the line of points on the graph. When the slope of Map A's points is closer to the slope of the red diagonal line than the slope of Map B's points, then Map A is more responsive. This means the seat share for Map A increases and decreases at a rate closer to pure proportionality than does Map B. Again, the broad span of eight points should be compared from graph to graph to ascertain whether one map is consistently better.

Symmetry

Symmetry is established when both parties experience the same increase and decrease in seat share as the vote share changes. One party's seat share should not increase faster or slower than the other party's seat share for the same change in vote share. The shape of an imaginary line drawn through the eight points should be straight. If instead it is curved, especially at low or high vote shares, then one party will experience more gains or losses of seats than the other party.

Each of these three partisan fairness measures can quickly be seen by examining the Vote Share – Seat Share graphs for alternative maps.

Comparing the LRC Final House and Benninghoff Amendment Maps

Figures 2A and 2B show the partisan fairness results for the two maps considered – LRC House Final and the Benninghoff Amendment. All three partisan fairness tests can be readily seen in the positions and shape of the curves that the eight points in each graph show.

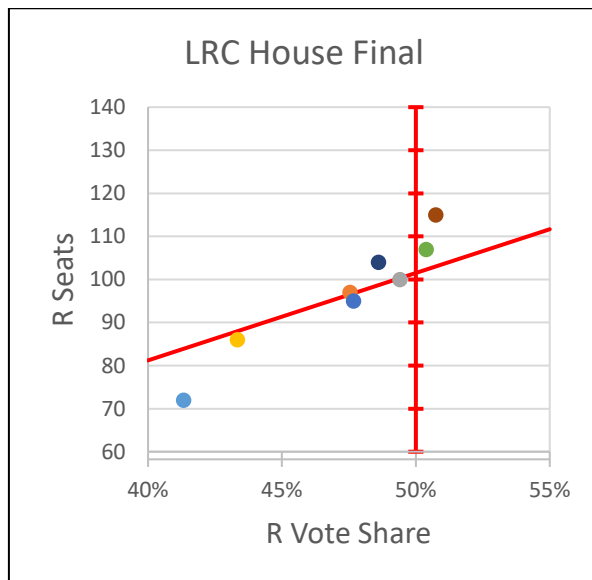


Figure 2A
LRC Final House map

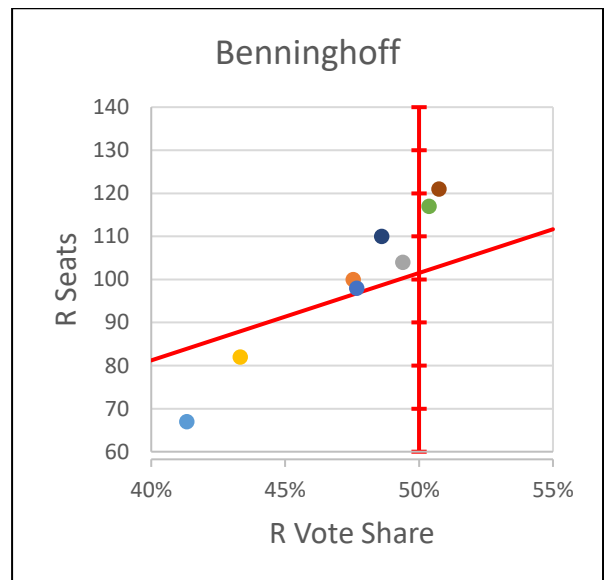


Figure 2B
Benninghoff Amendment map

Proportionality –

All points in the LRC graph lie closer to the red diagonal proportionality line than the points in Benninghoff's graph. The LRC map is therefore more proportional than the Benninghoff map.

Responsiveness –

The points in the LRC graph, if connected with a straight line, produce a slope/angle close to the diagonal red line. The slope of a line drawn through the Benninghoff points is much steeper. Therefore, the LRC map is more responsive than the Benninghoff map.

Symmetry –

Though slightly harder to visualize, an imaginary line drawn through the points on the LRC graph has a very shallow down and up change in direction at the ends. The Benninghoff graph has greater curves at the low and high vote shares. Therefore, the LRC map is more symmetrical.

Thus, all the measures of partisan fairness for the LRC House Final map are graphically better than the Benninghoff map.

While achieving the four criteria required in and by Article II, Section 16, the LRC produced a map that also achieves statewide partisan fairness, as required by the Free and Equal Elections of the Pennsylvania Constitution. On this additional criterion, the LRC map is demonstrably better for partisan fairness than the proposed Benninghoff Amendment map.

4. Partisan Bias Using the Efficiency Gap

In addition to the three main metrics utilized in the above analysis, the literature contains many other proposed metrics to describe the partisan tilt or the partisan fairness of district designs. Indeed, Dave’s Redistricting App provides 17 separate metrics for partisan bias as an output of its app.³

Dr. Michael Barber, the expert Benninghoff relied on, uses an increasingly popular technique involving the use of simulations to place the LRC Final Plan and the Benninghoff Amendment plan into a context that allows one to compare them. As recognized by Barber in his report⁴, several districting software packages allow for the computation of partisan fairness using these simulation approaches, including Dave’s Redistricting App and PlanScore. We have compared the statements of partisan bias called the “efficiency gap” arising from the three sources (including the Barber report) that Barber relies upon, in part, in his analysis. This metric examines the degree to which partisan voters concentrate in precincts in such a

³ Dave’s Redistricting App (<http://davesredistricting.org>). Given a map, **choose the** “bias” menu item in the “Advanced” tab.

⁴ Benninghoff at page 007a, footnote 4.

way as to “waste” votes. In this view, votes for a winning candidate in excess of 50% plus one are wasted because the candidate would have won anyway. In addition, all votes for the losing candidate are wasted because the candidate would have lost anyway. So, non-zero efficiency gaps correspond to voter distribution biases that favor one party or the other, and the farther the efficiency gap varies from zero the more pronounced the partisan bias. We found the following:

Efficiency Gaps from Selected Sources for PA House Maps

Source	Current House Map	Benninghoff Plan	LRC Final Map
Barber	N/A	7.6% R	2.7% R
Dave’s Redistricting	6.2% R	4.4% R	2.8% R
PlanScore	6.9% R	3.1% R	2.3% R

Sources: Barber calculations at Benninghoff at 0060a and at 0066a, Dave’s Redistricting App (see Footnote 3), and PlanScore.⁵

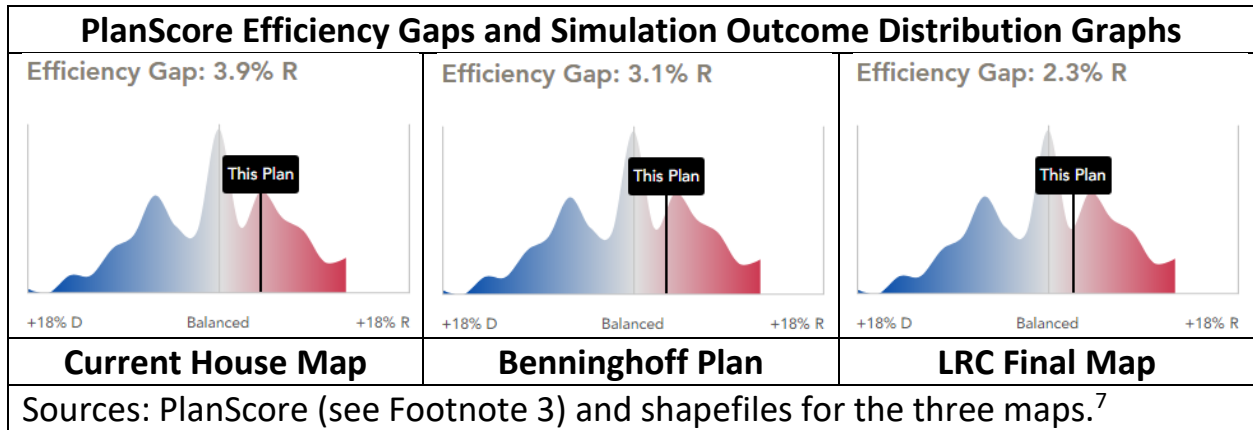
The three plans compare with each other similarly using all **three** approaches. First, all plan efficiency gaps point to voter distributions in the three district designs that favor Republicans. Both the Benninghoff plan and the LRC Final Map reduce the efficiency gaps from those associated with the current House districts in force since 2012. Finally, the Benninghoff plan has a more favorable design for Republicans than does the LRC Final Map.

We note one unexplained difference between the collection of simulations reported by Barber and those reported by PlanScore. Both sources portray the solution set as a distribution of simulations by the relative frequency of Democratic seats resulting from the simulation. All of the Barber distributions have the familiar shape of a Gaussian distribution, more popularly known as “bell-shaped” curves.⁶ More typically, however, the distributions from the kinds of simulations performed using these techniques usually have highly asymmetrical shapes with several peaks and valleys between the trailing edges, reflecting the existences of solution clusters that arise in very complex problems. Political district design typically has this kind of complexity -- arranging all the precincts in a state (9,178 in the case of Pennsylvania) into a much smaller number of districts (203 House districts in

⁵ PlanScore: (<https://planscore.campaignlegal.org/#!2020-ushouse>) using the “Score a Plan” feature and the shapefiles for the maps listed in footnote 7 below.

⁶ See, for example, the exhibit titled “Efficiency Gap Measure” in Benninghoff at page 0060a.

Pennsylvania). The PlanScore simulation set shown below does, in fact, exhibit this kind of complexity.



Note that this frequency distribution appears in the background of all three efficiency gap diagrams. This simply reflects the fact that the same PlanScore solution set applies to all three specific maps. It provides the common background for comparisons to be made.

The current House plan appears to use features that cluster around a 4% efficiency gap favoring Republicans (a 4% level corresponds to about 8 seats in the Pennsylvania House). The Benninghoff plan neutralizes some of these factors as it falls closer to a plan the PlanScore calls “Balanced.” The LRC Final Map, on the other hand, falls in a portion of the solution set (those that exhibit an efficiency gap of around 2.3% favoring Republicans), but still lies well within the range producing a likely Republican majority in the Pennsylvania House (2.3% or 4 to 5 seats). While it is true that the LRC Final Map falls in a range that is less detrimental to Democrats, it cannot be said to “favor” them, as Benninghoff and Barber claim.

⁷ Links to the sources:

Current: <https://www.redistricting.state.pa.us/Resources/GISData/Districts/Legislative/House/2011-Revised-final/SHAPE/2011-Revised-final-Plan-SHAPEFILES-House.zip>

LRC Final Plan:

<https://www.redistricting.state.pa.us/Resources/GISData/Districts/Legislative/House/2021-Final/SHAPE/2022%20LRC-House-Final.zip>

Benninghoff Plan (from Dave’s Redistricting Published Maps owned by user scaruso):

<https://davesredistricting.org/maps#viewmap:45e1723e-5108-4ef1-a1d2-b42c6d2ec9dc>

We decline to speculate on the nature of the factors that create the clustering that creates the peaks in the PlanScore solution set – it is beyond the scope of this analysis.

In the end, the interpretation of the results that appear in the Barber analysis, the DRA analysis, and the PlanScore analysis rests on the unstated assumptions and constraints built into the simulation sets used by the three sources. In our view, none provides sufficient information for us to evaluate the relative efficacy of one compared with another. As such, we cannot point to any one source for the efficiency gap figures as more reliable than any other.

5. Assessment of other Benninghoff Claims

Leader Benninghoff and his expert, Dr. Barber, make the following claims in criticizing the LRC Final House map:

1. The House population variance range among districts in the LRC Final House map is too great. They claim the Benninghoff Amendment map is better as the variance range is smaller.

CCFD Comment

1. The widely accepted allowable population variance range nationwide for state legislatures is 10% (+/-5%). This range is considered prima facie constitutional based on a wide range of redistricting case law.⁸

Both LRC Final House and Benninghoff plans fall within the 10% variance range.

- Actual Benninghoff range: 7.986%.
- Actual LRC Final House range: 8.646%

2. The districts as drawn in the LRC Final House map disproportionately underpopulate Democratic-leaning districts and overpopulate Republican-leaning districts.

CCFD Comment

1. There are no widely accepted guidelines for partitioning the districts' populations between political parties.
3. Seven Pennsylvania cities plus State College borough are split more times than necessary for the population, in violation of Article II, Section 16. They assert the additional splits create more Democratic-leaning districts.

⁸ See *Connor v. Finch*, 431 U.S. 407 (1977)

CCFD Comment

1. As Chair Nordenberg explained in his February 4, 2022 testimony with the release of the Final House map, the LRC “fashioned districts to create additional opportunities beyond the minimum requirements districts”... “consistent with the Voting Rights Act [and] consistent with, and possibly required by, both the Free and Equal Elections clause and the Racial and Ethnic Equality Clause of the Pennsylvania Constitution.”

Barber acknowledges that without adjustments as the LRC made districts are “thus ‘wasting’ many votes in running up large majorities far beyond 50%+1. This occurs in Pennsylvania in the large and medium-sized cities of the state. These over-whelming margins for the party are what drives ‘wasted votes,’ which, in turn translate to fewer seats than the statewide proportion of the vote would suggest.”⁹

Furthermore, Barber acknowledges “this means that Republicans begin the redistricting process with a natural geographic advantage due to the combination of laws requiring where and how districts are drawn combined with the particular spatial distribution of their voters.”¹⁰

Without the LRC having “fashioned districts” as it did, the LRC Final House map would thereby violate the Pennsylvania Constitution Free and Equal Elections clause.

As argued in the CCFD amicus brief accompanying this report, applying statewide partisan fairness should be the crucial fifth criterion required to supplement the “floor” of the four mandated criteria set out the by PA Constitution. In fact, it is the only added criteria needed to produce judicially manageable maps for all future redistricting cycles.

4. The LRC’s use of minority considerations to justify the urban splits discriminates against minorities.

CCFD Comment

1. It should be noted that Chair Nordenberg openly explained that the LRC used minority voting data as a basis to adjust districts.

⁹ Petition for Review, Benninghoff v 2021 Legislative Reapportionment Committee, February 17, 2022, P.57.

¹⁰ Ibid, pg 17..