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In re Colorado Independent Legislative Redistricting Commission

Exhibit 9

Report of Dr. Lisa Handley

Voting Patterns by Race/Ethnicity in Recent State Legislative Elections in Colorado

Dr. Lisa Handley

I. Scope of Project

I was retained by outside legal counsel to the Colorado Independent Legislative Redistricting Commission to carry out a racial bloc voting analysis of recent state legislative elections in select areas of Colorado.¹ I have conducted similar analyses on behalf of the Colorado Reapportionment Commission in 1991, 2001 and 2011.² If I concluded voting is racially/ethnically polarized in specific areas of the State, I was to assist in a district-specific, functional analysis to ascertain whether proposed districts would provide minority voters with an opportunity to elect their candidates of choice to legislative office.

II. Professional Experience

I have over thirty-five years of experience as a voting rights and redistricting expert. I have advised scores of jurisdictions and other clients on minority voting rights and redistricting-related issues and have served as an expert in dozens of voting rights cases. My clients have included state and local jurisdictions, independent redistricting commissions, the U.S. Department of Justice, national civil rights organizations, and such international organizations as the United Nations.

I have been actively involved in researching, writing, and teaching on subjects relating to voting rights, including minority representation, electoral system design, and redistricting. I co-authored a book, *Minority Representation and the Quest for Voting Equality* (Cambridge University Press, 1992) and co-edited a volume, *Redistricting in Comparative Perspective*

¹ My understanding is that the areas of the State selected for analysis were identified by legal counsel in collaboration with the Commissioners and staff as localities that contained a sufficiently large and geographically concentrated minority population to satisfy the first precondition of *Thornburg v. Gingles*. See footnote 3, below.

² My conclusion that voting was racially polarized in 1991 was later confirmed by the Tenth Circuit Court of Appeals in *Sanchez v. State of Colorado* (97 F.3d 1303 (10th Cir. 1996) which, in addition to my analysis, also considered data from subsequent elections. The existence of racially polarized voting, along with other factors, led the *Sanchez* court to conclude that the failure to create a majority minority district in the San Luis Valley constituted a violation of Section 2 of the Voting Rights Act of 1965.

(Oxford University Press, 2008), on these subjects. In addition, my research on these topics has appeared in peer-reviewed journals such as *Journal of Politics*, *Legislative Studies Quarterly*, *American Politics Quarterly*, *Journal of Law and Politics*, and *Law and Policy*, as well as law reviews (e.g., *North Carolina Law Review*) and a number of edited books. I hold a Ph.D. in political science from The George Washington University.

I have been a principal of Frontier International Electoral Consulting since co-founding the company in 1998. Frontier IEC specializes in providing electoral assistance in transitional democracies and post-conflict countries. In addition, I am a Visiting Research Academic at Oxford Brookes University in Oxford, United Kingdom.

III. Analyzing Voting Patterns by Race/Ethnicity

An election is racially polarized if minorities and whites, considered separately, would have elected different candidates – this is referred to as the "separate electorates test" in the seminal Supreme Court decision *Thornburg v. Gingles*, 478 U.S. 30 (1986). An analysis of voting patterns by race serves as the foundation of two of the three elements of the "results test" as outlined in *Gingles*: a racial bloc voting analysis is needed to determine whether the minority group is politically cohesive; and the analysis is required to determine if whites are voting sufficiently as a bloc to usually defeat minority-preferred candidates.³

Standard Statistical Techniques The voting patterns of white and minority voters must be estimated using statistical techniques because direct information about how individuals have voted is simply not available. To estimate vote choices by race/ethnicity, I used two standard statistical techniques: ecological regression and ecological inference.⁴

³ The "results test" as interpreted by the Supreme Court in *Thornburg v. Gingles* requires plaintiffs to demonstrate three threshold factors to establish a §2 violation:

- The minority group must be sufficiently large and geographically compact to constitute a majority in a single member district;
- The minority group must be politically cohesive;
- The minority group must be able to demonstrate that the white majority votes sufficiently as a bloc to enable it – in the absence of special circumstances, such as the minority candidate running unopposed – usually to defeat the minority's preferred candidate.

⁴ One commonly used check on the estimates derived from ecological regression and ecological inference is to compare these percentages to the actual voting percentages derived from racially/ethnically homogeneous precincts where the race/ethnicity of the voters is known. The general practice is to label a precinct as homogeneous if at least 90 percent of the voting age population or, in the case of Hispanics, 90 percent of the citizen voting age population, is composed of a single race/ethnicity. However, there are

Ecological regression was employed by the plaintiffs' expert in *Thornburg v. Gingles* and has the benefit of the Supreme Court's approval in this as well as many subsequent voting rights cases. The second technique, ecological inference, was developed after the Court decided *Gingles* and was designed, in part, to address the issue of out-of-bounds estimates (estimates that exceed 100 percent or are less than zero percent), which can arise in ecological regression analysis. Ecological inference analysis has been introduced and accepted in numerous district court proceedings.

Ecological regression (ER) is a technique for determining if there is a pattern across election precincts between the percentage minority and the percentage of votes cast for the candidates competing in a given election contest. If there is a strong linear relationship across precincts, this relationship can be used to estimate the percentage of minority and white voters supporting each of the candidates in the election contest being examined.

Ecological inference (EI) was developed by Professor Gary King. Unlike ecological regression, it does not rely on an assumption of linearity. Instead, it incorporates maximum likelihood statistics to produce estimates of voting patterns by race. In addition, it utilizes the method of bounds, which uses more of the information available from the precinct returns than simply their demographic composition and candidate vote percentages.⁵ The method of bounds also precludes the estimates from exceeding the possible limits. However, unlike ecological regression, EI does not guarantee that the estimates add to 100 percent of each racial/ethnic group in the elections examined.⁶

not a sufficient number of homogeneous Hispanic precincts in Colorado to report homogenous precinct percentages. For further explanation of homogenous precinct analysis and ecological regression see Bernard Grofman, Lisa Handley and Richard Niemi, *Minority Representation and the Quest for Voting Equality* (Cambridge University Press, 1992). See Gary King, *A Solution to the Ecological Inference Problem* (Princeton University Press, 1997) for a more detailed explanation of ecological inference.

⁵ The following is an example of how the method of bounds works: if a given precinct has 100 voters, of which 75 are Hispanic and 25 are white, and the Hispanic candidate received 80 votes, then at least 55 of the Hispanic voters voted for the Hispanic candidate and at most all 75 did. (The method of bounds is less useful for calculating estimates for white voters, as anywhere between none of the whites and all of the whites could have voted for the candidate.) These bounds are used when calculating EI estimates but not when using ecological regression.

⁶ While EI places a constraint on each choice (e.g., the estimate of the percentage of Hispanic voters that voted for any individual candidate will always fall between zero and 100 percent), it places no such constraint on the sum of all of the choices (e.g., the estimates of the percentage of Hispanic voters for all candidates need not sum to 100 percent).

Estimates derived using both of these methodological approaches, ER and EI, are reported in the summary racial bloc voting tables found at the end of this report. The state legislative contests analyzed are all recent (2018 and 2020) and all included candidates of color.⁷

IV. Results of Racial Bloc Voting Analysis

Western Adams County I analyzed five recent state legislative elections in the western portion of Adams County that included Hispanic candidates. The results of my analysis can be found in the table labeled “Western Adams County” at the end of this report. Four of these contests were clearly polarized, with the majority of Hispanic voters supporting a different candidate than the majority of non-Hispanic white voters.⁸ The polarization is less pronounced when all non-Hispanic voters are considered together because this category includes non-Hispanic Black voters who tend to support the same candidates as Hispanic voters. For example, the first contest listed in the Western Adams County table is the 2020 general election in State House District 30. An overwhelming majority of Hispanic voters – 87.2% according to the ER estimate and 90.4% according to the EI estimate – supported Dafna Michaelson Jenet, the Democratic candidate. A majority of non-Hispanic white voters supported Hispanic Republican Kerrie Gutierrez – 90.9% according the ER estimate and 81.4% according to the EI estimate.⁹ But when all non-Hispanic voters are considered together, voting is still polarized, although the percentage of voters supporting Gutierrez is lower.

Despite racially/ethnically polarized voting, the Hispanic-preferred candidate won the contest to represent House District 30 seat with 56.9% of the vote. This is because the district has a substantial (albeit not a majority) Hispanic voting age population (VAP). In fact, the Hispanic-preferred candidate won all five of the elections analyzed in western Adams County. The

⁷ In the context of determining if voting is racially polarized, election contests that include minority candidates are more probative than contests in which all of the candidates are white. This is because it is not sufficient for Hispanic or Black voters, for example, to be able to elect their candidates of choice only if these candidates are white. On the other hand, it is important to recognize that not all Hispanic or Black candidates are the preferred candidates of Hispanic or Black voters.

⁸ The fifth election contest, House District 32 in 2020, was polarized according to the ER estimates but not the EI estimates.

⁹ In this election contest, the Hispanic candidate was not the candidate of choice of Hispanic voters.

Hispanic VAP is at least 35% in four of the districts examined: House Districts 30, 31 and 32; and Senate District 21.¹⁰ Senate District 24 is approximately 25% Hispanic in voting age population, but Hispanic voters in this district also successfully elected their candidate of choice in a racially/ethnically polarized contest in 2018.

Weld County Three recent state legislative contests were analyzed: Senate District 23 in 2020 and House Districts 48 and 50 in 2018. The results can be found in the table labeled “Weld County” at the end of this report. All three contests were racially/ethnically polarized. The Hispanic-preferred candidate lost two of these contests (House District 48, 21.9% Hispanic VAP; Senate District 23, 12.8% Hispanic VAP), but won in House District 53, which has a Hispanic VAP of approximately 43%.

San Luis Valley and Pueblo County Eight recent state legislative election contests were examined in this area of the State: House Districts 46, 47 and 62 in both 2018 and 2020; Senate District 3 in 2018 and Senate District 35 in 2020.¹¹ The table labeled “San Luis Valley and Pueblo County” appended at the end of this report lists the results of this analysis. Table 1, below, organizes the outcome by the Hispanic percentage VAP in the district.

Table 1: Summary of Results for San Luis Valley and Pueblo County

State Legislative District	Hispanic VAP	2018	2020
House District 62	43.9%	Polarized; Hispanic-preferred candidate won	Polarized; Hispanic-preferred candidate won
Senate District 3	40.2%	Not polarized	
House District 46	36.8%	Polarized; Hispanic-preferred candidate won	Polarized; Hispanic-preferred candidate won
House District 47	32.3%	Polarized; Hispanic-preferred candidate won	Polarized; Hispanic-preferred candidate lost
Senate District 35	32.3%		Polarized; Hispanic-preferred candidate lost

¹⁰ State House District 32 is the only district I examined that had a majority Hispanic VAP (54.3%). Senate District 21 is not majority Hispanic, but it is majority minority in composition.

¹¹ There were no contested election for Senate District 3 in 2020 or Senate District 35 in 2018.

Seven of the eight contests were racially/ethnically polarized but the Hispanic-preferred candidate won five of these seven contests – all in districts in which the Hispanic VAP exceeds 36%. On the other hand, the Hispanic-preferred candidate lost polarized elections in House District 47 and Senate District 35, both of which have Hispanic VAPs of approximately 32%.

Southern El Paso County The 2018 and 2020 contests in House District 17 included an African American candidate, Thomas Exum, Sr., who won in 2018 with 58.8% of the vote and in 2020 with 56.5% of the vote. These two contests were racially/ethnically polarized, with a majority of non-Hispanic whites supporting Exum’s opponent in both instances. The district is 31.3% Hispanic and 12.6% Black in voting age population and the combined minority support for Exum was high.

Portion of Denver County The winning candidates in House Districts 5 and 7 in 2018 and 2020 were minority candidates: Latino Democrat Alex Valdez in House District 5 in 2018 and 2020, African American Democrat James Coleman in House District 7 in 2018, and African American Democrat Jennifer Bacon who ran unopposed in House District 7 in 2020. None of these elections was racially/ethnically polarized and the Hispanic-preferred candidates all won with at least 79% of the vote.

Lakewood I analyzed House District 28 election contests in 2018 and 2020. Neither of these contests were racially/ethnically polarized. The Hispanic-preferred candidate, Democrat Kerry Tipper, won both with over 57% of the vote.

Aurora Districts 40, 41 and 42, and Senate Districts 28 and 29 are all currently represented by Hispanic-preferred minority state legislators. All were elected in contests that were racially/ethnically polarized,¹² with Hispanic and Black voters supporting the winning Democratic candidates and the majority of non-Hispanic whites supporting their Republican opponents in these contests. In 2018, elections in House Districts 40, 41 and 42 were racially/ethnically polarized but the Hispanic and Black-preferred African American Democrats won all three contests with sizeable majorities.¹³ House District 42 and Senate District 29 are majority minority in

¹² African American Democrat Dominique Jackson ran unopposed in House District 42 in 2020 but was elected in 2018 in a racially/ethnically polarized election contest.

¹³ There were no elections in Senate Districts 28 and 29 in 2018.

composition;¹⁴ minorities make up over 37% of the voting age population in House Districts 40 and 41 and Senate District 28.

Conclusion Voting in most of the areas of the State I have examined is racially/ethnically polarized. The exceptions to this pattern are the election contests in House Districts 5 and 7 in the Denver area and House District 28 in Lakewood. Even where voting is polarized, however, Hispanic or Hispanic and Black voters combined have been able to elect their candidates of choice if the Hispanic VAP is significant, though not necessarily at least 50%. For example, in western Adams County, Hispanic-preferred candidates were elected in House Districts 30 (39.1 % Hispanic VAP) and 31 (35.3% Hispanic VAP). In the San Luis Valley and Pueblo County area, House Districts 46 and 62 (36.8 and 43.9% Hispanic, respectively), and Senate District 3 (40.2% Hispanic) all elected Hispanic-preferred Hispanic candidates to the state legislature. However, districts with slightly fewer Hispanics of voting age are unsuccessful at consistently electing their preferred candidates.

V. Calculating the Hispanic VAP Needed to Elect Hispanic-Preferred Candidates

As the discussion above illustrates, it is possible for districts with less than a majority Hispanic VAP to elect Hispanic voters' candidates of choice to the Colorado state legislature. But the percentage needed varies – there is no single universal or statewide demographic target that can be applied for Hispanic voters to elect their candidates of choice. A district-specific, functional analysis is required to determine whether a district is likely to provide minority voters with an opportunity to elect their candidates of choice. This analysis will produce different minority population percentages depending upon the location of the district and the participation rates and voting patterns of Hispanic and non-Hispanics in that specific area.

Using the estimates produced from the racial bloc voting analysis, I calculated the Hispanic VAP percentage needed to elect Hispanic-preferred candidates in each of the elections I examined. This calculation takes into account the relative participation rates of Hispanics and non-Hispanics, as well as the level of Hispanic support for the Hispanic-preferred candidates (the "cohesiveness" of Hispanic voters), and the level of non-Hispanics "crossing over" to vote for the Hispanic-preferred candidates.

¹⁴ House District 42 is 39.0% Hispanic, 20.4% Black, and 5.2% Asian in VAP. Senate District 29 is 30.0% Hispanic, 16.3% Black, and 5.7% Asian in VAP.

Equalizing minority and white turnout Because Hispanics who are eligible to vote often turn out to vote at lower rates than non-Hispanic voters in Colorado, the Hispanic VAP needed to ensure that Hispanic voters comprise at least half of the voters in an election is often higher than 50%. Once the respective turnout rates of Hispanic and non-Hispanic voters have been estimated using the two statistical techniques described above, the percentage needed to equalize Hispanic and non-Hispanic voters can be calculated mathematically.¹⁵ But equalizing turnout is only the first step in the process – it does not take into account the voting patterns of Hispanic and non-Hispanic voters. If voting is racially polarized but a significant number of non-Hispanic voters typically “crossover” to vote for Hispanic voters’ preferred candidate, it may be the case that crossover voting can more than compensate for depressed Hispanic turnout.

Incorporating Minority Cohesion and White Crossover Voting Even if Hispanic voters are turning out at lower rates than non-Hispanics, and voting is racially polarized, if a relatively consistent percentage of non-Hispanic voters support Hispanic-preferred candidates, the candidates preferred by Hispanic voters can be elected even in districts that are less than majority Hispanic. As a consequence, a district-specific, functional analysis should take into account not

¹⁵ The equalizing percentage is calculated mathematically by solving the following equation:

Let
M = the proportion of the district’s voting age population that is Black
W = 1-M = the proportion of the district’s voting age population that is white
A = the proportion of the Black voting age population that turned out to vote
B = the proportion of the white voting age population that turned out to vote

Therefore,
M(A) = the proportion of the population that is Black and turned out to vote (1)
(1-M)B = the proportion of total population that is white and turned out to vote (2)

To find the value of M that is needed for (1) and (2) to be equal, (1) and (2) are set as equal and we solve for M algebraically:

$$\begin{aligned} M(A) &= (1 - M) B \\ M(A) &= B - M(B) \\ M(A) + M(B) &= B \\ M(A + B) &= B \\ M &= B / (A+B) \end{aligned}$$

Thus, for example, if 39.3% of the Black population turned out and 48.3% of the white population turned out, B= .483 and A = .393, and $M = .483 / (.393 + .483) = .483 / .876 = .5513$, therefore a Black VAP of 55.1% would produce an equal number of Black and white voters. (For a more in-depth discussion of equalizing turnout see Kimball Brace, Bernard Grofman, Lisa Handley and Richard Niemi, “Minority Voting Equality: The 65 Percent Rule in Theory and Practice,” *Law and Policy*, 10 (1), January 1988.)

only differences in turnout rates, but also the voting patterns of Hispanic and non-Hispanic voters.¹⁶

To illustrate this mathematically, consider a district that has 1000 persons of voting age, 50% of who are Hispanic and 50% of who are non-Hispanic. Let us begin by assuming that Hispanic turnout is lower than non-Hispanic turnout in a two-candidate general election. In our hypothetical election example, 50% of the Hispanic VAP turn out to vote and 60% of the non-Hispanic VAP vote. This means that, for our illustrative election, there are 250 Hispanic voters and 300 non-Hispanic voters. Further suppose that 96% of the Hispanic voters supported their candidate of choice and 30% of the non-Hispanic voters cast their votes for this candidate (with the other 70% supporting her opponent in the election contest). Thus, in our example, Hispanic voters cast 240 of their 250 votes for the Hispanic-preferred candidate and their other 10 votes for her opponent; non-Hispanic voters cast 90 of their 300 votes for the Hispanic-preferred candidate and 210 votes for their preferred candidate. The two candidates in our example will receive the following number of votes under these conditions:

		Votes for Hispanic Preferred Candidate	Votes for non-Hispanic Preferred Candidate
Hispanic	$500 \times .50 = 250$	$250 \times .96 = 240$	$250 \times .04 = 10$
Non-Hispanic	$500 \times .60 = \underline{300}$	$300 \times .30 = \underline{90}$	$300 \times .70 = \underline{210}$
Votes	550	330	220

The candidate of choice of Hispanic voters received a total of 330 votes (240 from Hispanic voters and 90 from non-Hispanic voters), while the candidate preferred by non-Hispanic voters received only 220 votes (10 from Hispanic voters and 210 from non-Hispanic voters). The Hispanic-preferred candidate won the election with 60% (330/550) of the vote in this hypothetical 50% Hispanic VAP district. And the Hispanic-preferred candidate won the election

¹⁶ For an in-depth discussion of this approach to creating effective minority districts, see Bernard Grofman, Lisa Handley and David Lublin, "Drawing Effective Minority Districts: A Conceptual Framework and Some Empirical Evidence," *North Carolina Law Review*, volume 79 (5), June 2001.

despite the fact that the election was racially/ethnically polarized and Hispanics turned out to vote at a lower rate than non-Hispanics.¹⁷

In a district that is 45% Hispanic VAP rather than 50% Hispanic VAP, the Hispanic-preferred candidate still wins with 56.8% (315/555) of the vote, as shown below.

	Voters	Votes for Hispanic-Preferred Candidate	Votes for non-Hispanic Preferred Candidate
Hispanic	$450 \times .50 = 225$	$225 \times .96 = 216$	$225 \times .04 = 9$
Non-Hispanic	$550 \times .60 = \underline{330}$	$330 \times .30 = \underline{99}$	$303 \times .70 = \underline{231}$
Votes	555	315	240

Table 2, below, incorporates the estimates of turnout and votes by race/ethnicity (based on the EI analysis) listed in the tables at the end of this report and calculates the percentage Hispanic VAP needed for the Hispanic-preferred candidate to win each specific election contest. However, if voting is not polarized, no Hispanic percentage is calculated because the non-Hispanic voters would have elected the Hispanic-preferred candidate regardless of the Hispanic VAP. In addition, there were a number of election contests for which the turnout disparity between Hispanic and non-Hispanic voters was so high that the estimated percentage of Hispanics of voting age turning out to vote was too low and was not used to calculate the percent Hispanic needed to win.

¹⁷ In the illustrative example, VAP and voting patterns are known and the equation solves for percentage of votes received by the Hispanic-preferred candidate. In determining the percentage of Hispanic VAP needed to provide Hispanic voters with an opportunity to elect their candidates of choice, voting patterns and the percentage of votes are known and we are solving for the VAP needed to produce at least 50 percent of the votes for the Hispanic-preferred candidate.

Table 2: Percent Hispanic VAP Needed to Win

Colorado Percent Hispanic VAP needed to win Contests with Hispanic Candidates	race of H-P candidate	turnout rate for office and percent vote for Hispanic- preferred candidates						percent of vote B-P cand would have received if district was 55% Hispanic VAP	percent of vote B-P cand would have received if district was 50% Hispanic VAP	percent of vote B-P cand would have received if district was 45% Hispanic VAP	percent of vote B-P cand would have received if district was 40% Hispanic VAP	percent of vote B-P cand would have received if district was 35% Hispanic VAP	percent Hispanic VAP must exceed for H-P candidate to win	comments
		Hispanic voters			Non-Hispanic voters									
		votes cast for office	H-P	all others	votes cast for office	H-P	all others							
Western Adams County														
2020 House District 30	W	19.2	90.4	9.6	73.2	45.3	54.7	56.2	54.7	53.3	52.0	50.9	30.7	polarized
2020 House District 32	H	14.8	77.1	22.9	81.9	52.1	47.9	56.6	55.9	55.3	54.8	54.3		not polarized
2020 Senate District 21	H	15.0	87.6	12.4	79.4	49.3	50.7	56.5	55.4	54.4	53.6	52.8	9.0	polarized but high crossover
2018 House District 31	H													polarized, Hisp turnout est too low
2018 Senate District 24	W	10.8	72.0	28.0	67.5	47.9	52.1	51.8	51.2	50.7	50.2	49.8	37.4	polarized
Weld County														
2020 Senate District 23	H	32.3	77.0	23.0	85.8	41.6	58.4	52.8	51.3	49.9	48.7	47.6	45.2	polarized
2018 House District 48	B													polarized, Hisp turnout est too low
2018 House District 50	H													polarized, Hisp turnout est too low
San Luis Valley and Pueblo County														
2020 House District 46	H	38.9	89.4	10.6	91.3	32.1	67.9	51.7	49.2	46.9	44.8	42.8	51.6	polarized
2020 House District 47	H	36.6	90.2	9.8	84.5	25.4	74.6	47.8	45.0	42.4	39.9	37.7	58.6	polarized
2020 House District 62	H	44.5	91.8	8.2	83.8	34.0	66.0	56.7	54.0	51.5	49.1	46.9	41.9	polarized
2020 Senate District 35	H	48.1	81.9	18.1	80.4	20.9	79.1	46.7	43.7	40.9	38.3	35.8	60.4	polarized
2018 House District 46	H	27.4	98.6	1.4	73.6	35.9	64.1	55.5	52.9	50.5	48.4	46.4	43.8	polarized
2018 House District 47	H	28.8	90.9	9.1	63.6	31.8	68.2	52.9	50.2	47.8	45.5	43.4	49.6	polarized
2018 House District 62	H	34.8	89.9	10.1	66.0	34.6	65.4	56.3	53.7	51.3	49.0	46.8	42.3	polarized
2018 Senate District 3	H	25.1	99.9	0.1	65.2	56.5	43.5	70.4	68.6	66.9	65.4	64.0		not polarized
Southern El Paso County														
2020 House District 17	B	40.5	80.2	19.8	52.1	30.0	70.0	54.5	52.0	49.5	47.1	44.8	46.0	all minority voters combined
2018 House District 17	B	16.1	82.8	17.2	48.7	31.4	68.6	46.2	44.2	42.3	40.7	39.2	63.2	all minority voters combined

Table 2 (continued)

Colorado Percent Hispanic VAP needed to win Contests with Hispanic Candidates	race of H-P candidate	turnout rate for office and percent vote for Hispanic- preferred candidates						percent of vote B-P cand would have received if district was 55% Hispanic VAP	percent of vote B-P cand would have received if district was 50% Hispanic VAP	percent of vote B-P cand would have received if district was 45% Hispanic VAP	percent of vote B-P cand would have received if district was 40% Hispanic VAP	percent of vote B-P cand would have received if district was 35% Hispanic VAP	percent Hispanic VAP must exceed for H-P candidate to win	comments
		Hispanic voters			Non-Hispanic voters									
		votes cast for office	H-P	all others	votes cast for office	H-P	all others							
Portion of Denver County														
2020 House District 5	H	44.0	87.5	12.5	62.3	75.8	24.2	81.2	80.6	80.1	79.5	79.0		not polarized
2018 House District 5	H	41.4	89.0	11.0	44.1	75.0	25.0	82.5	81.8	81.1	80.4	79.7		not polarized
2018 House District 7	B	1.0	90.8	9.2	74.5	80.8	19.2	81.0	80.9	80.9	80.9	80.9		not polarized
Lakewood														
2020 House District 28		32.6	70.6	29.4	77.7	54.4	45.6	59.9	59.2	58.5	57.9	57.4		not polarized
2018 House District 28		0.5	83.2	16.8	72.4	52.7	47.3	53.0	52.9	52.9	52.8	52.8		not polarized
Aurora: Hispanic - nonHispanic														
2020 House District 40		36.4	63.2	36.8	61.8	58.2	41.8	60.3	60.1	59.8	59.6	59.4		Hisp & nonHisp not polarized
2020 House District 41		0.7	92.9	7.1	69.5	62.3	37.7	62.7	62.6	62.6	62.5	62.5		Hisp & nonHisp not polarized
2020 Senate District 28		15.2	87.8	12.2	76.2	87.8	12.2	87.8	87.8	87.8	87.8	87.8		Hisp & nonHisp not polarized
2020 Senate District 28		5.8	99.2	0.8	67.8	62.5	37.5	66.0	65.4	64.9	64.5	64.1		Hisp & nonHisp not polarized
2018 House District 40		20.2	77.7	22.3	57.5	60.7	39.3	65.8	65.1	64.5	63.9	63.4		Hisp & nonHisp not polarized
2018 House District 41		1.2	97.3	2.7	54.8	60.3	39.7	61.3	61.1	61.0	60.8	60.7		Hisp & nonHisp not polarized
2018 House District 42		11.2	77.3	22.7	58.2	71.9	28.1	72.9	72.8	72.6	72.5	72.4		Hisp & nonHisp not polarized
Aurora: Hispanic - NHWhite														
2020 House District 40		36.4	63.2	36.8	92.5	43.0	57.0	49.6	48.7	47.9	47.2	46.5	57.4	Hisp & NHWhite polarized
2020 House District 41		0.7	92.9	7.1	91.3	46.1	53.9	46.5	46.5	46.4	46.3	46.3		Hisp & NHW polarized, low H turn
2020 Senate District 28		15.2	87.8	12.2	94.6	42.5	57.5	49.9	48.8	47.8	46.9	46.1	55.3	Hisp & NHWhite polarized
2020 Senate District 28		5.8	99.2	0.8	90.7	38.1	61.9	42.5	41.8	41.1	40.6	40.1		Hisp & NHW polarized, low H turn
2018 House District 40		20.2	77.7	22.3	84.3	45.6	54.4	52.9	51.8	50.9	50.0	49.3	39.9	Hisp & NHWhite polarized
2018 House District 41		1.2	97.3	2.7	84.1	42.2	57.8	43.1	43.0	42.8	42.7	42.6		Hisp & NHW polarized, low H turn
2018 House District 42		11.2	77.3	22.7	89.3	42.7	57.3	47.3	46.6	45.9	45.4	44.9	68.1	Hisp & NHWhite polarized

I analyzed five recent state legislative elections in *western Adams County*. One of the contests was not polarized based on the EI estimates (2020 House District 32). In another contest, the estimates Hispanic turnout percentage was unrealistically low (.7% in the 2018 contest in House District 31). The Hispanic VAP needed for the Hispanic-preferred candidate to win election with at least 50% of the vote had to exceed 30.7% in the 2020 House District 30 contest and 37.4% in the 2018 Senate District 24 contest. The very high percentage of non-Hispanic vote for the Hispanic candidate of choice in the 2020 state senate election in District 21 meant that very few Hispanics were needed for this candidate to win that election.

Two of the contests in *Weld County* yielded Hispanic turnout estimates that were unrealistically low, hence the Hispanic percent needed to win could be calculated for only one contest: the 2020 election in Senate District 23. This contest produced a percentage needed to win of 45.2% Hispanic VAP. However, the Hispanic-preferred candidate won House District 50, which is 43.3% Hispanic VAP, in 2018.

Only one election contest in the *San Luis Valley and Pueblo County* area was not racially/ethnically polarized. The other seven contests produced a wide range of Hispanic VAP percentages needed to win, from 41.9% (2020 House District 62) to 60.4% (2020 Senate District 35). The Hispanic-preferred candidate easily won House District 62 (43.9% Hispanic VAP) in both 2018 and 2020. But Hispanic-preferred candidates also won House District 46, which has only a 36.8% Hispanic VAP. For this reason, it is important to consider both the estimated percentages and the actual Hispanic VAP percentages of districts in which Hispanic-preferred candidates are successful.

Because the estimates of Hispanic turnout for the two elections in House District 17, in *southern El Paso County*, are unrealistically low, and the Black percentage of the district is not insubstantial (and Hispanic and Black voters supported the same candidate in both elections), I combined all minority voters together and calculated the percentage minority VAP needed to win based on comparing the voting patterns of non-Hispanic whites and all minorities combined. But this produced percentage estimates that were higher than the combined minority percentage of District 17 (43.9% Hispanic and Black together), and the minority-preferred candidate actually won the district in both 2018 and 2020.

Because the state legislative elections in the *Denver* area and *Lakewood* (House Districts 5 and 7; House District 28) were not polarized, no Hispanic VAP needed to win was calculated – non-Hispanics voting alone would have elected the Hispanic-preferred candidates without any support needed from Hispanic voters.

The seven contests analyzed in *Aurora* are complicated by the relatively high number of Black voters that are combined with non-Hispanic white voters when Hispanic voters are compared to non-Hispanic voters. Because Black voters support the same candidates as Hispanic voters in these elections, the contests appear to not be polarized when all non-Hispanics are considered together. However, when Hispanic voters and non-Hispanic white voters are compared, all of the contests are polarized and the Hispanic percentage needed to win can be calculated. The calculated percentage therefore reflects the percent Hispanic VAP compared to non-Hispanic white VAP and not all non-Hispanic VAP that might be combined to make a district. In other words, while the first set of calculations – comparing Hispanics and non-Hispanics – suggests no Hispanics are needed because voting is not polarized, the second set of calculations – Hispanic and non-Hispanic whites – is only useful if the only groups to be included in the proposed districts are Hispanics and non-Hispanic whites. The second set of estimates are overestimates if Black voters are also included in the proposed districts. As noted above House District 42 is 39% Hispanic VAP and Senate District 29 is 30% Hispanic VAP and both elect Hispanic-preferred candidates, but both are actually majority minority districts when all minority groups are considered. While Hispanics make up less than 20% of the VAP in House Districts 40 and 41 and Senate District 28, all minorities combined comprise over 37% of the voting age population in each instance and the Hispanic-preferred candidate wins the elections analyzed.

VI. Conclusion

Voting in recent state legislative elections in several areas of the State of Colorado that I examined is racially/ethnically polarized. The exceptions to this are recent legislative elections in House Districts 5 and 7 in the Denver area and House District 28 in Lakewood. Despite this pattern of polarized voting in several areas of Colorado, Hispanic voters or, in Aurora, Hispanic and Black voters combined, have been able to elect their candidates of choice in many of these districts. This is because a sufficient number of eligible Hispanics of voting age have been combined with

enough crossover non-Hispanic voters to provide Hispanic voters with an opportunity to elect their preferred candidates to the state legislature in these districts, even though most of these districts are not majority Hispanic in voting age population.¹⁸ As noted above, in western Adams County, Hispanic-preferred candidates are elected in House Districts 30 (39.1 % Hispanic VAP) and 31 (35.3% Hispanic VAP). In the San Luis Valley and Pueblo County area, House Districts 46 and 62 (36.8 and 43.9% Hispanic, respectively), and Senate District 3 (40.2% Hispanic) all elect Hispanic-preferred Hispanic candidates to the state legislature.

¹⁸ There are no majority Hispanic VAP senate districts in the State – the highest concentration of Hispanics can be found in Senate District 21, which has a 48.4% Hispanic VAP. There is only one majority Hispanic VAP state house district, District 32. This district easily elected Hispanic-preferred Hispanic candidate, Adrienne Benavidez, with 63.7% of the vote in a three-candidate race in 2020.

Western Adams County					Estimates for NonHispanic Voters		Estimates for Hispanic Voters		Estimates for NonHispanic White Voters	
	Percent Hispanic VAP	Party	Race/Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI
2020 General Election										
House District 30										
Michealson Jenet		D		56.9	22.3	45.3	87.2	90.4	9.1	18.6
Gutierrez		R	H	43.2	77.7	54.5	12.8	10.4	90.9	81.4
<i>Turnout of VAP</i>					<i>87.9</i>	<i>73.2</i>	<i>16.3</i>	<i>19.2</i>	<i>100.0</i>	<i>97.7</i>
House District 32										
Benavidez		D	H	63.7	44.0	52.1	71.9	77.1	41.2	51.4
Caputo		R		30.4	49.8	39.8	23.8	18.7	52.7	39.6
Chapman		L		5.9	6.2	6.3	4.3	5.4	6.0	5.6
<i>Turnout of VAP</i>					<i>84.9</i>	<i>81.9</i>	<i>3.7</i>	<i>14.8</i>	<i>100.0</i>	<i>95.3</i>
Senate District 21										
Moreno		D	H	63.6	39.8	49.3	77.0	87.6	31.1	40.4
Mendez		R	H	36.5	60.2	50.6	23.0	14.0	68.9	59.7
<i>Turnout of VAP</i>					<i>86.6</i>	<i>79.4</i>	<i>17.1</i>	<i>15.0</i>	<i>100.0</i>	<i>94.9</i>
2018 General Election										
House District 31										
Caraveo		D	H	55.0	39.5	43.9	88.5	88.2	34.1	35.9
Figueroa		R	H	38.6	53.8	50.2	4.3	4.0	58.0	58.1
Owens		L		6.4	6.7	6.1	7.2	7.2	7.9	6.6
<i>Turnout of VAP</i>					<i>62.7</i>	<i>65.7</i>	<i>0.0</i>	<i>0.7</i>	<i>83.4</i>	<i>85.1</i>
Senate District 24										
Winter		D		52.3	43.4	47.9	69.1	72.0	38.6	42.4
Martinez Humenik		R	H	39.8	49.4	45.6	17.1	14.4	56.6	52.5
Others				7.9	7.2	6.9	13.7	12.5	4.8	4.6
<i>Turnout of VAP</i>					<i>58.4</i>	<i>67.5</i>	<i>0.0</i>	<i>10.8</i>	<i>86.7</i>	<i>82.9</i>

Weld County					Estimates for NonHispanic Voters		Estimates for Hispanic Voters		Estimates for NonHispanic White Voters	
	Percent Hispanic VAP	Party	Race/Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI
2020 General Election										
Senate District 23	12.8									
Boccella		D	H	44.9	35.9	41.6	75.2	77.0	26.9	34.0
Kirkmeyer		R		55.1	64.1	58.3	24.8	23.3	73.1	65.8
<i>Turnout of VAP</i>					88.2	85.8	3.6	32.3	100.0	89.3
2018 General Election										
House District 48	21.9									
Ajiboye		D		32.2	29.4	27.4	63.0	56.2	25.0	20.8
Humphrey		R		67.8	70.6	72.6	37.0	43.8	75.0	79.2
<i>Turnout of VAP</i>					74.2	70.4	2.9	0.1	82.4	77.9
House District 50	43.3									
Galindo		D	H	53.4	na	40.5	79.2	79.7	na	35.5
Thuener		R		46.6	na	59.4	20.8	20.0	na	64.5
<i>Turnout of VAP</i>					51.9	55.6	0.0	0.8	62.9	66.7

San Luis Valley and Pueblo County					Estimates for NonHispanic Voters		Estimates for Hispanic Voters		Estimates for NonHispanic White Voters	
	Percent Hispanic VAP	Party	Race/Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI
2020 General Election										
House District 46	36.8									
Esgar		D	H	53.2	37.2	32.1	100.0	89.4	32.5	26.4
Ambler		R		43.1	58.3	67.3	0.0	5.4	63.5	71.1
Pickerill		L		3.7	4.5	3.9	3.7	3.5	4.0	3.1
<i>turnout of VAP</i>					73.1	91.3	32.8	38.9	80.8	94.4
House District 47	32.3									
Buentello		D	H	45.9	23.1	25.4	100.0	90.2	6.2	15.9
Luck		R		54.1	76.9	74.6	0.0	10.1	93.8	84.2
<i>turnout of VAP</i>					69.0	84.5	21.1	36.6	83.0	90.5
House District 62	43.9									
Valdez		D	H	57.8	35.1	34.0	87.4	91.8	32.1	30.1
Taggart		R		42.2	64.9	65.6	12.6	8.0	67.9	69.9
<i>turnout of VAP</i>					80.6	83.8	55.6	44.5	84.7	87.9
Senate District 35	32.3									
Lopez		D	H	39.9	15.1	20.9	80.2	81.9	9.6	17.8
Simpson		R		60.1	84.9	78.8	19.8	18.0	90.4	82.3
<i>turnout of VAP</i>					71.3	80.4	52.3	48.1	77.8	85.9
2018 General Election										
House District 46	36.8									
Esgar		D	H	58.7	38.9	35.9	100.0	98.6	32.3	32.5
Ambler		R		41.3	61.1	64.0	0.0	0.9	67.7	67.6
<i>turnout of VAP</i>					53.0	73.6	20.4	27.4	61.5	80.1
House District 47	32.3									
Buentello		D	H	50.5	31.4	31.8	100.0	90.9	13.3	24.1
Bendell		R		49.5	68.6	68.2	0.0	9.2	86.7	75.9
<i>turnout of VAP</i>					52.1	63.6	10.7	28.8	63.9	76.6
House District 62	43.9									
Valdez		D	H	56.8	33.2	34.6	92.7	89.9	29.7	27.3
Honeycutt		R		43.2	66.8	65.5	7.3	10.2	70.3	72.7
<i>turnout of VAP</i>					65.1	66.0	40.2	34.8	69.5	75.1
Senate District 3	40.2									
Garcia		D	H	73.6	60.6	56.5	100.0	99.9	51.0	52.1
Pickerill		L		26.4	39.4	43.5	0.0	0.1	49.0	47.9
<i>turnout of VAP</i>					42.2	65.2	22.6	25.1	55.5	73.0

Southern El Paso County					Estimates for NonHispanic Voters		Estimates for Hispanic Voters		Estimates for NonHispanic White Voters		Estimates for All Minority Voters Combined	
	Percent Hispanic VAP	Party	Race/Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI	ER	EI
2020 General Election												
House District 17	31.3% HVAP; 12.6% BVAP											
Exum, Sr.		D	B	56.8	46.2	54.8	56.9	64.6	27.0	30.0	74.4	80.2
Blancken		R		37.4	49.5	40.1	28.8	29.3	66.5	64.6	18.9	13.7
Quilleash		L		5.8	4.3	3.8	14.3	12.1	6.5	5.9	6.7	5.8
<i>Turnout of VAP</i>					54.8	58.4	0.0	1.1	54.3	52.1	15.0	40.5
2018 General Election												
House District 17	31.3% HVAP; 12.6% BVAP											
Exum		D	B	58.8	46.2	56.3	72.7	66.4	29.0	31.4	79.2	82.8
Roupe		R		41.2	53.8	43.8	27.3	33.4	71.0	68.5	20.8	16.5
<i>Turnout of VAP</i>					37.7	41.7	0.0	0.1	38.9	48.7	3.9	16.1

Portion of Denver County					Estimates for nonHispanic Voters		Estimates for Hispanic Voters		Estimates for NonHispanic White Voters	
	Percent Hispanic VAP	Party	Race/Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI
2020 General Election										
House District 5										
Valdez	30.5	D	H	79.1	78.0	75.8	88.0	87.5	79.6	75.1
Woodley		R		19.5	19.5	22.9	9.4	11.5	18.4	23.8
Richardson		U		1.4	2.5	1.1	2.6	2.0	2.0	0.8
<i>Turnout of VAP</i>					<i>61.3</i>	<i>62.3</i>	<i>43.2</i>	<i>44.0</i>	<i>71.1</i>	<i>69.4</i>
2018 General Election										
House District 5					30.5					
Valdez		D	H	79.0	79.7	75.0	92.9	89.0	80.7	74.2
Whitney		R		17.9	17.4	21.6	4.8	8.9	16.4	21.8
Lamberton		L		3.1	2.9	3.4	2.3	5.1	2.9	3.4
<i>Turnout of VAP</i>					<i>43.7</i>	<i>44.1</i>	<i>35.6</i>	<i>41.4</i>	<i>53.9</i>	<i>51.2</i>
					Estimates for Hispanic Voters		Estimates for Black Voters		Estimates for NonHispanic White Voters	
	Percent Hispanic VAP	Party	Race/Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI
2018 General Election										
House District 7					37.4 H/ 20.6 B					
Coleman		D	B	83.6	91.9	90.8	95.2	92.9	88.6	80.8
Kucera		R		16.4	8.1	8.9	4.8	9.8	11.4	19.3
<i>Turnout of VAP</i>					<i>0.0</i>	<i>1.0</i>	<i>0.0</i>	<i>41.9</i>	<i>92.4</i>	<i>74.5</i>

Lakewood				Estimates for NonHispanic Voters		Estimates for Hispanic Voters		Estimates for NonHispanic White Voters	
	Party	Race/ Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI
2020 House District 28									
Hildebrand	L		5.5	5.2	5.1	7.1	7.1	5.3	5.1
Tipper	D		57.6	59.4	54.4	71.7	70.6	56.0	51.6
Roybal	R		36.9	35.4	39.7	21.3	24.0	38.7	41.9
<i>turnout of VAP</i>				<i>50.6</i>	<i>77.7</i>	<i>18.7</i>	<i>32.6</i>	<i>63.0</i>	<i>84.5</i>
2018 House District 28									
Tipper	D		58.7	53.9	52.7	83.6	83.2	50.3	51.2
Joy Alley	R		38.0	43.8	45.1	8.1	8.5	47.9	46.2
Kloof	L		3.3	2.4	0.7	8.4	9.1	1.8	2.2
<i>turnout of VAP</i>				<i>49.4</i>	<i>72.4</i>	<i>0.0</i>	<i>0.5</i>	<i>64.2</i>	<i>77.2</i>

Aurora				Estimates for nonHispanic White Voters		Estimates for nonHispanic Voters		Estimates for Hispanic Voters		Estimates for Black Voters	
	Party	Race/Ethnicity	Percent of Vote	ER	EI	ER	EI	ER	EI	ER	EI
2020 General Election											
2020 House District 40											
Ricks	D	B	59.2	37.8	43.0	49.3	58.2	60.8	63.2	100.0	99.4
Bassett	R		36.7	60.6	51.5	48.2	38.2	31.8	28.1	0.0	0.2
Harrison	L		4.2	1.6	1.0	2.5	3.7	7.5	6.7	0.0	8.5
<i>turnout of VAP</i>				90.8	92.5	72.2	61.8	39.3	36.4	0.0	1.0
2020 House District 41											
Jodeh	D	M.E.	66.0	40.7	46.1	47.2	62.3	92.4	92.9	100.0	99.6
Andrews	R		34.0	59.3	53.5	52.8	37.6	7.6	4.0	0.0	0.4
<i>turnout of VAP</i>				95.1	91.3	86.9	69.5	0.0	0.7	0.0	0.3
2020 Senate District 28											
Buckner	D	B	61.9	46.3	42.5	59.4	87.8	88.0	87.8	100.0	99.6
Stecher	R		38.1	53.7	57.7	40.6	11.5	12.0	11.5	0.0	0.2
<i>turnout of VAP</i>				92.3	94.6	73.1	76.2	9.0	15.2	0.0	0.3
2020 Senate District 29											
Poague	R		31.3	65.4	62.0	32.7	37.6	0.0	0.6	0.0	0.9
Fields	D	B	68.7	34.6	38.1	67.3	62.5	100.0	99.2	100.0	98.8
<i>turnout of VAP</i>				85.7	90.7	53.8	67.8	0.0	5.8	0.0	0.3
2018 General Election											
2018 House District 40											
Buckner	D	B	63.1	45.4	45.6	56.9	60.7	74.0	77.7	100.0	98.6
Bassett	R		36.9	54.6	54.5	43.1	39.3	26.0	22.9	0.0	0.1
<i>turnout of VAP</i>				72.1	84.3	52.0	57.5	7.1	20.2	0.0	4.2
2018 House District 41											
Melton	D	B	64.4	39.6	42.2	49.3	60.3	100.0	97.3	100.0	98.1
Myers	R		35.6	60.4	57.9	50.7	39.7	0.0	2.6	0.0	0.2
<i>turnout of VAP</i>				82.7	84.1	69.5	54.8	0.0	1.2	0.0	0.8
2018 House District 42											
Jackson	D	B	73.3	44.1	42.7	73.0	71.9	80.8	77.3	100.0	100.0
Donald	R		26.7	55.9	57.7	27.0	27.9	19.2	21.7	0.0	0.4
<i>turnout of VAP</i>				98.9	89.3	31.7	58.2	0.0	11.2	2.2	15.6