Federal Compliance Consulting LLC
11808 Becket Street
Potomac, Maryland 20854
301-762-5272
240-536-9192 fax

Bruce L. Adelson
CEO/Attorney at Law
badelson1@comcast.net
badelsonfcc@verizon.net

Admitted to Practice:
DC, MD, MI, VA (inactive)

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Daniel Jurkowitz
Bureau Supervising Attorney
Pima County Attorney's Office, Civil Division
32 N. Stone #2100
Tucson, AZ 85701

Dear Mr. Jurkowitz:

We have been asked for our opinion of the redistricting process for the Pima County Board of Supervisors (BOS) and Pima County Community College Board and compliance with the Voting Rights Act of 1965.

According to the 2020 Census, Pima County has a total population of 1,052,030 people. Hispanics are the largest minority group in Pima County. Of the total County population, 37.8% (397,667 people) are Hispanic and 51.2% (538,639 people) are Non-Hispanic White.

Section 2 of the Voting Rights Act of 1965 (VRA) prohibits any electoral practice or procedure that minimizes or cancels out the voting strength of members of racial or language minority groups in the voting population. This phenomenon is known as vote dilution. Redistricting plans cannot crack (reduce or divide) or pack (overconcentrate) a geographically discrete minority community across districts or within a district in a manner that dilutes minority voting strength. The Voting Rights Act requires a state or local jurisdiction to create districts that provide minority voters with an opportunity to usually elect their candidates of choice if voting is racially polarized and the candidates preferred by minority voters usually lose.

In *Thornburg v. Gingles,* 478 U.S. 30 (1986), the Supreme Court set out the framework for challenges to such dilutive redistricting practices or procedures. In *Brnovich v. Democratic National Committee,* 141 S. Ct. 2321, 2337 (2021), the Supreme Court described Gingles as "our seminal § 2 vote dilution case" and recognized that "[o]ur many subsequent vote dilution cases have largely followed the path that Gingles charted."

Analysis begins by considering whether the three *Gingles* preconditions exist. First, the minority group must be sufficiently large and geographically compact to constitute a majority of the voting age population or a minority coalition with other similarly situated groups in a single-member district. Second, the minority group must be politically cohesive in supporting the same candidates. Third, the majority must vote sufficiently as a bloc to enable it usually to defeat the minority group's preferred candidate.

While the second *Gingles* precondition asks only whether minority voters generally vote as a cohesive group, the third precondition assesses whether "a bloc-voting [white] majority can routinely outvote the minority, thereby impair[ing] the ability of a protected class to elect candidates of its choice. " *Johnson v. De Grandy* , 512 U.S. 997, 1007, 114 S.Ct. 2647, 129 L.Ed.2d 775 (1994). Critically, the salient inquiry under the third *Gingles* precondition is not whether white candidates do or do not usually defeat minority candidates, but whether minority-preferred candidates, whatever their race, usually lose.

Pima County retained Dr. Lisa Handley to conduct the required *Gingles* and Voting Rights Act statistical and election redistricting analysis. She prepared a report entitled, "Voting Patterns by Race and Ethnicity in Pima County, Arizona," which is used herein to inform our opinions.

Gingles describes a review of the totality of the circumstances that requires a "searching practical evaluation of the past and present reality" of a jurisdiction's electoral system that is "intensely local," "fact-intensive," and "functional" in nature. 478 U.S. at 45-46, 62-63, 79.

When evaluating how to create districts with large minority populations, the County may not "reach out" simply to add minority population to a given district. The U.S. Supreme Court has been very clear that such "reach outs" raise suspicions of a racial gerrymander, a redistricting decision based predominantly on race that violates the U.S. Constitution's 14th Amendment and its equal protection guarantee. For example, the Supreme Court struck down a North Carolina redistricting because the design of a "serpentine" district was nothing if not race-centric, and could not be justified as a reasonable attempt to comply with the VRA. *Shaw v. Reno.* 509 U.S. 630 (1993)

The Supreme Court has clearly stated that a redistricting plan will not be held invalid simply because the "redistricting is performed with consciousness of race" or because a jurisdiction intentionally creates a majority-minority district. Indeed, Race is always part of the redistricting process. *United States v. Hays*, 515 U.S. 737, 745 (1995), *Easley v. Cromartie*, 532 U.S. 234, 253-54 (2001) (quoting *Bush v. Vera*, 517 U.S. 952, 958 (1996). Instead, for a plan to be judicially invalidates, race cannot predominate the redistricting process.

A plaintiff challenging a majority-minority district for improperly using race to draw the district must show at a minimum that the legislature subordinated traditional race-neutral districting principles . . . to racial considerations. Race must not simply have been a motivation for the drawing of a majority-minority district, but the predominant factor motivating the legislature's districting decision. Plaintiffs must show that a facially neutral law is unexplainable on grounds other than race. *Easley v. Cromartie*, 532 U.S. 234, 253-54 (2001) and *Bush v. Vera*,

517 U.S. 952, 958 (1996). Among the "race-neutral districting principles" are "compactness, contiguity, [and] respect for political subdivisions or communities defined by actual shared interests." *Miller v. Johnson,* 515 U.S. 900, 916 (1995) and *Shaw v. Reno,* 509 U.S. at 647).

The most legally relevant elections in VRA election and racially polarized voting analysis are "endogenous elections" with minority and white candidates running against each other for the same offices (Pima County Board of Supervisor and Community College Board district elections). Endogenous elections are the most probative in assessing whether white bloc voting exists to usually prevent minorities from electing their preferred candidates.

In determining the presence of legally cognizable racially polarized voting, the courts overwhelmingly recognize the significant value of elections involving candidates of different races. Dr. Handley's analysis includes such elections. "Elections between white and minority candidates are the most probative in determining the existence of legally significant white bloc voting." *Old Person v. Cooney,* 230 F.3d 1113, 112324 (9th Cir. 2000). Single race elections are not typically entitled to the same evidentiary weight as those elections involving minority candidates. *U.S. v. City of Euclid,* 580 F.Supp.2d 584 (N.D. Ohio 2008) and *Rural West Tenn. African Am. Affairs Council v. Sundquist,* 209 F.3d 835, 840 (6th Cir.2000).

As Dr. Handley's analysis attests, Hispanic voters have enjoyed regular success in electing their preferred candidates over the past decade since the implementation of the last BOS redistricting plan. We concur with Dr. Handley's decision to rely predominantly upon Citizen Voting Age Population in conducting her election analysis.

As her report states:

> "Because the largest group of minority voters in Pima County is Hispanic voters, citizen voting age population rather than voting age population is a better indication of the likely demographic composition of the voters in each of the election precincts... Because only citizens can vote in Pima County elections, the percentage of citizens of voting age provides a better indication of likely voters than the percentage of voting age population by race/ethnicity."

Below is a chart of the racial composition of each BOS district. Two districts, Two and Five, are the only BOS districts with plurality Hispanic population.

Citizen Voting Age Population (CVAP) by Race/Ethnicity for Supervisory Districts

District	Total CVAP	NHWhite CVAP	Hispanic CVAP	Black CVAP	Native American CVAP	Asian CVAP
1	172674	75.7%	15.5%	2.1%	1.4%	3.6%
2	131465	40.8%	45.8%	6.4%	2.5%	2.7%
3	150667	57.9%	28.4%	3.5%	6.2%	2.3%
4	176163	73.3%	16.6%	3.7%	1.7%	2.8%
5	138304	43.2%	44.9%	3.7%	4.1%	2.5%

The chart reveals that in addition to Hispanics, there are other minority groups in Pima County. However, these groups, Black, Native American, and Asian are too small to analyze reliably. As Dr. Handley wrote in her report:

"Producing reliable estimates of voting patterns by race/ethnicity requires an adequate number of minority and white voters, an adequate number of election precincts, and sufficient variation in the percentage of minority and white voters across the precincts. Only one group of minority voters in Pima County satisfied the first condition – Hispanic voters. It was not possible to produce reliable estimates for Native American, Black or Asian voters in Pima County because there are not a sufficient number of citizens of voting age in any of these groups."

Therefore, since the voting and electoral preferences of the County's Black, Native American, and Asian population cannot be reliably analyzed and relied upon, we recommend focusing on the Hispanic population, especially Hispanic VAP and CVAP, as Dr. Handley does. We further caution against combining minority populations to create seemingly majority-minority districts since the electoral preferences and behavior of only Hispanics can be utilized and relied upon in assessing each proposed map's Voting Rights Act compliance.

Dr. Handley's analysis reveals some statistical evidence of racially polarized voting (RPV). However, the existence of RPV does not prevent Hispanics from usually electing their candidates of choice. The presence of such electoral success requires the BOS to create new districts that do not impair, impede, dilute, or infringe upon Hispanics' ability to continue electing candidates of choice. Since Hispanic voters have usually elected their candidates of choice without majority CVAP districts, the BOS cannot legally justify creating such districts now as being Voting Rights Act required.

As the Supreme Court repeatedly held during last decade's redistricting cycle, creating majority-minority districts arbitrarily, for the analytically erroneous, unsupported presumption that majority-minority districts are needed to elect preferred candidates without analytical supporting data and evidence, is uniformly considered to be constitutionally infirm. See: *Bethune-Hill v. Virginia State Board of Elections,* 137 S Ct 788, 197 L Ed 2d 85 (2017), *Cooper v. Harris,* 137 S. Ct. 1455, 197 L.Ed.2d 837 (2017), and *Alabama Legislative Black Caucus v. Alabama,* 135 S. Ct. 1257 (2015).

Indeed, in the absence of consistent white bloc voting to prevent minorities from usually electing their preferred candidates and the presence of minority electoral success in Pima County, majority-minority districts can only be legally justified by examining the actual population of the County and the inclusion of compact, historic, geographically discrete minority communities and communities of interest in new districts to adhere to "traditional districting principles such as maintaining communities of interest and traditional boundaries." *League of United Latin Am. Citizens v. Perry* , 548 U.S. 399, 433, 126 S.Ct. 2594, 165 L.Ed.2d 609 (2006).

The Supreme Court's redistricting jurisprudence provides further support for applying race-neutral, traditional redistricting criteria, such as preserving communities of interest. The Court has regularly held that "[a]ny number of consistently applied legislative policies" can be used in redistricting: *Reynolds v. Sims,* 377 U.S. 533 (1964). *Mahan v. Howell,* 410 U.S. 315 (1973), *Brown v. Thomson,* 462 U.S. 835 (1983), and *Voinovich v. Quilter,* 507 U.S. 146 (1993), *Karcher v. Daggett,* 462 U.S. 725 (1983) and *Harris v. Arizona Independent Redistricting Commission,* 136 S. Ct. 1301, 194 L. Ed. 2d 497 (2016).

Maintaining communities of interest is a traditional redistricting criterion, in Arizona and throughout most of the United States, and is often adopted by local redistricting bodies as a redistricting goal. The specific definition of communities of interest can be amorphous and indefinite. However, communities of interest can be reliably defined as a neighborhood, Native American Nation, or community that would benefit from being maintained in a single district because of shared interests, views, or characteristics.

Communities of interest can be identified by referring to many data points, including the decennial Census, American Community Survey, demographic studies, related surveys, and social and economic characteristics that community members. Relevant social and economic characteristics can include Income levels, educational backgrounds, traditional and longstanding housing patterns, cultural and language characteristics, employment and economic patterns, health and environmental conditions.

Maintaining geographically compact, concentrated, traditional minority communities is legally permissible when done in a race neutral way, without racial considerations predominating or being the primary factor in keeping such communities together. Uniting them through geography, shared culture, language, and community rather than race-based criteria and assumptions is a traditionally accepted practice and can thus avoid what the Supreme Court disapproved of here:

"a reapportionment plan that includes in one district individuals who belong to the same race, but who are otherwise widely separated by geographical and political boundaries, and who may have little in common with one another but the color of their skin, bears an uncomfortable resemblance to political apartheid. *Shaw v. Reno – Id*

... to draw ... a district connecting concentrations of Georgia's dispersed minority population would require us to subordinate Georgia's traditional districting policies and consider race predominantly, to the exclusion of both constitutional norms and common sense. *Miller v. Johnson*, 515 U.S. 900 (1995)"

The recognition of nonracial communities of interest reflects the principle that a redistricting body may not "assum[e] from a group of voters' race that they 'think alike, share the same political interests, and will prefer the same candidates at the polls.'" *LULAC v. Perry*, 548 U.S. 399 (2006) and *Shaw v. Reno*, 509 U. S. 630, 647 (1993). Such community based, race neutral redistricting also avoids setting arbitrary percentages of minority voters to be assigned to any given district. Such racial considerations are disfavored by the Supreme Court. *Cooper v. Harris*, 137 S. Ct. 1455, 197 L.Ed.2d 837 (2017)

In addition to VRA compliance, the U.S. Constitution's 14th Amendment requires "substantial equality of population" in state or county-level redistricting, better known as one person, one vote. The U.S. Supreme Court has decided that that a county or local redistricting plan with an overall population deviation of less than ten percent may survive an equal protection attack, unless there is proof of intentional discrimination within that ten percent. *Gaffney v. Cummings*, 412 U.S. 735 (1973), *White v. Regester*, 412 U.S. 755 (1973), and *Reynolds v. Sims*, 377 U.S. 533 (1964)

The current BOS district plan has a population deviation of approximately 15%. BOS District 5 is underpopulated by 7.6%. District 4 is overpopulated by 7.2%. District 2 is underpopulated by almost 4%. The new BOS district plan must have a population deviation under 10%.

However, redistricting plans within the "ten percent" standard are not immune from attack or being overturned. The attacking plaintiffs must present compelling evidence that the plan ignores legitimate reasons for population disparities (such as VRA and 14th Amendment compliance) and creates the deviations solely for the benefit of certain persons to the constitutional detriment of others.

In the last redistricting cycle, the Supreme Court spoke clearly about population deviations and the extreme deference given to redistricting bodies' decisions regarding population in their redistricting:

"The Fourteenth Amendment's Equal Protection Clause requires States to 'make an honest and good faith effort to construct [legislative] districts ... as nearly of equal population as is practicable.' Reynolds, 377 U.S., at 577, 84 S.Ct. 1362.

The Constitution, however, does not demand mathematical perfection. In determining what is "practicable," we have recognized that the Constitution permits deviation when it is justified by "legitimate considerations incident to the effectuation of a rational state policy." Id ., at 579, 84 S.Ct. 1362. In related contexts, we have made clear that in addition to the "traditional districting principles such as compactness [and] contiguity," Shaw v. Reno, 509 U.S. 630, 647, 113 S.Ct. 2816, 125 L.Ed.2d 511 (1993), those legitimate considerations can include a state interest in maintaining the integrity of political subdivisions, Mahan v. Howell, 410 U.S. 315, 328, 93 S.Ct. 979, 35 L.Ed.2d 320 (1973), or the competitive balance among political parties, Gaffney v. Cummings, 412 U.S. 735, 752, 93 S.Ct. 2321, 37 L.Ed.2d 298 (1973).

We have further made clear that "minor deviations from mathematical equality" do not, by themselves, "make out a prima facie case of invidious discrimination under the Fourteenth Amendment so as to require justification by the State."

We have defined as "minor deviations" those in "an apportionment plan with a maximum population deviation under 10%." Brown, 462 U.S., at 842, 103 S.Ct. 2690. And we have refused to require States to justify deviations of 9.9%, White v. Regester, 412 U.S. 755, 764, 93 S.Ct. 2332, 37 L.Ed.2d 314 (1973), and 8%, Gafney, 412 U.S., at 751, 93 S.Ct. 2321...

In sum, ... those attacking a state-approved plan must show that it is more probable than not that a deviation of less than 10% reflects the predominance of illegitimate reapportionment factors rather than the "legitimate considerations" to which we have referred in Harris v. Ariz. Indep. Redistricting Comm'n 136 S. Ct. 1301 (2016), Reynolds and later cases.

...see also Vieth v. Jubelirer, 541 U.S. 267, 284, 124 S.Ct. 1769, 158 L.Ed.2d 546 (2004) (plurality opinion) (listing examples of traditional redistricting criteria, including "compliance with requirements of the [Voting Rights Act]").

Given the inherent difficulty of measuring and comparing factors that may legitimately account for small deviations from strict mathematical equality, we believe that attacks on deviations under 10% will succeed only rarely, in unusual cases. And we are not surprised that the appellants have failed to meet their burden here." *Harris v. Ariz. Indep. Redistricting Comm'n* 136 S. Ct. 1301 (2016) Emphasis Added

Mapping Decisions

Demographic Composition of Existing Hispanic Plurality BOS Districts

With 2020 Census Data

	District 2	District 5
Total Population	200,525	192,866
Deviation from Ideal District Size	-3.9%	-7.6%
Percent Hispanic Voting Age Population	50.9	48.0
Percent Hispanic Citizen Voting Age Population	45.8	44.9

In both of these Hispanic plurality districts, Hispanics have usually elected their preferred candidates since the current BOS districts were adopted following the 2010 Census. Districts 2 and 5 have provided Hispanics with the opportunity to elect their candidates of choice. Pursuant to the VRA, this opportunity must not be diluted so that Hispanics no longer have success usually electing their candidates of choice.

According to Dr. Handley:

> "Neither of these districts are majority Hispanic in CVAP, but both are consistently able to elect Hispanic-preferred candidates. Maintaining these districts as Hispanic opportunity districts does not necessarily mean that the districts must be redrawn with precisely the same percentage Hispanic CVAP and it certainly does not require that the districts be drawn as majority Hispanic CVAP districts. Instead, a district-specific, functional analysis should be undertaken to determine if the proposed districts are likely to continue to provide Hispanic voters with an opportunity to elect their candidates of choice to office."

To ensure VRA compliance , Hispanic CVAP percentages should remain close to what they are in the current BOS map without increasing the percentages to create majority-minority districts , which are not legally justifiable to avoid dilution of the Hispanic vote. Avoiding Hispanic CVAP reductions of approximately 5% or more per district is similarly highly advisable.

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In creating new Districts 2 and 5, the BOS should avoid adding population and geographic areas where voters do not support Hispanic candidates of choice. Such population additions could be vote dilution in violation of the VRA. The same is also true about removing from districts population and geographic areas that supported Hispanic candidates of choice during the past decade. Such removal could also be considered VRA-prohibited vote dilution.

Instead, in crafting the two new districts, we recommend using population and preserving traditional, historic, discrete, and compact communities of interest that align with retaining the opportunity to elect Hispanic candidates of choice in Districts 2 and 5. Such an approach would adhere to "traditional districting principles such as maintaining communities of interest and traditional boundaries." *League of United Latin Am. Citizens v. Perry*, 548 U.S. 399, 433, 126 S.Ct. 2594, 165 L.Ed.2d 609 (2006).

We agree with Dr. Handley's admonition of undertaking a "district specific, functional approach" for new BOS Districts 2 and 5 for evaluation of electoral performance and VRA compliance.

In sum, we endorse and agree with Dr. Handley's conclusion as the BOS and Redistricting Commission moves forward with redistricting:

> "Voting is usually ethnically polarized in Pima County. As a consequence, districts that provide minority voters with an opportunity to elect their candidates of choice will need to be maintained. A district-specific, functional analysis is required to ensure that any plan enacted continues to offer Hispanic voters an opportunity to elect their candidates of choice to the Board of Supervisors and the Pima Community College Board of Governors."

Thank you for your consideration.

Sincerely,

/s/

Bruce L. Adelson, Esq.

Voting Patterns by Race and Ethnicity in Pima County, Arizona
Dr. Lisa Handley

I. Scope of Project

I was retained by Pima County, Arizona to conduct an analysis of voting patterns by race/ethnicity. If I concluded that voting in recent elections was racially/ethnically polarized, I may assist with a district-specific, functional analysis to ensure the redrawn Board of Supervisory districts will provide minority voters with an opportunity to elect their candidates of choice in compliance with the Voting Rights Act.

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* (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. The Voting Rights Act and Racially Polarized Voting

The Voting Rights Act of 1965 prohibits any voting standard, practice or procedure – including redistricting plans – that result in the denial or dilution of minority voting strength. Section 2 of the Voting Rights Act was amended in 1982 to establish that intentional discrimination need not be proven (as the Supreme Court determined was required under the 15th Amendment to the Constitution). The U.S. Supreme Court first interpreted the amended Act in *Thornburg v. Gingles*,[1] a challenge to the 1982 North Carolina state legislative plans. In this case the U.S. Supreme Court held that plaintiffs must satisfy three preconditions to qualify for relief:

- The minority group must be sufficiently large and geographically compact to form a majority in a single-member district
- The minority group must be politically cohesive
- Whites must vote as a bloc to usually defeat the minority-preferred candidates

What do we mean when we say minority voters must be politically cohesive? And how do we know if white voters usually vote as a bloc to defeat the candidates preferred by minority voters? According to the Court, racially polarized voting is the "evidentiary linchpin" of a vote dilution claim. Voting is racially polarized if minorities and whites consistently vote for different candidates. More specifically, if minorities consistently support the same candidates, they are said to be politically cohesive. If whites are consistently *not* supporting these candidates, they are said to be bloc voting against the minority-preferred candidates.

The Voting Rights Act requires a state or local jurisdiction to create districts that provide minority voters with an opportunity to elect their candidates of choice if voting is racially polarized and the candidates preferred by minority voters usually lose. If districts that provide minority voters with the opportunity to elect their preferred candidates already exist, these must be maintained if voting is polarized.

A. Analyzing Voting Patterns by Race/ethnicity

An analysis of voting patterns by race/ethnicity 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

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[1] 478 U.S. 30 (1986).

determine if whites are voting sufficiently as a bloc to usually defeat the candidates preferred by minority voters. The voting patterns of white and minority voters must be estimated using statistical techniques because direct information the race/ethnicity of the voters is not, of course, available on the ballots cast.

To carry out an analysis of voting patterns by race/ethnicity, an aggregate level database must be constructed, usually employing election precincts as the units of observation. Information relating to the demographic composition and election results in these precincts is collected, merged and statistically analyzed to determine if there is a relationship between the demographic composition and support for specific candidates across the precincts.

Standard Statistical Techniques Three standard statistical techniques have been developed over time to estimate vote choices by race/ethnicity: homogeneous precinct analysis, ecological regression, and ecological inference.[2] Two of these analytic procedures – homogeneous precinct analysis and ecological regression – were employed by the plaintiffs' expert in *Gingles*, have the benefit of the Supreme Court's approval in that case, and have been used in most subsequent voting rights cases. The third technique, ecological inference, was developed after the *Gingles* decision and was designed, in part, to address some of the disadvantages associated with ecological regression analysis. Ecological inference analysis has been introduced and accepted in numerous court proceedings.

Homogeneous precinct (HP) analysis is the simplest technique. It involves comparing the percentage of votes received by each of the candidates in precincts that are racially or ethnically homogeneous. The general practice is to label a precinct as homogeneous if at least 90 percent of the voting age population is composed of a single race/ethnicity.[3] In fact, the homogeneous results reported are not estimates – they are the actual precinct results. However, in most jurisdictions, most voters do not reside in homogeneous precincts. And voters who do reside in homogeneous precincts may not be representative of voters who live in more racially diverse precincts. For this reason, I refer to these percentages as estimates.

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[2] For a detailed 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.

[3] If turnout or registration by race/ethnicity is available, this information is used to identify homogenous precincts.

The second statistical technique employed, ecological regression (ER), uses information from all precincts, not simply the homogeneous ones, to derive estimates of the voting behavior of minorities and whites. If there is a strong linear relationship across precincts between the percentage of minorities and the percentage of votes cast for a given candidate, this relationship can be used to estimate the percentage of minority (and white) voters supporting the candidate.

The third technique, ecological inference (EI), was developed by Professor Gary King. This approach also uses information from all precincts but, 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/ethnicity. In addition, it utilizes the method of bounds, which uses more of the available information from the precinct returns as well as providing more information about the voting behavior being estimated.[4] Unlike ecological regression, which can produce percentage estimates of less than 0 or more than 100 percent, ecological inference was designed to produce only estimates that fall within the possible limits. However, EI does not guarantee that the estimates for all of the candidates add to 100 percent for each of the racial groups examined.

In conducting my analysis of voting patterns by race/ethnicity in statewide and countywide elections in Pima County, as opposed to elections for the districted offices of County Board of Supervisors and Board of Governors for Pima County Community College, I also used a more recently developed version of ecological inference, which I have labeled "EI RxC" in the summary tables found in the Appendices at the end of the report. EI RxC expands the analysis so that it allows us to take into account differences in the relative rates of minority and white turnout when, as is the case in Pima County, we do not have turnout by race/ethnicity but instead must rely on citizen voting age population by race/ethnicity to derive estimates of minority and white support for each of the candidates. This additional approach could only be utilized when all of the County precincts were included in the analysis as the turnout estimates for the district elections were unreliable.

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[4] The following is an example of how the method of bounds works: if a given precinct has 100 voters, of whom 75 are Hispanic and 25 are non-Hispanic 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 in this example as anywhere between none of the whites and all of the whites could have voted for the candidate.)

Database To analyze voting patterns by race/ethnicity using aggregate level information, a database that combines election results with demographic information is required. This database is almost always constructed using election precincts as the unit of analysis. The demographic composition of the precincts is based on voter registration or turnout by race/ethnicity/ethnicity if this information is available; if it is not, then voting or citizen voting age population is used. Pima County does not collect voter registration data by race/ethnicity, therefore census data was used to ascertain the racial/ethnic composition of the precincts.

Because the largest group of minority voters in Pima County is Hispanic voters, citizen voting age population rather than voting age population is a better indication of the likely demographic composition of the voters in each of the election precincts.[5] The percentage Hispanic citizen voting age population (CVAP) was derived using a combination of two U.S. Census Bureau databases: the census enumeration data as reported in the PL94-171 redistricting database, and American Community Survey (ASC) data, which provides an estimate of the citizen voting age population by race/ethnicity by census tract for Pima County.[6] The proportion of each racial/ethnic group's voting age population that reported being citizens in each census tract in the ACS data was used in conjunction with the census enumeration data to estimate the CVAP by race/ethnicity for each of the election precincts in Pima County.[7] This CVAP estimation exercise was carried out by Pima County staff with expertise in GIS technology.

Minority groups and geographic areas Producing reliable estimates of voting patterns by race/ethnicity requires an adequate number of minority and white voters, an adequate number of election precincts, and sufficient variation in the percentage of minority and white voters across the precincts. Only one group of minority voters in Pima County satisfied the first condition – Hispanic voters. It was not possible to produce reliable estimates for Native American, Black or

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[5] Non-Hispanic residents of Pima County (non-Hispanic white, Native American, and Black residents) have a higher citizenship rate than Hispanic (and Asian) residents. Because only citizens can vote in Pima County elections, the percentage of citizens of voting age provides a better indication of likely voters than the percentage of voting age population by race/ethnicity.

[6] The 2012, 2014, and 2016 election results were paired with the 2010 PL 94-171 census data and the 2008-2012 ACS data; the 2018 and 2020 elections were paired with the 2020 PL 94-171 census data and the most recent ACS data available (2015-2019 ACS data).

[7] There were 288 election precincts for the 2012 elections, 248 precincts for the 2014 and 2016 elections, and 249 precincts for the 2018 and 2012 elections in Pima County.

Asian voters in Pima County because there are not a sufficient number of citizens of voting age in any of these groups. Table 1, below, provides the CVAP for each of these groups, in total and by supervisory district.

Table I: Citizen Voting Age Population (CVAP) by Race/Ethnicity for Supervisory Districts

District	Total CVAP	NHWhite CVAP	Hispanic CVAP	Black CVAP	American Indian CVAP	Asian CVAP
1	172674	75.7%	15.5%	2.1%	1.4%	3.6%
2	131465	40.8%	45.8%	6.4%	2.5%	2.7%
3	150667	57.9%	28.4%	3.5%	6.2%	2.3%
4	176163	73.3%	16.6%	3.7%	1.7%	2.8%
5	138304	43.2%	44.9%	3.7%	4.1%	2.5%
Total	*769273*	*59.9%*	*28.7%*	*3.8%*	*3.1%*	*2.8%*

While voting patterns in all five of the supervisory districts were analyzed, the lack of Hispanic voters in some of the districts meant that estimates produced in these districts are less reliable than other district estimates. Furthermore, as noted above, deriving EI RxC estimates for district elections was not possible because Hispanic turnout could not be reliably estimated. As a general rule, the estimates that relied on all precincts in the county (statewide and countywide elections) are more reliable than the districtwide estimates.

Elections analyzed All contested Board of Supervisors and Pima County Community College Board of Governors elections held over the course of this past decade (2012-2020) were analyzed.

In addition to endogenous elections – that is, elections specific to the districts – I also analyzed recent statewide and countywide elections that included minority candidates. I investigated these additional election contests for several reasons. First, some districts did not have a sufficient number of minority voters to produce reliable estimates of the voting choices of Hispanic voters. Second, elections that include minority candidates are more probative than contests in which all of the candidates are white,[8] and several districts did not have any minority

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[8] Election contests that include minority candidates are more probative because it is not sufficient for minority voters to be able to elect their candidates of choice only if these candidates are white. On the

candidates competing for a seat on the Board of Supervisors or Board of Governors of Pima Community College. Third, if voting in any of these additional elections is polarized and the minority candidate is preferred by minority voters, these elections can serve as "bellwether elections" to assist in determining if a proposed district is likely to provide minority voters with an opportunity to elect their candidates of choice. The role of "bellwether elections" in evaluating proposed minority opportunity districts is discussed in more detail later in this report. Table 2, below, lists the statewide and countywide general election contests I analyzed and the minority candidates that competed in these elections.

Table 2. Statewide and Countywide General Election Contests Analyzed

General election contests	Minority candidate	Race/ethnicity
Statewide		
Governor 2018	David Garcia	Hispanic
	Angel Torres	Hispanic
Attorney General 2018	January Contreras	Hispanic
Countywide		
County Recorder 2020	Gabriella Cázares-Kelly	Native American
Clerk of the Superior Court 2018	Gary Harrison	Black
County Recorder 2016	F. Ann Rodriguez	Hispanic
County Recorder 2012	F. Ann Rodriguez	Hispanic

In addition to general election contests, I also analyzed the only recent countywide Democratic primary that included a minority candidate.[9] Republican primaries were not examined because the vast majority of minority voters in Pima County who choose to vote in primaries cast their ballots in Democratic rather than Republican primaries. As a consequence, Democratic primaries are far more probative than Republican primaries for ascertaining the candidates

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other hand, it is important to recognize that not all minority candidates are the preferred candidates of minority voters.

[9] I analyzed all Democratic primaries, not simply those that included minority candidates, for the districted Board of Supervisors and Board of Governors of Pima Community College elections.

preferred by minority voters.[10] The countywide Democratic primary analyzed was the 2020 County Recorder contest in which Native American Gabriella Cázares-Kelly ran against non-Hispanic white candidate Kim Challender.

B. Voting Patterns in Recent Statewide and Countywide Elections

Appendix A, at the end of this report, provides estimates of the percentages of non-Hispanic white and Hispanic voters who voted for each of the candidates in the statewide and countywide election contests analyzed. Voting in Pima County in the two recent statewide general elections analyzed was racially/ethnically polarized. In the 2018 gubernatorial general election, a strong majority of Hispanic voters (well over 75%, and as high as 84%) supported the Hispanic Democrat, David Garcia, while the majority (between approximately 58 and 64%) of non-Hispanic white voters cast their votes for his white Republican opponent, Doug Ducey. The same pattern was found in the 2018 general election for attorney general: an overwhelming majority (approximately 90%) of Hispanic voters supported Hispanic Democrat, January Contreras, and the majority (between about 51 and 60%) of non-Hispanic white voters cast their votes for his opponent, white Republican Mark Brnovich. In both instances, however, the Hispanic-preferred candidate carried the county despite the presence of racially/ethnically polarized voting.

Some recent countywide elections that included minority candidates were also racially/ethnically polarized. In the 2020 general election contest for county recorder, an overwhelming majority (approximately 90%) of Hispanics voted for the Native American Democrat, Gabriella Cázares-Kelly, but the majority (between 53 and 60%) of non-Hispanic whites supported her non-Hispanic white Republican opponent, Benny White. In the 2018 election contest for clerk of the court, Black Democrat Gary Harrison was the candidate of choice of an overwhelming percentage of Hispanic voters (approximately 90%), but the majority (between 54 and 63%) of non-Hispanic whites supported Toni Hellon, his non-Hispanic white Republican opponent. Again, in both instances, the Hispanic-preferred candidate won the election countywide.

The only Hispanic candidate to compete countywide recently was F. Ann Rodriguez, who ran for county recorder in 2012 and 2016. Neither of these election contests was racially/ethnically polarized: an overwhelming majority of Hispanic voters supported her in both elections (over 90% in both instances) and she garnered an increasing majority of non-Hispanic voters in 2016, when

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[10] In addition, producing reliable estimates for Hispanic voters in Republican primaries would not have been possible.

over 70% of non-Hispanic white voters supported her as compared to 2012, when only a slight majority on white voters cast their votes for her.

Voting in the only countywide Democratic primary analyzed may not have been polarized. While Hispanic clearly favored Gabriella Cázares-Kelly, non-Hispanic white voters divided their support between her and her non-Hispanic white challenger, Kim Challender.

In summary, four of the six (66.7%) statewide and countywide general elections analyzed were racially/ethnically polarized in Pima County.

C. Voting Patterns in Recent Board of Supervisors and Board of Governors Elections

Appendix B reports the estimates for the percentage of Hispanic and white voters who supported each of the candidates in the district election contests for Board of Supervisors and Board of Governors for Pima County Community College. The estimates for Districts 1 and 4 are very problematic – there were simply not enough Hispanic voters to produce reliable estimates in these districts. Although I have included the estimates in the summary table, they must be considered with extreme caution.[11]

In District 3, where the Hispanic CVAP is slightly over 28%, the EI estimates appear to be somewhat more reliable than in Districts 1 and 4. According to the EI estimates, the election contests analyzed were all polarized with the exception of 2012 Board of Governors race. Despite the polarization, however, the Hispanic-preferred candidates won each of these contests. In the contests for Board of Supervisors, Democrat Sharon Bronson was clearly not the candidate of choice of white voters, but she won in 2012, 2016, and 2020 because of the Hispanic support she gained. In the 2018 race for Board of Governors, Hispanic candidate Maria Garcia was the clear choice of Hispanic voters but was not supported by a majority of white voters. However, over 35% of white voters did vote for her and this white crossover vote, combined with strong support from Hispanics, was sufficient for her to win the contes. The only contest that was not racially/ethnically

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[11] What is clear is the voting patterns of non-Hispanic white voters in each of these two districts. In District 1, white voters supported the Republican candidate, Ally Miller, for the Board of Supervisors in 2012 and 2016, but, by a slight majority, the Democratic candidate, Rex Scott, in 2020. In all instances, the candidates preferred by white voters won. The same pattern exists for the Board of Governors elections: white voters supported the winning candidates, Mark Hanna and Catherine Ripley, respectively, in 2014 and 2020. In District 4, the majority of white voters supported the Republican candidate, Steve Christy, in both contested elections and he won in both 2016 and 2020, though with a much smaller percentage of the vote in 2020.

polarized was the 2012 election for Board of Supervisors, in which both Hispanics and whites voted for the Asian candidate, Sylvia Lee.

Hispanics comprise 45.8% of the citizens of voting age and slightly over 50% of the voting age population in District 2. There have been a limited number of elections in this district: there have been no recent contested Board of Governors elections and only two Board of Supervisors general elections – the 2016 election was uncontested (incumbent Hispanic Democrat Ramon Valadez faced no challengers). Voting was racially/ethnically polarized in the 2012 and 2020 Board of Supervisors elections, but the Hispanic-preferred candidates easily won both of these contests. In 2012, Ramon Valadez received over 97% of the Hispanic vote, but his opponent, Republican James Kelley, garnered over 65% of the white vote. Valadez won the election. In 2020, Democrat Matt Heinz was the candidate of choice of Hispanic voters (at least 85% of Hispanic voters supported him), but a majority of white voters (between 52 and 55%) voted for his Republican opponent, Anthony Sizer. Heinz won with 67.8% of the vote. However, although Heinz was clearly favored by Hispanic voters in the general election, he was not the candidate of choice of Hispanic voters in the Democratic primary. The first choice of Hispanic voters was incumbent Ramon Valadez, though he may have been supported by only a plurality – or possible a small majority – of Hispanic voters in this three-candidate contest.

District 5 also has a sizeable Hispanic population: Hispanics comprise 48% of the voting age population and 44.9% of the citizen voting age population. Voting in this district was mixed: none of the partisan Board of Supervisors election contests were racially/ethnically polarized, but all of the nonpartisan Board of Governors for Pima Community College election contests were polarized. In the three Board of Supervisors contests analyzed, a large majority of both Hispanic and white voters supported Hispanic Democratic candidate Richard Elias in 2012 and 2016, and Hispanic Democratic candidate Adelita Grijalva in 2020.[12] These candidates won their elections with over 73% of the vote. In the Board of Governors elections, however, while the Hispanic candidate garnered a large percentage of the Hispanic votes, white voters in each instance supported an opponent of the Hispanic candidate. The Hispanic candidate supported by Hispanic voters was successful in all three elections, but with only a plurality of the vote in the three-

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[12] Adelita Grijalva easily won the Democratic primary in 2020 with strong support from both Hispanic and white voters.

candidate contest in 2012, 50.4% of the vote in 2016, and 52.1% of the vote in 2018. This is a marked contrast from the winning percentages in the Board of Supervisors election contests.

Table 3, below, summarizes the results of the racial bloc voting analysis for Districts 2, 3, and 5.

Table 3: Summary of Racial Bloc Voting Analysis of District Elections

District	Board of Supervisors		Pima Community College Board		Total
	Contested	*Polarized*	*Contested*	*Polarized*	
2	2	2 (100%)	0		2/2 (100%)
3	3	3 (100%)	2	1 (50%)	4/5 (80%)
5	3	0 (0%)	3	3 (100%)	3/6 (50%)
Total	8	5 (62.5%)	5	4 (80%)	9/13 (69.2%)

IV. Drawing Minority Opportunity Districts

Because voting in Pima County is usually racially/ethnically polarized, districts that provide minority voters with an opportunity to elect their candidates of choice must be created or, if they already exist, must be maintained. There are currently two districts with a sufficient Hispanic population to provide Hispanic voters with an opportunity to elect their candidates of choice: Districts 2 and 5. The demographic composition of these two districts is displayed in Table 4, below.

Table 4: Demographic Composition of Hispanic Opportunity Districts

	District 2	District 5
Total Population	200,525	192,866
Deviation from Ideal District Size	-3.9%	-7.6%
Percent Hispanic Voting Age Population	50.9	48.0
Percent Hispanic Citizen Voting Age Population	45.8	44.9
Percent Combined Minority CVAP	59.2	56.8

Both of the districts are under-populated and at least District 5 will have to gain population to comply with equal population requirements.[13] Neither of these districts are majority Hispanic in CVAP, but both are consistently able to elect Hispanic-preferred candidates. Maintaining these districts as Hispanic opportunity districts does not necessarily mean that the districts must be redrawn with precisely the same percentage Hispanic CVAP and it certainly does not require that the districts be drawn as majority Hispanic CVAP districts. Instead, a district-specific, functional analysis should be undertaken to determine if the proposed districts are likely to continue to provide Hispanic voters with an opportunity to elect their candidates of choice to office.[14]

There are two related approaches to conducting a district-specific, functional analysis to determine if a district provides minority voters with an opportunity to elect their candidates of choice to office. Both approaches take into account the relative turnout rates and voting patterns of minorities and whites. The first approach uses estimates derived from racial bloc voting analysis to calculate the percent minority population needed in a specific area for minority-preferred candidates to win a district in that area. However, because estimates of Hispanic participation rates and voting patterns are problematic in some districts, this approach is not the best approach to adopt for Pima County districts.

The second approach relies on election results from previous contests that included minority-preferred candidates (as identified by the racial bloc voting analysis) to determine if these candidates would win election in the proposed districts. The election results for these "bellwether elections" – racially polarized elections that include minority candidates who are preferred by minority voters – are recompiled to reflect the boundaries of the proposed district. If the minority-preferred candidates in these bellwether elections carry the proposed district, this district is likely to provide minority voters with an opportunity to elect their candidates of choice. This approach can only be used once proposed district boundaries have been drawn. This is the best approach to use for Pima County supervisory districts for two reasons. First, estimating

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[13] A districting plan should not have a total population deviation that exceeds 10%. The current plan has a deviation of nearly 15%, with District 5 underpopulated by 7.6% and District 4 overpopulation by 7.2%.

[14] Establishing some demographic target (e.g., 55% black voting age population) for all minority districts across the jurisdiction is, in fact, expressly forbidden by the U.S. Supreme Court. See *Alabama Legislative Black Caucus v. Alabama,* 575 U.S. 254 (2015).

voting patterns by ethnicity proved challenging in some districts. Second, the district redrawing process is likely to be carried out using whole precincts whenever possible. This not only simplifies the recompiling of election results, it means the results are more accurate.

The second approach to assessing whether a proposed district is likely to provide minority voters with an opportunity to elect their candidates of choice entails (1) identifying "bellwether" elections, (2) reassigning or "recompiling" precinct level results for these elections to conform to the proposed district boundaries, and (3) summing the election results across each of the districts to determine if the minority-preferred candidate would win. This recompilation can only be done with elections that cover a broad enough area to encompass all of the draft districts, hence only countywide or statewide elections can be used for this exercise.

V. Conclusion

Voting is usually racially/ethnically polarized in Pima County. As a consequence, districts that provide minority voters with an opportunity to elect their candidates of choice will need to be maintained. A district-specific, functional analysis is required to ensure that any plan enacted continues to offer Hispanic voters an opportunity to elect their candidates of choice to the Board of Supervisors and the Pima Community College Board of Governors.

Appendix A: Statewide and Countywide Elections Pima County				Estimates for non-Hispanic White Voters				Estimates for Hispanic Voters			
	Party	Race	Vote	EI RxC	95% confidence interval	EI	ER	EI RxC	95% confidence interval	EI	ER
Statewide Elections with minority candidates, Pima County only											
2018 General Election											
Governor											
David Garcia	D	H	50.3	41.5	(40.4, 42.7)	34.0	34.4	84.3	(79.0, 89.2)	78.9	76.9
Doug Ducey	R	W	47.5	57.9	(56.7, 59.1)	64.5	64.3	12.3	(7.5, 17.6)	17.1	19.1
Angel Torres	Grn	H	2.2	0.6	(.4, .8)	1.3	1.2	3.4	(2.4, 4.8)	4.5	4.0
Votes for office/CVAP						*70.9*	*72.1*			*25.4*	*22.6*
Attorney General											
January Contreras	D	H	58.4	49.4	(48.0, 50.6)	40.3	40.9	90.5	(86.5, 93.9)	92.4	89.3
Mark Brnovich	R	W	41.6	50.6	(49.4, 52.0)	59.7	59.1	9.5	(6.2, 13.5)	7.8	10.6
Votes for office/CVAP						*69.2*	*70.3*			*25.0*	*22.4*
Countywide Elections with minority candidates											
2020 General Election											
County Recorder											
Gabriella Cazares-Kelly	D	NA	58.8	46.7	(45.3, 48.2)	40.2	40.9	90.1	(86.2, 93.2)	90.7	86.6
Benny White	R	W	41.2	53.3	(51.8, 54.7)	59.9	59.1	9.8	(6.8, 13.8)	9.4	13.4
Votes for office/CVAP						*82.8*	*82.4*			*42.8*	*41.5*
Democratic Primary											
County Recorder											
Gabriella Cazares-Kelly	D	NA	65.0	53.6	(50.8, 56.5)	48.2	49.6	89.0	(84.7, 92.3)	92.7	86.7
Kim Challender	D	W	35.0	46.4	(43.5, 49.2)	51.7	50.4	11.0	(7.7, 15.3)	7.4	13.2
Votes for office/CVAP						*22.5*	*20.8*			*14.2*	*14.2*

Appendix A: Statewide and Countywide Elections Pima County	Party	Race	Vote	Estimates for non-Hispanic White Voters				Estimates for Hispanic Voters			
				EI RxC	95% confidence interval	EI	ER	EI RxC	95% confidence interval	EI	ER
2018											
General Election											
Clerk of the Superior Court											
Gary Harrison	D	B	56.2	45.9	(44.6, 47.4)	37.1	37.2	91.0	(87.6, 93.9)	92.2	88.8
Toni Hellon	R	W	43.8	54.1	(52.7, 55.4)	62.9	62.8	9.0	(6.1, 12.4)	7.7	10.9
Votes for office/CVAP						67.3	68.7			25.2	22.7
Democratic Primary											
Clerk of the Superior Court											
Gary Harrison	D	B	100.0	unopposed							
2016											
General Election											
County Recorder											
F. Ann Rodriguez	D	H	77.9	74.6	(73.7, 75.7)	71.0	71.8	91.2	(87.3, 94.3)	94.0	90.8
Mike Cease	R	W	22.1	25.4	(24.4, 26.3)	29.0	28.3	8.8	(5.7, 12.7)	6.0	9.2
Votes for office/CVAP						64.8	64.3			37.4	33.5
Democratic Primary											
County Recorder											
F. Ann Rodriguez	D	H	100.0	unopposed							
2012											
General Election											
County Recorder											
F. Ann Rodriguez	D	H	63.7	55.9	(55.0, 56.8)	50.3	50.6	92.7	(90.0, 95.0)	97.0	96.4
Bill Beard	R	W	36.3	44.1	(43.2, 45.0)	49.8	49.4	7.3	(5.0, 10.0)	3.1	3.6
Votes for office/CVAP						67.4	67.5			29.4	24.0
Democratic Primary											
County Recorder											
F. Ann Rodriguez	D	H	100.0	unopposed							

Appendix B: Pima County Board of Supervisors and Pima Community College Board Elections

	Party	Race	Vote	Estimates for non-Hispanic White Voters		Estimates for Hispanic Voters	
				EI 2x2	ER	EI 2x2	ER
District 1							
General Elections							
Board of Supervisors							
2020 November							
Rex Scott*	D	W	50.3	51.9	52.8	34.3	33.5
Steven Spain	R	W	49.7	48.2	47.2	65.4	67.0
Votes for office/CVAP				*91.3*	*99.6*	*19.7*	*0.0*
2016 November							
Brian Bickel	D	W	46.0	47.2	48.5	35.0	26.7
Ally Miller*	R	W	54.0	52.7	51.6	65.5	73.3
Votes for office/CVAP				*83.5*	*92.5*	*2.1*	*0.0*
2012 November							
Nancy Young Wright	D	W	46.2	45.3	44.1	49.2	51.6
Ally Miller*	R	W	53.8	54.7	56.0	50.8	48.7
Votes for office/CVAP				*78.9*	*91.8*	*5.8*	*0.0*
Board of Governors, Pima Community College							
2020 November							
Catherine Ripley*		A/W/H	59.3	59.2	59.4	53.9	55.3
Ethan Orr		W	40.7	40.3	40.6	44.8	44.5
Votes for office/CVAP				*69.5*	*71.5*	*18.3*	*12.3*
2014 November							
Michael Duran		W	48.5	48.1	48.1	48.6	46.5
Mark Hanna*		W	51.5	52.2	51.9	49.3	53.1
Votes for office/CVAP				*43.0*	*51.9*	*0.4*	*0.0*
Democratic Primaries							
Board of Supervisors							
2020 August							
Rex Scott*	D	W	66.9	77.6	78.3	22.7	18.8
Brian Radford	D	W	33.1	22.3	21.7	76.9	81.3
Votes for office/CVAP				*24.2*	*28.8*	*0.2*	*0.0*
District 2							
General Elections							
Board of Supervisors							
2020 November							
Matt Heinz*	D	W	67.8	44.9	48.1	85.0	87.1
Anthony Sizer	R	A	32.2	55.1	52.2	15.1	12.9
Votes for office/CVAP				*81.5*	*77.4*	*41.0*	*39.2*

Appendix B: Pima County Board of Supervisors and Pima Community College Board Elections	Party	Race	Vote	Estimates for non-Hispanic White Voters		Estimates for Hispanic Voters	
				EI 2x2	ER	EI 2x2	ER
2016 November							
Ramon Valadez*	D	H	100.0				
2012 November							
Ramon Valadez*	D	H	62.8	33.1	35.3	97.4	100.0
James Kelley	R	W	37.2	67.0	65.1	2.6	0.0
Votes for office/CVAP				*58.9*	*58.7*	*28.7*	*27.3*
Democratic Primaries							
Board of Supervisors							
2020 August							
Ramon Valadez	D	H	34.1	7.8	14.4	55.5	47.1
Richard Hernandez	D	H	13.7	0.1	6.4	21.2	18.9
Matt Heinz*	D	W	52.2	95.5	79.2	17.3	34.2
Votes for office/CVAP				*26.8*	*24.2*	*11.6*	*10.6*
District 3							
General Elections							
Board of Supervisors							
2020 November							
Sharon Bronson*	D	W	57.4	35.7	36.2	66.1	36.7
Gabby Saucedo Mercer	R	H	42.6	64.3	63.8	33.9	63.2
Votes for office/CVAP				*81.4*	*76.1*	*56.3*	*60.0*
2016 November							
Sharon Bronson*	D	W	52.1	33.3	32.9	55.2	29.4
Kim DeMarco	R	W	47.9	66.7	67.3	44.7	70.4
Votes for office/CVAP				*64.8*	*62.8*	*44.5*	*44.4*
2012 November							
Sharon Bronson*	D	W	54.8	36.3	36.3	68.2	43.2
Tanner Bell	R	W	45.2	63.7	63.5	31.6	56.2
Votes for office/CVAP				*57.9*	*58.7*	*42.7*	*34.1*
Board of Governors, Pima Community College							
2018 November							
Maria Garcia*		H	55.4	39.1	36.9	74.1	46.9
Sherryn Marshall		W	44.6	61.0	63.0	26.0	53.4
Votes for office/CVAP				*46.4*	*43.7*	*28.3*	*28.7*
2012 November							
Sylvia Lee*		A	61.8	62.8	63.4	67.5	70.3
Sherryn Marshall		W	38.2	36.8	36.7	32.3	29.7
Votes for office/CVAP				*36.3*	*36.1*	*34.3*	*25.7*

Appendix B: Pima County Board of Supervisors and Pima Community College Board Elections

	Party	Race	Vote	Estimates for non-Hispanic White Voters		Estimates for Hispanic Voters	
				EI 2x2	ER	EI 2x2	ER
Democratic Primaries							
Board of Supervisors							
2020 August							
Juan Francisco Padres	D	H	43.0	35.4	38.0	67.9	66.2
Sharon Bronson*	D	W	57.0	64.4	62.0	31.5	33.9
Votes for office/CVAP				*19.9*	*17.4*	*13.4*	*10.0*
District 4							
Board of Supervisors							
2020 November							
Steve Diamond	D	W	45.7	45.8	42.8	46.2	48.3
Steve Christy*	R	W	54.3	54.2	57.3	53.8	52.1
Votes for office/CVAP				*84.8*	*85.4*	*16.3*	*19.1*
2016 November							
Steve Christy*	R	W	72.6	74.7	76.0	64.2	51.5
Joshua Reilly	Grn	W	27.4	25.7	24.0	35.8	48.8
Votes for office/CVAP				*73.8*	*74.0*	*26.9*	*7.0*
2012 November							
Ray Carroll*	R	W	100.0				
District 5							
Board of Supervisors							
2020 November							
Adelita Grijalva*	D	H	73.6	68.1	70.6	79.4	75.7
Fernando Gonzales	R	H	26.4	31.8	29.3	20.6	24.1
Votes for office/CVAP				*68.7*	*68.9*	*53.2*	*54.0*
2016 November							
Richard Elias*	D	H	78.4	69.3	71.3	87.6	86.2
Martin Bastidas	Grn	H	21.6	30.7	28.7	12.2	13.8
Votes for office/CVAP				*49.0*	*49.4*	*45.6*	*44.9*
2012 November							
Richard Elias*	D	H	73.8	66.3	69.2	80.9	79.1
Fernando Gonzales	R	H	26.2	33.5	30.9	18.8	20.9
Votes for office/CVAP				*51.8*	*49.3*	*39.9*	*38.9*
Board of Governors, Pima Community College							
2018 November							
Luis Gonzales		H	52.1	13.6	13.7	84.4	82.9
Debi Chess Mabie		B	47.9	86.5	86.3	15.5	17.0
Votes for office/CVAP				*42.3*	*44.1*	*33.2*	*33.2*

Appendix B: Pima County Board of Supervisors and Pima Community College Board Elections	Party	Race	Vote	Estimates for non-Hispanic White Voters		Estimates for Hispanic Voters	
				EI 2x2	ER	EI 2x2	ER
2016 November							
Luis Armando Gonzales*		H	50.4	18.6	19.0	79.5	80.8
Martha Durkin		W	39.9	68.9	68.9	13.5	11.6
Francis Saitta		W	9.7	12.1	12.2	7.7	7.4
Votes for office/CVAP				*36.1*	*35.8*	*44.1*	*44.1*
2012 November							
Marty Cortez*		H	43.6	20.6	21.6	66.5	66.8
Richard Fridena		W	37.8	54.6	53.9	21.1	20.0
Francis Saitta			18.7	23.2	24.5	12.6	13.3
Votes for office/CVAP				*31.3*	*29.1*	*36.0*	*35.6*
Democratic Primaries Board of Supervisors							
2020 August							
Adelita Grijalva*	D	H	67.5	69.1	68.8	66.0	66.5
Consuelo Hernandez	D	H	32.5	31.1	31.1	34.0	33.6
Votes for office/CVAP				*32.8*	*32.4*	*17.5*	*16.0*