MEMORANDUM

DATE   November 29, 2021

TO   Tyrone Buckley, California Department of Housing and Community Development (HCD)

CC   Tom Brinkhuis, Tawny Macedo, Annelise Osterberg, and Kevin Rolfness; HCD

Kristine Cai and Meg Prince, Fresno Council of Governments

FROM   David Early, Andrea Howard, and Asher Kaplan; PlaceWorks

SUBJECT   Fresno COG 6th Cycle RHNA Determination, Comparable Regions Analysis – Revised November 29, 2021

Dear Mr. Buckley:

On behalf of the Fresno Council of Governments (Fresno COG), I am pleased to submit the following comparable regions analysis (CRA) as a substitute measure for calculating the overcrowding adjustment for the Fresno COG's 6th cycle Regional Housing Needs Determination. State law allows the use of the CRA as a substitute benchmark in place of national averages, recognizing comparisons against national averages may be less appropriate than comparisons against comparable regions with healthy housing markets. The outcomes of Fresno COG's CRA are summarized in **Table 1**.

Table 1. Comparable Regions Average + National Average Summary

Geography	Overcrowding Rate	Lower Income Household Cost Burden Rate	Higher Income Household Cost Burden Rate
Fresno County, CA	9.37%	70.64%	13.42%
USA	3.35%	60.25%	9.89%
Comparable Regions Average	**4.37%**	**60.77%**	**9.45%**

Introduction

After a review of other region's CRAs and consultation with HCD staff, Fresno COG developed the following process to measure comparability:

1. Determine the appropriate geography
2. Identify an initial longlist of counties with populations 66%-130% the size of Fresno County's.
3. Collect data, including the following set of indicators, from the 2019 ACS 5-year estimate for US counties.

4. Score each county in comparison to Fresno County for each indicator, then aggregate these scores to determine a "composite comparability score" for each county to identify counties closest in composite comparability score and population size.
5. Remove counties determined to have unhealthy housing markets.
6. Calculate an average of the overcrowding and cost burden rates for the resulting group of comparable counties.

HCD advised that the process should result in a list of between five and seven comparable counties with healthy housing markets. The process initially identified a list of seven counties, which included one county identified as having markers of an unhealthy housing market. This county was eliminated, resulting in a final list of six comparable counties.

Methodology

1. Determine the appropriate geography

The area covered by Fresno COG is both a county and a metropolitan statistical area, which have coextensive boundaries. Thus, we had to first determine whether to consider counties or MSAs for the CRA. Fresno COG consulted on this question with HCD staff, who suggested that counties are more contained than MSAs and that Fresno County's dynamics were likely to be more similar to those of other counties than other MSAs. Fresno COG therefore determined that the analysis should use counties as the comparable geographic unit.

2. Identify an initial longlist of counties with populations 70%-130% of Fresno County's

The 2019 ACS 5-year estimate reports Fresno County's population as 984,521. Our initial longlist numbers 70 counties with populations between 66%-133% of Fresno County's. The full initial longlist can be found in **Appendix A, Table A-1.**

Fresno County has a relatively large population size among US counties, so comparable counties were generally smaller. Of 70 counties longlisted for population size, only 16 counties had populations larger than Fresno County's, and none of these 16 counties scored highly enough in the composite score comparison (described below) to appear in the final list of counties. The seven counties found to be most comparable to Fresno County through the composite score comparison ranged between 69% and 104% of Fresno County's population size.

3. Collect indicators from 2019 ACS 5-year estimate

Nine comparability indicators were chosen based on precedent Comparable Region Analyses shared by HCD, as well as Fresno COG's knowledge of factors that characterize Fresno County.

- Common CRA Factors (with ACS 2019 5-year estimate Table IDs)
  - Median Household Income (B19013)
  - GINI Index (B19083)
  - Share of population living in poverty (B17020)
  - Share of population with bachelor's degree or higher (B15003)
  - Share of households that moved in 2017 or later (B25038)
  - Median age of workers (B23013)
  - Total workers (16 and over) (B08603)
  - % of population 17 and under or 64 and over (B01001)

- Factors Unique to Fresno County's CRA
  - Share of population working in agriculture, forestry, fishing, hunting, and mining. (C24050)

Although this indicator was not used in CRAs completed in other parts of the state, similar indicators have been used. Fresno County is one of the country's largest agricultural production centers, which makes agricultural workers and their housing needs important considerations. This indicator is included in a similar way to the inclusion of Public Administration Jobs as a comparability indicator in the Sacramento Area Council of Government (SACOG) CRA, in that it helps identify counties that share some degree of comparability with Fresno County in terms of workforce composition.

4. Score each county in comparison with Fresno County. Aggregate these scores to determine a "composite comparability score."

This section describes the scoring and normalization process. Because indicator values vary in scale and format, normalization was necessary for a comparison among them.

1. Initial scoring
Counties were assigned **initial scores** for each indicator. An **initial score** is the percentage difference between a comparable county's value and Fresno County's value for a specific indicator (as an absolute value.)

$$\text{Initial score} = |(y - x)/y|$$

  x = comparable county value
  y = Fresno County value

2. Calculating normalization factors for each indicator

Normalization factors are unique to each indicator. The **normalization factor** for each indicator was calculated by dividing 1 by the **average initial score (z)** across all US counties for that indicator (the sum of all US county initial scores for that indicator divided by the total number of counties).

$$\text{Average initial score} = \text{sum(all US County initial scores)} / \text{\# of US Counties}$$
$$\text{Average initial score} = z$$
$$\text{Normalization factor} = 1/z$$

3. Normalizing scores

Multiplying all **initial scores** for a given indicator by that indicator's **normalization factor** proportionally rescaled scores and caused the average score for that indicator to become 1, which we refer to as the **normalized average score**. This was repeated for each indicator using each indicator's unique **normalization factor**. This process gives us **normalized scores**, with each indicator now sharing the same **normalized average score (1)**.

$$\text{Initial score} = |(y - x)/y|$$
$$\text{Normalization factor} = 1/z$$
$$\text{Normalized Score} = |(y - x)/y| * (1/z)$$

x = comparison county value
y = Fresno County value
z = average initial score = sum(all US County initial scores) / # of US Counties

For example, when scoring median household income comparability for Polk County, Florida, we found the following:

- The **initial score is 0.0627,** which is the percentage difference in median income between Fresno and Polk Counties. |($53,969-$50,584)/$53,969| = 0.0627).
- The **average initial score is 0.204** for household median income. This is the percentage difference between Fresno County and the average US county, or the sum of all US county scores divided by the total number of counties.
- The **normalization factor is 4.90**, which is calculated by dividing 1 by the **average initial score (0.204).**
- The **normalized score for Polk County is 0.307**, which is calculated by multiplying the initial score (0.0627) by the normalization factor (4.90).
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Once the normalized scores are calculated for each indicator, we sum these scores to create a "composite score." The counties with the lowest composite scores are the ones that are most comparable to Fresno County. Higher scores indicate greater difference from Fresno County.

Tables 2 and **3** show the raw scores, the normalized comparability indicator scores, and the composite scores for the seven counties found to be most comparable to Fresno County.

Table 2. Comparability Indicator Values
Source: ACS 2019 5-year estimates

County	Median Household Income	GINI Index	% Population Living in Poverty	% Population 25 Years and Over: Bachelor's Degree or Better	% Occupied Housing Units: Moved in 2017 or Later	Median Worker Age	Total Workers (16 and over)	% Population under 17 or over 64	% Employed Civilian Population 16 Years and Over: Agriculture, Forestry, Fishing and Hunting, and Mining
Fresno County, CA	$53,969	0.4746	22.55%	21.17%	10.64%	37.9	395,689	40.49%	9.69%
Kern County, CA	$53,350	0.4668	21.00%	16.38%	10.52%	37.6	337,438	39.75%	15.83%
El Paso County, TX	$46,871	0.4613	10.08%	23.31%	11.94%	37.6	361,986	39.35%	1.07%
Pima County, AZ	$53,379	0.4694	16.81%	32.38%	13.16%	38.1	442,389	40.35%	1.10%
San Joaquin County, CA	$64,432	0.4529	14.51%	18.76%	9.06%	39.4	303,147	39.84%	4.52%
Polk County, FL	$50,584	0.4452	15.83%	20.17%	11.64%	40.2	281,139	42.44%	1.62%
Oklahoma County, OK	$54,520	0.4911	15.96%	31.99%	13.50%	37.6	373,566	38.94%	3.37%
Bernalillo County, NM	$53,329	0.4770	16.69%	34.41%	11.01%	38.6	317,562	37.85%	1.04%

Table 3. Normalized Comparability Indicator Scores and Composite Scores
Source: ACS 2019 5-year estimates

County	Median Household Income (In 2019 Inflation Adjusted Dollars)	GINI Index	% Pop. Living in Poverty	% Pop. 25 Years and Over: Bachelor's Degree or Better	% Occupied Housing Units: Moved in 2017 or Later	Median Worker Age	Total Workers (16 and over)	% Population under 17 or over 64	% Employed Civilian Population 16 Years and Over: Agriculture, Forestry, Fishing and Hunting, and Mining	Composite Score
Fresno County, CA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kern County, CA	0.06	0.20	0.17	0.69	0.04	0.08	0.16	0.25	0.92	2.57
El Paso County, TX	0.64	0.34	0.26	0.31	0.45	0.08	0.09	0.39	1.30	3.87
Pima County, AZ	0.05	0.13	0.64	1.61	0.87	0.05	0.13	0.05	1.29	4.82
San Joaquin County, CA	0.95	0.56	0.89	0.35	0.54	0.40	0.25	0.22	0.78	4.95
Polk County, FL	0.31	0.76	0.75	0.14	0.34	0.62	0.31	0.67	1.21	5.12
Oklahoma County, OK	0.05	0.43	0.73	1.55	0.99	0.08	0.06	0.53	0.95	5.37
Bernalillo County, NM	0.06	0.06	0.65	1.90	0.13	0.19	0.21	0.91	1.30	5.41

5. Exclude counties determined to have unhealthy housing markets.

HCD advised that comparable regions should have healthy housing markets. With that in mind, Fresno COG developed a methodology to identify any potentially unhealthy housing markets among the seven counties found most comparable to Fresno County.

Fresno COG used cost burden rates as an indicator for identifying and eliminating unhealthy housing markets. Counties with a cost burden average exceeding the national average both by 10% or more for lower income and 5% or more for higher income cost burden averages were to be eliminated.

Table 4 contains a breakdown of these indicators by income group for the seven most comparable counties. Based on these criteria, San Joaquin County was determined to have an unhealthy housing market. As is reflected in **Table 4**, this county has the highest rate of cost burden among comparable counties across both income groups by a substantial margin.

Table 4. Comparable Counties Housing Market Conditions*
Source: 2019 ACS, 2018 CHAS - Income by Cost Burden (Owners and Renters)

Counties	Lower Income Cost Burden	Higher Income Cost Burden
USA Average	60.25%	9.89%
Fresno County, CA	70.64%	13.42%
Kern County, CA	67.41%	13.02%
El Paso County, TX	56.20%	8.46%
Pima County, AZ	63.10%	9.59%
San Joaquin County, CA	**72.02%**	**16.89%**
Polk County, FL	59.83%	10.57%
Oklahoma County, OK	54.00%	5.95%
Bernalillo County, NM	64.58%	9.23%

Bolded *values indicate values outside the specified range set as markers of housing market health.*

6. Calculate the average of the overcrowding and cost burden rates for the resulting group of comparable counties.

Table 5 compares overcrowding and cost burden data for Fresno County with the averages for the final six comparable counties and the United States. The comparable regions averages for overcrowding and cost burden were calculated using the original ACS data on overcrowding and cost burden from each jurisdiction and are the result of dividing the total number of overcrowded or cost burden households in all five comparable regions by the total number of households in all five jurisdictions overall. Detailed tables showing cost burden and overcrowding data and averages for comparable regions can be found in **Appendix A**, **Tables A-2, A-3, and A-4**.

Table 5. Comparable Region Analysis Summary
Source: ACS 2019 5-year estimates, CHAS 2018

County	Overcrowding Rate	Lower Income Household Cost Burden Rate	Higher Income Household Cost Burden Rate
Fresno County, CA	9.37%	70.64%	13.42%
USA Average	3.35%	60.25%	9.89%
Comparable Regions Average	**4.37%**	**60.77%**	**9.45%**
Kern County, CA	9.21%	67.41%	13.02%
El Paso County, TX	5.09%	56.20%	8.46%
Pima County, AZ	3.62%	63.10%	9.59%
Polk County, FL	3.36%	59.83%	10.57%
Oklahoma County, OK	2.71%	54.00%	5.95%
Bernalillo County, NM	2.66%	64.58%	9.23%

Conclusion and Request

After completing steps 1-6, described above, the analysis resulted in a list of six top-scoring comparable counties, shown in **Table 6**.

Table 6. Composite Scores and Comparability Ranking
Source: ACS 2019 5-year estimates, CHAS 2018

County	Population	Composite Score*	Comparability Ranking**
Fresno County, CA	984,521	0.00	0
Kern County, CA	887641	2.57	1
El Paso County, TX	836,062	3.87	2
Pima County, AZ	1,027,207	4.82	3
Polk County, FL	686,218	5.12	5
Oklahoma County, OK	787,216	5.37	6
Bernalillo County, NM	677,858	5.41	7

Smaller numbers indicate closer comparability.
*** Note that the county ranked #4 was eliminated due to excessive cost burden, the specified marker of an unhealthy housing market.*

As is shown in **Table 7**, the six final comparable regions have an average overcrowding rate of 4.37%, 1.02% higher than the national average. Comparable region cost burden rates are 60.77% and 9.05% each for lower and higher income groups, 0.52% above and 0.44% below their respective national averages.

Table 7. Comparable Regions Average + Requested Adjustment
Source: ACS 2019 5-year estimates, CHAS 2018

Geography	Overcrowding Rate	Lower Income Household Cost Burden Rate	Higher Income Household Cost Burden Rate
Fresno County, CA	9.37%	70.64%	13.42%
USA	3.35%	60.25%	9.89%
Comparable Regions Average	**4.37%**	**60.77%**	**9.45%**
Comparable Regions Impact	+1.02%	+0.52%	-0.44%

Fresno COG asks that HCD utilize the Comparable Regions Averages for Overcrowding and Cost Burden, shown in **Table 7**, to determine the Fresno COG region's Final 6th Cycle RHNA Determination.

Table A-1: 66%-133% Population Longlist in Descending Order by Composite Score
Source: ACS 2019 5-year estimates

County	Total Population	As a % of Fresno	Composite Score
Fresno County, California	984,521	100%	0.00
Kern County, California	887,641	90%	2.57
El Paso County, Texas	836,062	85%	3.87
Pima County, Arizona	1,027,207	104%	4.82
San Joaquin County, California	742,603	75%	4.95
Polk County, Florida	686,218	70%	5.12
Oklahoma County, Oklahoma	787,216	80%	5.37
Bernalillo County, New Mexico	677,858	69%	5.41
Jackson County, Missouri	696,216	71%	5.62
Milwaukee County, Wisconsin	951,226	97%	5.67
Jefferson County, Alabama	659,680	67%	5.80
Jefferson County, Kentucky	767,419	78%	5.85
Hidalgo County, Texas	855,176	87%	5.89
Shelby County, Tennessee	936,374	95%	5.92
Pinellas County, Florida	964,666	98%	6.20
Marion County, Indiana	951,869	97%	6.66
Hamilton County, Ohio	813,589	83%	6.72
Cuyahoga County, Ohio	1,247,451	127%	6.75
Erie County, New York	919,355	93%	6.84
Duval County, Florida	936,186	95%	6.97
Lee County, Florida	737,468	75%	7.07
Monroe County, New York	743,341	76%	7.34
Macomb County, Michigan	870,325	88%	7.78
New Haven County, Connecticut	857,513	87%	8.56
Pierce County, Washington	877,013	89%	8.60
Allegheny County, Pennsylvania	1,221,744	124%	8.81
DeKalb County, Georgia	749,323	76%	9.17
St. Louis County, Missouri	996,919	101%	9.34
Essex County, New Jersey	795,404	81%	9.68
Hartford County, Connecticut	893,561	91%	9.70
Franklin County, Ohio	1,290,360	131%	9.76
Salt Lake County, Utah	1,133,646	115%	10.05
Gwinnett County, Georgia	915,046	93%	10.13
Honolulu County, Hawaii	984,821	100%	10.18
Ventura County, California	847,263	86%	10.19
Baltimore County, Maryland	828,018	84%	10.37

County	Total Population	As a % of Fresno	Composite Score
Worcester County, Massachusetts	824,772	84%	10.46
El Paso County, Colorado	698,974	71%	10.48
Essex County, Massachusetts	783,676	80%	10.60
Davidson County, Tennessee	687,488	70%	10.68
Hudson County, New Jersey	670,046	68%	11.12
Multnomah County, Oregon	804,606	82%	11.32
Mecklenburg County, North Carolina	1,074,475	109%	11.36
Snohomish County, Washington	798,808	81%	11.96
Hennepin County, Minnesota	1,245,837	127%	12.11
Oakland County, Michigan	1,253,185	127%	12.23
Cobb County, Georgia	751,218	76%	12.35
Prince George's County, Maryland	908,670	92%	12.40
Lake County, Illinois	701,473	71%	12.64
Will County, Illinois	689,315	70%	12.73
Fort Bend County, Texas	765,394	78%	12.92
Contra Costa County, California	1,142,251	116%	13.20
Montgomery County, Pennsylvania	823,823	84%	13.44
Denver County, Colorado	705,576	72%	13.69
Fulton County, Georgia	1,036,200	105%	13.73
Middlesex County, New Jersey	825,920	84%	13.76
DuPage County, Illinois	929,060	94%	13.97
Denton County, Texas	833,822	85%	14.16
Wake County, North Carolina	1,069,079	109%	14.28
Suffolk County, Massachusetts	796,605	81%	14.63
Travis County, Texas	1,226,805	125%	14.72
Bergen County, New Jersey	930,390	95%	15.05
Norfolk County, Massachusetts	700,437	71%	15.12
Fairfield County, Connecticut	943,926	96%	15.19
Westchester County, New York	968,890	98%	15.76
Montgomery County, Maryland	1,043,530	106%	16.17
San Mateo County, California	767,423	78%	16.50
Collin County, Texas	973,977	99%	16.56
District of Columbia, District of Columbia	692,683	70%	17.29
San Francisco County, California	874,961	89%	18.95
Fairfax County, Virginia	1,145,862	116%	19.69

TABLE A-2: Comparable Regions Cost Burden Summary:
Average Households by Income Group and Average Rates of Cost Burden
Source: CHAS 2018

Detailed Income Group	Average Households Across Comparable Regions by Detailed Income Groups		Simplified Income Group	Average Households Across Comparable Regions by Simplified Income Groups		Average Cost Burden Rates by Simplified Income Group
	Average Cost Burdened Households (>30%)	Average Total Households		Average Cost Burdened Households (>30%)	Average Total Households	
<= 30% HAMFI*	26,723	36,276	Lower Income Households	73,000	120,128	60.77%
>30% to <=50% HAMFI*	24,608	34,929				
>50% to <=80% HAMFI*	21,669	48,923				
>80% to <=100% HAMFI*	6,824	28,456	Higher Income Households	15,689	165,973	9.45%
>100% HAMFI*	8,865	137,518				
TOTAL	88,689	286,103	TOTAL	88,689	286,103	

*"HAMFI" refers to the U.S. Department of Housing and Urban Development (HUD) Area Median Family Income

TABLE A-3: Comparable Regions Cost Burden Calculation Detail
Source: CHAS 2018

Simple Income Group	Detailed Income Group	Kern County, CA		El Paso County, TX		Pima County, AZ		Polk County, FL		Oklahoma County, OK		Bernalillo County, NM	
		Cost Burden (>30%)	Total House-holds	Cost Burden (>30%)	Total House-holds	Cost Burden (>30%)	Total House-holds	Cost Burden (>30%)	Total House-holds	Cost Burden (>30%)	Total House-holds	Cost Burden (>30%)	Total House-holds
Lower Income House-holds	<= 30% HAMFI*	26,520	34,295	24,375	36,355	38,090	50,545	15,230	21,745	30,315	40,675	25,810	34,040
	>30% to <=50% HAMFI*	24,455	32,065	22,290	35,395	34,680	47,220	16,700	23,835	25,090	38,280	24,430	32,780
	>50% to <=80% HAMFI*	24,290	45,290	20,350	47,490	30,480	65,870	18,610	38,890	17,135	55,375	19,150	40,625
Higher Income House-holds	>80% to <=100% HAMFI*	7,605	24,880	5,860	26,185	10,105	40,905	6,665	23,580	4,410	30,490	6,300	24,695
	>100% HAMFI*	12,735	131,385	6,320	117,770	12,415	193,995	8,360	118,555	5,250	131,995	8,110	131,405
	TOTAL	95,605	267,915	79,195	263,200	125,770	398,530	65,565	226,605	82,200	296,820	83,800	263,550

*"HAMFI" refers to the U.S. Department of Housing and Urban Development (HUD) Area Median Family Income

Table A-4: Overcrowding Calculation Detail
Source: ACS 2019 5-year estimates

Simple Overcrowding Category	Not Overcrowded		Overcrowded			
Detailed Overcrowding Category	Occupied Housing Units: 0.50 or Less Occupants Per Room	Occupied Housing Units: 0.51 to 1.00 Occupants Per Room	Occupied Housing Units: 1.01 to 1.50 Occupants Per Room	Occupied Housing Units: 1.51 to 2.00 Occupants Per Room	Occupied Housing Units: 2.01 or More Occupants Per Room	Total Occupied Housing Units
Kern County, CA	144,473	100,906	17,587	5,298	2,018	270,282
El Paso County, TX	158,609	96,041	8,949	3,021	1,690	268,310
Pima County, AZ	283,488	106,590	10,085	3,472	1,104	404,739
Polk County, FL	166,490	60,881	4,735	1,889	1,288	235,283
Oklahoma County, OK	213,755	79,632	6,065	1,684	434	301,570
Bernalillo County, NM	196,626	63,963	4,577	2,102	431	267,699
Average Housing Units by Detailed Category	193,907	84,669	8,666	2,911	1,161	291,314
Average Housing Units by Simple Category	278,576		12,738			291,314
Average Overcrowding Rate by Simple Category	95.6%		<u>4.37%</u>			