Nevada Affordable Housing Dashboard

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Homeless Count per Thousand People	2.7		2.6		1.7	
Percent of Extremely Low Income Renter Households with Severe Rent Burden	75%		70%		63%	
Percent of Low Income Renter Households with Severe Rent Burden	11%		9%		7%	
Market Rate Multifamily Vacancy Rate	6.5%		3.6%		4.8%	
Tax Credit Multifamily Vacancy Rate	3.0%		3.2%		2.3%	
Subsidized Units per Thousand People	9.5		16.3		15.2	
Housing Choice Vouchers per Thousand People	5.2		6.1		7.7	
Jobs per Permit	2.5		2.5		2.0	
Homeownership Rate	53.3		58.6		63.9	
Share of Homes Sold Affordable to Median Income Family	46.4		37.9		63.6	

Documentation:

Arrow direction gives direction of long-term trend since baseline. Baseline numbers are available in the full report below. Red/frown denotes a worsening trend, green/smile an improving trend and yellow/straight face a stable trend.

Homeless Count per Thousand People – Homeless Point in Time count divided by U.S. Census Bureau population estimates divided by 1000 for appropriate year and region: U. S. Housing and Urban Development Point in Time Counts 2007 to 2018: https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/ downloaded 1-4-2019, U.S. Census Bureau Vintage 2018 Population Estimates: https://www.census.gov/programs-surveys/popest/data/data-sets.All.html, and calculations by author. Baseline year is 2014 and most recent is 2018. Assumption is that more homelessness is bad.

Percent of Extremely Low Income Renter Households with Severe Rent Burden – Source: For most recent data HUD 2011-2015 Comprehensive Housing Affordability Strategy (CHAS) https://www.huduser.gov/portal/datasets/cp.html , accessed 7-6-2018, for baseline data HUD 2006-2010 CHAS https://www.huduser.gov/portal/datasets/cp.html accessed 7-6-2018 and calculations by author. Assumption is that more severe rent burden for extremely low income renters is bad.

Percent of Low Income Renter Households with Severe Rent Burden – Source: For most recent data HUD 2011-2015 CHAS https://www.huduser.gov/portal/datasets/cp.html, accessed 7-6-2018, for baseline data HUD 2006-2010 CHAS https://www.huduser.gov/portal/datasets/cp.html accessed 7-6-2018, and calculations by author. Assumption is that more severe rent burden for low income renters is bad.

Multifamily Vacancy Rate – Source for Reno/Sparks Metro 4th quarter 2014 and 2018 average overall vacancy rate from Historical Table on page 5, in Johnson, Perkins and Griffin Apartment Survey 4th Quarter 2018 report. For Las Vegas One minus average occupancy rate from ALN Las Vegas Apartment Data General Overview for month of October 2014 for baseline and one minus average occupancy rate from ALN Las Vegas Apartment Data General Overview for month of October 2018 for most recent. U.S. multifamily vacancy rate is from REIS 2014 and 2018 as shown in Apartment Trends Q12015 http://www.reisreports.com/resources/video-library and Apartment Preliminary Trends Q4 2018 https://www.reis.com/apartment-preliminary-trends-q4-2018/ Series are carried out with different methodologies for different locations.

Vacancy rate is a market balance indicator. High vacancy rates can indicate an oversupply of apartments which can potentially lead to property owner's inability to maintain properties, financial distress and even foreclosure, although from the short-term point of view of a renter higher vacancy rates can be desirable. Very low rates may indicate a market imbalance with demand greater than supply. Low vacancy rates are associated with a rising rents. By rule of thumb, 5% vacancy is considered an indication of a balanced multi-family market. The assumption is that movement towards 5% is better for the long-run interest of both renters and owners.

Tax Credit Multifamily Vacancy Rate – Baseline is 2014 4th quarter average vacancy rate and current is 2018 4th quarter. Data is from Nevada Housing Division's Taking Stock 2018.
https://housing.nv.gov/uploadedFiles/housingnvgov/content/programs/LIHD/2018Taking%20Stock%2020190222.pdf Although rent restrictions prevent complete market type responses, the assumption is as above that movement towards 5% is better for the long-run interest of both renters and owners. National LIHTC vacancy rate is from REIS as quoted in Fannie Mae *Multifamily Market Commentary – February 2019* 2-20-2019 and *Multifamily Market Commentary – November 2015* by Tatyana Zahalak and Zahalak et al. respectively.
http://www.fanniemae.com/resources/file/research/emma/pdf/MF_Market_Commentary_111915.pdf
http://www.fanniemae.com/resources/file/research/emma/pdf/MF_Market_Commentary_022119.pdf

Documentation (2nd page)

Subsidized Units per Thousand People – Calculation is Annual Housing Progress Report (AHPR) total subsidized unit inventory for 2014 (baseline) and 2018 (most recent) divided by Census Bureau (Vintage 2018) Population Estimates over 1,000 for region and year. National number was estimated using National Housing Preservation Database total (https://preservationdatabase.org/) publicly supported rental homes of 4,904,674 divided by U.S. Census Bureau Population Estimate over 1000: https://www.census.gov/programs-surveys/popest/data/tables.html. The 2017 National Housing Preservation estimate of publicly supported rental homes divided by the appropriate Vintage 2018 national population estimate was used for comparison since no similar estimate of publicly supported rental homes was found for an earlier date. Nevada Housing Division's 2018 Annual Housing Progress Report is available online on the Low Income Housing Database website.
The assumption is that in Clark and Washoe County as a whole at this time, more subsidized units are better. It should be recognized that the ultimate aim is not more subsidized units but rather fewer homeless, and fewer low income households living in overcrowded conditions or inadequate housing or experiencing rent burden. If it is possible that there are other ways to reduce these "bads" without using subsidized housing, it might be preferable to have less subsidized housing. Some sub-regions may have too much subsidized housing.

Housing Choice Vouchers per Thousand People –Total number of authorized Housing Choice Vouchers for Washoe and Clark County divided by population estimate over 1,000. Baseline year is 2013 and most recent is 2017. For the denominator the data source is U.S. Census Bureau Population Estimate Vintage 2018: https://www.census.gov/programs-surveys/popest/data/data-sets.All.html Voucher data is number of authorized vouchers from U.S. Housing and Urban Development Voucher Management System data as accessed through the Center for Budget and Policy Priorities Housing Choice Voucher Utilization Data: https://www.cbpp.org/research/housing/national-and-state-housing-fact-sheets-data . See above for assumptions on trend desirability.

Jobs per Permit – This statistic compares a housing demand indicator (employment growth) to a housing supply indicator (residential permits). (New) jobs per permit is a market balance indicator. A high level of new jobs per permit could mean demand is outrunning supply which would mean higher rents and housing prices. A low level of new jobs per permit could mean an oversupply of housing. Over the long run housing unit permits per new job should be in the range between 1 and 2 since average jobs per household is in this range. To account for job and housing activity in surrounding counties, the aggregation of Washoe, Storey, Carson and Lyon Counties was used for this indicator rather than Washoe County by itself.

Baseline is change in Quarterly Census of Employment and Wages employment from June 2009 to June 2013 divided by total residential building permits 2009 to 2013. Data is from the Bureau of Labor Statistics at https://www.bls.gov/cew/ accessed 5-28-2019 and U.S. Census Bureau, Residential Building Permits Survey at https://www2.census.gov/econ/bps/County/ accessed 2-25-2019. Current is for 2014 to 2018. U.S. data is from the same sources.

Homeownership Rate –Baseline year is 2013. Current year is 2017. Source is U.S. Census Bureau American Community Survey as accessed through the Federal Reserve Bank of St. Louis. Annual Homeownership Rate https://fred.stlouisfed.org/series/HOWNRATEACS032003 and https://fred.stlouisfed.org/series/HOWNRATEACS032031. For the United States the source is United States Census Bureau, Table B25003 Tenure, 2013 and 2017 1-year estimates at https://factfinder.census.gov/

Share of Homes Sold Affordable to Median Income Family- Baseline is 4th quarter 2014 and current is 4th quarter 2018. Source is National Association of Home Builders. NAHB-Wells Fargo Housing Opportunity Index. http://www.nahb.org/en/research/housing-economics/housing-indexes/housing-opportunity-index.aspx accessed 3-13-2019.

Affordable Housing Dashboard Report

The Affordable Housing Dashboard Report further documents the methodology and expands the context for each of the dashboard indicators, in many cases providing a chart and/or table with the entire time series, additional information on Nevada counties outside of Washoe and Clark, component numbers used to calculate rates and more.

Taken as a whole, the ten dashboard indicators point to a worsening housing situation for low income households in Nevada. Bright spots include the decrease in the rate of homelessness in Clark County and movement towards more normal rates of apartment vacancy in both counties over the period. Washoe County vacancy rates continued to show a tight apartment market however. Also, unfortunately the Washoe County point-in-time homelessness rate continued to rise sharply. Rates of severe housing burden in households from 50% to 80% AMI were stable or decreasing, but this statistic suffers from a severe time lag. It is quite likely that more recent data will show a rise in this indicator. Another bright spot was an increase in Housing Choice Vouchers per thousand population for Clark County but for Washoe County this indicator dropped. In recent years the voucher utilization rate has also been dropping for Washoe County, so that even this reduced voucher rate is overly optimistic. The vouchers, along with public housing, and HUD or USDA housing with full rental assistance are valuable tools for assisting extremely low income households, especially those with near zero income, although even with the slight increase only a minority of households that qualify receive them. Unlike Medicaid for healthcare and the Supplemental Nutrition Assistance Program for food, housing for low income families is not an entitlement.

Most other dashboard measures indicated a decrease in affordability for low income households. For the extremely low income renters nearly three quarters experienced severe rent burden, which was a higher rate than the nation as a whole, in both urban regions. There are fewer subsidized units per thousand populations, and a comparison of new jobs to building permits indicates that new building may not be keeping up with demand. Homeownership rates are down and a smaller share of homes for sale would be available to the median income family.

Homeless Count per Thousand People

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Homeless Count per Thousand People	2.7		2.6		1.7	

Homeless Count per Thousand Dashboard indicator:

Clark County 2014 point-in-time (PIT) count was 3.6/thousand population and in 2018 was 2.7/thousand population, a decrease of 25%. Washoe County started out at 1.8 PIT count/thousand, the same as the national rate in 2014 and ended up higher at 2.6/thousand. The Washoe County PIT count/thousand increased 45% over the years from 2014 to 2018. The national rate of PIT count per thousand was down from 2014 at 1.8/thousand to 1.7/thousand. See Table 2 for a complete time series.

The dashboard assumption is that more homelessness is bad. Many studies show that homelessness imposes costs on individuals who are homeless as well as on the community in which the homelessness takes place (Ly and Latimer 2015, Steen 2018).

Additional information on homelessness in Nevada

The U.S. Department of Housing and Urban Development (HUD) requires each Continuum of Care (CoC) in the country to carry out the Point-In-Time (PIT) count of the homeless sometime in the last week of January. The count is of both sheltered and unsheltered homeless as of a single night.[ii] The count must be done biennially at a minimum. The HUD requirements allow each CoC to choose amongst several different methods of counting and some changes in definition and count protocol have occurred throughout the time period. By its nature it is difficult to obtain a comprehensive count of people who do not have an established home and the numbers must be understood in that context.[iii,iv]

Figure 1 shows the time trend for total homeless PIT counts per 1,000 population for Clark County CoC, Washoe County CoC and Nevada Balance of State CoC and for the U.S. from 2007 to 2018. The data used for the figure is contained in Table 2. Using a rate of Point-in-Time homeless count per thousand population helps to account for population increase or decrease and helps facilitate comparisons across regions. Las Vegas's overall rate of homeless PIT count varied from 2.7 to 5.1 homeless per thousand population. Clark County CoC rate of PIT homelessness from 2007 to 2018 decreased 32%. This was greater than the rate of decrease that occurred in the U.S. as a whole (21%). Throughout the period, rates of PIT homelessness were high in Clark County as compared to the national rate. For example, Nevada's rate of PIT homelessness was 2.7 per 1,000 population in 2018 as compared to the national rate of 1.7 per thousand.

On the other hand, Washoe County roughly matched the U.S. PIT count per thousand until recently. From 2015 to 2018 the PIT count per thousand in Washoe County increased with the end result being 2.6 per thousand, higher than the national average and almost as high as the rate in Clark County. In the Rural Nevada CoC, PIT count per thousand has been lower than the national average and trending downward. However, not all rural counties have enough staffing or volunteers to carry out the PIT count, so for this and other reasons the Rural Nevada CoC PIT may undercount homeless at a greater rate than the urban CoCs.

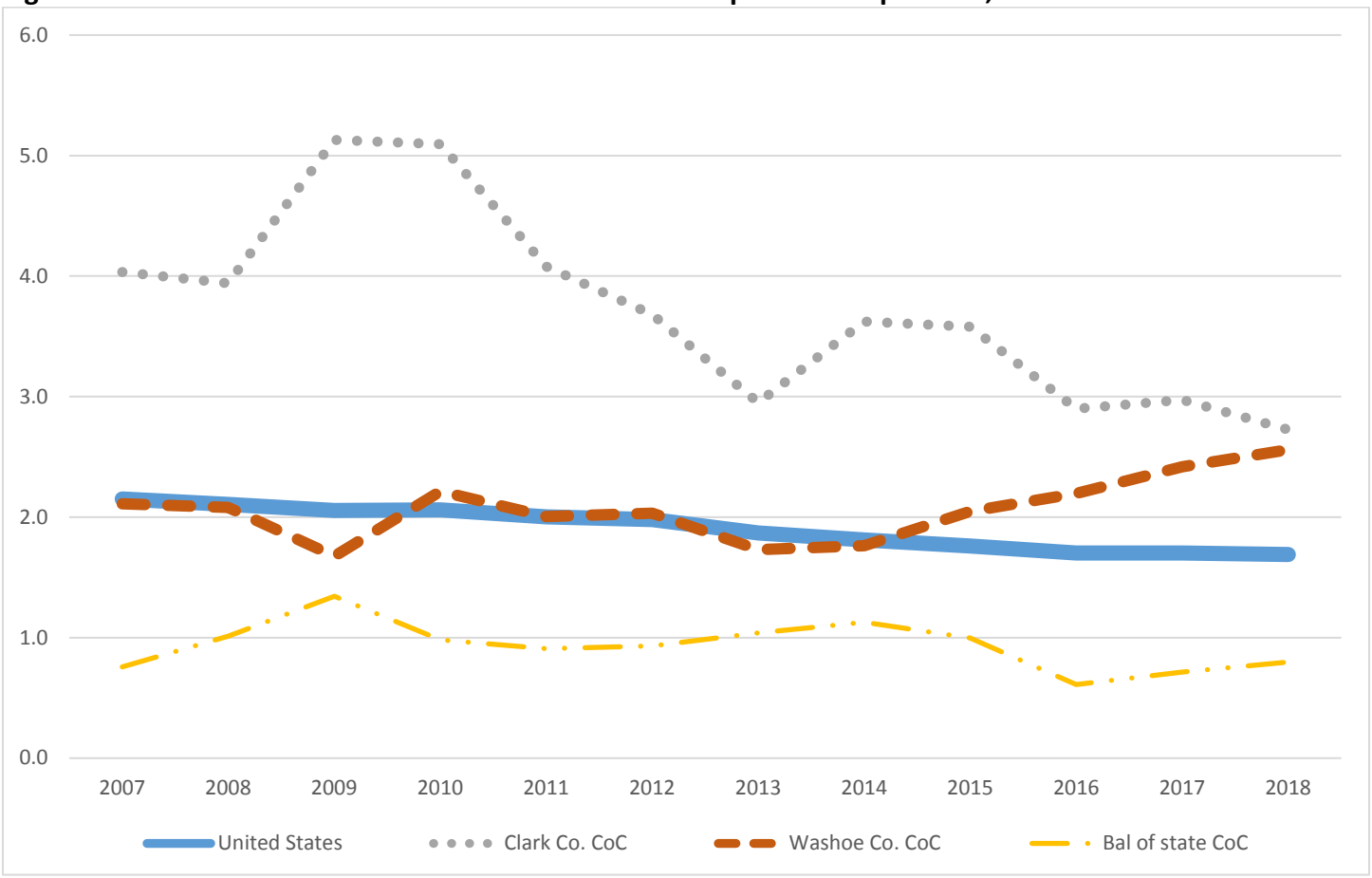
Table 1. United States, Nevada and Nevada CoCs 2018 point-in-time (PIT) homeless count

	United States	Nevada	Clark County COC	Washoe County CoC	Bal of state CoC
2018 PIT Count	552,830	7,544	6,083	1,192	269

Table 2. United States, Nevada and Nevada CoCs PIT count per thousand trend for 2007 to 2018

Year	United States	Nevada	Clark County COC	Washoe County CoC	Bal of state
2007	2.2	3.3	4.0	2.1	0.8
2008	2.1	3.3	3.9	2.1	1.0
2009	2.1	4.1	5.1	1.7	1.3
2010	2.1	4.1	5.1	2.2	1.0
2011	2.0	3.4	4.1	2.0	0.9
2012	2.0	3.1	3.7	2.0	0.9
2013	1.9	2.5	2.9	1.7	1.0
2014	1.8	3.0	3.6	1.8	1.1
2015	1.8	3.0	3.6	2.0	1.0
2016	1.7	2.5	2.9	2.2	0.6
2017	1.7	2.6	3.0	2.4	0.7
2018	1.7	2.5	2.7	2.6	0.8
Percent Change PIT per thousand 2007-2018	**-21%**	**-25%**	**-32%**	**21%**	**5%**

Figure 1. U.S. and Nevada CoCs Total Homeless PIT Count per 1000 Population, 2007 to 2018[v]



Homelessness is the most visible "tip of the iceberg" indicator for housing problems. Some research has linked rates of homelessness to housing market conditions (Quigley, 2001). Related to homelessness lies the rest of the iceberg of many other housing related issues. However, there are many caveats to be aware of:

- Point-in-time counts are a snapshot and only measure a portion of the population experiencing episodes of homelessness throughout the year.
- It is difficult to count homeless individuals for many reasons. This problem is even more severe in rural regions.
- Weather, number of volunteers and changes in method across jurisdictions and across time may affect homeless counts.
- A large number or rate of point-in-time homelessness by itself does not indicate how quickly a state or locality is able to house homeless people. A locality may reach an effective end to homelessness if it is able to move people into permanent housing as quickly as new homeless people appear.
- Detail on number of sheltered, unsheltered and chronic homeless is important in understanding the entire picture.

For comparisons of PIT count homeless rates with other southwestern states as well as comparisons of subpopulations see Homeless Count Trend Graphs.

More information on the point-in-time counts is available in these reports:

Southern Nevada Census and Survey

Homeless PIT Report links on NHD website

Severe rent burden for extremely low and low income renters

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Percent of Extremely Low Income Renter Households with Severe Rent Burden	75%		70%		63%	
Percent of Low Income Renter Households with Severe Rent Burden	11%		9%		7%	

Severe Rent Burden Dashboard indicator:

The proportion of Washoe County extremely low income renters (below 30% of HUD area median income) with severe rent burden has risen from 69% to 70% from the 2006-2010 period to the 2011-2015 period (Figure 2). In Clark County the proportion rose from 74% to 75%. For the United States as a whole, the proportion stayed the same at 63%. For low income renters (50% to 80% of HUD area median income) Washoe County severe rent burden stayed the same at 9%while in Clark County it decreased from 12% to 11%. For the United States, the proportion stayed even at 7%.

Increased rates of rent burden in low income households are assumed to be bad, all else equal. Some studies link housing affordability to rates of housing and neighborhood instability, homelessness, and poor health (Quigley and Raphael 2001, Pollack, Griffin et al. 2010, Desmond and Shollenberger 2015).

More about rent burden in Nevada

A low income renter who pays more than 50% of household income for rent and utility costs is considered “severely rent burdened.” Renter households paying more than 30% of household income for rent and utilities are considered “rent burdened.” An extremely low income household is approximately a household with income at or below 30% of HUD Area Median Family Income. However, see endnote ix for more information about how this HUD income category has changed recently. A very low income household has income from 30% to 50% of area family median income, while a low income household has income from 50% to 80% of area family median income. As an example and to facilitate understanding of these income categories, in Clark County in 2018, a single individual would be considered extremely low income with an income of $14,750 or lower while a four person family with an income of $25,100 or less would be considered extremely low income. Washoe County limits are somewhat higher than these.[vi]

There has been an overall upward trend in the percentage of severely rent burdened households in the extremely low, very low and low income categories across the time period from 1990 to 2011-2015 for both Washoe and Clark County.

Rent burden measures are relatively easy to calculate from American Community Survey data from the Census Bureau. However, the measure has been criticized for several reasons:

- Households in higher income brackets may have no real problem paying for other necessities such as food or transportation even if paying more than 50% of their income for rent, while very low income households may have severe problems covering the same basics even if they are not officially rent burdened using the 30% of income definition widely used.
- If a family moves farther away from job sites to obtain cheaper housing, transportation costs may increase and real affordability remain unchanged or worsen.
- The quality of the housing is not measured by this method. In addition, neighborhood amenities or disamenities provide benefits and impose costs not accounted for with a housing burden method; for example access to good

schools, frequency of criminal activity or distance to neighborhood parks may all influence what a household is willing to pay for a given unit or location.

A residual income method has been suggested as an alternative to avoid the problems laid out in the first bullet point. This method calculates minimum basic costs for households and subtracts them from a household's income to find what is available for rent or house payments. However, the method is time-consuming and more complex to calculate. Some methods have also been developed that include transportation costs that address the second bullet. These also add considerable complexity. See Hertz, Daniel, 2015 on Residual Income and the H + T Affordability Index.[vii] See also Jewkes and Delgadillo, 2010, and Cai, Zi, 2017, Analyzing Measurements of Housing Affordability.[viii]

Figure 2. Percentage of Washoe County Renters with Rent Burden[ix]

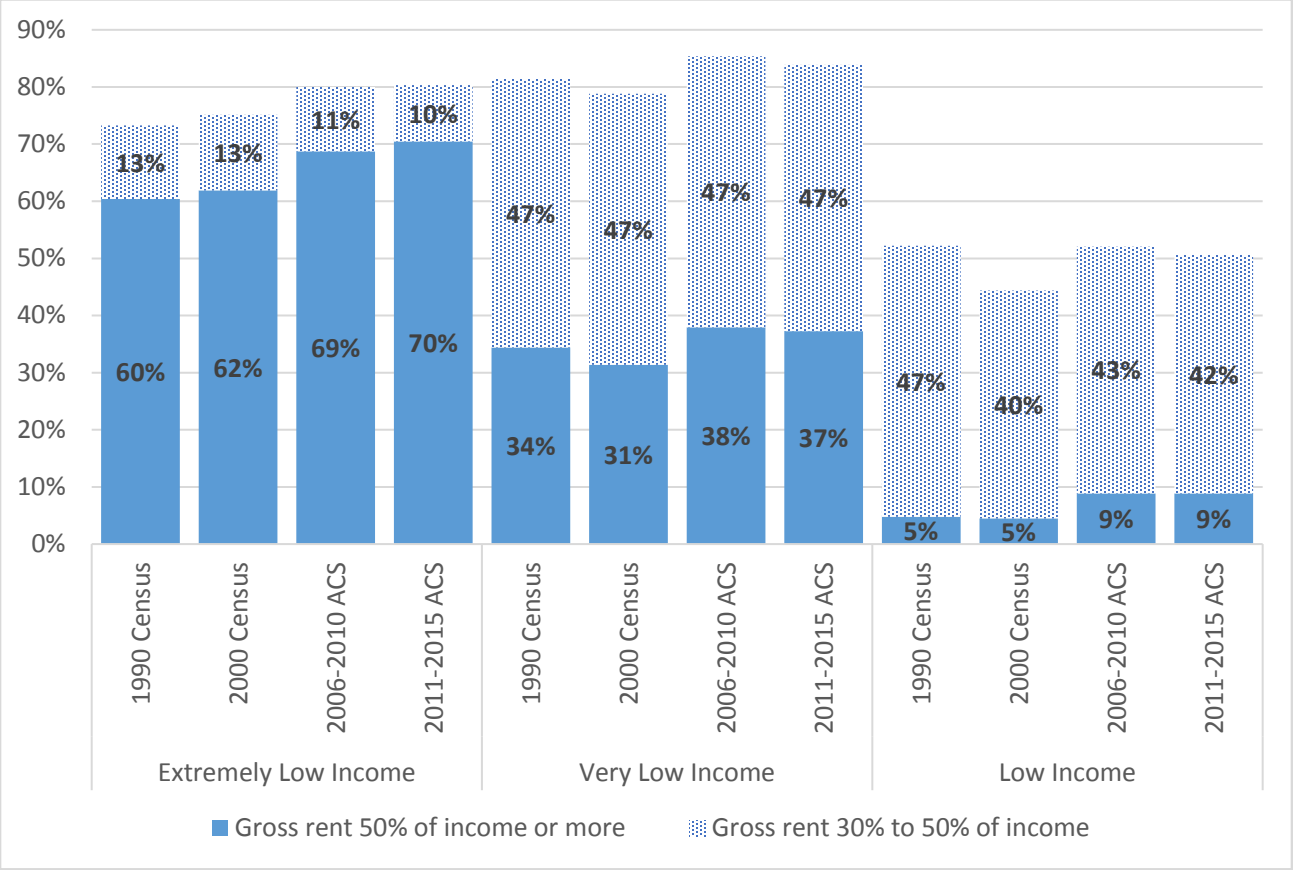


Figure 3. Percentage of Clark County Renters with Rent Burden

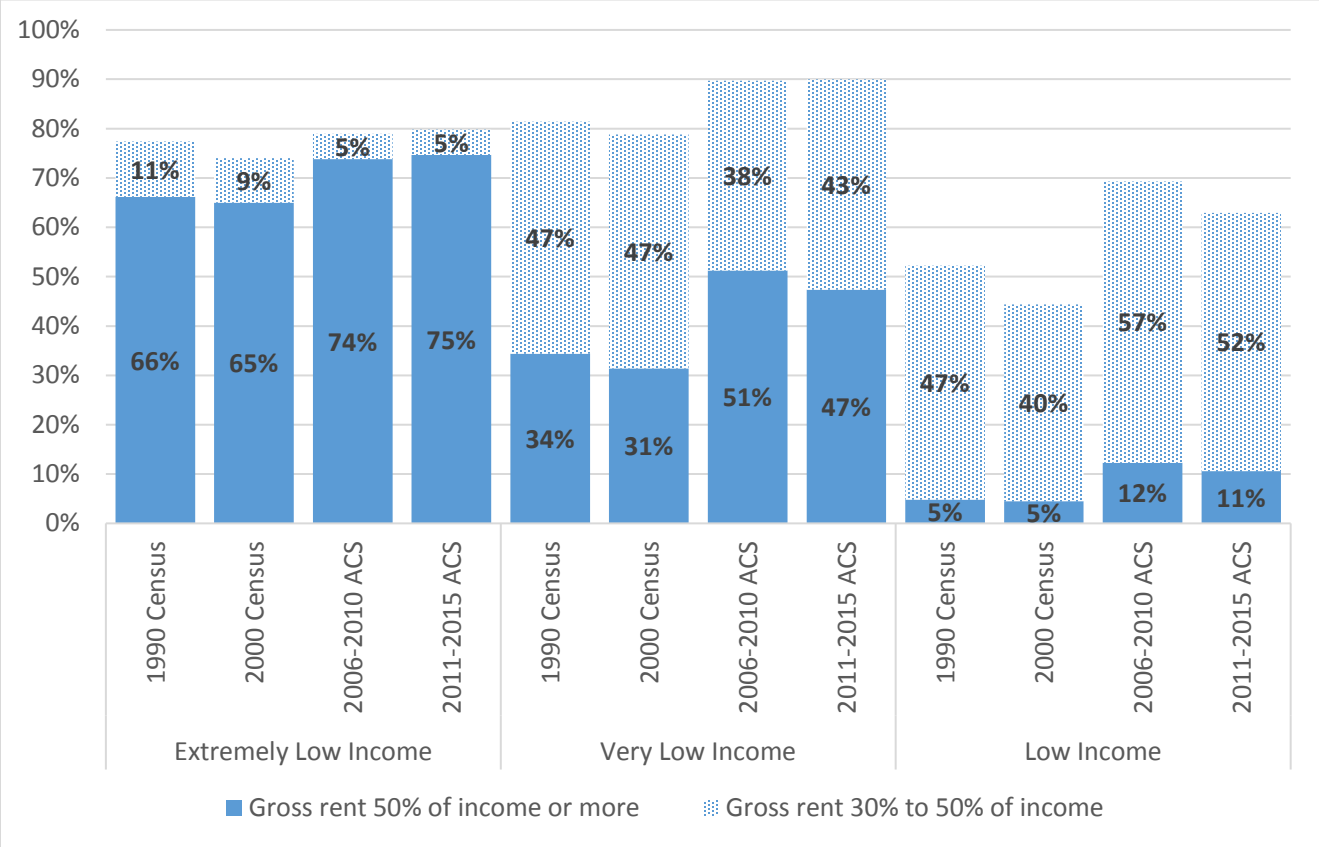


Table 3. Renter Household Income Limits Example: Clark County 2018 HUD Income Limits[x]

FY 2018 Income Limit Category	1 person	2 people	3 people	4 people
Extremely Low Income Limits[xi]	$ 14,750	$ 16,850	$ 20,780	$ 25,100
Very Low (50%) Income Limits	$ 24,550	$ 28,050	$ 31,550	$ 35,050
Low (80%) Income Limits	$ 39,250	$ 44,850	$ 50,450	$ 56,050

Market apartment and tax credit apartment vacancy rates

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Market Rate Multifamily Vacancy Rate	6.5%		3.6%		4.8%	
Tax Credit Multifamily Vacancy Rate	3.0%		3.2%		2.3%	

Apartment vacancy rates dashboard indicators:

Apartment Multi-family Vacancy: Las Vegas Metro region apartment vacancy rate as measured by ALN decreased from 7.7% to 6.5% from the fourth quarter of 2014 to fourth quarter of 2018. Since an assumption has been made that 5% vacancy represents a balanced market, the decrease is considered an improvement as it moves towards the balance point. In Reno-Sparks metro region, the Johnson-Perkins and Griffin 4th quarter vacancy rate increased from 3.3% in 2014 to 3.6% in 2018. Because the increase moves toward the market balance point of 5% it is considered an improving trend. The fourth quarter U.S. vacancy rate as measured by Reis increased from 4.2% to 4.8% also assumed to be improving as it is moving towards the assumed balanced point of 5%

Tax Credit Apartment Vacancy: The fourth quarter tax credit apartment vacancy rate in Clark County decreased from 4.3% in Clark County in 2014 to 3.0% in 2018. This movement shows a tightening of the market. In Washoe County 4th quarter tax credit vacancy rate decreased from 3.5% to 3.2%, also heading away from the 5% balance point. National tax credit vacancy rate as measured by Reis was 2.3% at the end of 2018, the same as it was at the end of 2014.

More about apartment vacancies in Nevada

When vacancy rates are high over a long period of time, apartment building owners may reduce rents, which would help renter households; however landlords may also have reduced cash flow, trouble keeping up with maintenance and ultimately, may have trouble paying off debts with extreme cases resulting in bankruptcy. When vacancy rates are low, owners will profit from increased rents but rent burdens will increase for low income families. Search costs will increase for tenants looking for a new apartment. The end result for some renters will be overcrowding, settling for inadequate housing or even homelessness for low income families and individuals. For more on the natural rate of vacancy see (Hagen and Hansen, 2010.)

Table 4. Comparison of 4th quarter multi-family apartment and LIHTC (Low Income Housing Tax Credit) vacancy rates[xii]

Region/Type	2013	2014	2015	2016	2017	2018	Change 2013 to 2018
Las Vegas region - ALN	9.1%	7.7%	6.8%	6.4%	7.2%	6.5%	-2.6%
Las Vegas region – Lied	8.7%	8.3%	8.2%	7.6%	7.6%	8.0%*	-0.7%
Clark Co. – LIHTC	7.8%	5.5%	4.3%	4.4%	2.9%	3.0%	-4.8%
Reno/Sparks- Johnson and Perkins	4.1%	3.3%	2.9%	2.9%	3.8%	3.6%	-0.5%
Reno/Sparks - ALN	4.0%	3.9%	4.3%	3.4%	5.0%	5.7%	1.7%
Washoe Co. - LIHTC	5.3%	3.8%	3.5%	3.1%	2.6%	3.2%	-2.1%
U.S. – REIS	4.1%	4.2%	4.4%	4.2%	4.5%	4.8%	0.7%
U.S. – LIHTC/affordable	2.9%	2.3%	1.9%	1.0%	1.9%	2.3%	-0.6%

*Lied Institute 3rd quarter Apartment Market Trends (4th quarter is not available).

Table 5. Comparison of 4th quarter market and LIHTC (Low Income Housing Tax Credit) rents from 2013 to 2018

Region/Type	2013	2014	2015	2016	2017	2018	Increase 2013 to 2018
Las Vegas region- ALN mkt. rate	$759	$798	$856	$913	$979	$1,037	37%
Las Vegas region – Lied	$741	$796	$855	$909	$968	$1,021*	38%
Clark Co. - LIHTC	$649	$657	$724	$732	$750	$801	23%
Reno/Sparks- J & P mkt. rate	$860	$868	$946	$1,066	$1,180	$1,292	50%
Reno/Sparks - ALN	**	**	**	$1,021	$1,154	$1,260	NA
Washoe- LIHTC	$716	$755	$784	$807	$823	$861	20%

*Lied Institute 3rd quarter Apartment Market Trends (4th quarter is not available).

**Data not available.

2017 and 2018 interrupt a four year decline in 4th quarter vacancy rates for many series.

Average fourth quarter 2018 market vacancy rates for multi-family apartments in the U.S., Las Vegas and Reno have increased since 2016, ending a four year downward trend from 2013 to 2016 for all the private market series except Reno ALN and the U.S. REIS which had a more mixed series over those years. Year over year, Las Vegas area apartment vacancy trends were mixed and depended on the series used, with LIED showing an increase and ALN showing a decrease. In Reno-Sparks the rate decreased from 3.8% to 3.6% as measured by Johnson, Perkins & Griffin.[xiii] Alternate measurement of vacancy rates for Reno through ALN also showed an increase year over year for the fourth quarter. Reno experienced an all-time low vacancy rate for the Johnson and Perkins series in the second quarter of 2017 at 1.2%. The series begins in 2006. However, the new ALN series, which includes smaller properties, showed higher 4th quarter vacancy rates in Reno except in 2013.

The Low Income Housing Tax Credit program

The Low Income Housing Tax Credit (LIHTC) program is a federal tax incentive program administered by the Internal Revenue Service (IRS) through regulations published under Section 42 of the Internal Revenue Code.[xiv] The role the program's public private partnership plays in affordable housing is large. In 2017, tax credit units currently active or under construction made-up about 10% of the estimated 277,000 multi-family units in Nevada.[xv] As of February 2019 there were about 27,000 LIHTC rent-restricted units active or being built in Nevada. The LIHTC program is by far the largest in Nevada, and nation-wide, for producing affordable rental housing. Seventy-five percent of affordable multi-family housing units in Nevada have been constructed or rehabilitated fully or partially with tax credit funding.[xvi] It was estimated in 2012 that the LIHTC program is responsible for 90% of nationwide funding for new affordable housing.[xvii] LIHTC properties typically have rent restrictions meant to provide affordable units for households with 50% to 60% of area median income. Typically, only with layering from other programs with deeper subsidies do LIHTC units become affordable to extremely low income renters. [xviii]

Vacancy rates decreased faster for Nevada LIHTC properties

Reno's 2018 LIHTC vacancy rate (3.2%) was lower than the Johnson et al. market vacancy rate (3.8%) and the ALN rate (5.7%). In Clark County, affordable properties' vacancy rates remained far lower than market vacancy rates. For both the Reno and Las Vegas market over the six-year period from 4th quarter 2013 to 4th quarter 2018, the decrease in vacancy rates has been greater for the LIHTC properties, with Las Vegas LIHTC properties experiencing the largest decrease

(4.8%). Reis national vacancy rates increased over the period from 2013 to 2018 by 0.7% to 4.8%. Nationwide the vacancy rates reported for LIHTC and other subsidized properties remained low throughout the period.

The decreasing vacancy rates were accompanied by increasing average rents (see Table 5). In the case of the LIHTC rents, increases were reigned in as maximum rent caps were reached.

Rent increases largest for Reno market rate properties

Maximum allowable rents for LIHTC properties are complex. They depend on regional HUD median incomes, determined annually, and also on the date each property is put into service, whether median incomes have increased or decreased, set-aside agreements and other factors and adjustments.[xix] Any change in utility costs could also influence rent since it is gross rents which are restricted in tax credit properties. Gross rent includes utility costs. Utility costs are paid for by the tenant for a majority of Nevada's tax credit units (Taking Stock 2015 found that 77% of tenants paid for all utilities). If so, rents must be reduced by an estimated utility allowance.

On average LIHTC properties reported rents increased 23% in Las Vegas over the period from 2013 to 2018 and 20% in Reno/Sparks. In comparison, market rate rents increased by 37% in Las Vegas and by 50% in Reno/Sparks.

Subsidized Units per Thousand People

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Subsidized Units per Thousand People	9.5		16.3		15.2	

Subsidized units per thousand dashboard indicator:

The number of subsidized units per thousand population in Clark County decreased from 10.7 to 9.5 from 2014 to 2018 and in Washoe County from 16.9 to 16.3. In Clark County the decrease was due to both a decrease in net number of subsidized units and an increase in population. In Washoe County the number of subsidized units increased by 3% but population increased by 7% over the time period. The United States as a whole had 15.2 subsidized units per thousand population as compared to 15.5 the year before. No previous data on number of subsidized units could be located for the U.S.

A decrease in subsidized units is assumed in the dashboard to be a worsening of the low income housing situation. More subsidized housing in general is considered to be a part of the solution to the current difficult situation for low income renters. However this may not be true in each sub-region and it is beyond the scope of the dashboard to recommend a given solution for low income renters. Please see notes below for more information on this topic.

Table 6. Clark County, Washoe County and Balance of State Subsidized Units, 2014 - 2018[xx]

Year	Region	Subsidized Units	Population	Subs. Units per 1000 population	Households	Subs. Units per 1000 Households
2014	Clark Co.	22,018	2,054,263	10.7	731,322	30.1
2015	Clark Co.	21,870	2,098,105	10.4	740,966	29.5
2016	Clark Co.	21,205	2,140,547	9.9	755,258	28.1
2017	Clark Co.	21,653	2,183,310	9.9	781,796	27.7
2018	Clark Co.	21,222	2,231,647	9.5	791,439	26.8
% Change 2014 to 2018	Clark Co.	-4%	9%	-11%	8%	-9%
2014	Washoe Co.	7,385	436,493	16.9	166,641	44.3
2015	Washoe Co.	7,370	442,728	16.6	172,751	42.7
2016	Washoe Co.	7,288	450,142	16.2	174,726	41.7
2017	Washoe Co.	7,332	457,333	16.0	180,851	40.5
2018	Washoe Co.	7,602	465,735	16.3	181,733	41.8
% Change 2014 to 2018	Washoe Co.	3%	7%	-4%	9%	-2%
2014	Bal. of State	NA	-	-	-	-
2015	Bal. of State	3,344	327,833	10.2	125,797	26.1
2016	Bal. of State	NA	329,083	NA	126,479	NA
2017	Bal. of State	3,475	331,762	10.5	127,767	26.8
2018	Bal. of State	3,475	337,010	10.3	131,744	26.4
% Change ***2015 to 2018***	Bal. of State	4%	3%	1%	3%	1%

Clark County subsidized units per thousand decreases fastest

Table 6 gives a more complete picture of the change in subsidized units per thousand. Subsidized units decreased 4% from 2014 to 2018 in Clark County while increasing in Washoe County by 3% and by 4% in the Balance of State from 2015 to 2018 (no measure of subsidized units is available for the Balance of State for 2014). According to the Census Vintage 2018 population estimates, population increased the fastest in Clark County (9%) over the period as compared to a 7% increase in Washoe County. For the Balance of State only the change in population from 2015 to 2018 (3%) was calculated.

Given an increase in the denominator (population) and a decrease in subsidized units, when combined into the units per thousand indicator, the Clark County series decreased fastest by 11% from 2014 to 2018. Washoe County subsidized units per thousand benefited from an increase in units and a slower population growth, so the indicator decreased by only 4%. The Balance of State indicator increased a small amount since the growth in units outweighed the growth in population over the period.

Looking at the number of subsidized units per 1000 households instead of 1000 population creates some subtle changes because household size in larger in Clark County. In Clark County, the average household size in 2017 was estimated to be 2.79 while in Washoe County it was estimated to be 2.53 with similar differences throughout the period 2014 to 2018. Since there are fewer households for an equivalent population, this slightly improves the Clark County ratio.

Annual Housing Progress Report (AHPR) subsidized units methodology

As per Nevada Revised Statute 278.235, the AHPR is compiled annually by the Nevada Housing Division and is available on its Low Income Housing Database website. NRS 278.235 requires certain jurisdictions' adoption of measures to maintain and develop affordable housing. The jurisdictions must report to the Housing Division how such measures were used in the prior year. The purpose of the legislation is to encourage local governments to deploy resources to increase affordable housing.

As a part of the AHPR, total units of subsidized residential housing are tracked. Data from 2015 through 2018 reports are comparable. Previous years are more difficult to compare. However, a baseline number of subsidized units for 2014 was created which is comparable to the later numbers so that has been included. For Washoe and Clark County these numbers are all from the 2018 AHPR.

Subsidized units include residential housing with rent and income caps such as units built with the Low Income Housing Tax Credit (LIHTC), Bond or HOME funding, and units with full rental assistance such as public housing, HUD assisted or USDA RD assisted housing. The total number of units is tied to a list of subsidized housing for the jurisdiction maintained at the Housing Division. To be included on the list, the properties must either have project based rental assistance, or deed restrictions or other agreements restricting income levels of occupants or rent levels. Group homes, emergency shelters and transitional housing are generally not included in this inventory. Each year typically sees the addition of several hundred new LIHTC or other subsidized units; however, some units typically will convert to private market units each year as well. Many of these units may become a part of the category of naturally occurring affordable housing; however, they no longer are bound by legal restrictions on rent or income limits and typically are no longer tracked.

Using the lists compiled by the Housing Division and the jurisdictions there were a total of 28,824 units of subsidized housing in existence in the designated jurisdictions at the end of 2018. This was 1% less than 2017's inventory unit count, and 2% less than the baseline count in 2014. A similar list that includes the entire state gives a total of 32,299 subsidized units in 2018.

Over two thousand subsidized units are in the pipeline.

According to the AHPR, twenty-two multi-family projects were funded or under construction in the two counties, 18 of which are to be new construction. For both single family and multi-family projects, a total of 2,200 new or new to the subsidized housing inventory units were in the pipeline. One new rural project with 31 units was in pipeline as of 5-28-2019.

Possible alternate indicators.

The denominator used to compare the number of subsidized units was population in thousands. A denominator closer to the one used in the Annual Housing Progress Report might be total households under 80% AMI with a housing problem. In all regions about 40% of all households are under 80% AMI. However, the proportion of those households experiencing a housing problem is lower in the balance of state at 30% as compared to about 40% in Washoe and Clark County. Using this alternative denominator would bring up the statistic for Balance of State relative to Clark and Washoe counties', but wouldn't have a large effect on the comparison between Washoe and Clark County rates.

Too many subsidized units are possible, and other caveats.

Building subsidized units can sometimes have unintended negative consequences. For example, it is possible in a given time and sub-region that an increase in subsidized housing could increase segregation either by race, ethnicity or income and decrease opportunities for jobs and education for low income individuals and families. In addition, an increase in subsidized units might not be the only way to address the difficulties experienced by low income households and it is possible that different methods could produce better results with the same amount of money or less. There is a large literature on these topics with both positive and negative findings as to the efficacy of building new subsidized housing in addressing housing problems. A few examples are (Malpezzi and Vandell 2002, Sinai and Waldfogel 2005, Baum-Snow and Marion 2009, Eriksen and Rosenthal 2010, Freedman and Owens 2011, Horn and O'Regan 2011, Freedman 2012, Lang 2012, Albright, Derickson et al. 2013, Di and Murdoch 2013, Galster 2013, Freedman and McGavock 2015, Orfield, Stancil et al. 2016, Schwartz 2016). See also recent Senate Testimony on the LIHTC program. Americas Affordable Housing Crisis Challenges and Solutions.

Vouchers, inclusionary housing requirements in new construction, energy efficiency, reform of zoning and building regulation, use of better building technology, increase in minimum wage, and encouragement of boarders in existing housing are some of the many alternative or additional solutions that have been proposed.

Housing Choice Vouchers per Thousand People

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Housing Choice Vouchers per Thousand People	5.2	↑	6.1	↓	7.7	↑

Housing Choice Vouchers (HCV) per thousand dashboard indicator:

Authorized Housing Choice Vouchers (HCV) per thousand was 6.2 in Washoe County in 2013 and decreased to 6.1 in 2017. In Clark County the rate was 5.0 per thousand in 2013 with an increase to 5.2 in 2017. The rate for the U.S. as a whole was 7.5 in 2013 and 7.7 in 2017.

An increase in vouchers per thousand people, given the situation for low income households in Nevada at the current time, is assumed within the dashboard framework to be a move in the right direction. HCVs have been shown to reduce rent burden and overcrowding and help prevent homelessness.[xxi] However, this would not necessarily be the case at any given level of vouchers. It is beyond the scope of the dashboard to recommend a given solution for low income renters.

Additional information on Housing Choice Vouchers

The housing choice voucher (HCV) program is a federal program for helping low income renters. Vouchers are sometimes referred to as "tenant-based" assistance because the vouchers are typically not tied to a given housing development. Rather, the household with the voucher is able to find their own housing, including a single-family home, townhouse or apartment, as long as the housing meets all the requirements of the HCV program and the landlord accepts the voucher. Housing choice vouchers in Nevada are administered by local public housing agencies. In Nevada there are three Public Housing Authorities administering the HCV program: Southern Nevada Regional Housing Authority (SNRHA), Reno Housing Authority (RHA), and Nevada Rural Housing Authority (NRHA). The sliding scale nature of the voucher allows it to assist even households with zero income or extremely low income individuals such as those on Social Security Disability. Unlike Medicaid or the Supplemental Nutrition Assistance Program, vouchers are not considered an entitlement. Most who would qualify cannot obtain a voucher because of lack of availability.

As can be seen in Figure 4, the number of authorized HCV per thousand population (7.7 in 2017) is higher in the U.S. overall than in Nevada, perhaps one of the factors in Nevada's low ranking in serving extremely low income households in need of housing. Most HCV administered by the SNRHA are used in Clark County, most HCV administered by the RHA are used in Washoe County and most HCV administered by NRHA are in the balance of the state. Assuming that all administered vouchers lie in those respective regions, the rate of authorized HCV administered per thousand was 5.2 in Clark County, 6.1 in Washoe County and 4.9 in the balance of the state. From 2013 to 2017 there was a change in authorized HCV ranging from a 13% increase for SNRHA to 5% for Washoe County. The increase was largely due to vouchers added because of the Veterans Affairs Supportive Housing (VASH) program which provides rental assistance and wrap-around support services for homeless veterans or veterans at risk of homelessness.

Not all vouchers that are authorized are always in use. One reason for this is that in a tight housing market there may not be any units available at fair market rents or any landlords available that will accept a voucher. Figure 5 shows the change from 2013 to 2017 in housing vouchers per thousand actually in use. Using this metric there was an increase in the U.S. and all Nevada regions except in Washoe County. In Washoe County there was a 10% decrease in HCV use per thousand from 2013 to 2017.

Figure 4. Authorized Housing Choice Vouchers per Thousand Population, 2013 and 2017[xxii]

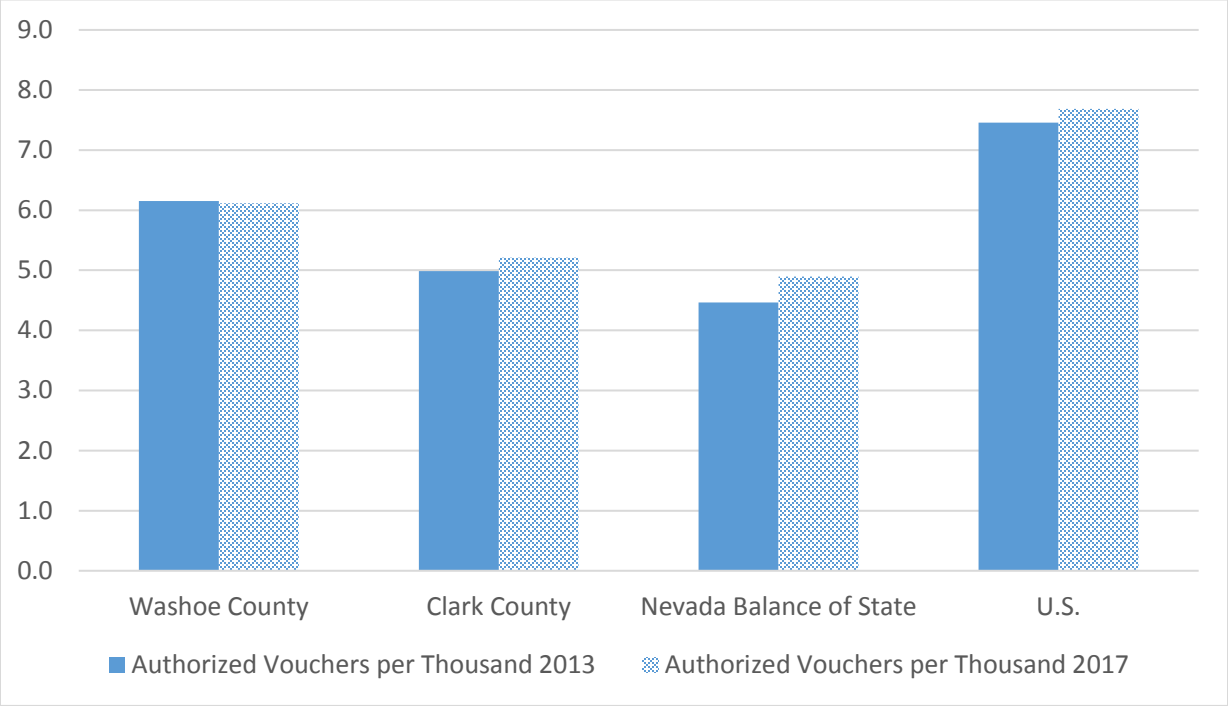


Figure 5. Housing Choice Vouchers in Use per Thousand Population, 2013 and 2017

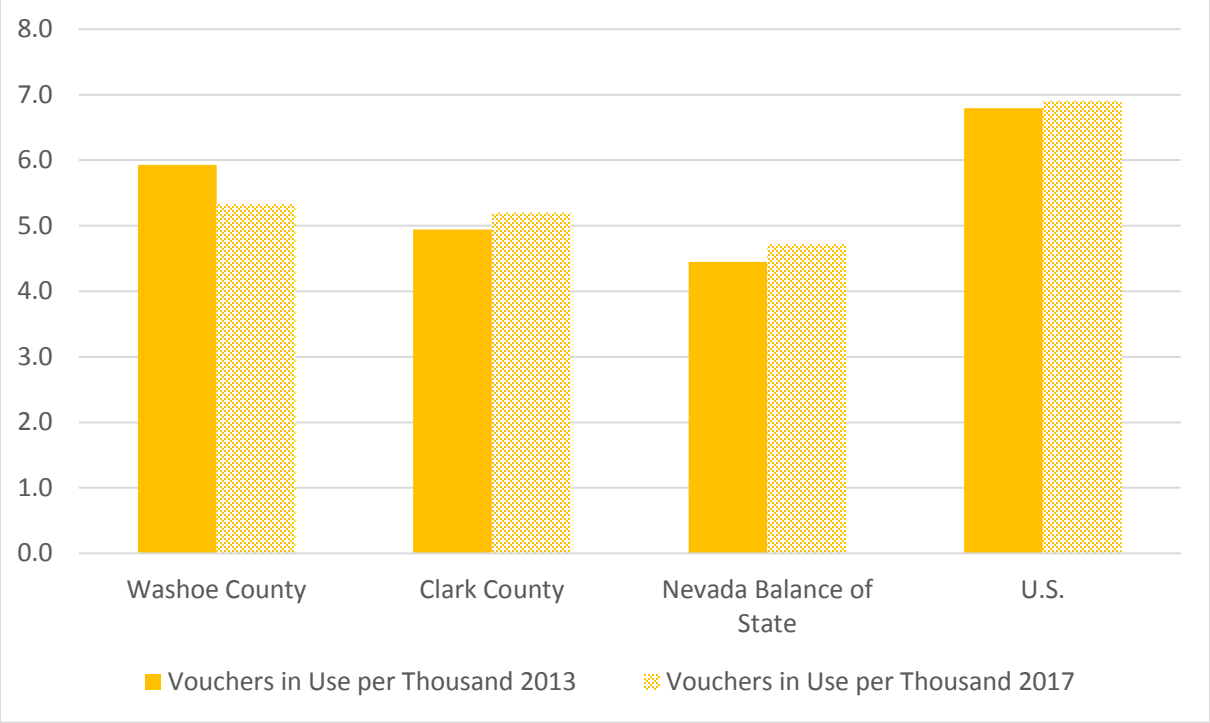


Table 7. Housing Choice Vouchers per Thousand Population 2013 and 2017

	Washoe County	Clark County	Nevada Balance of State	U.S.
Authorized Vouchers 2013	2,653	10,059	1,463	2,356,833
Vouchers in Use 2013	2,556	9,970	1,458	2,147,082
Authorized Vouchers per Thousand 2013	6.2	5.0	4.5	7.5
Vouchers in Use per Thousand 2013	5.9	4.9	4.4	6.8
Authorized Vouchers 2017	2,797	11,376	1,624	2,499,910
Vouchers in Use 2017	2,440	11,360	1,567	2,244,992
Authorized Vouchers per Thousand 2017	6.1	5.2	4.9	7.7
Vouchers in Use per Thousand 2017	5.3	5.2	4.7	6.9
% Change 2013 to 2017 Authorized Vouchers per thousand	-1%	5%	10%	3%
% Change 2013 to 2017 Vouchers Used per thousand	-10%	5%	6%	2%

Jobs per Permit

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Jobs per Permit	2.5		2.5		2.0	

Jobs per permit dashboard indicator:

Jobs per Permit measures the number of new jobs as compared to the number of residential housing permits over a period of time. For the dashboard, the ratio for 2014 to 2018 is compared to the ratio for 2009 to 2013. Theoretically, over the long run, housing supply and demand are in balance so the ratio should be somewhere between 1 and 2, as the number of jobs per household is typically in that range. When jobs per permit goes over 2 for a long period, it could signify a lack of new housing supply commensurate with new households forming in the region. When jobs per permit goes under 1 for a long period, it could signify overbuilding.

Clark County measured 2.5 new jobs per residential housing permit for the period from 2014 to 2018. This could signify a tight housing market. However, job losses from 2009 to 2013 made the jobs per permit ratio negative at -2.3. The somewhat high ratio of 2.5 may also mean that Clark County is still absorbing the oversupply of housing from that time period. Northern Nevada (Washoe, Storey, Lyon and Carson City) measured 2.5 jobs per residential housing permit over the period from 2014 to 2018 moving up from -4.9 for 2009 to 2013 with similar implications. The U.S. as a whole has seen an increase in the jobs per permit ratio to 2.0 over the period, up from -0.4 in the previous five-year period. Data for 2018 for both the Quarterly Census of Employment and Wages (QCEW) employment and building permits is preliminary.

Additional information about jobs per permit

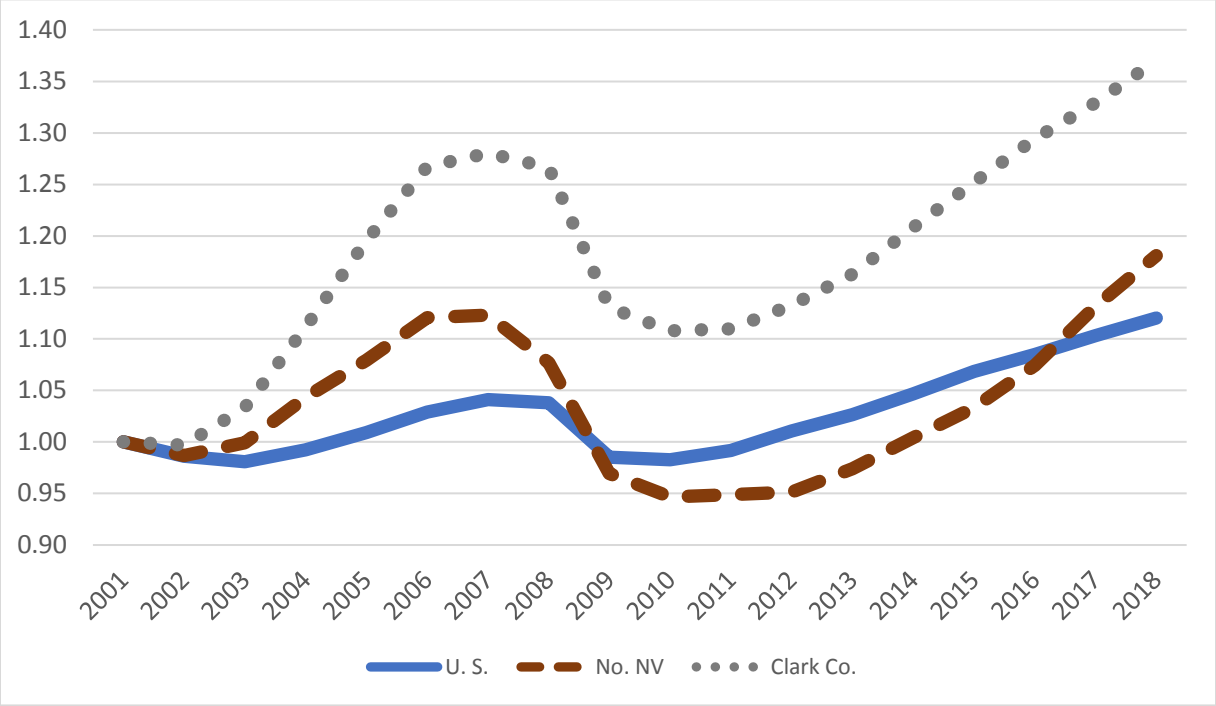
Table 8. New Employment over Residential Building Permits[xxiii]

Time Period	Clark County	Northern Nevada	United States
Jobs per Permit 2004 to 2008	1.2	0.8	0.9
Jobs per Permit 2009 to 2013	-2.3	-4.9	-0.4
Jobs per Permit 2014 to 2018	2.5	2.5	2.0
New Employment (June to June) 6-2004 to 6-2008	169,063	18,576	7,532,766
New Employment (June to June) 6-2009 to 6-2013	-74,966	-24,613	-1,515,003
New Employment (June to June) 6-2014 to 6-2018	150,513	49,512	12,337,969
Residential Permits 2004 to 2008	145,986	23,198	8,368,070
Residential Permits 2009 to 2013	32,257	4,990	3,632,114
Residential Permits 2014 to 2018	60,235	19,517	6,041,225

Employment fluctuated dramatically over the previous 19 years (Table 8 and Figure 6). June Quarterly Census of Employment and Wages (QCEW) employment at the height of the bubble reached 929,632 in Clark County in 2007, not to be surpassed again until June 2016 at 939,577. In between Clark Co. QCEW June employment reached a low of 804,297 in 2010. In 2018 Clark County QCEW June employment was 994,819 (preliminary), up by nearly 30,000 jobs (3.1%) from June 2017.In Northern Nevada (Carson City, Lyon, Storey and Washoe counties) June employment also peaked in 2007 at 268,949 which was not surpassed until June of 2017 at 271,038. In between Northern Nevada QCEW

employment in June hit a low of 226,716 also in 2010. Preliminary Northern Nevada employment in 2018 was 281,015 (preliminary), up by 4.3% over 2017. In Figure 6 employment data was indexed to 2001 values to allow for comparison of the changes since then across regions.

Figure 6. QCEW June Employment Index, 2001 to 2018 (2001 = 1)[xxiv]

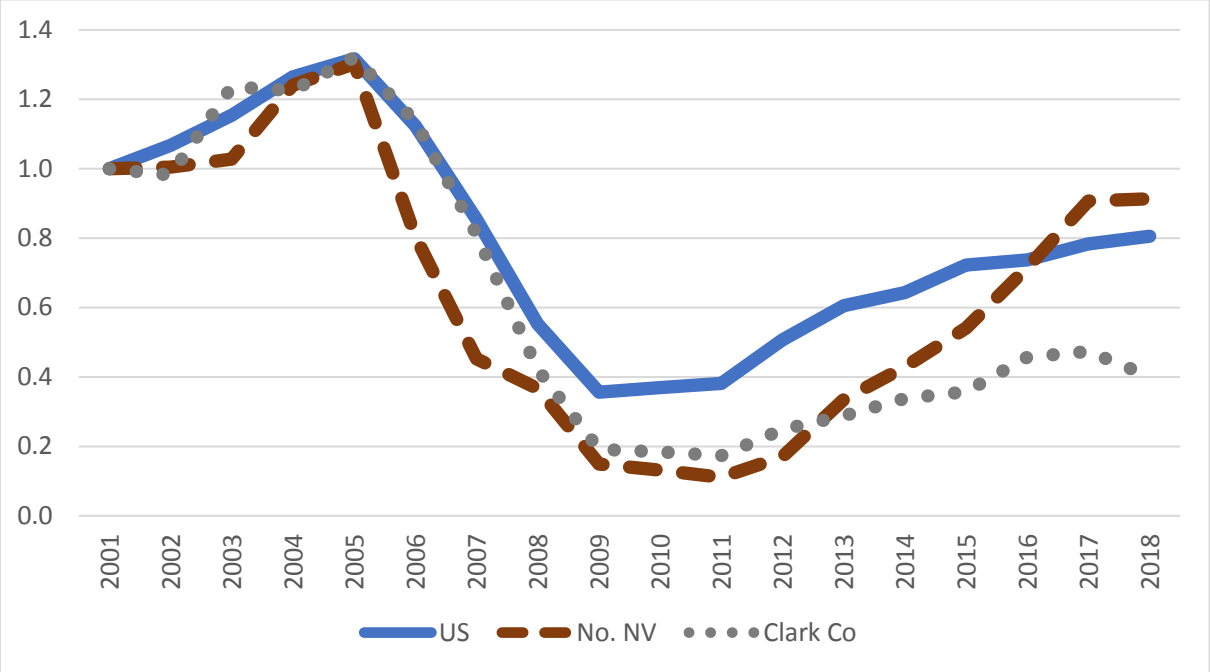


Annual number of residential building permits also fluctuated dramatically over the course of the previous 19 years (Table 8 and Figure 7). At the height in 2005 permits were issued by Clark County for 39,237 units. After 2007, the highest number of units permitted was 14,073 in 2017. In contrast, the low for the period was in 2011 when only 5,147 permits were issued. Permits issued in 2018 were down year over year from 2017 by 15.1% to 11,944 (preliminary).

In Northern Nevada (Carson City, Lyon, Storey and Washoe counties) annual residential permits peaked in 2005 also at 7,252 units. The lowest number of permits issued was in 2011 at only 617. In 2018, northern Nevada permitted 5,086 units (preliminary) up less than 1% over 2017.

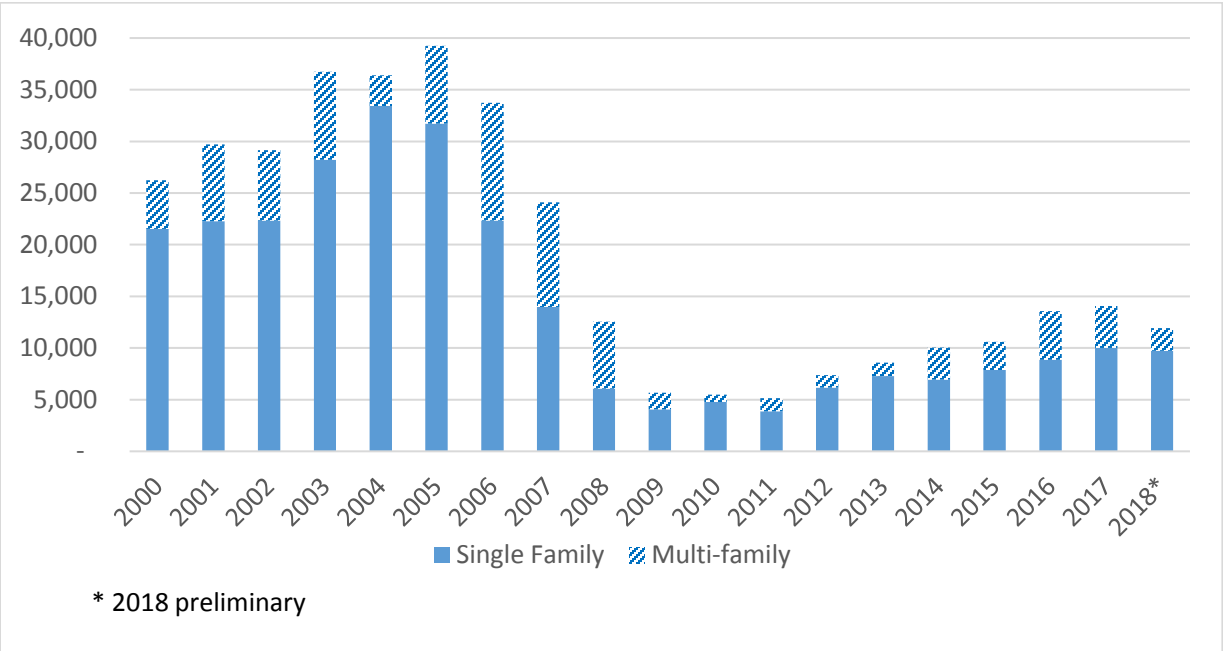
Permit data was also indexed to 2001 values to allow for comparison of an index across regions in Figure 7.

Figure 7. Residential Building Permits Index, 2001 to 2018 (2001=1) [xxv]



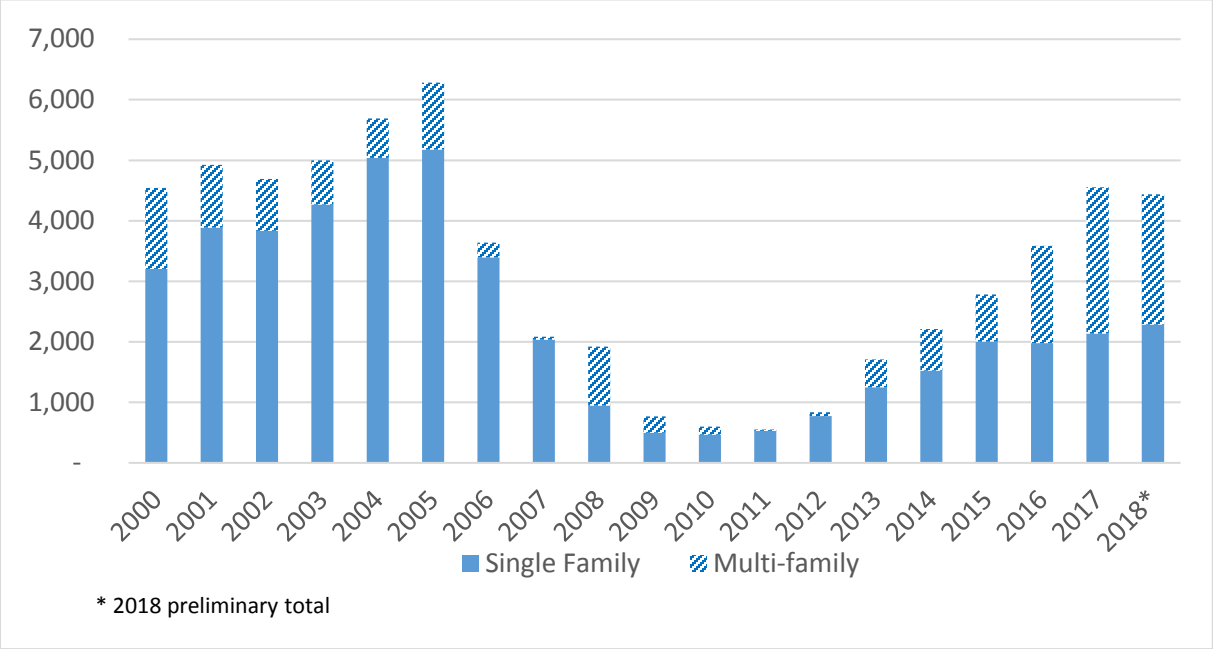
Figures 8, 9 and 10 graph the Census Bureau residential building permits data from 2000 to 2018 for Clark County, Washoe County and Rural Nevada. Solid blue denotes single family units while the striped blue denotes multi-family units. For more discussion of Nevada's residential building permit data see the Nevada Building Permits report on the Low Income Housing Database Housing Market Data page at the Nevada Housing Division website.

Figure 8. Clark County Residential Building Permits, 2000 to 2018[xxvi]



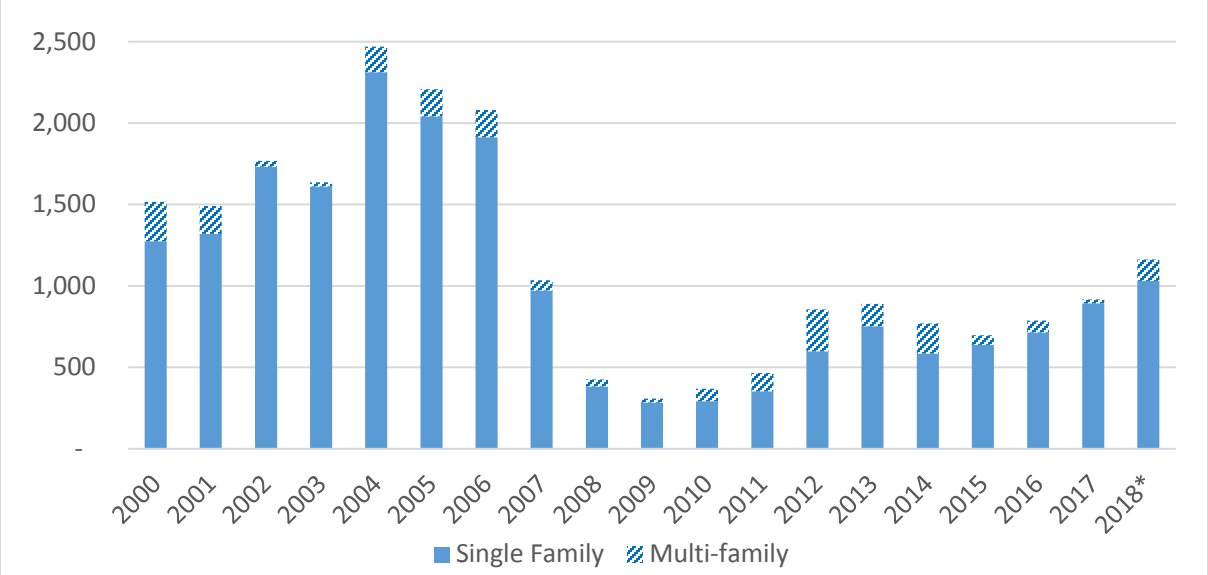
* 2018 preliminary

Figure 9. Washoe County Residential Building Permits, 2000 to 2018



* 2018 preliminary total

Figure 10. Rural Nevada Residential Building Permits, 2000 to 2018



* 2018 preliminary

Homeownership Rate

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Homeownership Rate	53.3	↓	58.6	↓	63.9	↑

Homeownership rate dashboard indicator:

The homeownership rate in 2013 in Clark County was 54.7% and has since decreased to 53.3% in 2017. For Washoe County the rate decreased from 58.9% in 2013 to 58.6% in 2017. U.S. homeownership rates increased slightly from 63.5% to 63.9% from 2013 to 2017. See Table 9 for the time series from 2009 to 2017 for all three regions.

The dashboard assumption is that increasing homeownership is good. Culturally, homeownership is considered to be highly beneficial to both society and homeowners and is promoted by policies at both the federal and local level. Studies have shown that homeownership may help households with child development, wealth aggregation and personal satisfaction while it may help the community with neighborhood stability and increased civic involvement. The leverage that a householder can command with a mortgage can lead to a return on investment greater than is available in the stock market if wielded in an appreciating housing market. However, many of the benefits found in research studies are confounded by self-selection bias – the difficulty of sorting out whether the benefits stem from the type of people who chose to become homeowners or through the actual experience of owning a home. Financial benefits and leverage may fail or backfire in markets where homes are not appreciating, as was observed in the latest housing downturn, and these types of risks may be highest in low income neighborhoods.[xxvii]

More about homeownership in Nevada

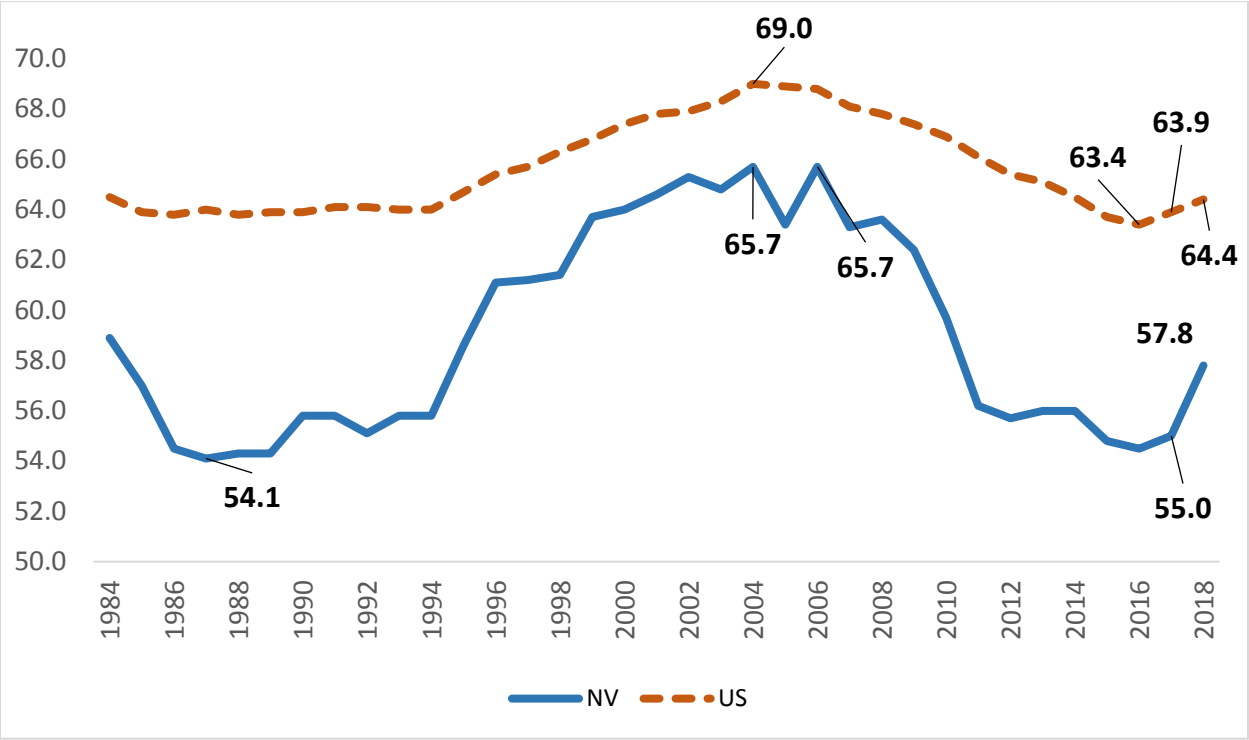
Table 9. American Community Survey (ACS) Homeownership Rates, 2009 to 2017[xxviii]

Year	Clark Co.	Washoe Co.	United States
2009	60.1%	62.2%	65.9%
2010	59.1%	62.0%	65.4%
2011	57.5%	61.0%	64.6%
2012	55.8%	59.6%	63.9%
2013	54.7%	58.9%	63.5%
2014	53.3%	57.8%	63.1%
2015	52.7%	57.5%	63.0%
2016	52.4%	57.5%	63.1%
2017	53.3%	58.6%	63.9%

Table 9 gives homeownership rates calculated with the Census Bureau's ACS data. A different Census Bureau homeownership series using data from the Current Population Survey and the American Housing Survey is available for Nevada and the United States as a time series back to 1984 (it is not available for smaller regions such as Washoe County.) Figure 11 displays this homeownership series for Nevada and the United States. Homeownership for the United States as a whole has been higher than Nevada's for the entire period. For Nevada the lowest rate occurred in 1987 at 54.1%. For the United States the lowest homeownership rate occurred in 2016 at 63.4%. The highest rate for both regions occurred in 2004 at 69.0% for the United States and 65.7% for Nevada with Nevada hitting the same percentage again in 2006. Both series have shown an increase from 2017 to 2018 with Nevada increasing robustly from 55% in 2017 to 57.8% in 2018. However, because of the smaller sample size in these surveys the 90% confidence interval is large. For

example, for Nevada 2018 it is plus or minus 2.3% for the homeownership rate estimate and for the United States it is plus or minus 0.3%. The 2018 data for the ACS series is not available as of this writing.

Figure 11. Homeownership rate for Nevada and the United States (%), 1984 to 2018.



Share of Homes Sold Affordable to Median Income Family

Indicator	Clark	Clark Trend	Washoe	Washoe Trend	U.S.	U.S. Trend
Share of Homes Sold Affordable to Median Income Family	46.4	↓	37.9	↓	63.6	↓

Share of affordable homes dashboard indicator:

The National Association of Home Builders-Wells Fargo Housing Opportunity Index measures the percentage of home sales that would have been affordable to the median income household. In Las Vegas 46.4% of the homes sold in the 4th quarter of 2018 were affordable to a median income household. This was down from 71.9% in 4th quarter of 2014. For Washoe County in the 4th quarter of 2018, only 37.9% of homes sold were affordable to a median income household as compared to 64.5% in the 4th quarter of 2014. At the national level there was also a decrease in affordability from 65.5% in 4th quarter 2014 to 63.6% in 4th quarter 2018. The largest decrease was experienced in Washoe County.

To calculate the opportunity index NAHB uses HUD area median family income and actual sales transaction records from CoreLogic. The share of the records with home sale prices that would have been affordable to a household with HUD area median family income is then calculated. To read more about the methodology used by NAHB-Wells Fargo visit the NAHB-Wells Fargo Housing Opportunity Index webpage.

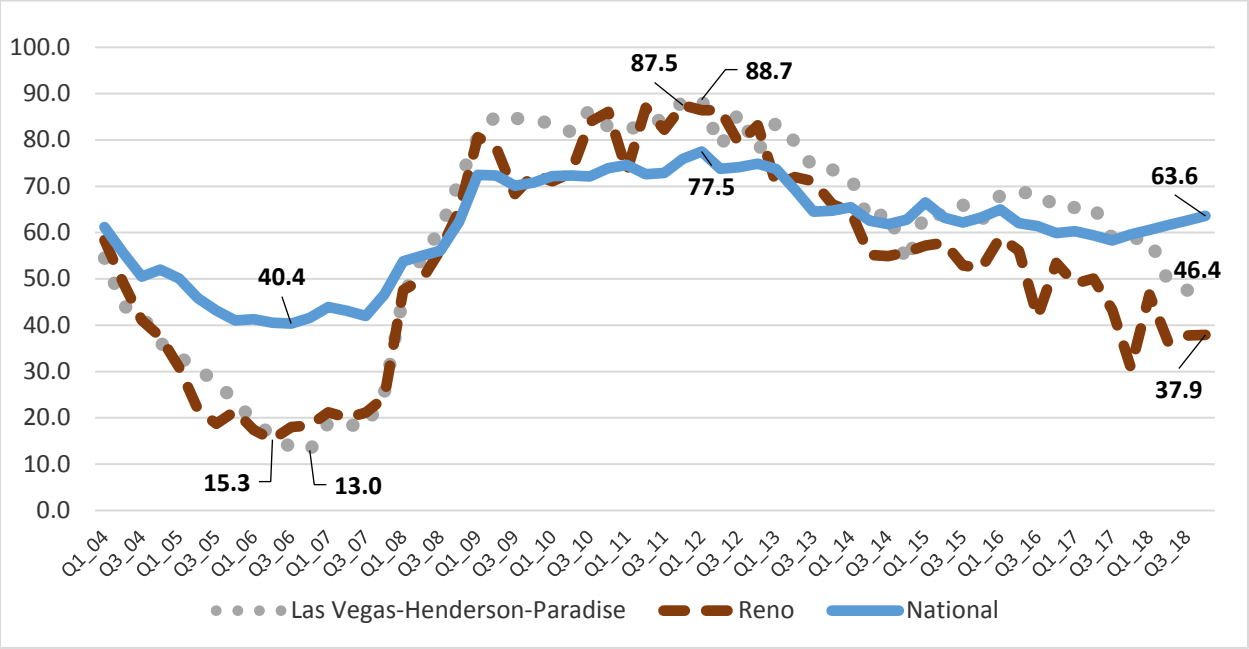
More about the housing opportunity index

Figure 12 gives the housing opportunity index from the National Association of Home Builders and Wells Fargo from the 1st quarter 4004 to the 4th quarter of 2018. The index gives the share of homes sold that would be affordable to a median income family. At the peak of the housing boom in 2006, this share was only 15% in Reno-Sparks and 13% in Las Vegas-Henderson-Paradise. As prices plummeted, the share rose to 87% in Reno-Sparks and 89% in Las Vegas-Henderson-Paradise. Currently, affordability of single family homes has been decreasing rapidly in Las Vegas closing in on Reno-Sparks low share of affordable home sales. Reno-Sparks experienced a 7.1 point increase in the affordability index from 4th quarter 2017 to 4th quarter 2018 from 30.8% to 37.9%, while Las Vegas' decreased 12.3 points to 46.4%. Both regions have a lower opportunity index than the nation at 63.6%.

Table 10. National Association of Home Builders-Wells Fargo Housing Opportunity Index[xxix]

Region	Q4_14	Q4_17	Q4_18	Change over 5 yrs.	Change year over year
Las Vegas-Paradise	71.9	58.7	46.4	-25.5	-12.3
Reno-Sparks	64.5	30.8	37.9	-26.6	7.1
National	65.5	59.6	63.6	-1.9	4

Figure 12. National Association of Home Builders – Wells Fargo Housing Opportunity Index, 1st qtr. 2004 to 4th qtr. 2018



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Abstracts

Albright, L., et al. (2013). "Do Affordable Housing Projects Harm Suburban Communities? Crime, Property Values, and Taxes in Mount Laurel, NJ." City & Community 12(2): 89-112.

This paper offers a mixed-method analysis of the municipal-level consequences of an affordable housing development built in suburban New Jersey. Opponents of affordable housing development often suggest that creating affordable housing will harm surrounding communities. Feared consequences include increases in crime, declining property values, and rising taxes. To evaluate these claims, the paper uses the case of Mount Laurel, New Jersey—the site of a landmark affordable housing legal case and subsequent affordable housing development. Employing a multiple time series group control design, we compare crime rates, property values, and property taxes in Mount Laurel to outcomes in similar nearby municipalities that do not contain comparable affordable housing developments. We find that the opening of the affordable housing development was not associated with trends in crime, property values, or taxes, and discuss management practices and design features that may have mitigated potential negative externalities.

Baum-Snow, N. and J. Marion (2009). "The effects of low income housing tax credit developments on neighborhoods." Journal of Public Economics 93(5–6): 654-666.

This paper evaluates the impacts of new housing developments funded with the Low Income Housing Tax Credit (LIHTC), the largest federal project based housing program in the U.S., on the neighborhoods in which they are built. A discontinuity in the formula determining the magnitude of tax credits as a function of neighborhood characteristics generates pseudo-random assignment in the number of low income housing units built in similar sets of census tracts. Tracts where projects are awarded 30% higher tax credits receive approximately six more low income housing units on a base of seven units per tract. These additional new low income developments cause homeowner turnover to rise, raise property values in declining areas and reduce incomes in gentrifying areas in neighborhoods near the 30th percentile of the income distribution. LIHTC units significantly crowd out nearby new rental construction in gentrifying areas but do not displace new construction in stable or declining areas.

Desmond, M. and T. Shollenberger (2015). "Forced Displacement from Rental Housing: Prevalence and Neighborhood Consequences." Demography 52(5): 1751-1772.

Drawing on novel survey data of Milwaukee renters, this study documents the prevalence of involuntary displacement from housing and estimates its consequences for neighborhood selection. More than one in eight Milwaukee renters experienced an eviction or other kind of forced move in the previous two years. Multivariate analyses suggest that renters who experienced a forced move relocate to poorer and higher-crime neighborhoods than those who move under less-demanding circumstances. By providing evidence implying that involuntary displacement is a critical yet overlooked mechanism of neighborhood inequality, this study helps to clarify why some city dwellers live in much worse neighborhoods than their peers.

Di, W. and J. C. Murdoch (2013). "The impact of the low income housing tax credit program on local schools." Journal of Housing Economics 22(4): 308-320.

The low-income housing tax credit (LIHTC) program has developed over two million rental homes for low-income households since 1986. The perception of deterioration in school quality has been a main reason for community opposition to LIHTC projects in middle- and upper-income areas. In this paper, we examine the impact of LIHTC projects on the nearby school performance using data on all LIHTC projects and elementary schools in Texas from the 2003–04 through 2008–09 academic years. We employ the longitudinal structure of the data to control for school fixed effects and estimate the relationship between the opening of nearby LIHTC on campus-level standardized test scores and performance ratings. We address the potential selection biases by controlling for preexisting trends in school performance prior to the study period. We find no robust evidence that the opening of LIHTC units negatively impacts the performance of nearby elementary schools.

Abstracts (continued)

Eriksen, M. D. and S. S. Rosenthal (2010). "Crowd out effects of place-based subsidized rental housing: New evidence from the LIHTC program." Journal of Public Economics 94(11–12): 953-966.

Since its inception in 1987, the Low Income Housing Tax Credit (LIHTC) program has ballooned into the largest ever source of subsidized construction of low-income housing in the United States, accounting for one-third of all recent multi-family rental construction. This paper examines the crowd out effects of this increasingly important source of low-moderate income housing. To do so, we analyze the impact of LIHTC construction at three different levels of geography, MSA, county, and 10-mile radius circles. This allows us to employ increasingly extensive geographic fixed effects that help to difference away unobserved factors. Political variables are also used as instruments to further facilitate identification. In all of our models, IV estimates yield substantially greater crowd out than OLS, confirming the endogenous attraction of LIHTC development to areas ripe for new construction. Our most robust IV estimates indicate that nearly 100% of LIHTC development is offset by a reduction in the number of newly built unsubsidized rental units, although the confidence band around this point estimate allows for less dramatic assessments. Additional estimates suggest that LIHTC development has a much more moderate impact on construction of owner-occupied housing, but these estimates are imprecise. Overall, while LIHTC development may well affect the location of low-moderate income rental housing opportunities, our estimates suggest that the impact of the program on the number of newly developed rental housing units appears to be small.

Freedman, M. (2012). "Teaching new markets old tricks: The effects of subsidized investment on low-income neighborhoods." Journal of Public Economics 96(11–12): 1000-1014.

This paper examines the effects of investment subsidized by the federal government's New Markets Tax Credit (NMTC) program, which provides tax incentives to encourage private investment in low-income neighborhoods. I identify the impacts of the program by taking advantage of a discontinuity in the rule determining the eligibility of census tracts for NMTC-subsidized investment. Using this discontinuity as a source of quasi-experimental variation in commercial development across tracts, I find that subsidized investment has modest positive effects on neighborhood conditions in low-income communities. Though spillovers appear to be small and crowd out incomplete, the results suggest that some of the observed impacts on neighborhoods are attributable to changes in the composition of residents as opposed to improvements in the welfare of existing residents.

Freedman, M. and T. McGavock (2015). "Low-Income Housing Development, Poverty Concentration, and Neighborhood Inequality." Journal of Policy Analysis and Management 34(4): 805-834.

Considerable debate exists about the merits of place-based programs that steer new development, and particularly affordable housing development, into low-income neighborhoods. Exploiting quasi-experimental variation in incentives to construct and rehabilitate rental housing across neighborhoods generated by Low-Income Housing Tax Credit (LIHTC) program rules, we explore the impacts of subsidized development on local housing construction, poverty concentration, and neighborhood inequality. While a large fraction of rental housing development spurred by the program is offset by a reduction in the number of new unsubsidized units, housing investment under the LIHTC has measurable effects on the distribution of income within and across communities. However, there is little evidence the program contributes meaningfully to poverty concentration or residential segregation.

Abstracts (continued)

Freedman, M. and E. G. Owens (2011). "Low-income housing development and crime." Journal of Urban Economics 70(2–3): 115-131.

This paper examines the effect of rental housing development subsidized by the federal government's Low-Income Housing Tax Credit (LIHTC) program on local crime. Under the LIHTC program, certain high-poverty census tracts receive Qualified Census Tract (QCT) status, which affects the size of the tax credits developers receive for building low-income housing. Changes in federal rules determining QCT status generate quasi-experimental variation in the location of LIHTC projects. Exploiting this variation, we find that low-income housing development in the poorest neighborhoods brings with it significant reductions in violent crime that are measurable at the county level. There are no detectable effects on property crime.

Galster, G. C. (2013). U.S. Assisted Housing Programs and Poverty Deconcentration: A Critical Geographic Review. Neighbourhood Effects or Neighbourhood Based Problems? A Policy Context. D. Manley, M. van Ham, N. Bailey, L. Simpson and D. Maclennan. Dordrecht, Springer Netherlands: 215-249.

The personal and social costs of concentrating low-income (typically minority) households in neighbourhoods with high proportions of similarly disadvantaged households has long been of concern in the U.S. In this chapter, Galster explores four federal housing programs tasked with reducing poverty concentrations over the last 25 years: (1) scattered-site public housing; (2) tenant-based Housing Choice Vouchers (HCV); (3) private developments subsidized through the Low-Income Housing Tax Credit (LIHTC); and (4) mixed-income redevelopment of distressed public housing estates (HOPE VI). Based on a synthesis of the evidence, four conclusions are drawn. Residents of U.S. public housing on average reside in significantly more disadvantaged neighbourhoods compared to participants in any other assisted housing program. Residents of other types of site-based assisted housing programs (particularly LIHTC) do not reside in significantly different residential environments than tenant-based HCV holders. HCV households live in somewhat lower-poverty neighbourhoods than equivalent households who do not receive housing subsidies, but the comparative differences are more modest for residents in LIHTC units. HCV holders typically do not substantially improve their neighbourhood circumstances with subsequent moves. In understanding how these post-public housing policy efforts have not produced more significant deconcentration of poverty the chapter identifies both the scale and structure of the housing programs, characteristics and needs of residents, and structural barriers. In conclusion, an amalgam of supply-side and demand-side housing program reforms is suggested, coupled with non-housing strategies. Importantly, the US experience offers selective lessons for housing policymakers in Western Europe, though there are vast differences in the origins and policy options available for addressing concentrated poverty.

Hagen, D. and J. Hansen (2010). "Rental Housing and the Natural Vacancy Rate." Journal of Real Estate Research 32(4): 413-433.

This study uses 1989–2005 data for the Seattle metropolitan area to test the natural vacancy rate hypothesis for rental housing markets using a new methodology. Findings support the existence of a natural vacancy rate for apartments that varies over time, and in some cases across apartment submarkets. Results show a decline in the natural vacancy rate in the time period following the introduction and growth of the Web. Results also show significant differences in natural vacancy rates for different geographic subareas. No significant differences in the natural vacancy rate are found for different apartment types.

Abstracts (continued)

Horn, K. M. and K. M. O'Regan (2011). "The low income housing tax credit and racial segregation." Housing Policy Debate 21(3): 443-473.

This paper addresses a critical but almost unexamined aspect of the Low Income Housing Tax Credit (LIHTC) program—whether its use (and in particular, the siting of developments in high poverty/high minority neighborhoods), is associated with increased racial segregation in the metropolitan area. Using data from HUD and the census, supplemented with data on the racial composition of LIHTC tenants in three states, we examine three potential channels through which the LIHTC could affect segregation: where LIHTC units are built relative to where other low income households live, who lives in these tax credit developments, and changes in neighborhood racial composition in neighborhoods that receive tax credit projects. The evidence on each of these channels suggests that LIHTC projects do not contribute to increased segregation, even those in high poverty neighborhoods. On net, we find that increases in the use of tax credits are associated with declines in racial segregation at the metropolitan level.

Lang, B. J. (2012). "Location incentives in the low-income housing tax credit: Are qualified census tracts necessary?" Journal of Housing Economics 21(2): 142-150.

The low-income housing tax credit (LIHTC) is the largest project-based housing subsidy in the United States. Within the program, private developers receive a subsidy in exchange for constructing apartment units that rent for a predetermined affordable rate. Because the subsidy requires apartment buildings to charge a lower rental rate, the opportunity cost of developing subsidized housing in a location is the market rent that a developer could have charged if he had not received the subsidy. This study characterizes how profit incentives motivate location decisions within the LIHTC program by showing that opportunity cost causes more LIHTC development in locations with low market rent. This result implies that additional financial incentives, like the qualified census tract, may not be necessary to promote construction of subsidized housing in low-rent areas.

Ly, A. and E. Latimer (2015). "Housing First Impact on Costs and Associated Cost Offsets: A Review of the Literature." The Canadian Journal of Psychiatry 60(11): 475-487.

Objective: Housing First (HF) programs for people who are chronically or episodically homeless, combining rapid access to permanent housing with community-based, integrated treatment, rehabilitation and support services, are rapidly expanding in North America and Europe. Overall costs of services use by homeless people can be considerable, suggesting the potential for significant cost offsets with HF programs. Our purpose was to provide an updated literature review, from 2007 to the present, focusing specifically on the cost offsets of HF programs. Method: A systematic review was performed on MEDLINE and PsycINFO as well as Google and the Homeless Hub for grey literature. Study characteristics and key findings were extracted from identified studies. Where available, impact on service cost associated with HF (increase or decrease) and net impact on overall costs, taking into account the cost of HF intervention, were noted. Results: Twelve published studies (4 randomized studies and 8 quasi-experimental) and 22 unpublished studies were retained. Shelter and emergency department costs decreased with HF, while impacts on hospitalization and justice costs are more ambiguous. Studies using a pre/post design reported a net decrease in overall costs with HF. In contrast, experimental studies reported a net increase in overall costs with HF. Conclusions: While our review casts doubt on whether HF programs can be expected to pay for themselves, the certainty of significant cost offsets, combined with their benefits for participants, means that they represent a more efficient allocation of resources than traditional services.

Abstracts (continued)

Malpezzi, S. and K. Vandell (2002). "Does the low-income housing tax credit increase the supply of housing?" Journal of Housing Economics 11(4): 360-380.

The low-income housing tax credit (LIHTC) was originated in conjunction with the Tax Reform Act of 1986 (TRA 86) to provide incentives for private sector production of low-income housing. In this note we examine whether these units have added to the existing stock or merely substituted for unsubsidized units that otherwise would have been built. We explicitly control for effects of the number of other supply-side (e.g., public housing, Section 8 New Construction, Section 236 housing) and demand-side (vouchers and Section 8 Certificates) subsidies. From estimations of a simple cross-state model of the determinants of the stock of housing per 1000 population, we find no significant relationship between the number of LIHTC units (and other subsidized units) built in a given state and the size of the current housing stock, suggesting a high rate of substitution. However, our test is not sufficiently powerful to reject some alternative null hypotheses that suggest a lower rate of substitution, and we make some suggestions for future research.

Orfield, M., et al. (2016). "Taking a Holistic View of Housing Policy." Housing Policy Debate 26(2): 284-295.

Pollack, C. E., et al. (2010). "Housing Affordability and Health among Homeowners and Renters." American Journal of Preventive Medicine 39(6): 515-521.

BACKGROUND:
Although lack of affordable housing is common in the U.S., few studies have examined the association between housing affordability and health.

PURPOSE:
Using quasi-experimental methods, the aim of this study was to examine whether housing affordability is linked to a number of important health outcomes, controlling for perceptions of neighborhood quality, and determining whether this association differs by housing tenure (renting versus owning).

METHODS:
Data from the 2008 Southeastern Pennsylvania Household Health Survey, a telephone-based survey of 10,004 residents of Philadelphia and its four surrounding counties, were analyzed. The association between housing affordability and health outcomes was assessed using propensity score methods to compare individuals who reported living in unaffordable housing situations to similar individuals living in affordable ones.

RESULTS:
Overall, 48.4% reported difficulty paying housing costs. People living in unaffordable housing had increased odds of poor self-rated health (AOR=1.75, 95% CI=1.33, 2.29); hypertension (AOR=1.34, 95% CI=1.07, 1.69); arthritis (AOR=1.92, 95% CI=1.56, 2.35); cost-related healthcare nonadherence (AOR=2.94, 95% CI=2.04, 4.25); and cost-related prescription nonadherence (AOR=2.68, 95% CI=1.95, 3.70). There were no significant associations between housing affordability and heart disease, diabetes, asthma, psychiatric conditions, being uninsured, emergency department visits in the past year, obesity, and being a current smoker. Renting rather than owning a home heightened the association between unaffordable housing and self-rated health (AOR=2.55, 95% CI=1.93, 3.37 for renters and not significant among homeowners) and cost-related healthcare nonadherence (AOR=4.74, 95% CI=3.05, 7.35 for renters and AOR=1.99, 95% CI=1.15, 3.46 for homeowners).

CONCLUSIONS:
The financial strain of unaffordable housing is associated with trade-offs that may harm health. Programs that target housing affordability for both renters and homeowners may be an important means for improving health.

Abstracts (continued)

Quigley, J. M. and S. Raphael (2001). "THE ECONOMICS OF HOMELESSNESS: THE EVIDENCE FROM NORTH AMERICA." European Journal of Housing Policy 1(3): 323-336.

It is generally believed that the increased incidence of homelessness in the US has arisen from broad societal factors - changes in the institutionalization of the mentally ill, increases in drug addiction and alcohol usage, etc. This paper reports on a comprehensive test of the alternate hypothesis that variations in homelessness arise from changed circumstances in the housing market and in the income distribution. We utilize essentially all the systematic information available on homelessness in US urban areas - census counts, shelter bed counts, records of transfer payments, and administrative agency estimates. We use these data to estimate the effects of housing prices, vacancies, and rent-to-income ratios upon the incidence of homelessness. Our results suggest that simple economic principles governing the availability and pricing of housing and the growth in demand for the lowest quality housing explain a large portion of the variation in homelessness among US metropolitan housing markets. Furthermore, rather modest improvements in the affordability of rental housing or its availability can substantially reduce the incidence of homelessness in the US.

Schwartz, A. (2016). "The Low-Income Housing Tax Credit, Community Development, and Fair Housing: A Response to Orfield et al." Housing Policy Debate 26(2): 276-283.

Sinai, T. and J. Waldfogel (2005). "Do low-income housing subsidies increase the occupied housing stock?" Journal of Public Economics 89(11–12): 2137-2164.

A necessary condition for justifying a policy such as subsidized low-income housing, either via tenant-based rental assistance or construction of public or private projects, is that it has a real effect on market outcomes. In this paper, we examine one aspect of the real effect of subsidized housing—does it increase the housing stock? If subsidized housing raises the quantity of occupied housing per capita, either more people are finding housing or they are being housed less densely. On the other hand, if subsidized housing merely crowds-out equivalent-quality low-income housing that otherwise would have been provided by the private sector, the housing policy may have little real effect on housing consumption. Using both Census place and MSA-level data from the decennial census and from the Department of Housing and Urban Development, we ask whether housing markets with more subsidized housing also have more total housing, after accounting for housing demand. We find that government-financed units raise the total number of units in a market, although on average one government-subsidized unit adds only one-third to one-half of a unit to the total housing stock. There is less crowd-out in more populous markets, and more crowd-out in places where there is less excess demand for subsidized housing, as measured by the number of government-financed units per eligible person. Tenant-based housing programs, such as Section 8 Certificates and Vouchers, seem to be more effective than project-based programs at targeting subsidized housing units to people who otherwise would not have their own.

Steen, A. (2018). "The many costs of homelessness." The Medical Journal of Australia 208(4): 167-168.

Endnotes

[i] This statistic uses the northern Nevada counties of Carson City, Lyon, Storey and Washoe.

[ii] The PIT count is not the same as the estimate of total population that has experienced a bout of homelessness over the entire year. For annual estimates, the PIT count is adjusted upward by two factors, according to a standard HUD prescribed method. First, the number of homeless who became homeless in the last seven days is multiplied by 51. Then the proportion of currently homeless who have experienced more than one homeless episode in the past year is used to adjust this number downward. These factors also vary.

[iii] Bitfocus, Inc. for Help Hope Home. 2016. Homeless Census and Survey 2016 Southern Nevada Comprehensive Report

[iv] U.S. Housing and Urban Development. 2014. Point-in-Time Count Methodology Guide.https://www.hudexchange.info/resources/documents/PIT-Count-Methodology-Guide.pdf accessed May 8 2017.

[v] Figure 1, Table 1 and 2 Sources: US Department of Housing and Urban Development HUD Exchange, PIT and HIC Data Since 2007, https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/ accessed 1-4-2019, US Census Bureau Population and Housing Units Estimates for Vintage 2018, https://www.census.gov/programs-surveys/popest.html and calculations by author.

[vi] U.S. Housing and Urban Development, Office of Policy Development and Research. Income Limits. Effective April 1, 2018, https://www.huduser.gov/portal/datasets/il.html accessed 6-4-2018.

[vii] Hertz, Daniel. July 2015. Residual Income a Better Way of Measuring Affordability, City Commentary at http://cityobservatory.org/residual-income-a-better-way-of-measuring-affordability/ and
H + T Affordability Index: https://htaindex.cnt.org/map/.

[viii] Jewkes, Melanie and Delgadillo, Lucy, Weaknesses of Housing Affordability Indices Used by Practitioners. Journal of Financial Counseling and Planning, Vol. 21, No. 1, 2010. Available at SSRN: https://ssrn.com/abstract=2222052 and Cai, Zi, 2017. Analyzing Measurements of Housing Affordability. Thesis. Washington State University.

[ix] Figure 2 and 3 Source: State of the Cities Data Systems: Comprehensive Housing Affordability Strategy (CHAS) Data from 1990 and 2000 Census, https://socds.huduser.gov/chas/CHAS_java.odb , accessed 4-25-2018, HUD 2011-2015 and HUD 2006-2010 Comprehensive Housing Affordability Strategy datasets Housing Affordability Strategy https://www.huduser.gov/portal/datasets/cp.html and calculations by author. Note that methodology and survey changes between Census long form and American Community Survey may prevent a precise comparison.
In 2014, HUD changed the extremely low income category of households to include households that are either under the federal poverty level or 30% or HUD area family median income, whichever is the highest.

[x] Table 3 Sources: U.S. Housing and Urban Development, Office of Policy Development and Research. Income Limits. Effective April 1, 2018, https://www.huduser.gov/portal/datasets/il.html accessed 6-4-2018.

[xi] The FY 2014 Consolidated Appropriations Act changed the definition of extremely low-income to be the greater of 30/50ths (60 percent) of the Section 8 very low-income limit or the poverty guideline as established by the Department of Health and Human Services (HHS), provided that this amount is not greater than the Section 8 50% very low-income limit. Consequently, the extremely low income limits may equal the very low (50%) income limits. This change can effect comparability between time periods going forward.

[xii] Table 4 and 5 Sources: ALN Las Vegas Apartment Data for month of October 2013, November 2014, October 2015-2018, Lied Institute Apartment Market Trends, ALN Reno Review, October 2017, Excel Spreadsheet *Reno History Stats* email communication with ALN 1-11-2017, Fourth Quarter, 2013 to 2018, Johnson, Perkins & Griffin 4th Quarter 2018 report. Low Income Housing Tax Credit Vacancy Rates and Rents for Clark and Washoe County from Taking Stock editions 2013 to 2018. For more detail please see https://housing.nv.gov/programs/Low_Income_Housing_Database/ National Data from Reis Q4 2013 to 2017 Apartment Trends 2013 to 2017 by Victor Calanog, 2018 Preliminary Apartment Trends, Q4 2018 https://www.reis.com/apartment-preliminary-trends-q4-2018/

[xiii] ALN Las Vegas Apartment Data for month of October 2013, November 2014, October 2015-2018. Johnson and Perkins 4th Quarter 2018 report.

[xiv] Section 42 regulations can be found at: https://www.irs.gov/pub/irs-drop/rr-04-82.pdf

[xv] Census Bureau, American Community Survey 5-year estimates for 2017, Table B25024, Units in Structure https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml accessed 2/4/2019. For Nevada Tax Credit Housing by County, an in-house Nevada Housing Division database gives total housing units in tax credit properties as of February 4, 2019 as 27,117.

[xvi] From NHD in-house database, Mothership.xlsx, 1-24-2018

[xvii] http://www.nytimes.com/2012/12/21/opinion/a-tax-credit-worth-preserving.html?_r=1

[xviii] For more about Nevada's Low Income Housing Tax Credit apartments and inventory please see any of the Taking Stock reports 2013 to 2018. https://housing.nv.gov/programs/Low_Income_Housing_Database/

[xix] Stagg, Thomas. 2009. "Understanding the New Income Limits." Novogradac Property Compliance Report. Vol. XII, Issue 5.

[xx] Sources for Table 6: Subsidized unit for Washoe and Clark County are from Nevada Housing Division's 2018 Annual Housing Progress Report. Numbers for balance of state were from the report "Nevada Low Income Properties by County" for May 2017 and September 2018 available on the Nevada Housing Division Database webpage or by request:
https://housing.nv.gov/uploadedFiles/housingnvgov/content/programs/Nevada%20Low%20Income%20Properties.pdf Internal Housing Division documents were used to estimate the changes in the balance of state inventory that took place from 2015 to 2018 in order to derive 2015 number of subsidized units.
Population estimates are from U.S. Census Bureau Population Estimates 2018 vintage: https://www.census.gov/programs-surveys/popest/data/data-sets.All.html Number of households for 2014 to 2017 were from ACS 1 year estimates for Washoe and Clark County; 2018 estimates and the number of households and the series for the balance of state were estimated by the author.

[xxi] For a summary of research on vouchers see Ellen, Ingrid. August 14, 2017. *What Do We Know About Housing Choice Vouchers?* NYU Furman Center and NYU Wagner. https://furmancenter.org/files/HousingChoiceVouchers_WorkingPaper_IngridGouldEllen_14AUG2017.pdf

[xxii] Sources for Figure 4 and 5 and Table 7: Total number of authorized Housing Choice Vouchers for Washoe and Clark County divided by population estimate over 1,000. Baseline year is 2013 and most recent is 2017. For the denominator the data source is U.S. Census Bureau Population Estimates Vintage 2018: https://www.census.gov/programs-surveys/popest/data/data-sets.All.html Voucher data is number of authorized vouchers and number of families using vouchers from U.S. Housing and Urban Development Voucher Management System data as accessed through the Center for Budget and Policy Priorities Housing Choice Voucher Utilization Data: https://www.cbpp.org/research/housing/national-and-state-housing-fact-sheets-data

[xxiii] Table 8 Sources: Ratio is change in June Quarterly Census of Employment and Wages (QCEW) employment divided by total private residential building permits. QCEW data is from the Bureau of Labor Statistics at https://www.bls.gov/cew/ accessed 5-28-2019 and permit data is from U.S. Census Bureau, Residential Building Permits Survey https://www2.census.gov/econ/bps/County/ accessed 2-25-2019.

[xxiv] Figure 6 Source: June QCEW employment divided by QCEW 2001 June Employment. https://www.bls.gov/cew/ accessed 5-28-2019.

[xxv] Figure 7 Source: U.S. Census Bureau, Residential Building Permits Survey. https://www2.census.gov/econ/bps/County/ accessed 2-25-2019. 2018 numbers are preliminary.
[xxvi] Figures 8 – 10 Source: U.S. Census Bureau, Residential Building Permits Survey. https://www2.census.gov/econ/bps/County/ accessed 2-25-2019 and calculations by author.
[xxvii] Schwarz, Alex. 2015. Housing Policy in the United States. 3rd Edition. New York and London, Routledge. P. 380-386.
[xxviii] Source for Table 9: U.S. Census Bureau American Community Survey as accessed through the Federal Reserve Bank of St. Louis. Annual Homeownership Rate https://fred.stlouisfed.org/series/HOWNRATEACS032003 and https://fred.stlouisfed.org/series/HOWNRATEACS032031 Accessed 5-21-2018. For the United States the source is United States Census Bureau, Table B25003 Tenure, 2012 and 2016 1-year estimates accessed 6-27-2018 https://factfinder.census.gov/
[xxix] Source for Table 10 and Figure 12. National Association of Home Builders. NAHB-Wells Fargo Housing Opportunity Index. http://www.nahb.org/en/research/housing-economics/housing-indexes/housing-opportunity-index.aspx accessed 3-13-2019