

IN THE CIRCUIT COURT OF JACKSON COUNTY, MISSOURI
AT KANSAS CITY

TERRENCE WISE, et al.,

Plaintiffs,

v.

STATE OF MISSOURI, et al.,

Defendants.

Case No. 2516-CV29597

Division 15

ELIZABETH HEALEY, et al.,

Plaintiffs,

v.

STATE OF MISSOURI, et al.,

Defendants.

Case No. 2516-CV31273

Division 15

EXPERT REPORT OF DR. JONATHAN RODDEN

Jonathan Rodden

December 22, 2025

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I. INTRODUCTION AND SUMMARY OF FINDINGS

I have been asked to examine the newly enacted Missouri congressional redistricting plan (henceforth the “2025 Plan”), using the factors set forth by the Missouri Supreme Court in *Pearson v. Koster*, 367 S.W.3d 36 (Mo. banc. 2012), to determine whether the districts in a Missouri redistricting plan are “compact as may be.” Above all, this calls for an examination of whether the districts are composed of “closely united territory.” I conclude that by any reasonable definition of closely united territory, Districts 4, 5, and 6 in the 2025 Plan violate this principle by breaking the densely populated portions of the Kansas City metropolitan area into three fragments that extract urban neighborhoods from their closely united neighbors and connect them with faraway rural areas with very different social and economic characteristics. I demonstrate that Kansas City has been treated by congressional mapmakers as closely united territory ever since the city’s incorporation in the 1850s—a history from which the 2025 Plan is a radical departure.

I also demonstrate that the 2025 Plan breaks up geographic clusters of workers and firms that are likely to have common interests in policy and common requests of their members of Congress. These include not only urban and rural residents, but also renters, public transit users, technology workers, and those who work in more traditional non-metro economic sectors, including agriculture. The 2025 Plan divided the closely unified territory of the prior Districts 4, 5, and 6, and changed them into heterogenous amalgams of urban and rural interests, renters and homeowners, and tech workers and farmers.

Pearson v. Koster provides that, once a violation of the principle of “closely united territory” is established, the court must examine whether “minimal and practical deviations” may have occurred as a result of several factors, including “(1) the interrelationship in standards for the population equality and compactness requirements” and “(2) the contiguity requirement.” 367 S.W.3d at 53. Throughout this report, I demonstrate that deviations from the principle of closely united territory in the Kansas City area were neither minimal nor practical. Moreover, the General Assembly, in drawing the redistricting plan enacted in 2022 and used in the 2022 and 2024 congressional elections (henceforth the “2022 Plan”), was able to work with the same geography and census data and construct compact, contiguous districts with equal population in the Kansas City metro area (and beyond), and those districts did not violate the principle of closely united territory.

Next, *Pearson v. Koster* calls for an examination of whether deviations from the principle of closely united territory can be explained by efforts to abide by “(3) federal laws, including the Voting Rights Act.” *Id.* I demonstrate that the violation of the principle of closely united territory in the configuration of districts of the 2025 Plan in Kansas City cannot be explained as an effort to comply with Section 2 of the Voting Rights Act. On the contrary, by extracting a narrow strip of White residents from the rest of Kansas City between the Kansas border and Troost Avenue—a historical line of racial segregation—the 2025 Plan potentially raises new concerns under federal law about its use of race. I conclude that violations of the principle of closely united territory in the 2025 Plan cannot be explained by efforts to comply with federal law.

Finally, *Pearson v. Koster* calls for an examination of whether deviations from the principle of closely united territory may have occurred as a result of “(4) the recognized factors of population density, natural boundary lines, boundaries of political subdivisions, and historical boundary lines of prior redistricting maps.” *Id.* I consider each of these factors individually and conclude that none of them can explain the unusual treatment of Kansas City in the 2025 Plan. On the contrary, the 2025 Plan pays little attention to patterns of population density or natural boundary lines or political subdivisions. It creates districts that are extremely heterogeneous with respect to population density and other features, connecting urban neighborhoods with rural places on the other side of the state. It splits school districts, city council districts, and historical neighborhoods, slicing through a university campus, a hospital campus, and even a high school building.

II. QUALIFICATIONS AND EXPERIENCE

I am currently a tenured Professor of Political Science at Stanford University and the founder and director of the Stanford Spatial Social Science Lab—a center for research and teaching with a focus on the analysis of geo-spatial data in the social sciences. I am engaged in a variety of research projects involving large, fine-grained geo-spatial data sets including ballots and election results at the level of polling places, individual records of registered voters, census data, and survey responses. I am also a senior fellow at the Stanford Institute for Economic Policy Research and the Hoover Institution. Prior to my employment at Stanford, I was the Ford Professor of Political Science at the Massachusetts Institute of Technology. I received my Ph.D. from Yale University and my B.A. from the University of Michigan, Ann Arbor, both in political science. I am a native

of Florissant, Missouri and a graduate of McCluer North High School. A copy of my current C.V. is included as Exhibit A.

In my current academic work, I conduct research on voting, demographics, geography, and aspects of election administration, including registration, the structure of precincts, redistricting, and methods of voting. Recent papers and books focus on the relationship between the patterns of political representation, geographic location of demographic and partisan groups, and the drawing of electoral districts. I have published papers using statistical methods to assess political geography, balloting, and representation in a variety of academic journals including *Statistics and Public Policy*, *Proceedings of the National Academy of Science*, *Science Advances*, *American Economic Review Papers and Proceedings*, the *Journal of Economic Perspectives*, the *Virginia Law Review*, the *American Journal of Political Science*, the *British Journal of Political Science*, the *Annual Review of Political Science*, and the *Journal of Politics*. One paper was selected by the American Political Science Association as the winner of the Michael Wallerstein Award for the best paper on political economy, another received an award from the American Political Science Association section on social networks, and another received an award for the best paper published in the journal in the last year.

In 2025, I was selected as an Andrew Carnegie Fellow. In 2021, I received a John Simon Guggenheim Memorial Foundation Fellowship, and, for my 2006 book *Hamilton's Paradox: The Promise and Peril of Fiscal Federalism*, received the Martha Derthick Award of the American Political Science Association for "the best book published at least ten years ago that has made a lasting contribution to the study of federalism and intergovernmental relations."

I have written a series of papers, along with my co-authors, using automated redistricting algorithms to assess partisan gerrymandering. This work has been published in the *Quarterly Journal of Political Science*, *Election Law Journal*, and *Political Analysis*, and it has been featured in more popular publications like the *Wall Street Journal*, the *New York Times*, and *Boston Review*. I authored a book titled *Why Cities Lose*, published by Basic Books in June of 2019, on the relationship between political districts, the residential geography of social groups, and their political representation in the United States and other countries that use winner-take-all electoral districts. The book was reviewed in *The New York Times*, *The New York Review of Books*, *Wall Street Journal*, *The Economist*, and *The Atlantic*, among others.

I have expertise in the use of large data sets and geographic information systems (GIS) and conduct research and teaching on applied statistics related to elections. I frequently work with geo-coded voter files and other large administrative data sets, including in recent papers published in the *Annals of Internal Medicine* and *The New England Journal of Medicine*. I have developed a national data set of geo-coded precinct-level election results that has been used extensively in policy-oriented research related to redistricting and representation.

I have been accepted and testified as an expert witness in over a dozen election law and redistricting cases, all of which are listed in my CV. Much of the testimony in these cases had to do with geography, electoral districts, voting, ballots, and election administration.

III. DEVIATIONS FROM THE STANDARD OF CLOSELY UNITED TERRITORY IN THE 2025 PLAN

In *Pearson v. Koster*, the Missouri Supreme Court affirmed its tradition of interpreting “compactness” as fundamentally a matter of whether a district is composed of “closely united territory,” clarifying that this “does not refer solely to physical shape or size” and that “a visual observation...is not the decisive factor.” 367 S.W.3d at 48-49. No matter how one might define “closely united territory,” Kansas City, Missouri—especially the section to the south of the Missouri River in Jackson County—can be understood as a closely united territory since its incorporation in 1850 as a trading hub at the confluence of the Kansas and Missouri Rivers. Since then, Kansas City has grown into a major city with a closely integrated labor market and commuting zone. This integrated urban zone has expanded over the years—first to the south and east and later across the Missouri River to the north—as have the boundaries of the city of Kansas City.

This section of my report examines the principle of closely united territory from three perspectives. **First**, I turn to history, and ascertain that when drawing congressional districts, the General Assembly has treated Kansas City as a closely united territory since the very early days of its existence. **Second**, I examine a variety of demographic indicators showing that Kansas City can be understood as closely united territory, and that this territory is divided in exceptionally unnatural ways by the 2025 Plan. In addition, I point out that the 2025 Plan’s splitting of Kansas City has implications not only for metro-area voters, but also for rural voters and agricultural producers in the 2022 Plan’s Districts 4 and 6 who have historically been placed in districts based

on closely united territory. **Third**, I build on these observations and present a simple district-level metric, “district sprawl,” that helps quantify the extent to which the 2025 Plan violates the standard of closely united territory: the distance from the median population center of the district to its furthest geographic extent.

A. Kansas City as Closely United Territory in Historical Congressional Plans

The General Assembly has always held the central business district of Kansas City together in a single district. Moreover, as the population grew and Kansas City annexed surrounding areas, the General Assembly drew districts that respected the closely united territory of Kansas City.

This historical precedent can be observed in **Figure 1**, which provides maps of the Kansas City area under each congressional redistricting plan enacted since 1900. Each of the maps focuses on Jackson County and its surroundings. The central business district of Kansas City is portrayed in white. This is an area bounded by 31st Avenue to the south, the Missouri River to the north, the Kansas border to the west, and Woodland Avenue to the east. This also corresponds to the historical boundary of Kansas City for much of the 1800s, but note that by 1901, the eastern boundary of the city had moved significantly eastward, and by 1909 it reached all the way to the Blue River. The blue area in each map portrays the city boundaries (as documented in historical maps) that were in place when each map was enacted. Looking through these maps, one can track the expansion of Kansas City’s boundaries first to the east and south, and then north into Clay County and eventually Platte County.

From 1821 to 1847, all of Missouri was an at-large district. From 1848 to 1900, the Kansas City-area districts were composed of all of Jackson County combined with other surrounding counties, and from 1900 to 1933, all of Jackson County was its own district. From 1933 to 1935 (not shown in Figure 1), Missouri returned to an at-large system. In 1935, Missouri returned to drawing districts. At that time, Kansas City’s population was far larger than the average size of a congressional district in Missouri, and it was necessary to draw two Kansas City districts.

Figure 1: Jackson County Congressional Districts since 1900

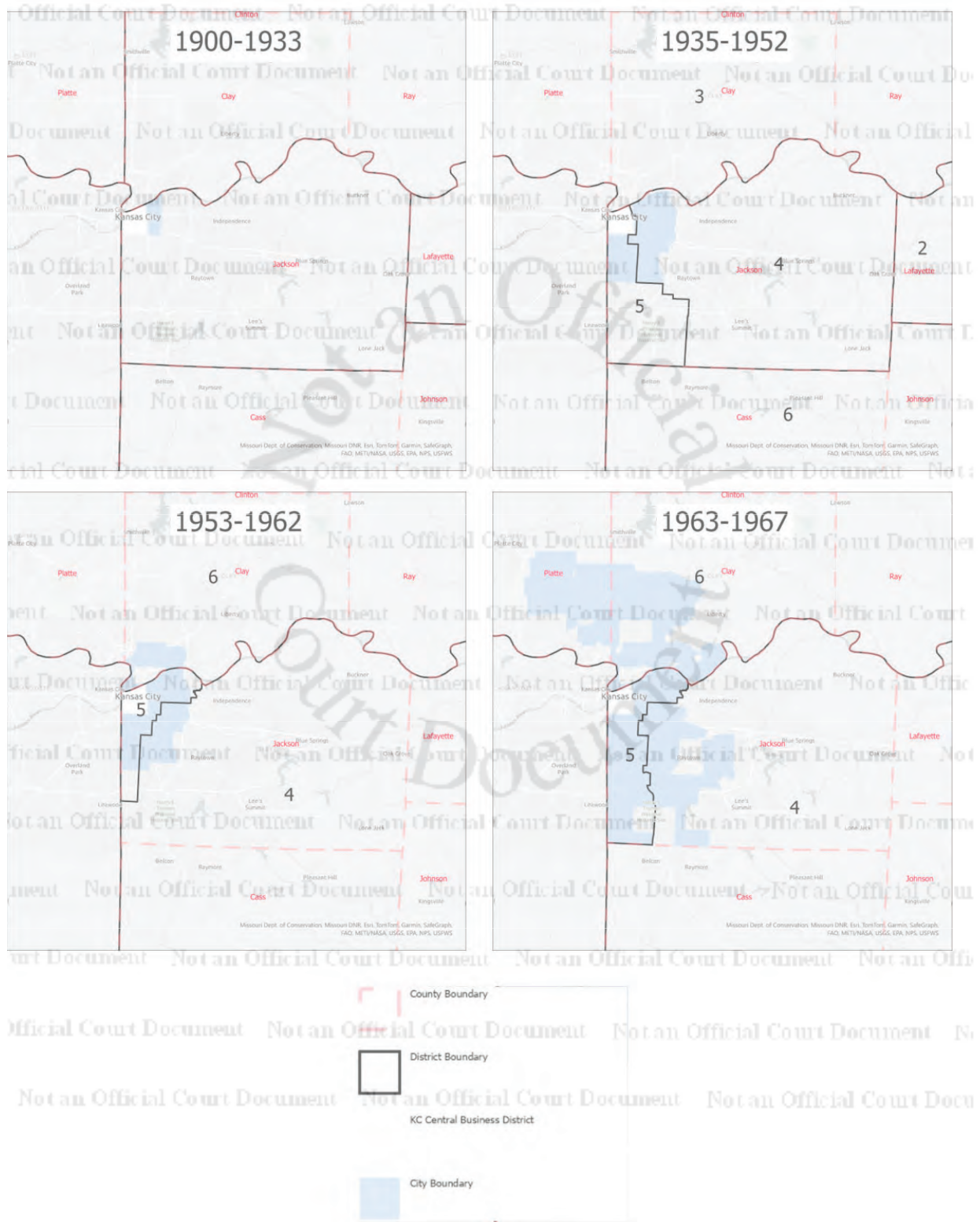
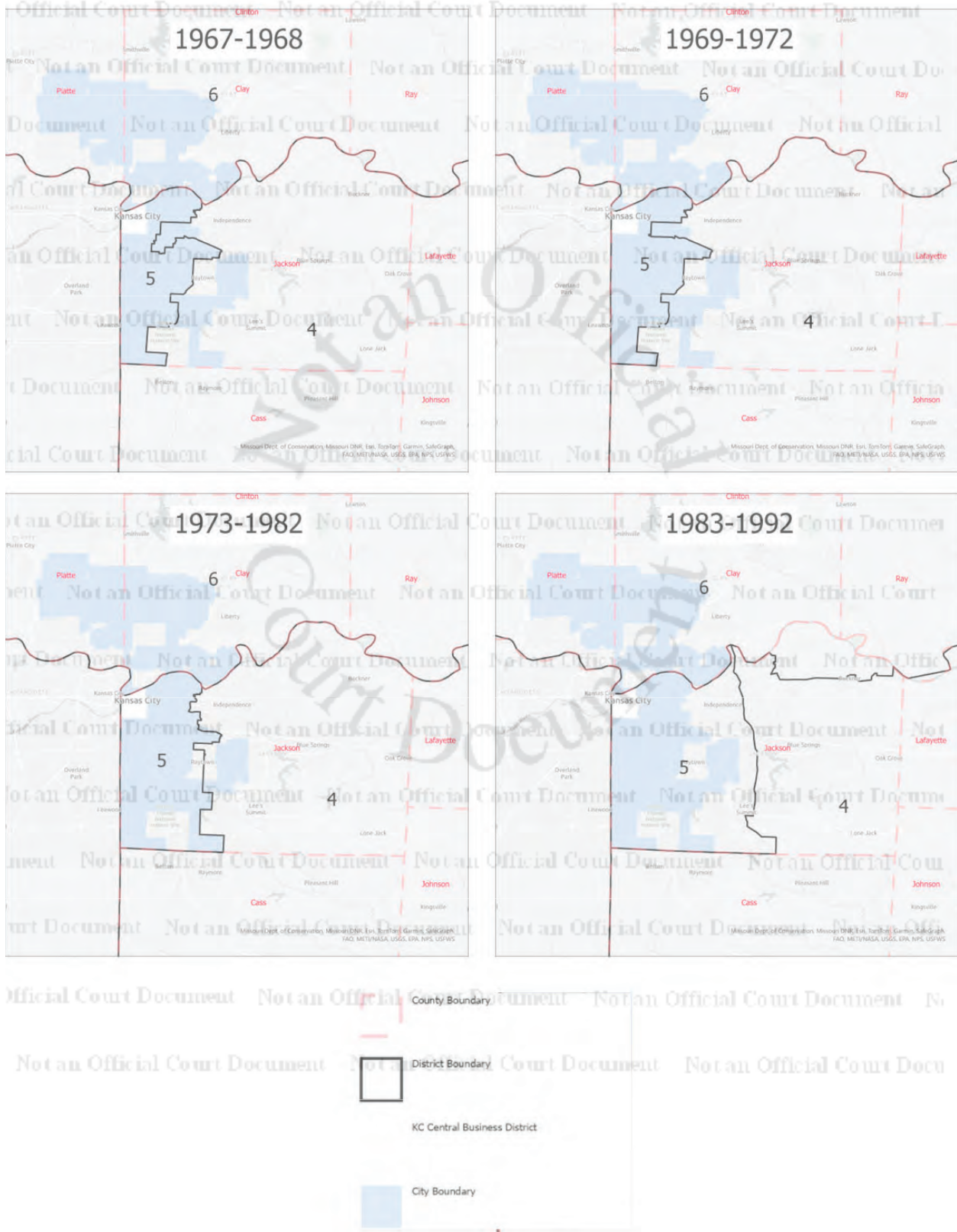
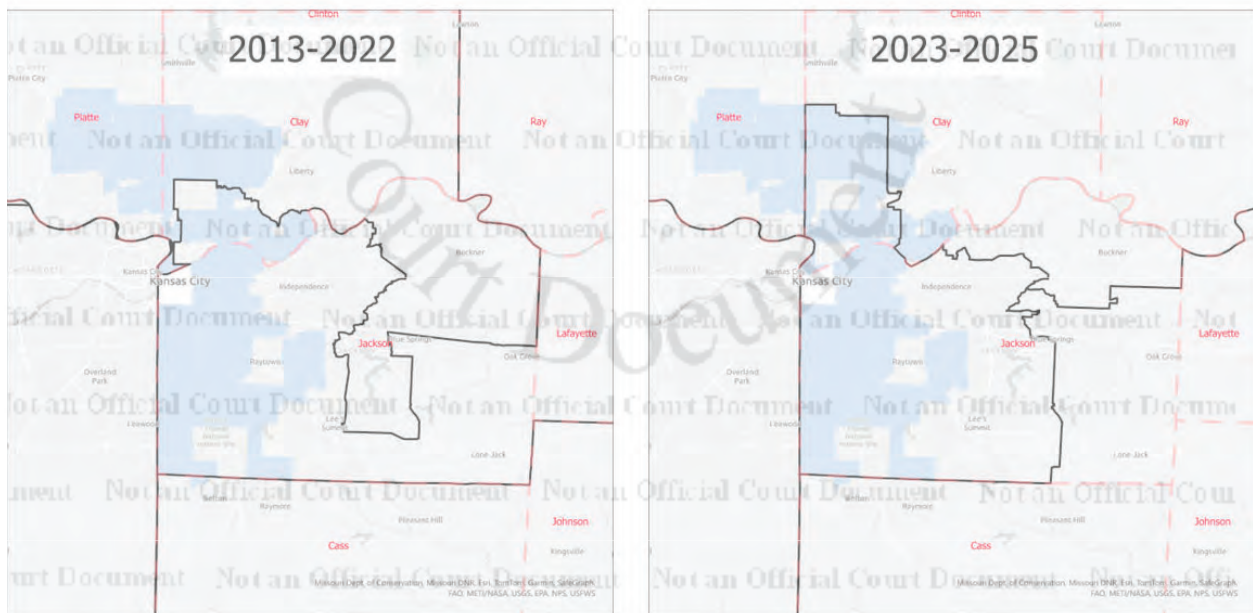


Figure 1 (continued): Jackson County Congressional Districts since 1900



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In the map used from 1935 through 1952, District 5 included the central business district and neighborhoods to the south, while District 4 included many of the newly annexed areas to the east. A similar approach was taken when new districts were drawn after the 1950 census and again after the 1960 census, although in these plans, District 5 was drawn to pull in a larger share of Kansas City's densest urban population, whereas District 4 focused on suburban and surrounding rural areas. Kansas City began to annex areas outside Jackson County to the north of the Missouri River in the 1950s. Since then, the General Assembly has placed those areas in District 6 and kept the core Jackson County portion of Kansas City together, with as much of it as possible kept in District 5.

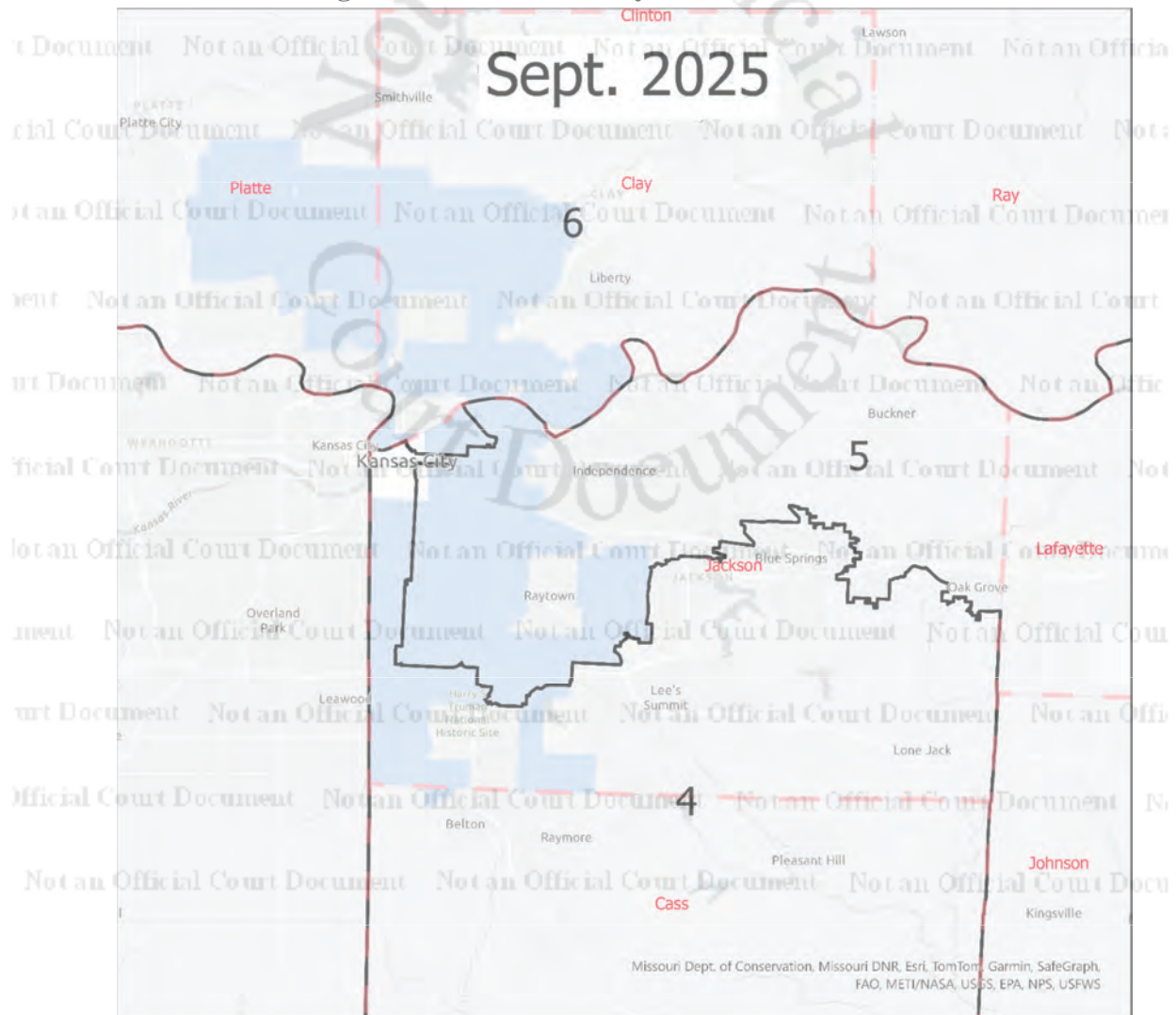
In every redistricting plan since the 1950s, District 5 brings as much of the Jackson County population of Kansas City as possible together in a single district, and more recently, brings in a substantial portion of the Clay County parts of Kansas City as well. In fact, the Jackson County portion of Kansas City has not been split since the round of redistricting that took place after the 1980 census. In prior maps, this split of the Jackson County portion of Kansas City was strictly necessary because the population of the Jackson County portion of Kansas City was too large relative to the target size of a congressional district. That is to say, from the 1950s until the 1980 census, a minimal and practical deviation from the "closely united territory" standard was required by the necessity of drawing districts with equal population pursuant to *Baker v. Carr*, 369 U.S. 186 (1962) and *Reynolds v. Sims*, 377 U.S. 533 (1964).

This was no longer the case after the 1980 decennial census, when the population of the Jackson County portion of Kansas City fell below the size of a congressional district. Thereafter, District 5 has been drawn to include all of the Jackson County portion of Kansas City. The last four maps in **Figure 1** above cover the period from the 1990 census to the present—a period when the population of Kansas City makes up a declining share of the overall state population, which makes it very easy to respect the closely united territory of Kansas City. These plans keep the Kansas City portion of Jackson County together and combine it with suburban, exurban, and rural areas to the east. The two most recent plans have also reached across the Missouri River to keep even more of Kansas City together in District 5.

In sum, for as long as the General Assembly has been drawing congressional districts, there has been a district based on the closely united territory of Kansas City. The central business district has never been split, and ever since it became possible to keep the entire portion of Kansas City that falls in Jackson County together (over 40 years ago), the General Assembly has done so.

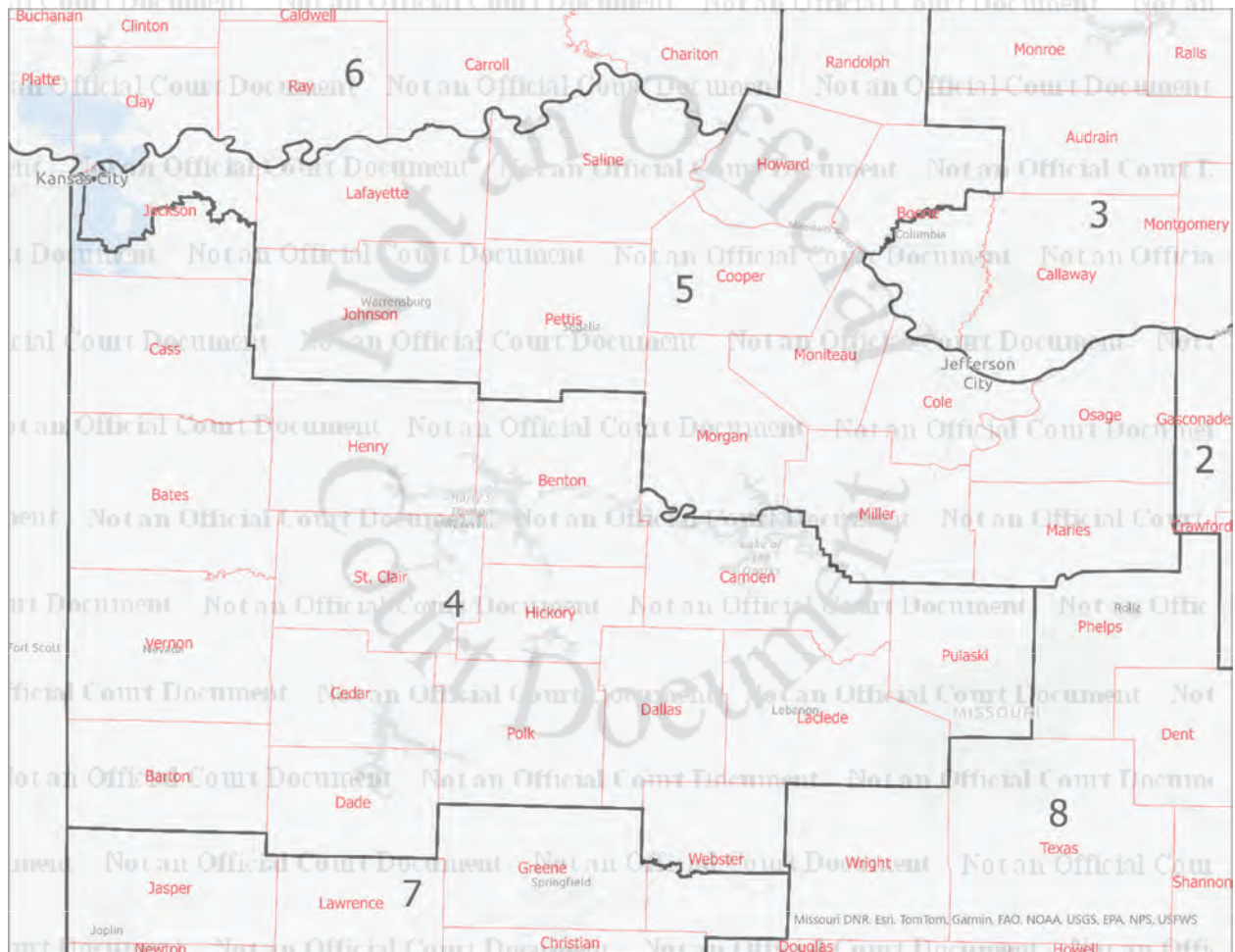
In contrast, the 2025 Plan divides the Kansas City central business district into three districts: Districts 4, 5, and 6 (**Figure 2** below). Part of the central business district is carved off from the rest of the city via a narrow corridor (less than two miles wide) bounded by the Kansas boundary 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.

Figure 2: The Kansas City Area in 2025 Plan



The eastern sections of Kansas City are now in a sprawling rural-oriented district that reaches well over 200 miles across the state, almost reaching Rolla, so that the furthest reaches of the district are between three and four hours away by car (see **Figure 3** below). The remaining portion of the central business district is placed in District 6, which for the last 200 years has never crossed the Missouri River into Kansas City.

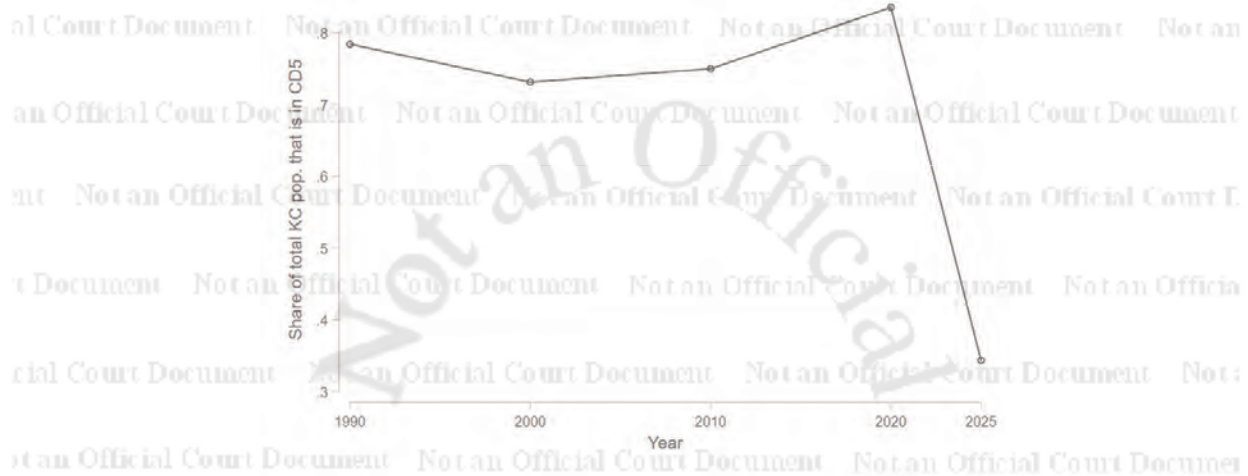
Figure 3: Districts 4 and 5 in the 2025 Plan



Pearson v. Koster examined the congressional plan enacted in 2011 (the “2011 Plan”), which had District 5 extend to a portion of Kansas City north of the Missouri River and left out a non-Kansas City part of Jackson County to the east (see the penultimate map in **Figure 1** above). In explaining its decision to uphold the constitutionality of District 5, the Missouri Supreme Court noted of the 2011 Plan that “the boundaries of the Map were drawn in consideration of the legitimate factor of keeping a greater portion of Kansas City in district 5.” 367 S.W.3d at 56. This

was clearly not a factor in the design of District 5 in the 2025 Plan. Using block-level data from each decennial census from 1990 to 2020, I calculate the share of Kansas City residents placed in District 5 in each redistricting plan. I plot this quantity in **Figure 4** below, naming each plan according to the decennial census after which it was drawn (except for the mid-decade 2025 Plan).

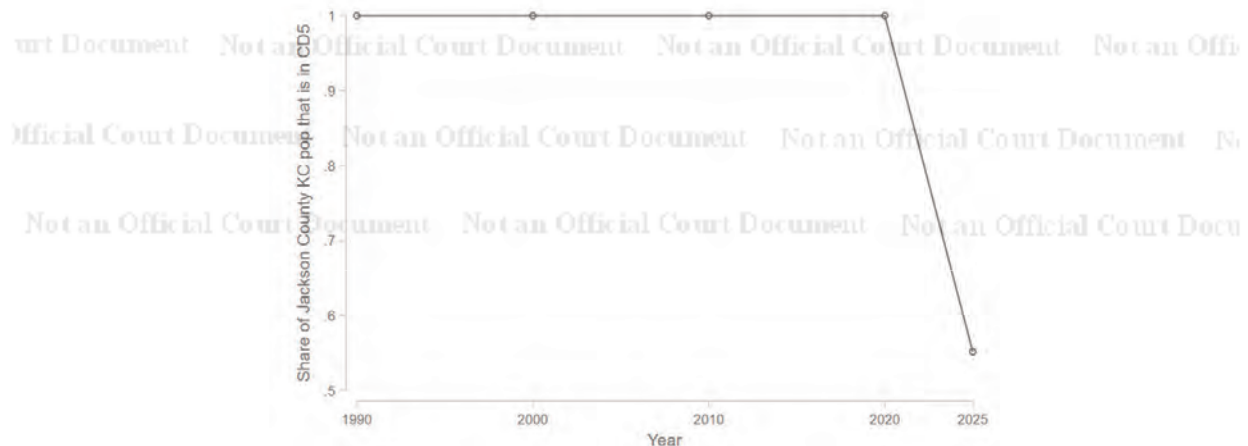
Figure 4: Share of Kansas City Population Included in Congressional District 5



For three decades, a little under 80 percent of Kansas City's total population was in District 5. In the 2022 Plan, the figure was 84 percent. But in the 2025 Plan, this falls all the way to 34 percent.

Further, as mentioned above, the share of the Kansas City population of Jackson County placed in District 5 has been 100 percent since the redistricting following the 1990 census. As can be seen in **Figure 5** below, in 2025, this has fallen to 55 percent.

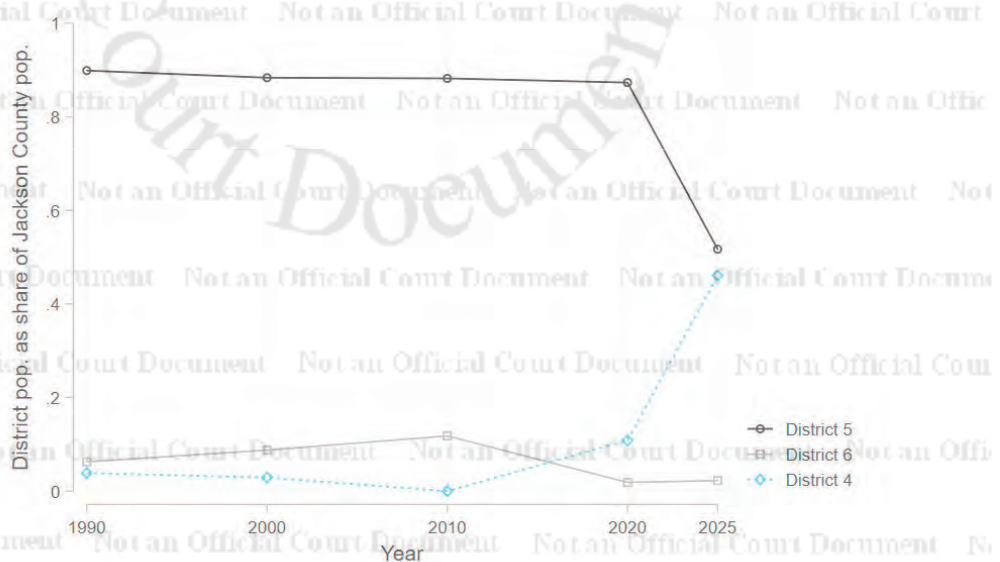
Figure 5: Share of Jackson County Kansas City Population Included in Congressional District 5



In *Pearson v. Koster*, the Missouri Supreme Court also discussed previous congressional maps that had been considered at trial, stating the following: “These maps demonstrated that a portion of Jackson County historically has been carved out of district 5 and appended to other districts (both districts 4 and 6). The current Map only slightly expands that carved-out portion.” 367 S.W.3d at 36. It is possible to quantify this insight. Again using block-level decennial census data, I calculate the share of the Jackson County population falling into each district in each redistricting plan since 1990 and plot the data in **Figure 6** below.

Figure 6 demonstrates that in each redistricting plan from 1990 to 2020, between 87 and 90 percent of Jackson County’s population was placed in District 5, and between 10 and 13 percent of the population was “carved out” into either District 4 or 6. The Court was correct to characterize the size of the “carved out” portion in the challenged redistricting plan after the 2010 census as in keeping with recent history. However, the 2025 Plan presents a radical departure from this history, with the District 5 portion suddenly falling to 52 percent, and the “carved out” portion increasing to 48 percent.

Figure 6: Share of Jackson County Population Falling into Districts 4, 5, and 6



Another way to consider the deviation of the 2025 Plan from Missouri’s tradition of closely united territory is to examine the extent to which this plan deviates from the prior plan. Even if prior plans were consistent with the Missouri Constitution and comprised of closely united territory, changes with each decennial census might be necessitated by population shifts, such as the growth of suburbs, exurbs, and midsize metros like Springfield. But if the 2022 Plan reflected

the principle of closely united territory, it is not clear how this principle might necessitate large changes to the structure of districts in a mid-decade redistricting where the same population data are used.

To examine the extent of these changes, I identify the census blocks placed in each district of the 2012 Plan, the 2022 Plan, and the 2025 Plan. First, I calculate the share of individuals in each district of the 2022 Plan who had been placed in the same district in the prior, 2012 Plan. We can refer to this as the extent to which the population “core” of the district was retained. Next, I calculate the share of individuals in each district of the 2025 Plan who were in the same district in the 2022 Plan. This metric of “core retention” is displayed for each district in each plan in **Table 1** below.

Table 1: Core Retention in 2022 and 2025

District	% of core retained 2022	% of core retained 2025
1	89.99%	93.94%
2	71.29%	77.25%
3	58.15%	60.41%
4	76.53%	61.88%
5	84.72%	42.74%
6	82.74%	79.31%
7	98.90%	100.00%
8	83.25%	100.00%

Districts 4 and 5 stand out. When redrawing the district after the 2020 census—after a decade of significant population movements associated with suburbanization in the Kansas City Metro area—around 77 percent of the people placed in District 4 a decade ago were placed once again in District 4. And in District 5, around 85 percent of the newly drawn district’s population had been in the district for the last decade. In 2025, without a new population count, only 62 percent of the people placed in District 4 were in that district in the 2024 election, and this was true for only 43 percent of the population in the 2025 version of District 5.

B. Census Demographics and Closely United Territory

Throughout its history, Missouri legislators have treated Kansas City as closely united territory, keeping the central business district together and making clear efforts to keep as much as possible of Kansas City—especially the Jackson County section—in a single district. It is worthwhile taking a close look at *why* they have done so.

Kansas City and its surrounding suburbs constitute the second-largest metropolitan statistical area (MSA) in Missouri. The Office of Management and Budget (OMB) defines a metropolitan statistical area as a geographic region with a large urban core, with at least 50,000 residents and sufficient population density, plus surrounding counties that demonstrate strong social and economic ties to the core area, primarily measured by commuting patterns.¹ The U.S. Census department carries out rigorous analysis to measure these social and economic ties and designate MSAs. In other words, the MSA is a concept created by OMB and implemented by the Census Bureau to designate closely unified territory. The core of the Kansas City MSA is in Jackson County, but the MSA also includes Cass, Bates, and Lafayette Counties to the South of the Missouri River, and Platte, Clay, Clinton, Caldwell, and Ray Counties to the north. The population of the Missouri side of the MSA is too large to place in a single congressional district. The social and economic ties that define an MSA are typically strongest in the urban core and inner-ring suburbs with the highest population density.² As seen above, the General Assembly has always tried to keep as much of the urban core together as possible in District 5, with the more exurban, lower-density northern counties of the MSA in District 6, and the southern exurban areas in District 4.

1. Population density

In *Pearson v. Koster*, the Missouri Supreme Court mentions “population density” as a “recognized factor” that may be considered in redistricting. 367 S.W.3d at 53. Voters living in close proximity to one another in a high-density environment are likely to have different interests and make different demands of their legislators than voters living in exurban or rural areas. For

¹ Glossary, United States Census Bureau, [\(https://www.census.gov/programs-surveys/metro-micro/about/glossary.html#:~:text=contain%20metropolitan%20divisions.-,Metropolitan%20Statistical%20Area,Statistical%20Areas%22%20\(CBSAs\)\)](https://www.census.gov/programs-surveys/metro-micro/about/glossary.html#:~:text=contain%20metropolitan%20divisions.-,Metropolitan%20Statistical%20Area,Statistical%20Areas%22%20(CBSAs)) (last visited Dec. 12, 2025).

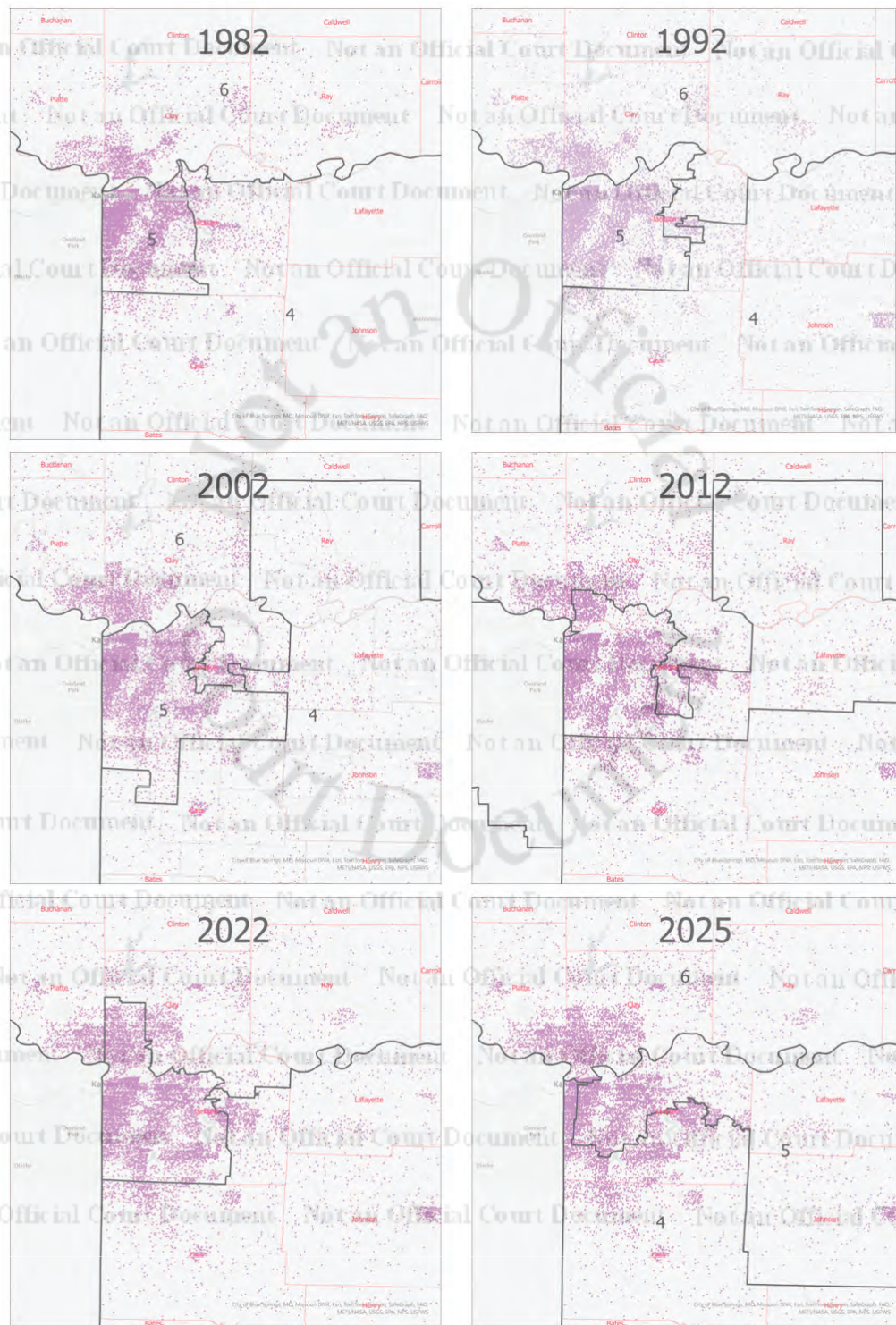
² See Wei Pan et al., “Urban characteristics attributable to density-driven tie formation,” *Nature Communications* 4, 1961 (2013); Edward Glaeser, *Triumph of the City*, Penguin Press (2011).

instance, individuals living in high-density environments are likely to care more about investments in public transportation, parks and common spaces, public housing, and other collective goods that are less cost-effective in sparse environments. Perhaps for these and other reasons, Missouri district-drawers have clearly used population density as an important guide to applying their notion of closely united territory.

Using data from each decennial census at the level of census tracts³ since 1980, **Figure 7** below maps the population of metro Kansas City, where each dot corresponds to 100 residents. **Figure 7** demonstrates how suburbanization has led to a spread of population density over time, but every decade, the General Assembly has tried to keep the densest parts of Jackson County together in District 5. In 2012 and 2022, efforts were also made to include the densest areas north of the Missouri River in District 5, which ensured that District 6 would retain its mostly rural character. The plan that was challenged in *Pearson v. Koster* (titled “2012” in **Figure 7**) was likewise drawn to keep the densest neighborhoods in metro Kansas City, both on the north and south sides of the Missouri River, in District 5.

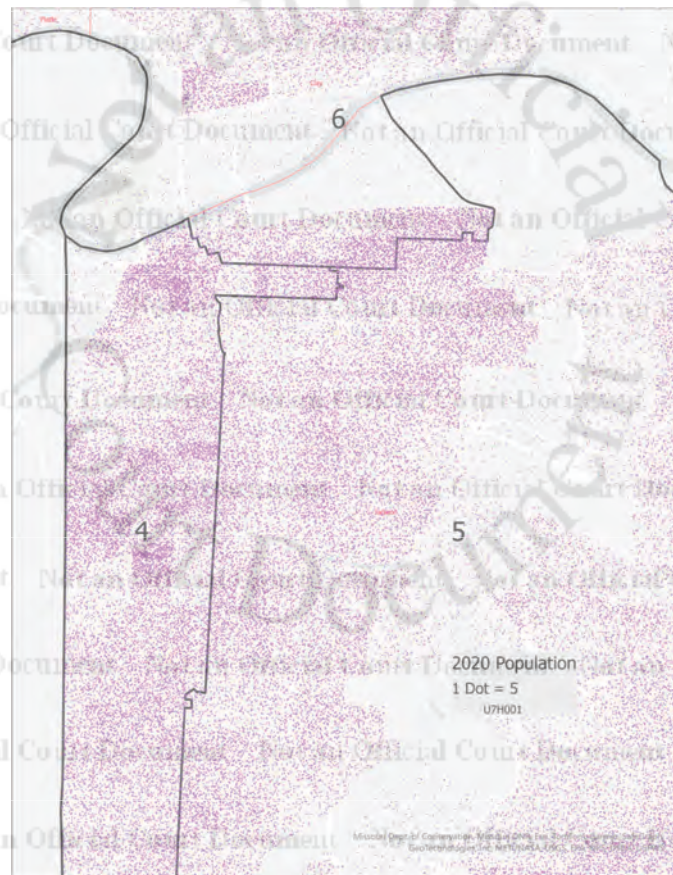
³ A census tract is a “small, relatively permanent statistical subdivision” defined by the U.S. Census Bureau. See *Glossary*, United States Census Bureau, <https://www.census.gov/programs-surveys/geography/about/glossary.html>.

Figure 7: Population Density and Congressional Districts in the Kansas City Metro Area from 1980s to the present



The final image of **Figure 7** shows that the 2025 Plan is a dramatic departure from the prior treatment of Kansas City as a closely united territory: the densest neighborhoods in Kansas City are now split between Districts 4, 5, and 6. In fact, the 2025 Plan chooses one of the densest parts of the central business district as the meeting point for these three districts, so that the parts of Kansas City with relatively high density are divided across the three districts. **Figure 8** below demonstrates this by zooming in on the urban core in a dot density map where each dot corresponds to five individuals.

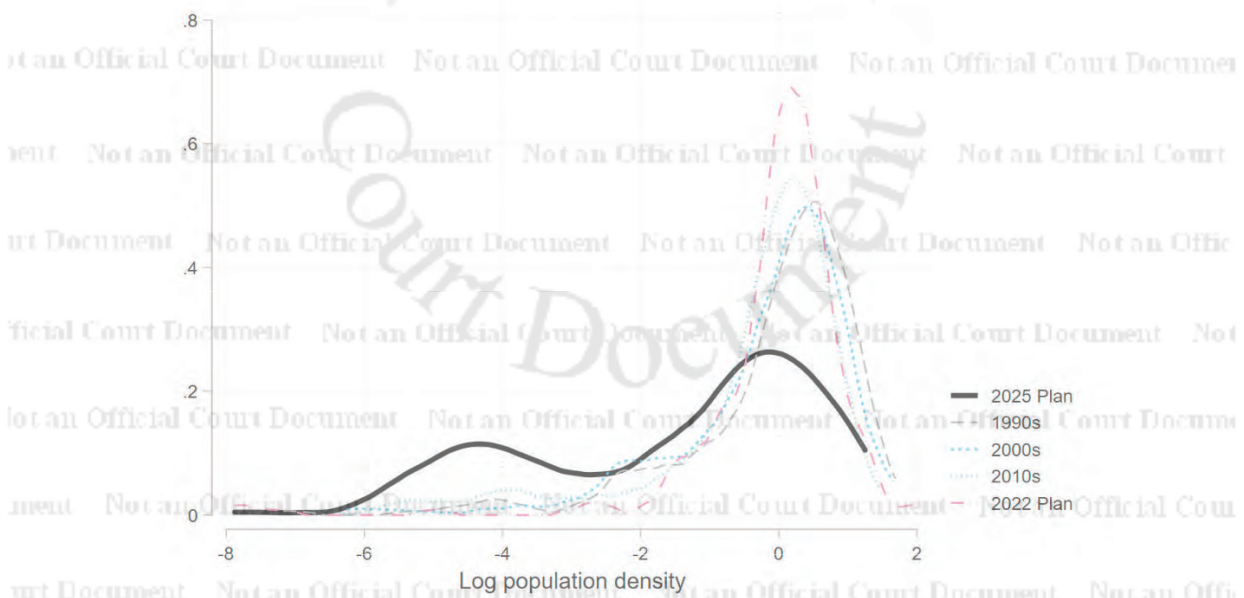
Figure 8: Population Density and the 2025 Plan in Downtown Kansas City



A good way to appreciate the 2025 Plan's departure from historical norms is to examine how the distribution of population density at the level of the census tracts within each district has changed across redistricting maps. **Figure 9** below provides a kernel density of the population density of each tract in District 5 of each districting plan, from the 1990s to the present. The previous plans are presented in various colors, and the September 2025 Plan is portrayed in thick black font. A kernel density is a smoothed histogram, suitable for displaying the distribution of a

variable. **Figure 9** provides another way of seeing what one can also appreciate in the dot density maps above: District 5 has traditionally been composed of a set of Kansas City census tracts with similarly high levels of population density, as reflected by the large peak on the right side of the graph for each previous version of District 5. There are only a handful of low-density tracts in the left tails of these distributions. Suddenly, with the 2025 Plan, the distribution of population density across census tracts in District 5 has changed dramatically. The sharp peak—indicative of a district based on closely united high-density tracts—has become much smoother, and the distribution has now become bimodal. This means that District 5 is now a combination of some dense urban census tracts that have been carved away from Kansas City (on the right side of the graph) and a group of faraway, rural, sparsely populated tracts (on the left side of the graph). Instead of being formed of closely united territory, District 5 is now an urban-rural amalgam.

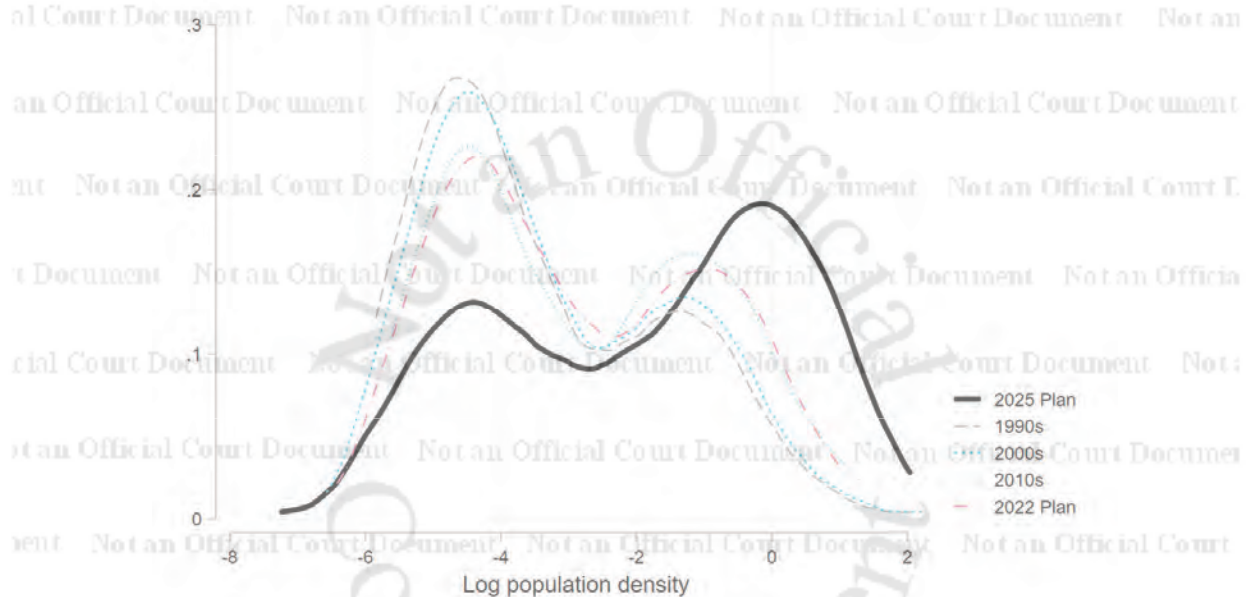
Figure 9: Kernel Densities of Tract-Level Population Density in District 5 of Congressional Redistricting Plans from 1990s to 2025



The changing character of District 4 can be reflected in a similar way. **Figure 10** below provides a kernel density plot of tract-level population density for District 4. The tract-level population density of District 4 has demonstrated a bimodal distribution for decades, but District 4's low-density rural tracts have always outnumbered the relatively denser Kansas City-area exurban tracts on the right side of the graph. The 2025 Plan transforms District 4 by reaching into the urban core and extracting dense urban neighborhoods from Kansas City. The right-hand

(urban) peak has moved to the right in Figure 10 and is now taller than the rural peak on the left, meaning the rural character of District 4 has been lost. District 4 is now an urban-suburban-rural amalgam, with the metro-area portion of the district now comprising a larger share of the district's population than the rural part.

Figure 10: Kernel Densities of Tract-Level Population Density in District 4 of Congressional Redistricting Plans from 1990s to 2025

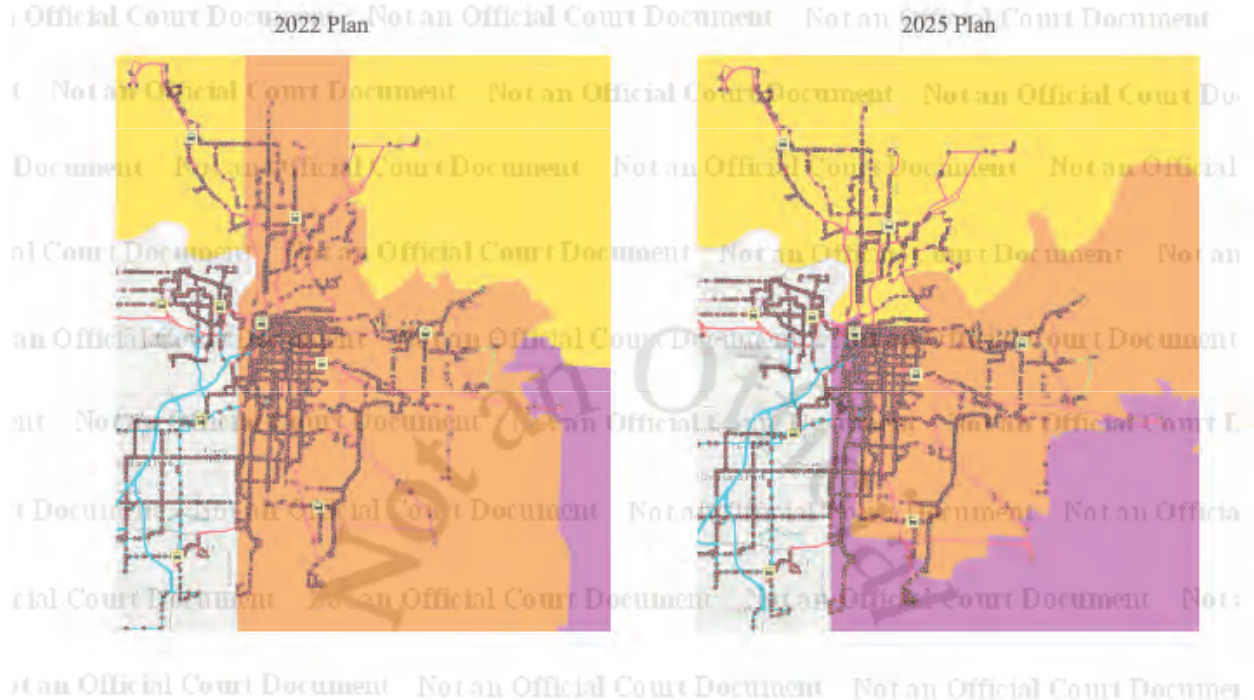


2. *Transportation networks*

Transportation networks and commuting behavior are also an important part identifying closely united territory. **Figure 11** below assembles data from the Kansas City Area Transportation Authority (KCATA) on all public streetcar and bus routes in its system, superimposing the transit lines and stops over the boundaries of the districts in the 2022 Plan and the 2025 Plan. On this metric, the 2022 Plan was a good example of an application of the closely unified territory standard. The district boundaries keep as many of the neighborhoods served by the (Missouri side) KCATA routes as possible in District 5.

The 2025 Plan, in contrast, pays no attention to the closely united territory that has been created over decades through investments in transportation infrastructure. It divides the transit network across three congressional districts. Every bus line in Jackson County that travels east-west will cross a congressional boundary on each run. The southern terminus of several routes is now in District 4, and the routes serving north Kansas City now travel from District 5 to District 6.

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



Under the 2025 Plan, voters and interest groups who care about transit policy and local transit officials who might wish to lobby members of Congress for policies and funding are forced to seek out three different members of Congress who represent relatively exurban and rural-oriented districts with very low levels of public transit use. There will be no single member of Congress with an encompassing interest in Kansas City public transit.

3. *Renters versus homeowners*

Within metropolitan areas, political scientists and economists have noted that political preferences and demands made to representatives are driven in large part by whether one owns a home or rents.⁴ Among other things, renters and homeowners have distinctive preferences about taxation, land use, school finance, and rent control. **Figure 12** below uses data from the 2020 decennial census from Missouri census tracts, portraying the share of housing units that are rented rather than owner-occupied.

⁴ Fischel, William. 2001. *The Homevoter Hypothesis*. Cambridge, MA: Harvard University Press; Hall, Andrew B., and Jesse Yoder. "Does homeownership influence political behavior? Evidence from administrative data." *The Journal of Politics* 84.1 (2022): 351-366; Marble, William, and Clayton Nall. "Where self-interest trumps ideology: liberal homeowners and local opposition to housing development." *The Journal of Politics* 83.4 (2021): 1747-1763.

Figure 12: Rental Units as Share of Housing Units in Metro Kansas City

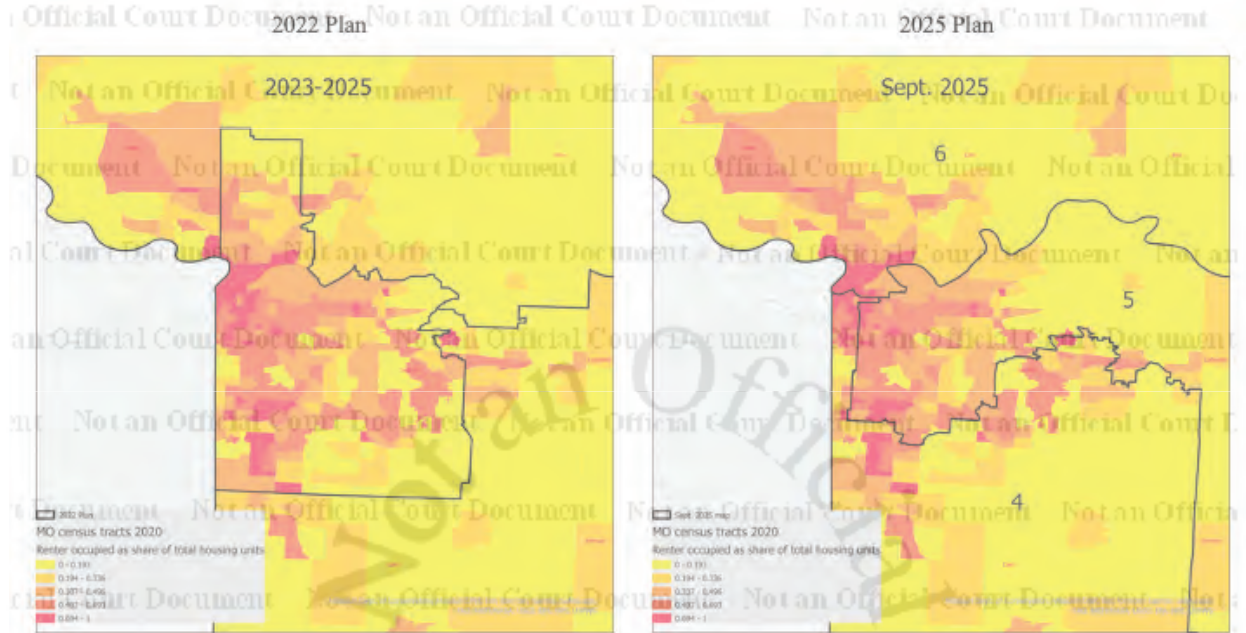


Figure 12 demonstrates that the community of renters in Kansas City was largely contained in District 5 in the 2022 Plan, whereas this population is scattered across Districts 4, 5, and 6 in the 2025 Plan.

4. *Occupations and industrial sectors*

Occupations and industrial sectors are also clustered in geographic space and form an important locus for representational demands and hence make up an additional component of the notion of “closely united territory.” For instance, employers and workers in science and technology might have specific concerns about regulations and funding for science, technology, and higher education. Kansas City has been one of the most economically successful cities in the Midwest in part because its leaders have deftly embraced and fostered knowledge-based industries, developing strengths in technology, life sciences, and healthcare, with strong links between the private sector and universities and a vibrant entrepreneurial scene. In 2023, the Kansas City region was designated by the U.S. Economic Development Administration as a federal “tech hub,” specifically focused on biologics and biomanufacturing via the KC BioHub.⁵ The goal of this designation was

⁵ Press Release, U.S. Economic Development Administration, Biden-Harris Administration Designates Tech Hub in Kansas City Region to Drive Innovation in Vaccine-Related Biologics Manufacturing (Oct. 23, 2023),

to position Kansas City as a global leader in life sciences and vaccine development.⁶ Close coordination with the federal government and procurement of federal grants are a central part of this vision.

The 2025 Plan splits Kansas City's biotechnology research and manufacturing institutions into different congressional districts. Research and manufacturing in biotechnology is quite dispersed throughout metro Kansas City.⁷ The 2025 Plan places the most central cluster of research organizations, in the vicinity of the UMKC Health Sciences District and Union Station, into the narrow strip of urban, more affluent areas to the west of Troost Avenue that are combined in District 4 with rural areas that extend to Fort Leonard Wood. In contrast, most of Rockhurst University is placed in District 5. Advocacy for federally funded Kansas City biotech research might be undermined by the need for coordination among three members of Congress, each of whom only represents a slice of the Kansas City knowledge economy.

Figure 13 and **Figure 14** below illustrate how the 2025 Plan shifts workers in the knowledge economy from District 5 to District 4, changing the character of both districts. One way of measuring employment in the knowledge economy is to examine the share of adults employed in professional, scientific, management, and administrative industries. **Figure 13** below displays tract-level employment shares in these fields, focusing on Districts 4 and 5, with the panel on the left displaying the 2022 Plan, and the panel on the right displaying the 2025 Plan. Knowledge-economy employees are scattered throughout the Kansas City area, but they are somewhat clustered on the west side of Kansas City and in suburbs and exurbs to the south, west, and north (as well as on the Kansas side). The previous version of District 5 kept many of these areas in a compact Kansas City district that also included technology firms and universities. The 2025 Plan extracts these employees from their western Kansas City neighborhoods and southwestern suburbs and moves them to a district with a very different occupational and industrial mix.

<https://www.eda.gov/news/press-release/2023/10/23/Kansas-City-Inclusive-Biologics-and-Biomanufacturing-Tech-Hub>.

⁶ *Id.*

⁷ BioNexus KC, *Kansas City Regional Life Sciences Industry Census 2018* (2019), <https://bionexuskc.org/wp-content/uploads/2019/01/BioNexus-KC-Census-Report-2018-FINAL-1.17.19.pdf>.

Figure 13: Share of Adults Employed in Professional, Scientific, Management, and Administrative Industries

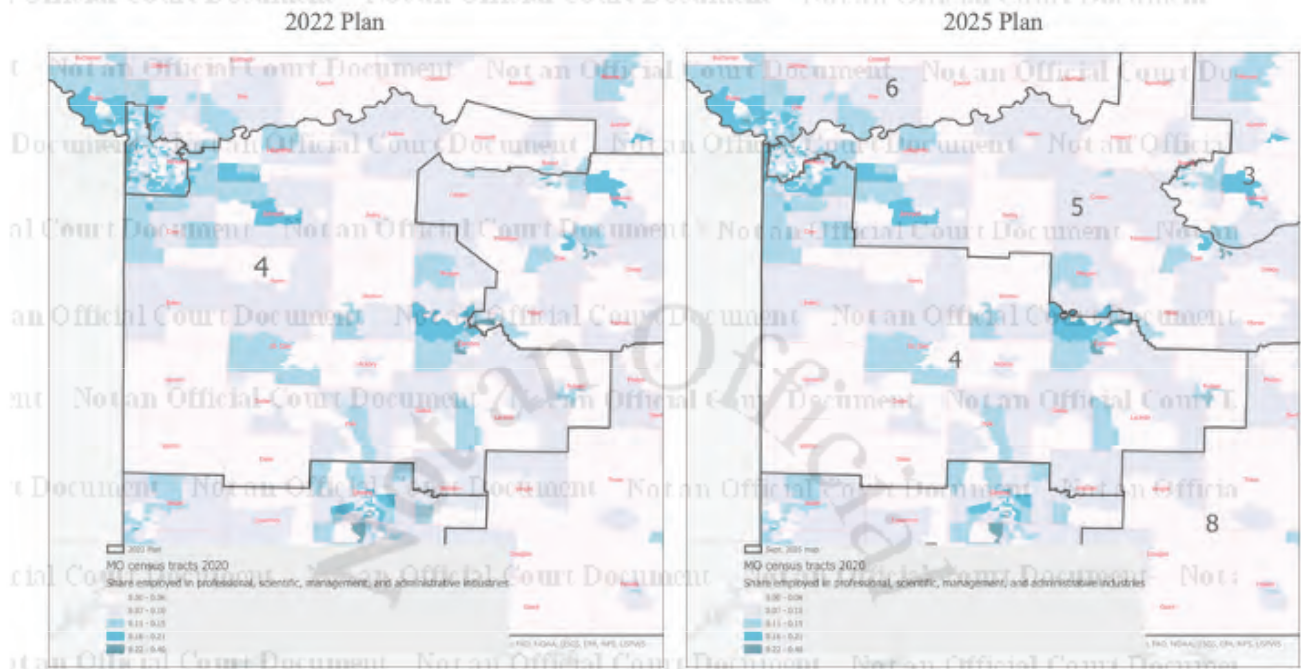


Figure 14 below provides a histogram of tract-level employment in these industries in Districts 5 and 4 in the 2022 Plan, represented with hollow bars outlined in red; and the 2025 Plan, represented with solid gray bars. The presence of red bars on the right side of the graph and absence of gray bars demonstrates how District 5 lost some of its densest clusters of knowledge workers. The peak of the gray distribution (reflecting the 2025 Plan) is well to the left of the distribution for the 2022 Plan. The second histogram is for District 4. The growth of gray bars on the right side of the graph indicates that District 4 gained some of the tracts with the highest concentrations of knowledge employees. The 2025 Plan not only shifts knowledge workers from one district to another but also scatters them across districts. The estimated number of employees in these industrial sectors in District 5 went from around 51,000 in the 2022 Plan to around 30,000 in the 2025 Plan. In District 4, the number went from around 26,000 to around 42,000. By absorbing parts of Kansas City's northern suburbs, District 6 also saw a small increase in knowledge workers, from around 30,000 to 35,000.

Figure 14: Tract-level Histograms of Employees in Professional, Scientific, Management, and Administrative Industries, Districts 5 and 4, 2022 and 2025 Plans

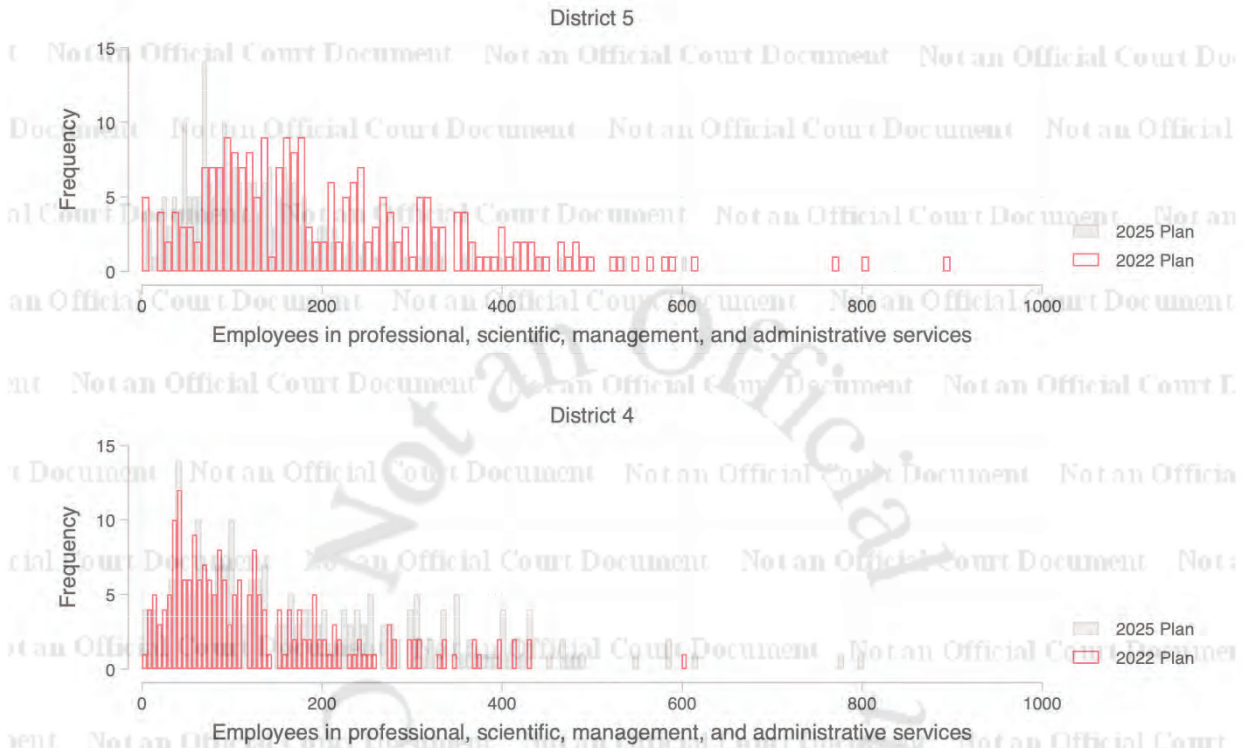
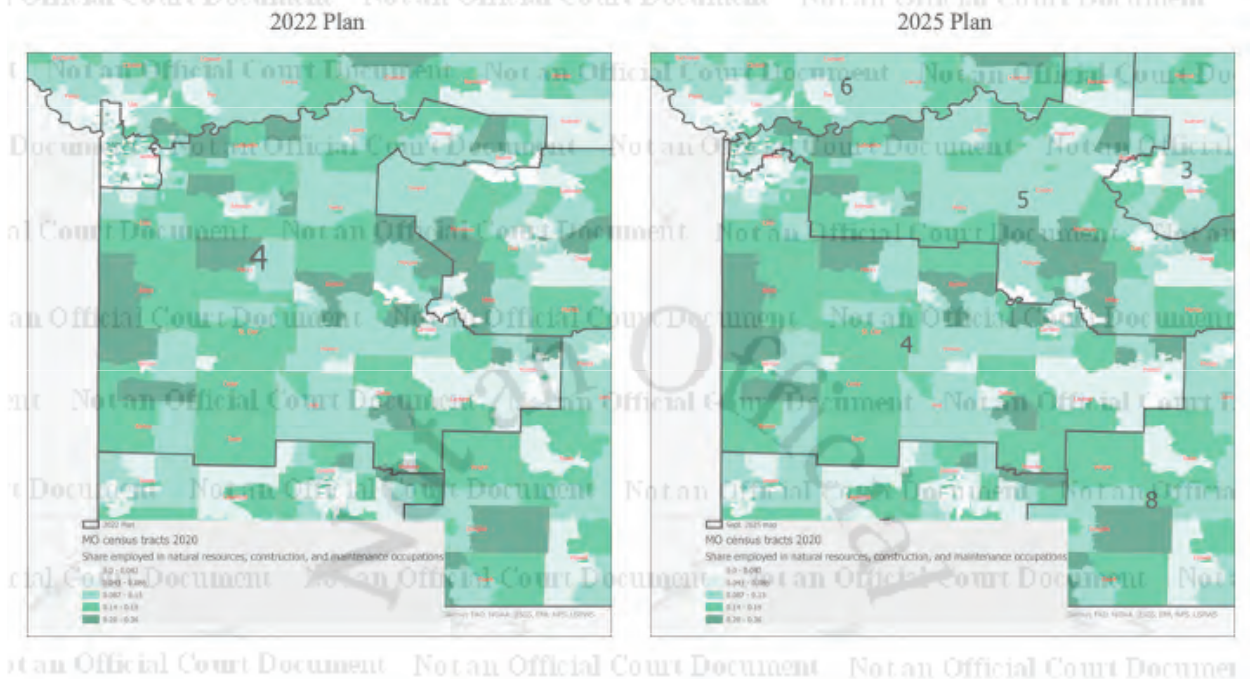


Figure 15 below focuses on a mix of occupational categories that are more common in the areas to the east and south of Kansas City: natural resources (including agriculture), construction, and maintenance. **Figure 15** shows that relatively lower shares of the population are engaged in these activities in Kansas City, with higher shares in more rural areas. A crucial change effected by the 2025 Plan is that District 4 drops a large portion of its rural territory and adds urban and suburban parts of Kansas City, where employment in natural resources, construction, and maintenance is less common.

Figure 15: Share Employed in Natural Resources, Construction, and Maintenance Occupations



Again, this shift in the character of the districts can be visualized by comparing tract-level histograms. **Figure 16** below provides histograms for tract-level employment in natural resources, construction, and maintenance in Districts 4 and 5 in the 2022 Plan (once again outlined in red) and the 2025 Plan (in solid gray). The difference is especially noticeable on the left-hand side of the graphs. District 5 previously had a large density of census tracts with minimal employment in these areas. Those tracts have now moved to District 4, appearing in solid gray on the left-hand side of the second histogram. The 2025 Plan has changed District 4 into a hybrid district combining urban knowledge-based employees with college degrees and rural employees engaged in more traditional economic activities.

Figure 16: Tract-level Histograms of Employees in Natural Resources, Construction, and Maintenance in Districts 5 and 4, 2022 and 2025 Plans



The difference is especially pronounced for agricultural workers. The estimated total number of employees in District 5 working directly in “agriculture, forestry, fishing, hunting, and mining” was around 1,900 in the 2022 Plan, but with the 2025 Plan’s addition of rural territory to District 5, it jumped to 6,300. In contrast, the number of agricultural employees in District 4 was around 9,800 in the 2022 Plan, but it fell to 6,600 in the 2025 Plan. In other words, as with knowledge workers, the 2025 Plan scatters agricultural workers across more than one district.

The 2025 Plan also shifted the agricultural makeup of District 6. The two largest crops in Missouri are corn and soybeans. Using data from the United States Department of Agriculture, **Figure 17a** and **Figure 17b** below present county-level data on the value of crops sold for corn and soybeans in 2022, the most recent year for which data were available. In the 2022 Plan, District 6 was clearly crafted around a closely united territory of corn and soybean producers. The 2025 Plan alters this closely united territory. It adds suburban areas north of Kansas City and a chunk of Kansas City’s urban core to District 6, forcing the district to shed population elsewhere. As a result, District 6 has lost several core corn- and soybean-producing counties in the eastern part of Missouri. These counties were added to District 3, the population of which is dominated by St. Charles, Missouri—a growing suburban part of the St. Louis metropolitan area, where voters have little connection to the needs of agricultural producers.

Figure 17a: County-level value of corn sales, 2022

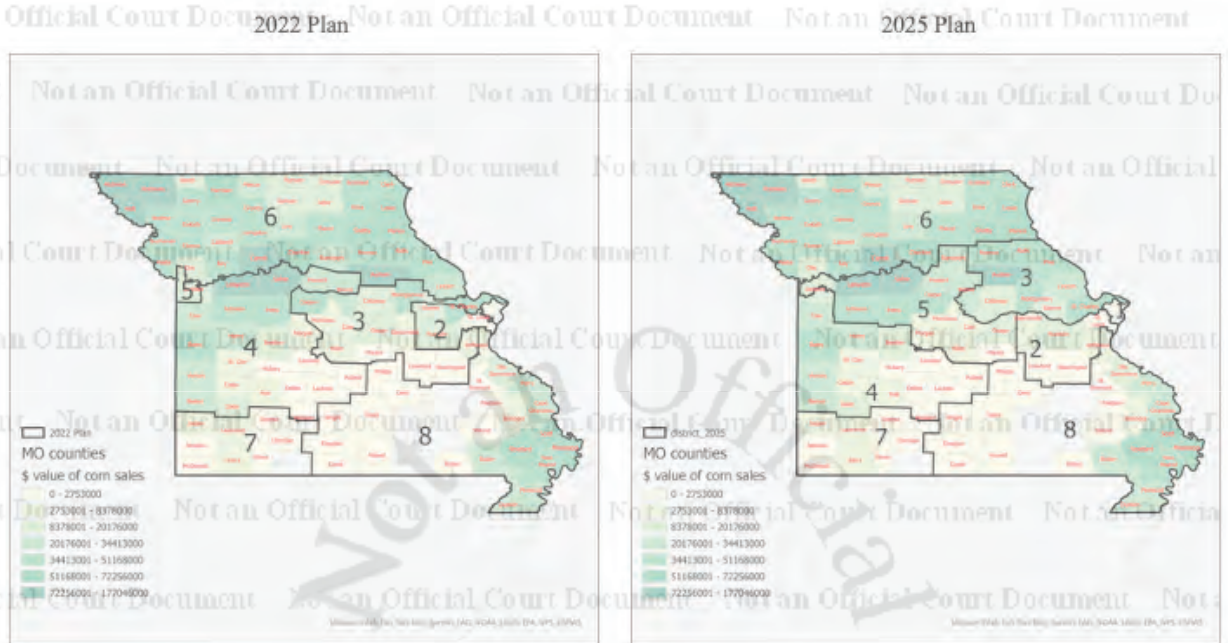
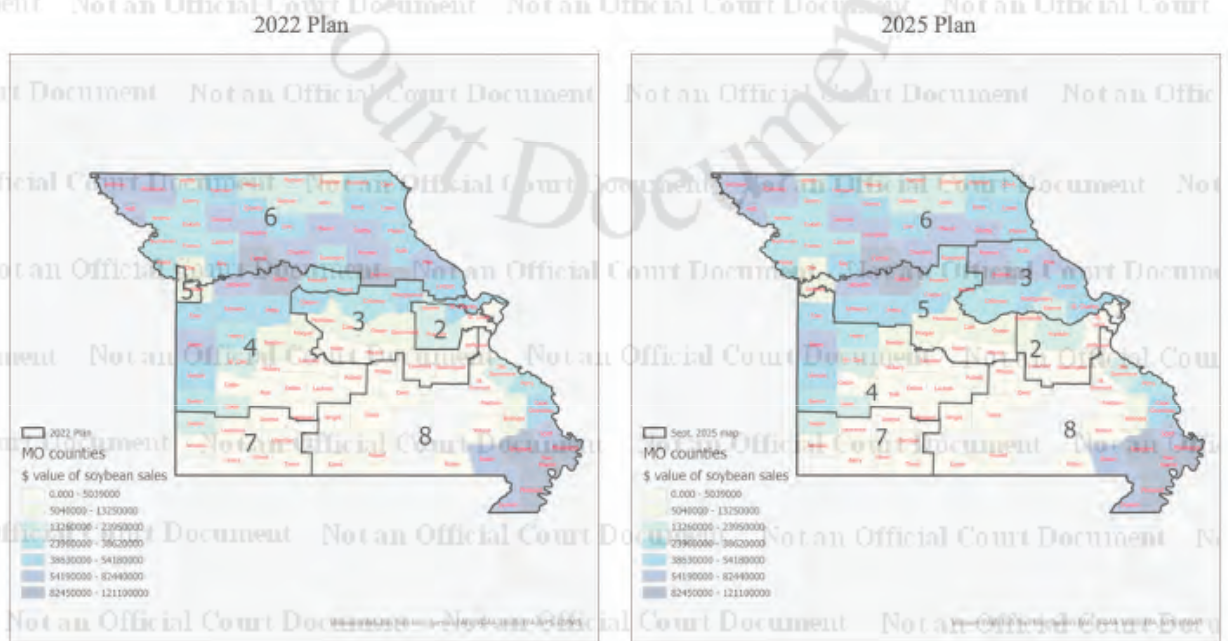


Figure 17b: County-level value of soybean sales, 2022



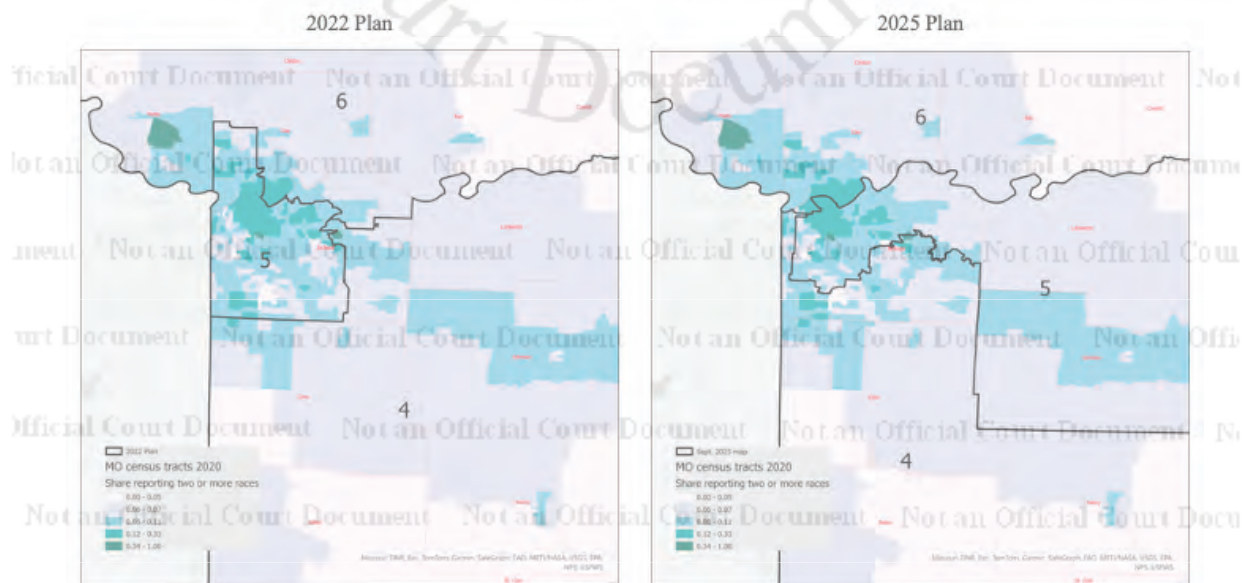
In the 2022 Plan, District 4 drew together the core agricultural counties of western Missouri to the south of the Missouri River. In the 2025 Plan, these counties are now scattered between Districts 4 and 5, which are now urban-rural hybrids with much less concentrated agricultural

presence. In sum, as with technology workers and firms, the 2025 Plan splits agricultural producers across districts, potentially reducing the likelihood they can get the close attention of their congressional representatives.

In addition to population density, home ownership, transit, employment, and industrial patterns, an additional indicator of “closely united territory” can be race. Although they are sometimes starkly segregated—and Kansas City is certainly no exception— American cities can also facilitate racial integration. One often-overlooked aspect of diverse metropolitan areas is that they create an environment where people of different backgrounds live and work together, which facilitates greater social and workplace contact between members of different groups, which leads to community integration and a blurring of strict racial categories.⁸ A good way to see this is to examine census data specifying which respondents identified themselves with more than one racial category.

Figure 18 below displays such tract-level data on the share of the population reporting that they identify with more than one racial category. There is a clear cluster in the Kansas City metro area, and the boundary of District 5 in the 2022 Plan largely surrounds it. The boundaries of the 2025 Plan divide this cluster into three segments.

Figure 18: Share of population reporting two or more races



⁸ Davenport, Lauren. "The fluidity of racial classifications." *Annual Review of Political Science* 23.1 (2020): 221-240.

C. District Sprawl: A Metric for Assessing Whether Districts Meet the Closely United Territory Standard

Table 2 below presents two of the most commonly used measures of geographic compactness for Districts 4, 5, and 6 in the 2022 and 2025 Plans, along with an average for all 8 districts.

Table 2: Traditional Compactness Measures, Challenged Districts

District	Reock 2022 Plan	Reock 2025 Plan	PP 2022 Plan	PP 2025 Plan
4	0.506	0.391	0.296	0.331
5	0.420	0.292	0.396	0.199
6	0.247	0.281	0.277	0.322
Avg. of challenged districts	0.391	0.322	0.323	0.284
Avg. of all districts	0.417	0.413	0.310	0.353

According to the Reock measure, which calculates the area of the district by the area of the smallest circle that would completely enclose it, the 2025 Plan's move from an urban Kansas City-oriented District 5 to a sprawling urban-rural hybrid District 5 is associated with a substantial decline in compactness. The same is also true for the Polsby-Popper score, which examines the area of the district relative to its perimeter, meaning that it is more sensitive to physical geography like meandering rivers or coastlines. District 4 also became less compact according to the Reock measure, but not Polsby-Popper. District 6, by shedding some agricultural counties, became slightly more compact in the 2025 Plan.

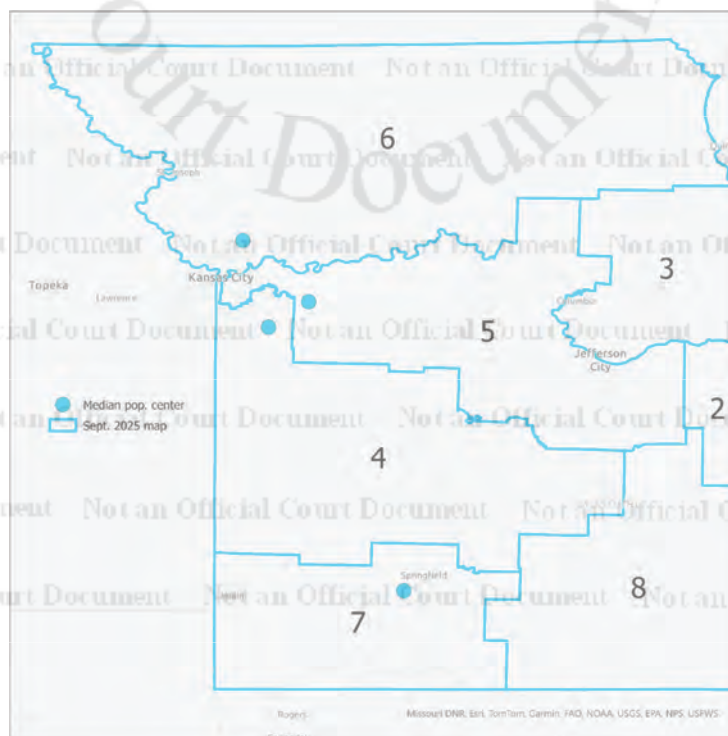
In *Pearson v. Koster*, however, the Missouri Supreme Court expressed skepticism about the usefulness of traditional compactness metrics like the Reock and Polsby-Popper measures. Indeed, these measures shed little light on the more substantive notion of closely united territory favored in Missouri, and apparent non-compactness according to these measures can even be driven by the desire to keep elongated but closely united territory together, or to observe natural boundaries like rivers or mountains.

Accordingly, it is useful to examine a measure that more closely corresponds to the notion of closely united territory than traditional compactness measures. Rather than focusing on shapes and visual images of districts, my analysis below examines the extent to which districts keep clumps of proximate voters in the same district, and prevent pairing them with faraway populations

with whom they are unlikely to share the same representational interests. Here, I introduce a simple measure of *district sprawl*, which I define as the distance between the median population center of the district and its furthest geographic extent. When districts are composed of closely united territory, districts keep geographic clusters of proximate voters together in the same district rather than combining them with faraway voters.

To see this, we can use tract-level population data to calculate the median population center of each district. The median population center of a district is the point where half the population lives to the east and half to the west, and half to the north and half to the south. Because so much of the population of western Missouri lives in the Kansas City metro area, the median population centers of Districts 4, 5, and 6 in the 2025 Plan are relatively close to Kansas City, as depicted in **Figure 19** below. However, the furthest reaches of the district are quite far away from the population center of each district. The median population center of District 5 is 143 miles away from the southeast corner of the district. The median population center of District 4 is 147 miles away from the southeast corner of the district, and the median population center of District 6 is 176 miles away from the furthest point in the district.

Figure 19: Median Population Centers of Districts in 2025 Plan



Such distances between the median population center and the farthest population in the district are entirely avoidable. **Figure 20** below displays the same information for the 2022 Plan. While the median population center of District 6 is still quite far from the eastern extent of the district in that plan (190 miles), the median population center of District 5 is only 19 miles from the furthest point in the district (rather than 143 miles), and the median population center of District 4 is 103 miles away from its furthest point (rather than 147 miles).

Figure 20: Median Population Centers of Districts in 2022 Plan

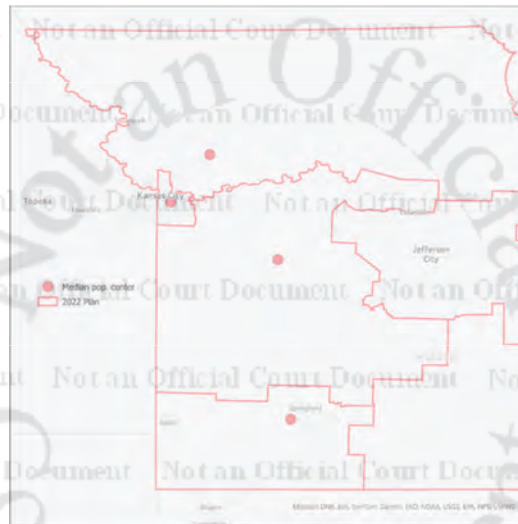
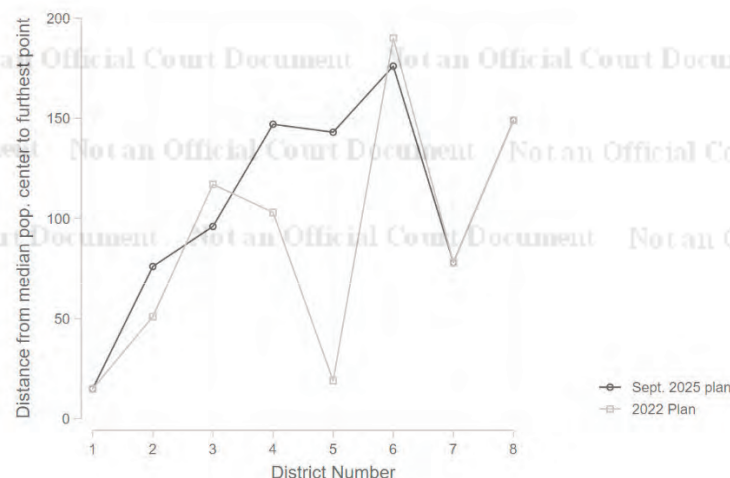


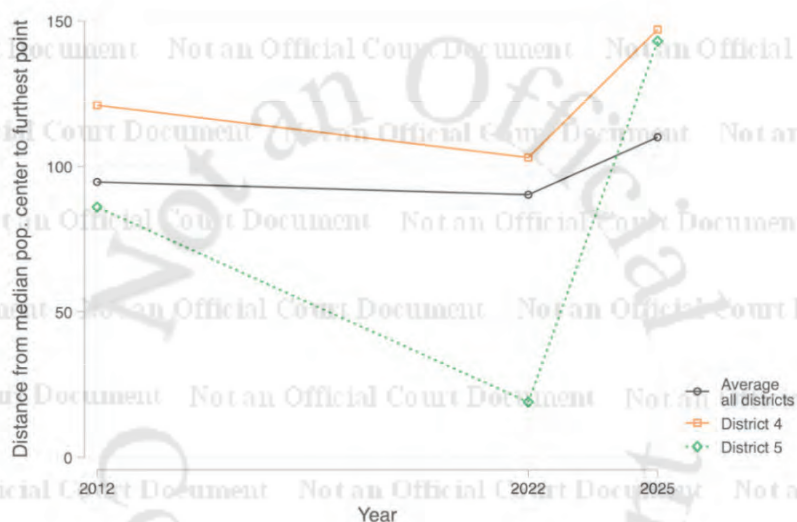
Figure 21 below provides information on these distances for each district in the 2022 Plan and the 2025 Plan. The figure shows that in the 2022 Plan the distances are rather similar for all the districts except Districts 4 and 5, whereas in the 2025 Plan Districts 4 and 5 become dramatically less compact by the metric of district sprawl.

Figure 21: Distances from Median Population Centers of Districts to Furthest Point in District, 2022 Plan and 2025 Plan



Relative to past congressional plans, the district sprawl for Districts 4 and 5 increased dramatically in the 2025 Plan. **Figure 22** below provides another visualization of this change, by plotting the distance from the median population centers of Districts 4 and 5 to the furthest points of those districts for each version of the congressional map enacted since Missouri went from nine congressional districts to eight after the 2010 census cycle.

Figure 22: Average Distance from Median Population Center of District to Furthest Point in District, Plans from 2012 to Present



IV. CAN DEVIATIONS FROM COMPACTNESS BE EXPLAINED BY OTHER RECOGNIZED FACTORS?

The 2025 Plan clearly falls short of the “closely united territory” standard of compactness. The remainder of this report considers several reasons, enumerated by the Missouri Supreme Court in *Pearson v. Koster*, as to why “minimal and practical deviations” from compactness may occur, namely: “(1) the interrelationship in standards for the population equality and compactness requirements; (2) the contiguity requirement; (3) federal laws, including the Voting Rights Act; and (4) the recognized factors of population density, natural boundary lines, boundaries of political subdivisions, and historical boundary lines of prior redistricting maps.” *Pearson v. Koster*, 367 S.W. 3d 36, 53 (Mo. 2012).

The 2025 Plan’s division of Kansas City into three districts is neither minimal nor practical in its deviation from the principle of closely united territory. It is not possible to claim that these deviations were required by efforts to draw contiguous, equal-population districts, since the General Assembly used the same geography and population data in drawing the 2022 Plan and

was able to keep most of the closely united territory of Kansas City together in a single district, and was able to draw more rural-oriented versions of Districts 4 and 6. Above, I demonstrated in Part III.B.1 that without doubt, the 2025 Plan was not drawn with any regard for population density, and in Part III.A that it was a radical departure from historical district boundaries. This Part explains why none of the remaining factors of federal law, natural boundary lines, or boundaries of political subdivisions explain the 2025 Plan's stark deviation from the closely united territory standard of compactness.

A. Federal Law

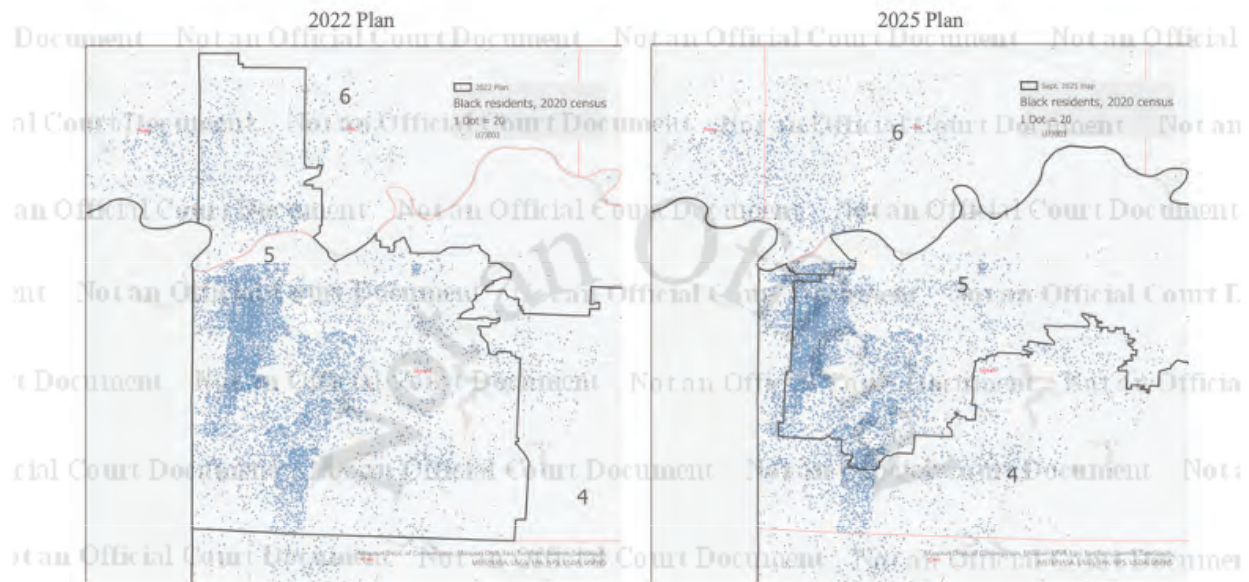
Efforts to comply with federal law do not explain the 2025 Plan's violation of the closely united territory standard. When drawing a redistricting plan in the United States, district-drawers must be aware of the federal Voting Rights Act (VRA). If there is a sufficiently large concentration of minority voters in an area, and racially polarized voting might be present, the district-drawer might need to conduct some additional analysis to establish whether racially polarized voting is indeed present and whether minority voters typically are unable to elect their candidates of choice. The first question under Section 2 of the Voting Rights Act is whether the minority group is large enough and geographically compact enough to form a majority in a single-member district. If the answer is "no," the VRA does not compel consideration of race in drawing the districts.

In the Kansas City area, there is no minority group large enough to form a majority in a single-member district. The Black voting-age population on the Missouri side of the Kansas City metropolitan statistical area is well under 200,000, and the target size of a Missouri congressional district is 769,364 people. Moreover, the Black voting-age population share of District 5 in the 2022 Plan was only 22.45 percent. As can be seen in the left-hand panel of **Figure 23** below, that district was already drawn in a way that included much of the Black population in the Kansas City area. Accordingly, a district-drawer would have known immediately that Section 2 of the VRA would not be implicated in the Kansas City area. In any case, the VRA cannot explain the deviations from the standard of closely united territory in the Kansas City area.

In fact, the 2025 Plan was drawn in such a way as to potentially invite scrutiny related to racial gerrymandering and the 14th amendment. **Figure 23** below is a dot density map of the Black population of metro Kansas City from the 2020 Census. By extracting a strip of Kansas City bounded north-south along Troost Avenue—one of the most famous racial dividing lines in the

United States⁹—the 2025 Plan appears to sort voters into District 5 and out of District 4 along racial lines.

Figure 23: Dot Density Map of Black Population in Metro Kansas City with 2022 and 2025 Plan District Boundaries



B. Natural Boundary Lines

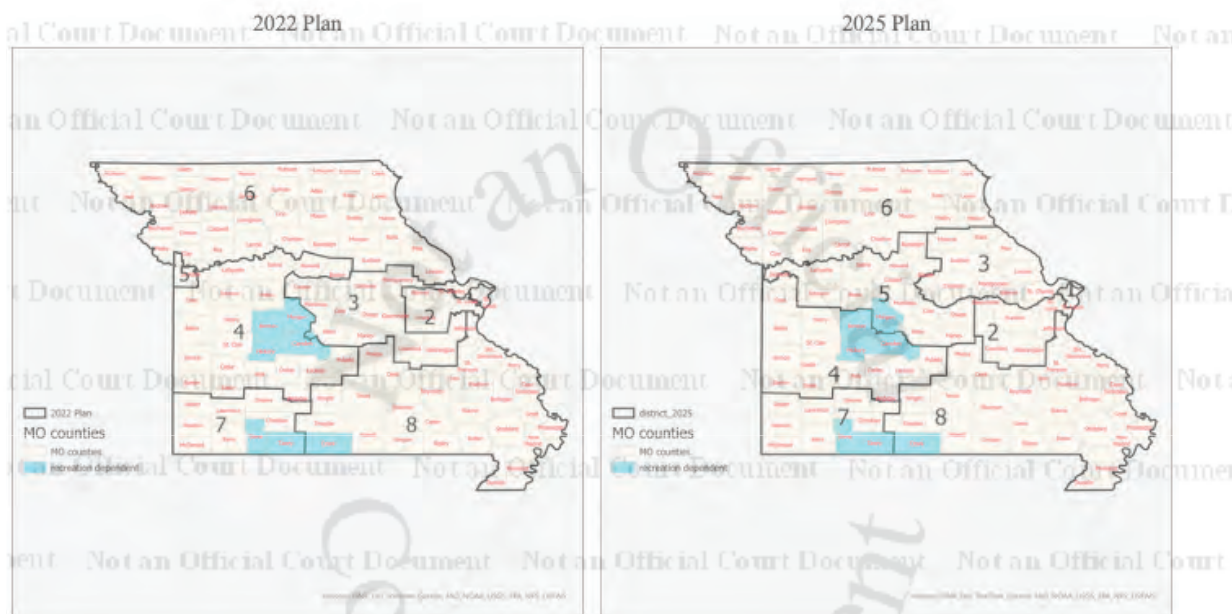
The boundaries that subdivide Kansas City in the 2025 Plan do not appear to be driven by a desire to follow bodies of water or other natural features. In fact, the 2025 Plan breaches a significant natural boundary that prior congressional maps have respected. As demonstrated in the historical maps in Part III, the Missouri River has long been part of the dividing line between Districts 5 and 6 in the Kansas City area. In the 2025 Plan, District 6 dips down across the Missouri River and extracts part of Kansas City south of the river for the first time in history.

The 2025 Plan breaches natural boundary lines in other areas of the state as well. The 2025 Plan's boundary between District 4 and District 5 subdivides the Lake of the Ozarks recreation area. **Figure 24** below depicts the “recreation dependent” counties of Missouri, using the U.S. Department of Agriculture Economic Research Service’s classification of counties by economic

⁹ Sherry Lamb Schirmer, *A City Divided: The Racial Landscape of Kansas City, 1900-1960*. University of Missouri Press (2016); Kevin Fox Gotham, *Race, Real Estate, and Uneven Development: The Kansas City Experience, 1900-2010*, State University of New York Press (2014).

dependence based on job and income concentration.¹⁰ Previous redistricting plans kept Morgan County—home to a part of the Lake of the Ozarks—together with the other recreation-dependent counties in District 4. The 2025 Plan moves Morgan County to District 5, where it is the only recreation-dependent county.

Figure 24: Recreation-Dependent Counties of Missouri



C. Boundaries of Political Subdivisions

The 2025 Plan's lack of compactness cannot be explained by a desire to respect the boundaries of political subdivisions. In fact, the 2025 Plan introduces new splits of political subdivisions at multiple levels of government.

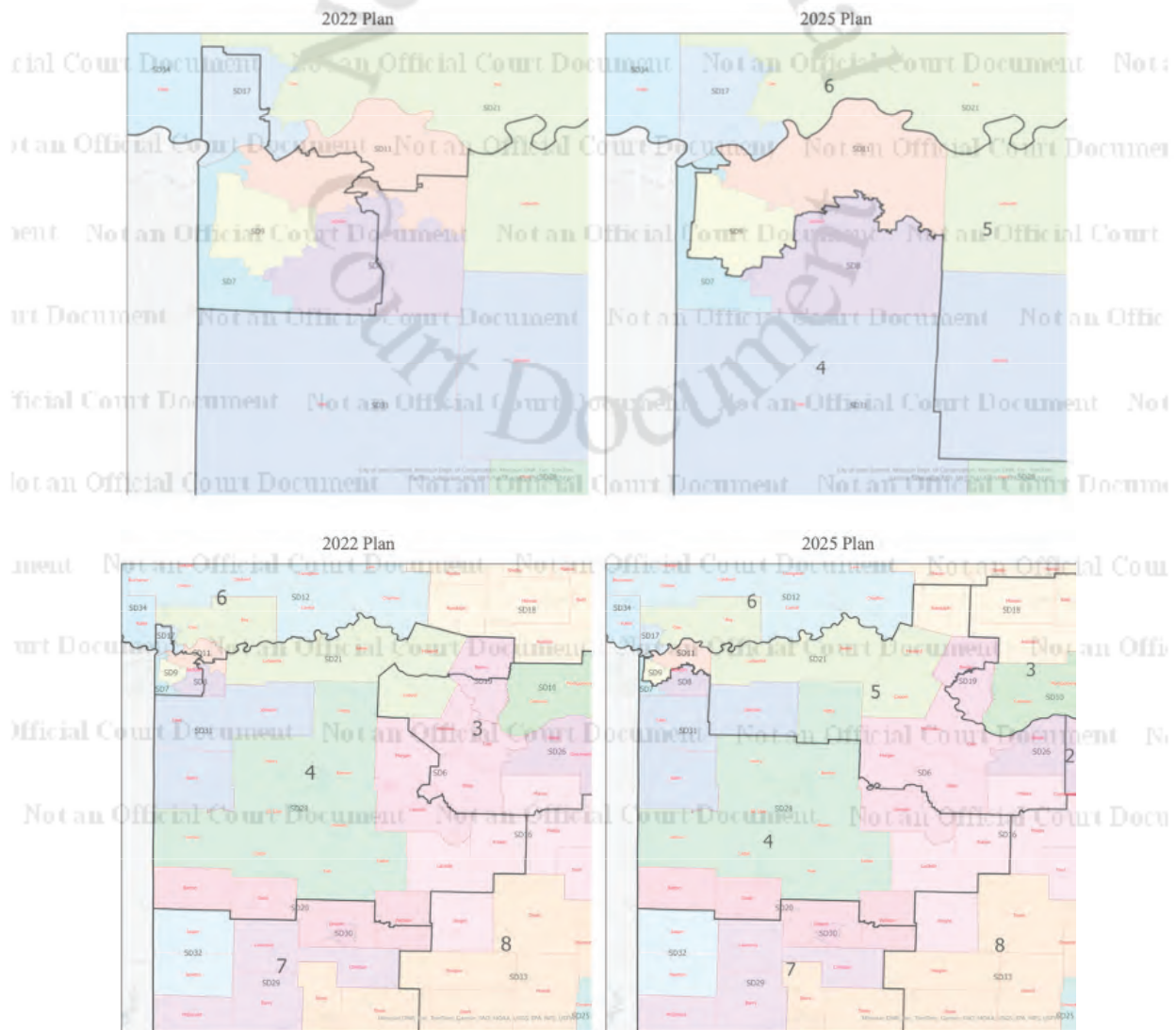
The 2025 Plan violates the principle of closely united territory in western Missouri by dividing the political subdivision of Kansas City—and even the central business district of Kansas City—into three congressional districts. The boundary of District 5 in the 2025 Plan also splits the cities of Columbia and Jefferson City, both of which are also designated by the OMB and the U.S. Census Bureau as metropolitan statistical areas.

¹⁰ Count Typology Codes – Descriptions and Maps, Economic Research Service, U.S. Dep't of Agriculture (updated Apr. 11, 2025), <https://www.ers.usda.gov/data-products/county-typology-codes/descriptions-and-maps#highrec>.

These violations of closely united territory cannot be explained by a desire to minimize splits of state legislative districts, city council districts of Kansas City, school districts, or neighborhoods.

It does not appear that the 2025 Map's deviation from the principle of closely united territory arose from an effort to preserve boundaries of Missouri Senate districts. **Figure 25** below superimposes the boundaries of the 2022 Plan and the 2025 Plan on a map of Missouri State Senate districts. The first set of images zoom in on Jackson County, and the second set of images zoom out to the entire extent of Districts 4 and 5. In the first set of images, one can see that the 2025 Plan partially follows the boundaries of the state senate districts in Jackson County (which also follow municipal boundaries in part), which was less clearly the case in the 2022 Plan.

Figure 25: Missouri State Senate Districts and Boundaries of 2022 and 2025 Plans



However, the first set of images also shows that the 2025 Plan divides State Senate District 7 in the Kansas City central business district into three congressional districts. Moreover, the second set of images shows that the 2022 Plan's overall correspondence with state senate districts was greater than the 2025 Plan. The boundary of District 5 in the 2022 Plan only split three State Senate districts, whereas the boundary of District 5 in the 2025 Plan splits nine.

Figure 26 below provides similar maps for Missouri State House districts. Here again, it does not appear that deviation from Kansas City's closely united territory arose from an effort to preserve boundaries of Missouri House districts. The intersection of Districts 4, 5, and 6 in the 2025 Plan splits a State House district into three congressional districts. Whereas the boundary of District 5 in the 2022 Plan split five State House districts in total, the boundary of District 5 in the 2025 Plan split six State House districts on the Troost Avenue corridor alone, eight total in Jackson County, and 16 overall.

Figure 26: Missouri State House Districts and Boundaries of 2022 and 2025 Plans

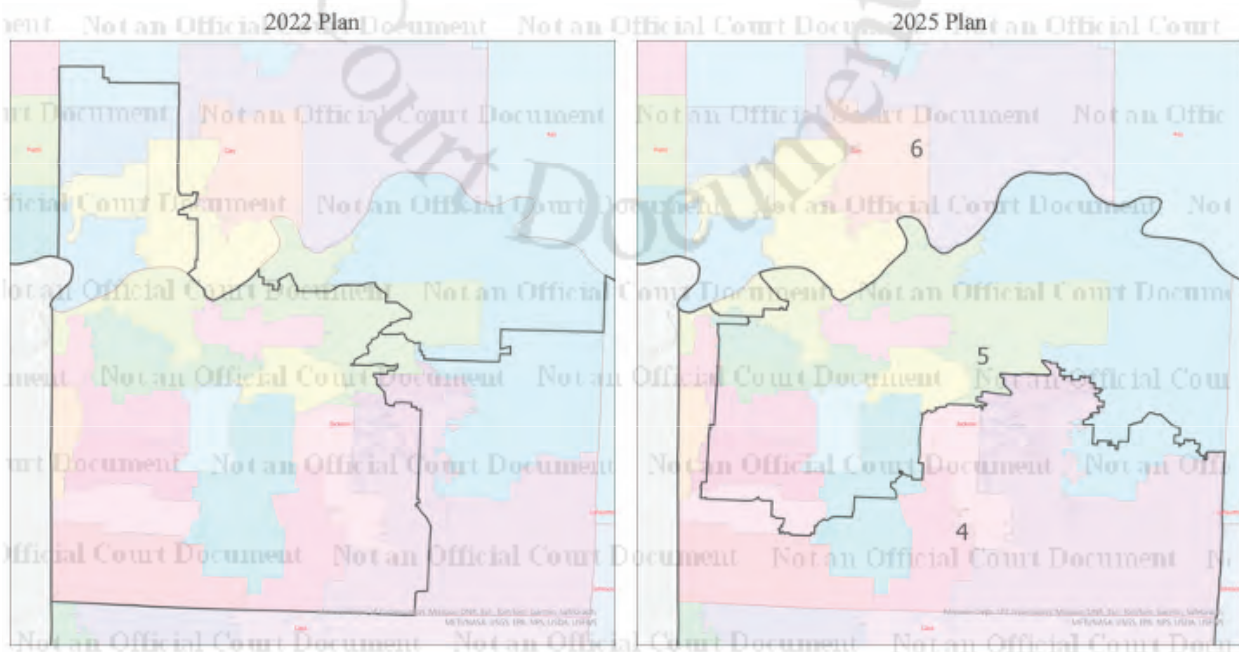
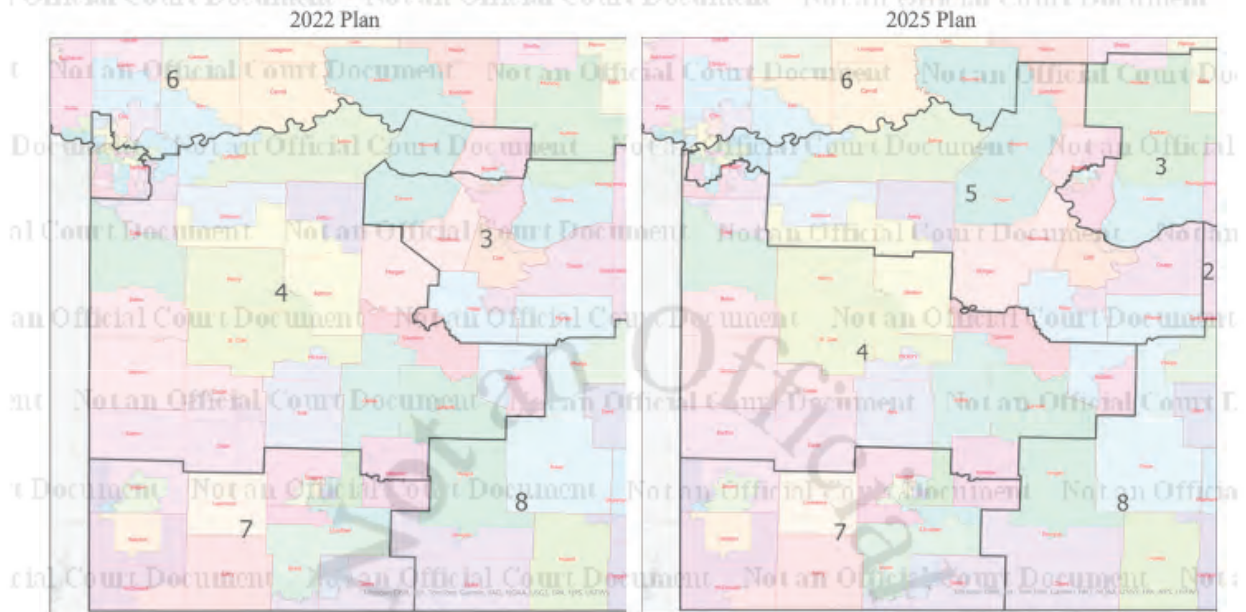
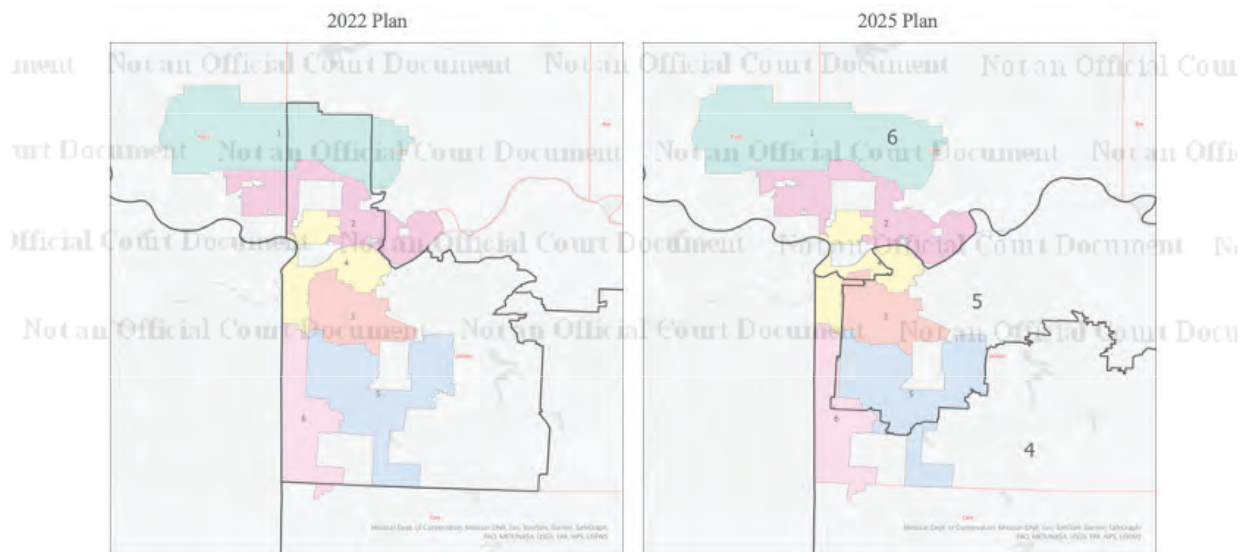


Figure 26 (continued): Missouri State House Districts and Boundaries of 2022 and 2025 Plans

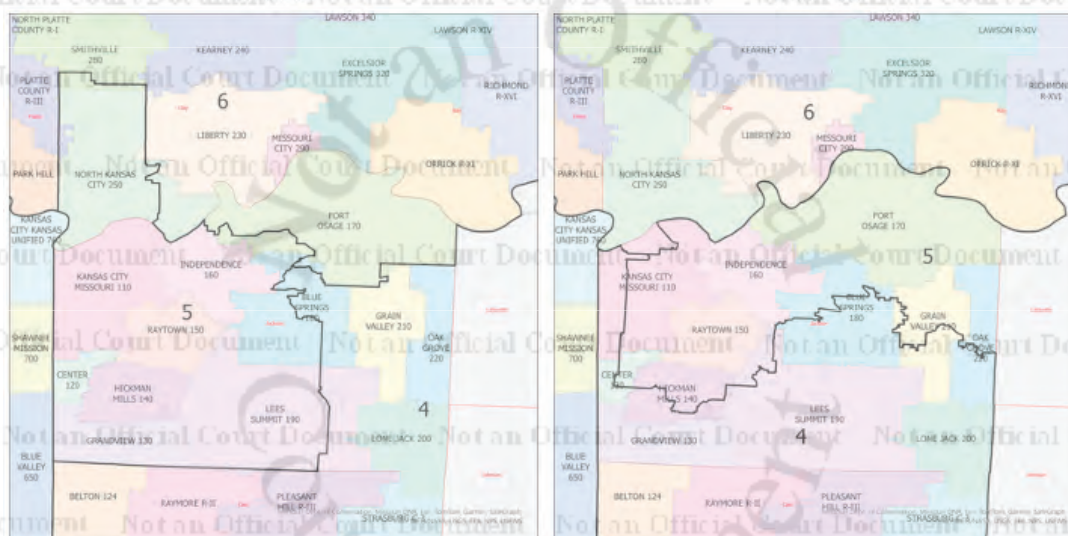


The story is the same for city council districts. **Figure 27** below provides a map of city council districts and includes the boundaries of the 2022 and 2025 Plans. While the 2022 Plan split City Council Districts 1 and 2 in Clay County, it did not split any of the four city council districts in Jackson County. The 2025 Plan does the opposite: while it does not split the two Clay County districts, it splits all four of the Jackson County districts. Remarkably, two city council districts—3 and 4—are subdivided into three different congressional districts.

Figure 27: City Council Districts of Kansas City and Boundaries of 2022 and 2025 Plans



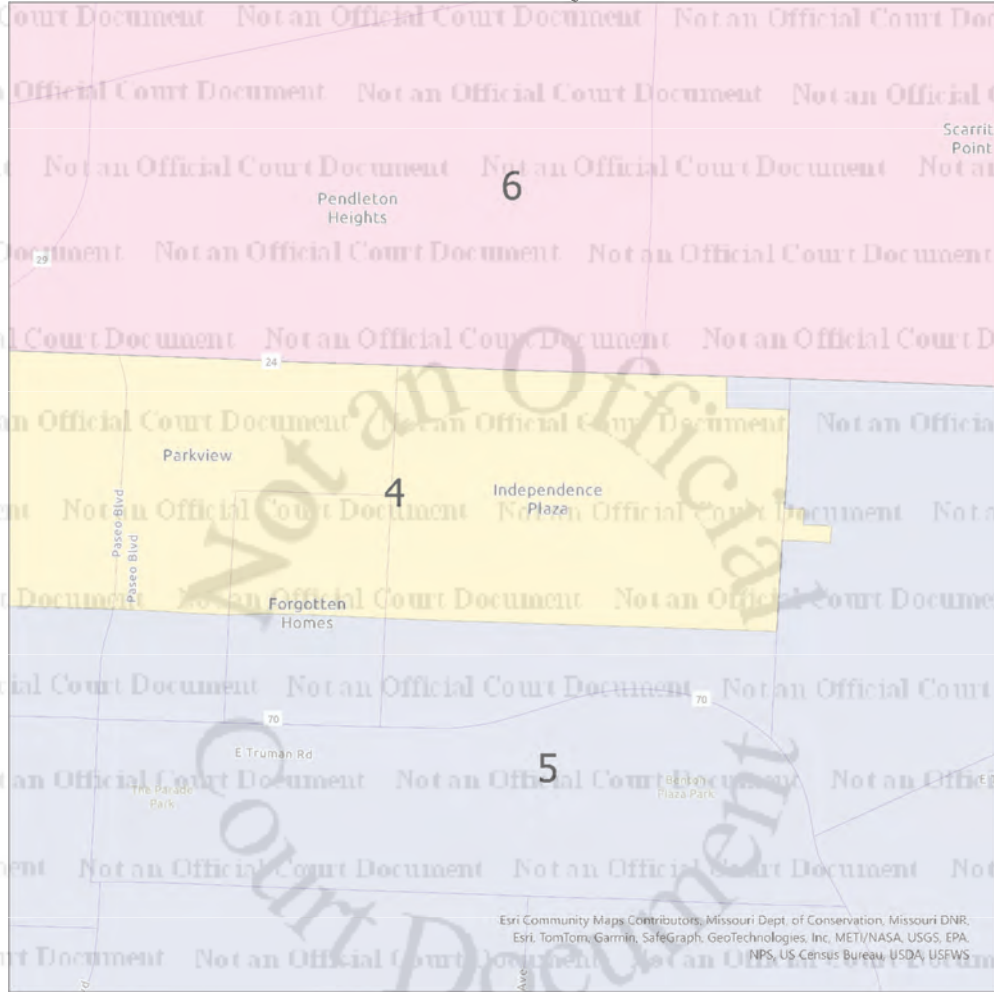
2022 Plan



It is also useful to briefly consider how the 2025 Plan divides Kansas City's neighborhoods. The intersection of Districts 4, 5, and 6 in Kansas City is portrayed in **Figure 29** below, along with boundaries of Kansas City neighborhoods. Historic neighborhoods in the northern part of the city, including Pendleton Heights and Scarritt Point, have been carved out of Jackson County and placed in District 6, which reaches over 200 miles to the east, all the way to Hannibal and the Mississippi River.

40

Figure 29: Boundaries of Neighborhoods and 2025 Congressional Districts, Kansas City



The district boundaries that carve through the historic heart of the city pay little attention to neighborhood boundaries, splitting the following neighborhoods along the way: Holmes Park, Tower Homes, Santa Fe Hills, Boone Hills, Willow Creek, Fairlane, Stratford Estates, Hickman Mills, Crossgates, Kirkside, Columbus Park Industrial, Columbus Park, North Indian Mound, South Indian Mound, Sheffield, Independence Plaza, Forgotten Homes, Parkview, Paseo West, and Hospital Hill. The boundary cuts off part of the campus of Rockhurst University, runs through the parking lot of a hospital, and slices through the middle of the school building of the University Academy charter school.

V. CONCLUSION

Kansas City and its surrounding metro area constitutes closely united territory, and it has been treated as such in the drawing of congressional district boundaries throughout Missouri history. The 2025 Plan is a major deviation from this tradition. It divides the core of Kansas City into three heterogeneous districts. In doing so, it divides urban residents and the interests of urban workers and firms across three congressional districts, potentially undermining the representation of a wide range of groups including renters, transit advocates, and technology firms and workers. While District 5 in the 2025 Plan loses its urban character, District 4 loses its rural character, forcing workers and firms in more traditional economic sectors to compete for influence with a new set of high-tech firms and university-educated workers. Districts 4 and 5 have become far more heterogeneous with respect to population density, and the district boundaries have stretched far away from the median population center of the district.

The 2025 Plan demonstrates that these deviations from Missouri's tradition of drawing districts around closely united territory cannot be explained by the challenge of drawing contiguous, equal-population districts. Nor can these deviations be explained by efforts to abide by federal law or respect for prior districts, natural boundaries, or boundaries of political subdivisions or neighborhoods.

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Assistant Professor of Political Science, MIT, 1999–2003.

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Publications

Books

Why Cities Lose: The Deep Roots of the Urban-Rural Divide. Basic Books, 2019.

Decentralized Governance and Accountability: Academic Research and the Future of Donor Programming. Co-edited with Erik Wibbels, Cambridge University Press, 2019.

Hamilton's Paradox: The Promise and Peril of Fiscal Federalism, Cambridge University Press, 2006. Winner, Gregory Luebbert Award for Best Book in Comparative Politics, 2007; Martha Derthick Award for lasting contribution to the study of federalism, 2021.

Fiscal Decentralization and the Challenge of Hard Budget Constraints, MIT Press, 2003. Co-edited with Gunnar Eskeland and Jennie Litvack.

Peer Reviewed Journal Articles

The Great Global Divider? A Comparison of Urban-Rural Partisan Polarization in Western Democracies, 2024, *Comparative Political Studies* 58(2): 261-290 (with Twan Huijsmans). Winner, Frances Rosenbluth Best Paper Award, *Comparative Political Studies*.

The Great Recession and the Public Sector in Rural America, 2024, *Journal of Economic Geography* 24(3): 441-458.

How Social Context Affects Immigration Attitudes, 2023, *Journal of Politics* 85(2): 372-388 (with Adam Berinsky, Christopher Karpowitz, Zeyu Chris Peng, and Cara Wong).

Homicide Deaths Among Adult Cohabitants of Handgun Owners in California, 2004 to 2016: A Cohort Study, 2022, *Annals of Internal Medicine* 175(5): 804-811 (with David M. Studdert, Yifan Zhang, Erin E. Holsinger, Lea Prince, Alexander F. Holsinger, Garen J. Wintemute, and Matthew Miller).

Policies to Influence Perceptions about COVID-19 Risk: The Case of Maps. 2022, *Science Advances* 8(11): 1-9 (with Claudia Engel and Marco Tabellini).

Polarization and Accountability in COVID Times, 2022, *Frontiers in Political Science* January 19, 2022 (with Pablo Beramendi).

Who Registers? Village Networks, Household Dynamics, and Voter Registration in Rural Uganda, 2021, *Comparative Political Studies* 55(6), 899-932, <https://doi.org/10.1177/00104140211036048> (with Romain Ferrali, Guy Grossman, and Melina Platas).

Partisan Dislocation: A Precinct-Level Measure of Representation and Gerrymandering, 2021, *Political Analysis* 30(3), 403-425, doi:10.1017/pan.2021.13 (with Daryl DeFord Nick Eubank).

Who is my Neighbor? The Spatial Efficiency of Partisanship, 2020, *Statistics and Public Policy* 7(1):87-100 (with Nick Eubank).

Handgun Ownership and Suicide in California, 2020, *New England Journal of Medicine* 382: 2220-2229 (with David M. Studdert, Yifan Zhang, Sonja A. Swanson, Lea Prince, Erin E. Holsinger, Matthew J. Spittal, Garen J. Wintemute, and Matthew Miller).

Viral Voting: Social Networks and Political Participation, 2020, *Quarterly Journal of Political Science* 163: 265-284, (with Nick Eubank, Guy Grossman, and Melina Platas). Winner, *Political Ties Award* for the best paper on the subject of political networks.

It Takes a Village: Peer Effects and Externalities in Technology Adoption, 2020, *American Journal of Political Science* 64(3): 536-553, (with Romain Ferrali, Guy Grossman, and Melina Platas). Winner, 2020 Best Conference Paper Award, American Political Science Association Network Section.

Assembly of the LongSHOT Cohort: Public Record Linkage on a Grand Scale, 2019, *Injury Prevention* 26: 153-158 (with Yifan Zhang, Erin Holsinger, Lea Prince, Sonja Swanson, Matthew Miller, Garen Wintemute, and David Studdert).

Crowdsourcing Accountability: ICT for Service Delivery, 2018, *World Development* 112: 74-87 (with Guy Grossman and Melina Platas).

Geography, Uncertainty, and Polarization, 2018, *Political Science Research and Methods* doi:10.1017/psrm.2018.12 (with Nolan McCarty, Boris Shor, Chris Tausanovitch, and Chris Warshaw).

Handgun Acquisitions in California after Two Mass Shootings, 2017, *Annals of Internal Medicine* 166(10):698-706. (with David Studdert, Yifan Zhang, Rob Hyndman, and Garen Wintemute).

Cutting Through the Thicket: Redistricting Simulations and the Detection of Partisan Gerrymanders, 2015, *Election Law Journal* 14(4): 1-15 (with Jowei Chen).

The Achilles Heel of Plurality Systems: Geography and Representation in Multi-Party Democracies, 2015, *American Journal of Political Science* 59(4): 789-805 (with Ernesto Calvo). Winner, Michael Wallerstein Award for best paper in political economy, American Political Science Association.

Why has U.S. Policy Uncertainty Risen Since 1960?, 2014, *American Economic Review: Papers and Proceedings* May 2014 (with Nicholas Bloom, Brandice Canes-Wrone, Scott Baker, and Steven Davis).

Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures, 2013, *Quarterly Journal of Political Science* 8: 239-269 (with Jowei Chen).

How Should We Measure District-Level Public Opinion on Individual Issues?, 2012, *Journal of Politics* 74(1): 203-219 (with Chris Warshaw).

Representation and Redistribution in Federations, 2011, *Proceedings of the National Academy of Sciences* 108, 21: 8601-8604 (with Tiberiu Dragu).

Dual Accountability and the Nationalization of Party Competition: Evidence from Four Federations, 2011, *Party Politics* 17, 5: 629-653 (with Erik Wibbels).

The Geographic Distribution of Political Preferences, 2010, *Annual Review of Political Science* 13: 297-340.

Fiscal Decentralization and the Business Cycle: An Empirical Study of Seven Federations, 2009, *Economics and Politics* 22(1): 37-67 (with Erik Wibbels).

Getting into the Game: Legislative Bargaining, Distributive Politics, and EU Enlargement, 2009, *Public Finance and Management* 9(4) (with Deniz Aksoy).

The Strength of Issues: Using Multiple Measures to Gauge Preference Stability, Ideological Constraint, and Issue Voting, 2008. *American Political Science Review* 102(2): 215-232 (with Stephen Ansolabehere and James Snyder).

Does Religion Distract the Poor? Income and Issue Voting Around the World, 2008, *Comparative Political Studies* 41(4): 437-476 (with Ana Lorena De La O).

Purple America, 2006, *Journal of Economic Perspectives* 20(2) (Spring): 97-118 (with Stephen Ansolabehere and James Snyder).

Economic Geography and Economic Voting: Evidence from the U.S. States, 2006, *British Journal of Political Science* 36(3): 527-47 (with Michael Ebeid).

Distributive Politics in a Federation: Electoral Strategies, Legislative Bargaining, and Government Coalitions, 2004, *Dados* 47(3) (with Marta Arretche, in Portuguese).

Comparative Federalism and Decentralization: On Meaning and Measurement, 2004, *Comparative Politics* 36(4): 481-500. (Portuguese version, 2005, in *Revista de Sociologia e Política* 25).

Reviving Leviathan: Fiscal Federalism and the Growth of Government, 2003, *International Organization* 57 (Fall), 695-729.

Beyond the Fiction of Federalism: Macroeconomic Management in Multi-tiered Systems, 2003, *World Politics* 54(4) (July): 494-531 (with Erik Wibbels).

The Dilemma of Fiscal Federalism: Grants and Fiscal Performance around the World, 2002, *American Journal of Political Science* 46(3): 670-687.

Strength in Numbers: Representation and Redistribution in the European Union, 2002, *European Union Politics* 3(2): 151-175.

Does Federalism Preserve Markets? 1997, *Virginia Law Review* 83(7): 1521-1572 (with Susan Rose-Ackerman). Spanish version, 1999, in *Quorum* 68.

Working Papers

Elections, Political Polarization, and Economic Uncertainty, NBER Working Paper 27961 (with Scott Baker, Aniket Baksy, Nicholas Bloom, and Steven Davis).

Federalism and Inter-regional Redistribution, Working Paper 2009/3, Institut d'Economia de Barcelona.

Representation and Regional Redistribution in Federations, Working Paper 2010/16, Institut d'Economia de Barcelona (with Tiberiu Dragu).

Changing the Default: The Impact of Motor-Voter Reform in Colorado (with Justin Grimmer), 2022.

Chapters in Books

Recessions and Ratchets: Federal Funds and Public Sector Employment, in *American Federalism Today*, edited by Michael Boskin, Hoover Institution Press.

The Urban-Rural Divide in Historical Political Economy, in *Oxford Handbook of Historical Political Economy*, edited by Jeffery A. Jenkins and Jared Rubin, 2023, Oxford University Press.

Political Geography and Representation: A Case Study of Districting in Pennsylvania (with Thomas Weighill), in *Political Geometry*, edited by Moon Duchin and Olivia Walch, 2022, Springer.

Keeping Your Enemies Close: Electoral Rules and Partisan Polarization, in *The New Politics of Insecurity*, edited by Frances Rosenbluth and Margaret Weir, 2022, Cambridge University Press.

Decentralized Rule and Revenue, 2019, in Jonathan Rodden and Erik Wibbels, eds., *Decentralized Governance and Accountability*, Cambridge University Press.

Geography and Gridlock in the United States, 2014, in Nathaniel Persily, ed. *Solutions to Political Polarization in America*, Cambridge University Press.

Can Market Discipline Survive in the U.S. Federation?, 2013, in Daniel Nadler and Paul Peterson, eds., *The Global Debt Crisis: Haunting U.S. and European Federalism*, Brookings Press.

Market Discipline and U.S. Federalism, 2012, in Peter Conti-Brown and David A. Skeel, Jr., eds., *When States Go Broke: The Origins, Context, and Solutions for the American States in Fiscal Crisis*, Cambridge University Press.

Federalism and Inter-Regional Redistribution, 2010, in Nuria Bosch, Marta Espasa, and Albert Sole Olle, eds., *The Political Economy of Inter-Regional Fiscal Flows*, Edward Elgar.

Back to the Future: Endogenous Institutions and Comparative Politics, 2009, in Mark Lichbach and Alan Zuckerman, eds., *Comparative Politics: Rationality, Culture, and Structure* (Second Edition), Cambridge University Press.

The Political Economy of Federalism, 2006, in Barry Weingast and Donald Wittman, eds., *Oxford Handbook of Political Economy*, Oxford University Press.

Fiscal Discipline in Federations: Germany and the EMU, 2006, in Peter Wierds, Servaas Deroose, Elena Flores and Alessandro Turrini, eds., *Fiscal Policy Surveillance in Europe*, Palgrave MacMillan.

The Political Economy of Pro-cyclical Decentralised Finance (with Erik Wibbels), 2006, in Peter Wierds, Servaas Deroose, Elena Flores and Alessandro Turrini, eds., *Fiscal Policy Surveillance in Europe*, Palgrave MacMillan.

Globalization and Fiscal Decentralization, (with Geoffrey Garrett), 2003, in Miles Kahler and David Lake, eds., *Governance in a Global Economy: Political Authority in Transition*, Princeton University Press: 87-109. (Updated version, 2007, in David Cameron, Gustav Ranis, and Annalisa Zinn, eds., *Globalization and Self-Determination: Is the Nation-State under Siege?* Routledge.)

Introduction and Overview (Chapter 1), 2003, in Rodden et al., *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Soft Budget Constraints and German Federalism (Chapter 5), 2003, in Rodden, et al, *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Federalism and Bailouts in Brazil (Chapter 7), 2003, in Rodden, et al., *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Lessons and Conclusions (Chapter 13), 2003, in Rodden, et al., *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Online Interactive Visualization

Stanford Election Atlas, 2012 (collaboration with Stephen Ansolabehere at Harvard and Jim Herries at ESRI)

Other Publications

Supporting Advanced Manufacturing in Alabama, Report to the Alabama Innovation Commission, Hoover Institution, 2021.

How America's Urban-Rural Divide has Shaped the Pandemic, 2020, *Foreign Affairs*, April 20, 2020.

An Evolutionary Path for the European Monetary Fund? A Comparative Perspective, 2017, Briefing paper for the Economic and Financial Affairs Committee of the European Parliament.

Amicus Brief in *Rucho et al. v. Common Cause*, 2019, Supreme Court of the United States, with Wesley Pegden and Samuel Wang.

Amicus Brief in *Gill et al. v. Whitford et al.*, 2017, Supreme Court of the United States, with Jowei Chen and Wesley Pegden.

Representation and Regional Redistribution in Federations: A Research Report, 2009, in *World Report on Fiscal Federalism*, Institut d'Economia de Barcelona.

On the Migration of Fiscal Sovereignty, 2004, *PS: Political Science and Politics* July, 2004: 427-431.

Decentralization and the Challenge of Hard Budget Constraints, *PREM Note 41*, Poverty Reduction and Economic Management Unit, World Bank, Washington, D.C. (July).

Decentralization and Hard Budget Constraints, *APSA-CP* (Newsletter of the Organized Section in Comparative Politics, American Political Science Association) 11:1 (with Jennie Litvack).

Book Review of *The Government of Money* by Peter Johnson, *Comparative Political Studies* 32,7: 897-900.

Fellowships, Honors, and Grants

Andrew Carnegie Fellow, 2025.

Frances Rosenbluth Best Paper Award, 2025, *Comparative Political Studies*.

National Science Foundation, funding for study "Segregation, Suburbanization, and Representation," 2023.

John Simon Guggenheim Memorial Foundation Fellowship, 2021.

Martha Derthick Award of the American Political Science Association for "the best book published at least ten years ago that has made a lasting contribution to the study of federalism and intergovernmental relations," 2021.

National Institutes of Health, funding for "Relationship between lawful handgun ownership and risk of homicide victimization in the home," 2021-2024.

National Collaborative on Gun Violence Research, funding for "Cohort Study Of Firearm-Related Mortality Among Cohabitants Of Handgun Owners." 2020.

Fund for a Safer Future, Longitudinal Study of Handgun Ownership and Transfer (LongSHOT), GA004696, 2017-2018.

Stanford Institute for Innovation in Developing Economies, Innovation and Entrepreneurship research grant, 2015.

Michael Wallerstein Award for best paper in political economy, American Political Science Association, 2016.

Common Cause Gerrymandering Standard Writing Competition, 2015.

General support grant from the Hewlett Foundation for Spatial Social Science Lab, 2014.

Fellow, Institute for Research in the Social Sciences, Stanford University, 2012.

Sloan Foundation, grant for assembly of geo-referenced precinct-level electoral data set (with Stephen Ansolabehere and James Snyder), 2009-2011.

Hoagland Award Fund for Innovations in Undergraduate Teaching, Stanford University, 2009.

W. Glenn Campbell and Rita Ricardo-Campbell National Fellow, Hoover Institution, Stanford University, beginning Fall 2010.

Research Grant on Fiscal Federalism, Institut d'Economia de Barcelona, 2009.

Fellow, Institute for Research in the Social Sciences, Stanford University, 2008.

United Postal Service Foundation grant for study of the spatial distribution of income in cities, 2008.

Gregory Luebbert Award for Best Book in Comparative Politics, 2007.

Fellow, Center for Advanced Study in the Behavioral Sciences, 2006-2007.

National Science Foundation grant for assembly of cross-national provincial-level dataset on elections, public finance, and government composition, 2003-2004 (with Erik Wibbels).

MIT Dean's Fund and School of Humanities, Arts, and Social Sciences Research Funds.

Funding from DAAD (German Academic Exchange Service), MIT, and Harvard EU Center to organize the conference, "European Fiscal Federalism in Comparative Perspective," held at Harvard University, November 4, 2000.

Canadian Studies Fellowship (Canadian Federal Government), 1996-1997.

Prize Teaching Fellowship, Yale University, 1998-1999.

Fulbright Grant, University of Leipzig, Germany, 1993-1994.

Michigan Association of Governing Boards Award, one of two top graduating students at the University of Michigan, 1993.

W. J. Bryan Prize, top graduating senior in political science department at the University of Michigan, 1993.

Other Professional Activities

Selection committee, best paper award, American Journal of Political Science.

Selection committee, best paper award, American Political Economy

International Advisory Committee, Center for Metropolitan Studies, Sao Paulo, Brazil, 2006–2010.

Selection committee, Mancur Olson Prize awarded by the American Political Science Association Political Economy Section for the best dissertation in the field of political economy.

Selection committee, Gregory Luebbert Best Book Award.

Selection committee, William Anderson Prize, awarded by the American Political Science Association for the best dissertation in the field of federalism and intergovernmental relations.

Courses

Undergraduate

Politics, Economics, and Democracy

Introduction to Comparative Politics

Introduction to Political Science

Political Science Scope and Methods

Institutional Economics

Spatial Approaches to Social Science

Graduate

Political Economy

Political Economy of Institutions

Federalism and Fiscal Decentralization

Politics and Geography

Consulting

2017. Economic and Financial Affairs Committee of the European Parliament.

2016. Briefing paper for the World Bank on fiscal federalism in Brazil.

2013-2018: Principal Investigator, SMS for Better Governance (a collaborative project involving USAID, Social Impact, and UNICEF in Arua, Uganda).

2011-2014: Consultation with investment groups and hedge funds on European debt crisis.

2011-2014: Lead Outcome Expert, Democracy and Governance, USAID and Social Impact.

2010: USAID, Review of USAID analysis of decentralization in Africa.

2006-2009: World Bank, Independent Evaluations Group. Undertook evaluations of World Bank decentralization and safety net programs.

2008-2011: International Monetary Fund Institute. Designed and taught course on fiscal federalism.

1998-2003: World Bank, Poverty Reduction and Economic Management Unit. Consultant for *World Development Report*, lecturer for training courses, participant in working group for assembly of decentralization data, director of multi-country study of fiscal discipline in decentralized countries, collaborator on review of subnational adjustment lending.

Expert Testimony

2025. Expert witness in *Williams v. Hall* No. 1:23-cv-01057 (M.D. NC. 2025).

2023. Expert witness in *Agee, Jr. et al v. Benson et al*, No. 1:22-cv-00272 (W.D. Mi. 2023).

2022. Expert witness in *Rivera v. Schwab* No. 2022-cv-89 (Kan. Dist. Ct. 2022)

2022. Drew Pennsylvania Congressional redistricting plan that was chosen by the Pennsylvania Supreme Court for implementation in *Carter v. Chapman* No. 7 MM 2022, 2022WL 549106 (Pennsylvania Supreme Court).

2022. Written expert testimony in *Benninghoff v. 2021 Legislative Reapportionment Commission* (Pennsylvania Supreme Court).

2022 Expert witness in *Bennett v. Ohio Redistricting Commission*, No. 2012-1198 (Ohio Supreme Court).

2022 Expert witness in *Adams v. DeWine* No. 2012-1428 (Ohio Supreme Court).

2022 Expert witness in *Neiman v. LaRose* No. 2022-0298 (Ohio Supreme Court)

2019: Written expert testimony in *McLemore, Holmes, Robinson, and Woullard v. Hosemann*, United States District Court, Mississippi.

2019: Expert witness in *Nancy Corola Jacobson v. Detzner*, United States District Court, Florida.

2018: Written expert testimony in *League of Women Voters of Florida v. Detzner* No. 4:18-cv-002510, United States District Court, Florida.

2018: Written expert testimony in *College Democrats of the University of Michigan, et al. v. Johnson, et al.*, United States District Court for the Eastern District of Michigan.

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2017: Expert witness in *Bethune-Hill v. Virginia Board of Elections*, No. 3:14-CV-00852, United States District Court for the Eastern District of Virginia.

2017: Expert witness in *Arizona Democratic Party, et al. v. Reagan, et al.*, No. 2:16-CV-01065, United States District Court for Arizona.

2016: Expert witness in *Lee v. Virginia Board of Elections*, 3:15-cv-357, United States District Court for the Eastern District of Virginia, Richmond Division.

2016: Expert witness in *Missouri NAACP v. Ferguson-Florissant School District*, United States District Court for the Eastern District of Missouri, Eastern Division.

2014-2015: Written expert testimony in *League of Women Voters of Florida et al. v. Detzner, et al.*, 2012-CA-002842 in Florida Circuit Court, Leon County (Florida Senate redistricting case).

2013-2014: Expert witness in *Romo v Detzner*, 2012-CA-000412 in Florida Circuit Court, Leon County (Florida Congressional redistricting case).

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