No. SC101572

IN THE SUPREME COURT OF MISSOURI

TERRENCE WISE, et al.,

Appellants,

v.

STATE OF MISSOURI, et al.,

Respondents,

and

MISSOURI REPUBLICAN STATE COMMITTEE,

Intervenor-Respondent

Appeal from the Circuit Court of Jackson County, Missouri
The Honorable Adam L. Caine
Case No. 2516-CV29597

APPELLANTS' OPENING BRIEF

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JURISDICTIONAL STATEMENT

Article V, § 3 of the Missouri Constitution provides that this Court has exclusive jurisdiction over "the validity . . . of a statute or provision of the constitution of this state." As Appellants have explained, *see* D114, this case challenges the validity of a statute and thus falls within this Court's exclusive appellate jurisdiction. All counts challenge Missouri's 2025 congressional redistricting map enacted in House Bill 1 ("H.B. 1")[1] under Article III, § 45 of the Missouri Constitution. Count I of Appellants' Petition, which challenged the timing of H.B. 1, was dismissed. Count II raises the claim that congressional districts ("CDs") 4 and 5 violate the constitution because they are not as "compact . . . as may be" as required by Article III, § 45. Count III raises the claim that the text of H.B. 1 renders CDs 4 and 5 not "as nearly equal in population as may be" in violation of Article III, § 45. And Count IV raises the claim that the text of H.B.1 renders CD 5 non-contiguous in violation of Article III, § 45's contiguity requirement. Appellants' claims were preserved because they were presented to and ruled on by the Circuit Court, and Appellants properly raise them on appeal. *Goodman v. Saline Cnty. Comm'n*, 699 S.W.3d 437, 440 (Mo. banc 2024); *Comprehensive Health of Planned Parenthood Great Plains v. State*, 729 S.W.3d 222, 225, 227 (Mo. banc 2025).

[1] H.B. 1, 103rd Gen. Assemb., 2d Extraordinary Sess. (2025).

INTRODUCTION

Article III, § 45 of the Missouri Constitution requires each congressional district to be "as compact . . . as may be." This requirement is "mandatory and objective," only allowing "minimal and practical" deviations from compactness for a limited set of "recognized factors." *Pearson v. Koster*, 367 S.W.3d 36, 48-49 (Mo. banc 2012) ("*Pearson II*"). "Compact" means "closely united territory"—which refers not just to "physical dimensions" of size and shape, but to whether a district keeps proximate, related areas together to facilitate fair representation. *Id.* The requirement exists to guard "against the legislative evil commonly known as the 'gerrymander.'" *State ex rel. Barrett v. Hitchcock*, 146 S.W. 40, 65 (Mo. 1912).

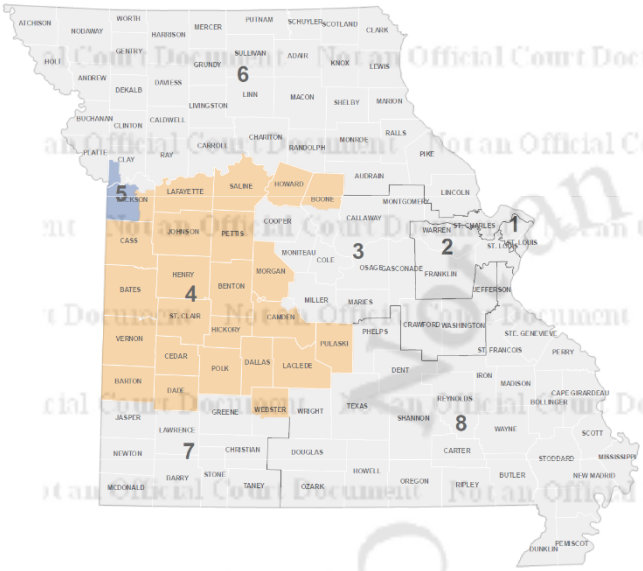
To prove a district is clearly and undoubtedly not as compact as may be "is not burdensome." *Johnson v. State*, 366 S.W.3d 11, 31 (Mo. banc 2012). The "plaintiff must present evidence that greater . . . compactness is feasible" and that "recognized factors" cannot explain the district boundary. *Id.* A plaintiff prevails by "submit[ting] maps or other evidence" showing that recognized factors "were not a basis for the district boundary." *Id.* Alternatively, a plaintiff can show that a departure from compactness in a challenged district "goes beyond a 'minimal and practical deviation.'" *Id.* (citation omitted).

Appellants have more than met this burden with respect to H.B. 1. The General Assembly enacted H.B. 1 during an extraordinary session called to redraw congressional districts mid-decade—the first time it had done so in nearly 150 years—with no intervening census and no constitutional infirmity in the existing map (the "2022 Plan"). The purpose was undisguised: to convert Democratic-leaning CD 5 into a safe Republican seat. To do

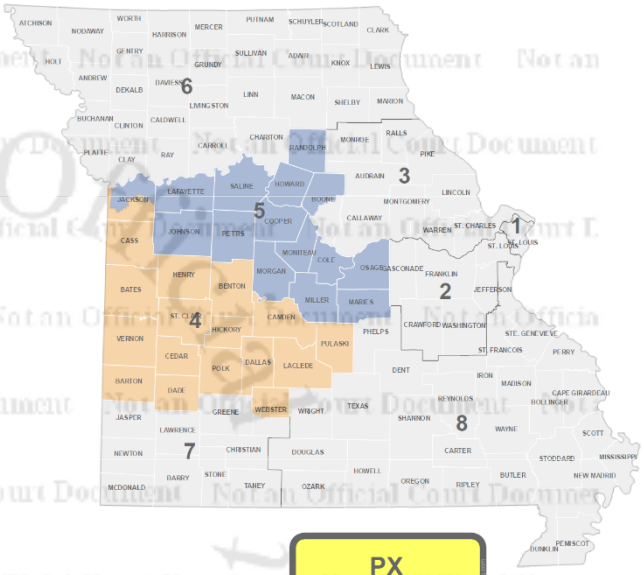
so, the General Assembly made CD 5 and neighboring CD 4 not minimally but dramatically less compact, as shown below.

Summary Compilation: 2022 & 2025 Congressional Map Boundaries (Statewide)

2022



2025



PX 82

One cannot look at these maps and fail to perceive a significant departure from any reasonable understanding of the word compact—especially in CD 5. Under the 2022 Plan, CD 5 was a small square and rectangular district uniting the closely connected Kansas City metro area, which it had done for decades, while CD 4 united rural counties of western Missouri. Under the 2025 Plan, CD 5 instead meanders from Kansas City through rural communities more than halfway across the state, while CD 4 reaches from rural Missouri into urban Kansas City through a narrow corridor, splitting both the metro area and surrounding rural territory into sprawling, irregular districts.

The trial record confirms what the eyes see. Four expert witnesses presented unrebutted analyses—involving several compactness metrics, alternative maps, computer-

generated ensembles of 100,000 maps, historical map comparisons, and demographic and geographic evidence—all showing that CDs 4 and 5 depart from compactness on every conceivable dimension. Lay witness testimony confirmed that the new districts both combine dissimilar territory and fracture closely united areas that were respected in the prior map, frustrating rather than facilitating representation. Respondents' own experts conceded that CDs 4 and 5 could have been drawn more compactly, agreed that Appellants' alternative maps achieved greater compactness while satisfying all recognized factors, and offered no opinion on whether CDs 4 and 5 are closely united.

No recognized factor can explain these departures. No new census required the legislature to redraw the districts to equalize population. The existing districts were already contiguous. Federal law, including the Voting Rights Act, did not compel CD 4 or 5 to be redrawn. And the "permissive" factors of population density, political subdivision boundaries, natural boundaries, and historical boundary lines all favor configurations far more compact than the 2025 Plan's CDs 4 and 5. *Pearson II*, 367 S.W.3d at 50-51. Tens of thousands of computer-generated maps and several hand-drawn alternatives proved that much more compact versions of CDs 4 and 5 were readily available while matching or improving performance on every recognized factor.

Nevertheless, the Circuit Court entered judgment for Respondents. But it did so only after committing a cascade of legal errors that, taken together, effectively relieved it from applying the compactness test *Pearson II* and its progeny require.

First, the court failed to assess compactness on a district-by-district basis, instead relying on plan-wide averages of a handful of shape-based metrics—an approach this Court

has rejected as having "limited relevance." *Pearson II*, 367 S.W.3d at 54 n.16. Had the court assessed each district individually—even on the very same metrics it found probative—it could not have escaped the conclusion that CDs 4 and 5, and especially CD 5, have been made drastically less compact. **(Point I)**

Second, the court confined its analysis to a narrow set of geometric shape scores and inapt cross-decade comparisons, contravening *Pearson II*'s instruction that compactness cannot alone be determined by a district's physical shape and must be assessed under the totality of the evidence. **(Point II)**

Third, the court dismissed the alternative map evidence, including both hand-drawn maps and two ensembles of 100,000 computer-generated configurations—despite this Court's repeated recognition that such evidence is probative and sufficient to meet Appellants' burden. **(Point III)**

Fourth, the court excluded geographic evidence bearing directly on whether the challenged districts comprise "closely united territory" as "irrelevant communities of interest analysis," including testimony regarding population density, urban and rural territory, transit patterns, and other indicators bearing on constituent-representative interaction—among considerations this Court identified as part of the compactness inquiry in *Pearson II*. **(Point IV)**

Fifth, the court failed to determine whether the departures from compactness in CDs 4 and 5 were minimal and practical deviations "resulting from" or "due to" application of recognized factors, as this Court's precedent requires. **(Point V)**

Sixth, the court credited non-recognized factors—including state senate district boundaries and the legislature's balancing of its subjective policy preferences—to justify departures from compactness, despite this Court's holding that the recognized factors are exclusive and that the compactness inquiry is objective, not subjective. The General Assembly's policy preferences cannot override the constitutional mandate for compactness. **(Points VI-VII)**

Seventh, in light of these cumulative legal errors, the court's judgment is against the weight of the evidence and unsupported by substantial evidence. The unrebutted record demonstrating that neither CD 4 nor 5 is "as compact . . . as may be" inexorably leads to a firm belief that the judgment below is wrong. **(Points VIII-IX)**

Finally, the court legally erred in entering judgment for Respondents on Counts III and IV of Appellants' Petition. The General Assembly, in its rush to enact H.B. 1 during an accelerated, non-transparent extraordinary session, drafted the plain text of the bill to assign two identically named, non-contiguous voting tabulation districts (i.e., precincts) to *both* CD 4 and CD 5, without any differentiation or unique identification. This had the undisputed effect of rendering both districts unequally populated and CD 5 non-contiguous in violation of Article III, § 45's additional requirements that "districts shall be composed of *contiguous* territory as compact and as nearly *equal in population* as may be." Mo. Const. art. III, § 45 (emphasis added). **(Point X)**

In light of these numerous errors and the unrebutted record, this Court should reverse and enter judgment in Appellants' favor. *See* Rule 84.14. Enforcement of H.B. 1

should be enjoined, and the 2022 Plan declared the operative congressional map for the 2026 election.

STATEMENT OF FACTS

I. H.B. 2909 ("2022 Plan")

On May 11, 2022, during its regular session, the General Assembly enacted H.B. 2909, establishing the state's congressional map for the decade based on the 2020 decennial census. The Governor signed H.B. 2909 on May 18, 2022. D86 (Joint Stips.) p.6; App 38.

Nothing in the legislative process indicated that the 2022 Plan may have been unlawful or needed to be replaced before the 2030 census. The Governor praised the 2022 Plan as one that "meets our constitutional requirements." PX 50. And legislators throughout the redistricting process described the map as "fair and constitutional" with "common-sense boundaries that everyday Missourians can recognize," drawn in careful compliance with both Missouri and federal law. PX 45-47; *see also* PX 48 at 1:06:20 p.m. (redistricting committee chair describing the 2022 Plan as "constitutional" regarding population equality, compactness, and contiguity). There was no question—nor any dispute below—that the 2022 Plan complied with the Voting Rights Act (VRA). D86 (Joint Stips.) p.10; App 42; Tr. 194:16-195:4. On the House floor, the sole question put to the bill's sponsor before enactment was whether the map's constitutionality had been "independently evaluated," to which the sponsor replied that it had and would withstand any legal challenge. PX 49 at 6:30:39 p.m.

No legal challenge followed. On May 13, 2022, the Secretary of State transmitted the 2022 Plan to local election authorities ("LEAs") for implementation in upcoming

elections. D86 (Joint Stips.) p.6; App 38; PX 36, 43-44. Missourians voted under the map to elect Missouri's congressional delegation in the 2022 and 2024 primary and general elections. D86 (Joint Stips.) p.6; App 38. In both years, Republican candidates prevailed in six of the eight congressional districts, while Democratic candidates prevailed in only two (CDs 1 and 5). D86 (Joint Stips.) p.8; App 40.

II. H.B. 1 ("2025 Plan")

On August 29, 2025, Governor Kehoe issued a Proclamation calling an extraordinary session of the General Assembly to redraw congressional districts mid-decade. PX 30. The last time Missouri conducted mid-decade congressional redistricting was in 1877. *Luther v. Hoskins*, __S.W.3d__, 2026 WL 815813, at *12, n.9 (Wilson, J., dissenting) (Mo. banc 2026). The only legal justification offered for this extraordinary endeavor was that the 2022 Plan "may be vulnerable" to a VRA or Fourteenth Amendment challenge—a rationale the State has disclaimed. PX 30; D86 (Joint Stips.) p.10; App 42; Tr. 194:16-195:4.

The true impetus for the mid-decade redistricting was partisan. On the day of his Proclamation, the Governor posted a video in which he thanked President Trump for "raising the level of conversation on this matter" and unveiled the "Missouri First Map." PX 32 at 1:20. The video concluded with an image of the Missouri First Map with only one district (CD 1) shaded blue and seven districts (rather than six) shaded red, including now CD 5. *Id.* at 2:52. The next day, the Governor reposted a message by President Trump, which showed the map with the same 7-1 partisan shading and celebrated that it "will give the incredible people of Missouri the tremendous opportunity to elect an additional MAGA

Republican." PX 33. The Governor confirmed that "the Missouri First Map delivers just that" in service of "conservative, common-sense values." *Id.*

The General Assembly enacted the Missouri First Map with extraordinary speed. It was introduced as H.B. 1 ("2025 Plan") on September 3, 2025, passed the House on September 9, passed the Senate on September 12, and was signed by the Governor on September 28. D86 (Joint Stips.) p.8-9; App 40-41, 48-175.

III. Procedural History

On September 12, 2025—as soon as H.B. 1 passed in the General Assembly—*Wise* Appellants sued in the Circuit Court of Jackson County seeking declaratory and injunctive relief against the State of Missouri and the Secretary of State ("State Respondents"), and the election boards of Kansas City and Jackson County and their respective officers ("Board Respondents"). D2. *Wise* Appellants are four registered voters, taxpayers, and residents of the prior CD 5 who have been sorted into the newly reconfigured CDs 4, 5, and 6 in the 2025 Plan. D86 (Joint Stips.) p.1-2; App 33-34; PX 1-4. Appellants alleged that Article III, § 45 prohibited the mid-decade redistricting (Count I), and that the 2025 Plan's reconfigured CDs 4 and 5 violate Article III, § 45's compactness requirement (Count II), equal population requirement (Count III), and contiguity requirement (Count IV). D2 p.39-44.

The same day, Appellants moved for a preliminary injunction on Count I, which raised a purely legal question, and sought to expedite resolution by consolidating a trial on the merits of that claim with a preliminary injunction hearing. D3, 5. State Respondents responded by moving to dismiss or transfer venue to Cole County and refusing to respond

to Appellants' preliminary injunction motion within the time required by the local rules. D7-8, 10-11. On September 28, 2025, the *Healey* Appellants filed a separate petition raising parallel claims under Counts I and II and likewise moved for a preliminary injunction on Count I. *Healey* D2. The Missouri Republican State Committee ("Intervenor-Respondent") moved to intervene as a defendant in both cases in November 2025. D20.

On December 10, 2025, the trial court denied State Respondents' motions to dismiss or transfer venue in both cases, stayed Count I pending resolution of the parallel mid-decade redistricting claim in *Luther v. Hoskins*, Case No. SC101412, and granted intervention. D34-35. The remaining counts in both cases were set for a joint four-day bench trial on January 26, 2026, a date reserved in the *Wise* case as of December 1, 2025. *Id.* State Respondents subsequently moved for a three-week continuance of trial, which the trial court denied. D40, 43. The court instead entered a scheduling order, jointly proposed by the parties, setting deadlines for discovery, pretrial filings, and proposed findings of fact and conclusions of law, and the parties proceeded accordingly toward the January 26 trial date. D44. Then, on January 7, 2026—twenty-eight days after intervention was granted and less than three weeks before the scheduled trial—Intervenor-Respondent applied for a change of judge under Rule 51.05(b), forcing reassignment and a three-week delay. D46-47, 50-51. The bench trial was rescheduled to February 17, 2026. D53.

Before opening statements on February 17, counsel for *Healey* Appellants, on behalf of both sets of plaintiffs, and State Respondents requested findings of fact and conclusions of law. Tr. 12:16-24. Appellants' counsel "particularly" requested findings "on the disputed issues of fact," *id.* at 12:21-24, which Appellants had identified in their respective pre-trial

briefs and joint stipulations filed shortly before trial, *see* D73 p.5-27; D86 (Joint Stips.); App 33-47; *Healey* D36. Board Respondents appeared through counsel but did not otherwise participate in the trial. Tr. 12:1-11.

At trial, Appellants jointly presented the testimony of four qualified expert witnesses and several lay witnesses, including Kansas City Mayor Quinton Lucas and Appellant Terrence Wise. Tr. 3-4. Respondents presented two expert witnesses and one party witness. *Id.* at 4-5. By stipulation of the parties, all expert reports and rebuttal reports were admitted into evidence. D86 (Joint Stips.) p.12-13; App 44-45. The parties also jointly submitted deposition designations for the four directors of the Board Respondents as part of the trial record. D90-93. By agreement of the parties and order of the Circuit Court, the evidence presented at trial constituted a single, joint record applicable to both matters. On March 2, 2026, the parties, consistent with the Circuit Court's scheduling order, submitted proposed findings of fact and conclusions of law. D97-98, 107.

IV. Trial Record

A. Expert Witnesses

Wise and *Healey* Appellants' expert witnesses included Drs. Jonathan Cervas, Ari Stern, Jonathan Rodden, and John Cromartie.

Dr. Jonathan Cervas is a political scientist at Carnegie Mellon University with extensive experience as an expert witness, special master, and court consultant in redistricting matters. Tr. 56:1-57:23; PX 23 at 3. He analyzed whether the 2025 CDs 4 and 5 are compact using a holistic comparative approach, evaluating those districts against the 2022 Plan and eight alternative maps, and considering mathematical compactness scores,

closely united territory, and other recognized factors. Tr. 59:4-60:23, 65:1-9. The Circuit Court did not question Dr. Cervas's credibility.

Dr. Ari Stern is a tenured mathematician at Washington University in St. Louis, whose research focuses on geometry and its applications to computing, including redistricting. PX 21 ¶¶1-5. He conducted an "ensemble analysis," to determine whether the 2025 CDs 4 and 5 can be drawn more compactly while controlling for all other recognized redistricting factors. *Id.* ¶¶8-11. To do so, he programmed an algorithm to generate two sets of 100,000 alternative maps by randomly redrawing the boundaries between CDs 4 and 5 while leaving the unchallenged districts unchanged (thus preserving all of the legislators' policy choices in those districts). *Id.* at 2, 7-11; Tr. 156:2-158:11. The algorithm drew contiguous and nearly equipopulous districts while avoiding county splits and remaining blind to partisan or racial data, allowing comparison of the enacted districts' compactness against the full range of neutral alternatives. *Id.* at 158:12-160:5, 193:20-194:3. Dr. Stern's analysis showed that CDs 4 and 5 can be made significantly more compact—across virtually all compactness metrics, including those not limited to physical shape or size—while matching or improving adherence to all recognized factors. Tr. 189:17-206:8. The Circuit Court did not question Dr. Stern's credibility.

Dr. Jonathan Rodden is a tenured political scientist at Stanford University and founder of the Stanford Spatial Social Science Lab. PX 27 at 2. He analyzed compactness, including closely united territory, using mathematical measures, historical boundaries, demographic data, political subdivision boundaries, and other geospatial data. *See* PX 27, 28. The Circuit Court, based on its legal error, did not find Dr. Rodden's compactness

opinion persuasive but found his historical maps helpful and did not question his credibility. D108 p.14; App 14.

Dr. John Cromartie is a geographer specializing in population geography and rural demography with 35 years of service at the USDA's Economic Research Service (including five years in Kansas City), where he developed rural-urban classifications, including the Rural-Urban Commuting Area (RUCA) codes used to target federal programs. Tr. 419:22-423:7; PX 25 at 5-7. He analyzed whether the Kansas City area constitutes closely united territory and whether the 2025 CDs 4 and 5 do more or less than their 2022 predecessors to keep together alike territory, using comparative spatial methods consistent with his work at USDA-ERS. Tr. 419:3-17, 427:24-429:22; PX 25 at 4, 8. The Circuit Court, based on its legal error, gave little weight to Dr. Cromartie's conclusions but did not question his credibility. D108 p.12; App 12.

State Respondents' expert Dr. Sean Trende is a Senior Elections Analyst for Real Clear Politics. DX 101 at 2-3. He was retained only to respond to Appellants' experts and offered no opinion on whether the challenged districts are compact or closely united. Tr. 625:18-629:5, 653:22-654:14, 672:16-19, 675:23-676:1. He did not dispute any of Appellants' experts' data or calculations, agreed that Drs. Cervas and Stern provided more compact alternative maps, reaffirmed the methodology for generating computer-simulated maps used by Dr. Stern, and had no response to the vast majority of Appellants' experts' analyses. DX 101; Tr. 654:15-658:8, 661:3-663:15, 664:13-666:4.

Intervenor-Respondent's expert Dr. M.V. Hood III is a political scientist at the University of Georgia. Tr. 730:6-11. His analysis was limited to shape-based compactness

scores comparing the 2025, 2022, and 2012 Plans and summary statistics on equal population, contiguity, core retention, and subdivision splits. IX 215; Tr. 755:14-23. He offered no opinions on Appellants' experts' analyses and did not consider closely united territory—though he conceded its relevance under Missouri law. Tr. 755:14-23, 773:21-774:12. Nor did Dr. Hood evaluate whether any recognized factors affected the compactness of individual districts in any of the maps he compared. *Id.* at 757:5-12, 765:15-22, 773:24-775:8, 776:5-13, 779:12-20, 780:17-24. He conceded that CDs 4 and 5 are less compact than in the 2022 Plan and that it is "certainly possible" to draw a more compact plan. *Id.* at 781:11-15; *see also id.* at 757:13-764:19.

B. CDs 4 and 5 Substantially Depart from Principles of Compactness.

The unrebutted trial record demonstrates that CDs 4 and 5—and especially CD 5—substantially depart from compactness based on traditional compactness scores, comparisons to hand-drawn alternative maps and computer-generated ensembles, and other circumstances bearing on whether the districts comprise closely united territory, including historical practice, population density patterns, and areas of shared interests.

1. CDs 4 and 5 are less compact than in the 2022 Plan and alternative maps on traditional measures of district shape.

Both sides' experts considered several traditional compactness metrics that capture aspects of a district's shape: "Reock" measures elongation by how closely a district fits its smallest bounding circle; "Polsby-Popper" evaluates boundary irregularity; "Convex Hull" measures how closely a district fits its smallest bounding polygon; and "IKIWISI" ("I Know It When I See It") predicts how judges and public officials would evaluate a district's

compactness based on geometric features. Tr. 68:3-8, 68:16-69:2, 70:2-10, 90:18-91:4, 91:10-92:16 (Cervas); PX 21 at 23-24; PX 23 at 2, 7; PX 24 at 5, 8, 10. On all four of these measures, a lower score means a district is less compact, while a higher score means a district is more compact. PX 23 at 9; PX 24 at 7-10. Dr. Hood's preferred "Alternative-Schwartzberg" metric, as all experts agreed, is essentially duplicative of Polsby-Popper. Tr. 87:16-88:1 (Cervas), 668:12-22 (Trende), 744:4-14 (Hood).

No metric has a mathematical cutoff for what makes a district compact, but all experts agreed that these measures are useful when evaluated against an appropriate comparator drawn under the same population data and legal requirements. Tr. 90:6-17 (Cervas); PX 24 at 3; PX 22 at 6-7; IX 215 at 4; Tr. 630:14-632:11 (Trende). In evaluating the compactness of CDs 4 and 5 in the 2025 Plan, all experts agreed that the 2022 Plan is a valid comparator. *Id*. Dr. Hood testified that the 2022 Plan is the "first place" he would start, because it is the most recent map, and was drawn using the same 2020 census population data as the 2025 Plan. Tr. 756:6-757:12.

Dr. Cervas's eight alternative maps also serve as comparators for the 2025 CDs 4 and 5. Dr. Cervas drew these eight maps by freezing the six unchallenged districts in the 2025 Plan so that, in his first four maps, only CDs 4 and 5 were altered, leaving the remaining districts identical to the 2025 Plan. Tr. 66:18-67:15. This approach isolates whether CDs 4 and 5 could be made more compact while holding constant the General Assembly's choices in the other six districts. *Id.* Dr. Cervas did not seek to maximize compactness or achieve any target score; he drew the districts as he would if appointed to prepare a court-drawn map, applying the traditional redistricting factors recognized under

Missouri law and using no partisan data. Tr. 66:1-66:17. No expert disputed that his alternative maps are more compact while complying with equal population and contiguity requirements and performing as well or better on all recognized factors. PX 24 at 2; IX 215 at 17; Tr. 783:3-18 (Hood); DX 101 at 27.

The 2025 Plan's configuration of CD 5 is less compact than the 2022 Plan's on ***every measure considered***. All experts agreed that CD 5's Reock score declined, from 0.42 in the 2022 Plan to 0.29 in 2025. Tr. 757:13-759:4 (Hood); Tr. 68:16-69:21; PX 23 at 10; PX 27 at 32. Its Polsby-Popper dropped from 0.40 to 0.20. Tr. 70:15-19; PX 23 at 10; PX 27 at 32. Dr. Hood testified that with its Polsby-Popper score "reduced by half," CD 5 is now the least compact district in the entire 2025 Plan. Tr. 762:12-25, 763:4-14, 776:8-21. CD 5's Convex Hull score dropped from 0.84 to 0.70, and its IKIWISI score dropped from 69 to 34 (out of 100). PX 24 at 8-10. Dr. Hood testified that it is possible to draw a more compact version of CD 5 and that the 2022 Plan's CD 5 is one such example. Tr. 764:12-19.

The alternative maps confirm the same pattern—CD 5 in the 2025 Plan scores lower than all eight of Dr. Cervas's alternative maps on Reock, Polsby-Popper, Convex Hull, *and* IKIWISI. Tr. 69:3-21, 70:16-19, 91:2-92:19; PX 23 at 11; PX 24 at 8-10. Indeed, CD 5's IKIWISI score in the 2025 Map is at least 50% and up to 66% less compact than any of Dr. Cervas's alternative configurations of CD 5. PX 24 at 9-10.

None of these figures are disputed.

CD 4 follows a similar, if less decisive, pattern. There is no dispute that CD 4's Reock score declined, from 0.51 in the 2022 Plan to 0.39, in 2025. Tr. 68:16-69:21; PX 23

at 10; PX 27 at 32; Tr. 757:13-759:4 (Hood). Its Polsby-Popper score increased slightly from 0.30 to 0.33, but Dr. Hood testified that increase was "small" and still left it below the 2025 Plan average—and it came at the expense of CD 5's steep decline. Tr. 70:15-19; PX 23 at 10; PX 27 at 32; Tr. 759:5-11, 763:4-7 (Hood). CD 4's IKIWISI score also declined slightly compared to the 2022 Plan, while the average IKIWISI score for CDs 4 and 5 together dropped from 64 to 46, and the average Convex Hull score for them dropped from 0.81 to 0.76. PX 24 at 8-10.

CD 4 has a lower Reock score than all eight of Dr. Cervas's alternative maps, and a lower Polsby-Popper score in six of eight, with a comparable score in the remaining two. PX 23 at 11. Its IKIWISI score in the 2025 Plan is lower—often substantially—than in all eight alternatives. PX 24 at 9-10. And CD 4 has a lower Convex Hull score in six of eight alternatives, with an equal or comparable score in the remaining two. PX 24 at 8.

Neither Dr. Trende nor Dr. Hood disputed that CDs 4 and 5 in the 2025 Plan are less compact than other maps that can be drawn—with Dr. Trende referring to this fact as "*it is what it is*." Tr. 658:2-8 (Trende) (emphasis added); DX 101 at 27; IX 215 at 17.

Rather than dispute these figures, Drs. Trende and Hood raised other irrelevant or unreliable comparisons. Both relied on average compactness scores for entire statewide maps, even though both conceded that statewide averages can mask the existence of non-compact individual districts. Tr. 633:6-9 (Trende); Tr. 757:20-25, 758:13-25, 762:7-11 (Hood) (testifying that even if one considered map-wide averages, on some scores the 2022 Map was more compact than 2025).

Drs. Trende and Hood also compared the challenged districts' scores to a handful of other congressional and non-congressional districts drawn across decades. DX 101 at 17-19; IX 215 at 5-9. Districts from past decades were drawn under different circumstances; for instance, Missouri previously had as many as ten congressional districts, and the state's population has shifted over each decennial census. Tr. 669:1-670:7 (Trende). The 2012 and 2025 Plans rely on different population data, and the comparison does not account for factors that may have influenced the compactness of individual districts in each plan, including any current factors that may impact CDs 4 and 5. Tr. 756:6-757:12 (Hood); Tr. 88:14-89:24 (Cervas); PX 24 at 3; PX 22 at 6-7; PX 28 at 4-5. Dr. Trende also compared the compactness of CDs 4 and 5 to that of Missouri's state legislative districts. Tr. 670:1-671:22. Missouri has 34 Senate and 163 House districts, as compared to eight congressional districts, which are drawn pursuant to different constitutional provisions with different legal requirements. *Id.* The large number of state legislative districts means that those districts will be much smaller in size than congressional districts. *Id.*

Despite these differences, Dr. Trende admitted he generally did not consider whether these comparator districts had lower compactness scores for reasons inapplicable to CDs 4 and 5, such as natural boundary constraints or VRA compliance; for the one comparator he did consider, House District 76, he acknowledged it was a Section 2 VRA district—which is not true of the challenged districts. Tr. 667:22-668:11, 672:8-19, 673:6-25, 194:16-195:4. Dr. Hood similarly admitted he did not consider factors that might affect a district's compactness in one area versus another or at one point in time versus another, including population differences between maps. Tr. 756:6-757:12. Dr. Hood also conceded that

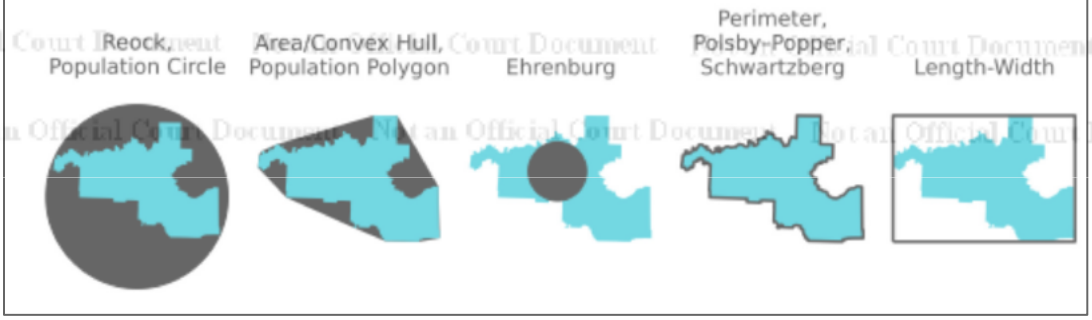
although he compared the 2012 districts from *Pearson II* to the 2025 Map, that comparison alone does not determine whether any 2025 district is compact. Tr. 773:3-11.

2. CDs 4 and 5 are less compact than computer-simulated maps on every compactness metric.

Dr. Stern assessed whether CDs 4 and 5 depart from compactness by comparing them to two sets of 100,000 random alternatives drawn by an algorithm to match or exceed compliance with recognized factors while keeping unchallenged districts constant. Tr. 156:2-159:5, 169:4-9. He evaluated the compactness of CDs 4 and 5 against this ensemble using eleven metrics that account not only for district shape but also district size, population distribution, and adherence to natural and political boundaries. PX 21 ¶¶17, 47.

Nine of those metrics are standard shape-based measures (shown below)—two of which, Population Circle and Population Polygon, also account for population distribution. Tr. 181:23-183:7; PX 21 ¶¶17, 48, 26.

Figure 10: A visual guide to the 9 standard district-by-district compactness metrics, illustrated with CD5 of the Missouri FIRST Map shown in blue. *From left to right*: Reock compares the area of the district to that of the smallest circle enclosing it; Population Circle compares these shapes' populations rather than areas. Area/Convex Hull compares the area of the district to that of its "convex hull," which contains all straight-line paths between points in the district; Population Polygon compares these shapes' populations rather than areas. Ehrenburg compares the area of the district to that of the largest circle contained inside it. Polsby–Popper compares the area of the district to that of the circle with the same perimeter; Schwartzberg compares the perimeter of the district to that of the circle with the same area. Finally, Length-Width simply measures the difference between the length and width of a rectangle enclosing the district.

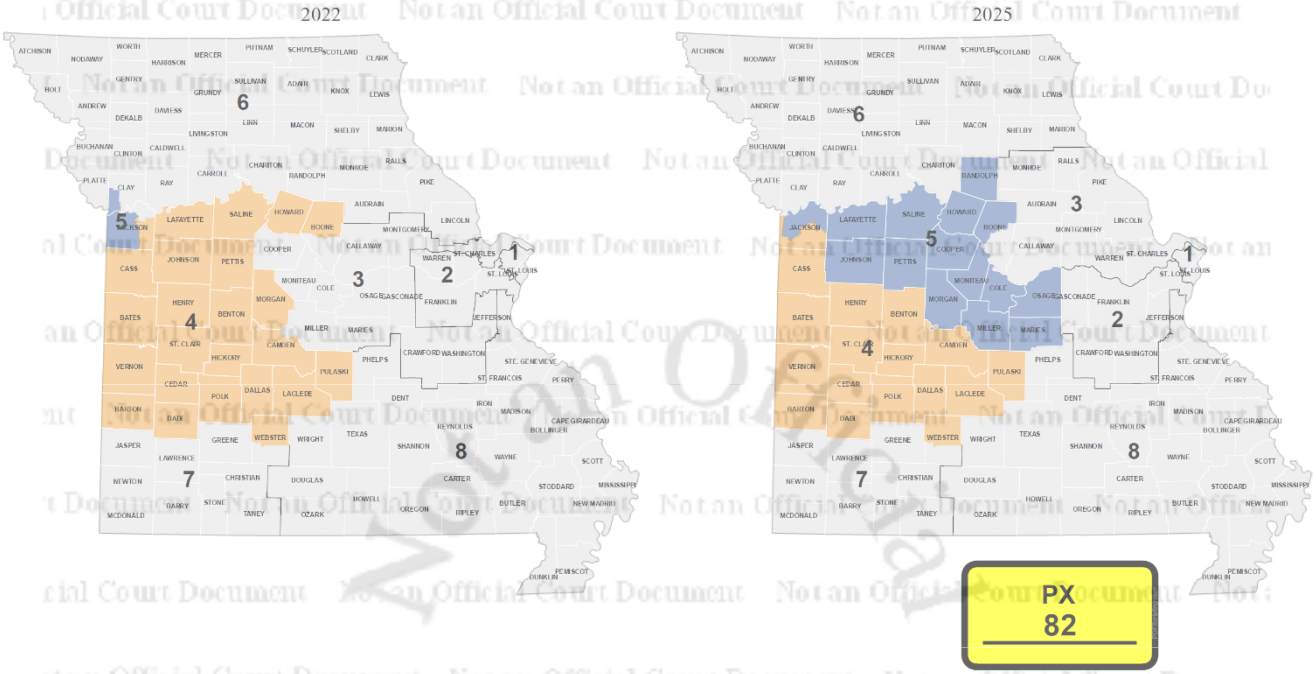


The remaining two metrics assess boundary length, a critical indicator of the close unity of a district because long boundaries either correspond to a sprawling district spanning a large geographic area or snaking lines that twist as they carve up a small area. PX 21 ¶45; Tr. 175:15-178:20 (Stern). Dr. Stern measured boundary length in both miles and "cut edges." *Id.* The cut edges metric uses census-block boundaries to measure the length of a district line. *Id.*; PX 21 ¶46. Because census blocks conform to irregular natural features like rivers and political boundaries like city lines, cut edges do not penalize a district for following those features. *Id.* But because densely populated areas contain more census blocks, cut edges do increase more quickly when a boundary carves through a populated area than when it crosses sparsely populated land. *Id.* Cut edges thus capture when a boundary splits apart a proximate, densely populated community and when a lengthy boundary passes through sparsely populated areas. *Id.*

Across all eleven compactness metrics, CDs 4 and 5—and most especially CD 5—are consistently and significantly less compact than tens of thousands of alternative maps generated by Dr. Stern's algorithm. Tr. 187:18-188:1; PX 21 ¶¶50-58. On all eleven metrics, the 2025 Plan has a worse average CD 4-CD 5 compactness score than at least 80% of the ensemble and, on several, worse than 90% or even 99%. PX 21 ¶¶17, 47-58. The fact that randomly drawn maps are overwhelmingly more compact than CD 4 and 5—in the absence of any express instruction to maximize compactness—indicates more compact options were readily available and not hard to draw. *Id.*; Tr. 159:17-161:18 (Stern); Tr. 657:5-13 (Trende).

Furthermore, on both measures of boundary length (miles and cut edges), the CD 4-CD 5 boundary under the 2025 Plan is more than *twice* as long as the median in the ensemble, and less compact than over *97.5%* of ensemble maps—an extreme outlier. Tr. 180:8-181:3; PX 21 ¶¶47, 23-24. This result reflects the 2025 Map's operation in both directions: it carves up the population-rich Kansas City metropolitan area, driving up the cut-edges score, and then compensates for the lost urban population by stretching CD 5 into distant rural counties, adding many miles of perimeter. *Id.* The unusual length of CD 5's overall perimeter confirms this: CD 5 in the 2025 Plan has a total perimeter of 717 miles, nearly *three times* the length of the typical Jackson County-based district in Dr. Stern's simulated maps. PX 21 ¶¶56, 29. These results—as well as CD 5's extreme departure from compactness on these metrics compared to 2022—are readily apparent from a before-and-after view of the district. PX 82 (below in blue); App 177.

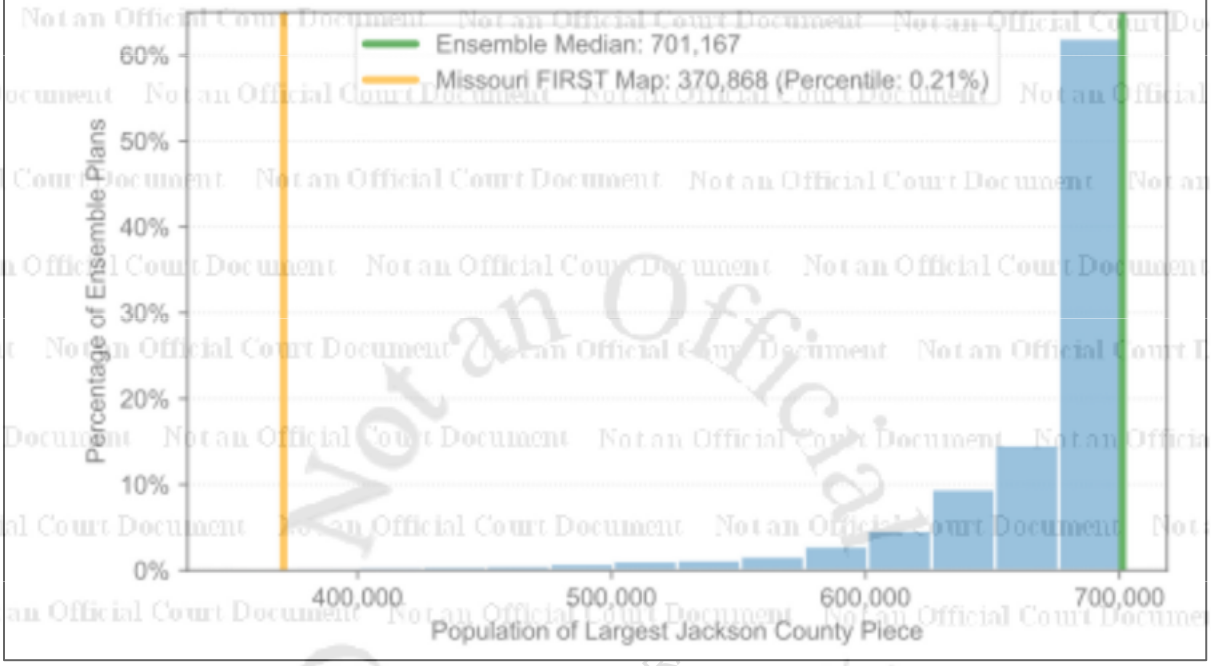
Summary Compilation: 2022 & 2025 Congressional Map Boundaries (Statewide)



In addition to compactness scores, Dr. Stern's analysis also undisputedly showed that the 2025 Plan pairs Jackson County with an unusually large number of distant counties. In the majority of ensemble maps, there is one district consisting of at most three counties—Jackson County and one or two neighboring—but 2025 CD 5 now comprises *15* counties in total, three times the median ensemble map. PX 22 ¶¶18, 27; Tr. 174:7-175:4.

Dr. Stern's ensemble also confirmed that the 2025 Plan's splitting of Jackson County and Kansas City is highly unusual. Jackson County is less intact under the 2025 Plan than 99.79% of the ensemble maps, and Kansas City is less intact than 99.59%—even though the algorithm contains no preference for keeping Kansas City whole. PX 21 ¶¶18, 39, 35, 15, fig. 2 (see below).

Figure 2: Histogram showing the largest portion of Jackson County population left intact between CD4 and CD5. The Missouri FIRST Map (yellow line) is an extreme outlier compared to the ensemble maps (blue bars, median shown as green line).



Dr. Stern's two ensembles allowed up to either 1% or 0.1% population deviation. Tr. 196:11-197:1; PX 21 ¶72. Dr. Stern's ensemble also naturally produced a number of perfectly equally populated maps. PX 21 at 52-54 & app'x. 4; Tr. 201:9-202:9. Reducing the population deviation from 1% to 0.1% population deviation in the ensemble maps did not affect the conclusions drawn, indicating that a slight population variance in the algorithm is immaterial. Tr. 158:12-159:16, 196:11-199:5 (Stern); PX 21 ¶72; Tr. 662:19-663:15 (Trende) (testifying that the level of population variance used by Dr. Stern reflects standard practice, including Dr. Trende's own practice, and does not affect conclusions). Furthermore, Dr. Cervas showed that Dr. Stern's maps can be easily adjusted by hand without materially affecting their compactness. Tr. 85:12-86:4 (Cervas); Tr. 197:14-198:10 (Stern). Despite initially claiming the ReCom algorithm Dr. Stern uses cannot draw non-

compact maps, Dr. Trende conceded that the ReCom algorithm merely has a soft *tendency* not to draw wildly non-compact maps—the kind of "absurd" maps he acknowledged he had never seen enacted before. Tr. 659:8-16, 659:21-666:2.

3. CDs 4 and 5 break from longstanding historical practice in the Kansas City area and disregard population density patterns.

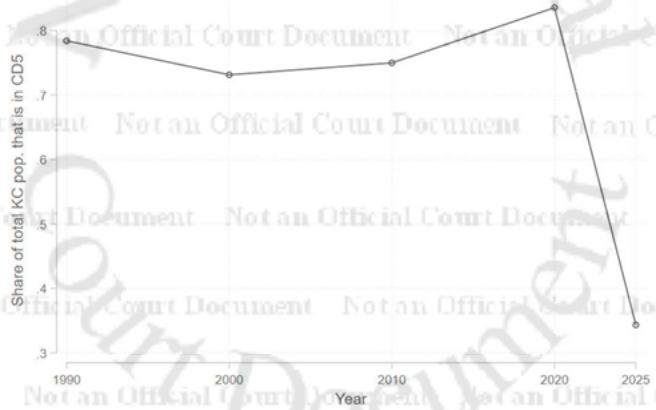
Throughout Missouri's history of congressional redistricting, the General Assembly has treated Kansas City—particularly the portion in Jackson County—as closely united territory. As historical congressional maps going back to 1900 demonstrate, the central business district of Kansas City has always been contained in a single congressional district. PX 27 at 6-10; PX 28 at 16 n.3; Tr. 311:13-312:11 (Rodden). Since it became possible after the 1980 census to place the entire Jackson County portion of Kansas City within a single district while maintaining equal population, the General Assembly has done so in CD 5. PX 27 at 9, 11; Tr. 314:11-315: 17 (Rodden).

The 2025 Plan radically departs from this history by dividing Kansas City's central business district into three districts: CDs 4, 5, and 6. Tr. 318:3-23. CD 4 carves part of the central business district "from the rest of the city via a narrow corridor (less than two miles wide) bounded by the Kansas boundary on the west and Troost Avenue on the east, connecting it with a vast rural area that stretches over 200 miles away to Fort Leonard Wood, which is almost a four-hour drive." PX 27 at 10. CD 5 places the eastern portions

of Kansas City and its central business district "in a sprawling rural-oriented district that reaches well over 200 miles across the state, almost reaching Rolla." *Id.* at 11.[2]

Both Drs. Stern and Rodden also analyzed the historical allocation of Kansas City's and Jackson County's populations among congressional districts since the 1990 redistricting cycle. *Id.* at 12-13; PX 22 ¶¶10-11. In each of the four congressional maps from 1992 to 2022, approximately 80% of Kansas City's total population was placed in CD 5; in the 2025 Plan, that number fell to 34%. PX 27 at 12 (see below).

Figure 4: Share of Kansas City Population Included in Congressional District 5



Similarly, over the same period, 100% of Kansas City's population within Jackson County was placed in CD 5; in the 2025 Plan, that figure fell to 55%. *Id.* (see below).

[2] CD 6 crosses the Missouri River to carve off the northeast corner of the central business district and adjacent Kansas City communities in Jackson County and connect them with agricultural counties in central Missouri and areas along both the Illinois and Nebraska borders. PX 27 at 12, 30.

Figure 5: Share of Jackson County Kansas City Population Included in Congressional District 5

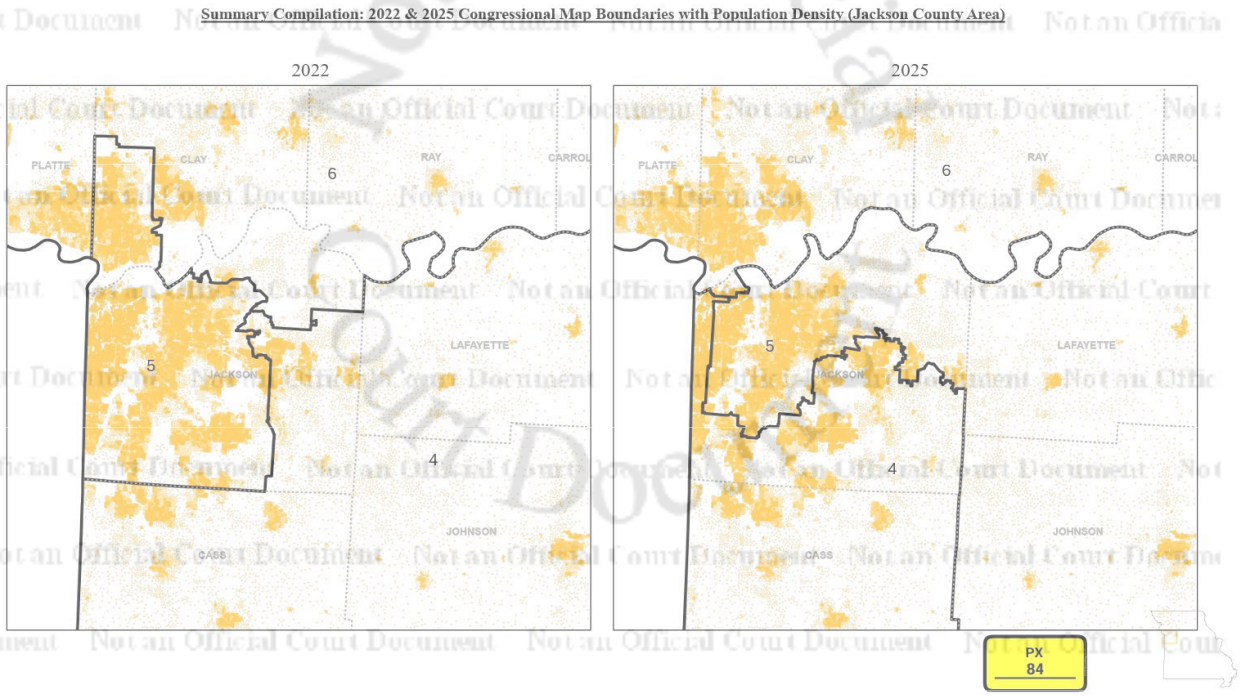
Dr. Stern's calculations confirmed these historical patterns and the 2025 Plan's stark departure from them. PX 22 ¶¶10-11. It was uncontested that prior to 2025, only a negligible number of Kansas City residents were split off from CD 5 and assigned to CD 4: 42 people in 1992, zero in 2002, 197 in 2012, and 104 in 2022. *Id.* In the 2025 Plan, that number increased by more than a thousandfold, with 126,008 Kansas City residents assigned to CD 4. *Id.* [3]

The 2025 Plan's reconfiguration of CDs 4 and 5 also disregards population density patterns in western Missouri that were respected in prior plans. PX 27 at 17-22; Tr. 80:16-81:3 (Cervas); *id.* at 321:17-25 (Rodden). The 2022 Plan kept territory with comparable population density together in each district. PX 23 at 16. CD 4 was configured as a predominantly rural district centered on less-densely populated western Missouri counties, while CD 5 was centered on the Kansas City metropolitan area and reflected the area's

[3] Neither of Respondents' experts disputed any of the historical analysis of congressional redistricting of the Kansas City area from the 1800s to now. Tr. 627:4-20 (Trende), 789:17-20 (Hood).

dense urban population. Tr. 80:16-24; PX 27 at 17-22, 29. The 2025 Plan, by contrast, dramatically disrupts that pattern, slicing through the most densely populated portions of Kansas City and combining those segments with sparsely populated rural areas. Tr. 81:16-82:3 (Cervas); PX 23 at 10.

The relative treatment of population density patterns is especially apparent in and around Jackson County. PX 84 (see below). The eastern part of Jackson County is much less densely populated than the western part of Jackson County. Tr. 63:12-19 (Cervas).



The 2022 Plan accordingly divides Jackson County vertically, pairing the less densely populated eastern territory of the county with similar areas in CD 4 (and CD 6), while uniting densely populated territory of Jackson County with similarly dense areas of Clay County in CD 5. *Id.*; PX 84. Instead, in the 2025 Plan, Jackson County is divided in a manner that results in urban, suburban, and rural territory of the county being split into

multiple districts. Tr. 62:14-63:2 (Cervas); PX 83. The 2025 Plan thus "transform[ed] District 4 by reaching into the urban core and extracting dense urban neighborhoods from Kansas City," such that "the rural character of District 4 has been lost" and its metropolitan share now exceeds its rural portion. PX 27 at 19-20; Tr. 448:2-450:6 (Cromartie); PX 25 at 4, 16-21 (classifying western Missouri's rural and urban areas using widely-applied federal urban/rural categories and confirming this pattern for CDs 4 and 5); Tr. 449:17-22, 487:16-489:12 (explaining that unlike the Kansas City urban-core focused CD 5 in the 2022 Plan, 2025 CD 5 now has residents from every category across the urban-rural continuum, including parts of Jefferson City and Columbia, with which Kansas City shares little in common).

Neither of Respondents' experts disputed Appellants' experts' analyses of the population density of CDs 4 and 5. *Id.* at 628:10-13, 629:6-14 (Trende); *id.* at 780:21-24 (Hood).

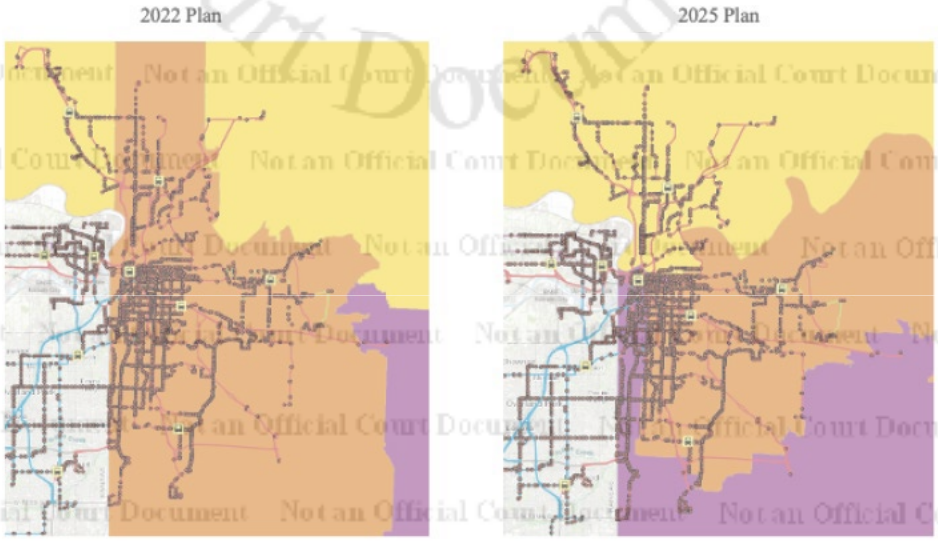
4. CDs 4 and 5 divide "closely united territory" by fragmenting areas of shared interests and concerns.

Appellants offered testimony from both expert and lay witnesses that the Kansas City area, including the area previously encompassed in CD 5 under the 2022 Plan, is a closely united territory in terms of its population's shared interests and concerns. *See, e.g.*, Tr. 506:15-507:2, 514:7-25, 517:19-518:7, 519:17-521:1 (Lucas). The rural communities of western Missouri previously encompassed in CD 4 under the 2022 Plan are also closely united in their interests and concerns, which are distinct from those of Kansas City-area

residents. *Id.* at 427:24-428:11, 448:5-24 (Cromartie). The 2025 Plan's CDs 4 and 5 fragment both of these closely united territories.[4]

For instance, under the 2022 Plan, the Missouri-side transit lines and routes of the Kansas City Transportation Authority (KCATA) were largely contained within CD 5. PX 27 at 20-21; Tr. 328:3-11 (Rodden). Under the 2025 Plan, the KCATA network is divided across CDs 4, 5, and 6. PX 27 at 21. Under the 2025 Plan, "[t]here will be no single member of Congress with an encompassing interest in Kansas City public transit," and any voters and interest groups who wish to lobby members of Congress about transit policies and funding now face the difficult task of seeking out and persuading multiple representatives of relatively exurban and rural-oriented districts with very low levels of public transit use. *Id.* at 20-21; Tr. 328:19-329:6 (Rodden); PX 27 at 21 (see below).

Figure 11: Kansas City Area Transportation Authority Routes and District Boundaries



[4] Intervenor-Respondent's expert agreed that one factor for determining if an area constitutes closely united territory is whether communities that share similarities are included in a district together. Tr. 774:3-6 (Hood).

The 2025 Plan's CDs 4 and 5 fragment a territory in the Kansas City area that is also closely united in terms of its housing patterns and needs, *see* Tr. 329:9-330:16 (Rodden); PX 27 at 21-22; its predominant occupations and industrial sectors, *see* PX 27 at 22-23; Tr. 330:18-332:1 (Rodden); and, its shared interest in federal funding for local projects and its long-established and deeply rooted relationship with its congressional representative. Tr. 495:13-497:24, 499:23-502:17, 511:12-512:22 (Lucas); Tr. 40:12-42:2 (Wise); Tr. 404:18-405:12, 405:23-406:5 (Wright).

The rural territory encompassed by the 2022 Plan's CD 4 in western Missouri also exhibits needs and interests distinct from urban areas, closely uniting it. Tr. 438:8-440:13 (Cromartie); PX 25 at 5-6, 12-13 (describing disparate population trends facing urban and rural areas in Missouri from 1950-2020). As Dr. Cromartie's unrebutted analysis indicated, rural areas in Missouri "draw on a distinct store of assets not typically found in urban areas, including abundant land, natural resources, scenic amenities, recreational opportunities, less congestion and a slower pace of life." PX 25 at 12. Rural areas are also united in contending with out-migration of young adults and population aging, as well as workforce capacity concerns, broadband access and internet coverage, and limited healthcare access. *Id.* The rural areas in 2022 CD 4 that were identified by Dr. Cromartie as having common interests are divided in the 2025 CD 4; instead, CD 4's remaining rural territory is joined with significant urban territory, "combin[ing] communities with deep disparities between them." *Id.* at 19.

C. Recognized Factors Did Not Result in the Departures from Compactness in CDs 4 and 5.

None of the recognized or permissible factors recognized in *Pearson II*—compliance with federal law, population equality, contiguity, population density, respect for boundaries of political subdivisions, natural boundary lines, and historical boundary lines—can explain the deviation from compactness in CDs 4 and 5. 367 S.W.3d at 49-50. Both Dr. Stern's and Dr. Cervas's alternative maps showed CDs 4 and 5 could be made much more compact while matching or outperforming the 2025 Plan on each of the recognized redistricting factors, along with other considerations raised by Respondents. PX 21-24; DX 101; IX 215; Tr. 774:13-781:15 (Hood) (offering no opinion on the impact of recognized factors on the compactness of any district in 2025 Plan or alternative maps); Tr. 664:13-16 (Trende) (testifying he was not aware of any consideration unaccounted for by Dr. Stern's ensembles).

The 2025 Plan's departures from compactness in CDs 4 and 5 were not the result of the **equal population** and **contiguity** requirements in the Missouri and U.S. Constitutions. The 2022 Plan's districts were already precisely equally populated and contiguous, and no new decennial Census required redrawing the districts in 2025. Tr. 72:19-73:15 (Cervas); PX 23 at 12-13; PX 21 at 51-53; Tr. 773:12-22, 774:13-775:8 (Hood). Departures from compactness in CDs 4 and 5 were also not the result of compliance with **federal law** including the VRA or the Equal Protection Clause. Tr. 194:16-195:4; Tr. 665:7-9 (Trende); D86 (Joint Stips.) p.10; App 42; PX 27 at 34; PX 21 ¶¶64-67.

The 2025 Plan's departures from compactness in CDs 4 and 5 were not the result of any regard for **population density**. *See supra* Facts, Sec. IV.B.4; PX 27 at 34. The 2022 Plan already accounted for population density in the region by uniting the highly dense Kansas City metropolitan area in CD 5 and the less dense rural areas in CD 4. Tr. 80:2-82:3 (Cervas). In comparison, the 2025 Plan's configuration of CDs 4 and 5 disregards population density patterns by pairing high-density urban areas with far flung low-density rural areas, and with smaller metropolitan areas more than halfway across the state (e.g., Columbia and Jefferson City). PX 23 at 16, 18; Tr. 318:24-323:9 (Rodden), 487:16-489:12 (Cromartie). Dr. Stern's and Dr. Cervas's alternative maps accounted for population density while outperforming the compactness of CDs 4 and 5 in the 2025 Plan. Tr. 167:13-168:2, 169:4-9, 176:4-180:25; Tr. 69:9-21, 80:2-82:3 (Cervas); PX 86; PX 23; PX 21 ¶¶51-52.

The 2025 Plan's departures from compactness in CDs 4 and 5 were not the result of respect for the **boundaries of political subdivisions**, including counties, municipalities, or voting tabulation districts ("VTDs"). Tr. 189:17-192:5 (Stern); PX 21 ¶¶14-16; Tr. 76:12-79:4 (Cervas); PX 23 at 14-15; Tr. 338:5-340:7 (Rodden); PX 27 at 36-41; PX 28 at 10-12. Though the 2025 Plan, as a whole, contains fewer county, municipal, and VTD splits than the 2022 Plan, Tr. 76:12-79:4 (Cervas), these changes cannot *explain* the reduction in compactness of CDs 4 and 5. Drs. Cervas and Stern produced multiple alternative maps that achieve the same or fewer number of county, municipal, and VTD splits as the 2025 Plan while also creating more compact configurations of CDs 4 and 5. Tr. 189:17-192:5 (Stern); Tr. 76:12-79:4 (Cervas); PX 23 at 7, 10; PX 21 ¶¶35-43.

The practical impact of political subdivision splits, and not just the total number of splits, is also relevant.[5] PX 22 at 2-5; PX 28 at 10; Tr. 338:5-340:7 (Rodden). As Drs. Rodden and Stern testified, the fragmenting of Kansas City and Jackson County populations increased in both severity and consequence in CDs 4 and 5 the 2025 Plan. PX 28 at 11-12; PX 22 at 2-3. Thus, even if the raw number of county and municipal splits in Kansas City and Jackson County is the same, the 2025 Plan's impact on those communities is not. PX 28 at 1, 11; PX 22 at 2-5.

The 2025 Plan's departures from compactness in CDs 4 and 5 were also not the result of **natural boundary lines**. PX 23 at 22; PX 21 at ¶44; PX 27 at 35. Although the 2025 Plan appears in places to make an effort to use the Missouri River as a natural boundary between districts throughout the state, Dr. Cervas showed that a more compact configuration of CDs 4 and 5 would have increased the amount of the Missouri River that could have been used for that purpose. Tr. 82:7-21; PX 23 at 22. Dr. Stern's ensemble of 100,000 maps demonstrates the same thing: the 2025 districts consistently perform worse on every compactness measure, including the cut-edges metric that incorporates the shapes of natural and political boundaries. PX 21 at ¶44.

Nor was the 2025 Plan's departure from compactness in CDs 4 and 5 the result of respect for **historical boundary lines**. *See supra* Facts, Sec. IV.B.3. The 2025 Plan's configuration of CDs 4 and 5 departs radically from the historic configuration of Missouri's

[5] Neither Dr. Trende nor Dr. Hood offered any additional analyses or opinions about how a particular county split might impact residents in those split subdivisions. Tr. 634:11-635:9 (Trende); Tr. 763:25-764:3, 776:5-13 (Hood).

congressional district lines. *Id.* Drs. Cervas and Rodden, as well as Dr. Hood, measured regard for historical boundary lines with a metric known as "core retention," or the percentage of a district's population in a prior map that is retained in the same district in a later map.[6] Tr. 82:22-85:2 (Cervas); PX 27 at 14; PX 23 at 23; IX 215 at 13; Tr. 776:18-24 (Hood). Though the 2025 Plan used the same Census data as the 2022 Plan—and therefore could have kept 100% of the same population in each district—the 2025 Plan's CDs 4 and 5 retained less than 62% and 43% of their prior populations respectively. PX 23 at 23; Tr. 778:12-779:25, 786:5-787:6 (Hood). CDs 4 and 5 in the 2022 Plan also retained significantly more of their 2012 population than in the 2025 Plan (75.8% versus 49% for CD 4, and 82.7% versus 51.4% for CD 5). PX 23 at 23. In Dr. Hood's academic writing, he concluded that a district with a core retention level of even 68.7%, "greatly alter[s] the relationship between representatives and constituents." Tr. 784:15-787:9. The 2025 CDs 4 and 5 fall far below this threshold. *Id.* In contrast to the 2025 Plan, alternative maps presented by Drs. Cervas and Stern increased both the compactness and core retention levels for CDs 4 and 5 (while keeping other districts identical to the 2025 Plan). PX 23 at 23; PX 21 ¶60.

Other redistricting considerations raised by Respondents also cannot explain the departures from compactness in CDs 4 and 5. Improving the compactness of other congressional districts in the state does not necessitate the 2025 Plan's non-compactness in

[6] Despite recognizing that core retention is a commonly used metric in redistricting cases, Dr. Trende did not offer any opinion on core retention or dispute Appellants' experts' calculation of core retention. Tr. 627:21-628:6.

CDs 4 and 5. Dr. Cervas's alternative maps simultaneously improved the compactness of both CDs 4 and 5 while keeping most of the remaining six districts unchanged (or *improving* their compactness) from the 2025 Plan. Tr. 73:22-74:7 (Cervas); PX 23 at 7, 10. Additionally, CDs 4 and 5 in Dr. Stern's ensemble maps are consistently and significantly more compact than CDs 4 and 5 under the 2025 Plan, despite maintaining the exact same boundaries for the remaining six districts. Tr. 157:18-24, 161:9-18 (Stern).

The deviation from closely united territory in CDs 4 and 5 in the 2025 Plan also cannot be explained by adherence to state senate districts. State senate districts are not political subdivisions—unlike counties and municipalities, state legislative districts are redrawn every decade and bound by different constitutional criteria. Tr. 188:10-24 (Stern); PX 28 at 12; Tr. 341:10-342:5, 382:2-21 (Rodden); Tr. 638:24-639:2 (Trende); Tr. 775:23-776:1 (Hood). The 2025 Plan splits more state senate districts overall than the 2022 Plan. 2025 CD 5 alone splits nine senate districts, whereas the 2022 CD 5 split only three. PX 27 at 38. Though Respondents claimed that the 2025 Plan follows Senate District 7's boundary, the 2025 Plan actually splits Senate District 7 between three congressional districts. PX 21 ¶62; PX 28 at 17. Appellants' alternative map evidence shows that Senate District splits could have been reduced in the 2025 Plan while drawing more compact configurations of CDs 4 and 5. PX 24 at 11-12; PX 23 at 7; Tr. 93:2-12 (Cervas); Tr. 199:22-200:8 (Stern) (noting that "looking at population intactness or the number of splits," the 2025 Plan "split senate districts more times and more severely than about 90 percent of the ensemble maps," while also being consistently less compact than the ensemble maps).

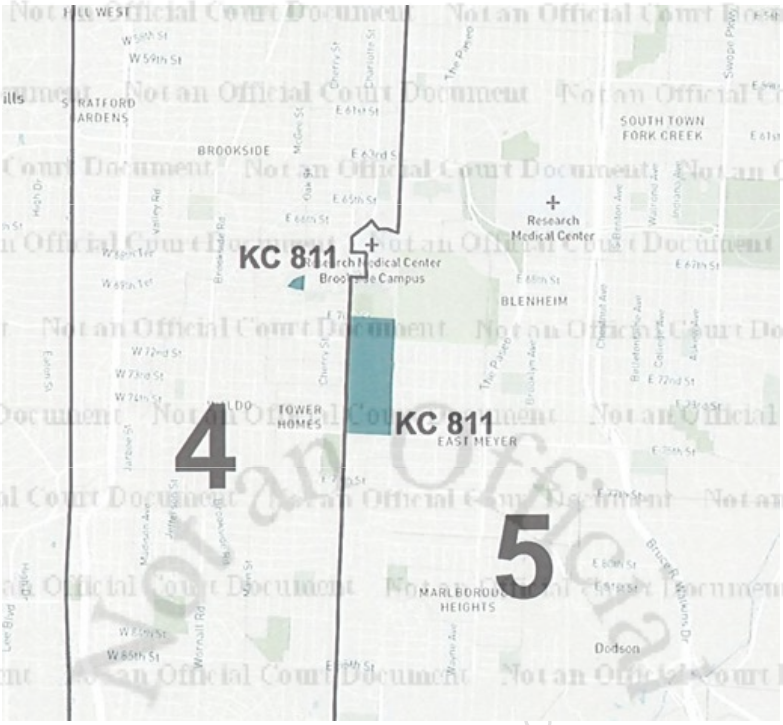
The deviation from closely united territory in CDs 4 and 5 in the 2025 Plan could not have resulted from an effort to preserve the boundaries of state house districts. The 2025 Plan's CD 5 splits 16 state house districts, while the 2022 Plan's CD 5 splits only five state house districts. PX 27 at 38.

Nor can the configuration of CDs 4 and 5 be explained by a desire to adhere to Kansas City Council districts, Kansas City-area school districts, or Kansas City neighborhoods. PX 27 at 39-41. In addition, Appellants' alternative map evidence shows that the non-compactness of CDs 4 and 5 cannot be explained by any attempt to avoid placing their current incumbent congressmembers in the same district.[7] PX 21 ¶¶70-71, 73; Tr. 195:5-196:10 (Stern).

D. H.B. 1's Double Assignment of "KC 811"

There are two, noncontiguous VTDs within Kansas City named "KC 811" by the U.S. Census Bureau. D86 (Joint Stips.) p.11; App 43. Dr. Cervas produced the following figure in his report, demonstrating that the two VTDs named "KC 811" are noncontiguous. PX 23 at 25.

[7] State Respondents expressly disclaimed incumbent protection being a recognized factor under the Missouri Constitution in their pretrial briefing. D87 p.28.



H.B. 1 states that "The fourth congressional district shall be composed of" several geographic units including "VTD: KC 811." *Id.* ¶87. H.B. 1 also states that "The fifth congressional district shall be composed of" several geographic units including "VTD: KC 811." *Id.* ¶88.

Respondents argued that the two KC 811 VTDs are differentiated by their "GEOID," a geographic identifier used by the U.S. Census Bureau. D98 p.52-53.[8] But the text of H.B. 1 does *not* refer to VTDs by their GEOID. *Id.* Consequently, as Dr. Cervas concluded, "the bill's text does not provide clear guidance as to how to assign [those] VTDs to congressional districts." PX 23 at 25. As such, "[t]he double assignment of population

[8] While Dr. Trende suggests it is possible to render CDs 4 and 5 contiguous and equipopulous by assigning one KC 811 VTD to CD 4 and the other KC 811 VTD to CD 5, *see* DX 101 at 16, he admitted he does not "know Missouri canons of construction" or how they would apply to the assignment of the two VTDs labeled KC 811 and did not offer an opinion as to those points. Tr. 589:16-21; DX 101 at 15-16.

in the VTDs named KC 811 renders both CDs 4 and 5 in the 2025 Plan malapportioned" and noncontiguous. *Id.* at 26. Dr. Trende agrees with Dr. Cervas that if both KC 811 VTDs were assigned to the same district "one district would be non-contiguous and another would have a hole in it and they would both . . . not be" equally populated. Tr. 590:20-24; DX 101 at 16.

E. Congressional Map Implementation

The 2022 Plan has been—and remains—the status quo for purposes of Missouri's election administration. The 2022 Plan was used to elect the state's congressional delegation in the 2022 and 2024 Primary and General Elections. D86 (Joint Stips.) p.7; App 39. The Secretary of State's office sent the KCEB the shapefiles for the 2025 Plan on January 9, 2026. Tr. 700:2-7; D92 (Kieffer Dep.) 41:24-42:5. However, the voter information currently in the MCVR is based on the 2022 Plan's congressional district lines. Tr. 698:19-21; D93 (Ealom Dep.) 55:2-8.

As of January 27, 2026, the MCVR is "locked down" and the KCEB and JCEB will not make any changes to district lines until after the certification of the April 7, 2026, municipal election results. Tr. 700:16-701:5; D91 (Zorich Dep.) 34:2-21; D90 (Brown Dep.) 34:12-35:1. As of the time that Mr. Kieffer testified at trial (February 19, 2026), the KCEB had instructions from the Secretary of State's office to "hold" and not yet implement the 2025 Plan. Tr. 700:13-15. Local election authorities will not begin to update the MCVR

system to reflect the 2025 Plan until April 21, 2026, at the earliest, because of ongoing municipal elections. *Id.* at 700:21-701:5; D90 (Brown Dep.) 34:12-35:1.[9]

V. Decision Below

The Circuit Court issued its Order and Judgment on March 12, 2026, ruling against Appellants on all counts tried. D108 p.30-31; App 30-31. On March 16, 2026, Appellants filed notices of voluntary dismissal of their respective Counts I, making the Court's March 12, 2026, Order and Judgment a final judgment resolving all claims in each case. D109. Appellants then filed a Notice of Appeal and a Motion to Shorten Time pursuant to Rule 81.045, which the Circuit Court granted on March 20, 2026. D111, 113-16. This appeal follows.

POINTS RELIED ON

I. The Circuit Court erred in finding that CDs 4 and 5 in the 2025 Plan do not violate Article III, § 45's compactness requirement, because it misapplied the law, in that such a finding requires a district-by-district analysis, and proof that any one challenged district is not "as compact . . . as may be" under the totality of the evidence is sufficient to establish a violation.

- Mo. Const. art. III, § 45
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Johnson v. State*, 366 S.W.3d 11 (Mo. banc. 2012)
- *Faatz v. Ashcroft*, 685 S.W.3d 388 (Mo. banc 2024)

[9] While the candidate filing deadline is scheduled for March 31, that poses no obstacle to enjoining the 2025 Plan, as congressional candidates are not required by state or federal law to reside in their districts. *See* D86 (Joint Stips.) p.7; App 39. Indeed, in 2022, the operative congressional map was not even enacted until months after the close of the candidate filing period. D86 (Joint Stips.) p.6-7; App 38-39; D93 (Ealom Dep.) 29:16-30:6; D91 (Zorich Dep.) 30:10-14.

II. The Circuit Court erred in finding no departure from compactness in CDs 4 and 5 under Article III, § 45, because it misapplied the law, in that exclusive reliance on a narrow set of geometric shape metrics assessed through statewide averages and inapt comparisons contravenes *Pearson II*'s totality-of-the-evidence standard.

- Mo. Const. art. III, § 45
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Faatz v. Ashcroft*, 685 S.W.3d 388 (Mo. banc 2024)
- *Johnson v. State*, 366 S.W.3d 11 (Mo. banc. 2012)

III. The Circuit Court erred in dismissing alternative map evidence, including hand-drawn maps and computer-generated ensembles, because it misapplied the law under Article III, § 45, in that such evidence can demonstrate a compactness violation under controlling precedent.

- Mo. Const. art. III, § 45
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Faatz v. Ashcroft*, 685 S.W.3d 388 (Mo. banc 2024)
- *Johnson v. State*, 366 S.W.3d 11 (Mo. banc. 2012)

IV. The Circuit Court erred in dismissing portions of Plaintiffs' expert and lay witness testimony as "irrelevant communities of interest analysis," because the court misapplied the law, in that evidence bearing on whether a district comprises "closely united territory" under Article III, § 45—including the ability of constituents to interact with representatives, population density, urban and rural interests, transit patterns, and infrastructure—is relevant under this Court's totality-of-the-evidence standard.

- Mo. Const. art. III, § 45
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Johnson v. State*, 366 S.W.3d 11 (Mo. banc. 2012)
- Kurtis A. Kempter, Annotation, *Appl. of Const. "Compactness Requirement" to Redistricting*, 114 A.L.R. 5th 311, Part II, § 3(b) (2003).

V. The Circuit Court erred in failing to determine whether the departures from compactness in CDs 4 and 5 in the 2025 Plan were minimal and practical deviations that "result from" application of recognized factors,

because it misapplied the law, in that this Court's precedent requires such a determination under Article III, § 45.

- Mo. Const. art. III, § 45
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Johnson v. State*, 366 S.W.3d 11 (Mo. banc 2012)
- *Faatz v. Ashcroft*, 685 S.W.3d 388 (Mo. banc 2024)

VI. The Circuit Court erred in allowing non-recognized factors to justify departures from compactness, because it misapplied the law, in that the recognized factors enumerated in *Pearson II* that may result in a minimal and practical deviation from compactness are exclusive.

- Mo. Const. art. III, § 45
- *Johnson v. State*, 366 S.W.3d 11 (Mo. banc 2012)
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Preisler v. Hearnes*, 362 S.W.2d 552 (Mo. banc 1962)

VII. The Circuit Court erred in discounting Appellants' expert evidence on the grounds that the experts could not account for the subjective "policy preferences" of the General Assembly, because it misapplied the law, in that *Pearson I* and *Pearson II* hold that Article III, § 45's compactness requirement is mandatory and objective, not subjective, and that legislative policy preferences cannot override the constitutional compactness mandate.

- Mo. Const. art. III, § 45
- *Johnson v. State*, 366 S.W.3d 11 (Mo. banc 2012)
- *Pearson v. Koster*, 359 S.W.3d 35 (Mo. banc 2012)
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)

VIII. The Circuit Court erred in its judgment that neither CD 4 nor CD 5 violate Article III, § 45's compactness mandate, because it is against the weight of the evidence, in that the probative value of the evidence that CDs 4 and 5 depart from principles of compactness without valid explanation so outweighs the evidence supporting the court's contrary finding that a firm belief the judgment is wrong is warranted.

- Mo. Const. art. III, § 45
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Weeks v. City of St. Louis*, 721 S.W.3d 873, 876 (Mo. banc 2025).

IX. The Circuit Court erred in its judgment that neither CD 4 nor CD 5 violate Article III, § 45's compactness mandate, because the judgment is not supported by substantial evidence, in that the legal errors in Points I through VII left the court's compactness finding without a sufficient evidentiary basis.

- Mo. Const. art. III, § 45
- *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc 2012)
- *Ivie v. Smith*, 439 S.W.3d 189, 199 (Mo. banc 2014).

X. The Circuit Court erred in entering judgment for Respondents on Counts III and IV, because the court misapplied the law, in that the court based its ruling on whether the Board Respondents would misapply the map rather than engaging with the plain text of H.B. 1, which assigns two identically named VTDs to both CDs 4 and 5 without differentiating between them violating Article III, §45, and the record contained undisputed evidence establishing the violations.

- Mo. Const. art. III, § 45
- *Goodman v. Saline Cnty. Comm'n*, 699 S.W.3d 437 (Mo. banc 2024)
- *Reichert v. Bd. of Educ. of City of St. Louis*, 217 S.W.3d 301 (Mo. banc 2007)
- *State v. Turnage*, 719 S.W.3d 884 (Mo. App. W.D. 2025)

ARGUMENT

Point I: The Circuit Court erred in finding that CDs 4 and 5 in the 2025 Plan do not violate Article III, § 45's compactness requirement, because it misapplied the law, in that such a finding requires a district-by-district analysis, and proof that any one challenged district is not "as compact . . . as may be" under the totality of the evidence is sufficient to establish a violation.

I. Standard of Review and Preservation of Error

A circuit court's judgment is set aside if it "erroneously declares or applies the law." *Pearson II*, 367 S.W.3d at 43 (citation omitted). Claims that the circuit court misapplied the law are reviewed de novo. *Sender v. City of St. Louis*, 681 S.W.3d 189, 193 (Mo. banc 2024). "The determination of whether the compactness requirement is satisfied . . . involves the determination of a mixed question of law and fact." *Pearson*, 367 S.W.3d at 47. The reviewing court therefore "will defer to the factual findings made by the trial court so long as they are supported by competent, substantial evidence, but will review de novo the application of the law to those facts." *Id.* at 44 (citation omitted).

Appellants preserved this claim. Appellants' Petition alleged compactness violations under Article III, § 45 in each of CDs 4 and 5 and identified precedent requiring a district-by-district analysis. D2 p.3, 9, 26-38, 41-43. Appellants maintained that claim and urged the Circuit Court to conduct an analysis of the constitutionality of each challenged district in their pretrial brief, at trial, and in their post-trial briefing. *See* D73 p.5-9, 10-27; Tr. 19:6-12, 846:8-11, 944:18-945:24; D107 p.94, 97-98, 100-104. No post-trial motion was required.

II. Argument

The Circuit Court legally erred in failing to conduct the individual district-by-district analysis required in assessing the validity of CDs 4 and 5 in the 2025 Plan under Article III, § 45 of the Missouri Constitution's compactness requirement. In contravention of the plain language and this Court's precedent, the Circuit Court instead assessed compactness primarily on the basis of the 2025 Plan as a whole. *See, e.g.*, D108 p.21 (finding that "Plaintiffs failed to prove 'clearly and undoubtedly' that *the map* was not 'as compact . . . as may be'") (emphasis added); *id.* at 23 ("[t]he 2025 Plan is more compact statewide"); *id*. at 29 (stating that "Plaintiffs focus heavily on District 5 but underplay . . . that the General Assembly may have had permissibly broader views of redistricting principles in its enactment of the 2025 Plan."); App 21, 23, 29. In finding that the 2025 Plan passed constitutional muster principally in reliance on statewide average scores of the 2025 Plan and plan-wide comparisons to prior plans, rather than an individual assessment of CDs 4 and 5, the Circuit Court misapplied the law and committed reversible legal error.

The plain language of Article III, § 45 mandates that congressional "districts" shall be "as compact…as may be." Mo. Const. art. III, § 45. The compactness requirement thus applies to "each district," *Pearson II*, 367 S.W.3d at 55, and requires courts to assess the constitutionality of every challenged district individually. *See, e.g.*, *id*. at 53 ("Plaintiffs must prove that the boundaries of districts 3, 5, and 6 depart from the principles of compactness . . . ."); *Johnson*, 366 S.W.3d at 24 n.7 (analysis of constitutional validity under article III, § 45 must "focus[] on whether *each* constitutional requirement is met for *each* district") (emphasis in original); *Pearson v. Koster*, 359 S.W.3d 35, 39 (Mo. banc

2012) ("*Pearson I*") (holding that the protection of article III, § 45's mandatory compactness requirement "applies to each Missouri voter, in every congressional district"). If any challenged district is not "as compact . . . as may be"—in that its departure from compactness is either not minimal *or* does not result from application of recognized factors—that violates the Constitution. *Pearson II*, 367 S.W.3d at 48, 53, 55. As a result, this Court has held that because "each congressional district must be 'as compact . . . as may be,'" the "compactness of the Map as a whole . . . has limited relevance." *Id.* at 54 n.16 (disregarding portion of defendants' expert's testimony on this basis).

Contrary to the Missouri Constitution and this Court's clear precedent, the Circuit Court assessed compactness by analyzing the 2025 Plan as a whole—for example, by averaging compactness scores across all eight districts rather than examining CDs 4 and 5 individually—an approach this Court has held to have "limited relevance." *Id.* The vast majority of the Circuit Court's factual findings relate to the 2025 Plan as a whole, rather than CDs 4 or 5. *See, e.g.*, D108 p.6 (stating that "2025 Plan is more compact statewide" and the "2025 Plan also outperforms the 2012 Plan on statistical measures"); *id*. at 7 (stating that the "2025 Plan scores better as a whole on compactness," and "the 2025 Plan performs better statewide on the Convex Hull score" without discussing district-specific scores); *id.* at 7-8 (stating "[t]he 2025 Plan performs better statewide on the Schwartzberg score" and "[t]he 2025 Plan performs better on the IKIWISI measure" without discussing district-specific scores); *id.* at 8 (stating that the "2025 Plan performs better statewide" and that the "2025 Plan is not an outlier" without discussing CDs 4 and 5); *id.* at 8-9 (discussing statewide statistics relating to political subdivision splits for 2025 Plan); App 6-9. Indeed,

many of the findings related to CDs 4 and 5 are framed as plan-wide comparisons, rather than a true district-level review. *See, e.g.*, D108 p.6-7, 24 (comparing CDs 4 and 5 to a general plan-wide range of compactness scores in prior maps without evaluating the factors influencing any individual district boundaries); App 6-7, 24.

The Circuit Court's erroneous focus on plan-wide averages led it to disregard key district-specific evidence. *See* D108 p.6 (disregarding 2025 CD 5's individual compactness scores in relation to 2022 version of CD 5); App 6. Indeed, even Respondents' expert testified that the compactness of 2025 CD 5 decreased on all four measures he analyzed compared to the 2022 district; its Polsby-Popper score was cut in half, and its Reock score was the lowest of any district in the 2025 Plan. Tr. 763:19-764:3, 762:16-25, 758:9-12 (Hood).

In addition, the Circuit Court conducted a map-wide analysis even though both Defendants' and Intervenor's experts agreed that relying on average compactness scores for an entire statewide map can mask the existence of non-compact individual districts. Tr. 633:6-9 (Trende); Tr. 757:20-25, 758:13-25, 762:7-11 (Hood) (also testifying that even if one considered plan-wide averages, on some measures the 2022 Map was more compact than 2025). As one example, the Circuit Court noted that this Court has "specifically found the use of a Convex Hull score relevant to measuring compactness." D108 p.24 n.2 (citing *Faatz v. Ashcroft*, 685 S.W.3d 388, 402 n.8 (Mo. banc 2024)); App 24 n.2. The Circuit Court then relied only on the 2025 *plan-wide average* Convex Hull score in its grounds for decision, omitting the undisputed fact that the individual Convex Hull score for CD 5 dropped significantly from 0.84 in the 2022 Plan to 0.70 in the 2025 Plan, which also placed

it below the plan-wide average. PX 24 at 8; DX 101 at 18.[10] Thus, the measure favored by this Court in *Faatz* demonstrates the individual non-compactness of CD 5.

Indeed, the undisputed evidence at trial proved that statewide statistics camouflaged the non-compactness of CDs 4 and 5 specifically. Both CDs 4 and 5 in the 2025 Plan *decreased* in compactness from the 2022 Plan on common quantitative compactness measures, were less compact than the average of the 2025, 2022, or 2012 Plans, and *all parties' experts agreed* that CDs 4 and 5 could be more compact. *See, e.g.*, PX 23 at 10-12; PX 24 at 2, 5, 8-9; PX 21 at 6; *id.* at ¶¶40-58; PX 22 at 2-6; PX 27 at 6-7, 29-32; Tr. 758:1-759:4, 760:17-762:1, 763:19-764:3, 764:16-19, 767:6-12 (Hood); Tr. 658:2-8 (Trende) (testifying that the existence of more compact districts "is what it is"); DX 101 at 27; IX 215 at 14. The Circuit Court's unlawful focus on plan-wide metrics also led to errors. *See, e.g.*, D108 p.23 (incorrectly stating that "the three districts Plaintiffs challenge are more compact in the 2025 Plan than the previous versions of those districts" on Reock and Polsby-Popper measures); App 23.[11]

[10] In addition, the difference between the 2025 Plan's average Convex Hull score and that of the 2022 Plan is .01. PX 24 at 8; DX 101 at 19. It is undisputed that a difference in a score of .03 is "small," Tr. 759:5-11 (Hood), making a .01 difference negligible. A negligibly higher Convex Hull average plan-wide score for the 2025 Plan tells one nothing about the compactness of CDs 4 or 5. Yet, the Circuit Court relied on this evidence and found it "helpful and persuasive" in its grounds of decision. D108 p.24; App 24.

[11] Even the limited district-specific findings made by the Circuit Court itself contradict this error. *See, e.g.*, D108 p.6; *id.* at 7 (finding that CD 4 in the 2025 Plan was less compact on Reock measure than in prior plans); *id*. at 24 (stating that CD 5 "on some measures scores lower than prior plans"); App 6-7, 24; *see also* Tr. 763:19-24 (Hood) (Intervenor-Respondent's expert testifying that CD 5 in the 2025 Plan is less compact on all four quantitative measures he utilized than the 2022 Plan, including Reock and Polsby-Popper).

Moreover, the Circuit Court's plan-wide analysis failed to apply the standard of "closely united territory" and to consider the vast changes made to the territory within CDs 4 and 5. Under the 2022 Plan, CD 5 united the bulk of the densest part of the Kansas City metropolitan area in a single, reasonably shaped and sized district, while CD 4 encompassed largely surrounding rural counties in a compact configuration that followed county and natural boundaries as practicable. PX 25 at 17-20; PX 21 at 12-19, 29-34; PX 22 at 2-5, 12-14; PX 23 at 16-21. The 2025 Plan abandoned those compact arrangements by carving up the heart of Kansas City and Jackson County and attaching those metropolitan communities to distant rural areas, yielding two sprawling, irregular districts that ignore population density, historical boundaries, and lack compactness. PX 25 at 4, 16-21; PX 27 at 4-32; PX 21 at 12-19, 29-34; PX 22 at 2-5, 12-14; PX 23 at 10-11, 16-23; *see Pearson II*, 367 S.W.3d at 56 (recognizing consideration of unity of Kansas City as legitimate goal). And it was undisputed that neither of the defendants' experts analyzed anything other than quantitative compactness measures of district shape in assessing whether the 2025 CDs 4 or 5 are compact. Tr. 755:14-23, 774:7-12 (Hood); Tr. 635:6-9 (Trende); DX 101 at 17-19.

In turn, given that the Circuit Court's findings rely heavily on statewide average scores for the 2025 Plan or plan-wide comparisons to prior maps, it is no surprise that the same is true of the Court's grounds for decision. The Circuit Court sidestepped a district-level analysis of whether CDs 4 or 5 are compact, instead relying on a legal analysis and framing of Appellants' claim that is plan-wide in nature. *See, e.g.*, D108 p.21 ("Plaintiffs failed to prove 'clearly and undoubtedly' that *the map* was not 'as compact . . . as may be'"

(emphasis added)); *id.* at 22 ("Plaintiffs must prove that the 2025 Plan 'departs from the principles of compactness . . . '" and "the Court finds that the 2025 Plan complies . . . "); *id.* at 23 ("[t]he 2025 Plan is more compact statewide" and "[t]he 2025 Plan's Reock and Polsby-Popper scores do not suggest any departure from the principle of compactness"); *id.* at 24 (stating that "the 2025 Plan is not unusually non-compact" while discussing the 2025 Plan's average scores on three mathematical compactness measures but not CDs 4 and 5); *id.* at 25 (comparing 2025 Plan as a whole to prior plans and relying on 2025 Plan's "improved county and municipal splits" statewide rather than analyzing how political subdivision splits impacted the non-compactness of CDs 4 and 5); App 21-25. Indeed, the court went so far as to state that "Plaintiffs focus heavily on District 5 but underplay the possibility that the General Assembly may have had permissibly broader views of redistricting principles in its enactment of the 2025 Plan." D108 p.29; *see also id.* at 26 (stating that "[e]ven if portions of the challenged districts in this case appear to not be composed of closely united territory (or closely united territory is divided), the 2025 Plan is still 'as compact . . . as may be.'"); App 26, 29. That gets the standard exactly backwards. Under this Court's precedent, each district must be individually analyzed and if even one district is not as compact as may be, that is enough to establish a violation despite characteristics of the statewide map. *Pearson II*, 367 S.W.3d at 48, 53, 55.[12]

[12] Moreover, to the extent that this Court's precedent requires analysis of whether a district's non-compactness is a result of the boundaries of neighboring districts, the record demonstrated that the decrease in compactness in CDs 4 and 5 was not a necessary tradeoff to improve the compactness of any other congressional district. In particular, Appellants' alternative maps demonstrated that the compactness of CDs 4 and 5 could substantially improve while keeping the remaining six congressional districts unchanged, or while

By basing its judgment on the exact plan-wide evidence this Court held has "limited relevance," *id.* at 54 n.16, the Circuit Court misapplied the law and failed to conduct the necessary district-level analysis of CDs 4 and 5 required by the Constitution and this Court. That is reversible legal error.

Point II: The Circuit Court erred in finding no departure from compactness in CDs 4 and 5 under Article III, § 45, because it misapplied the law, in that exclusive reliance on a narrow set of geometric shape metrics assessed through statewide averages and inapt comparisons contravenes Pearson II's totality-of-the-evidence standard.

I. Standard of Review and Preservation of Error

The standard of review for the misapplication of law identified in Point II is identical to the standard articulated in Point I. Appellants also preserved this claim. Appellants' Petition alleged that individual CDs 4 and 5 in the 2025 Plan each violate Article III, § 45's compactness requirement, and that compact means "closely united territory" and "does not refer solely to physical shape or size" of a district. D2 p.9, 41. Appellants maintained that claim, including arguing that the 2012 districts' quantitative scores are not a safe harbor for compactness, in their pretrial brief, at trial, and in their post-trial briefing. *See* D73 p.6-9, 26-27; Tr. 18:4-19:12, 846:8-847:10, 850:22-852:6, 861:2-862:19, 939:8-940:19, 941:15-942:1; D107 p.98-100, 105-112. No post-trial motion was required.

II. Argument

The Circuit Court legally erred by basing its decision that CDs 4 and 5 satisfied Article III, § 45's compactness requirement on a narrow set of mathematical shape-based

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simultaneously maintaining or improving the compactness of other districts. Tr. 73:22-74:23 (Cervas); PX 23 at 7, 10; Tr. 157:18-158:11, 169:4-9, 201:9-202:20 (Stern).

measures, rather than the full range of factors relevant to assessing whether a district comprises closely united territory as defined by this Court in *Pearson II*, 367 S.W.3d at 48-49 (holding that the physical shape of a district is "not the decisive factor" in determining compactness). In doing so, the Circuit Court relied on plan-wide average compactness scores with "limited relevance," *id.* at 54 n. 16, to make inapt comparisons to both non-congressional maps and other maps drawn under different circumstances. *See* D108 p.23-24; App 23-24. In particular, the Circuit Court erred in its treatment of the 2012 congressional districts as a legal safe harbor, which gave those districts' quantitative compactness scores a status akin to a presumption of constitutionality. As a result, the Circuit Court misapplied the law in assessing the compactness of CDs 4 and 5 and in doing so committed reversible legal error.

Under this Court's precedent, compactness means "closely united territory, a phrase not necessarily limited to physical dimensions" of a congressional district. *Pearson II*, 367 S.W.3d at 48. Thus, although a district's physical shape or size—assessed by "visual observation" or "various statistical measures"—may be "relevant" to the compactness inquiry, it is not dispositive. *Id*. at 48-49, 55 (holding that "the word 'compact' does not refer solely to physical shape or size" and that physical appearance, "although relevant, is not the decisive factor in determining whether a district departs from the principle of compactness"). As such, the *Pearson II* court rejected a bright-line threshold for quantitative compactness scores that would determine whether a district is constitutionally compact. *Id*. at 49 n.10 (stating that quantitative compactness scores "alone do not demonstrate that a [district] is or is not compact"), *id.* at 55 (citing expert testimony that

"there is no statistical measure or specific score that conclusively indicates that a map is compact").

Courts applying Article III, § 45 have accordingly considered not only the geometry of a district but also the character of its enclosed territory, including whether the district keeps proximate and related communities together to facilitate representation. In *Pearson II*, this Court upheld a trial court's determination—based on the record before it—that the plaintiffs failed to prove CD 5 in the 2012 map was not "as compact . . . as may be," despite its irregular shape, because the district could have been "drawn in consideration of the legitimate factor of keeping a greater portion of Kansas City" within the same district. *Id.* at 56. The Court also relied on a treatise recognizing that closely united territory may encompass whether a district is "conducive to communication and interaction among representatives and constituents." *See id.* at 48-49; Kurtis A. Kempter, Annotation, *Application of Const. "Compactness Requirement" to Redistricting*, 114 A.L.R. 5th 311, Part II, § 3(b) (2003).

Contrary to this Court's precedent, the Circuit Court relied exclusively on quantitative measures of shape in assessing whether the 2025 Plan departs from compactness. In the two pages of the Circuit Court's order relating to this assessment, the Court relied exclusively on the Reock, Polsby-Popper, Convex Hull, IKIWISI, and Schwartzberg compactness measures, which assess only a district's physical shape. D108 p.23-24; App 23-24; Tr. 755:14-23 (Hood) (testifying that Reock, Polsby-Popper, and Schwartzberg scores measure the shape of a district); Tr. 667:22-668:11 (Trende) (same for Convex Hull and IKIWISI scores). The Circuit Court thus flatly misapplied the law, as it

relied solely on measures of physical shape to assess compactness, even though that evidence "alone do[es] not demonstrate that a [district] is or is not compact." *Pearson II*, 367 S.W.3d at 49 n.10.

In relying exclusively on these quantitative metrics, the Circuit Court erred in multiple ways. For example, in *Pearson II*, the Court had before it eight statistical measures of compactness, including some that considered more than just a district's shape or size. 367 S.W.3d at 56 (noting "District 5 scored well on the measures of compactness that consider area in combination with population"). Here, none of the metrics the court relied on measured anything other than district shape—not even district size, a notable omission given how substantially the 2025 Map ballooned CD 5's size. *See* DX 101 at 6-12 (Trende); Tr. 181:5-14 (Stern). In contrast, Dr. Stern presented 11 different compactness metrics, including three that specifically account for shape in combination with other factors like population density and natural and political boundaries, and a fourth that measures a district's boundary length in miles (size). PX 21 ¶¶17, 46-47; Tr. 175:15-178:20, 181:23-183:1. On these metrics and calculations, which are uncontested by Respondents' experts, CDs 4 and 5 in the 2025 Plan "rank as extremely non-compact" compared to Dr. Stern's ensemble maps. PX 21 ¶¶47, 52; Tr. 180:8-181:3 (Stern), 654:18-655:2 (Trende), 781:3-10 (Hood). The Circuit Court disregarded these metrics entirely in its analysis, compounding its error of giving quantitative measures of shape alone a "decisive" role in assessing compactness. *Pearson II*, 367 S.W.3d at 55.

In addition, the Circuit Court erred not only in exclusively relying on quantitative measures of shape, but also in compounding that error by relying primarily on *plan-wide*

average scores or "ranges of compactness scores" under these metrics. *See* D108 p.23-24 (mentioning 2025 Plan overall or average score at least nine times, "challenged districts" together compared to a "range of district scores" three times, but generalized CD 4 or CD 5 references only twice, including that "District 5 on some measures scores lower than prior plans" and "District 4 . . . [is] more compact under several measures [but not all] than prior plans."); App 23-24.[13] The Circuit Court layered error onto error, disregarding the legally-required district-specific analysis and coupling plan-wide averages of "limited relevance" with quantitative measures that, standing alone, do not determine district compactness. *Pearson II*, 367 S.W.3d at 48-49, 49 n.10, 54 n.16, 55. Whether CDs 4 and 5 are each as compact as may be cannot be assessed based on plan-wide averages or "ranges" of scores that have nothing to do with the individual district boundaries of CDs 4 and 5. Tr. 675:23-676:1 (Trende) (testifying that he offered no opinion as to whether any given district is compact); *Johnson*, 366 S.W.3d at 24 n.7 (holding the analysis must "focus[] on whether *each* constitutional requirement is met for *each* district) (emphasis in original). This is particularly true here because the undisputed evidence demonstrated that CDs 4 and 5 in the 2025 Plan were made *less compact* than in the 2022 Plan. PX 23 at 10; PX 24 at 2, 5, 8-9; PX 27 at 4-5, 30-33; PX 21 at 6, *id. at* ¶¶50-58; PX 25 at 4, 16-21; Tr. 758:1-759:4,

[13] As explained *supra* Argument, Point I, the Circuit Court also erred when it stated that "the three districts Plaintiffs challenge are more compact in the 2025 Plan than the previous versions of those districts," D108 p.23; App 23, as it is undisputed by Intervenor-Respondent's own expert that the 2025 Plan's CDs 4 and CD 5 are less compact on multiple quantitative measures than in the 2022 Plan. *See, e.g.,* Tr. 758:1-759:4, 760:17-762:1, 763:19-764:3, 764:16-19, 767:6-12 (Hood).

760:17-762:1, 763:19-764:3, 764:16-19, 767:6-12 (Hood); Tr. 658:2-8 (Trende); DX 101 at 18, 27; IX 215 at 14.

The Court also legally erred in the emphasis it put on the Convex Hull measure under *Faatz*. D108 p.24 n.2 (citing 685 S.W.3d at 402 n.8); App 24 n.2. The compactness challenge in *Faatz* arose under the standard for state legislative redistricting found in Article III, § 3, which—while requiring districts to be "compact as may be"—also explicitly defines compactness to mean "square, rectangular, or hexagonal in shape to the extent permitted by natural . . . boundaries." 685 S.W.3d at 394. This geometric definition differs from how *Pearson II* described Article III, § 45's compactness requirement as focusing on whether a district is comprised of "closely united territory." *Pearson II*, 367 S.W.3d at 48.

The parties and the court below were bound to follow *Pearson II*, which is a precedent of this Court that was decided before Missouri's voters adopted the definition of compactness found in Article III, § 3. But even if this Court were to interpret Article III, § 3(b)(3) and Article III, § 45 *in pari materia*, *see S. Metro. Fire Prot. Dist. v. City of Lee's Summit*, 278 S.W.3d 659, 666 (Mo. banc 2009), CD 5 would clearly and undoubtedly violate the requirement that a district be "square, rectangular, or hexagonal in shape to the extent permitted by natural boundaries." Mo Const. art. III, § 3(b)(3).[14] CD 5 went from a

[14] In Missouri, "the rules of statutory interpretation mirror the rules for the interpretation of constitutional provisions." *Robust Mo. Dispensary 3, LLC v. St. Louis Cnty.*, 721 S.W.3d 135, 139 (Mo. banc 2025). Thus, "[i]n determining the intent and meaning of" a constitutional provision's language, "the words must be considered in context and sections

small square and rectangular district in 2022 to one that irregularly stretches and meanders across half the state. PX 23 at 10; PX 82; App 177. CD 5 also performs poorly on the Convex Hull compactness measure, which the circuit court in *Faatz* found to be especially probative under Article III, § 3's standard. *See* 685 S.W.3d at 402. As Dr. Cervas's analysis shows, and Dr. Trende's analysis confirms, CD 5's Convex Hull score dropped precipitously in 2025 compared to 2022. PX 24 at 8; DX 101 at 18. Dr. Cervas's alternative maps also showed that CD 5 could retain a tight rectangular or square shape and a far higher Convex Hull score (as well as higher or constant scores in CDs 4 and 6), while achieving comparable or better compliance with other recognized factors. PX 24 at 8; PX 23 at 6-7.

Next, the Circuit Court erred in comparing the 2025 Plan average and select district-specific scores to historical maps and district "ranges." D108 p.24; App 24. For example, the Circuit Court credited analysis by Dr. Trende comparing the 2025 Plan's average score on three metrics to the average scores of historical plans "since 1972." *Id*. But such a comparison is methodologically flawed from the start—each previous decennial redistricting cycle occurred using different population data from the census, and the population in Missouri has changed significantly over time, including the loss of two congressional seats in the state. Tr. 669:1-670:7 (Trende). Moreover, neither Dr. Trende nor the Circuit Court considered whether or how recognized factors, including natural boundaries, population density, compliance with the VRA, political subdivision splits, and

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of the" constitution "in pari materia . . . must be considered in order to arrive at the true meaning and scope of the words." *City of Lee's Summit*, 278 S.W.3d at 666.

historical boundaries may have influenced compactness scores in historical maps (or the individual districts in those maps) compared to any actual constraints on CDs 4 and 5 and the geography in which they are located in the 2025 Plan. Tr. 667:22-668:11, 672:16-19, 653:22-654:10 (Trende). This is error. *See Johnson*, 366 S.W.3d at 31, 24 n.7 (holding that the constitutional compactness requirement must be assessed for each district); *Pearson II*, 367 S.W.3d at 53, 55 (identifying factors impacting whether a district is non-compact).

In particular, the Circuit Court misapplied the law in treating the 2012 Plan's quantitative compactness scores as a safe harbor for the 2025 Plan, including CDs 4 and 5. In doing so, it gave the 2012 Plan's average compactness score and range of scores on various metrics the elevated status of presumptive constitutionality. Per the Circuit Court, as long as the 2025 Plan's average or district range did not fall below the least compact district in the 2012 Plan, there could be no constitutional violation. *See* D108 p.23-24; App 23-24.

Treating the 2012 districts as a safe harbor has no footing in this Court's caselaw. Indeed, the approach would be news to the *Pearson* Court, which evaluated the 2012 districts and did not set a bright-line standard for quantitative compactness scores to meet constitutional muster, nor did it uphold districts based on their quantitative compactness scores alone. 367 S.W.3d at 48-49, 54 n.16, 56; *see also* Tr. 773:3-774:9 (Hood) (testifying that comparing quantitative scores for a challenged district in the 2025 Plan to the 2012 Plan alone is not a methodology that determines whether a district is compact or constitutional). And this comparison fails for the same reason outlined above—the 2012 and 2025 Plans rest on different population data, and the comparison ignores factors that

could influence the 2012 Plan's average or individual district scores in ways that may differ from the factors influencing CDs 4 and 5 specifically in the 2025 Plan. Tr. 756:6-757:12 (Hood). Indeed, Intervenor's expert Dr. Hood testified that he would start with the 2022 Plan as a more apt comparator, because it used the same population data as the 2025 Plan, and thus demonstrates what was possible for district boundaries. *Id.* Thus, the Circuit Court's treatment of the 2012 Plan's quantitative scores as a presumptive constitutional floor is fundamentally flawed and has no basis in the law. And the error of using the 2012 Plan as a safe harbor is especially egregious, given that comparison to the most recent 2022 Plan shows that CDs 4 and 5 in the 2025 Plan were made less compact. *See supra* Facts, Sec. IV.B.1.

As a result, the Circuit Court exclusively focused on evidence that this Court has held "alone do[es] not demonstrate that a [district] is or is not compact." *Pearson II*, 367 S.W.3d at 49 n.10.[15] Its failure to conduct an analysis of the constitutionality of CDs 4 and 5 under the correct legal standard is reversible error.

[15] The Circuit Court did not analyze whether CDs 4 or 5 are "conducive to communication and interaction among representatives and constituents" when considering closely united territory. *Pearson II*, 367 S.W.3d at 48-49; Kurtis A. Kempter, Annotation, *Application of Const. "Compactness Requirement" to Redistricting*, 114 A.L.R. 5th 311, Part II, § 3(b) (2003); D108 at 21-29; App 21-29. This is legal error. *See infra* Argument, Point IV.

Point III: The Circuit Court erred in dismissing alternative map evidence, including hand-drawn maps and computer-generated ensembles, because it misapplied the law under Article III, § 45, in that such evidence can demonstrate a compactness violation under controlling precedent.

I. Standard of Review and Preservation of Error

The standard of review for the misapplication of law identified in Point III is identical to the standard articulated in Point I above. Appellants also preserved this claim. Appellants' Petition alleged that CDs 4 and 5 each violate the compactness requirement, and that the departures from compactness in the districts were neither minimal nor necessary to comply with recognized factors. D2 p.32-34, 36-38, 41-43. Appellants also urged the Circuit Court to consider alternative map evidence, per this Court's precedent, to assess compactness in their pretrial brief, at trial, and in post-trial briefing. *See* D73 p.8-12, 13-27; Tr. 19:21-20:3, 865:19-876:12; D107 p.97-98, 100-104. No post-trial motion was required.

II. Argument

The Circuit Court misapplied the law in disregarding Appellants' alternative map evidence, including Dr. Stern's analysis of computer-generated maps (i.e., ensemble analysis) and Dr. Cervas's hand-drawn maps. The court dismissed both forms of map evidence on two legally erroneous grounds.

First, the Circuit Court reasoned that alternative maps merely demonstrate "*better* maps" could have been drawn from "Plaintiffs' perspective," which it characterized as "not the standard under Missouri law." D108 p.26 (emphasis in original); App 26. But Missouri law regards alternative maps as central in assessing whether an enacted map complies with

objective mandates like compactness. In fact, this Court has specifically tasked plaintiffs with proving whether "greater . . . compactness is feasible" and whether recognized factors explain the challenged district's boundaries. *Johnson*, 366 S.W.3d at 30-31. There is no evidence more probative of whether a district is as compact as may be than maps illustrating what feasible possibilities "may be." *See Faatz*, 685 S.W.3d at 403 ("Because the requirement[] for . . . compactness [is] curbed with the language . . . 'as may be,' the standard[] '[is] impacted by the existence of other possibilities.'") (quoting *Johnson*, 366 S.W.3d at 30).

Indeed, this Court has described the relevant standard as "not burdensome on the plaintiff" precisely because a plaintiff "***needs only to submit maps*** or other evidence that objectively shows that [recognized factors] were not a basis for the district boundary or that it goes beyond a 'minimal and practical deviation.'" 366 S.W.3d at 31 (quoting *Pearson I*, 359 S.W.3d at 40) (emphasis added); *see also Faatz*, 685 S.W.3d at 404 n.10 ("[A] plaintiff may satisfy this objective standard by presenting evidence—***such as proposed maps***—demonstrating the alleged violation was not necessary to achieve the same compliance with other constitutional requirements.") (emphasis added).

Recent applications of this standard confirm the importance of alternative map evidence and the sufficiency of Appellants' map evidence here.

In *Johnson*, this Court upheld a compactness ruling against plaintiffs not because alternative maps were the wrong kind of evidence, but because the plaintiffs' single alternative map—although it achieved greater compactness and population equality—failed to account for federal law and other recognized factors. 366 S.W.3d at 32-33. The

Court did not reject the map because it reflected a "better" configuration; rather, it was deemed analytically incomplete because it did not account for the full range of recognized factors. Appellants' alternative maps do not suffer from that deficiency. For example, it was undisputed that Dr. Cervas's hand-drawn maps improved the compactness of CDs 4 and 5—on the very quantitative compactness metrics the Circuit Court found most probative—while matching or exceeding the 2025 Map's performance on population equality, contiguity, federal law, and other recognized factors. PX 24 at 2; IX 215 at 14; Tr. 781:3-18 (Hood); DX 101 at 27. Dr. Stern's ensemble analysis also showed that the compactness of CDs 4 and 5 in the 2025 Plan could be significantly improved while accounting for all recognized factors. PX 21 ¶¶8-11; Tr. 167:10-169:9, 187:18-188:1, 189:17-206:17 (Stern).

In *Faatz*, this Court reaffirmed that a violation of a constitutional mandate qualified by "as may be" language can be satisfied by "proposed maps" demonstrating that the alleged violation is not "a minimal and practical deviation necessary to comply with other constitutional requirements." 685 S.W.3d at 404, n.10. Applying that standard to a claim of excess political subdivision splits, the Court considered and credited computer-simulated maps offered by Dr. Trende, who is also the State Respondent's expert in this case (but offered no such analysis here). The *Faatz* Court affirmed a judgment against the plaintiffs because Dr. Trende's simulations showed the challenged splits were common among the ensemble maps, the splits were frequently necessary to achieve greater population equality, and the plaintiffs' alternative map was less compact than the enacted map. 685 S.W.3d at 404-05. Here the opposite is true: CDs 4 and 5 are far less compact compared to either Dr.

Cervas's or Dr. Stern's maps, and they show that not one of the recognized redistricting principles could explain the departure from compactness. *See supra* Facts, Sec. IV.B.2.

The Circuit Court's second ground for dismissing the alternative map evidence similarly misunderstands the law. The trial court reasoned that because "there is virtually no limit to the creation of alternative maps that could increase compactness," and because "[t]here is no requirement to maximize compactness under Missouri law," the alternative maps did not prove anything. D108 p.29; *see also id.* at 27; App 27, 29. But Appellants do not contend—and have never contended—that Article III, § 45 requires the General Assembly to maximize compactness. The standard to prove a compactness violation is not to show that a slight improvement in compactness is possible in a vacuum; it is to show, by way of comparison to "other possibilities," *Faatz*, 685 S.W.3d at 403, that a district's departure from compactness, if any, is not a *minimal or practical* deviation resulting from application of recognized factors, *Pearson II*, 367 S.W.3d at 53.

The trial court's maximization rationale for disregarding alternative maps, taken to its logical conclusion, would render the compactness requirement unenforceable, though it is a "mandatory and objective" requirement that "must be satisfied." *Pearson II*, 367 S.W.3d at 48. If alternative maps can be dismissed on the theory that an even more compact map can always be drawn, then no plaintiff could ever use such maps to carry their burden—even though this Court has expressly identified proposed maps as a means by which a plaintiff "may satisfy this objective standard." *Faatz*, 685 S.W.3d at 404 n.10.

Indeed, this Court credited ensemble evidence in *Faatz* precisely because a large representative sample of maps drawn under the comparable constraints is useful in

determining whether a district's departure from a mandate is minimal or otherwise an unexplained outlier. The U.S. Supreme Court has endorsed alternative map evidence in redistricting cases for similar reasons. *See, e.g.*, *Alexander v. South Carolina State Conf. of the NAACP*, 602 U.S. 1, 35-36 (2024) (noting that alternative map evidence alone can "carry the day" for plaintiffs and, if produced will "undermine[] the [government's] defense that the districting lines were 'based on a permissible, rather than a prohibited, ground'").

In *Faatz*, this Court found no violation of a requirement to avoid political subdivision splits in part because random simulations showed the challenged splits were often necessary to maintain equal population. *See* 685 S.W.3d at 404-05. Here, CDs 4 and 5 fall on the outlying tail of Dr. Stern's 100,000-map ensembles on multiple measures of compactness, and no recognized factor could explain the often-extreme departure from the norm. Tr. 187:18-188:1; PX 21 ¶¶50-58. Dr. Cervas's hand-drawn maps also showed it is easy to make CDs 4 and 5 substantially more compact on multiple measures while matching or exceeding compliance with all recognized factors. PX 21 at 2, 5-24.

The Circuit Court's concern about a never-ending series of more compact ensemble maps is also unfounded as a practical matter here. State Appellants' own expert agreed that drawing a set of 100,000 maps is intended to ensure a representative sample. Tr. 661:20-662:9 (Trende). Dr. Stern generated two such sets. Once a representative sample of maps is achieved, as Dr. Stern did twice, there is no logical reason to suppose that more simulations would produce significantly more compact options.

Appellants' unrebutted alternative map evidence thus showed that the deviation from compactness in CDs 4 and 5 was drastic rather than minimal and cannot be explained

by any recognized factor, which is the showing this Court's precedent contemplates. The Circuit Court misapplied the law in discarding this evidence as mere alternative preference and a demand for maximization.

The court's additional reasons for dismissing each form of alternative map evidence only compound the error.

A. The Circuit Court Misapplied the Law in Disregarding Dr. Stern's Ensemble Analysis.

The Circuit Court misapplied the law in dismissing Dr. Stern's ensemble analysis as a "novel methodology," for employing the same parameters that Dr. Trende did in his ensemble analysis as endorsed in *Faatz*, or for allegedly "favor[ing] compact maps." D108 p.28-29; App 28-29.

First, ensemble analysis is not a "novel methodology" unrecognized by Missouri courts. D108 p.28; App 28. *Faatz* is dispositive. There, this Court credited Dr. Trende's "random simulations"—the same methodology Dr. Stern employed here—as probative evidence in assessing whether certain political subdivision splits violated a requirement to preserve political subdivisions to the extent possible, a constitutional mandate subject to qualifying language as compactness here is to "as may be." *Faatz*, 685 S.W.3d at 404-05; Tr. 655:11-13. Dr. Trende also testified that simulations are widely used in political science and that courts have relied on such analyses in redistricting cases. Tr. 656:13-18; *Alexander*, 602 U.S. at 35-36.

Beyond *Faatz*, ensemble analysis is also the direct answer to the evidentiary gap *Pearson II* identified as the reason plaintiffs there fell short. In *Pearson II*, this Court noted

that the plaintiffs' expert did "not know if it [was] possible to draw the most compact district if controlling for population equality, voting rights, and other factors" and that he "did not consider such factors or anything else, such as the dispersion of population in a district, when forming his opinion." 367 S.W.3d at 55. *Johnson* then formalized this gap into the operative standard: a plaintiff must show—with "maps or other evidence"—that greater compactness is "feasible" while accounting for "federal laws or other recognized factors." 366 S.W.3d at 31. Dr. Stern's ensemble analysis answers this question directly. By generating tens of thousands of maps under the same constraints as the 2025 Map, it tests whether more compact configurations of CDs 4 and 5 were feasible under those constraints without sacrificing compliance with any recognized factors or adherence to any of the Missouri legislature's redistricting choices in any other district. The trial court therefore erred in dismissing Dr. Stern's ensemble analysis as novel and unrecognized.

Second, the small deviation from population equality among districts in Dr. Stern's ensemble maps does not limit the utility of his analysis. D108 p.29; App 29. Dr. Trende, whom the Circuit Court found credible, utilized this same methodology in the ensemble analysis he conducted in *Faatz*, which this Court endorsed. 685 S.W.3d at 404-05; Tr. 662:19-22, 663:6-15 (Trende) (testifying that he has permitted comparable population deviation when running simulations in the past). Indeed, Dr. Trende testified that Dr. Stern's use of a 1% or 0.1% population deviation is standard practice. Tr. 662:19-663:21 (Trende), 196:11-197:7 (Stern). Dr. Trende also agreed that such minor differences in population do not affect the conclusions drawn from the ensemble. Tr. 662:19-663:21 (Trende), 159:6-

16, 196:11-197:1 (Stern). The trial court thus misapplied the law in concluding that the small population deviation in Dr. Stern's ensemble analysis had bearing on its utility.[16]

Third, the Circuit Court misapplied the law in faulting Dr. Stern's ReCom algorithm, which he utilized to create the ensemble maps, for allegedly "favor[ing] compact maps." D108 p.29; App 29. But Dr. Trende testified that the ReCom algorithm is a reliable way to draw maps for an ensemble analysis. Tr. 656:19-25. Dr. Trende also conceded that "it is theoretically possible" for ReCom to produce the noncompact districts he initially claimed it could not, that the algorithm merely has a soft tendency not to generate wildly noncompact districts, and that Dr. Stern did not push ReCom to draw more compact districts. Tr. 657:1-17, 659:5-660:19.

More fundamentally, however, the Circuit Court misapplied the law in treating a slight algorithmic preference for avoiding wildly non-compact districts as grounds to discount the ensemble. The Missouri Constitution does not narrowly prohibit the *intentional* drawing of non-compact districts[17]—it imposes an objective mandate that each

[16] Dr. Stern also showed that a change in population deviation from 1% to 0.1% does not affect the results, which makes it unlikely that a 0.1% difference would be material. Tr. 196:11-197:1; PX 21 ¶72. Dr. Stern's ensemble also coincidentally produced several maps with perfect population equality, a number of which also improved on CD 4 and 5's compactness while freezing all other districts and outperforming the 2025 Plan on this Court's recognized factors. PX 21 at 51-53 & app'x. 4; Tr. 201:9-202:9. Dr. Cervas also testified that Dr. Stern's simulated maps can be readily adjusted to balance population without affecting their compactness properties. Tr. 85:8-86:4 (Cervas), 197:14-198:10 (Stern).

[17] If the Court were assessing whether the legislature *purposefully* drew non-compact districts, ReCom's soft preference for compactness might be relevant. Where intent is the legal standard, an algorithm that generates districts without any preference for the factor at issue, for example, race or partisanship (or here, compactness), helps to see if the

district be "as compact . . . as may be." Mo. Const. art. III, § 45. The operative legal question is therefore whether more compact districts were feasible while accounting for recognized factors. *Johnson*, 366 S.W.3d at 30-31. The only reasonable way to answer that question is to look for more compact districts for comparison, as even Dr. Trende acknowledges. Tr. 658:2-8. ReCom's marginal preference for avoiding extreme non-compactness does not undermine that inquiry; it mirrors the constitutional preference the General Assembly was obligated to follow. If the legislature were in fact adhering to the compactness requirement, one would expect CDs 4 and 5 to be composed of closely united territory given recognized factors, rather than extreme outliers. It is therefore irrelevant as a legal matter whether the algorithm inherently prefers generating compact districts, because that is what the Missouri Constitution requires.

Finally, any concern that the algorithm's preference inflated compactness at the expense of other redistricting criteria is refuted by the uncontroverted record. Dr. Stern's ensemble maps outperform the 2025 Plan on every recognized factor, confirming that his algorithm did not give undue weight to compactness at the expense of other considerations. Tr. 266:2-12. Thus, the trial court's reliance on this criticism as a basis to find CDs 4 and 5 compact under Article III, § 45 misapplied the law.

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challenged district conforms to neutrally drawn simulations. But that is not the standard here. Rather, any slight preference ReCom may have for compact maps furthers, rather than hinders, the analysis, which asks courts to consider whether a district non-minimally departed from compactness, and whether that could be explained by recognized factors.

B. The Circuit Court Misapplied the Law in Disregarding Dr. Cervas's Hand-Drawn Alternative Maps.

The Circuit Court also misapplied the law in specifically dismissing Dr. Cervas's alternative maps. The court's principal reason for discounting his maps was that they were "more compact than the 2022 Plan," which it claimed means "the 2022 Plan did not maximize compactness and would be unconstitutional." D108 p.26-27; App 26-27.

First, the lower court's premise is wrong: Dr. Cervas did not attempt to maximize compactness. Tr. 66:1-66:17. This Court's precedent does not hold that any map or individual district must have a certain mathematical compactness score to be constitutional. That is because, as this Court explicitly held, quantitative measures of shape and size "alone do not demonstrate that a [district] is or is not compact" and compactness means "closely united territory," which is "not . . . limited to physical dimensions" of a congressional district. *Pearson II*, 367 S.W.3d at 48, 49 n. 10. Thus, the quantitative scores of districts in Dr. Cervas's maps do not condemn any district in the 2022 Plan, which respected closely united territory in ways beyond just pure mathematical measures of district shape. Tr. 60:24-64:22.

Second, the districts on trial were CDs 4 and 5 in the 2025 Plan—not the 2022 Plan. No legal challenge has been filed against the 2022 Plan's districts, which are presumptively constitutional. *Pearson II*, 367 S.W.3d at 45. Dr. Cervas accordingly limited his analysis to assessing the compactness of the 2025 CDs 4 and 5 based on a holistic consideration of mathematical measures of compactness *and* on other indicia of closely united territory. Tr. 60:24-64:22, 134:23-135:12, 138:16-24. He did not analyze the compactness of districts in

the 2022 Plan beyond CDs 4 and 5, and after repeated questions on cross-examination, he took pains to make clear that his comparison of alternative maps to the 2022 Plan was *only* in terms of the mathematical compactness measures apparent from tables in his report, not the holistic view of compactness as closely united territory demanded by Article III, § 45. *See* Tr. 128:13-17, 130:20-131:9, 133:23-134:2, 134:16-135:12. Presumably applying a holistic analysis too, both the General Assembly and the Governor praised the 2022 Plan as one that "meets our constitutional requirements," PX 50, with "common-sense boundaries that everyday Missourians can recognize," PX 45. Thus, any solely quantitative comparison between Dr. Cervas's alternative maps and the 2022 Plan is irrelevant to assessing the compactness of CDs 4 and 5 in the 2025 Plan.

Third, the Circuit Court's mischaracterization of Appellants' requested remedy contributed to its erroneous dismissal of Dr. Cervas's alternative map evidence. The court appeared to treat alternative maps as proposed *remedial* plans and evaluated them against the 2022 Plan. *See* D108 p.29; App 29. But the legal function of alternative map evidence at the liability phase is not to propose a court-ordered replacement; it is to demonstrate that the challenged districts depart from compactness to a degree not necessitated by recognized factors. *Johnson*, 366 S.W.3d at 31; *Faatz*, 685 S.W.3d at 404 n.10.

Finally, it bears mention that the Circuit Court's factual findings concerning Dr. Cervas's maps contain a noticeable gap. They focus only on the alternative maps that alter districts beyond CDs 4 and 5 (i.e., Cervas Maps 5 through 8). *See* D108 p.16-17; App 16-17. But that ignores half of Dr. Cervas's maps (Cervas Maps 1 through 4), which left all districts in the 2025 Plan other than CDs 4 and 5 entirely unchanged (and therefore

consistent with legislature's redistricting choices). Tr. 67:8-12. In particular, Cervas Maps 3 and 4 split precisely the same counties the same number of times as the 2025 Map—a metric the Circuit Court found significant—while substantially improving the compactness scores on which the court placed great weight and complying with other recognized factors. Tr. 138:25-141:10; PX 86 at 6-9; PX 23 at 7.

For all these reasons, the Circuit Court misapplied the law in dismissing Dr. Cervas's and Dr. Stern's alternative map evidence.

Point IV: The Circuit Court erred in dismissing portions of Plaintiffs' expert and lay witness testimony as "irrelevant communities of interest analysis," because the court misapplied the law, in that evidence bearing on whether a district comprises "closely united territory" under Article III, § 45—including the ability of constituents to interact with representatives, population density, urban and rural interests, transit patterns, and infrastructure—is relevant under this Court's totality-of-the-evidence standard.

I. Standard of Review and Preservation of Error

The standard of review for the misapplication of law identified in Point IV is identical to the standard articulated in Point I above. Appellants also preserved this claim. Appellants included in their Petition that in Missouri, "compact" means "closely united territory," which "does not refer solely to physical shape or size," and that assessing whether a district contains closely united territory requires examining the totality of the evidence, including whether a district facilitates interaction between representatives and their constituents, population density, urban/rural differences, transit patterns, infrastructure, and other considerations. D2 p.9, 14-18, 41. Appellants maintained that argument and urged the Circuit Court to consider the totality of the evidence in their pretrial

brief, at trial, and in post-trial briefing. D73 p.6-9, 12-13, 20, 23-26; Tr. 18:15-19:1, 20:9-13, 20:24-21:4, 937:22-939:7; D107 p.115-117. No post-trial motion was required.

II. Argument

The Circuit Court legally erred in dismissing portions of Appellants' evidence as "legally irrelevant communities of interest analysis" and mere "policy preference that districts preserve 'communities of interest' in Kansas City." D108 p.27; App 27.

By disregarding how this Court has defined "closely united territory," the court discarded robust and unrebutted evidence that CDs 4 and 5 in the 2025 Plan combine areas that are not closely united and fragment connected areas that had been previously unified. Among this evidence were expert reports and testimony from Drs. Cervas, Stern, Cromartie, and Rodden, and lay witness testimony from plaintiffs and community leaders, including Kansas City Mayor Quinton Lucas. This evidence proved that the 2025 Plan's reconfiguration of CDs 4 and 5 splits a cohesive portion of Kansas City that has historically been contained within a single congressional district, disregards population density patterns and the distribution of urban and rural territory, and divides areas sharing common transit networks, housing patterns, and infrastructure, impeding rather than facilitating interaction among constituents and their representatives in each district. *See supra* Facts, Sec. IV.B.3-4.

The Circuit Court's error stemmed from its failure to apply this Court's definition of compactness. Whereas some states define "compact" to refer only to the physical shape or size of districts, this Court has long defined compact more broadly to mean "closely united territory, a phrase not necessarily limited to *physical* dimensions." *Pearson II*, 367

S.W.3d at 48 (emphasis added). As explained above, while a district's physical shape or size—assessed by "visual observation" or "various statistical measures"—is "relevant" to the compactness inquiry, it is not the only component of compactness. *Id.* at 48-49. A compact district—one comprising "closely united territory"—is also one "conducive to communication and interaction among representatives and constituents." *See id.*; Kurtis A. Kempter, Annotation, *Application of Const. "Compactness Requirement" to Redistricting*, 114 A.L.R. 5th 311, Part II, § 3(b) (2003) (describing state court cases asking whether districts are "compact in interests as well as in means of intercommunication" and examining "the ability of citizens to relate to each other and their representatives"). Thus, under Article III, § 45, compactness encompasses not only a district's geometry but also whether it keeps proximate and related communities together to facilitate representation.

Courts applying Article III, § 45 have recognized the character and features of a district's enclosed territory as legitimate compactness considerations. In *Pearson II*, this Court upheld a circuit court's determination that the plaintiffs failed to prove CD 5 in the 2012 Plan was not "as compact . . . as may be," despite its irregular shape, because the district could have been "drawn in consideration of the legitimate factor of keeping a greater portion of Kansas City" within the same district. *Pearson II*, 367 S.W.3d at 56. The three-judge federal district court in *Shayer v. Kirkpatrick* had a similar understanding: tasked with redrawing Missouri's congressional map after the state failed to reapportion following the 1980 census, the court recognized that compactness includes how urban and rural areas are distributed among districts, explaining that "grouping of urban interests is

to some extent necessary to meet the compactness requirement." 541 F. Supp.922, 934 (W.D. Mo. 1982), *aff'd sub nom.*, *Schatzle v. Kirkpatrick*, 456 U.S. 966 (1982).

This precedent demands a holistic analysis, including an evaluation of whether proximate territory sharing common characteristics is kept together. Compliance is assessed, as this Court has instructed, under the "totality of the evidence"—i.e., without categorical exclusion of non-geometric evidence as to whether territory within a district is closely united. *Pearson II*, 367 S.W.3d at 48. Among the recognized factors this Court has found relevant are population density and "the historical boundary lines of prior redistricting maps." *Id.* at 50. Consideration of historical boundaries "allows residents of a district to continue any relationships such residents may have established with their elected representatives and to avoid the detriment to residents of having to reestablish relationships when district boundaries change." *Id.* at 50 n.12.

Thus, Appellants' evidence of the 2025 Plan's unprecedented fragmentation of the closely united Kansas City area previously unified in CD 5 and of surrounding rural areas previously unified in CD 4, which the court dismissed as mere "policy preference" and "community of interest" evidence, is relevant to assessing compactness itself—as Intervenor-Respondent's own expert conceded. *See* Tr. 774:3-6 (Hood) (testifying that one factor for determining if an area constitutes closely united territory is whether communities that share similarities are included in a district together). Dr. Cromartie's analysis of commuting patterns and urban/rural designations and populations; Dr. Rodden's analysis of population density, transit infrastructure, housing, and industry distribution; Mayor Lucas's testimony about the connection between federal representation and investment in

city projects; and Dr. Hood's testimony that according to his own academic threshold, the gutting of constituents in the 2025 CDs 4 and 5 "greatly altered the relationship between representatives and constituents," all directly go to the character and features of the district's territory and whether it facilitates interaction among the district's constituents and representative, as precedent requires. *See Pearson II*, 367 S.W.3d at 48-50; Tr. 784:15-787:9.

The Circuit Court also committed legal error by relying on *Johnson* to categorically dismiss this evidence. In *Johnson*, this Court held that considerations beyond recognized factors—such as "maintaining communities of interest and avoiding contests between incumbents"—cannot *justify* a district's departure from compactness. 366 S.W.3d at 30. That holding is not implicated here. Appellants do not contend that a departure from compactness in CDs 4 and 5 is unjustified on community-of-interest grounds. Rather, they contend that the districts' fragmentation of connected territory and recombination of disconnected territory along dimensions beyond physical size and shape is *itself* a departure from compactness—consistent with *Pearson II*'s definition of compactness as closely united territory. And this evidence of disunity in CDs 4 and 5 points in the same direction as the physical size-and-shape evidence: the districts lack closely united territory on every dimension. This approach is in fact consistent with *Johnson*, which does not hold that evidence of disunity along non-physical size-and-shape dimensions is irrelevant to assessing compactness under Article III, § 45. Indeed, it would make no sense for *Johnson* to foreclose such evidence when it was decided the same day as *Pearson II*, which expressly defined compactness as closely united territory beyond mathematical size and

shape. The Circuit Court acknowledged this definition, D108 p.21; App 21, but then proceeded to commit legal error by relying on *Johnson* to disregard it.

Had the court not dismissed the relevant and unrebutted evidence through a misapplication of the law and instead engaged in the required analysis, it could not have escaped the conclusion that CDs 4 and 5 in the 2025 Plan combine dissimilar areas and fragment closely united territory in a manner that is not minimal or practical, in violation of the Missouri Constitution. The Circuit Court's categorical dismissal of this evidence is reversible legal error.

Point V: The Circuit Court erred in failing to determine whether the departures from compactness in CDs 4 and 5 in the 2025 Plan were minimal and practical deviations that "result from" application of recognized factors, because it misapplied the law, in that this Court's precedent requires such a determination under Article III, § 45.

I. Standard of Review and Preservation of Error

The standard of review for the misapplication of law identified in Point V is identical to the standard articulated in Point I above. Appellants also preserved this claim. Appellants' Petition alleged that the 2025 Map's deviations from compactness in CDs 4 and 5 were not required by nor did they "result from" population density patterns, historical boundary lines, political subdivision splits, contiguity, population equality, federal law, or any other required or permissive factor. D2 p.33-34, 36-37, 42-43. In their pretrial brief, at trial, and in post-trial briefing, Appellants further pursued this argument, explaining that the lack of compactness in the challenged districts did not result from any mandatory or permissive factor. D73 p.9-10, 13-25; Tr. 19:13-20:3, 864:25-865:9, 938:4-939:7; D107 p.69-85. No post-trial motion was required.

II. Argument

The Circuit Court failed to apply an essential part of the legal standard: determining whether any departures from compactness in CD 4 or CD 5 are the "result of" recognized factors.

Departures from compactness under Article III, § 45 are permissible only if they are "minimal and practical deviations" that "result[] from" the application of recognized factors. *Pearson II*, 367 S.W.3d at 53. Those factors include the other constitutional mandates of "contiguous territory and population equality," as well as compliance with federal law, like the VRA. *Id.* at 49. They also include certain "permissive" factors: "population density; natural boundary lines; the boundaries of political subdivisions, including counties, municipalities, and precincts; and the historical boundary lines of prior redistricting maps." *Id.* at 50, 51.

The fact that the map as a whole complies with other constitutional requirements or improves on permissive factors statewide does not automatically excuse a departure of compactness. *See, e.g.*, *Johnson*, 366 S.W.3d at 24 n.7 (holding that analysis of constitutional validity under article III, § 45 must "focus[] on whether *each* constitutional requirement is met for *each* district) (emphasis in original); *Pearson I*, 359 S.W.3d at 39 (Article III, § 45's mandatory compactness requirement "applies to each Missouri voter, in every congressional district."); *Pearson II*, 367 S.W.3d at 48, 53, 54 n. 16, 55. Minimal and practical deviations from compactness are only permitted if they are "due to" mandatory and permissive factors, *Pearson II,* 367 S.W.3d at 51, or "*necessary* to comply with other

constitutional requirements," *Faatz*, 685 S.W.3d at 404 (emphasis added). The Circuit Court committed legal error when it ignored and misapplied this requirement.

The Circuit Court excused all deviations from compactness because it concluded that the 2025 Plan adhered to population equality and contiguity requirements and, compared to the 2022 Map, had an overall reduction in county and municipal splits, better aligned county and congressional district borders in CDs 1, 2, and 3, and eliminated a split in the "Northland" area of Kansas City. D108 p.25-26; App 25-26. But the court conducted no analysis to determine whether the lack of compactness in CDs 4 and 5 was the *result of* or *necessitated by* adherence to these mandatory and permissive considerations as the caselaw requires. Neither of Respondents' experts analyzed whether application of any of the recognized factors resulted in a departure from compactness in CDs 4 or 5. Tr. 774:13-780:24 (Hood); 653:22-654:14, 664:13-665:9, 675:23-676:1 (Trende). Such analysis—neglected by Respondents' experts and the court but conducted by Appellants' experts—demonstrates that no recognized factor justified the lack of compactness in CDs 4 and 5.

First, it was uncontested that deviations from compactness in CDs 4 or 5 were not necessitated by adherence to population equality or contiguity requirements. In its grounds for decision, the Circuit Court merely noted that the 2025 Plan "complies with the equal population and continuity mandates." D108 p.25; App 25. But it was undisputed that the 2022 Plan already adhered to these requirements, and it did so while keeping CDs 4 and 5 more compact. Tr. 774:13-775:8 (Hood). Moreover, no new decennial Census occurred between 2022 and 2025 that could have necessitated a redraw of the district to achieve population equality. *Id*. at 773:13-22. Therefore, population equality and contiguity

requirements cannot be the *reason* for the departure from compactness in CDs 4 and 5 in the 2025 Plan, as the caselaw requires.[18]

Second, a reduction in county, municipal, or VTD splits in the 2025 Plan also did not necessitate a reduction in compactness in the challenged districts. The Circuit Court put great weight on the overall improvement in county, municipal, and VTD splits in the 2025 Plan, finding these reductions were an "important consideration" justifying a departure in compactness. D108 p.25-26 (citing *Johnson*, 366 S.W.3d at 29-30); App 25-26. This is legal error. The constitution does not permit a significant reduction in compactness in a district simply if the resulting map happens to perform better statewide on some permissible factor. The permissible factor has to *result in* the compactness reduction. *Pearson II,* 367 S.W.3d at 51 (minimal or practical deviation must be "due to" recognized factors); *Faatz*, 685 S.W.3d at 404 (deviation must be "necessary to comply with other constitutional requirements."). But the evidence here did not show—nor did the Circuit Court find—*any* causal relationship between the plan-wide improvement on county or municipal splits and the district-level compactness reductions in CDs 4 or 5. Rather, the uncontested evidence from Dr. Stern's and Dr. Cervas's alternative maps shows that the same plan-wide reduction in county and municipal splits was possible without any reduction in the compactness of CDs 4 or 5. Tr. 77:8-79:4 (Cervas); PX 23 at 7-10, 14-15; PX 21 ¶¶ 36-38. The Circuit Court focused on the 2025 Plan's removal of a split of Camden

[18] The parties also stipulated that any changes to CD 4 or 5 in the 2025 Plan were not a necessary result under the federal VRA or the Fourteenth Amendment. D86 (Joint Stips.) p.10; App 42.

County in CD 4, D108 p.26; App 26, but this cannot explain CD 4's reduction in compactness. All eight of Dr. Cervas's maps removed the split of Camden County in CD 4 while keeping the district more compact. PX 86 at 2-17. This conclusively shows that reduction of splits did not necessitate a reduction in compactness.

The Circuit Court also treated the General Assembly's choice to adjust the boundaries in CDs 1, 2, and 3 as a justification for departing from compactness in CDs 4 and 5. D108 p.26; App 26. But the Circuit Court again failed to analyze whether these choices in any way caused or explain the reduction in compactness in CDs 4 and 5, as the law requires. Indeed, no change in the boundaries of CDs 1, 2, and 3 can explain the reduction in compactness in CDs 4 and 5. Dr. Stern's ensemble of 100,000 maps left CDs 1, 2, and 3 exactly as they were in the 2025 Plan, while drawing configurations of CDs 4 and 5 that were significantly more compact. PX 21 at 3-4, 6. Dr. Cervas's maps do the same. In all eight of Dr. Cervas's alternative maps, CDs 1 and 2 are unchanged compared to the 2025 Plan, and in four of his maps, CDs 1, 2, 3, and 6 are unchanged from the 2025 Plan, respecting 100% of the General Assembly's policy choices in that area, while significantly improving the compactness of CDs 4 and 5. PX 23 at 6-8. Thus, even on a map-wide basis, these alternative maps significantly improve upon the overall compactness of the 2025 Plan. *Id.* at 7. The adjusted boundaries of CDs 1, 2, and 3 in the 2025 Plan thus cannot be the reason for the change in compactness in CDs 4 and 5, and the Circuit Court committed legal error by neglecting to analyze whether this was so.

The Circuit Court also treated the General Assembly's choice to unify the "Northland" portion of Kansas City as a justification for the departure from compactness

in the CDs 4 and 5. D108 p.26; App 26. But the Northland could have been unified—if that was the goal—without making CDs 4 and 5 any less compact. Dr. Stern's ensemble maps left the unification of the Northland in CD 6 untouched while improving the compactness of CDs 4 and 5 across virtually every compactness measure. PX 21 at 3-4, 6, 25-28. And four of Dr. Cervas's eight maps do the same. PX 23 at 6-8. Dr. Cervas's maps 1 through 4 keep CD 6 (with its unification of the Northland) exactly as it is in the 2025 Plan while CDs 4 and 5 are made more compact across nearly every metric. *Id.* The Circuit Court disregarded these four maps entirely. *See supra* Argument, Point III.C. Had the Circuit Court not disregarded this evidence, it would have been plain that the lack of compactness in CDs 4 and 5 was not "due to" or made "necessary" by any purported choice by the General Assembly—mandatory or permissive. Failing to conduct this analysis was legal error.

The Circuit Court also raised the possibility that "Missouri legislators might have wanted to unite areas with *different* population density in the same district." D108 p.27; App 27. But no evidentiary foundation for this idea exists, as there is nothing in the record to even suggest this motivated the General Assembly or that it led to CDs 4 and 5 being non-compact. Nor has this Court ever held that the mere *possibility* of such a motive of the General Assembly—and one which would be nothing more than a pretext for partisan advantage—is among the list of exclusive recognized factors that can necessitate a departure from compactness. *See infra* Argument, Point VI. The Circuit Court also failed to explain whether such a possible goal necessitated the drastic departure from compactness in CDs 4 or 5 in the 2025 Plan. Regardless, the uncontroverted record shows

it did not: alternative maps—namely Cervas Maps 3 and 4—sensibly combine areas of varying population density (urban and rural) in both CDs 4 and 5 while keeping both significantly more compact. PX 86 at 6-9; PX 23 at 7. A speculative—and ultimately inconsequential—motive of the General Assembly cannot justify CD 4 or 5's departure from compactness.

Finally, the Circuit Court found that Appellants' alternative maps "focus heavily on District 5 but underplay the possibility that the General Assembly may have had permissibly broader views of redistricting principles in its enactment of the 2025 Plan." D108 p.29; App 29. But "the framers of the Constitution did not intend" for redistricting to be done "according to the free will and caprice of the officers charged with that duty." *Preisler v. Doherty*, 284 S.W.2d 427, 435 (Mo. banc 1955). Instead, Missouri law presents a finite list of mandatory and permissive factors that the General Assembly must and can consider. *Pearson II*, 367 S.W.3d at 51. Any reduction in compactness of the challenged districts—including CD 5—must be minimal and practical and must actually *result from* adherence to those limited factors. The Circuit Court erred in suggesting that an impermissible plan-wide focus supplants a review of the compactness of an individual district, such as CD 5. In fact, it was legal error for the Circuit Court not to conduct that analysis. *See, e.g.*, *Johnson*, 366 S.W.3d at 24 n.7. At bottom, the Circuit Court failed to analyze the required causal connection between mandatory or permissive factors and a resulting reduction in compactness in CDs 4 and 5. This failure constitutes reversible legal error.

Point VI: The Circuit Court erred in allowing non-recognized factors to justify departures from compactness, because it misapplied the law, in that the recognized factors enumerated in Pearson II that may result in a minimal and practical deviation from compactness are exclusive.

I. Standard of Review and Preservation of Error

The standard of review for the misapplication of law identified in Point VI is identical to the standard articulated in Point I above. Appellants also preserved this claim. Appellants' Petition contended that CDs 4 and 5 in the 2025 plan violate the Article III, § 45 compactness requirement, and specifically that the deviations in compactness do not result from consideration of the exclusive list of *Pearson II*'s "recognized factors," which does not include conforming congressional boundaries to state senate districts or local legislative boundaries. D2 p.10, 32-34, 36-38, 42-43. Appellants maintained that claim and urged the Circuit Court to follow this Court's precedent and consider only these factors in their pretrial brief, at trial, and in their post-trial briefing. D73 p.7-8, 22-25; Tr. 82:4-85:7, 847:11-23, 863:18-865:9, 866:16-867:18, 869:18-870:15, 872:23-875:17; D107 p.2-3, 69, 78-81, 96, 101-102, 104, 119-122. No post-trial motion was required.

II. Argument

To support its determination that the 2025 Plan did not violate Article III, § 45's compactness requirement, the Circuit Court stated that the 2025 Plan "generally follows state senate boundaries," and "respects [] political subdivisions in Jackson County [in part] by tracking the state senate map almost perfectly," and that it "better follows . . . local legislative boundaries" than the 2022 Plan. D108 p.25-26; App 25-26. But the Circuit Court misapplied the law in that neither state senate districts nor local legislative boundaries are

among the *exclusive* set of recognized factors that may justify minimal and practical deviations from compactness under *Pearson II*, 367 S.W.3d at 49-50. And even if they were, the evidence shows they cannot explain the departure from compactness in CDs 4 and 5.

The compactness requirement in Article III, § 45 is qualified by the words "as may be," which the Missouri Supreme Court has understood to mean "there are other recognized factors that affect the ability to draw district boundaries with closely united territory." *Id.* at 49. Those factors include the other constitutional mandates of "contiguous territory and population equality," as well as compliance with federal law, like the VRA. *Id.* They also include certain "permissive" factors: "population density; natural boundary lines; the boundaries of political subdivisions, including counties, municipalities, and precincts; and the historical boundary lines of prior redistricting maps." *Id.* at 50.

This set of factors is *exclusive*, meaning these are the only factors that may justify deviation from closely united territory. *See, e.g.*, *id.*; *Johnson*, 366 S.W.3d at 28 n.10 ("Nothing . . . should be construed as expanding the list of factors beyond those recognized in this Court's precedent."). State Respondents appear to agree. *See* D87 p.27. State senate districts and local legislative boundaries are not among the political subdivisions enumerated in *Pearson II*, which, as noted above, identifies only "counties, municipalities, and precincts" as the relevant subdivisions entitled to consideration. 367 S.W.3d at 50. This is not simply a semantic distinction; state senate districts are different from counties and municipalities in that they change at least once a decade, are subject to various redistricting requirements that impact their boundaries, and are not independent government units in

which citizens are "accustomed to working together" in the sense recognized by Missouri precedent. *See id.* at 49 (quoting *Preisler v. Hearnes*, 362 S.W.2d at 556); PX 28 at 12.

The Circuit Court thus misapplied the law in claiming that "[e]ven if portions of the challenged districts in this case appear to not be composed of closely united territory . . . the 2025 Plan is still 'as compact . . . as may be' after considering the 2025 Plan's adherence to the permissive factors [including adherence to state senate district and local legislative boundaries] discussed above." D108 p.26; App 26. This is error because conforming congressional districts to state senate district and local legislative boundaries is *not* a permissive factor according to this Court's binding precedent in *Pearson II*. Nor, as the Circuit Court claims, does "the Constitution's compactness direction 'implicitly permit[]' the General Assembly to consider" such a factor as a justification for "minimal and practical deviation [from compactness]." D108 p.25-26; App 25-26; *see also Johnson*, 366 S.W.3d at 28 n.10 (noting that list of recognized factors is exclusive).

Even if this Court were to determine that these factors are relevant, their consideration does not support the Circuit Court's grounds for decision. Dr. Cervas's alternative maps show that the 2025 Plan *increased* the number of senate district splits compared to the 2022 Plan, and his alternative maps show that more compact configurations of CDs 4 and 5 were readily available that would have further decreased senate district splits. PX 24 at 11-12; PX 23 at 7; Tr. 93:2-25.[19] Additionally, Dr. Stern's

[19] It is undisputed that the 2025 Plan's CD 5 splits more state senate districts than does the 2022 Plan's CD 5. Tr. 639:3-8 (Trende).

analysis shows that, whether "looking at population intactness or the number of splits," the 2025 Plan "split senate districts more times and more severely than about 90-percent of the ensemble maps," while also being consistently less compact than the ensemble maps. Tr. 200:5-8; PX 21 at 33. It therefore cannot be that the 2025 Plan's deviations from compactness can be explained by an effort to respect state senate districts and local legislative boundaries when the 2025 Plan performs *worse* than the vast majority of available alternatives in satisfying that objective.[20]

Point VII: The Circuit Court erred in discounting Appellants' expert evidence on the grounds that the experts could not account for the subjective "policy preferences" of the General Assembly, because it misapplied the law, in that Pearson I and Pearson II hold that Article III, § 45's compactness requirement is mandatory and objective, not subjective, and that legislative policy preferences cannot override the constitutional compactness mandate.

I. Standard of Review and Preservation of Error

The standard of review for the misapplication of law identified in Point VII is identical to the standard articulated in Point I above. Appellants also preserved this claim. Appellants' Petition claimed that CDs 4 and 5 in the 2025 Plan violate the Article III, § 45 compactness requirement, and specifically that the subjective intent of the General Assembly is not a permissible consideration in a compactness analysis according to Missouri Supreme Court precedent. D2 p.9-10, 38-39, 42-43. Appellants maintained that claim and urged the Circuit Court not to consider the subjective intent of the General

[20] Even if these considerations were permissible factors—they are not—the Circuit Court did not analyze whether they actually necessitate a departure from compactness in CDs 4 or 5 specifically. This was legal error. *See, e.g.*, *Johnson*, 366 S.W.3d at 24 n.7.

Assembly in their pretrial brief, at trial, and in their post-trial briefing. D73 p.7-9, 27; Tr. 20:4-13, 946:5-25; D107 p.101, 126-27. No post-trial motion was required.

II. Argument

In assessing what consideration to give the evidence presented by Appellants' experts, the Circuit Court explained that:

> Plaintiffs' experts conceded they do not know which traditional factors the General Assembly considered, how it balanced those various factors, which trade-offs it made among them, and how it decided to make those trade-offs. Their various analyses and opinions cannot account for the policy preferences the General Assembly made throughout the legislative process and the creation of the 2025 Plan.

D108 p.27; App 27. This reasoning is legally erroneous. This Court has held that the compactness inquiry under Article III, § 45 is *objective*, meaning that it does not turn on legislators' subjective explanations or considerations, but rather on whether the challenged districts' deviations from closely united territory were minimal and practically necessary due to recognized factors. *See Pearson II*, 367 S.W.3d at 46, 48. State Defendants concur. *See* D87 p.25 ("Prying into any political motivations behind the 2025 Plan's enactment is *ultra vires* and irrelevant to this present controversy."); D98 p.54.

The Missouri Constitution's compactness requirement is "mandatory and objective," such that "the existence of good faith in the legislature or lack thereof is irrelevant." *See id.*; *Johnson*, 366 S.W.3d at 30 ("[T]he issue of whether the constitutional requirements are satisfied is determined objectively, requiring no proof of the subjective intent." (citing *Pearson I*, 359 S.W.3d at 40)). In assessing whether a violation of Article III, § 45 has occurred, the question is not what the General Assembly's subjective intent

was in making its decisions, but whether each district is "as compact . . . as may be" considering minimal and practical deviations to account for the exclusive list of recognized factors. *Pearson II*, 367 S.W.3d at 50-51. No Missouri case has ever held that a plaintiffs' expert must show that their alternative map evidence replicates or mirrors legislative intent in order to satisfy their burden. Indeed, when it comes to redistricting, "it was not the intention of the framers of the Constitution to confer upon the Legislature the unlimited power and discretion to form the districts in such shapes and dimensions as it might, in its own opinion, deem proper, nor to give to each a population which it deemed best." *See Hitchcock*, 146 S.W. at 54.

The Circuit Court thus legally erred in criticizing Appellants' expert witnesses for "not consider[ing] all the factors that the General Assembly weighed in enacting the 2025 Plan." D108 p.16; App 16.[21] As explained, this is a legally inappropriate consideration in assessing a compactness claim under Article III, § 45. Nevertheless, it is indisputable that both Dr. Stern and Dr. Cervas maximally preserved legislative preferences in creating their alternative maps.

[21] Moreover, legislators and the Governor moved to quash subpoenas sent by the *Healey* Appellants seeking to discover any relevant information they had regarding redistricting. The parties responded to the subpoenas by claiming legislative privilege and stating that *subjective intent is irrelevant* in these types of cases, as "the analysis at issue is an objective analysis limited to the map at issue." *See* D55 at 1, 12 (stating "to reiterate, the case before the Court requires no proof of the subjective intent of . . . the Governor and General Assembly" which is "not relevant to this case.") (citation omitted); *see also* D56-64 (same). Legislative intent cannot be used as a both a sword (by asserting that Appellants' experts do not know the General Assembly's intent) and a shield (refusing to provide any information regarding legislative intent).

In Dr. Stern's ensembles, he left in place the 2025 Plan's boundaries for every congressional district except for CDs 4 and 5. PX 21 at 4. Dr. Cervas did the same for four of his eight alternative maps, with three others also slightly altering CD 6 and a final map that made a minor adjustment to CD 3. PX 23 at 8. This means that the vast majority of the General Assembly's preferences, whatever they might have been and as expressed in the lines enacted, were preserved in *all* of the alternative maps created by Plaintiffs' experts.[22]

Moreover, if the Court were to find that the subjective intent of the legislature is a relevant consideration, the evidence in this case would surely prove fatal to the Circuit Court's ruling. As this Court has made clear, the ultimate purpose of the compactness requirement under the Missouri Constitution is "to guard, as far as practicable . . . against a legislative evil, commonly known as the gerrymander." *Preisler*, 284 S.W.2d at 435 (citing *Hitchcock*, 146 S.W. at 61, 65) (quotation marks omitted); *see also Pearson II*, 367 S.W.3d at 50 ("[D]istricting, without any regard for political subdivision or natural or historical boundary lines, may be little more than an open invitation to partisan gerrymandering." (citation omitted)).

The impetus for the General Assembly's decision to engage in this unprecedented mid-decade redistricting was unabashedly partisan and is a matter of both the evidentiary and the public record. PX 30-33. The haste in which the General Assembly accomplished

[22] The *only* map that would assuredly capture legislative intent with respect to *all* districts is the map the General Assembly actually enacts. Thus, if the Circuit Court's view were the law (it is not), it would effectively insulate any congressional map from any enforcement of the "compact . . . as may be" standard.

its mid-decade redistricting in a special session reinforces this conclusion. To the extent that the Missouri General Assembly sought to reduce the political strength of Kansas City voters relative to voters elsewhere in Missouri, that is a political and partisan decision that cannot serve as a basis for departing from the Missouri Constitution's *mandatory* compactness requirement. *See* Tr. 896:12-14, 937:5-6 (counsel for State Respondents and Intervenor-Respondent effectively conceding that the legislature's goal in CDs 4 and 5 was to put statewide partisan interests, described as "Missouri First," before Kansas Citians' interest in representation, described as "Kansas City first"). As this Court has held, Article III, § 45's compactness requirement protects each Missouri voter, in each congressional district, from such harms. *Pearson I*, 359 S.W.3d at 39.

Point VIII: The Circuit Court erred in its judgment that neither CD 4 nor CD 5 violate Article III, § 45's compactness mandate, because it is against the weight of the evidence, in that the probative value of the evidence that CDs 4 and 5 depart from principles of compactness without valid explanation so outweighs the evidence supporting the court's contrary finding that a firm belief the judgment is wrong is warranted.

I. Standard of Review and Preservation of Error

"A judgment entered following a bench trial may be reversed if no substantial evidence supports the judgment, it is against the weight of the evidence, or it erroneously declares or applies the law." *Weeks v. City of St. Louis*, 721 S.W.3d 873, 876 (Mo. banc 2025). To demonstrate a circuit court's judgment is against the weight of the evidence, an appellant must:

> (1) identify a challenged factual proposition necessary to sustain the judgment; (2) identify all favorable evidence in the record supporting the challenged factual proposition; (3) identify the evidence in the record contrary to that proposition, resolving all evidentiary conflicts in accordance with the circuit court's implicit and

> explicit credibility determinations; and (4) demonstrate the favorable evidence, and the reasonable inferences therefrom, is so lacking in probative value it fails to induce belief in that proposition when considered in the context of the entire record.

Id. at 877. Weight generally refers to the probative value (not quantity) of the evidence. *Pearson II*, 367 S.W.3d at 51.

Appellants preserved this claim. Appellants' Petition alleged compactness violations under Article III, § 45 in each of CDs 4 and 5. D2 p.3, 9, 26-38, 41-43. Appellants maintained that claim and urged the Circuit Court to conduct an analysis of the constitutionality of each challenged district under the totality of the evidence in their pretrial brief, at trial, and in their post-trial briefing. *See* D73 p.5-25; Tr. 20:9-13, 847:4-10, 944:18-945:24; D107 p.96-104. No post-trial motion was required.

II. Argument

The Circuit Court's judgment that CDs 4 and 5 do not violate Article III, § 45's compactness mandate is against the weight of the evidence.[23]

First, the Circuit Court's judgment rests on its finding that neither CD 4 nor CD 5 departs from principles of compactness, which is a factual proposition necessary to sustain its judgment. D108 p.24; App 24; *see Pearson II*, 367 S.W.3d at 47 (noting that

[23] Despite viewing the parties' requests under Rule 73.01(c) as deficient in form, *see* Order at 5, the Circuit Court nevertheless made findings of fact and explained its application of law to facts and how it weighed the evidence in a detailed statement of grounds for decision, facilitating appellate review here, unlike the lower court in *Pearson II*, 367 S.W.3d at 44 n.3, 52.

"determining whether the characteristics of a particular map satisfy the meaning of the 'as compact . . . as may be' requirement involves questions of fact").[24]

Second, as explained *supra* Argument, Points I-II, the exclusive evidence on which the Circuit Court relied to support this determination consists of a handful of geometric shape metrics assessed through irrelevant statewide averages and inapt comparison of these scores at the district level with an assortment of districts from across the state in old maps drawn under different population and geographic constraints. D108 p.23-24; App 23-24. This evidence was, as a matter of law, inadequate to support a factual finding that neither CD 4 nor CD 5 departed at all from principles of compactness under *Pearson II*, which demands an assessment of "closely united territory" that the court simply did not conduct. *See supra* Argument, Points I-II. Thus, there is no favorable evidence in the record to support such a finding with respect to either district, except for the factually incomplete and legally inconclusive observation that CD 4 slightly improved on some shape-based measures of compactness. PX 23 at 10; PX 24 at 5, 8.

Third, the uncontroverted evidence contrary to the court's compactness finding is overwhelming. Regarding CD 5, no expert disputed that the district declined compared to the 2022 Plan on *every* shape-based measure the Circuit Court found probative—having been transformed from a small square/rectangular-shaped district to one that stretches more

[24] As explained *supra* Argument, Point V, the lower court failed to make *any* finding as to whether the departures from compactness in each district "result from" or were "due to" any recognized factor—to the extent one infers that the court did so find, that too is against the weight of the evidence.

than 200 miles across the state. PX 23 at 10; PX 24 at 8-10; Tr. 762:12-25, 763:4-14 (Hood). No expert disputed that CD 5's perimeter nearly tripled, expanded to encompass 15 counties (three times the median in Dr. Stern's ensemble), or that it is less compact than 97.5% of Dr. Stern's 100,000 simulated plans on boundary-length measures that account for natural and political subdivision boundaries and population density. PX 21 ¶¶47, 56; Tr. 180:8-181:4. No expert disputed that the 2025 Plan assigned only 34% of Kansas City's population in CD 5, down from about 80% in every map since 1992, or that 126,008 Kansas City residents were reassigned from CD 5 to CD 4, a more-than-thousandfold increase from 2022. PX 27 at 14-15; PX 22 ¶¶10-11. And no expert disputed that CD 5 now combines dense urban territory with sparsely populated rural areas, disregarding population density patterns and fragmenting areas of shared interests that the 2022 Plan respected. PX 27 at 13, 17-22; PX 25 at 4, 16-21; PX 23 at 10; Tr. 81:16-82:3.

Regarding CD 4, no expert disputed that its Reock and IKIWISI scores declined compared to the 2022 Plan and are lower than in all eight of Dr. Cervas's alternative maps. PX 23 at 10-11; PX 24 at 8-10. No expert disputed that CD 4 retained less than 62% of its prior population—well below the 68.7% threshold Dr. Hood identifies as "greatly alter[ing] the relationship between representatives and constituents." Tr. 784:15-787:9; PX 23 at 23. And no expert disputed that CD 4's formerly rural character has been fundamentally altered by pairing rural counties with dense urban Kansas City neighborhoods in a narrow corridor along the state line, transforming the district so that its share of metropolitan area now exceeds its rural. PX 27 at 19-20; Tr. 448:2-450:6 (Cromartie).

Fourth, when considered in the context of the entire record, the evidence favorable to the Circuit Court and the reasonable inferences therefrom cannot support a belief that CD 4 and CD 5 do not depart from compactness. Indeed, the totality of the evidence shows that CD 4 and CD 5 both clearly and undoubtedly depart from compactness to a degree that is not minimal or practical or explainable by application of any recognized factor.

The Circuit Court's judgment must be overturned as against the weight of the evidence.

Point IX: The Circuit Court erred in its judgment that neither CD 4 nor CD 5 violate Article III, § 45's compactness mandate, because the judgment is not supported by substantial evidence, in that the legal errors in Points I through VII left the court's compactness finding without a sufficient evidentiary basis.

I. Standard of Review and Preservation of Error

"Substantial evidence is evidence that, if believed, has some probative force on each fact that is necessary to sustain the circuit court's judgment." *Ivie v. Smith*, 439 S.W.3d 189, 199 (Mo. banc 2014). Evidence has probative force if it has any tendency to make a material fact more or less likely. *Id.* To review whether a circuit court's judgment is supported by substantial evidence, appellate courts view the evidence in the light most favorable to the circuit court's judgment and defer to the circuit court's credibility determinations; no contrary evidence need be considered. *Id.*

Appellants preserved this claim. Appellants' Petition alleged compactness violations under Article III, § 45 in each of CDs 4 and 5. D2 p.3, 9, 26-38, 41-43. Appellants maintained that claim and urged the Circuit Court to conduct an analysis of the constitutionality of each challenged district under the totality of the evidence in their

pretrial brief, at trial, and in their post-trial briefing. *See* D73 p.5-25; Tr. 20:9-13, 847:4-10, 944:18-945:24; D107 p.98-108. No post-trial motion was required.

II. Argument

The Circuit Court's judgment that CDs 4 and 5 satisfy the compactness mandate is not supported by substantial evidence. Once the legal errors identified in Points I through VII are corrected—and the proper standard is applied, assessing each district individually under the totality of the evidence as *Pearson II* demands—there is no substantial evidence in the record supporting a finding that CDs 4 and 5 are "as compact . . . as may be."

The Circuit Court's sole evidentiary basis consists of plan-wide average scores on a handful of geometric metrics and comparisons to historical maps drawn under different constraints, as well as map-wide improvements to county and municipal splits compared to 2022 (that could have been achieved without any reduction in compactness in CDs 4 and 5). D108 p.23-25; App 23-25. Even if believed and viewed in the light most favorable to the judgment, plan-wide averages have "limited relevance" to the compactness of any individual district as a matter of law, *Pearson II*, 367 S.W.3d at 54 n.16, and quantitative measures of district shape "alone do not demonstrate that a [district] is or is not compact," *id.* at 49 n.10. Because of these and several other legal errors identified above, the Circuit Court disregarded highly probative evidence that, if considered, would have shown a clear compactness violation in CDs 4 and 5. Instead, the court zeroed in on meager evidence of low probative value that is insufficient as a matter of law to support its compactness ruling. Its judgment should thus be reversed as not based on substantial evidence.

Point X: The Circuit Court erred in entering judgment for Respondents on Counts III and IV, because the court misapplied the law, in that the court based its ruling on whether the Board Respondents would misapply the map rather than engaging with the plain text of H.B. 1, which assigns two identically named VTDs to both CDs 4 and 5 without differentiating between them violating Article III, §45, and the record contained undisputed evidence establishing the violations.

I. Standard of Review and Preservation of Error

A circuit court's judgment is set aside if it "erroneously declares or applies the law." *Pearson II*, 367 S.W.3d at 43 (citation omitted). Claims that the circuit court misapplied the law are reviewed de novo. *Sender*, 681 S.W.3d at 193. Appellants preserved these claims. Appellants' Petition claimed that CDs 4 and 5 in the 2025 plan violate the equal population and contiguity requirements under Article III, § 45 due to H.B. 1's assignment of VTD KC 811 to both districts. D2 p.3, 7, 24-26, 43-44. Appellants maintained that claim and urged the Circuit Court to find that, according to the text of H.B. 1, the 2025 Plan violates the equal population and contiguity requirements in their pretrial brief, at trial, and in their post-trial briefing. *See* D73 p.1, 3, 27-29; Tr. 21:5-14, 665:10-666:3, 881:25-882:7; D107 p.85-88, 123-125. No post-trial motion was required.

II. Argument

The Circuit Court ruled that Appellants did not meet their burden on Counts III and IV, which state that the 2025 Plan violates the equal population and contiguity requirements of Article III, § 45 by assigning two noncontiguous VTDs both named "KC 811" to both CDs 4 and 5. In explanation, the lower court wrote that "[t]here is no credible basis in the evidence to believe that the Board Defendants will misapply the new map." D108 p.30; App 30. This is a misapplication of the law in that the Circuit Court failed to engage with

the plain text of the bill implementing the 2025 Plan (H.B. 1) and ignored undisputed, stipulated evidence establishing violations of the equal population and contiguity requirements.

In Missouri, "the canon of constitutional avoidance has no application in the absence of statutory ambiguity." *Goodman*, 699 S.W.3d at 440 n.5 (citation modified). "This Court will not rely upon *any* canon of construction, including the canon of constitutional avoidance, when the statutory language is unambiguous." *State v. League of Women Voters of Mo.*, No. SC100997, 2026 WL 816122, at *3 (Mo. banc Mar. 24, 2026). Indeed, "the Court has no authority to read into a statute a legislative intent contrary to the intent made evident by the plain language." *See Reichert v. Bd. of Educ. of St. Louis*, 217 S.W.3d 301, 305 (Mo. banc 2007); *see also State v. Turnage*, 719 S.W.3d 884, 894-95 (Mo. Ct. App. W.D. 2025) ("Our courts cannot read into a statute words not found within the statue when the language of the statute is clear.") (internal quotations omitted). The reason for this jurisprudence is obvious; a court may not "write [words] into the statute" because courts "cannot thus usurp the function of the General Assembly, or by construction rewrite its acts." *Brant v. Brant*, 273 S.W.2d 734, 736 (Mo. Ct. App. 1954).

The Circuit Court claims that Appellants "put on no evidence at trial to support the Count III and IV claims." D108 p.30; App 30. That is error. On the contrary, Appellants entered a number of undisputed facts into the evidentiary record supporting their claims. Appellants did not need to call witnesses live because the evidence was either stipulated or already admitted into the record.

There are two, noncontiguous VTDs within Kansas City named "KC 811" by the U.S. Census Bureau. PX 23 at 25 fig. 9; D86 (Joint Stips.) p.11; App 43. One has a population of 32, the other a population of 843. D86 (Joint Stips.) p.11; App 43. The bill text of H.B. 1 states that "[t]he fourth congressional district shall be composed of" several geographic units including "VTD: KC 811," while simultaneously stating that "[t]he fifth congressional district shall be composed of" several geographic units including "VTD: KC 811." *Id.* at 11-12. Respondents' expert, Dr. Trende, agreed that if both KC 811 VTDs were assigned to the same district as the plain text instructs, "one district would be noncontiguous and another would have a hole in it and they would both . . . not be" equally populated. Tr. 590:20-24; DX 101 at 16.

Without citing any evidence, the Circuit Court confusingly stated that "[b]ased on the evidence before the Court, VTD KC 811 is not assigned to two districts." D108 p.30; App 30. In fact, the undisputed evidentiary record and H.B. 1's plain text demonstrate that H.B. 1 does just that. The Circuit Court may believe it knows the General Assembly's true intent despite the textual error. But it is a misapplication of the law for the Circuit Court to "read into a statute a legislative intent contrary to the intent made evident by the plain language," which here assigns two identically named VTDs to both CDs 4 and 5 without differentiation. *Reichert*, 217 S.W.3d at 305. And, because the language in H.B. 1 clearly and unambiguously assigns both VTDs to both districts, no canon of constitutional avoidance can be applied. *See Goodman*, 699 S.W.3d at 440 n.5.

Ignoring the plain text, the basis for the Circuit Court's holding instead appears to be that the Secretary of State, following the passage of H.B. 1, transmitted a shapefile of

the 2025 Plan to the Kansas City Board of Elections (KCEB) which assigns the smaller KC 811 to CD 4 and the larger KC 811 to CD 5. D108 p.30; App 30. In other words, the Secretary of State took it upon himself to assign the VTDs in a way that would fix both districts' noncompliance with the equal population and contiguity requirements, but he did so in a manner that is not specified by the text of the law. On that basis alone, the Circuit Court concluded, "[t]here is no credible basis in the evidence to believe that the Board Defendants will misapply the new map." D108 p.30; App 30.

This conclusion is in error. First, the Secretary of State's attempt to re-assign the KC 811 VTDs appears to rely on those VTDs' unique GEOIDs assigned by the Census Bureau, but the bill text of H.B. 1 plainly *does not refer to any geographic units by their GEOID*. D86 (Joint Stips.) p.12; App 44. Neither the Circuit Court, this Court, nor election officials charged with implementing H.B. 1 can rewrite H.B.1's plain text to solve its constitutional infirmities.[25] *See Goodman*, 699 S.W.3d at 440 n.5 ("The canon of constitutional avoidance has no application in the absence of statutory ambiguity.") (internal quotations and citation omitted); *League of Women Voters of Mo.*, 2026 WL 816122 at *3 ("[T]his Court has declined to give special weight to the secretary of state's interpretation of challenged provisions."); *id.* at *3 n.11 ("The executive branch does not have the authority to interpret the law and declare its meaning, as that responsibility resides in the judiciary." (citing Mo. Const. art. II, § 1; *id.* art. V, § 1)). As a result, the trial court misapplied the law in

[25] Dr. Trende testified that he was "[n]ot at all" comfortable offering an opinion as to whether an election official has discretion to determine how the two areas labeled KC 811 should be assigned. Tr. 665:25-666:4.

interpreting H.B.1, which clearly violates Article III, § 45's equal population and contiguity requirements.

REMEDY

For the reasons explained above, this Court should reverse, enter judgment in favor of Appellants, enjoin the enforcement of H.B. 1 (the 2025 Plan), and declare that by operation of law H.B. 2909 (the 2022 Plan) is now the operative congressional map for the 2026 election. No legal, practical, or equitable considerations stand in the way.

Appellants are entitled to a judgment declaring H.B. 1 unconstitutional. *See Tupper v. City of St. Louis*, 468 S.W.3d 360, 368 (Mo. banc 2015). The controversy is justiciable, ripe, and there are legally protectable interests at stake. With no adequate remedy at law, equitable relief is appropriate, and a permanent injunction against H.B. 1 should be issued. *See City of Normandy v. Kehoe*, 709 S.W.3d 327, 335 (Mo. banc 2025) (holding that permanent injunction proper remedy in declaratory judgment action). Because H.B. 1 repealed the 2022 Plan and "enacted in lieu thereof" the 2025 Plan, an order declaring H.B. 1 unconstitutional and enjoining its enforcement would have the effect of negating these provisions. *See State ex rel. Crouse v. Mills*, 133 S.W. 22, 24 (Mo. 1910) ("[W]here an act expressly repealing another act and providing a substitute therefor[e] is found to be invalid, the repealing clause must also be held to be invalid.") (citation omitted). Thus, by operation of law, the 2022 Plan would be the operative congressional map for Missouri, and this Court should so order.

The practical status quo makes Appellants' requested relief simple because the 2022 Plan remains the operative plan in MCVR, the state's voter database. As of February 19,

2026, no steps had yet been taken to implement the 2025 Plan, and because of the functionality of the MCVR system, no steps can be taken until at least April 21. Tr. 698:19-701:5 (Kieffer). To the extent that any LEAs begin implementing the 2025 Plan between April 21 and the date of a decision by this Court ordering otherwise, it would not be difficult to reverse course and ensure the constitutional 2022 Plan is in place. Implementing the 2022 Plan took "very little to no time," Tr. 698:25-699:3 (Kieffer), in May 2022, and could easily be done here "up until at least May 26." Tr. 702:9-11; *see also* D90 (Brown Dep.) 21:14-24. To avoid disruption to the existing election calendar, a decision by this Court shortly in advance of May 26 would provide LEAs with sufficient time to take any necessary steps to ensure the 2022 Plan is properly implemented.[26]

The so-called *Purcell* principle also presents no barrier for timely relief. The *Purcell* principle is animated by federalism concerns that counsel against a federal court altering state election rules on the eve of an election. *See Republican Nat'l Comm. v. Democratic Nat'l Comm.*, 589 U.S. 423, 424 (2020) (citing *Purcell v. Gonzalez*, 549 U.S. 1 (2006)). This case is brought in state court under state law, making *Purcell* inapplicable, and this Court has adopted no analogous state rule.

[26] To avoid the irreparable harm of holding an election under an unconstitutional map, this Court can also use its equitable powers to adjust election timelines if necessary to ensure "full justice." *Phelps v. Scott*, 30 S.W.2d 71, 75 (Mo. 1930); *see also Willman v. Beheler*, 499 S.W.2d 770, 778 (Mo. 1973), *abrogated on other grounds by State ex rel. Leonardi v. Sherry*, 137 S.W.3d 462 (Mo. banc 2004) ("Equity will not suffer a wrong to be without a remedy, and seeks to do justice and avoid injustice.").

Other equitable considerations also present no barrier. In Missouri, candidates do not have to live in the congressional districts in which they are running, and candidates regularly declare and begin campaigning before the district lines are set. For instance, in 2022, the candidate filing period ran from February 22 to March 29 and new congressional districts were not enacted until May 11, 2022. D86 (Joint Stips.) p.6-7; App 38-39. LEAs implemented those districts in May ahead of the August 2022 primary election on nearly the same timeline as would occur in this case. *See id.* at 6-7. Nor is voter confusion a concern. Two elections have already taken place under the 2022 Plan, and there are still nearly three months following oral argument before the August primary and six months before the general election. Any voter confusion is the result of the General Assembly's voluntary enactment of the 2025 Plan in violation of the Constitution's compactness requirement. "[B]eing subject to an unconstitutional statute, 'for even minimal periods of time, unquestionably constitutes irreparable injury.'" *Rebman v. Parson*, 576 S.W.3d 605, 612 (Mo. banc 2019) (quoting *Elrod v. Burns*, 427 U.S. 347, 373 (1976). A decision in Appellants' favor would remedy this violation, and voters, candidates, and election officials face no harm from such a decision.

CONCLUSION

For the forgoing reasons, the Circuit Court's judgment should be reversed and judgment entered in Appellants' favor. Enforcement of H.B. 1 (the 2025 Plan) should be enjoined and the 2022 Plan declared the operative congressional map for the 2026 election.

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Respectfully submitted,

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Certificate of Service and Compliance

The undersigned hereby certifies that on April 16, 2026, the foregoing brief was filed electronically and served automatically on the counsel for all parties.

The undersigned further certifies that pursuant to Rule 84.06(c), this brief: (1) contains the information required by Rule 55.03; (2) complies with the limitations in Rule 84.06(b); and (3) contains 29,023 words (excluding the cover, signature block, and this certificate of service and compliance), as determined using the word-count feature of Microsoft Office Word. Finally, the undersigned certifies that the electronically filed brief was scanned and found to be virus-free.

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