Exhibit E

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF WASHINGTON

ROGELIO MONTES and MATEO ARTEAGA, Plaintiffs, vs. CITY OF YAKIMA, MICAH CAWLEY, in his official capacity as Mayor of Yakima, and MAUREEN ADKISON, SARA BRISTOL, KATHY COFFEY, RICK ENSEY, DAVE ETTL, and BILL LOVER, in their official capacity as members of the Yakima City Council, Defendants.	NO. CV-12-3108-TOR EXPERT REPORT OF PETER MORRISON, Ph.D.

1. I have been retained as an expert by the city of Yakima, Washington. I am an applied demographer and am retired from The RAND Corporation, where I was Senior Demographer and the founding director of RAND's Population Research Center. I have provided testimony in litigation pertaining to the Voting Rights Act and districting plans and have constructed and/or evaluated numerous proposed local redistricting plans. I have made invited presentations on demographic aspects of redistricting to members and/or staff of the U. S. House of Representatives Subcommittee on the Census, the County Counsels' Association of California, the League of California Cities, the National League of Cities, and the Population Association of America. I have served on the U.S. Census Bureau Advisory Committee on Population Statistics, 1989-1995; and as an invited participant on the Bureau's Working Group on 2010 Race and Ethnicity. I have been elected as President of the Southern Demographic Association and to the Board of Directors of the Population Association of America, which are the two leading associations of professional demographers; and have taught students at the RAND Graduate School.

2. Details of my academic background, including all publications in the last ten years and work as an expert, including all cases in which I have testified by deposition or at trial in the last four years, are furnished in the attached vita (Appendix A).

3. I have been retained as an expert to evaluate Plaintiffs' assertion that the current election system used by the City of Yakima deprives Latinos of an equal opportunity to elect representatives of their choice. My evaluation relies on official sources of demographic and electoral data from, respectively, the US Census Bureau and the Elections Division of the Yakima County Auditor's Office, and various data files relevant to the preparation of the report provided in this case by Mr. William Cooper.

SUMMARY AND CONCLUSIONS

4. The City of Yakima elects its seven City Council members using a hybrid at-large election process. Plaintiffs assert that this system violates Section 2 of the Voting Rights Act because it (1) "impermissibly dilutes the Latino vote," (2) "consistently allows the white majority's bloc voting to defeat the candidates preferred by Latino voters," and (3) "deprives Latinos of an equal opportunity to elect representatives of their choice." Patterns of voting in recent elections and the demographic makeup of the City's electorate have an important bearing on all three assertions. Together these facts cast substantial doubt on the latter two assertions.

5. The first of three necessary *Gingles* preconditions that Plaintiffs must satisfy for an actionable vote dilution claim is that Latinos must be "sufficiently large and geographically compact to constitute a majority in a single-member district." My analysis discredits Plaintiffs' claim to have satisfied this precondition. The claim that Latinos constitute a majority of the citizen voting-age population (CVAP) in proposed demonstration District 1 in each of Plaintiffs' Illustrative Plans 1 and 2 is unjustifiable by the accepted scientific standards in my field. Moreover, the supporting data themselves are conspicuously tainted and, in my opinion, unreliable for making the very precise estimates that are required in this case.

6. A district drawn for the sole purpose of making Latinos the majority of CVAP would inevitably cause the votes of eligible voters in that one district to carry twice the weight of a vote in another district. This imbalance would be decidedly non-neutral along racial and ethnic lines, since those whose votes would be debased are disproportionately American Indian, Asian, African American, and non-Latino white voters.

7. This unnecessary electoral imbalance poses two questions: First, is it constitutional to undersize the citizen population in one (Hispanic) district while oversizing the citizen population in another district? In other words, should only 4,414 or 4,547 citizens in demonstration District 1 elect one member to the Yakima City Council whereas 9,461 or 9,511 citizens in a neighboring district elect another City Council member? Second, would this electoral imbalance cause unlawful dilution of votes cast by one or more protected groups (e.g., American Indians or Asians) whose numbers are disproportionately concentrated outside demonstration District 1?

8. As to the second and third *Gingles* preconditions, available data at the precinct level hinder reliable conclusions. In most precincts, the infrequent Latino who votes is submerged among many more non-Latinos voting in that same precinct, a circumstance that may leave only faint and unreliable statistical traces of Latino voting preferences.

9. Differences in Latinos and non-Latino voter registration and turnout arise partly from the different age structures of the two populations. Latinos in the City of Yakima have a distinctly "young" adult age distribution, which partly accounts for why Latinos exhibit lower rates of political participation overall. The actual gap in turnout rates among voters is only two-thirds as wide as the observable gap, controlling for differences in age structure between these two populations.

I. INTRODUCTION

10. The City of Yakima elects its seven City Councilmembers using a hybrid at-large election process. Four members are nominated in a non-partisan top-two primary in four residency districts and then elected via an at-large general election process; three other members are elected on a purely at-large basis. Staggered elections are held every two years, most recently on November 8, 2011 for the residency district position and on November 3, 2009, for the at-large positions.

11. Plaintiffs assert that this system violates Section 2 of the Voting Rights Act because it (1) "impermissibly dilutes the Latino vote," (2) "consistently allows the white majority's bloc voting to defeat the candidates preferred by Latino voters," and (3) "deprives Latinos of an equal opportunity to elect representatives of their choice."[1] At the request of Defendants' counsel, I have undertaken an empirical evaluation of this assertion. My evaluation relies on official sources of demographic and electoral data from, respectively, the US Census Bureau and the Elections Division of the Yakima County Auditor's Office. This report presents my conclusions and supporting analyses.

12. In Sections II and III, I consider the facts pertaining to the three necessary *Gingles* preconditions, which Plaintiffs must satisfy for an actionable vote dilution claim. In Section IV, I consider certain facts pertaining to the "Senate Factors." Section V documents certain exogenous elections that reveal the choices of City-resident voters. Section VI summarizes my conclusions.

[1] *Complaint*, page 4.

II. FACTS PERTAINING TO THE FIRST GINGLES PRECONDITION

13. This section presents my analysis of demographic and electoral data bearing on the first of the three *Gingles* preconditions that Plaintiffs must satisfy for an actionable vote dilution claim. This first necessary precondition is that Latinos must be "sufficiently large and geographically compact to constitute a majority in a single-member district."

14. For technical reasons detailed in the section immediately below, I question the conclusion by Plaintiffs' expert Mr. Cooper that "it is possible to create at least one Latino citizen voting age-majority district out of seven." [Cooper Declaration of February 1, 2013 at Paragraph 6.] Even if it were possible to form one such district as part of a seven-district plan as of 2010, doing so would pose a central concern: the prospect of violating the Equal Protection clause of the Fourteenth Amendment by causing votes to carry grossly unequal weight in different districts.[2] (See "UNEQUALLY WEIGHTED VOTES IN DIFFERENT DISTRICTS" at page 15.)

TECHNICAL LIMITATIONS OF PLAINTIFFS' UNDERLYING DATA

15. Mr. Cooper's conclusion that Latinos could constitute a majority in a single-member district is based on his tabulation of census block data from the 2010 decennial census, supplemented by citizenship estimates from the Census Bureau's 2007-2011 American Community Survey (hereafter ACS). When using ACS data to form districts, one must interpret all numerical results with caution. ACS citizenship estimates are statistical estimates (not a census). These estimates are accompanied by margins of error (MOEs) and also by incremental non-sampling errors (such as non-responses, for which the Census Bureau publishes imputation counts).

1. Confidence in Point Estimates

16. Mr. Cooper reports that the demonstration District 1 in his Illustrative Plan 1 has a 50.25% Latino share among its citizen voting-age population (CVAP). He calculates this share as 2,217.91 Latino CVAP divided by the district's total CVAP (4,414.08). For the demonstration District 1 in his

[2] See: Kent D. Krabill and Jeremy A. Fielding, "No More Weighting: One Person, One Vote Means One Person, One Vote," *Texas Review of Law & Politics:* 16 (2), Spring 2012, pp. 275-294.

Illustrative Plan 2, the corresponding Latino share is slightly less (50.13%), so I shall focus ahead on Plan 1.

17. We must regard each of these fractions as a point estimate, plus or minus a margin of error (which I am now in the process of calculating).[3] The 50.25% point estimate, along with the associated margin of error, is the basis for inferring that the true (but unmeasured) percentage exceeds 50%, before considering non-sampling errors.

2. Logical Inconsistencies

18. In this particular instance, a further problem compounds this uncertainty: logical inconsistencies in the data on which Mr. Cooper bases his conclusions. I evaluated the underlying data he used to estimate how many of the voting-age persons in each census block in Yakima are citizens. In the course of these evaluations, I discovered troubling inconsistencies that raised doubts about the overall validity of his allocation procedure (detailed in his *Declaration* at Paragraph 38). Specifically, I noted relationships in his data that are logically impossible—for example, census block groups where his estimate of the number of voting-age Latino citizens noticeably exceeds the Census complete count of voting-age Latino persons.

19. The highlighted cells in Table 1 furnish examples of these logical inconsistencies. As shown in the top row, the Census counted 1,590 persons 18 and older, whereas Mr. Cooper estimates that BG 4004 has 1,642 *citizens* 18 and older—which is logically impossible. In the fifth row from the top, the Census counted 111 Hispanic persons 18 and older, whereas Mr. Cooper estimates that BG 8001 has 160 Hispanic *citizens* 18 and older. Overall, the number of rows shaded indicates that these are not isolated inconsistencies, and their magnitudes are material relative to a razor-thin Latino CVAP majority in a demonstration district of just 22 to 24 adult Latino citizens.

[3] Every ACS estimate has an accompanying margin of error. This margin of error reflects *sampling error*—that is, the uncertainty associated with an estimate that is based on data gathered from a sample of the population rather than the full population. This is the error that is accounted for in the US Census Bureau's published "margins of error" statistics. Source: www.census.gov/acs/www/methodology/sample_size_definitions/. For further elaboration, see: www.census.gov/acs/www/Downloads/presentations/ACS_Affect_Est.ppt

Table 1. Logical Inconsistencies in Cooper's Census Block Estimates of Latino CVAP

Block Group	All Groups		Hispanic Population	
	All persons ages 18+ (Census count)	Citizens ages 18+ (Cooper's estimate)	All persons ages 18+ (Census count)	Citizens ages 18+ (Cooper's estimate)
4004000	1,590	1,642	161	49
5002000	832	945	200	110
5004000	1,279	1,340	106	60
7002000	951	890	262	285
8001000	1,251	1,185	111	160
8002000	816	725	113	165
8003000	550	535	56	130
8004000	928	945	140	90
9014000	1,446	1,535	135	180
9022000	1,118	1,095	202	310
10002000	841	1,015	150	370
11001000	1,313	1,530	518	405
11003000	786	810	181	190
12013000	587	705	221	335
28023000	2,452	1,503	262	320

Sources: US Census Bureau, 2010 Census, PL-94 data; Cooper "CVAP_DATA" census block data aggregated to block groups.

20. Mr. Cooper may attribute such logical inconsistencies to sampling error (the margins of error that accompany all ACS estimates, described in the preceding footnote).[4] However, that interpretation only underscores a fundamental problem. In crafting his demonstration District 1, Mr. Cooper necessarily had to estimate the number of citizens in individual census *blocks* by allocating ACS estimates of citizens for larger geographic units (census *block groups*). That is, he began with a block group estimate (which itself has an associated MOE) and then subdivided that estimate to allocate some number of citizens to each of the individual census blocks within that block group.

21. When an accepted method yields results that are suspect, the cause often traces to data that are insufficiently refined to support the analysis in question. My concern here is that the slightest flaws in Mr. Cooper's data are material. The purported Latino majority in demonstration District 1 hinges

[4] Logical inconsistencies can arise when combining decennial census data and ACS data to generate population estimates for the purpose of drawing district boundaries. These inconsistencies may emerge because of sampling errors, non-sampling errors, or definitional differences.

on just 22 to 24 adult Latino citizens.[5] Accordingly, the following sections clarify the practical limits of what the published ACS data can reveal about Latinos' share of a district's voting-age citizen population.

3. Imputed Latino Citizens

22. As with any survey, the American Community Survey faces the problem of responses that are missing, incomplete, or inconsistent. Through a series of data edits developed by Census Bureau subject matter experts, the ACS utilizes data imputation to maintain data quality. Data imputation involves replacing missing, incomplete, or inconsistent responses with modified values.

23. *Census Bureau technical documentation reports that nativity and citizenship was imputed for fully 182 of the foreign-born persons residing within the City of Yakima. Roughly 35 of those 182 (19%) reside in the demonstration District 1 in each of Mr. Cooper's two illustrative plans.*

24. Imputation involves changing responses through either *assignment* or *allocation*.[6] "Assignment" entails changing a response value based on other information reported by the respondent. For example, if a respondent indicated that his place of birth was in the United States, but also responded that his citizenship was not "born in the United States" or was missing, the response for citizenship would be imputed to change his citizenship response to "Yes, born in the United States" (see Figure 1). When there is not enough information to assign a value, allocation is used instead. "Allocation" entails using valid values from other respondents who share similar demographic characteristics to the respondent to replace the respondent's invalid or missing value on the variable.

25. For example, the Census Bureau may allocate a valid citizenship response to a Hispanic respondent age 24 who did not report a value for citizenship from another 24-year-old Hispanic respondent in the survey who did.

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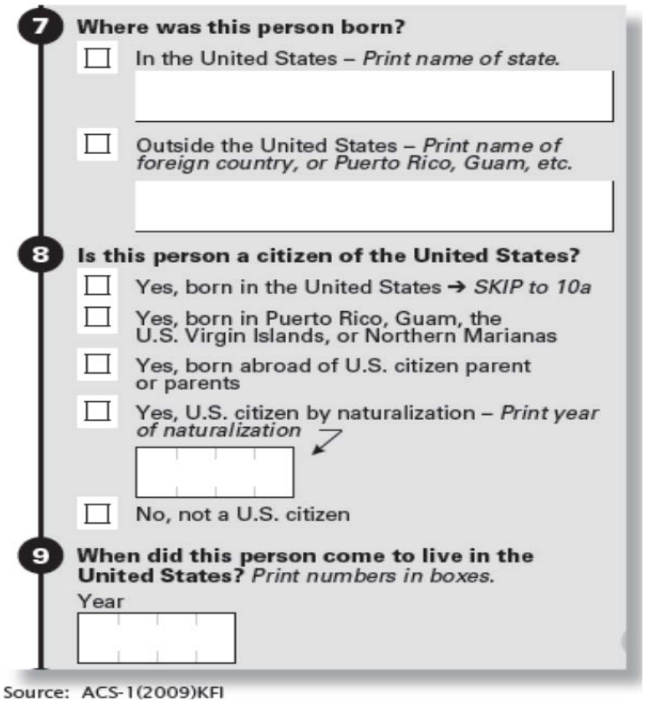
[5] That is the difference between Cooper's estimated 2,217.91 Latino CVAP and that same number reduced by 22 adult Latinos (2195.91) and 24 adult Latino citizens (2,193.91) in that same district which has 2,196.17 non-Latino CVAP.

[6] For further details, see U.S. Census Bureau, *Design and Methodology: American Community Survey* (Washington, DC: US Government Printing Office, 2009), Section 10.6.

Figure 1. Place of Birth, Citizenship, and
Year of Entry Questions in the ACS



Source: ACS-1(2009)KFI

26. Following its established practice, the Census Bureau documents the number of estimated persons for whom a given variable had to be imputed. Where critical decisions hinge on ACS data, the Census Bureau advises as follows:

> Item nonresponse measures allow data users to judge the completeness of the data on which the survey estimates are based. Final estimates can be adversely impacted when item nonresponse is high and bias can be introduced if the characteristics of the nonrespondents differ from those reported by respondents. Item nonresponse and unit nonresponse both contribute to potential bias in the estimates.[7]

27. Imputation is a specific source of non-sampling errors that can result from mistakes in how the ACS data are reported or coded, owing to problems related to non-response or interviewer bias.[8] These errors, and the associated uncertainties they introduce, compound published "margins of error" statistics. Imputation is the Bureau's last resort when the ACS respondent does not respond to a question on the ACS questionnaire.

[7] Source: http://www.census.gov/acs/www/methodology/item_allocation_rates_definitions/

[8] Source: http://www.sccommunityprofiles.org/acs_ovr/ACS_MOE.php

4. "Current Residence" vs. "Usual Place of Residence"

28. Residence rules define who is included in a census or survey. One of the most important differences between the ACS and the decennial 2010 Census is that the ACS assigns residence as the person's "current residence" rather than as the person's "usual place of residence." The ACS uses a 2-month residence rule, which includes anyone who is living at the sample address at the time of the ACS interview and who has lived or plans to live at that housing unit for more than 2 months. The 2010 Census, by contrast, counts a person at that sample address only if that is the person's *usual* place of residence.

29. Yakima's growth in the 20th century was fueled primarily by agriculture. The Yakima Valley produces many fruit and vegetable crops, and many of the city's residents have been drawn to Yakima by seasonal jobs associated with picking, processing, marketing and support services for the agricultural economy. Migrant farm laborers over the years have included persons of Native American, Japanese, and Mexican, and more recently, Thai descent.

30. The Census 2010 "usual residence on April 1, 2010" rule is in keeping with the focus of the census on the requirements of congressional apportionment and state redistricting. According to Census Bureau technical documentation:

> Residence rules determine which individuals are considered to be residents of a particular housing unit or group quarters. While many people have definite ties to a single housing unit or group quarters, some people may stay in different places for significant periods of time over the course of the year. For example, migrant workers move with crop seasons and do not live in any one location for the entire year.[9]

31. This means that some persons who would *not* be considered residents under the census definition *would* be considered residents under the ACS definition (and vice versa). That is why the Census Bureau warns that: "Appreciable differences may occur in areas where large proportions of the total population spend several months of the year in what would not be considered their residence under decennial census rules."[10]

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[9] Source: US. Census Bureau, *A Compass for Understanding and Using American Community Survey Data: What Researchers Need to Know* (Washington, DC: U.S. Government Printing Office, 2009), Appendix A-2. Accessible at: www.census.gov/acs/www/Downloads/handbooks/ACSResearch.pdf

[10] *Ibid.*, p. A-9.

5. Citizenship Misreporting

32. Census Bureau research on over-reporting of citizenship is a further basis for caution. In Mr. Cooper's demonstration District 1, the true number of voting-age Latinos who are citizens is very likely less than the point estimate, since there is firm evidence that some noncitizens are misreported as "naturalized citizens." The American Community Survey Public Use Microdata Sample data document such misreporting specific to Yakima. These data indicate that the ACS counted approximately 33 foreign-born Latinos of voting-age as "naturalized citizens," even though these persons reported having lived in the US for less than the five years necessary to qualify for naturalization. These findings for Yakima manifest a known phenomenon—citizenship misreporting—documented in prior Census Bureau staff research.[11]

33. I have tabulated the ACS 2007-2011 5-year PUMS file for the area corresponding to the City of Yakima and surrounding suburbs (PUMA 0902, viewable at http://www2.census.gov/geo/maps/puma/puma2k/wa_puma5.pdf). These data from the Census Bureau show that 1.3% of the foreign-born Hispanics 18+ who were reported as "naturalized citizens" nevertheless reported having lived in the US for less than 5 years. This rate indicates that as many as 33 of the Hispanic adults residing in the City of Yakima and classified as "naturalized citizens" are not, in fact, citizens.[12] Several of these 33 may have legal permanent resident status based on a marriage to a US citizen, in which case it is conceivable that the person became a naturalized citizen after only 3 years of continuous residence (assuming that person also met numerous further conditions necessary for eligibility to naturalize).[13] Most of these 33 cases, though, are instances of citizenship misreporting by foreign-born adult Hispanics in the City of Yakima.

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[11] See: R. Warren and J. S. Passel, "A Count of the Uncountable: Estimates of Undocumented Aliens Counted in the 1980 United States Census," *Demography* 24 (3), 1987, pp. 375-394; and unpublished appendix.

[12] The estimate of 33 presumptive noncitizens is derived by multiplying the fraction of foreign-born Latino adults reported as naturalized citizens in PUMA 0902 who misreported citizenship (42/4107) by the number of foreign-born Latino adult naturalized citizens (3,208) in the City of Yakima, published in ACS Table B05003I for ACS 2007-2011.

[13] Eligibility for naturalization generally requires one to have resided continuously in the US as a lawful permanent resident (LPR) for at least 5 years. One exception to that "continuous residence" requirement is for a person whose LPR status is based on a marriage to a US citizen. If certain further requirements can be met, it is hypothetically possible for a person to be eligible after only 3 years of continuous residence.
Source: US Department of Homeland Security, A Guide to Naturalization, accessed at www.uscis.gov/files/article/M-476.pdf

6. Quantifying These Technical Limitations

34. There are ample grounds for doubting the reliability of Mr. Cooper's count of Latino voting-age citizens in each of his demonstration districts, given the above technical limitations. Plaintiffs' entire case for the first *Gingles* factor hinges on 22 to 24 Latino citizens of voting-age. In the demonstration District 1 of Illustrative Plan 1, that is the difference between Cooper's estimated 2,217.91 Latino CVAP and that same number reduced by 22 adult Latino citizens (2195.91) and 24 adult Latino citizens (2,193.91) in that same district which has 2,196.17 non-Latino CVAP. (The corresponding difference is even narrower in Illustrative Plan #2.) If Mr. Cooper's 2,217.91 estimate is off by just 22 to 24 persons, the demonstration district would not be majority-Latino and would therefore fail to meet the first *Gingles* precondition.

35. For the reasons set forth above, the 2007-2011 ACS data on which Mr. Cooper relies is not refined enough to form a demonstration district in where the "demonstration" hinges on just 22 to 24 persons. The following straightforward demographic accounting underscores this point:

A. There are 182 foreign-born persons in the City of Yakima (and fully 92% of the City's foreign-born persons are Latino) who did not provide citizenship status in their ACS survey response. The Census Bureau had to infer the citizenship of these people.
B. Moreover, 33 foreign-born Latinos in the City appear to have been wrongly classified as citizens, based on their too-brief residence in the United States.
C. Altogether, then, 215 foreign-born persons (182 who are very likely Latino and 33 who are definitely Latino) the City of Yakima have dubious citizenship status.
D. The demonstration district in each of Mr. Cooper's illustrative plans encompass 19% of the City's Latino voting-age citizens That means that each demonstration district is likely to include on the order of 41 (i.e., 19% of 215) foreign-born persons whose citizenship status is dubious.
E. In each demonstration district, then, the 41 Latinos for whom citizenship is in serious doubt is nearly double the estimated 24-person majority supporting Plaintiffs' case for having satisfied the first *Gingles* precondition.

36. The Census Bureau publishes detailed caveats pertaining to its published ACS estimates.[14] The Bureau openly acknowledges that there are mistakes in how the ACS data are reported or coded. When critical decisions hinge on ACS data, analysts are obliged to heed the Bureau's advice: "Item nonresponse measures allow data users to judge the completeness of the data on which the survey estimates are based." (See footnote 7 above.)

37. In order to find that Cooper's demonstration District 1 has a Latino majority among the district's CVAP, one would have to ignore that advice and overlook the following sources of bias and other flaws whereby (in the Census Bureau's words): "Final [ACS] estimates can be adversely impacted":

A. The uncertain odds (56 to 44 by my preliminary calculations) that the district actually is majority Hispanic, given the margin of error associated with "50.25%".
B. There fact that 182 Latinos did not answer the citizenship question, thereby requiring the Census Bureau to impute a response. If any 22 to 24 of those 182 voting age Latinos were assigned citizenship status erroneously, this incremental error would threaten to invalidate the conclusion of majority found in (i).
C. The possibility that demonstration District 1 may not be the "usual place of residence" for every single one of the 2,217.91 Latino voting-age citizens whom the ACS counts as "current residents" of demonstration District 1, based on the ACS "current residence" rule.

UNEQUALLY WEIGHTED VOTES IN DIFFERENT DISTRICTS

38. Plaintiffs' expert Cooper has crafted two illustrative plans, each with a majority-Latino CVAP demonstration District 1 (Cooper Exhibits C-1 and D-1).[15] Mr. Cooper's single-minded purpose in devising each demonstration District 1 was to aggregate the most heavily Latino contiguous areas of the City so as to boost Latinos' *share* among whatever *number* of voting-age citizens that district happened to encompass. The result was a large Latino share (50.25%) at the expense of a small number (just 4,414 of the City's 54,234 voting-age citizens).

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[14] See US. Census Bureau, *A Compass for Understanding and Using American Community Survey Data: What Researchers Need to Know* (Washington, DC: U.S. Government Printing Office, 2009), *op. cit.*

[15] *Declaration of William S. Cooper* dated February 1, 2013, with accompanying Exhibits, in *Montes et al. v. City of Yakima, et al.*

39. In the City of Yakima, a district drawn for the sole purpose of making Latinos the majority of CVAP would invariably cause the votes of eligible voters in that one district to carry far more weight than a vote in another district. That is because any Latino majority-CVAP district encompassing 1/7th (14.3%) of the City's *total* population can encompass at most 8.4% of the City's *voting-age citizen* population. That 8.4% of eligible voters would necessarily exercise 14.3% of the power in electing City Council members—in effect, "one person, 1.7 votes." Conversely, the remaining 91.6% of the eligible voters across the City would exercise only 85.7% of the power in electing City Council members—i.e., "1 person, 0.94 votes."

40. Mr. Cooper's two demonstration districts exemplify this dilemma. As seen in Table 2, either plan would have the effect of conferring 14.3% of the power to elect City Council members on a mere 8.1% to 8.4% of the City's eligible voters—those residing in demonstration District 1, which he devised solely to maximize Latino eligible voters. In effect, District 1 bestows a political premium: a vote that counts for at least 170% (i.e., 14.3 divided by 8.4) of what a vote should count. By contrast, a vote cast by each individual eligible voter in proposed Districts 6 or 7 would necessarily be underweighted. In each of those districts, either plan would have the effect of conferring 14.3% of the power to elect City Council members on about 17.4% of the City's eligible voters in proposed District 7. That is a political penalty: a vote that counts for just 82% (i.e., 14.3 divided by 17.4) of what a vote should count.

41. Dividing the above political penalty (82%) by the above political premium (170%) reveals that either illustrative plan would severely penalize the voters in several districts. Under Cooper's Illustrative Plan 1, the voters in Districts 6 and 7 would exercise only 48% of the political power that the voters in demonstration District 1 exercise (i.e., 82 divided by 170). Under Illustrative Plan 2, the voters in Districts 3, 6, and 7 would exercise only 49% of the political power that the voters in demonstration District 1 exercise (85 divided by 172).

42. It is unnecessary to tolerate this degree of imbalance. However, Mr. Cooper does so by giving exclusive emphasis to Latino ethnicity in drawing each District 1.

Table 2

Derivation of Underweighted Votes in Cooper Plans 1 & 2

	Plan 1:						Plan 2:				
1.	Of 21,837 HVAP, only 11,754 are HCVAP, which is:				53.83%	1.	Of 21,837 HVAP, only 11,754 are HCVAP, which is:				53.83%
	2,217.91						2,279.36				
	2,258.08						2,172.07				
	2,144.56						2,171.92				
	2,018.64						2,063.73				
	1,099.23						1,055.32				
	677.69						673.72				
	1,338.07						1,338.07				
	11,754.18	(Total, D1-D7)					11,754.19	(Total, D1-D7)			
2.	Total CVAP (according to Cooper's data):					2.	Total CVAP (according to Cooper's data):				
	Hispanic	Non-Hisp	Total CVAP	% of Total CVAP			Hispanic	Non-Hisp	Total CVAP	% of Total CVAP	
	2,217.91	2,196.17	4,414.08	8.14%			2,279.36	2,267.27	4,546.63	8.38%	
	2,258.08	2,975.21	5,233.29	9.65%			2,172.07	2,925.44	5,097.51	9.40%	
	2,144.56	6,913.74	9,058.30	16.70%			2,171.92	7,011.18	9,183.10	16.93%	
	2,018.64	5,581.12	7,599.76	14.01%			2,063.73	5,645.58	7,709.31	14.21%	
	1,099.23	7,857.10	8,956.33	16.51%			1,055.32	7,975.04	9,030.36	16.65%	
	677.69	8,833.46	9,511.15	17.54%			673.72	8,532.28	9,206.00	16.97%	
	1,338.07	8,122.84	9,460.91	17.44%			1,338.07	8,122.84	9,460.91	17.44%	
	11,754.18	42,479.64	54,233.82	100.00%			11,754.19	42,479.63	54,233.82	100.00%	
	Total (ACS 2009-11)-->		54,537	<--ACS 2009-11			Total (ACS 2009-11)---->		54,537	<--ACS 2009-11	
	Hispanic (ACS 2009-11)-->		11,802	<--ACS 2009-11			Hispanic (ACS 2009-11)-->		11,802	<--ACS 2009-11	
3.	Ideal CVAP (1/7):		7,747.69	<--Cooper's		3.	Ideal CVAP (1/7):		7,747.69	<--Cooper's	
			7,791	<--ACS 2009-11					7,791	<--ACS 2009-11	
4.	Deviation from ideal CVAP (Cooper's 7,747.69)					4.	Deviation from ideal CVAP (Cooper's 7,747.69)				
	District	CVAP	% of Ideal				District	CVAP	% of Ideal		
	1	4,414.08	57.0%				1	4,546.63	58.7%		
	2	5,233.29	67.5%				2	5,097.51	65.8%		
	3	9,058.30	116.9%				3	9,183.10	118.5%		
	4	7,599.76	98.1%				4	7,709.31	99.5%		
	5	8,956.33	115.6%				5	9,030.36	116.6%		
	6	9,511.15	122.8%				6	9,206.00	118.8%		
	7	9,460.91	122.1%				7	9,460.91	122.1%		
5.	Ratio of D1 to D7:		47%			5.	Ratio of D1 to D7:		48%		
	Ratio of D7 to D1:		214%				Ratio of D7 to D1:		208%		
	Ratio of D6 to D1:		215%				Ratio of D6 to D1:		202%		

Sources: Cooper's Exhibits C-1 and D-1, with supplemental data furnished in letter from Ben Stafford to John Safarli dtd. 2/21/2013.

43. The effects of this imbalance would fall unequally on Latinos in one district and non-Latinos in all other districts. Furthermore, Mr. Cooper's data make it clear that those eligible voters who would be most severely disadvantaged include the majority of the City's American Indian, Asian, and African American eligible voters.

44. In summary, Plaintiffs' attempt to meet the first *Gingles* precondition relies on potentially flawed data of unknown confidence. Even if these technical issues with underlying data could be resolved, the unavoidable electoral imbalance that would result poses two questions: (1) Is it constitutional to undersize the citizen population in one (Latino) district while oversizing the citizen population in another district? In other words, should only 4,414 or 4,547 citizens in demonstration District 1 get to elect a member to the Yakima City Council member, while 9,461 or 9,511 citizens in a neighboring district get to elect another city council member? (2) Would this electoral imbalance cause the unlawful dilution of votes cast by one or more protected groups (e.g., American Indians or Asians) whose numbers are disproportionately concentrated outside demonstration District 1?

III. SECOND AND THIRD GINGLES PRECONDITIONS

45. The two further *Gingles* preconditions necessitate applying one or more statistical techniques, such as homogeneous precinct analysis, ecological inference, etc.[16] These techniques require datasets that meet certain specific requirements: (1) the dataset must contain enough voting precincts in the relevant jurisdiction (here, the City of Yakima) to detect cohesiveness and/or polarized voting; and (2) the Latino share of voters or registrants in those precincts must span a sufficiently broad range, extending from precincts that are mostly non-Latino to precincts that are mostly Latino. The voting patterns in such datasets, refracted through the prism of statistical analysis, are what can reveal the existence of Latino political cohesiveness and racially polarized voting. A dataset that falls short of these requirements cannot reliably indicate whether or not a group votes cohesively or whether voting is racially polarized.

46. The precinct-level data available for Yakima City Council elections suffice for the first of the above two requirements but not the second (see Table 3). In most precincts, the infrequent Latino who votes is submerged among many more non-Latinos voting in that same precinct, a circumstance that may leave only faint and unreliable statistical traces of Latino voting preferences. Among voters casting ballots, precincts span a range of only 0.0% to 30.3% Spanish surnamed; none is homogeneously Latino (i.e., a precinct in which Latino voters comprise at least 90% of all voters). There are only homogeneously *non-Latino* precincts, which can indicate the favored candidate of non-Latino voters.

[16] See for example: Gary King, *A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data* (Princeton: Princeton University Press, 1997).

Table 3. LATINO SHARE OF REGISTRANTS BY PRECINCT: 11/2009 GENERAL ELECTION

2009 City Council Position 5								
PCT.	Ballots Cast	Reg'd Voters	ETTL	RODRIGUEZ	Write-In	Total voters	Spanish surnamed	% Spanish surnamed
0101	268	759	111	149	2	268	54	20.1%
0104	190	660	91	91	3	190	29	15.3%
0110	622	1,320	254	353	1	622	44	7.1%
0111	439	1,187	187	235	2	439	64	14.6%
0116	85	178	35	48	0	85	8	9.4%
0118	147	321	80	59	1	147	9	6.1%
0120	273	908	110	156	3	273	72	26.4%
0126	231	976	101	121	0	231	70	30.3%
0127	324	835	165	151	3	324	47	14.5%
0129	357	946	185	162	1	357	60	16.8%
0131	610	1,365	298	292	3	610	63	10.3%
0133	784	1,451	341	415	3	784	42	5.4%
0134	855	1,465	388	447	0	855	49	5.7%
0138	1,366	2,321	701	619	1	1366	44	3.2%
0142	693	1,535	404	273	5	693	64	9.2%
0154	820	1,701	388	389	3	820	39	4.8%
0155	610	1,175	312	280	0	610	44	7.2%
0156	371	1,008	190	172	2	371	60	16.2%
0162	303	656	168	130	0	303	18	5.9%
0163	938	1,372	456	446	2	511	12	2.3%
0165	11	17	10	1	0	11	0	0.0%
0169	1,162	1,787	580	550	3	1,163	35	3.0%
0170	941	1,716	445	470	3	941	61	6.5%
0179	985	1,807	541	412	2	984	34	3.5%
0181	737	1,278	429	289	2	737	17	2.3%
0182	988	1,739	526	426	1	988	25	2.5%
0183	487	792	263	209	0	487	14	2.9%
0184	347	811	188	150	1	347	38	11.0%
0185	444	784	234	194	1	444	15	3.4%
0186	555	1,130	306	231	0	556	23	4.1%
0187	619	1,115	349	245	1	619	32	5.2%
0188	390	739	202	173	1	389	23	5.9%
Total	17,952	35,854	9,038	8,338	50	17,525	1,209	6.9%

Sources: Election results accessed at www.yakimacounty.us/vote/english/Returns.html; and Plaintiff's file # Yakima 00020029.xlxx.

47. The November 3, 2009 General Election illustrates the difficulty one confronts in trying to show that Latino voters in the City of Yakima vote cohesively and/or that non-Latinos vote as a bloc to defeat the candidate that Latino voters prefer. In the Ettl-Rodriguez contest for Position 5, a "Latino-favored" candidate cannot be identified unambiguously. That is because in some homogeneously *non-Latino* precincts, voters favored Rodriguez, whereas in other such precincts, voters instead favored Ettl:

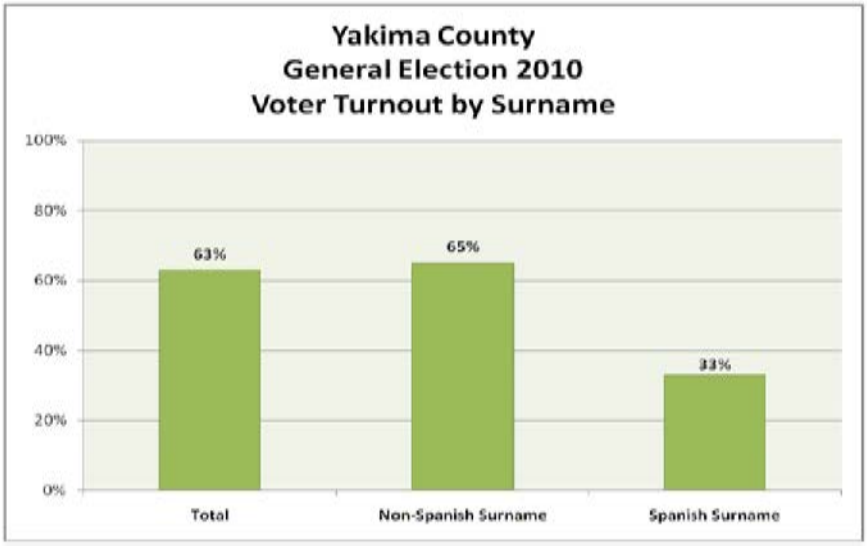
- In precincts 110, 116, 133, 134, 154, and 170—in each of which over 90% of the voters were *non-Latino*—these non-Latino voters favored *Rodriguez*. This voting pattern in six homogeneously non-Latino precincts is strong evidence that Rodriguez was the candidate whom non-Latinos favored.
- Voters in other homogeneously non-Latino precincts, however, favored *Ettl*, which directly contradicts the above.

48. With no homogeneously *Latino* precincts, all one can conclude is that each candidate was favored by *some* non-Latino voters—leaving unanswered the question of which candidate (if either) was the one whom Latino voters favored. Furthermore, without an identifiable Latino-favored candidate, one is left to conclude is that majority bloc voting defeated the *losing* candidate (a tautology). Alternative explanations (e.g., party affiliation or each candidates' positions on salient issues) explanations may fit the facts better than an artificial characterization of voting patterns as purely "racial."

IV. FACTS PERTAINING TO SENATE FACTORS

49. The Senate Report that accompanied Section 2 of the VRA as amended in 1982 included a set of factors that courts could consider in deciding whether an electoral structure makes it more difficult for minorities than for whites to elect their candidates of choice. Among those factors is whether lingering effects of past discrimination continue in evidence.[17] A plaintiff may cite a comparatively low rate of voter registration or turnout by the minority group to support a claim that past discriminatory policies continue to deter participation by that minority. Here, plaintiffs have furnished the exhibit shown in Figure 2 comparing Spanish-surnamed and non-Spanish-surnamed voter turnout among Yakima County registrants in the 2010 General Election.

Figure 2



Source: Plaintiffs' document identified as ACLU Yakima00004459

50. Differences in registration or turnout like the one shown in Figure 2 must be interpreted with caution. Such differences arise partly from the different age structures of the Latino and non-Latino adult populations. To the extent that Latinos have a distinctly "young" adult age distribution, they may exhibit lower rates of political participation overall for a purely demographic reason.

51. How much of the difference in Figure 1 is attributable to age structural differences between the Spanish-surnamed and non-Spanish-surnamed populations? To make a valid comparison of Latino and non-Latino voter turnout, I conducted an age-standardization analysis (detailed in the

[17] See: P. A. Morrison, " 'Lingering Effects' of Discrimination: Tracing Persistence Over Time in Local Populations," *Population Research and Policy Review* (25), 2006, especially pp. 129-131.

Appendix to this report). Based on this analysis, I conclude that the actual gap in voter turnout rates shown in Figure 2 is only three-fifths as wide as shown there after one controls for differences in age structure between the two populations. Put another way, Latinos' comparatively lower turnout is due partly to the fact that two-thirds of the City's Latino registrants are under age 45 (ages at which eligible voters are least likely to vote), whereas two-thirds of the City's non-Latino registrants are 45 and older (ages at which eligible voters are most likely to vote).

V. REVIEW OF CERTAIN EXOGENOUS ELECTIONS

52. This section presents the results of other exogenous elections that reveal the choices City-resident voters made among the candidates for other offices within Yakima County. These contests include elections of the Yakima School District Board of Directors and members of the State House of Representatives.

YAKIMA SCHOOL DISTRICT ELECTIONS

53. The Yakima School District's electorate is closely congruent with the City of Yakima's electorate. From 2001 through 2013, a Spanish-surnamed candidate (either Ybarra of Garcia) has served as a Board of Director for 10 of those 12 years (see Table 4). Since 2003, a Spanish-surnamed candidate has won and retained School Board Position #4.

Table 4

Yakima School District Board Election: 2001-2011

Election	Office	Candidate	No. of votes
2011	#7 position 3	Vornbrock	unopposed
	#7 position 4	Garcia [SSN]	unopposed
2009	#7 position 1	Scoggins	8,267
		Navarro [SSN]	3,201
2009	#7 position 2	Ranta	8,243
		Lee	2,924
2007	#7 position 1	Navarro [SSN]	unopposed
	#7 position 3	Vornbrock	unopposed
	#7 position 4	Ybarra [SSN]	unopposed
	#7 position 5	Rice	unopposed
2005	#7 position 1	Scoggins	unopposed
	#7 position 2	Ranta	9,685
		Saenz [SSN]	3,504
	#7 position 3	Vornbrock	8,714
		McCormick	4,156
2003	#7 position 3	Tuttle	5,726
		Sader	3,687
	#7 position 4	Ybarra [SSN]	5,595
		Camerer	4,549
	#7 position 5	Rice	unopposed
2001	#7 position 1	Scoggins	6,470
		Cheatom	5,921
	#7 position 2	Greenberg	unopposed
	#7 position 4	Carlton	unopposed

Note: "[SSN]" denotes that candidate's surname appears on Census Bureau List of Spanish Surnames.

Source: Yakima County Elections Division, accessed at www.yakimacounty.us/vote/english/Returns.htm

WASHINGTON STATE HOUSE OF REPRESENTATIVES ELECTIONS

54. The 2008 State House of Representatives election offers another revealing comparison of electoral choices by City-resident voters (see Table 5).

Table 5

WA State House of Representatives Election History: 2008				
Election	Office	Candidates	No. of votes (all voters)	No. of votes (city voters)
2008	**Legis. Dist. 14, Pos. 1**	Johnson (Rep.)	23,790	13,757
		Ybarra [SSN] (Dem.)	20,895	14,536
2008	**Legis. Dist. 14, Pos. 2**	Ross (Rep.)	31,175	18,455
		Ramirez [SSN] (Dem.)	12,618	9,168
Note: "[SSN]" denotes that candidate's surname appears on Census Bureau List of Spanish Surnames.				
Source: Yakima County Elections Division, accessed at www.yakimacounty.us/vote/english/Returns.htm				

55. In Legislative District 14, Position 1, the Latino candidate Ybarra lost countywide. However, City voters favored Ybarra, 14,536 votes to 13,757 votes for Johnson, her Republican opponent. Simultaneously, these same City voters, casting ballots for Position 2, favored Ross (the Republican candidate) over Latino candidate Ramirez.

56. The Position 1 result—both alone and in the context of the Position 2 result—contradicts the assertion that white bloc voting defeats the Latino-favored candidate.

VI. CONCLUSIONS

A. The first of three necessary *Gingles* preconditions that Plaintiffs must satisfy for an actionable vote dilution claim is that Latinos must be "sufficiently large and geographically compact to constitute a majority in a single-member district." My analysis discredits Plaintiffs' claim to have satisfied this precondition. The supporting data are conspicuously tainted and, in my opinion, unreliable for making the very precise estimates that are required in this case.

B. Mr. Cooper's procedure for estimating numbers of Latino citizens in individual city blocks generates estimates is plagued by internal contradictions that are logically impossible. In my opinion, those contradictions raise a red flag—especially where the estimated Latino majority in demonstration District 1 is so slender (i.e., 50.25% in Illustrative Plan 1, 50.13% in Plan 2). It is from these tainted data that Mr. Cooper has derived the fragile conclusion that Latinos (by a margin of 22 to 24 persons) are the majority of the CVAP in demonstration District 1 of Illustrative Plan 1.

C. The American Community Survey data are unsuited to making the very fine distinction Mr. Cooper attempts to make, which hinges on just 22 to 24 persons. The Census Bureau had to impute the citizenship of approximately 35 voting-age residents of demonstration District 1 in each of Mr. Cooper's two illustrative plans. Another six voting-age Latinos in each demonstration district apparently misrepresented their citizenship on the ACS questionnaire. Each demonstration district, then, is likely to include on the order of 41 foreign-born persons whose citizenship status is in serious doubt—a number that is nearly double the estimated 22-to-24-person majority supporting Plaintiffs' case for having satisfied the first *Gingles* precondition.

D. Apart from these technical measurement issues, a district drawn for the sole purpose of making Latinos the majority of CVAP would inevitably cause the votes of eligible voters in that one district to carry twice the weight of a vote in another district. Moreover, this imbalance would be decidedly non-neutral along racial and ethnic lines, since those whose votes would be debased are disproportionately American Indian, Asian, African American, and non-Latino white voters. This unnecessary electoral imbalance poses two questions: (a) Is it constitutional to undersize the citizen population in one (Hispanic) district while oversizing the citizen population in another district? In other words, should only 4,414 or 4,547 citizens in demonstration District 1 elect a

member to the Yakima City Council, while 9,461 or 9,511 citizens in a neighboring district elect another city council member? Would this electoral imbalance causes unlawful dilution of votes cast by one or more protected groups (e.g., American Indians or Asians) whose numbers are disproportionately concentrated outside demonstration District 1?

E. Available data at the precinct level hinder reliable conclusions pertaining to the second and third *Gingles* preconditions. In most precincts, the infrequent Latino who votes is submerged among many more non-Latinos voting in that same precinct, a circumstance that may leave only faint and unreliable statistical traces of Latino voting preferences.

F. Differences in registration or turnout (like the one shown in Figure 2) arise partly from the different age structures of the Latino and non-Latino adult populations. To the extent that Latinos have a distinctly "young" adult age distribution, they will exhibit lower rates of political participation overall for a purely demographic reason. The actual gap in voter turnout rates shown in Figure 2 is only two-thirds as wide as shown there after controlling for differences in age structure between the two populations.

REPORT APPENDIX

AGE STANDARDIZED COMPARISON OF VOTER TURNOUT RATES

Differences between Latinos and Non-Latinos in rates of voter registration and turnout arise partly from the different age structures of the Latino and non-Latino adult populations. To the extent that Latinos have a distinctly "young" adult age distribution, they will exhibit lower rates of political participation overall for this demographic reason. Appendix A details the age-standardization methodology I use to make a valid comparison of Latino and non-Latino voter turnout in the November 2012 General Election.

Age standardization is a demographic technique for comparing populations with dissimilar age structures to provide an "apples-to-apples" comparison. As an obvious illustration, the overall death rate (annual number of deaths per 1,000 population) is twice as high in Florida as in Alaska. Much of that difference reflects the disproportionate share of Floridians who are elderly compared to Alaskans. For a valid comparison here, we need to consider both states as though they had the same hypothetical age structure (either a comparably "elderly" Alaska or a comparably "youthful" Florida).[18]

To offer a valid comparison of Latino and non-Latino voter turnout in the November 2012 General Election, I begin with the age-specific voting rates by registered voters in the City of Yakima in the November 2012 election. Table A1 shows these rates for the two groups compared here: Latino and non-Latino registrants eligible to vote. Table A2 documents the dissimilar age structures of the City's Latino and non-Latino registrants who were eligible to vote in the November 2012 General Election. Note that 2/3 of the City's 7,050 Latino registrants are concentrated in the under-45 age range. By contrast, 2/3 of the City's 31,585 non-Latino registrants are 45 and older.

[18] An age-standardized participation rate is a hypothetical representation of a population's registration or turnout for analytic purposes. Age standardization eliminates the effect of differences in age distribution between the total rates being compared (see J. S. Siegel, *Applied Demography*, San Diego: Academic Press, 2002, p. 18). Paraphrasing Siegel (2002), we can derive an age-standardized registration rate by weighting a set of observed age-specific registration rates with a standard age distribution, to create a hypothetical total (all-ages) registration rate and thereby afford an undistorted comparison of population subgroups (analogous to comparing Florida's population with a comparably "elderly" Alaska population in the preceding illustration).

Table A1. Reported Voting Rates, November 2012
General Election by City of Yakima Registrants

	Voting Rate	
Age Group	Latino	Non-Latino
18-24 years	0.432	0.541
25-44 years	0.536	0.668
45-64 years	0.712	0.829
65-74 years	0.782	0.929
75 & older	0.771	0.884
All ages	0.578	0.790

Source: Author's tabulation of Plaintiffs' file "VOTERS_2013".

Table A2. Dissimilar Age Structures of
Latino and Non-Latino Registrants

Age Structure of All Registrants in 11/2012 City Election				
	All Registrants		Percent Distribution	
Age Group	Latino	Non-Latino	Latino	Non-Latino
18-24 years	1,485	2,151	21.1%	6.8%
25-44 years	3,189	8,505	45.2%	26.9%
45-64 years	1,830	10,967	26.0%	34.7%
65-74 years	358	5,002	5.1%	15.8%
75 & older	188	4,960	2.7%	15.7%
Total	7,050	31,585	100.0%	100.0%

Source: Author's tabulation of data in Plaintiffs' file "VOTERS_2013".

Next, I show each group's votes at the corresponding group rate (calculations shown in Table A3). That is, 43.2% of the City's 1,485 Latino registrants ages 18-24 turned out to vote, generating 642 Latino voters ages 18-24. The sum of these implied Latino voters across all ages is 4,078. Dividing the City's 4,078 Latino voters by its 7,050 Latino registrants yields the all-ages voting rate of 57.8 per hundred. I repeat the same calculations for non-Latinos (i.e., 54.1% of the City's 2,151 non-Latino registrants ages 18-24 turned out to vote, generating 1,163 non-Latino voters ages 18-24, etc.); then divide 24,965 non-Latino voters by the City's 31,585 non-Latino registrants, yielding the all-ages voting rate of 79.0 per hundred.

Table A3. Each Group Voting at Own Group's Rates

Table 3. Each Group Voting at Own Group's Citywide Rates			
	Latinos at Latino Citywide Rates		
Age	Rate	Population	Implied Voters
18-24	0.432	1,485	642
25-44	0.536	3,189	1,708
45-64	0.712	1,830	1,303
65-74	0.782	358	280
75 +	0.771	188	145
All ages	0.578	7,050	4,078
	Non-Latinos at Non-Latino Citywide Rates		
Age	Rate	Population	Implied Voters
18-24	0.541	2,151	1,163
25-44	0.668	8,505	5,683
45-64	0.829	10,967	9,087
65-74	0.929	5,002	4,645
75 +	0.884	4,960	4,387
All ages	0.790	31,585	24,965

At this point, we have two rates—57.8 (Latino) and 79.0 (non-Latino)—which differ by 21.2 percentage points. However, these rates are not strictly comparable due to the dissimilar age structures, which confound comparison. Latinos are overrepresented at the younger ages (where voting rates are lowest) and underrepresented at the more mature ages (where voting rates are highest).

Now let us postulate that Latinos in Yakima are distributed by age exactly as the City's non-Latinos are. That is, 6.8% (instead of 21.1% as shown in Table A2) are ages 18-24; 26.9% (instead of 45.2%) are ages 25-44; etc. I recalculate Latinos' all-ages voting rate (as shown in Table A4, which yields a hypothetical all-ages voting rate of 66.6. This rate is 8.8 percentage points above the 57.8 rate based on the unstandardized comparison (Table A3, top panel). Thus, the initial 21.2 percentage-point gap would shrink to a 12.8-point gap—that is, by two-fifths—were the two populations identical in age structure.

Table A4. Non-Latinos Voting at Latinos' Citywide Rate

Age	Non-Latinos at Latino Citywide Rates		
	Rate	Population	Implied Voters
18-24	0.432	2,151	930
25-44	0.536	8,505	4,555
45-64	0.712	10,967	7,809
65-74	0.782	5,002	3,912
75 +	0.771	4,960	3,826
All ages	0.666	31,585	21,032

In summary, were Latino registrants equally concentrated as their non-Latino counterparts are in the politically most active ages, the ethnic gap in voter turnout in the 2012 General Election would be only three-fifths as wide as it appears.

APPENDIX A

CASES I HAVE TESTIFIED IN SINCE SEPTEMBER 2007

1. UNITED STATES DISTRICT COURT FOR THE DISTRICT OF SOUTH CAROLINA COLUMBIA DIVISION, CHADRIC WILEY and LISA LANGLEY WILEY v. ADVANCE AMERICA, CASH ADVANCE CENTERS OF SOUTH CAROLINA, INC. and CHECK INTO CASH OF SOUTH CAROLINA, INC.

2. SUPERIOR COURT FOR STATE OF ALASKA, ALASKA RETIREMENT MANAGEMENT BOARD V. MERCER, CASE # 1 JU-07-974 C I.

3. CIRCUIT COURT, TWENTIETH JUDICIAL CIRCUIT OF ILLINOIS, KITSON V. BANK OF EDWARDSVILLE. CLASS ACTION 3 02-L-807.

4. COMMITTEE FOR A FAIR AND BALANCED MAP, et al. v.
ILLINOIS STATE BOARD OF ELECTIONS, et al. No. 11-C-5065 (N.D. Ill.)

5. PATRICIA FLETCHER, et al. v. LINDA LAMONE AND ROBERT WALKER, US DISTRIC COURT FOR THE DISTRICT OF MARYLAND, GREENBELT DIVISION, CIL. ACTION NO. RWT-11-3220.

6. ALVIN BALDUS, et al. Plaintiffs, v. Members of the Wisconsin Government Accountability Board, UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF WISCONSIN, File No. 11-CV-562.

7. Milwaukee Branch of the NAACP et al. v. Scott Walker et al. Dane County, Wisconsin, Circuit Court, Case Number: 11-CV-5492.

COMPENSATION FOR STUDY AND TESTIMONY IN THIS CASE

I bill my time for research in this case at an hourly rate of $215. I bill my time for testimony as an expert at trial or by deposition at an hourly rate of $400.

Peter A. Morrison

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EDUCATION

B.A., Sociology, 1962, Dartmouth College
Ph.D., Sociology, 1967, Brown University

PROFESSIONAL EXPERIENCE

2009-present — Applied demographic analysis
1969-2009 — Senior Staff Demographer and Resident Consultant, The RAND Corporation, Santa Monica, California
1979-1990 — Founding Director, Population Research Center, RAND
1967-1969 — Assistant Professor, Department of Sociology, and Research Associate, Population Studies Center, University of Pennsylvania, Philadelphia

AREAS OF EXPERTISE

Dr. Morrison's principal expertise centers on applications of demographic analysis in tracking socioeconomic trends and envisioning their consequences for public policy and business. Domestic applications include demographic analysis for electoral redistricting; store site selection; human resource analysis; evaluating employment discrimination claims; evaluating effectiveness of school desegregation remedies; forecasting school enrollments; gauging minority representation within jury pools; and various applications of census and administrative data in monitoring local demographic contexts. International applications include business concerns with corporate strategic planning and globally emerging middle-class consumer markets; identifying and quantifying demographic precursors of expanding consumer markets; comparing and evaluating individual markets; and analyzing forthcoming demographic trends to spot potential business opportunities.

Dr. Morrison performs studies for the private sector and conducts executive briefings on these topics through his consulting firm, founded in 1984. Clients have included American Express, American Stores, Corning, Inc., Ford Motor Co., Marriott International, NBC, New Directions for News, Times Mirror, University of California, and CIBC Securities (Canada).

Dr. Morrison has taught at The RAND Graduate School and lectures periodically before Congressional, academic, and business audiences. He has given testimony before subcommittees of the U.S. Senate and House of Representatives and addressed meetings of the National Science Board, The Conference Board, National League of Cities, National Conference of State Legislatures, University of California Management Institute, American Bar Association, American Society of Newspaper Editors, newsroom seminars for the Casey Journalism Center, County Counsels Association of California, American College of Surgeons, National Association of Homebuilders, Missouri Legislative Forum, World Future Society, and Volunteers of America.

He has served as advisor to the Committee for Economic Development, the Congressional Research Service, and committees of the National Academy of Sciences, U.S. Census Bureau, Department of Agriculture, National Institutes of Health, California Energy Commission, California Governor's Council on Growth Management, Center for California Studies, and United Way.

PROFESSIONAL ORGANIZATIONS/HONORS

Invited participant, U.S. Census Bureau Working Group on 2010 Race and Ethnicity

Member, L.A. Unified School District Enrollment Analysis Technical Advisory Committee

Visiting Lecturer, Helsinki School of Economics and Business Administration, summer 2001

U.S. Census Bureau Advisory Committee on Population Statistics, 1989-1995 (Chair, 1990).

Population Association of America: Board of Directors, 1978-1980; Public Affairs Committee, 1979-1986; Chair, Nominations Committee, 1981-1982; annual Program Organizing Committee, 1995, 1998; Local Arrangements Committee, 2000; Committee on Applied Demography, 1995-1999, Chair, 1998; Development Committee, 2006-.

Southern Demographic Association: Board of Directors, 1999-present; Vice President, 2001; President, 2003.

Center for Spatially Integrated Social Science, UC Santa Barbara: Advisory Board, 2000-

Research Advisory Board, Committee for Economic Development, 1988-1991.

Regents' Lecturer, UCLA, Spring 1987.

Social Science Research Council's Committee on the Survey of Income and Program Participation, 1985-1988.

National Advisory Child Health and Human Development Council, National Institute of Health, 1984-1987.

Population Research Committee, National Institute of Child Health and Human Development, 1977-1979.

Committee on Behavioral and Social Aspects of Energy Consumption and Production, National Academy of Sciences, 1980-1982.

Committee on Urbanization and Population Redistribution, International Union for Scientific Study of Population, Chairman, 1976-1979.

Advisory Subcommittee for Applied Social and Behavioral Sciences, National Science Foundation, 1978-1981.

Future of Rural America Advisory Committee, FHA, 1978-1981.

Editorial Advisory Committee, *Urban Studies,* 1985-1995.

Editorial Advisory Board, *J. Australian Population Assoc., 1995-1998.*

RECENT MEDIA APPEARANCES:

Interviews: CNBC; New York Times; Los Angeles Times; USA Today; Time Magazine; Seattle Times; AMA/Marketing News

Commentary: International Herald Tribune; Pittsburgh Post-Gazette; Los Angeles Times; Atlanta Constitution; Houston Chronicle

SELECTED RECENT PUBLICATIONS/PAPERS

"Quantifying the Effect of Age Structure on Voter Registration," under review by *Social Science Quarterly*.

"Forecasting Hispanics' Ripening Voting Strength at Local Scales," paper to be presented at 2012 Annual Meeting of Southern Demographic Association, Williamsburg, VA

"Gauging Hispanics' Effective Voting Strength in Proposed Redistricting Plans: Lessons Learned Using ACS Data," (coauthored with T. Bryan), for National Academy of Sciences Workshop on the Benefits (and Burdens) of the American Community Survey, Case Studies/Agenda Book, chap. 5 (2012).

"Chinese Workers Could Replace Mexican Immigrants," op-ed in *Houston Chronicle*, Aug. 12, 2011 (coauthored with Dudley Poston, Jr.).

"Integrating Census Data to Support a Motion for Change of Venue," *Population Research & Policy Review* (coauthored with Dean Judson), 2011.

"An Evaluation of Additive and Hierarchical Classifications of Race/Ethnicity as Measured on Census 2000," coauthor (under review).

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