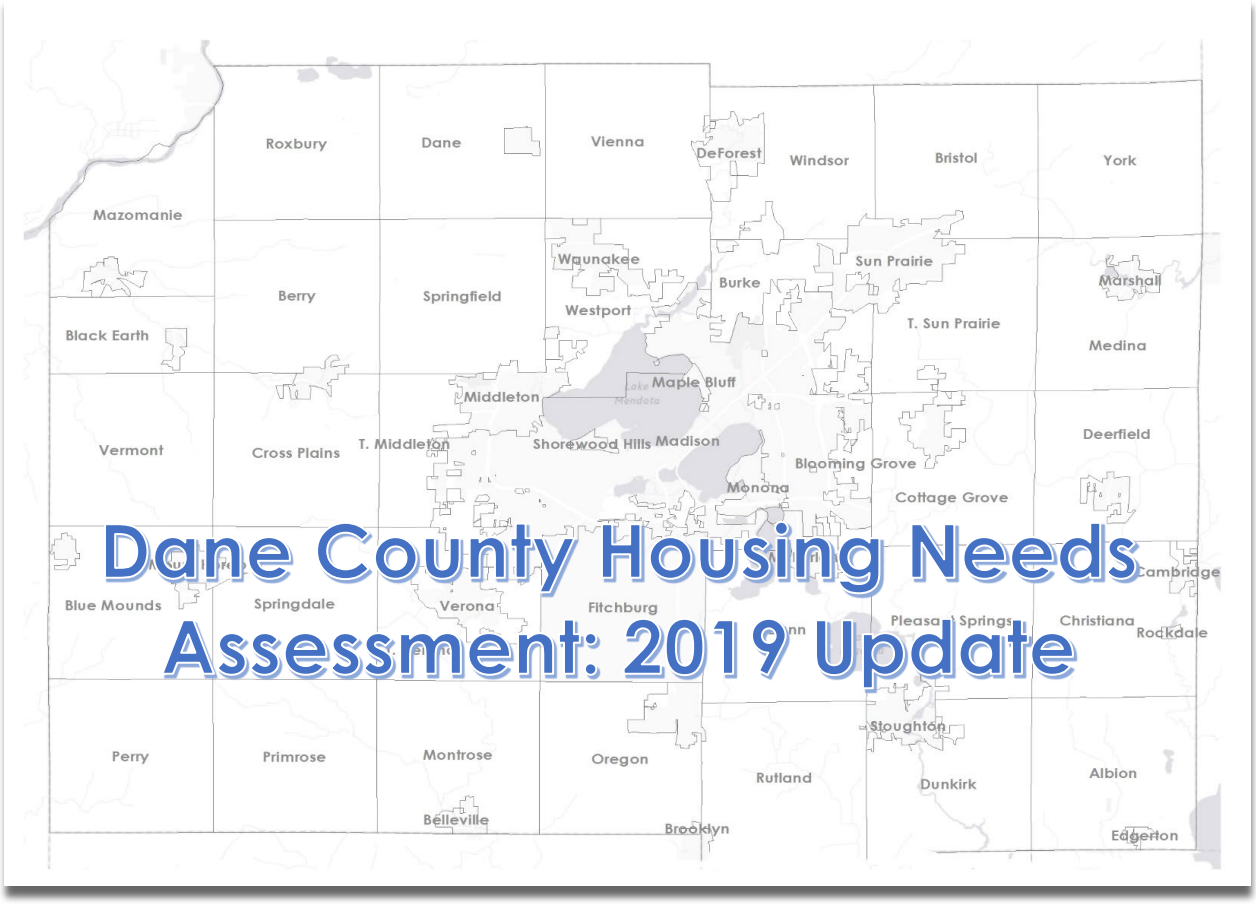

Dane County Housing Needs Assessment: 2019 Update

July 2019

Dane County Housing Initiative (DCHI)

UNIVERCITY YEAR
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COUNTY of DANE WISCONSIN 1839
UNIVERCITY YEAR DANE COUNTY

Department of Planning and Landscape Architecture
UNIVERSITY OF WISCONSIN–MADISON

About the Dane County Housing Initiative:

The Dane County Housing Initiative (DCHI) is a public-private partnership of residents, elected officials, financial institutions, housing developers, non-profit housing agencies and interested stakeholders. DCHI works to develop a network of information and resources, facilitate communication and learning, and help build strategies that expand housing options in Dane County.

About the UniverCity Alliance and UniverCity Year:

During 2017-2019, UniverCity Year partnered with the Dane County Board of Supervisors (to advance equity and sustainability throughout Dane County. This report is part of the partnership between UW-Madison and Dane County through the UniverCity Year program.

About this report:

In 2015, the Dane County Housing Initiative released a report on the housing needs for Dane County and its municipalities. This report updates that analysis of housing needs in Dane County with the most recent data available. It also discusses changes in housing demand and housing supply in Dane County since 2010.

An earlier version of this report was distributed at the 2018 Dane County Housing Summit. This document was revised to move much of the technical discussion to the appendix to make the document more readable, to add additional information on racial disparities in housing (section 5) updated data on Dane County's workforce (section 6), and updated data on "missing middle" housing supply (section 7). Where newer data was available, tables were updated.

About the author:

This report was authored by Kurt Paulsen, PhD, AICP, Associate Professor of urban planning in the Department of Planning and Landscape Architecture at the University of Wisconsin – Madison. The report represents the opinions and perspective of Prof. Paulsen alone, and does not necessarily reflect the opinions, policy, or positions of Dane County, the Dane County Board of Supervisors, UniverCity Alliance, or the University of Wisconsin System.

Major findings of the report:

- Household income, number of households, and population in Dane County have all grown at an average rate of 1.3 percent per year from 2010-2017. Jobs in Dane County have grown 1.7 percent per year. However, the number of housing units has only grown 1.1 percent per year. There is a real shortage of all types of housing units in Dane County. Rents have grown 2.3 percent per year on an average annualized basis.

-Despite producing over 25,000 net new housing units in Dane County (2006-2017), Dane County under-produced more than 11,000 housing units relative to household growth.

-Vacancies for multifamily rental units in the "core" urban area (Madison, Middleton, Monona, and Fitchburg zip codes) remain below 5 percent.

- Overall owner-occupied housing prices in Dane County have tracked the growth in housing prices in the nation, region, and state.

-Except for the lowest income households (those making less than 30 percent of AMI), the number of extremely-cost-burdened ***owner*** households has declined, marking a recovery from the housing and foreclosure crises of 2007/08.

- For ***renting*** households making less than half of median income, the number of extremely-cost-burdened households has increased in numbers. However, when measured as the percent of these households, extreme cost-burdens have declined slightly. If the rates of cost-burden from the previous report (2006-2010) applied today, at least 1,000 more renting households would be extremely cost-burdened. Although the percentage of extremely low-income renters who are extremely cost-burdened has declined, the increase in numbers reflects overall population growth.

- The City of Madison continues to have a disproportionate share of the region's lower-income renters relative to its share of the county's population.

- One measure of the "***Housing Gap***" is the difference between the number of renting households with incomes below 30 percent of AMI and the number of units whose rent would be affordable to households at 30 percent of AMI income levels. According to this measure, the County's housing gap is ***10,812 affordable units***.

- The second measure of the "Housing Gap" is a measure of the number of lower-income households who currently pay more than half of their income in rent. Under this measure, the County's ***affordable housing gap is 13,050 rental units and 3,490 ownership units***. This rental number has increased from 10,285 units in 2010, a ***26.9 percent increase***.

-There continue to be significant racial disparities in Dane County in terms of income, homeownership, and housing burdens. Even though income disparities contribute to housing disparities, African American and Hispanic households experience disproportionately higher rates of housing stress and burden compared to white households ***at the same income level***.

1. Introduction and purpose of this report.

In the film "Minding the Gap: The Housing Crisis in Dane County[1]," a senior citizen named Mary states:

"*Everyone needs a little place to call home.*"

Many of our neighbors here in Dane County – as in so many communities across the United States – find that a decent, safe, affordable, and healthy "place to call home" is out of reach.

In 2014, the City of Madison identified an affordable housing strategy with a plan to produce 1,000 affordable housing units within 5 years. They are well on the way to meeting that goal.[2]

In 2014, the Capital Area Regional Planning Commission (CARPC) produced a Fair Housing Equity Assessment for the region.[3] This report identified barriers to "opportunity for all" in the Madison/Dane County region.

In January, 2015 the Dane County Housing Initiative published the Housing Needs Assessment for Dane County Municipalities and began a series of Housing Summits and outreach events across the county.[4] Many communities in Dane County – cities, villages, and towns – have developed housing committees, housing strategies, affordable projects, and innovative developments to respond to the housing crisis.

While a lot has happened in affordable and workforce housing in Dane County in just a few short years, the need and the "housing gap" remain a pressing challenge for all communities. The housing crisis is high on everyone's agenda.

In response to the pressing need across Dane County's communities, Dane County initiated the Affordable Housing Development Fund in 2015.[5] This fund has distributed over $8.6 million to support the development of 913 units of new affordable housing across the county, with 575 of those in the City of Madison.

The 2015 housing needs assessment report was based on research conducted in 2014 and utilized the most recent data available at the time, which was only available through 2010. While communities need timely data for assessment of their housing conditions, there is often a delay in these data being produced by federal agencies.[6]

The main purposes of this report is to update the data on community housing needs with the most recent available and to describe changes in the housing market and demographics in Dane County in recent years.

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[1] Available at: https://communityoutreach.countyofdane.com/HousingInitiative/Housing-Film-and-Video
[2] https://madison.com/ct/news/local/govt-and-politics/madison-well-on-track-to-hit-goal-of-affordable-housing/article_fd2fbacb-b653-5dca-ac88-924e003aeb25.html
[3] https://danedocs.countyofdane.com/webdocs/PDF/capd/2014_Postings/FHEA%20Final/FHEA.pdf
[4] https://communityoutreach.countyofdane.com/HousingInitiative/housingreport
[5] https://communityoutreach.countyofdane.com/documents/housing-summit/2018/DC-Affordable-Housing-Fund-and-Awards.pdf
[6] Appendix 1 to this report describes the data used in the reports.

This report is organized as follows: Section 2 examines trends and issues in the housing market in Dane County, including changes to housing cost burdens. Section 3 explores the meaning of various terms such as "affordable housing," "housing affordability," and "workforce housing," including how these terms are measured. Section 4 presents updated analysis of the "housing gap" for cities and villages in Dane County. Section 5 discusses racial disparities in income and housing burdens in Dane County. Section 6 updates data on Dane County's workforce, and Section 7 includes data on housing supply regarding the "missing middle". Data sources and methods are provided in the appendix.

Section 2. Trends and Issues in Dane County's Housing Market.

In this section, we highlight a few recent trends and challenges for Dane County's housing market. This includes changes in the ***demand*** for housing (driven by households, jobs, and income) and changes in the ***supply*** of housing. We also examine changes in the ***cost*** of housing (house prices and rents).

Changes in Dane County mirror changes across the United States in housing.

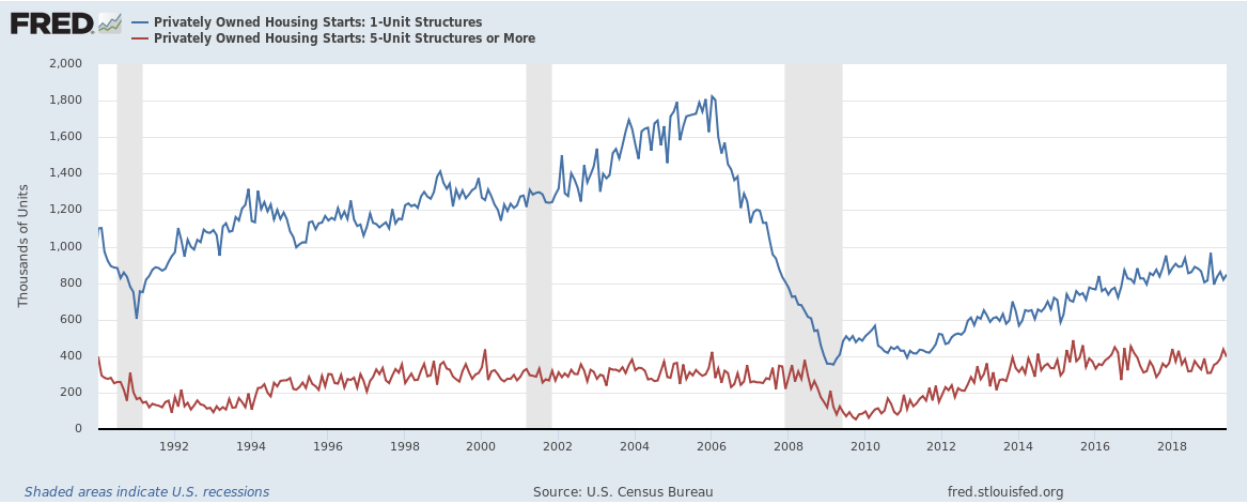
The past decade across the United States saw dramatic swings in housing prices, construction levels, and household demand. The housing bubble collapsed and the "Great Recession" resulted in millions of foreclosures and job losses.

As homeowners experienced foreclosure, housing construction (both single-family and multi-family) dipped to its lowest level in decades. Millions of families moved into rental homes but developers and builders were unable to respond quickly enough with construction of more units. In the Madison area, vacancy rates fell below 2 percent in many zip codes.

To illustrate these trends, Figure 1 (below) shows housing production nationwide. These data show annual housing starts (in thousands) for both single-family and multi-family units. At the height of the housing boom in 2006/7, over 1.8 million single-family units and about 350,000 apartments were built each year. During the Great Recession, overall production declined to less than half a million single-family units and fewer than 100,000 multi-family units. The housing market began to turn around in 2013-2014. However, even the most recent data from June 2019 shows the effects of the Great Recession: only 847,000 single-family units per year and 396,000 multi-family units each year.

Despite robust production of housing in the past couple of years in Dane County, in Wisconsin and in the US, there remains a significant housing shortage.

Figure 1. National housing starts (seasonally adjusted annual rate, in thousands)



These national trends are reflected in Dane County. Building permit data from CARPC[7] shows a high in 2004 of 2,725 single-family units permitted per year, down to only 1,090 in 2017. Although building permits for multi-family units reached a low of 347 in 2010, multi-family permits in 2016 had recovered to 3,050. The year 2017 (latest data available) saw approval of 1,817 multi-family units. Dane County thus reflects national trends: construction and building activity declined significantly during the Great Recession and has yet to recover.

Table 1 (below) describes changes in the Dane County housing market and demographic profile since the most recent Census (2010). Looking at the overall trends helps put the housing challenges in perspective. All data in Table 1 are adjusted for inflation to 2017$ to show changes in real income and housing costs.

Table 1. Dane County: Demographic and Housing Changes (2010-2017)

	2010	2017	Change	% Change	Ann.% Change
Population	489,309	536,416	47,107	9.6%	1.3%
Households	203,073	223,031	19,958	9.8%	1.3%
Housing units	216,230	233,007	16,777	7.8%	1.1%
Jobs	295,075	332,700	37,625	12.8%	1.7%
Inflation-adjusted to 2017$:					
Median household income (in 2017$)	$65,935	$72,268	$6,333	9.6%	1.3%
Median owner household income (in 2017$)	$90,966	$96,973	$6,007	6.6%	0.9%
Median renter household income (in 2017$)	$36,001	$42,189	$6,188	17.2%	2.3%
Median value of owner-occupied homes (in 2017$)	$259,869	$263,300	$3,431	1.3%	0.2%
Median gross rent (in 2017$)	$945	$1,053	$108	11.4%	1.6%

Sources: US Census; Bureau of Labor Statistics (QCEW). Inflation adjustment: CPI-U from BLS.

Population and income growth in Dane County is "slow and steady": population, household, and median household income all grew at annual average rates of 1.3 percent per year. Median rents, however, have grown faster than incomes – 1.6 percent per year, when adjusted for inflation.

Dane County is growing quickly – we are the fastest growing county in the State of Wisconsin.

[7] https://public.tableau.com/profile/sean1966#!/vizhome/BuildingPermits_30/HousingConstructioninDaneCounty

We've added over 37,000 jobs, over 47,000 new people, and over 16,000 new housing units in just a 7 year time period.

But growth has not been balanced. The rate of growth of jobs has exceeded the rate of growth of new households and household income. And these have far exceeded the rate of growth of new housing.

We are adding jobs faster than we are adding population. That means that many thousands of people who work in Dane County cannot live in Dane County, and must drive in for work every day.

We are adding population faster than we are adding housing units. That means that vacancy rates have declined and rents are going up.

In a balanced region, the rate of growth of households, jobs, and housing units should be about the same. But when population and jobs grow faster than places for people to live, families can struggle to find a decent place to live near where they work, or families end up experiencing rising housing costs, or both.

Table 1 also indicates that median-renter income has grown faster than median-owner income. This reflects two reinforcing trends in the region: many potential home-owning households may have been pushed out of the market (due to a combination of foreclosures, tighter lending regulations, or higher prices). Meanwhile, an influx of younger, professional renting households with higher incomes has put pressure on rental housing prices.

To compound this situation, construction costs have also been rising. Using a city-specific construction cost index from R.S. Means and Co., I find that ***construction costs from 2010 to 2017 increased 14.7 percent in the Madison region***. The value of existing housing reflects replacement costs, so that when construction costs go up it makes all forms of housing more expensive.

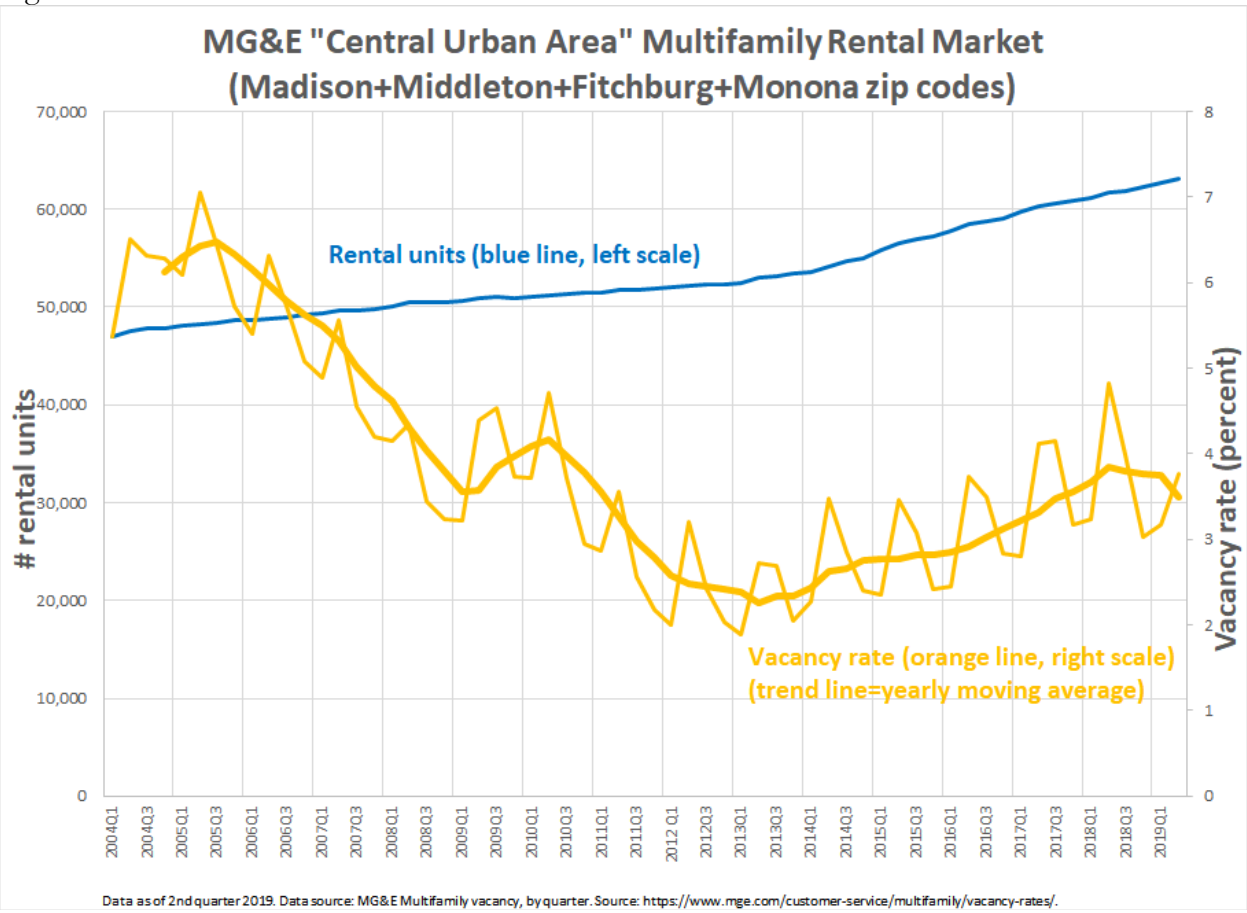
> ***A shortage of new housing + increased construction costs + strong housing demand (increasing population, income, and jobs) has exacerbated an already expensive and unaffordable housing market in Dane County.***

Inflation-adjusted median rents have therefore risen 1.6 percent per year, faster than incomes. This makes overall affordability worse, and imposes higher cost burdens on seniors and working families.

We have built a lot of housing (ownership and rental) in the county in the past 10 years. Had we not built all that housing, the situation would have been even worse. But we are still not building enough to meet demand.

Figure 2 illustrates the increased rental housing supply and the trends in vacancy rates for those central zip codes currently served by Madison Gas and Electric utility, as of June 2019.[8] We are fortunate that MG&E has produced this data consistently for many years, as these data are more current than available through Census data.

Figure 2.



The blue line in Figure 2 shows the number of multifamily rental units in the central urban area zip codes (Madison, Middleton, Fitchburg, and Monona) increasing from about 48,000 units in 2004 to over 63,000 units by mid-2019. The orange line shows the vacancy rate for multifamily rental units. Housing analysts generally consider a vacancy rate of between 5-7 percent to be a healthy rental market. The data show a decline in vacancy rates from about 6 percent at the beginning of 2006 to a low of about 2.5 percent in mid-2013. The rate of construction of new apartments and the increase in the vacancy rate both track in the same direction beginning in mid-2013. The seasonally-adjusted yearly-moving-average vacancy rate for the "central area", as of the end of June 2019, is 3.5 percent.

How does housing growth and construction in Dane County compare to the rest of the state? Table 2 compares changes in housing ***demand*** (households) to changes in housing ***supply*** (housing units)

[8] Madison Gas and Electric provides estimates of the number of multifamily rental units in its customer base, as well as a consistent measure of when those units are vacant. The methodology and data are described at: https://www.mge.com/customer-service/multifamily/vacancy-rates/. For purposes of this analysis, we combined all zip-codes which covered Madison, Middleton, Fitchburg, and Monona. We are not aware of comparable data for areas served by other utilities in the county.

for the 20 largest counties from 2006-2017 in Wisconsin. This period covers the housing boom (2006-2008), the Great Recession (2008-2011) and the "recovery" (2011-present). When new ***housing units*** are not produced to accommodate new ***households***, vacancy rates decline, or households double-up (overcrowding), and/or prices and rents rise and/or households move further away from work.

Table 2. Wisconsin's 20 largest counties underproduced nearly 20,000 housing units from 2006-2017

	Growth in households (2006-2017)	Growth in housing units (2006-2017)	Ratio of household growth to housing unit growth	Housing "Underproduction"
Milwaukee County	206	10,754	0.0192	
Dane County	**36,334**	**25,128**	**1.4460**	**11,206**
Waukesha County	13,199	10,986	1.2014	2,213
Brown County	9,806	8,145	1.2039	1,661
Racine County	2,319	2,645	0.8767	
Outagamie County	5,727	6,249	0.9165	
Winnebago County	3,134	4,903	0.6392	
Kenosha County	3,737	3,922	0.9528	
Rock County	2,516	1,480	1.7000	1,036
Marathon County	3,183	3,231	0.9851	
Washington County	4,019	4,289	0.9370	
La Crosse County	3,402	3,859	0.8816	
Sheboygan County	1,772	1,440	1.2306	332
Eau Claire County	2,504	3,156	0.7934	
Walworth County	3,208	2,671	1.2010	537
Fond du Lac County	3,727	2,929	1.2724	798
St. Croix County	3,164	3,246	0.9747	
Ozaukee County	2,909	2,082	1.3972	827
Dodge County	1,311	1,354	0.9682	
Jefferson County	3,469	2,241	1.5480	1,228
20 Largest Wisconsin Counties	***109,646***	***104,710***	***1.0471***	***19,838***

Source: Author's calculations based on 2006 and 2017 1-year American Community Survey data, U.S. Census Bureau. Households are 1- or more persons who occupy a housing unit. Housing units include vacant structures for sale or rent.

Dane County led the state in terms of household growth - adding over 36,000 net new households. Dane County also led the state in terms of housing units constructed - adding over 25,000 net new housing units during this 11-year time period.

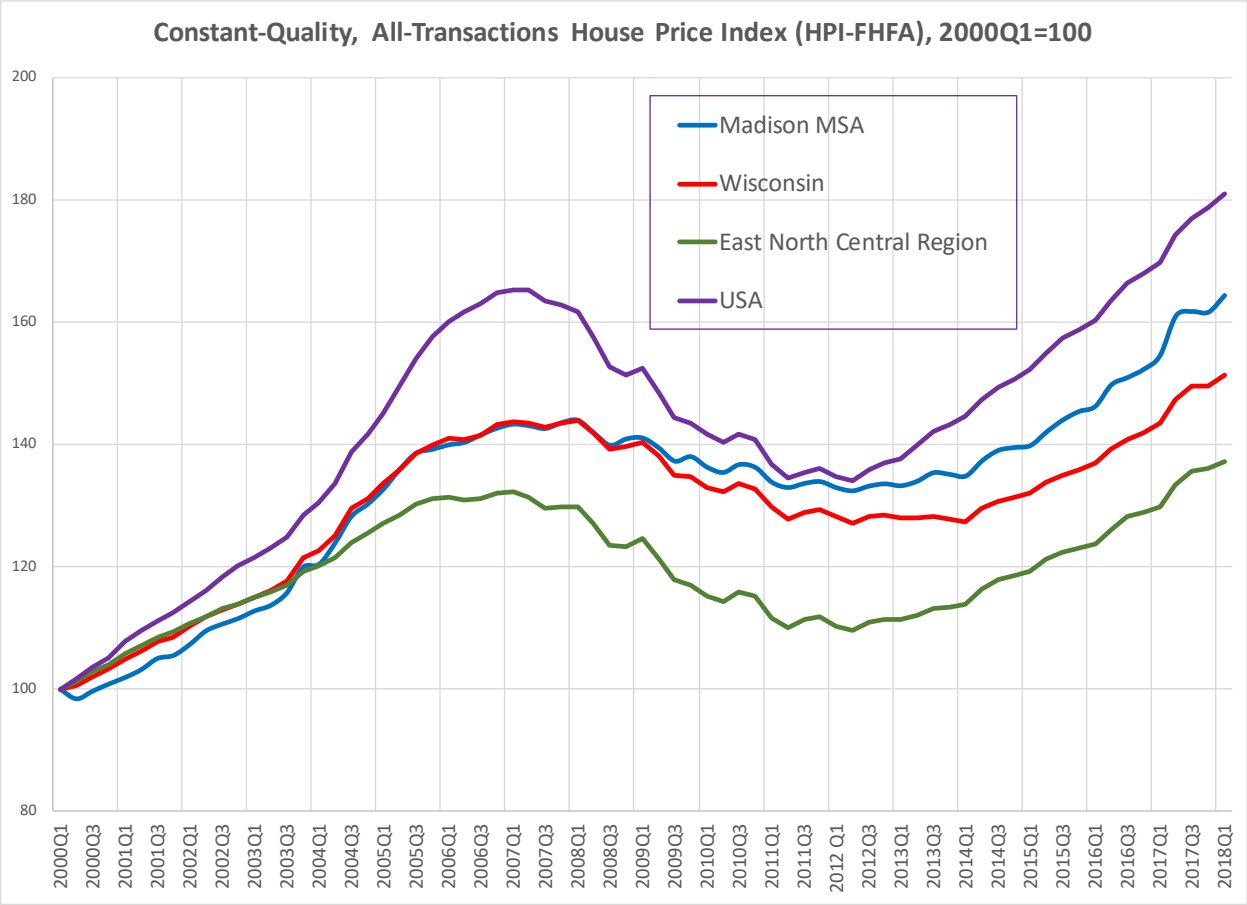
However, Dane County also led the state in terms of housing "***under-production***" (new households minus new housing units) by over 11,000. That works out to about 1,000 units per year under-supplied from 2006-2017.

> *Despite robust construction, housing supply in Dane County has not kept up with household demand.*

What is the impact on housing costs? Figure 3 shows the changes in owner-occupied housing costs in the Madison-region compared to the State of Wisconsin, our Census Region (Wisconsin, Illinois, Michigan, Indiana, and Ohio), and the United States. These data come from the Federal Housing Finance Agency's (FHFA) All-Transactions Constant Quality House Price Index[9], and are indexed to be equal to 100 in the year 2000. An index value for the Madison MSA of 164 in first quarter 2018 means that the constant-quality house has increased 64 percent in value since 2000.

[9] Source: https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx

Figure 3.



From 2000 through about 2009, rates of change in Madison-area house prices tracked those in Wisconsin, but were slower than nationally. After the recession, Madison-area house prices have increased faster than the rest of the state, although slower than the rest of the nation. From 2008-2014, house prices were reasonably flat in the Madison area and the state, but began to accelerate in 2014 onward.

The interaction of housing ***demand*** (households + jobs + income) and housing ***supply*** is seen in the ***cost*** of housing and its impact on housing ***affordability***.

Table 3 (on next page) presents overall changes in ***housing affordability*** for both owning and renting families in Dane County. These data are calculated by HUD for household incomes relative to "area median income" (AMI) and for family size. (More detailed data for each municipality is found in Section 4 of this report.)

Table 3 identifies the number of households who are considered to be "extremely-cost-burdened" which is defined as spending more than ***50 percent*** of monthly income on housing costs. Extremely cost-burdened households are the most vulnerable to changes in housing prices and availability. When households spend more than half of their income on rent or housing, they are unable to meet other needs such as health care, nutrition, and transportation.

Table 3a presents this information as raw *numbers* – the total number of households experiencing these extreme-cost-burdens, while Table 3b presents it in *percentage* terms – the percent of households in each particular income group who are extremely-cost-burdened.

Table 3a. Extremely Cost-Burdened Households (Owners and Renters), by income category, Dane County: 2006-2010 and 2011-2015

	Owners		***Renters***	
Income category	Extremely cost-burdened **(2006-2010)**	Extremeley cost-burdened **(2011-2015)**	Extremely cost-burdened **(2006-2010)**	Extremeley cost-burdened **(2011-2015)**
Less than 30-percent of AMI	3,115	3,490	10,285	13,050
Between 30- and 50-percent of AMI	3,165	2,575	2,145	2,350
Between 50- and 80-percent of AMI	2,680	1,890	430	650
Between 80- and 100-percent of AMI	5,235	365	85	15
More than 100-percent of AMI	8,610	405	170	20

Notes: Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), based on 2006-2010 and 2011-2015 census (most recent available). A household is considered cost-burdened if its monthly housing costs exceed 30-percent of its pre-tax income, and is considered extremely cost-burdened if its monthly housing costs exceed 50-percent of pre-tax income. For renting households, housing costs includes cash rents and utilities; for owner households, housing costs include mortgage payments, utilities, insurance, and property taxes. Cost-burdened renters less than 30% of AMI are reduced by 4285 and between 30 and 50% AMI by 1065 for both time periods to reflect estimates of number of student households near UW-Madison as described in 2015 report.

Table 3b. Extremely Cost-Burdened Households (Owners and Renters), percent by income category, Dane County: 2006-2010 and 2011-2015

	Owners		***Renters***	
Income category	Extremely cost-burdened **(2006-2010)**	Extremeley cost-burdened **(2011-2015)**	Extremely cost-burdened **(2006-2010)**	Extremeley cost-burdened **(2011-2015)**
Less than 30-percent of AMI	73.4%	63.1%	68.6%	67.2%
Between 30- and 50-percent of AMI	42.3%	32.2%	16.4%	13.5%
Between 50- and 80-percent of AMI	17.5%	10.9%	2.4%	3.2%
Between 80- and 100-percent of AMI	36.6%	2.4%	1.0%	0.2%
More than 100-percent of AMI	10.7%	0.5%	1.2%	0.1%

Notes: Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), based on 2006-2010 and 2011-2015 census (most recent available). A household is considered cost-burdened if its monthly housing costs exceed 30-percent of its pre-tax income, and is considered extremely cost-burdened if its monthly housing costs exceed 50-percent of pre-tax income. For renting households, housing costs includes cash rents and utilities; for owner households, housing costs include mortgage payments, utilities, insurance, and property taxes. Cost-burdened renters less than 30% of AMI are reduced by 4285 and between 30 and 50% AMI by 1065 for both time periods to reflect estimates of number of student households near UW-Madison as described in 2015 report.

In terms of *owner* households, the data show a reduction in the percent of owners in each income category (Table 3b) who are extremely-cost burdened. The data in 3a also show a reduction in raw numbers of extremely-cost-burdened *owners* for all income categories except those making less than 30 percent of AMI.

Based on other published research,[10] we can assume that nearly all homeowners with incomes below 30-percent of AMI are seniors. Although the actual *number* of extremely-low-income extremely-cost-burdened households has increased (reflecting overall population increase), the *percent* of households in this income bin who are cost-burdened has declined from 73 percent to 63 percent.

There are only four ways for the number on extremely-cost-burdened owners in an income category to decline: 1) households were able to increase their incomes while their housing costs remained the same; 2) households were able to refinance their mortgages to lower housing costs; 3) households downsized to less expensive housing; or 4) households exited homeownership all together (either through foreclosures, short-sales, or voluntary moves into rental housing).

In the 2010 data, we saw a large number of extremely cost-burdened *owner* households making more than 80 percent of AMI, likely reflecting the exotic mortgage products of the pre-crisis days. The number of these "moderate income" owner households with extreme housing costs has declined

[10] "Housing Costs and Financial Challenges for Low-Income Older Adults." Urban Institute, July 2015. Available at: https://www.urban.org/sites/default/files/2000312-housing-costs-and-financial-challenges-for-low-income-older-adults.pdf

over 13,000 -- by over 94 percent. Some households in this category were able to refinance their mortgages and avoid foreclosure, while others experienced foreclosure and exited the ownership market. The surge of families out of the ownership market and into the rental market put pressure on rents and rental vacancies.

In terms of *renting* families, the number of extremely-low-income households paying more than 50 percent of their income in rent has ***increased in total numbers*** by 2,765 families but has ***decreased in percentage terms*** from 68.6 percent to 67.2 percent, a 1.4 percentage point decline.

An increase in the total number of extremely-cost-burdened renters reflects overall population increase, while the slight percentage decrease reflects efforts across multiple communities (particularly Madison) to build and support more affordable housing units.

If we took the percentage of extremely-cost-burdened renters from the previous report (2006-2010) of 68.6 percent and applied it to today's population, 1,000 additional families would have been in severely unaffordable housing.

While the reduction in the percent of vulnerable households paying more than half of their income to rent represents (slight) progress, there is still a much higher rate of extreme-cost-burdens for low-income renters in Dane County compared to the state of Wisconsin and to the United States overall.

In Dane County, our rate of extreme-cost-burden of 67.2 percent is above the Wisconsin average rate of 65.3 percent and the national average rate of 63.1 percent.

In comparison to other places in the state and nation, 67.2 percent of our extremely-low-income families extremely-cost-burdened is above the national average of 63.1 percent and the Wisconsin average of 65.3 percent. To bring Dane County's rate down to the national rate would require providing approximately an additional 800-1000 affordable units.

Section 3. What do we mean by housing affordability, affordable housing or workforce housing?

The terms: "workforce housing," or "housing affordability" or "affordable housing" appear all the time in public conversations, even though there is no common agreement about their exact definition. In this section, we explain the basic definitions and calculations to help local elected officials and citizens have a conversation about the range of housing needed in their communities.

All measures of housing affordability relate ***housing costs*** to ***income***. The most commonly accepted standard (in state and federal law) is that a housing unit is affordable if it costs no more than 30 percent of a household's income.[11]

If a family does not have sufficient income to afford the type, size, or location of housing that might best fit their needs, they either move further away to a different community, spend a larger share of their income on housing or consume a lower-quality housing unit. When families spend too much of

[11] Income is measured as pre-tax, post-transfer income. Housing costs for owners include mortgage payments, real estate taxes, home insurance, and utilities. Housing costs for renters include rent paid plus utilities (electricity, water, gas, and sewer).

their income on housing, there is not enough income remaining for other important needs such as education, food, transportation, child care, or health care.

> ***"Housing affordability"*** is a general term for the overall level of prices relative to incomes in an area. Data is usually presented for the "typical" or "middle" (= "median") household income in an area. Housing affordability is the relationship between housing demand in an area (households + income) and housing supply in that area (sizes/types of units and their prices).

What is the overall housing affordability level in Dane County?

For ownership housing, we measure whether the median-income household can afford to purchase the median-priced home, which is the method used in the national homeownership affordability index from the National Association of Realtors.

The median sales price for houses sold in 2018 in Dane County (according to the Wisconsin Realtors) was $279,000. Using certain assumptions about interest rates and mortgage terms with a 20-percent down-payment[12], a family would need an income of $65,802 (in 2018) to afford the median-priced house with a 20-percent down-payment (assuming they have savings for a 20-percent down-payment). As shown in Table 1, the median household income in Dane County (as of the end of 2017) was $72,268. This means that the middle-income household could afford the middle-priced house.

However, when I simulate alternative mortgage scenarios, the median-income family could ***not*** afford this median priced house with a lower down-payment FHA-type mortgage.

The National Association of Realtors calculates a Housing Affordability Index for each metropolitan area. For the Madison metropolitan area, the value of the index for 2018 was a score of 166.7 which is the same as saying that the typical (median) family has 66.7 percent more income than would be needed for the mortgage on a median-priced home. However, the value of this NAR index for the Madison metropolitan area was 202.1 for the year 2016 and 183.7 for the year 2017, thus indicating that overall housing affordability in our region is declining.

Of course, these "affordability" calculations only measure the middle of the housing market and the middle-income families who are able to save 20 percent of the house value for a down-payment. They say nothing about different size families, families with below median incomes, different locations within the county, student loan debt, credit histories, or how families are able to save for their down-payment, etc.

This overall affordability for homeowners is consistent with the data in Table 3a and 3b. Fewer than 1 percent of the households earning above the median income in Dane County pay more than half of their income on housing. The affordability problems for current homeowners in Dane County are only seen in households below 80 percent of AMI.

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[12] I utilize an effective interest rate of 4.24 percent for conventional mortgages in Wisconsin, based on data from the Federal Housing Finance Agency. The methodology for calculating this affordability index is available at: https://www.nar.realtor/research-and-statistics/housing-statistics/housing-affordability-index/methodology

For rental housing, overall affordability examines whether the median-income renter family earns enough income to afford the median rent. The median renter-income for 2017 was $42,189, which yields an affordable rent payment of $1054 per month. The median gross rent (rent + utilities) for Dane County in 2017 was $1053 per month. Therefore, if we just look at the middle of the market, rent in Dane County is "affordable". Again, comparing Table 3a and 3b, there are very few cost-burdened renter families making more than 80 percent of the area median income. The rental affordability crisis is for families making less than 50 percent of the median income in the county.

And, of course, this does not mean that all families are able to find or afford the size and quality of units they want in locations near work or school or transit.

> "***Affordable housing***" is a more specific term relating the ***price*** of a particular unit (rent or owner cost) to the ***income-adjusted-for-family-size*** of a particular household, particularly for lower-income households. A unit of housing is affordable to a family of a particular size and income level if the family spends no more than 30 percent of its income on housing.

A unit of housing can be ***affordable*** for a lower-income family in three different ways: 1) the unit or the household is connected to some federal or state housing program such as the voucher program, tax-exempt bonds, or the Housing Tax Credit (LIHTC);[13] 2) the unit is owned and operated by a non-profit organization; or 3) the unit has "filtered down" the quality and price scale enough to be affordable to a lower-income household without direct subsidies. This last category is called "naturally occurring affordable housing" (NOAH).

State law does require every community to provide an adequate supply of affordable housing to "meet the needs of persons of all income levels…"[14] In order to assess whether a community is meeting their obligations, we first begin with the distribution of incomes-by-family-size for Dane County. This data is available at the federal Dept. of Housing and Urban Development's website and is updated annually. Data on income levels in an area (in this case Dane County) are always reported as a percentage of "area median income" (AMI) which is calculated based on the median family income for a representative family of 4 persons.

Table 4 shows the current "income limits" for each income-family size category for the most recent year (FY 2019).

Table 4. Dane County FY 2019 Income Limits

	Persons in Family			
	1	**2**	**3**	**4**
100 percent of AMI (Median Income)	$70,280	$80,320	$90,360	$100,400
Low Income Limits (80% of AMI)	$52,850	$60,400	$67,950	$75,500
Multifamily tax subsidy limits (60% of AMI)	$42,180	$48,240	$54,240	$60,240
Very Low Income Limits (50% of AMI)	$35,150	$40,200	$45,200	$50,200
40% of AMI Income Limits	$28,120	$32,160	$36,160	$40,160
Extremely Low Income Limits (30% of AMI)	$21,100	$24,100	$27,100	$30,100

Source: HUD, Office of Policy Development and Research, Income Limits Briefing Materials, http://www.huduser.org/portal/datasets/il.html and WHEDA.
Additional data are released for family sizes larger than 4, but are not reported here for space considerations.

[13] It is important to point out here that the largest housing subsidy programs in the U.S. are the mortgage interest deduction for homeowners who itemize deductions and the exclusion of capital gains on the sale of residences. Both indirect subsidies through the tax code mainly benefit households with adjusted-gross-incomes above $100,000.
[14] Wis. Stat. 66.1001(2)(b)

Households whose income is less than 80 percent of AMI for their family size are considered to be "low income" in federal housing and community development programs, even though a family that earns $67,000 may not be considered "low-income" by most people. It is for this reason that definitions of "affordable housing" almost always focus on households earning below 60- or 50-percent of AMI. (The 60-percent of AMI limits are reported because those incomes are used as eligibility standards for the LIHTC program and the tax-exempt bond program.)

Based on the rule that a household should spend no more than 30 percent of its income on housing costs, the monthly "affordable" budget for each of the household-income-family-size categories is shown in Table 5.

Table 5. Dane County FY 2019 Monthly "Affordability" Housing Budget (rent + utilities)

	Persons in Family			
	1	**2**	**3**	**4**
100 percent of AMI	$1,757	$2,008	$2,259	$2,510
Low Income Limits (80% of AMI)	$1,321	$1,510	$1,699	$1,888
Multifamily tax subsidy limits (60% of AMI)	$1,055	$1,206	$1,356	$1,506
Very Low Income Limits (50% of AMI)	$879	$1,005	$1,130	$1,255
40% of AMI Income Limits	$703	$804	$904	$1,004
Extremely Low Income Limits (30% of AMI)	$528	$603	$678	$753

Note: "affordable" monthly housing budget based on family size is 30-percent of pre-tax, post-transfer income spent on housing + utilities.

Therefore, when we define "affordable housing" as whether the rent of a unit is affordable to a particular household (income adjusted for family size), the information in Table 5 is particularly helpful.

For example, a 2 person family whose income is at the 50-percent of AMI level (earning $40,200 a year) can afford to spend $1,005 per month on housing. A unit of housing which costs $1005 or less per month would be affordable to this family, although that same unit would not be affordable to a household of 2 persons earning 30-percent of AMI.

For purposes of affordable housing, we need to convert the "affordable housing budget" in Table 5 into rents for particular units. For rental housing, this method is shown in Table 6, based on the method used by WHEDA (Wisconsin Housing and Economic Development Authority).

Table 6. WHEDA-estimated Dane County Rent Limits, FY 2019

	Efficiency	**1-BR**	**2-BR**	**3-BR**
Low Income (80% of AMI)	$1,321	$1,415	$1,698	$1,963
Multifamily tax subsidy (60% of AMI)	$1,054	$1,130	$1,356	$1,566
Very Low Income (50% of AMI)	$878	$941	$1,130	$1,305
40% of AMI Income Limits	$703	$753	$904	$1,044
Extremely Low Income (30% of AMI)	$527	$565	$678	$783

Note: WHEDA estimates these rent limits (rent+utilities) for their funded projects. Efficiency rent limits correspond to the "affordable" housing budget for 1-person households and 2-bedroom rent limits correspond to the "affordable" housing budget for 3-person households.

For ownership housing, converting household income to the affordable price of a unit is more complicated because it involves estimating current mortgage terms and rates, and households vary in their ability to provide a down-payment.

The first method to convert household income to an "affordable" homeownership price is based on the method used by HUD, and simulates a nationally representative low-down-payment (FHA) product. FHA-type products are often targeted towards "entry-level" or first-time homebuyers.

I utilize HUD's method to estimate the price of an entry-level house which would be affordable with a low down-payment FHA product for each category of household in Dane County in FY 2019 in Table 7. These estimates are produced up to 120-percent of AMI because some federal and state housing programs provide ownership assistance up to those levels.

Table 7. HUD-method* affordable ownership price levels, Dane Co. FY 2019

	Persons in Family				
	1	**2**	**3**	**4**	**5**
120% of AMI	$283,369	$323,850	$364,332	$404,813	$437,198
Median income limits (100% of AMI)	$236,141	$269,875	$303,610	$337,344	$364,332
Low Income Limits (80% of AMI)	$177,576	$202,944	$228,312	$253,680	$273,974
Multifamily tax subsidy limits (60% of AMI)	$141,725	$162,086	$182,246	$202,406	$218,599
Very Low Income Limits (50% of AMI)	$118,104	$135,072	$151,872	$168,672	$182,166
40% of AMI Income Limits	$94,483	$108,058	$121,498	$134,938	$145,733
Extremely Low Income Limits (30% of AMI)	$70,896	$80,976	$91,056	$101,136	$109,227

Note: HUD's estimation method for determining the affordable ownership price level in their CHAS (Comprehensive Housing Affordability Strategy) data is to multiply size-adjusted household-income by 3.36.

The second method to convert income to an affordable ownership price is to estimate and compare a conventional (20 percent down-payment) 30-year fixed-rate mortgage for each income category to a specific FHA mortgage (3.5 percent down-payment, rolling upfront-insurance premiums into the loan). These estimates in Table 8 are specific to average mortgage rates in Dane County, and reflective of property taxes and insurance rates here. Table 8 also shows the amount of cash needed from a borrower at closing (down-payment + fees).

Table 8. What Price House is considered "Affordable" For Homeownership* (Dane County, Aug. 2018)

Household Income	Option 1: 20% downpayment, conventional mortgage	Cash needed at closing (Option 1)	Option 2: 3.5% downpayment, FHA mortgage	Cash needed at closing (Option 2)
$30,000	$115,345	$25,376	$94,345	$5,189
$35,000	$136,972	$30,134	$111,964	$6,158
$40,000	$158,599	$34,890	$129,583	$7,127
$45,000	$180,226	$39,650	$147,202	$8,096
$50,000	$201,853	$44,408	$164,820	$9,065
$55,000	$223,480	$49,166	$182,439	$10,034
$60,000	$245,107	$53,924	$200,058	$11,003
$65,000	$266,734	$58,682	$217,677	$11,972
$70,000	$288,361	$63,440	$235,295	$12,941
$75,000	$309,989	$68,197	$252,914	$13,910
$80,000	$331,616	$72,995	$270,533	$14,879
$85,000	$353,243	$77,713	$288,151	$15,848
$90,000	$374,870	$82,471	$305,770	$16,817

* Based on the following assumptions. For option 1, assumes borrower qualifies for existing 30-year fixed rate (4.625% as of 8/13/2018), can provide downpayment plus closing costs out of own funds (not borrowed), and does not prepay any points. Option 1 assumes that PITI (principal+interest+insurance+taxes) does not exceed 30% of gross (pre-tax, post-transfer) income. For option 2, assumes borrower qualifies for FHA 30-year fixed rate (4.5% as of 8/13/2018) and rolls over the up-front mortgage insurance premium (UFMIP) into the value of the loan at current MIP rates (175 bps for UFMIP and 85 bps annual). Option 2 assumes that PITI+MIP (principal+interest+insurance+taxes) does not exceed 31% of gross (pre-tax, post-transfer) income. Both options involve assumptions of $1000 per year in homeowner insurance and a property tax rate of 20 mils.

> "*Workforce housing*" means housing that is priced to be affordable to the workforce in an area.

There are some states and cities that define workforce housing specific to a percent of AMI. New Hampshire, for example, uses 60-percent of AMI for renting while Utah uses up to 80-percent of AMI for renting households. Some communities use 50-percent of AMI for renting families. For ownership housing, "workforce housing" is variously defined as up to 100-percent or 120-percent of AMI. These definitions draw attention to the fact that a significant portion of the workforce in a community might not earn enough income in the labor market to be able to afford to live in the community where they work. Households with incomes between 50-80 percent of AMI have incomes which might be too high for various federal and state housing programs, but too low to be able to afford to live where they work.

However, this definition of "workforce housing" has some difficulties. By calling this housing "workforce" we can mistakenly suggest that families with incomes less than 50-percent of AMI are somehow not in the "workforce." Nothing could be further from the truth. The vast majority of non-elderly, non-disabled lower-income households are already in the labor force, but do not earn enough income in the labor market to afford decent housing near where they work or in neighborhoods where they might want to live. As described in my previous report,[15] I will use a more expansive definition of workforce housing as "housing that meets the needs of the workforce in an area." This definition draws attention to the range of incomes available in the labor market in an area.

[15] Dane County Workforce Housing Gap Fact Sheet, May 2017. Available at: https://communityoutreach.countyofdane.com/documents/housing-summit/2017/Dane%20County%20Workforce%20Housing%20Gap%20Fact%20Sheet%202017%20Summit.pdf

Section 4. The "Housing Gap" – Estimating Existing Affordable Housing Needs.

The purpose of this section is to update the numbers of municipal affordable housing demand and supply from the 2015 report and to examine how housing needs have changed across municipalities.

All of the data in this section is reported for the ***municipality where people are currently living***, not where they may have lived previously or would have preferred to live if all options were available and affordable. So the needs presented are for people already living in our communities.

The appendix to this report describes the data sources and methodology to calculate housing needs. It also explains why we exclude Towns in Dane County from this report – not because they are without housing needs, but because the sub-group data for many towns is too small for the margins-of-error within the sample data.

In this section, we present a number of different ways community leaders and planners can think about their existing affordable housing needs. The first approach is to examine the distribution of the population and jobs under the concept of "fair share" or "regional balance." Then we examine changing rental demand and changes in the rental housing stock. Finally, we estimate the "housing gap" for each municipality using two different methods, and examine changes over time.

Fair share or regional balance. Table 9 shows the distribution of various types of households and housing units across the larger municipalities of Dane County.[16] This table, as well as all subsequent tables, is grouped by Cities and Villages and sorted by population size. We include the Town of Madison because it will eventually be annexed into existing cities.

Table 9 shows the percent of the county's housing units within each municipality, the percent of the county's extremely-low-income renters within each municipality, and the distribution of households making more than 100 percent of AMI by municipality. Table 9 updates Table 3.2 from the 2015 report. The purpose of this table is to examine the distribution of housing opportunities across the county and to examine the extent to which lower- and upper-income households may be distributed across the county.

[16] See the Appendix as to why towns are not included: because the data is not reported for many variables by the Census due to privacy concerns.

Table 9. Distribution of housing units and certain income categories of households, Dane County urban municipalities, 2015

	Occupied housing units	Percent of County's Total Occupied Housing Units	Percent of County's Extremely-low-income (below 30% AMI) renter households	Percent of County's greater-than-100% AMI households
Cities				
Madison	104,085	49.31%	63.73%	43.26%
Sun Prairie	12,315	5.83%	5.15%	5.87%
Fitchburg	10,790	5.11%	6.73%	5.16%
Middleton	8,565	4.06%	3.22%	4.34%
Stoughton	5,240	2.48%	3.04%	2.32%
Verona	4,750	2.25%	1.08%	3.19%
Monona	3,940	1.87%	2.53%	1.59%
Cities Total	***149,685***	***70.91%***	***85.48%***	***65.72%***
Villages				
Waunakee	4,635	2.20%	0.95%	3.03%
Oregon	3,755	1.78%	0.63%	1.94%
DeForest	3,635	1.72%	1.17%	1.73%
McFarland	3,310	1.57%	0.76%	1.70%
Madison (town)	3,205	1.52%	4.09%	0.46%
Mount Horeb	2,925	1.39%	1.12%	1.38%
Cottage Grove	2,170	1.03%	0.60%	1.47%
Cross Plains	1,500	0.71%	0.46%	0.77%
Marshall	1,400	0.66%	0.79%	0.56%
Deerfield	950	0.45%	0.44%	0.49%
Belleville	785	0.37%	0.25%	0.36%
Mazomanie	720	0.34%	0.41%	0.26%
Shorewood Hills	695	0.33%	0.00%	0.56%
Black Earth	595	0.28%	0.16%	0.22%
Maple Bluff	590	0.28%	0.02%	0.48%
Cambridge	535	0.25%	0.30%	0.28%
Dane	440	0.21%	0.14%	0.22%
Blue Mounds	340	0.16%	0.05%	0.14%
Brooklyn	310	0.15%	0.02%	0.19%
Rockdale	95	0.05%	0.05%	0.04%
Villages Total or Average	***32,590***	***15.44%***	***12.42%***	***16.26%***

Notes: Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), 2011-2015 census (most recent available). Renter households with less than 30% of AMI are reduced by 4285 to reflect estimates of number of student households near UW-Madison as described in 2015 report.

Table 9 indicates that, for example, the City of Madison has about half of the overall county housing units and population, but houses nearly 64 percent of the county's extremely-low-income (less than 30 percent of AMI) renter households, excluding our estimate of student households residing near UW-Madison. The earlier report (2015) did not subtract student households from the City percentage calculations, and therefore overstated the percent of the county's extremely-low-income renter population in Madison. One could argue either for or against inclusion of students in determining the share of the population in Madison. On the one hand, student households may be temporarily poor while they seek education. Most student households are not eligible for affordable housing programs. On the other hand, the City is still required to provide city services to the student populations, regardless of income, and therefore students could be included for purposes of calculating relative burden.

However, in order to make sure that a fair comparison is made between Madison and other cities in the county, students are excluded from the calculations in Table 9. If students had been excluded in the 2015 report, the percentage of extremely-low-income (below 30% AMI) households for Madison would have been 66.4 percent of the county's below 30% AMI population. Thus the decline to 63.7 percent, while small in total percentage terms, does indicate that some proportion of

extremely-low-income renter households have moved to outlying jurisdictions, have moved up the income ladder, or have moved out of the county altogether. Because our data only tells us what city people are currently living in, it is impossible to track individual households over time.

Among larger municipalities, the Cities of Madison, Fitchburg, Stoughton, Monona, and the Town of Madison have a higher percentage of extremely-low-income renters than their share of the overall population. Among villages, Marshall, Mazomanie, and Cambridge have slightly higher percentages of extremely-low-income renter households than their overall share of the population.

As the region continues to grow, policy leaders from across the spectrum of municipalities in Dane County will continue to discuss whether each municipality should seek to take its "fair share" balance of lower-income and upper-income households, or whether it is more advantageous to have some cities (such as Madison) with public transportation and public services available take a disproportionate share of lower-income households. Regional planners certainly understand that transportation accessibility and transit availability are important for regional workforce and housing patterns.

Another way to examine the distribution of the population and housing units across municipalities in Dane County is to compare jobs to housing units. This jobs-housing ratio or "jobs-housing balance" is frequently used in transportation planning to measure commuting patterns. Table 10 presents an estimate of the number of housing units in each municipality and an estimate of the total number of jobs in each municipality. Because the jobs data is from 2015, the housing unit data is the 2012-2016 5-year Census data. Only municipalities with more than 1,000 jobs or 1,000 housing units are included. These data are sorted by municipal population.

Table 10. Distribution of jobs and housing units, Dane County municipalities 2015/2016

Municipality	*Housing Units (2016)*	*Job count (2015)*	*Jobs/Housing Ratio*
Madison city, Dane County, Wisconsin	110,540	193,959	1.755
Sun Prairie city, Dane County, Wisconsin	13,221	10,128	0.766
Fitchburg city, Dane County, Wisconsin	11,469	10,825	0.944
Middleton city, Dane County, Wisconsin	8,853	17,802	2.011
Stoughton city, Dane County, Wisconsin	5,297	5,128	0.968
Waunakee village, Dane County, Wisconsin	4,904	3,823	0.780
Verona city, Dane County, Wisconsin	4,854	13,334	2.747
Monona city, Dane County, Wisconsin	4,072	7,767	1.907
Oregon village, Dane County, Wisconsin	3,960	2,612	0.660
DeForest village, Dane County, Wisconsin	3,726	4,716	1.266
Madison town, Dane County, Wisconsin	3,432	8,454	2.463
McFarland village, Dane County, Wisconsin	3,371	2,625	0.779
Mount Horeb village, Dane County, Wisconsin	3,017	1,718	0.569
Windsor village, Dane County, Wisconsin	2,587	1,373	0.531
Dunn town, Dane County, Wisconsin	2,478	476	0.192
Cottage Grove village, Dane County, Wisconsin	2,271	1,801	0.793
Middleton town, Dane County, Wisconsin	2,166	868	0.401
Westport town, Dane County, Wisconsin	1,910	2,307	1.208
Cottage Grove town, Dane County, Wisconsin	1,645	496	0.302
Cross Plains village, Dane County, Wisconsin	1,577	1,259	0.798
Pleasant Springs town, Dane County, Wisconsin	1,424	433	0.304
Bristol town, Dane County, Wisconsin	1,324	466	0.352
Burke town, Dane County, Wisconsin	1,322	2,277	1.722
Marshall village, Dane County, Wisconsin	1,321	455	0.344
Oregon town, Dane County, Wisconsin	1,302	266	0.204
Springfield town, Dane County, Wisconsin	1,092	563	0.516
Deerfield village, Dane County, Wisconsin	962	1,233	1.282
Blooming Grove town, Dane County, Wisconsin	822	1,307	1.590
Belleville village, Dane County, Wisconsin	817	1,138	1.393
Shorewood Hills village, Dane County, Wisconsin	801	1,532	1.913
Totals (30 largest Dane County communities)	***206,537***	***301,141***	***Overall=1.458, Average=1.049***

Notes: Source for "housing units" count is 2016 5-year American Community Survey data from U.S. Census Bureau. Source for "job count" is U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter 2015). Job count is "primary jobs" - combined private sector and public sector jobs counts only allowing for one (highest paid) job per worker for individual workers. Data is sorted by number of housing units located in each municipality.

It is no surprise that Madison is a regional job center that people commute into, containing many hospitals, a diverse manufacturing and high-tech sector, the University of Wisconsin, and state government. The second largest employing municipality is Middleton, followed by Verona, Fitchburg, and Sun Prairie. A "jobs/housing ratio" score greater than 1 means that a municipality has more jobs than it has housing units. Likewise, a score less than 1 means that a municipality has more housing units than jobs.

Changing rental housing demand. As shown in Table 3a and 3b above, the highest incidence of extreme housing-cost-burdens falls upon the lowest income renters. That is why it is important to examine the changes in rental housing demand and supply in each of the Dane County municipalities from the time period covered in the previous report (through 2010) and the more recent data (through 2015), as shown in Table 11. During this time period (2010-2015), the number of low-income (below 80% AMI) renter households in Dane County increased over 10,000. Thousands of new units of housing were also created during this time.

Households may have moved up or down the income ladder during this time, and households may have moved from one housing unit to anther unit, either between or within municipalities. Changes in each municipality compared to changes in other municipalities can be utilized to compare changes in housing demand and supply. However, we should be careful interpreting small numbers (less

than 100). Recall that these special-tabulation data from the Census and HUD round numbers to end in either a 5 or a 0. Thus, the true numbers may have changed less than the rounded numbers indicate. For smaller cities and villages, also, very small changes in actual *numbers* may nonetheless show a very high *percentage* change.

Table 11. Change in renting households, by income, in Dane County municipalities, 2010 to 2015

	Income less than 30 % AMI			Income between 30% AMI and 50 % AMI			Income between 50% AMI and 80% AMI		
	2010	***2015***	***% change***	***2010***	***2015***	***% change***	***2010***	***2015***	***% change***
Cities									
Madison	9,955	12,365	*27.1%*	7,480	9,610	*24.9%*	10,685	11,515	*7.8%*
Sun Prairie	645	1,000	*55.0%*	855	1,055	*23.4%*	915	1,340	*46.4%*
Fitchburg	815	1,305	*60.1%*	735	1,550	*110.9%*	1,360	1,145	*-15.8%*
Middleton	425	625	*47.1%*	645	855	*32.6%*	955	1,055	*10.5%*
Stoughton	355	590	*66.2%*	490	390	*-20.4%*	485	350	*-27.8%*
Verona	205	210	*2.4%*	225	210	*-6.7%*	215	320	*48.8%*
Monona	465	490	*5.4%*	245	380	*55.1%*	350	430	*22.9%*
Cities Total	***12,865***	***16,585***	***28.9%***	***10,675***	***14,050***	***31.6%***	***14,965***	***16,155***	***8.0%***
Villages									
Waunakee	50	175	*250.0%*	260	205	*-21.2%*	375	440	*17.3%*
Oregon	190	115	*-39.5%*	120	270	*125.0%*	230	420	*82.6%*
DeForest	80	215	*168.8%*	120	330	*175.0%*	290	280	*-3.4%*
McFarland	120	140	*16.7%*	160	210	*31.3%*	150	265	*76.7%*
Madison (town)	595	750	*26.1%*	455	775	*70.3%*	315	640	*103.2%*
Mount Horeb	105	205	*95.2%*	155	280	*80.6%*	400	295	*-26.3%*
Cottage Grove	100	110	*10.0%*	85	120	*41.2%*	90	145	*61.1%*
Cross Plains	85	85	*0.0%*	70	100	*42.9%*	85	185	*117.6%*
Marshall	30	145	*383.3%*	45	40	*-11.1%*	80	45	*-43.8%*
Deerfield	55	80	*45.5%*	45	50	*11.1%*	45	65	*44.4%*
Belleville	25	45	*80.0%*	60	50	*-16.7%*	45	60	*33.3%*
Mazomanie	50	75	*50.0%*	20	45	*125.0%*	60	60	*0.0%*
Shorewood Hills	*	*	*	*	35	*	20	20	*0.0%*
Black Earth	20	30	*50.0%*	20	10	*-50.0%*	45	65	*44.4%*
Maple Bluff	10	*	*	25	10	*-60.0%*	15	10	*-33.3%*
Cambridge	25	55	*120.0%*	40	40	*0.0%*	25	25	*0.0%*
Dane	*	25	*	20	35	*75.0%*	15	30	*100.0%*
Blue Mounds	*	10	*	10	10	*0.0%*	*	15	*
Brooklyn	10	*	*	*	10	*	*	20	*
Rockdale	*	10	*	*	10	*	15	*	*
Villages Total	***1,554***	***2,278***	***46.6%***	***1,718***	***2,635***	***53.4%***	***2,308***	***3,089***	***33.8%***
County Total	***14,988***	***19,403***	***29.5%***	***13,067***	***17,444***	***33.5%***	***18,226***	***20,203***	***10.8%***

Notes: * = not reported by Census/HUD for privacy reasons because number is less than 10 households or housing units. Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), 2006-2010 and 2011-2015 census (most recent available). The number of extremely-low-income (under 30% AMI) rental households in Madison (and therefore Dane County overall) are reduced by 4285 and very-low-income (between 30 and 50% AMI) by 1065 to reflect estimates of number of student households near UW-Madison as described in 2015 report.

Table 11 shows that the number of renters in each of the three income categories experienced overall growth in the county. In only a very small number of municipalities did the actual numbers of lower-income renters decline over the 5 year period. Cities and villages were adding more housing units overall, including many affordable units, but they were also adding more renter households of all income levels. [17]

Again, it is important to understand that the people represented in Table 11 are counted where they currently live. People of all income levels are already living in every community.

[17] The numbers presented here may differ slightly from numbers reported for 2010 in the earlier report because HUD issued revisions to the data.

Changing rental housing stock. Table 12 examines the changes in the rental housing stock in each municipality from 2010-2015. This table examines how many units are "affordable" to households earning 30-percent-of-AMI and 50-percent-of-AMI.

It is important to understand how these numbers are calculated by HUD in order to interpret the table properly. HUD receives from the Census rent data for each unit (with utilities included or estimated). HUD calculates the rent that would be affordable for each family-size/income-category based on the number of bedrooms, which is the same calculation we demonstrated in Tables 4, 5 and 6. For example, if a 2-bedroom unit is targeted towards a 3-person household, using FY 2019 numbers, the gross rent (rent + utilities) which would be "affordable" for a 3-person, 30-percent-of-AMI household would be $678 per month. HUD would then calculate how many 2-bedroom units rent at or below $678 per month. HUD would also calculate how many 1-bedroom and 3-bedroom units rent at or below the rent that would be affordable to families of different sizes. Added up over all unit-size categories (efficiency, 1-bedroom, 2-bedroom, etc.) tells us the total number of rental units that would be affordable to families earning 30 percent of AMI. This variable is called "RHUD30" and is reported for each municipality. Likewise, "RHUD50" is calculated for household earning 50 percent of AMI.

We realize that all of these calculations may seem obscure or complicated, but the data available really do allow us to get a good look at the range of rents for units available in a municipality.

It is also important to understand that the data in Table 12 only looks at the rent charged for a unit, not whether it is occupied by a household which can actually "afford" that particular unit. And, these data only look at the rent of the unit, not the unit quality or location.[18]

The data in Table 12 is helpful in examining what was happening in the lower-cost segment of the rental market in Dane County from 2010-2015. When the number of rental units affordable at 30% of AMI declines, this could be either because those housing units exited the rental housing stock (conversion or destruction), or because the rents increased above what would be affordable at the 30% AMI price point.

[18] Unlike data which examines households and cost-burdens, I do not subtract out students near UW-Madison when examining counts of housing units.

Table 12. Rental units available, by income level, in Dane County municipalities, 2010 and 2015

	Total rental housing units			RHUD30 - Affordable at 30% AMI			RHUD50 - Affordable at 50% AMI		
	2010	***2015***	***% change***	***2010***	***2015***	***% change***	***2010***	***2015***	***% change***
Cities									
Madison	46,970	54,295	*15.6%*	3,695	4,320	*16.9%*	15,350	21,725	*41.5%*
Sun Prairie	3,925	5,260	*34.0%*	270	245	*-9.3%*	1,510	2,060	*36.4%*
Fitchburg	4,390	5,460	*24.4%*	245	250	*2.0%*	2,140	2,955	*38.1%*
Middleton	3,030	3,985	*31.5%*	230	205	*-10.9%*	1,275	2,045	*60.4%*
Stoughton	1,730	1,795	*3.8%*	270	250	*-7.4%*	970	955	*-1.5%*
Verona	1,035	1,615	*56.0%*	85	30	*-64.7%*	310	530	*71.0%*
Monona	1,500	1,780	*18.7%*	195	220	*12.8%*	835	945	*13.2%*
Cities Total	***62,580***	***74,190***	***18.6%***	***4,990***	***5,520***	***10.6%***	***22,390***	***31,215***	***39.4%***
Villages									
Waunakee	975	1,150	*17.9%*	60	70	*16.7%*	475	550	*15.8%*
Oregon	825	1,180	*43.0%*	65	135	*107.7%*	360	800	*122.2%*
DeForest	795	1,085	*36.5%*	75	145	*93.3%*	175	470	*168.6%*
McFarland	770	800	*3.9%*	65	130	*100.0%*	325	345	*6.2%*
Madison (town)	1,595	2,505	*57.1%*	130	220	*69.2%*	1,115	1,790	*60.5%*
Mount Horeb	930	1,085	*16.7%*	60	125	*108.3%*	475	635	*33.7%*
Cottage Grove	485	530	*9.3%*	10	*	*	65	305	*369.2%*
Cross Plains	405	460	*13.6%*	40	50	*25.0%*	150	255	*70.0%*
Marshall	250	395	*58.0%*	50	65	*30.0%*	90	225	*150.0%*
Deerfield	190	225	*18.4%*	25	25	*0.0%*	90	120	*33.3%*
Belleville	215	215	*0.0%*	30	25	*-16.7%*	130	120	*-7.7%*
Mazomanie	160	220	*37.5%*	30	40	*33.3%*	85	155	*82.4%*
Shorewood Hills	55	110	*100.0%*	*	*	*	*	*	*
Black Earth	105	130	*23.8%*	*	25	*	75	80	*6.7%*
Maple Bluff	80	55	*-31.3%*	20	*	*	35	30	*-14.3%*
Cambridge	105	140	*33.3%*	20	25	*25.0%*	50	70	*40.0%*
Dane	80	160	*100.0%*	*	35	*	50	90	*80.0%*
Blue Mounds	25	50	*100.0%*	*	*	*	20	30	*50.0%*
Brooklyn	20	50	*150.0%*	*	10	*150.0%*	*	15	*
Rockdale	20	30	*50.0%*	*	*	*	15	25	*66.7%*
Villages Total	***8,085***	***10,575***	***30.8%***	***706***	***1,141***	***61.6%***	***3,788***	***6,110***	***61.3%***
County Total	***74,475***	***88,450***	***18.8%***	***6,286***	***7526***	***19.7%***	***27,540***	***38,587***	***40.1%***

Notes: * = not reported by Census/HUD for privacy reasons because number is less than 10 households or housing units. Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), 2006-2010 and 2011-2015 census (most recent available).

All of the cities in Dane County, and most of the larger villages increased their rental housing stock over the 5 year period of this study. Cities increased their rental housing stock 18.6 percent, while there was a 30.8 percent increase in rental housing units in the villages.

As an illustration of how to read Tables 11 and 12 together, let's examine the City of Middleton. Middleton added nearly 1,000 rental units from 2010 to 2015, mostly through apartment construction but also through conversion of some single-family units into rental homes. The number of rental units affordable for the lowest-income bracket (30%AMI) declined, even though the number of 30%AMI households increased about 200 families. However, the number of rental units affordable to households at 50% of AMI increased 60 percent. These patterns and trends in Middleton perfectly represent the complexities of Dane County's housing markets over the past years: continued population growth at all income levels, significant increases in supply of units, but still not enough units constructed. The overall housing shortage then shows up in price pressures which reduce the number of lower-cost rental units affordable to working families.

Estimating the "Housing Gap." There are two main methods to estimate the "housing gap" or "affordable housing needs" for each municipality. The first approach compares the number of low-income households who already reside in that municipality to the number of units that are "affordable" to those households, whether or not those specific households live in those particular units. The second approach is to calculate the total number of renting and owning households who are extremely-cost-burdened, paying more than 50 percent of their income to housing costs. These two approaches together give a clear picture of the supply and demand issues in municipal provision of the range of housing choices that meets the needs of households with all income levels.

Municipal "Housing Gap": 2 Methods

1. Number of low-income renters currently living in a municipality minus the number of affordable units in the municipality. [Table 13]

Dane County Total: 10,812 affordable housing unit "gap" (at 30%AMI)

2. Number of low-income households currently living in a municipality paying more than 50 percent of their income to housing costs (owners) or rent (renters). [Table 14, and change over time in Tables 15 and 16]

Dane County Total: 13,050 renters and 3,490 owners (at 30%AMI)

Table 13 represents the "housing supply gap" between the number of extremely-low-income households who already reside in that community and the number of units affordable to those households. Under this method of calculating affordable housing needs, Dane County has a gap of ***10,812*** units affordable to renting households making less than 30-percent of AMI. The overall number for the county is less than that reported for all the cities combined, because a number of villages and towns have a slight "negative" gap.

Table 13. Affordable rental housing supply gap for under-30-percent-AMI renter households, 2015

	Renter Households with incomes below 30% AMI	Rental Units whose rent is affordable to households at 30% AMI	Affordable rental housing gap for households with incomes below 30% AMI
Cities			
Madison	12,365	4,320	8,045
Sun Prairie	1,000	245	755
Fitchburg	1,305	250	1,055
Middleton	625	205	420
Stoughton	590	250	340
Verona	210	30	180
Monona	490	220	270
Cities Total	***16,585***	***5,520***	***11,065***
Villages			
Waunakee	175	70	105
Oregon	115	135	*
DeForest	215	145	70
McFarland	140	130	10
Madison (town)	750	220	530
Mount Horeb	205	125	80
Cottage Grove	110	0	110
Cross Plains	85	50	35
Marshall	145	65	80
Deerfield	80	25	55
Belleville	45	25	20
Mazomanie	75	40	35
Shorewood Hills	0	4	*
Black Earth	30	25	5
Maple Bluff	4	4	*
Cambridge	55	25	30
Dane	25	35	*
Blue Mounds	10	4	6
Brooklyn	4	10	*
Rockdale	10	4	6
Villages Total	***2,278***	***1,141***	
County Total	***18,338***	***7,526***	***10,812***

Notes: * = not reported by Census/HUD for privacy reasons because number is less than 10 households or housing units, or because "gap" is negative. Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), 2011-2015 census (most recent). HUD determines availability of rental units by estimating the rent that would be affordable to households at 30%, 50%, and 80% of Area Median Income (AMI) and counts the number of units within each category. Total number of under-30% of AMI households in Madison (and therefore Dane County overall) are reduced by 4285 and 30-50% AMI households by 1065 to reflect estimates of number of student households near UW-Madison as described in 2015 report.

Table 14 is the second way to calculate a municipality's affordable housing needs, which looks at the number of extremely-cost-burdened owners and renters currently living in each municipality. Remember the definition of "extreme" housing cost burdens is when a household pays more than 50 percent of their income on housing.

Table 14. Extremely-Cost-Burdened Households, by tenure and income category, Dane County municipalities, 2015

	Owner Households			***Renter Households***		
	Less than 30% AMI	Between 30% AMI and 50% AMI	Between 50% AMI and 80% AMI	Less than 30% AMI	Between 30% AMI and 50% AMI	Between 50% AMI and 80% AMI
Cities						
Madison	1,570	1,115	650	8,045	1,225	545
Sun Prairie	150	120	90	705	120	15
Fitchburg	85	60	145	915	155	45
Middleton	45	75	15	435	105	10
Stoughton	150	95	50	330	25	*
Verona	40	*	60	140	70	*
Monona	110	95	35	300	110	*
Cities Total	***2,150***	***1,570***	***1,045***	***10,870***	***1,810***	***615***
Villages						
Waunakee	70	35	85	125	20	15
Oregon	135	65	25	70	*	*
DeForest	65	25	45	80	25	*
McFarland	45	*	45	40	*	*
Madison (town)	20	*	*	570	85	*
Mount Horeb	75	65	15	60	30	*
Cottage Grove	15	70	*	110	25	*
Cross Plains	*	25	20	30	20	*
Marshall	20	30	*	90	*	*
Deerfield	15	*	*	35	*	*
Belleville	30	15	*	45	*	*
Mazomanie	*	25	*	35	*	*
Shorewood Hills	15	*	20	*	15	*
Black Earth	15	*	15	25	*	*
Maple Bluff	*	*	25	*	*	*
Cambridge	15	20	*	20	*	*
Dane	*	15	*	15	*	*
Blue Mounds	20	*	*	*	*	*
Brooklyn	*	*	*	*	*	*
Rockdale	*	*	*	*	*	*
Villages Total	***597***	***430***	***327***	***1366***	***242***	***27***
County total	***3,490***	***2,575***	***1,890***	***13,050***	***2,350***	***650***

Notes: * = not reported by Census/HUD for privacy reasons because number is less than 10 households or housing units. Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), 2011-2015 census (most recent available). A household is considered cost-burdened if its monthly housing costs exceed 30-percent of its pre-tax income, and is considered extremely cost-burdened if its monthly housing costs exceed 50-percent of pre-tax income. For renting households, housing costs includes cash rents and utilities; for owner households, housing costs include mortgage payments, utilities, insurance, and property taxes. Cost-burdened renters less than 30% of AMI are reduced by 4285 and between 30 and 50% AMI by 1065 for both time periods to reflect estimates of number of student households near UW-Madison as described in 2015 report.

Table 14 indicates that, for Dane County as a whole, there are currently ***13,050*** extremely-cost-burdened renter households and ***3,490*** extremely-cost-burdened owner households whose income is less than 30 percent of the area median income. For those whose income is between 30-percent and 50-percent of AMI, there are 2,350 extremely-cost-burdened renters and 2,575 extremely cost-burdened owners.

How have these numbers changed over time in Dane County? Table 15 examines changes in extremely cost-burdened households, by municipality, for owning households while Table 16 shows those changes for renting households.

Table 15. Change in extremely-cost-burdened Owner households, by municipality, 2010-2015

	Income less than 30 % AMI			Income between 30% AMI and 50 % AMI		
	2010	***2015***	***% change***	***2010***	***2015***	***% change***
Cities						
Madison	1,535	1,570	*2.3%*	1,715	1,115	*-35.0%*
Sun Prairie	160	150	*-6.3%*	90	120	*33.3%*
Fitchburg	75	85	*13.3%*	170	60	*-64.7%*
Middleton	105	45	*-57.1%*	110	75	*-31.8%*
Stoughton	65	150	*130.8%*	85	95	*11.8%*
Verona	30	40	*33.3%*	50	*	*
Monona	40	110	*175.0%*	90	95	*5.6%*
Cities Total	***2,010***	***2,150***	***7.0%***	***2,310***	***1,570***	***-32.0%***
Villages						
Waunakee	125	70	*-44.0%*	40	35	*-12.5%*
Oregon	55	135	*145.5%*	*	*	*
DeForest	*	*	*	40	25	*-37.5%*
McFarland	30	45	*50.0%*	*	*	*
Madison (town)	25	20	*-20.0%*	175	*	*
Mount Horeb	85	75	*-11.8%*	40	65	*62.5%*
Cottage Grove	55	15	*-72.7%*	*	70	*
Cross Plains	*	*	*	*	25	*
Marshall	75	20	*-73.3%*	25	30	*20.0%*
Deerfield	*	15	*	*	*	*
Belleville	*	30	*	30	15	*-50.0%*
Mazomanie	*	*	*	25	25	*0.0%*
Shorewood Hills	*	15	*	*	*	*
Black Earth	*	15	*	*	*	*
Maple Bluff	15	*	*	15	*	*
Cambridge	*	15	*	*	20	*
Dane	*	*	*	20	15	*-25.0%*
Blue Mounds	*	20	*	*	*	*
Brooklyn	15	*	*	*	*	*
Rockdale	*	*	*	*	*	*
Villages Total	***550***	***597***	***8.5%***	***472***	***430***	***-8.9%***
County Total	***3,115***	***3,490***	***12.0%***	***3,165***	***2,575***	***-18.6%***

Notes: * = not reported by Census/HUD for privacy reasons because number is less than 10 households or housing units.
Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), 2006-2010 and 2011-2015 census (most recent available).

Table 16. Change in extremely-cost-burdened Renter households, by municipality, 2010-2015

	Income less than 30 % AMI			Income between 30% AMI and 50 % AMI		
	2010	***2015***	***% change***	***2010***	***2015***	***% change***
Cities						
Madison	6,430	8,045	*25.1%*	1,065	1,225	*15.0%*
Sun Prairie	425	705	*65.9%*	125	120	*-4.0%*
Fitchburg	630	915	*45.2%*	180	155	*-13.9%*
Middleton	295	435	*47.5%*	65	105	*61.5%*
Stoughton	200	330	*65.0%*	90	25	*-72.2%*
Verona	120	140	*16.7%*	75	70	*-6.7%*
Monona	215	300	*39.5%*	30	110	*266.7%*
Cities Total	***8,315***	***10,870***	***30.7%***	***1,630***	***1,810***	***11.0%***
Villages						
Waunakee	*	125	*	55	20	*-63.6%*
Oregon	105	70	*-33.3%*	*	*	*
DeForest	50	80	*60.0%*	30	25	*-16.7%*
McFarland	90	40	*-55.6%*	*	*	*
Madison (town)	465	570	*22.6%*	35	85	*142.9%*
Mount Horeb	90	60	*-33.3%*	15	30	*100.0%*
Cottage Grove	75	110	*46.7%*	50	25	*-50.0%*
Cross Plains	65	30	*-53.8%*	*	20	*
Marshall	30	90	*200.0%*	*	*	*
Deerfield	25	35	*40.0%*	*	*	*
Belleville	25	45	*80.0%*	20	*	*
Mazomanie	25	35	*40.0%*	*	*	*
Shorewood Hills	*	*	*	*	15	*
Black Earth	20	25	*25.0%*	*	*	*
Maple Bluff	*	*	*	*	*	*
Cambridge	15	20	*33.3%*	*	*	*
Dane	*	*	*	*	*	*
Blue Mounds	*	*	*	*	*	*
Brooklyn	*	*	*	*	*	*
Rockdale	*	*	*	*	*	*
Villages Total	***1,114***	***1366***	***22.6%***	***235***	***242***	***3.0%***
County Total	***10,285***	***13,050***	***26.9%***	***2,145***	***2,350***	***9.6%***

Notes: * = not reported by Census/HUD for privacy reasons because number is less than 10 households or housing units. Source is U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy data (CHAS), 2006-2010 and 2011-2015 census (most recent available). The number of extremely-low-income (under 30% AMI) rental households in Madison (and therefore Dane County overall) are reduced by 4285 and very-low-income (between 30 and 50% AMI) by 1065 to reflect estimates of number of student households near UW-Madison as described in 2015 report.

Section 5: Racial and ethnic disparities in housing opportunities and burdens.

Because disparities in housing opportunities and cost burdens are related to income, Table 17 shows disparities in the distribution of incomes by racial and ethnic categories for Dane County. Table 17 shows the percent of households within each racial/ethnic category whose income falls below 30% of AMI, between 30% and 50% of AMI, between 50% and 80% AMI, between 80% and 100% of AMI, and above the median income, as adjusted for family size.[19] Racial and ethnic categories are those reported by the census.[20]

Table 17. Distribution of Income by Race/ethnicity, Dane County 2011-2015

	White	African-American	Asian	Hispanic
Less than 30-percent of AMI	11.3%	38.3%	26.5%	23.8%
Between 30- and 50-percent of AMI	11.1%	22.8%	13.2%	29.6%
Between 50- and 80-percent of AMI	17.9%	14.7%	13.0%	21.1%
Between 80- and 100-percent of AMI	11.7%	7.8%	9.0%	8.2%
More than 100-percent of AMI	47.9%	16.4%	38.3%	17.3%

Notes: Source is US Department of Housing and Urban Development Comprehensive Housing Affordability Strategy data (CHAS), based on 2011-2015 census (most recent available.) Columns sum to 100 percent, so each cell indicates the percent of total residents of each race/ethnic category whose income falls into a particular category relative to AMI (area median income) adjusted for family size.

Table 17 clearly indicates significant disparities in income across racial and ethnic groups within Dane County. While nearly 48 percent of white households earn above the county median family income, only 16.4 percent of African-Americans, and 17.3 percent of Hispanics do.

Disparities in income, combined with historic patterns of discrimination, red-lining, and exclusionary zoning lead to spatial patterns of segregation and disparities in homeownership rates. Disparities in homeownership rates are clearly seen in Table 18, even for households within the same income category.

Table 18. Homeownership rates, by race/ethnicity and income level, Dane County 2011-2015

	White	African-American	Asian	Hispanic
Less than 30-percent of AMI	24.6%	1.9%	7.3%	8.5%
Between 30- and 50-percent of AMI	37.0%	4.4%	7.9%	12.3%
Between 50- and 80-percent of AMI	49.8%	14.7%	29.2%	23.6%
Between 80- and 100-percent of AMI	65.6%	23.8%	53.4%	58.5%
More than 100-percent of AMI	82.7%	59.8%	65.3%	73.2%

Notes: Source is US Department of Housing and Urban Development Comprehensive Housing Affordability Strategy data (CHAS), based on 2011-2015 census (most recent available.)

[19] Careful readers will note that fewer than 50 percent of all households in Dane County earn above the median income. But since the "median" is the 50th percentile, shouldn't the number be exactly 50 percent? The reason is a little complexity within the calculations, that "area median income" is calculated as area median "family" income but households are reported based on household income. Household income is less than "family" income because one-person-households are not included in "family" income calculations. Because of a large number of one-person-households, more households (adjusted for household size) earn below the median family income than earn above the family median income.

[20] Numbers may not add to county totals, because the Census racial/ethnic categories of "American Indian," "Pacific Islander" and "Other" are not reported here because these smaller numbers raise confidentiality issues. HUD does not report small numbers for sub-categories of race-income groups for privacy considerations.

For income categories below 50% of AMI, whites show significantly higher rates of homeownership than do African-Americans or Hispanics. Based on other data we've used, most lower-income homeowners are likely senior citizens, who were able to purchase their homes during their working careers, and remain as homeowners even after incomes have declined in retirement. The data clearly show that, due to historic patterns of discrimination and segregation, African-Americans were not similarly able to purchase homes and accumulate wealth.[21]

Even for households whose incomes exceed the county median family income, African-Americans have a 22.9 percentage point lower homeownership rate than similar-income white families. Although income disparities across racial groups are a significant contributor to housing consumption disparities, income alone cannot explain differences in homeownership rates or housing cost burdens. Historic patterns of segregation and historic (and ongoing) patterns of discrimination must be understood and addressed to remedy disparities and to "affirmatively further fair housing".[22]

Disparities in income, a lack of affordable housing availability, and ongoing discrimination in the housing market combine to produce disparities across racial and ethnic groups in terms of "severe housing problems." HUD defines "severe housing problems" as either being severely overcrowded or being extremely cost-burdened (spending more than 50 percent of income on housing.)[23]

Table 19 reports the percent of households within each income category, by race/ethnicity, who experience "severe housing problems" (which includes extreme-cost-burdens).

Table 19. Percent with Severe Housing Problems, Dane County 2011-2015

	White	African-American	Asian	Hispanic
Less than 30-percent of AMI	72.2%	79.6%	73.0%	77.8%
Between 30- and 50-percent of AMI	26.2%	20.1%	29.6%	41.5%
Between 50- and 80-percent of AMI	9.0%	7.5%	19.5%	16.2%
Between 80- and 100-percent of AMI	3.3%	8.3%	4.9%	11.3%
More than 100-percent of AMI	1.0%	2.7%	6.6%	1.7%

Notes: Source is US Department of Housing and Urban Development Comprehensive Housing Affordability Strategy data (CHAS), based on 2011-2015 census (most recent available.) Severe housing problems is defined by HUD as either lacking complete plumbing or kitchen facilities, being severely overcrowded, or being severely cost-burdened (paying more than 50 percent of income on housing.)

Table 19 clearly indicates that the vast majority of all households below-30% AMI experience severe housing problems, but the rates at which below-30% AMI households experience these problems is higher for African-Americans and Hispanics.

[21] See the recent book "The Color of Law" by Richard Rothstein for an in-depth history of how Federal government restrictions on mortgages (red-lining) and municipal zoning ordinances combined to rob African-Americans of homeownership opportunities.

[22] The term "affirmatively further fair housing" is a requirement for governments receiving federal funds under the federal Fair Housing Act.

[23] "Severe housing problems" can also include lacking complete plumbing or kitchen facilities, a very rare condition in urbanized areas in the county.)

Section 6: Housing Dane County's Workforce

The purpose of this section is to update a previous report "Dane County Workforce Housing Gap Fact Sheet" presented at the 2017 housing summit.[24] The previous report contained data through 2015, while this section updates the numbers through 2018.

We define workforce housing as means housing that is priced to be affordable to the workforce in an area. Therefore, it is important to understand the wages earned within the workforce, paying particular attention to those lower-wage occupations which are the lifeblood of the regional economy.

Table 20 presents the 25 lowest-wage occupations in Dane County (in 2018) which have over 1000 workers in those occupations. Combined, these 25 lowest wage occupations employ over 82,000 workers, or slightly more than 20 percent of the county's workforce.

Table 20. 25 lowest annual median-wage occupations in high-employment occupations (over 1000 employees), Madison metropolitan region (2018)

Occupation Code	Occupation Title	Employees	10th percentile annual wage	25th percentile annual wage	50th percentile annual wage
41-2031	Retail Salespersons	10,020	$17,630	$20,130	$23,550
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	8,400	$16,680	$17,870	$19,960
41-2011	Cashiers	7,980	$17,180	$19,310	$22,180
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	6,300	$20,760	$23,250	$28,470
35-3031	Waiters and Waitresses	5,860	$17,240	$19,450	$28,780
39-9021	Personal Care Aides	5,210	$21,250	$23,050	$25,850
43-5081	Stock Clerks and Order Fillers	4,150	$18,360	$21,020	$25,270
35-3011	Bartenders	3,630	$16,600	$17,760	$19,770
35-2014	Cooks, Restaurant	3,350	$19,820	$22,630	$26,400
43-4171	Receptionists and Information Clerks	3,110	$20,080	$24,930	$31,950
25-9041	Teacher Assistants	2,730	$20,270	$23,450	$29,910
37-3011	Landscaping and Groundskeeping Workers	2,500	$21,230	$26,400	$31,700
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	2,400	$22,790	$26,690	$31,080
37-2012	Maids and Housekeeping Cleaners	1,920	$17,810	$20,140	$23,330
51-9111	Packaging and Filling Machine Operators and Tenders	1,920	$23,320	$27,190	$32,030
21-1093	Social and Human Service Assistants	1,650	$22,800	$26,390	$31,370
25-2011	Preschool Teachers, Except Special Education	1,550	$21,070	$23,550	$27,500
33-9032	Security Guards	1,450	$20,500	$24,680	$30,170
39-5012	Hairdressers, Hairstylists, and Cosmetologists	1,270	$16,860	$18,620	$27,450
41-2021	Counter and Rental Clerks	1,230	$16,930	$18,750	$24,680
43-3071	Tellers	1,170	$23,630	$26,680	$29,780
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	1,150	$16,470	$17,530	$19,290
53-3031	Driver/Sales Workers	1,140	$16,750	$18,870	$27,520
35-9021	Dishwashers	1,070	$17,830	$20,280	$23,560
35-2021	Food Preparation Workers	1,020	$17,600	$20,210	$24,150
	All 25 lowest-wage high-employment occupations	***82,180***	***$19,258***	***$21,953***	***$26,628***
	All Occupations	***392,260***	***$21,510***	***$29,420***	***$42,770***

Notes: Data source is US Dept. of Labor, Bureau of Labor Statistics, Occupational Employment Statistics (OES) database for 2018. Detailed occupational data are only available at the Metropolitan Statistical Area (MSA) geography: Madison MSA contains Dane, Columbia, Green, and Iowa counties. Some detailed occupational data are not released due to confidentiality restrictions. Occupational codes follow the Standard Occupational Classification system (SOC). The 50th percentile is also called the median.

Table 21 illustrates the workforce housing challenge for these essential workers (lowest-wages in high-employment occupations) who comprise 20 percent of our workforce: the incomes they earn in the workforce are often not adequate enough to afford the housing in the communities where they work.

[24] Available at: https://communityoutreach.countyofdane.com/documents/housing-summit/2017/Dane%20County%20Workforce%20Housing%20Gap%20Fact%20Sheet%202017%20Summit.pdf

Table 21. Workforce housing challenge

	Employees	10th percentile annual wage	25th percentile annual wage	50th percentile annual wage
All 25 lowest-wage high-employment occupations	***82,180***	***$19,258***	***$21,953***	***$26,628***
Monthly "affordable" housing budget (1 worker)		***$481.46***	***$548.83***	***$665.70***
Monthly "affordable" housing budget (2 workers)		***$962.92***	***$1,097.66***	***$1,331.40***

Section 7: Housing supply and the "Missing Middle"

Communities across the country are re-examining their zoning codes to permit a more flexible housing supply called the "missing middle." The term "missing middle" was coined by architect/planner Daniel Parolek of Opticos Design[25] to reflect the types of housing (duplexes, courtyard apartments, triplexes, live/work units, accessory dwelling units, townhomes, small multifamily, cottage clusters/pocket neighborhoods, etc.) that used to be built in American cities but that have largely disappeared with post-war zoning codes.

States such as Utah and Oregon have recently passed legislation encouraging or mandating municipalities to provide more flexible urban housing options such as "missing middle" housing.

Using Census data on housing unit types ("units in structure"), we can roughly define the "missing middle" housing types to be 1-unit attached (townhouses, etc.) up through 9-units in structure, or the housing units between single-family detached and larger multifamily (10 or more units per structure). Examining the distribution of different housing unit types can help communities examine their housing supply and zoning regulations to see whether or not they are providing the range of housing sizes and types that meets the needs of their community. Some communities have policies in their comprehensive plans to promote "complete neighborhoods," defined as providing a full range of housing types in every neighborhood.

Table 22 shows the percent of each community's housing stock that is in various types of buildings. 1-attached to 4 unit buildings can be considered "attached single-family" homes, as buildings with up to 4 units are assessed as residential properties under Wisconsin law and are financed as single-family properties under Fannie Mae/Freddie Mac and Federal Housing Administration. Buildings with 5-9 units can be considered "small multifamily" properties, and are generally owned and operated by "mom and pop" landlords rather than development/management companies.

[25] See more at https://missingmiddlehousing.com/about. Image copyright Opticos Design, used with permission.

Table 22. Housing unit type (percent of housing stock) distribution, Dane County municipalities (2017)

	Single-family detached	*1 (attached) - 4 units*	*5-9 units*	*10+ units*
Cities				
Madison	42.8%	17.7%	*8.5%*	31.0%
Sun Prairie	45.2%	26.3%	*6.5%*	21.9%
Fitchburg	41.9%	16.7%	*8.4%*	33.0%
Middleton	42.7%	16.0%	*8.9%*	32.4%
Stoughton	63.1%	20.1%	*5.3%*	11.6%
Verona	58.0%	19.4%	*4.4%*	18.3%
Monona	55.4%	8.5%	*4.1%*	32.0%
Cities Total	***44.4%***	***18.2%***	***8.0%***	***29.4%***
Villages				
Waunakee	66.8%	17.7%	*3.1%*	12.5%
Oregon	65.5%	18.6%	*5.4%*	10.6%
DeForest	62.7%	24.9%	*3.1%*	9.3%
McFarland	72.3%	18.6%	*3.5%*	5.6%
Madison (town)	15.2%	27.9%	*14.8%*	42.1%
Mount Horeb	63.9%	19.6%	*6.4%*	10.2%
Cottage Grove	65.9%	19.6%	*1.4%*	13.1%
Cross Plains	68.5%	13.5%	*7.8%*	10.3%
Marshall	60.7%	34.6%	*1.5%*	3.1%
Deerfield	77.5%	18.7%	*2.3%*	1.5%
Belleville	72.1%	22.0%	*4.5%*	1.4%
Mazomanie	75.9%	15.1%	*5.2%*	3.8%
Shorewood Hills	76.8%	0.5%	0.0%	22.7%
Black Earth	69.9%	20.7%	*3.3%*	6.1%
Maple Bluff	95.7%	0.5%	1.5%	2.3%
Cambridge	57.4%	32.2%	*2.7%*	7.7%
Dane	71.9%	17.1%	7.8%	3.2%
Blue Mounds	89.5%	7.8%	2.7%	0.0%
Brooklyn	78.8%	16.6%	4.6%	0.0%
Rockdale	82.9%	16.3%	0.0%	0.8%
Villages Total	***63.3%***	***19.8%***	***4.8%***	***12.0%***
County Total	***53.4%***	***16.7%***	***6.6%***	***23.3%***

Soucre: US Census Bureau, American Community Survey 2017 (5-year data).

Section 8. Conclusions.

Dane County is the fastest growing county in the state of Wisconsin. Every year, we add thousands of new jobs, and thousands of new households move or form here. Income is growing (overall). But rents and housing costs are growing faster than incomes. We aren't producing enough housing supply (overall) to meet household growth. Our overall housing shortage contributes to increased housing scarcity, decreasing affordability, increasing rents, and increasing cost-burdens. The consequences of rising costs and decreasing affordability hits lower-income working families the hardest.

Appendix: Data sources and methods.

Understanding where the data comes from can be helpful in understanding what it can and can't tell us. The main source of data for this report is a special-tabulation dataset produced for by the US Census for the Department of Housing and Urban Development called the "Comprehensive Housing Affordability Strategy" (CHAS). This data is normally produced for communities which receive federal block-grant monies from HUD in order to prepare "consolidated plans." While this data is normally available to grantees, the data are also useful for analyzing housing needs in smaller communities. Data are available at the levels of states, counties, municipalities, and even census tracts. In this report, we use municipal-level data.

The underlying source data used is the 5-year American Community Survey (ACS) data produced by the US Census Bureau. For this report, the data cover the years 2011-2015.

The Census normally produces housing data which is very useful to communities to analyze housing demand and supply. These data are regularly updated and include measures of housing demand (households, populations, household types and sizes, income levels, education levels, etc.) and housing supply (number of units, types of units – single family, multi-family etc. – and unit sizes by number of bedrooms, rents and housing values, occupancy characteristics, etc.).

However, for purposes of analyzing housing needs and housing affordability, the normal Census data does not have enough detail. The Census uses income levels and rent levels that are the same across the country, but housing markets are local.

Income limits, payment standards, and eligibility for most housing programs (federal and state) are not based on national income and rent levels, but rather "Area Median Income" or AMI. The "area" for Area Median Income is localized, in this case covering just Dane County.

Additionally, normal Census income and housing data does not adjust for family size, a key component of affordable housing needs assessment.

For that reason, the special tabulation CHAS data is helpful. CHAS data are produced by the Census for HUD, and these data utilize each areas' AMI, and provides additional details on household sizes, household types (seniors, families, etc.), household needs (disability), race/ethnicity, and income levels.

The power of CHAS data for local housing analysis is in this fine-grained ability to examine different households (size, income level, type, etc.) and different housing units (rents, size, etc.). However, unsurprisingly, this data produced by a federal government agency is not at all user friendly to access and utilize. The data is accurate, it's just not easily accessible on HUD's website. In order to produce the estimates in this report, we had to download the entire CHAS data set for the entire country (over 36,000 municipalities and over 18 tables) and extract the information for each municipality in Dane County. Therefore, one of the purposes of this report is to provide this information in a (hopefully) accessible format.

Because these special tabulations are produced by the Census for HUD, there are precautions taken to protect people's privacy. One of those precautions is that the numbers in the HUD CHAS data are all rounded to the nearest 5 or 0. So, for example, the number of extremely-low-income (under

30% AMI) extremely-cost-burdened senior homeowners in Madison is reported as 190. But the "true" number could be anywhere from 186 to 194. If HUD reported the "exact" number, sophisticated computer programs could potentially identify individual homeowners. Therefore, HUD and Census deliberately introduce a tiny bit of "statistical noise" into the data to preserve confidentiality. They do this by rounding the number to the nearest multiple of 5.

But this legitimate need to protect privacy is the reason this report no longer includes information on many of our smaller communities, rural areas, and towns in Dane County. If HUD/Census calculates any number that is too low (below 15), they simply don't report it – and they fill in their data with the number "4." For example, the number of extremely-cost-burdened extremely-low-income senior owners in the Village of Brooklyn is listed as "4." This means there could be anywhere from 0 to 14 households in this category. No doubt, those households are important, but if the census were to report the number, someone's privacy might be violated. So, unfortunately, for many of the variables in this report, the numbers for most of our towns in Dane County are too small to be reported by HUD.

Therefore, in this report, we exclude many of our smaller communities and towns. This is not because they don't have housing needs – they do. And this is not because they are unimportant – they are important! It is simply because the data available does not capture their housing needs.

One other important point needs attention. These data are based on the municipalities where people and households ***currently live***. They do not track where someone previously lived, and they do not track where people might want to live if there was housing available and affordable for them in their desired community. The housing needs identified in section 4 represent people who are currently living in the municipalities identified.