

Housing Affordability in Hamilton County

*An analysis of households, housing affordability,
and housing subsidy in Hamilton County and Cincinnati, Ohio*

February, 2017

Table of Contents

| | |
|-------------------------------|-----------|
| Executive Summary | 3 |
| Introduction | 4 |
| Hamilton County Overview | 5 |
| Publicly Subsidized Housing | 8 |
| The Housing Gap | 10 |
| Cost Burdened Households | 12 |
| Appendix A: Supplemental Data | 15 |
| Appendix B: Methodologies | 19 |

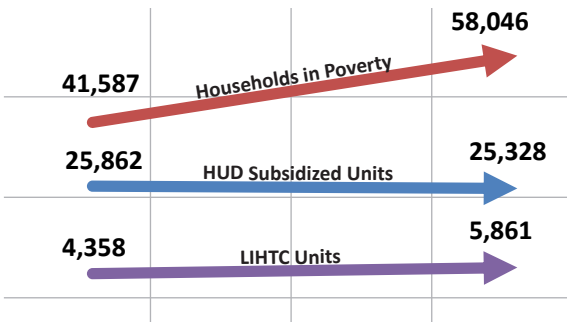
This report was produced by the Community Building Institute (CBI) at Xavier University, through the generous funding of Local Initiatives Support Corporation (LISC) of Greater Cincinnati & Northern Kentucky

For more information about this report, please contact Liz Blume at CBI (blume@xavier.edu) or Noam Gross-Prinz at LISC (nprinz@lisc.org)

Executive Summary

A Growing Housing Need

The number of Hamilton County households in poverty has grown by 40% since 2000. Over the same period, the number of HUD-subsidized units has decreased slightly. There are also more Low Income Housing Tax Credit (LIHTC) units in the County than in 2000, but many times these units overlap with HUD-subsidized units. Overall, the availability and affordability of housing has not kept pace with the rise in poverty.

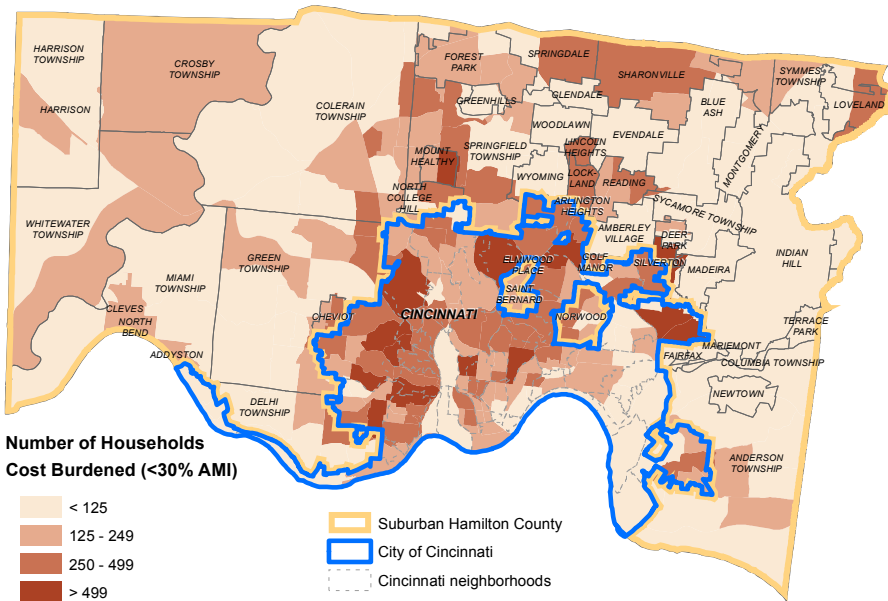
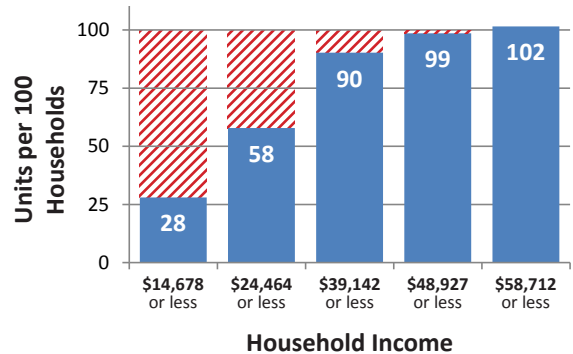


Change in Number of Units, 2000-2014
Hamilton County

The Affordable and Available Housing Gap

For every 100 of the lowest income households in Hamilton County, there are only 28 units of housing that are both affordable and available. This equates to an approximate gap of 40,000 units for those households making \$14,678 or less (30% of Hamilton County's median income).

Units Affordable and Available
per 100 households in Hamilton County



Cost Burden and Severe Cost Burden, by Census Tract
Extremely Low Income Households in Hamilton County

Housing Cost Burden

Nationally and locally, households are burdened by the high cost of housing. Many pay more than 30% of their income for housing, leaving little to pay for food, transportation, health care and other basic needs. Throughout Hamilton County this is particularly pronounced among extremely low income households. Three quarters of these households spend more than 30%, or more than 50%, of their income on housing, making it difficult to pay for other essential expenses.

Introduction

In Cincinnati and Hamilton County it is increasingly difficult for low-income families to find quality affordable homes. Today there is an estimated deficit of 40,000 housing units that are affordable and available to extremely low income households, those making less than \$14,678. On top of this, more than 7,500 additional households experience some form of homelessness in Cincinnati and Hamilton County (The Partnership Center, 2015). Most of these extremely low income households spend significantly more on housing than what is considered affordable, 30% or less of gross income. Many of us face difficult choices as we allocate our limited household resources, but households at the bottom of the income spectrum, with such a limited budget, are forced to make decisions between many essentials such as food, healthcare, and transportation. Households that come up short may move, get evicted, remain in housing in very poor condition, or crowd into homes that are too small. All of this puts stress on families, likely rippling out through our housing market and spilling over into labor and employer issues, education, and health care.

Cincinnati and Hamilton County are collectively considered a relatively affordable housing market, but it is not affordable for everyone. For a growing number of people living below Hamilton County's median income (\$48,927 in 2014) a decent home is not affordable. The foreclosure crisis of the late 2000s has left its mark; fewer new housing units are being built each year (1,000 less in 2015 than in 2000) and what is being built is more expensive. The average construction cost for a new single- or two-family unit in Hamilton County has grown by 31% since 2000, and for an apartment or condo in a multi-family building the per-unit cost has grown by 50%. Meanwhile, the median income in Hamilton County has only grown by 19% and the poverty rate has jumped by 43%. As the average cost of building housing goes up and the number of units declines, household income is not keeping pace and more of us pay a larger share of our income for housing.

There are tools available for us to address the affordable housing gap, but the existing programs have been underfunded. There are approximately 25,300 HUD-subsidized housing units available in Hamilton County, which is 500 units fewer than what was available in 2000. Yet today there are 16,000 more households in poverty that struggle to find affordable housing options. While the need for affordable housing is increasing and the publicly subsidized supply is largely unchanged, the ways we deliver subsidies for housing are changing. For generations, affordable housing built with public funds was part of the public housing system managed by metropolitan housing authorities and later, private site-based operators. In the last forty years, especially with the creation of the Housing Choice Voucher and Low Income Housing Tax Credit, more public subsidies for housing are channeled through private landlords. In many examples, these programs work well and provide quality units and more choice to tenants. In other cases, especially under the voucher program, unscrupulous landlords can earn steady cash income while renting poor quality units and leaving tenants with few options.

If we want families to move out of poverty and create better lives for themselves and their children, we should start by ensuring that everyone has a decent and stable place to call home. This might mean households are making more money and so are able to afford better housing, and that more quality housing units are available at lower rents. Overall, approximately 40,000 more housing units targeted to people of very low incomes are needed in Hamilton County to meet current demand. This affordable housing provides stability: an address for a job application, a place for children to study at night, a steady set of neighbors that offer support —just the things that families in Cincinnati have taken into account for generations when they say, “this is a great place to raise a family.” As our region continues to enjoy increased prosperity, we have an opportunity and an obligation to ensure that all of our neighbors share in the benefits of growth.

Hamilton County, Ohio

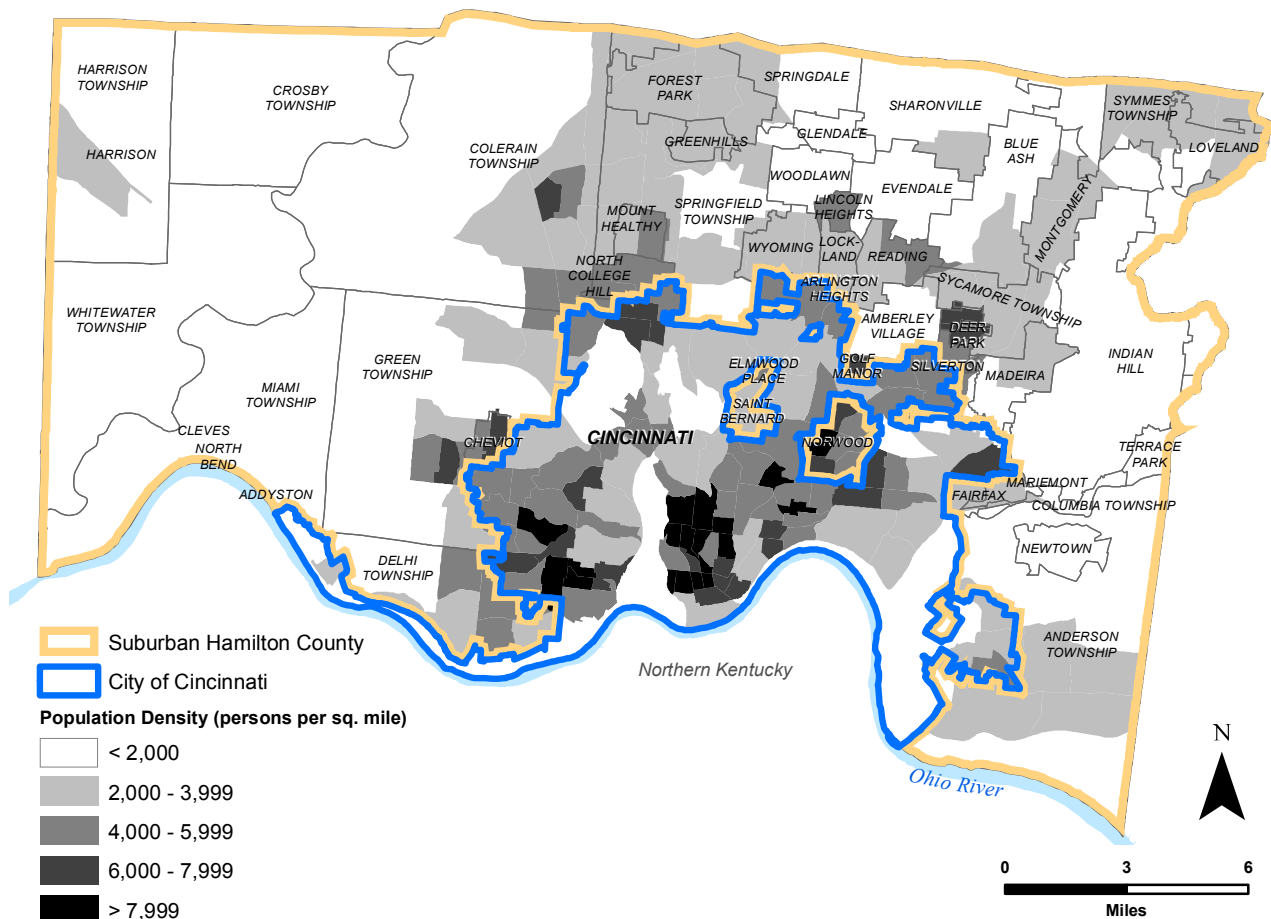
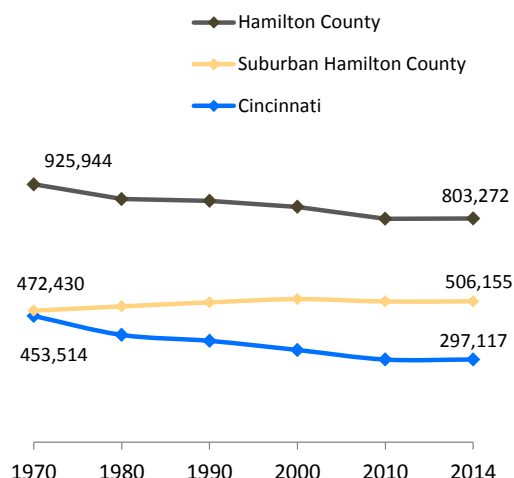
Hamilton County, located at the southwest corner of Ohio and bordered by both Indiana and Kentucky, had a population of 803,272 in 2014. It is comprised of 49 distinct municipalities and townships, the largest of which is Cincinnati with a population of 297,114.

Hamilton County has seen a steady decline in its population over the past decades. While suburban Hamilton County has grown slightly, Cincinnati has mirrored the population decline of the county overall.

Hamilton County's population is densest in the urban core, particularly in neighborhoods north and west of downtown Cincinnati. Several inner-ring suburbs also contain dense populations, including Lincoln Heights and Norwood, and parts of Colerain Township and Forest Park to the north of Cincinnati.

It should be noted that while Northern Kentucky is part of the local housing market, it was not included in this study.

Hamilton County Population 1970-2014



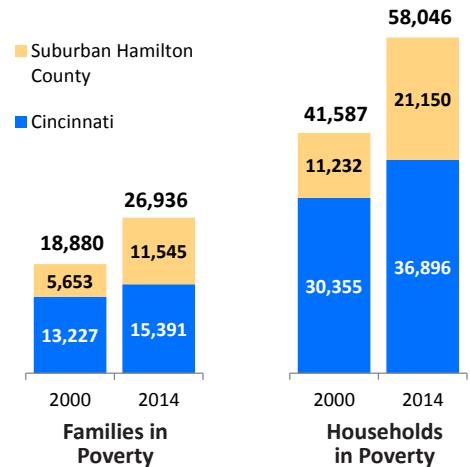
Data source: U.S. Census Bureau, Decennial Census 1970-2010; American Community Survey, 5-yr, 2010-2014

Poverty

Although the county population has declined since 2000, the number of families and households living in poverty has grown, both in Cincinnati and in suburban areas of Hamilton County. The number of families in poverty increased by more than the national rate, by 43% in Hamilton County compared to 33% nationally. The overall poverty rate in Hamilton County increased from 12% to 18% since 2000, and is slightly higher than statewide and national poverty rates.

While the overall poverty rate in Cincinnati has also increased from 22% to 31% since 2000, poverty has shifted from the urban core outward. In 2000, 30% of the County's families in poverty lived in the suburbs, but in 2014 this has grown to 43%. In Suburban Hamilton County (outside of Cincinnati), the number of families in poverty more than doubled since 2000.

Poverty in Hamilton County, 2000-2014

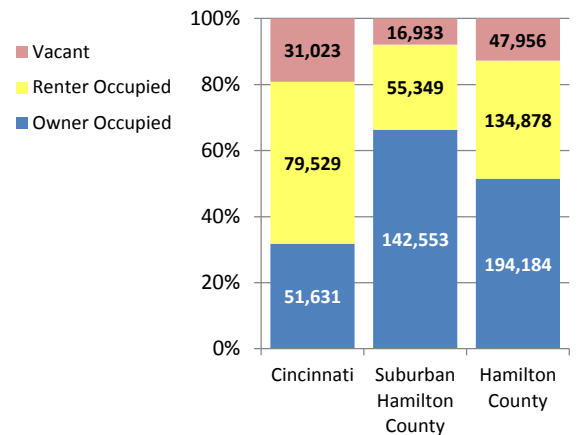


Housing Stock

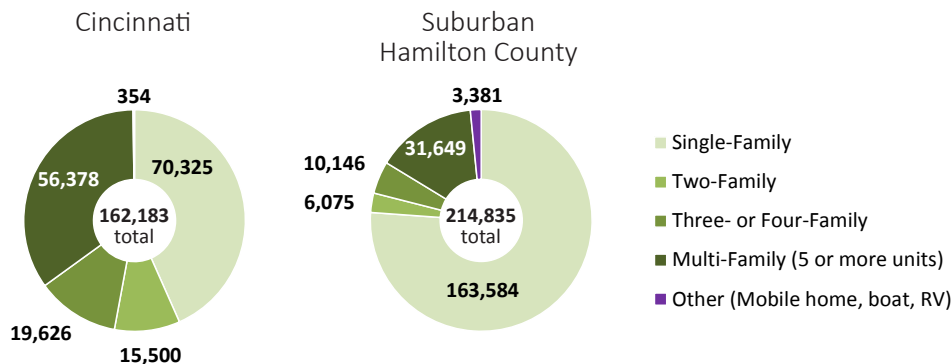
Hamilton County has more owner-occupied housing units than renter-occupied units. The owner-occupancy rate of 52% is slightly lower than the state and national rates of 60% and 56% respectively.

In Suburban Hamilton County, 66% of all housing units are owner-occupied, while in Cincinnati owner-occupied units constitute only 32% of all housing units. This pattern is also reflected in the number of units by building-type—most units in Cincinnati are in 2-family or larger multi-family buildings, while in Suburban Hamilton County the majority of units are single-family units.

Tenure of Housing Units in Hamilton County



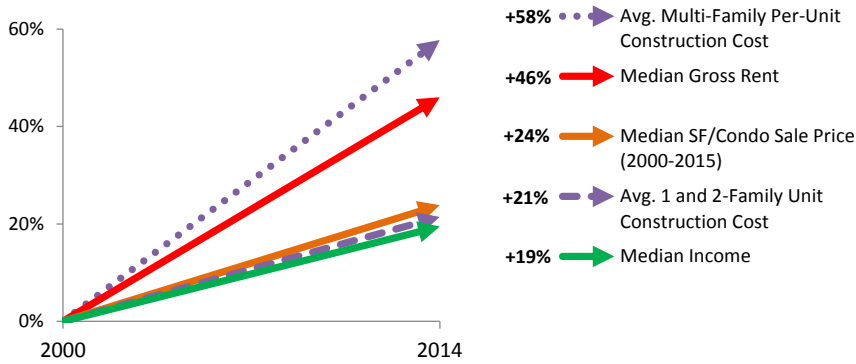
Housing Units in Hamilton County, by Building Type



Data source: U.S. Census Bureau, Decennial Census 2000; American Community Survey, 5-yr, 2010-2014

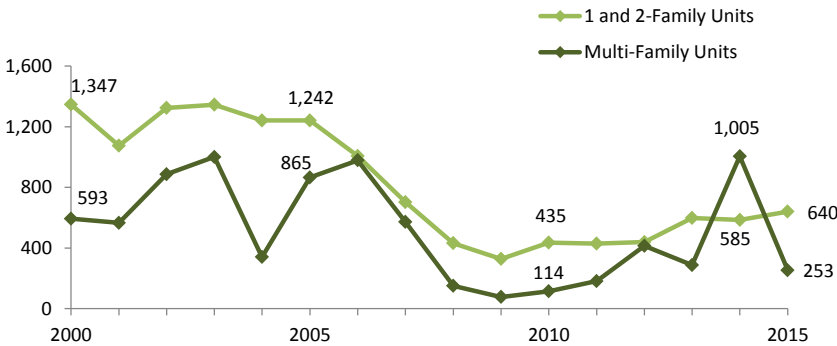
Income and Residential Construction Since 2000

Income, Housing, and New Construction Cost Changes, 2000-2014
Hamilton County



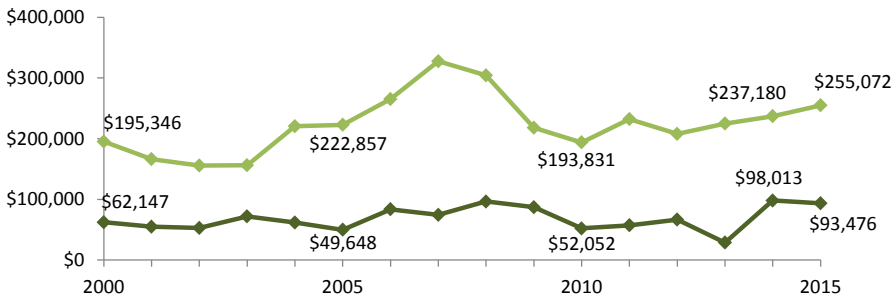
Between 2000 and 2014, the median income in Hamilton County grew by 19%, while median gross rent increased by more than twice that rate, 46%. Residential unit construction cost increases have also outpaced median income, with average single- and two-family home construction costs in particular rising by 58% between 2000 and 2014.

Number of New Units Constructed
Hamilton County



Since bottoming out in 2009 during the national recession, the number of new residential units constructed annually in Hamilton County has grown. One and two-family unit construction has risen steadily, although construction is still less than 50% of what it was in the early 2000s. The number of new multi-family units constructed annually has also risen from recession lows, although a large spike in construction in 2014 was followed by a 4-year low in 2015.

Average Construction Cost per New Unit
Hamilton County



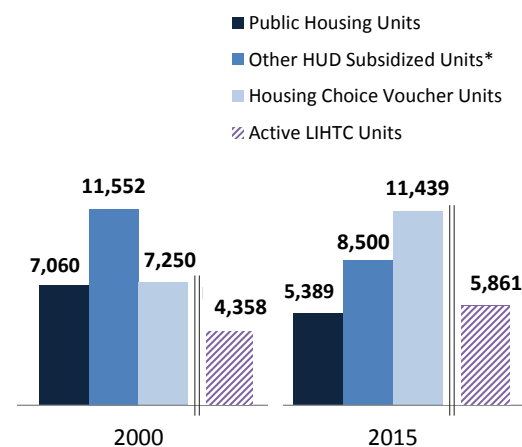
The cost-per-unit to construct new multi-family housing was more than \$93,000 in 2015, a 50% increase over 2000. The cost-per-unit to build single and two-family homes has steadily risen over the last four years to \$255,072, a 31% increase over 2000.

Data source: U.S. Census Bureau Building Permit Data; U.S. Census Bureau, Decennial Census 2000; American Community Survey, 5-yr, 2010-2014; Hamilton County Auditor Sales data, 2000-2015 (Warranty Deed sales only)

Publicly Subsidized Housing

The Federal Government’s Department of Housing and Urban Development (HUD) provides funding for affordable housing to low income households in a variety of ways. In broadest terms, subsidies can be targeted to the construction and financing of homes, the operations of apartment buildings, or the payment of household rent. Some programs, such as the Housing Choice Voucher system, provide some qualifying households with vouchers to pay rent for homes secured in the housing marketplace. Other programs subsidize homes in specific buildings, keeping these units affordable to low income families and individuals. Additionally, HUD provides funding to the Cincinnati Metropolitan Housing Authority, which owns and manages buildings within Hamilton County that are home to many low income households. City-funded and managed housing subsidies such as HOME and CDBG are omitted from this analysis because of frequent overlap with other subsidies.

Subsidized Housing Hamilton County



Across all program types, the number of units subsidized by HUD has decreased by 2% in the county. Over the past 15 years, Hamilton County has seen a

shift in the types and locations of subsidized housing that are being provided. The number of site-based subsidized homes (Public Housing or Other HUD Subsidized units in specific buildings) has decreased by 25%, while the number of vouchers has increased by nearly 58%. This change in program type comes with a shift in management, inspection, and tenant protections.

| | Public Housing Units | % | Other HUD Subsidized Units* | % | Housing Choice Voucher Units | % | Total HUD Subsidized Units | % | Active LIHTC Units |
|----------------------------|----------------------|-------|-----------------------------|-------|------------------------------|-------|----------------------------|------|--------------------|
| 2000 | 7,060 | 27.3% | 11,552 | 44.7% | 7,250 | 28.0% | 25,862 | 100% | 4,358 |
| 2015 | 5,389 | 21.3% | 8,500 | 33.6% | 11,439 | 45.2% | 25,328 | 100% | 5,861 |
| Change, 2000-2015 | -1,671 | - | -3,052 | - | 4,189 | - | -534 | - | 1,503 |
| % Change, 2000-2015 | -23.7% | - | -26.4% | - | 57.8% | - | -2.1% | - | 34.5% |

* These include Project-based Section 8, Moderate Rehab, Section 202, and Section 811.

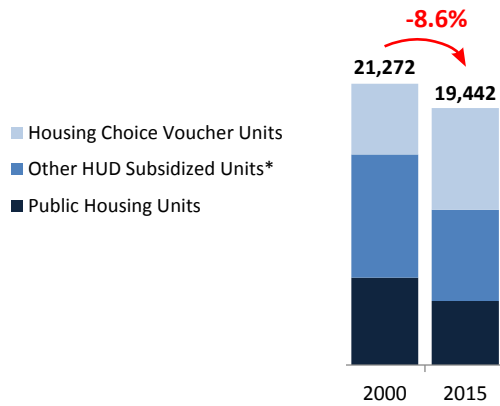
Data source: HUD, A Picture of Subsidized Households (2000, 2015); HUD Multi-Family Assistance and Section 8 Contract Database, 2016; Ohio Housing Finance Agency LIHTC database, 2016

Low Income Housing Tax Credits

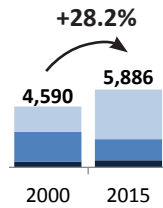
In addition to the variety of HUD-subsidized programs, the Internal Revenue Service, through the Ohio Housing Finance Agency, offers Low Income Housing Tax Credits (LIHTC) to subsidize the construction of housing units restricted to low income households. The majority of LIHTC projects in Hamilton County are located in Cincinnati. Some LIHTC projects also use other federal subsidies, so overlap, particularly among Housing Choice Voucher units, is likely. Active LIHTC units have increased by 34% since 2000, likely in part because the program does not require regular appropriations of public funds, but instead is a tax credit.

Cincinnati and Suburbs

Subsidized Housing Cincinnati



Subsidized Housing Suburban Hamilton County

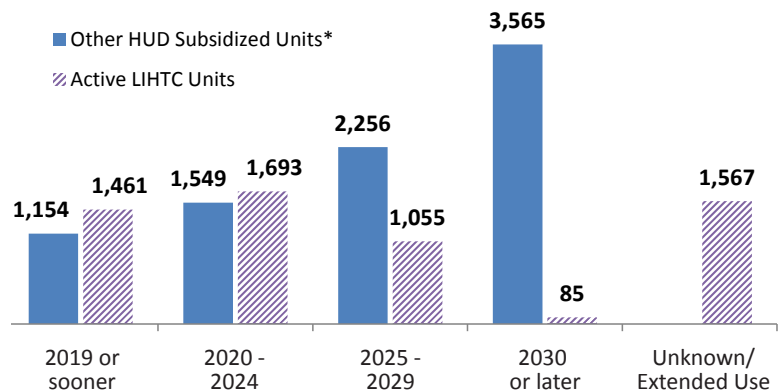


While Cincinnati and Hamilton County overall have seen a net loss of HUD subsidized units since 2000, Suburban Hamilton County (outside of Cincinnati) has seen a 28% increase. This increase was primarily due to an overall increase in Housing Choice Vouchers throughout the county. Even so, the increase in the number of HCV units in Cincinnati was greater than in the rest of the county, and the majority of Hamilton County subsidized units overall are still found in Cincinnati. See Appendix A for unit totals by type in Cincinnati and suburbs.

Expiring HUD and LIHTC Units

HUD and LIHTC multi-family subsidy programs allow for building owners to opt-out of the limiting contracts after some period of time. Many owners choose to renew these contracts, while others choose to leave the program and open their buildings up to market-rate rents and tenants. It is not possible to predict which contracts will renew and which will be allowed to expire. Additionally, some contracts are held by non-profit organizations whose mission is to preserve affordable low-income housing. Nevertheless, a snapshot of expected expiration dates as of 2016 shows that 14% of homes kept affordable by HUD contracts are set to expire before 2020, while 42% are secured through 2029. About 25% of LIHTC units are scheduled to expire before 2020. Note that the data at right does not include CMHA Public Housing or Housing Choice Voucher units. It is also assumed that LIHTC projects would opt out as early as possible (15 years), although owners of units built after 1990 must apply for permission to opt out before 30 years have passed.

Subsidized Housing Units, by Anticipated Expiration Date



* These include Project-based Section 8, Moderate Rehab, Section 202, and Section 811.

Data source: HUD Multi-Family Assistance and Section 8 Contract Database, 2016; HUD 'A Picture of Subsidized Households' (2000, 2015); Ohio Housing Finance Agency LIHTC database, 2016

The Housing Gap

When the number of **Affordable and Available** homes in Hamilton County is less than the total number of households living in the county, there is a housing gap. This gap counts the number of households that don't have affordable homes available to them and are therefore paying more than they should (30% of gross income). This analysis examines the housing gap in Hamilton County for households below various income thresholds.

The data for this analysis is based on the Census Public Use Microdata Sample (PUMS), 2010-2014. This sample contains self-reported responses, and is subject to inconsistencies. For example, a Housing Choice Voucher recipient may report housing cost without including the voucher subsidy, or students and seniors may not report income and housing costs consistently or accurately. The results on the following page should therefore be considered approximate. They take into account competition from higher income households choosing to live in units that lower income households could also afford, and also include vacant units that are for rent or for sale. For more detailed discussion of the methodology, see Appendix B.

The median income of all households in Hamilton County (regardless of household size) is \$48,927, and this is used as a baseline for the gap analysis. Using the County median, rather than the wider regional median, gives a more accurate picture of what county residents can afford. The household income thresholds used are specific percentages of this median. The data presented is also cumulative. For example, households at the \$39,142 (80% of median income) threshold are those making this amount or any lesser amount.

What does 'Affordable and Available' mean?

If a household spends 30% or less of its gross income on housing costs, the household's unit is counted as **Affordable and Available** to all income thresholds that this specific household's income falls under. Although the housing unit, based on its current housing costs, may also be considered **Affordable** to different households under a lower income threshold, it is not considered **Available** to those households because it is occupied by a higher income household.

If a vacant housing unit is for rent or for sale, it is **Available**. If the estimated housing cost of that unit (rent and utilities; or estimated mortgage payment, insurance, utilities) is at or below 30% of an income threshold, the vacant unit is considered both **Affordable and Available** for households with incomes below that threshold. For more information about the methodology behind this Gap Analysis, see Appendix B.

Hamilton County Income Categories:

The following household incomes are used in the gap analysis, and are based on specific percentages of Hamilton County's 2014 median household income.

\$14,678: 30% of County median

\$24,464: 50% of County median

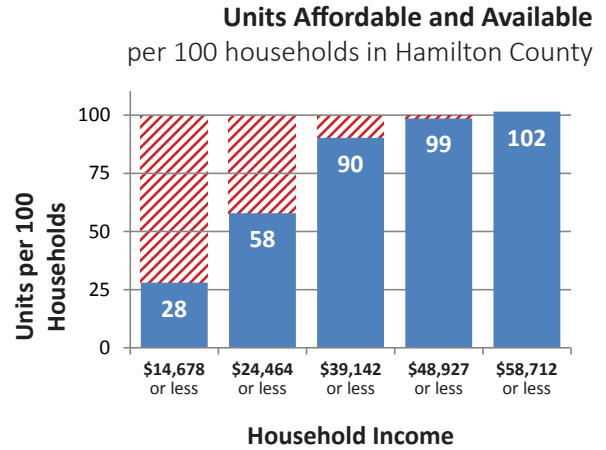
\$39,142: 80% of County median

\$48,927: 100% of County median

\$58,712: 120% of County median

Hamilton County Gap

In Hamilton County, the gap is greatest for households with an income below \$14,678 (30% of County median)—there are **only 28 units Affordable and Available for every 100 households, resulting in a gap of about 40,000 units**. The gap shrinks if the income threshold is increased to \$24,464 (50% of median). The gap between supply and demand could be addressed by making about 40,000 units Affordable and Available to those earning less than 30% of County median income.



Urban vs. Suburban Gap

The affordable housing gap varies geographically. As shown in the graphs below, there are relatively fewer units Affordable and Available per 100 households in Suburban Hamilton County than in Urban Hamilton County at each of the income thresholds*. In fact, within Cincinnati there is a surplus per 100 households once the threshold rises above \$48,927 (100% of County median).

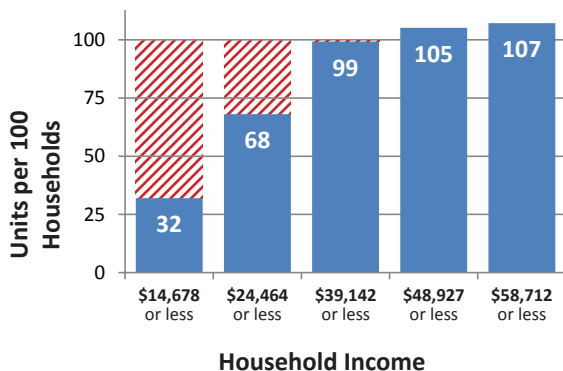
At all income categories, the relative gap per 100 units is greater in Suburban Hamilton County than in the Urban area. At the lowest income category, however, the total number of units in the gap is actually greater in the Urban area—there are **25,301 units** in the Urban gap but only **14,718 units** in the Suburban gap. The Suburban unit gap actually rises to **20,615 units** when the income threshold is lifted to \$24,464, and remains higher than the Urban gap at all other income levels. This is likely in part because suburban housing tends to be larger and more expensive to purchase or rent. See Appendix B for additional data.

Gap in Households and Affordable and Available Units
Hamilton County Overall

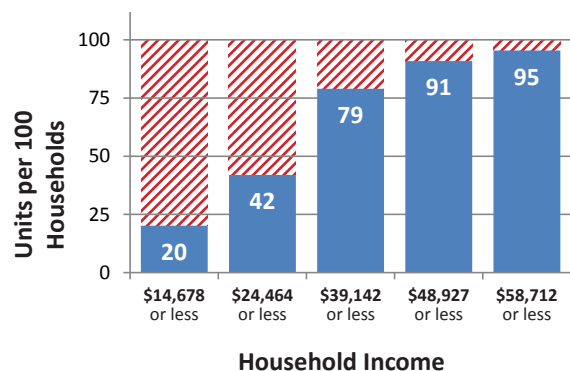
| Household Income | Total Households | Affordable and Available Units | Gap |
|-------------------------|------------------|--------------------------------|----------------|
| \$14,678 or less | 55,600 | 15,581 | -40,019 |
| \$24,464 or less | 90,946 | 52,611 | -38,335 |
| \$39,142 or less | 138,559 | 125,073 | -13,486 |
| \$48,927 or less | 165,531 | 163,191 | -2,340 |
| \$58,712 or less | 190,342 | 193,252 | 2,910 |

* See Appendix B for more information on Urban and Suburban geography boundaries

Units Affordable and Available
per 100 total households in **Urban Hamilton County**



Units Affordable and Available
per 100 total households in **Suburban Hamilton County**



Cost Burdened Households

Households that spend more than 30% of gross income on housing costs are considered cost burdened, and those spending more than 50% of income are considered severely cost burdened. Across Hamilton County, over one-third of households, more than 110,000, are burdened by the cost of their housing and pay more than 30% of their income to pay rent or a mortgage. This cost burden analysis examines the number of households in discrete income bands that are spending more than they can afford on housing in specific areas of Hamilton County. It examines only actual households rather than all available housing units.

Nationally, lower income households tend to spend a greater portion of their income on housing than do moderate and high-income households, and this is also true locally. In Hamilton County, 76% of Extremely Low Income Households are cost burdened (compared to 75% nationally).

The Area Median Family Income (AMFI) for the multi-county Greater Cincinnati region in 2013 for a family of four was \$68,673. Household income is shown as a percentage of this median income. For example, *Extremely Low Income* households earn less than 30% of AMFI—\$20,600 for a family of four.

Of the 44,500 Extremely Low Income households in the county that are cost burdened or severely cost burdened, almost half are families, many with children, and 10,050 are seniors.

* Including households for which information not computed (no or negative income reported)

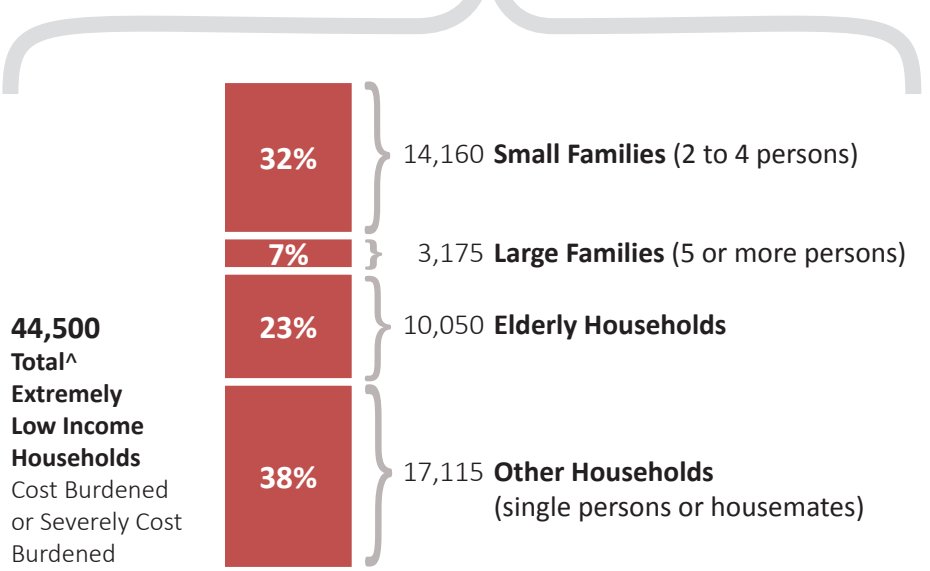
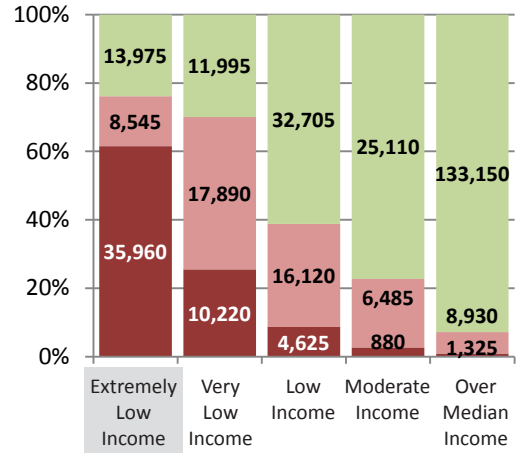
^ Due to rounding, household type subtotals may not add up exactly to cost burden totals

Data source: HUD Comprehensive Housing Affordability Strategy (CHAS), 2009-2013

Cost Burden

All Households in Hamilton County

Living affordably* Cost burdened Severely Cost Burdened

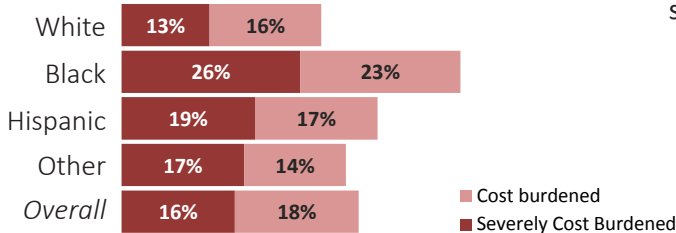


Income Categories:

- Extremely Low Income:** 0-30% of AMFI
- Very Low Income:** 30-50% of AMFI
- Low Income:** 50%-80% of AMFI
- Moderate Income:** 80%-100% of AMFI
- Over Median Income:** Over 100% of AMFI

Cost Burden by Race

Cost Burden by Race/Ethnicity
Hamilton County Households

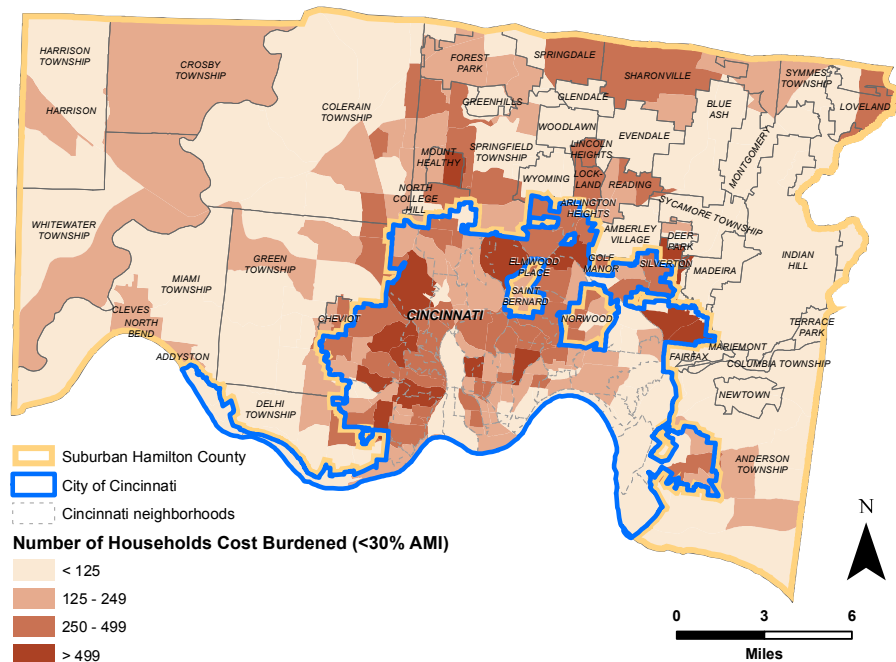


Black Hamilton County households are disproportionately affected by housing cost burden, with nearly 49% experiencing some level of burden, compared to 34% of households overall.

Cost Burden by Community

Many of the lowest income cost burdened households are located within Cincinnati, but there are also several areas in suburban Hamilton County where significant numbers of these households exist. The map below illustrates locations in the county where these households tend to be clustered. See Appendix A for more information on cost burden by tenure.

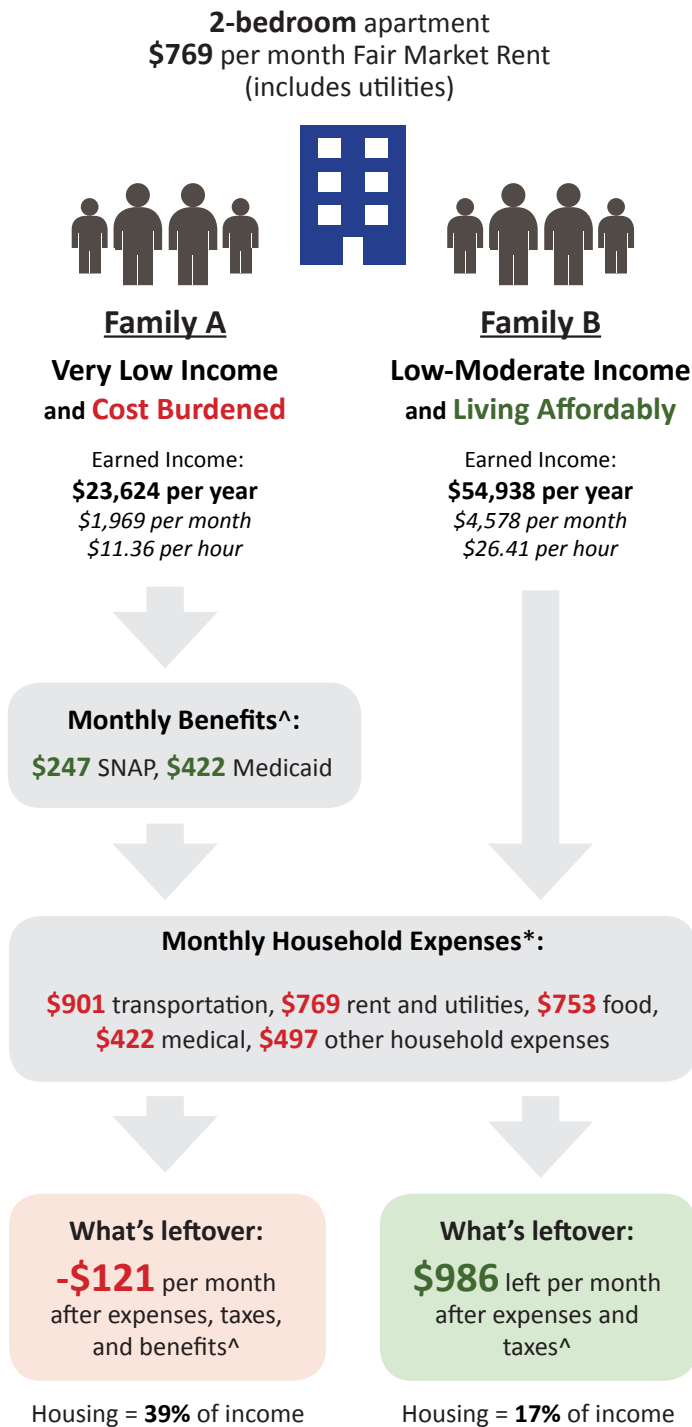
Cost Burden and Severe Cost Burden, by Census Tract
Extremely Low Income Households in Hamilton County



Cost Burdened Households

Data source: HUD Comprehensive Housing Affordability Strategy (CHAS), 2009-2013

Housing Cost and Poverty



In the example at left, a hypothetical 2-bedroom apartment is available for \$769, the HUD Fair Market Rent for Hamilton County in 2015. Two example families (**A** and **B**) are shown as possible tenants. Both are married couples with two children, and have the same basic household expenses. **Family A** is in the *Very Low Income* category, earning the 2013 federal poverty income of \$23,624. **Family B** earns 80% of Area Median Income, \$54,938, and falls on the line between *Low* and *Moderate Income*. It is assumed that because of limited availability, **Family A** has been unable to obtain any assistance with paying for a home. To live in this same apartment would put **Family A** into cost burden, while **Family B** is able to live affordably.

Housing costs constitute 23% of household expenses for both of these example families, but a much greater percentage of the *Very Low Income* household's available income. It should be noted that the expense numbers shown are estimates for a typical family, and don't necessarily incorporate many other variables that influence a household's expenses. Many low income families also have a single parent, adding childcare costs and potential benefits.

When a family spends more than they should on housing, less money is available for other important expenses. This is exacerbated for poor families which start with a very limited budget, making it harder for them to plan for and respond to uncertainty or emergencies. Even with other federal benefits, **Family A** is faced with a monthly deficit; not only is this family unable to save for the future, but spending on other household expenses such as food, clothing, or personal care must be reduced.

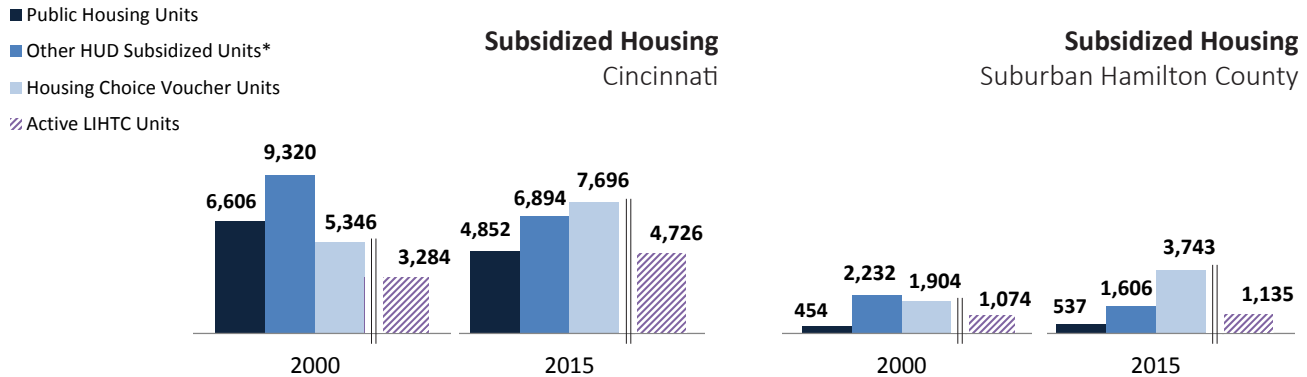
Cost Burdened Households

* Hamilton County household expenses based on MIT Living Wage Calculator (livingwage.mit.edu). Childcare assumed to be \$0, with one parent staying home and caring for children

[^] Benefits include SNAP and Medicaid (assumed to cover all medical expenses) as well as EITC and Child Tax Credit. Taxes include Federal, State and Local income tax based on IRS, Intuit, and SmartAsset 2016 income tax calculators. The Very Low Income family qualified for a substantial federal tax refund.

Appendix A: Supplemental Data

Subsidized Units by Geography



Expiration of Subsidized Units by Geography

Other HUD-Subsidized Housing Units, by Contract Expiration Date

| | 2019 or sooner | 2020-2024 | 2025-2029 | 2030 or later | Total |
|------------------------------|----------------|-----------|-----------|---------------|-------|
| Cincinnati | 719 | 1,144 | 2,100 | 3,050 | 7,013 |
| Outside of Cincinnati | 435 | 405 | 156 | 515 | 1,511 |
| TOTAL | 1,154 | 1,549 | 2,256 | 3,565 | 8,524 |

The table at left contains estimated expiration dates of HUD-subsidized housing units that have available expiration data (Project-based Section 8, Moderate Rehab, Section 202, and Section 811). This data is visualized in the main body of the report. Numbers may vary slightly due to use of different HUD data source for expiration dates.

LIHTC Units, by Expiration Date

| | 2019 or sooner | 2020-2024 | 2025-2029 | 2030 or later | Extended Use/Unknown | Total |
|------------------------------|----------------|-----------|-----------|---------------|----------------------|-------|
| Cincinnati | 1,410 | 1,508 | 847 | 85 | 876 | 4,726 |
| Outside of Cincinnati | 51 | 185 | 208 | 0 | 691 | 1,135 |
| TOTAL | 1,461 | 1,693 | 1,055 | 85 | 1,567 | 5,861 |

The table at left contains estimated expiration dates of LIHTC units. This data is also visualized in the main body of the report.

LIHTC Contracts in Hamilton County since 1986

| | Active | Inactive/Expired | TOTAL |
|------------------------------|--------|------------------|-------|
| Cincinnati | 4,726 | 2,470 | 7,196 |
| Outside of Cincinnati | 1,135 | 383 | 1,518 |
| TOTAL | 5,861 | 2,853 | 8,714 |

Since the LIHTC program's inception in 1986, 33% of LIHTC units in Hamilton County have become inactive, exiting the program for the unrestricted market.

Data source: HUD, *A Picture of Subsidized Households* (2000, 2015); HUD Multi-Family Assistance and Section 8 Contract Database, 2016; Ohio Housing Finance Agency LIHTC database, 2016

Affordable and Available Unit Gap by Geography

Gap in Households and **Affordable and Available** Units

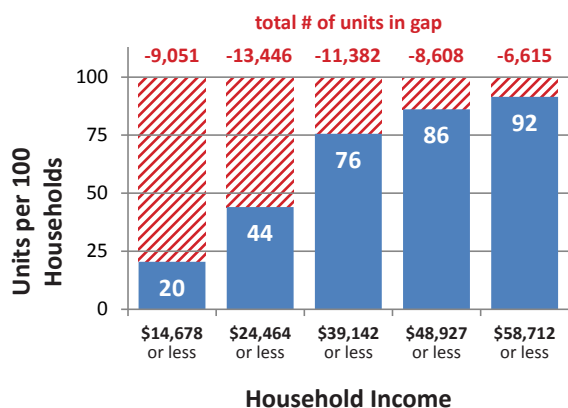
| Household Income | Urban Hamilton County | | | Suburban Hamilton County | | | TOTAL Hamilton County | | |
|------------------|-----------------------|--------------------------------|---------|--------------------------|--------------------------------|---------|-----------------------|--------------------------------|---------|
| | Total Households | Affordable and Available Units | Gap | Total Households | Affordable and Available Units | Gap | Total Households | Affordable and Available Units | Gap |
| \$14,678 or less | 37,181 | 11,880 | -25,301 | 18,419 | 3,701 | -14,718 | 55,600 | 15,581 | -40,019 |
| \$24,464 or less | 55,430 | 37,710 | -17,720 | 35,516 | 14,901 | -20,615 | 90,946 | 52,611 | -38,335 |
| \$39,142 or less | 77,002 | 76,443 | -559 | 61,557 | 48,630 | -12,927 | 138,559 | 125,073 | -13,486 |
| \$48,927 or less | 89,162 | 93,770 | 4,608 | 76,369 | 69,421 | -6,948 | 165,531 | 163,191 | -2,340 |
| \$58,712 or less | 98,415 | 105,501 | 7,086 | 91,927 | 87,751 | -4,176 | 190,342 | 193,252 | 2,910 |

Data source: U.S. Census Bureau Public Use Microdata Sample (PUMS), 2010-2014

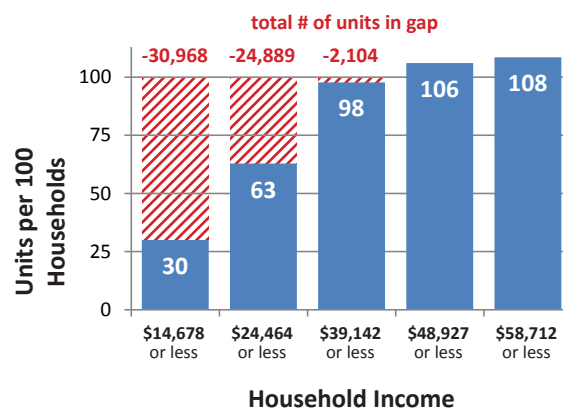
Affordable and Available Unit Gap by Tenure

The affordable housing gap varies by tenure (whether a unit is for renter or owner-occupants). While significant gaps exist for both categories at lower income levels, there is a surplus of affordable and available housing for renters at higher incomes. There is a gap for owner-occupied units at all income levels up to 120% of county median, and the gap is greater than for renters at all income levels.

Units Affordable and Available
per 100 **owner-occupied households** in Hamilton County



Units Affordable and Available
per 100 **renter households** in Hamilton County



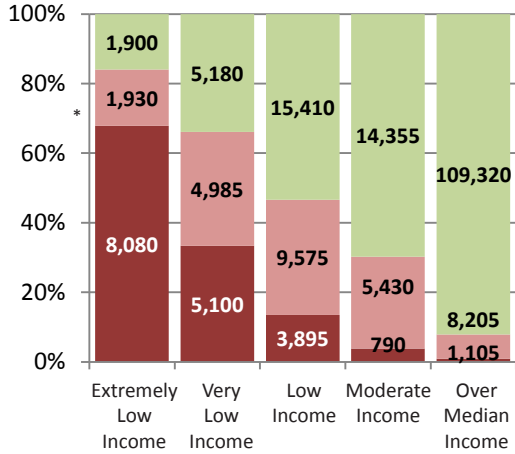
Data source: U.S. Census Bureau Public Use Microdata Sample (PUMS), 2010-2014

Cost Burden by Tenure

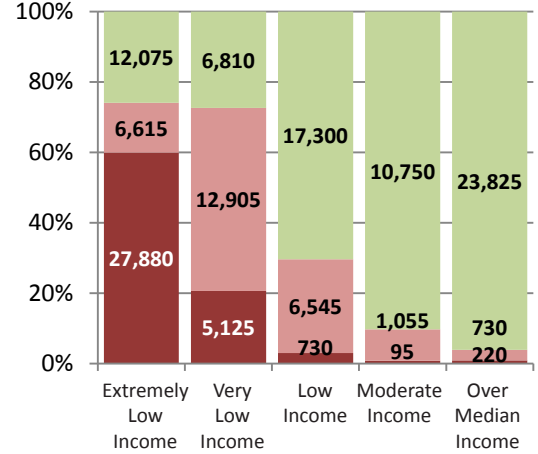
Owner-occupied households in Hamilton County experience greater burden and severe cost burden than renters in almost all income categories.

Cost Burden
Owner-Occupied Households in Hamilton County

Living affordably Cost burdened Severely Cost Burdened



Cost Burden
Renter Households in Hamilton County

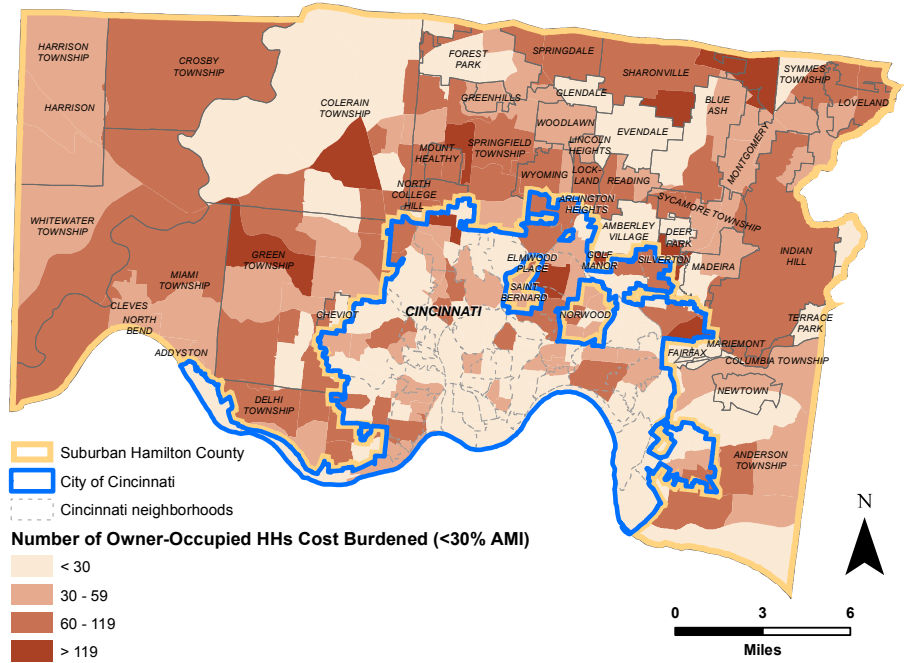


Data source: HUD Comprehensive Housing Affordability Strategy (CHAS), 2009-2013

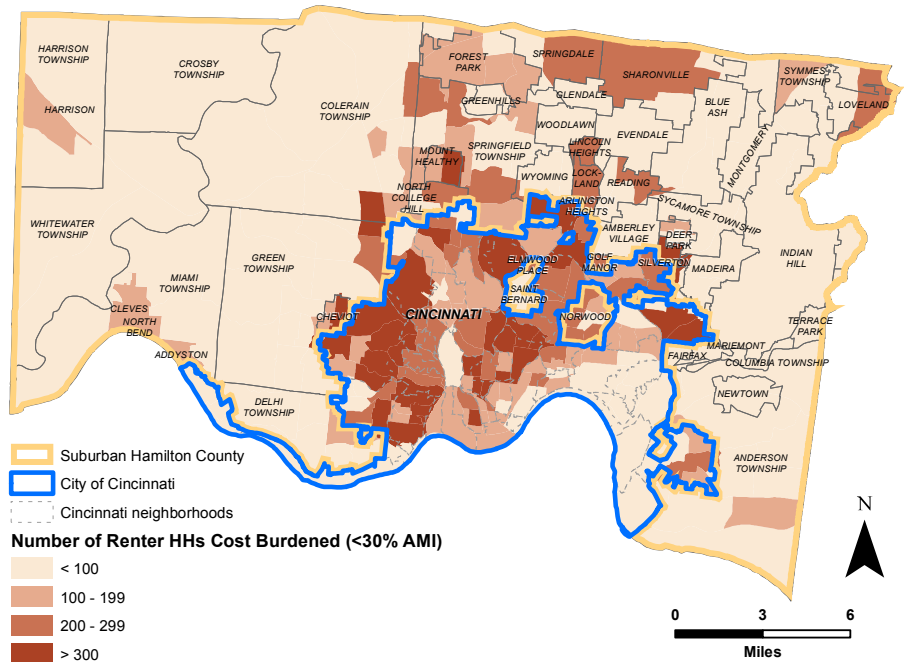
Cost Burden Within Hamilton County Communities

Number of Extremely Low Income **Owner-Occupied Households** Cost Burdened, by Census Tract, Hamilton County

These maps show distribution of cost burdened extremely low income households in Hamilton County, at right for only owner-occupied households, and below for only renter occupied households. These maps demonstrate that cost-burdened household distribution varies significantly depending on the tenure of the households.



Number of Extremely Low Income **Renter Households** Cost Burdened, by Census Tract in Hamilton County



Data source: HUD Comprehensive Housing Affordability Strategy (CHAS), 2009-2013

Appendix B: Methodologies

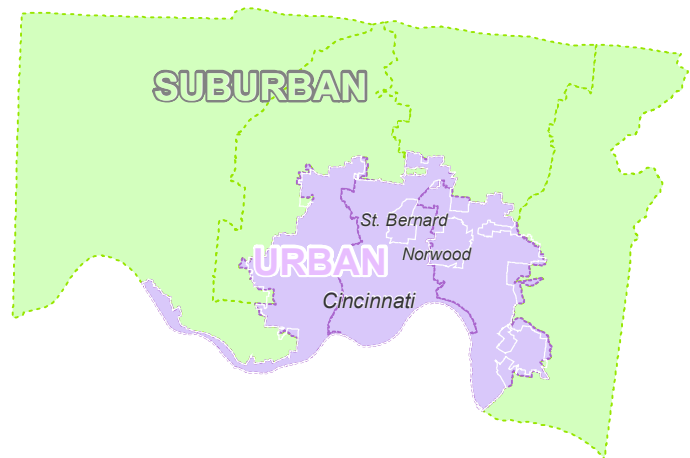
Housing Gap Methodology

Data and Geography

The Housing Gap Analysis was performed using information from the U.S. Census Bureau's Public Use Microdata Sample (PUMS), which is based on 2010-2014 American Community Survey (ACS). The PUMS data provides information on individual households within large geographies with populations of around 100,000 called Public Use Microdata Areas (PUMAs). For the data used in this report, there are seven PUMAs in Hamilton County. The PUMS data from the 5-year 2010-2014 ACS was based on two separate, but similar geographies. For 2010 and 2011, Census 2000 PUMA boundaries were used, and for the 2012-2014 samples, Census 2010 PUMA boundaries were used.

This map shows the *Urban* and *Suburban* boundary used for the gap analysis, based on PUMA boundaries which roughly follow City of Cincinnati boundaries. Norwood and St. Bernard are included in the *Urban* designation. For the 2010 and 2011 ACS, however, PUMS data used older PUMA boundaries were used which excluded Norwood and St. Bernard. For these reasons, the gap analysis that delineates Urban and Suburban areas should be considered a rough approximation of Cincinnati/Hamilton County and of the areas shown in the map at right.

Urban-Suburban Hamilton County Boundary
(based on 2012-2014 ACS PUMA boundaries)



Variables

PUMS variables used in the Housing Gap Analysis include Rent, Gross Rent, Home Value, Household Income, Tenure, Vacancy Status, Housing Weight, and inflation adjustment factors. The PUMS data represents a roughly 5% sample of the population, and each household in the dataset also includes a Housing Weight variable to signify how many actual households the sampled household represents. This variable is applied to each household in the Gap Analysis to estimate how many actual households and housing units exist in Hamilton County and what the actual gap in units looks like. As with all U.S. Census Bureau sample surveys, margins of error do exist, and it is therefore advisable to use this analysis only for large geographies such as Cincinnati and Hamilton County.

Additionally, since census survey data is self-reported, some households may not accurately report housing costs (e.g. they may use a Housing Choice Voucher, but still report the market rent amount). Seniors and student responses may also affect results of this analysis, and so it should be used only as an estimate.

Housing Gap Methodology (cont.)

Housing Cost Calculation

For renter-occupied units, or vacant units that are available for rent, housing cost is the gross rent, or rent plus a utility allowance if gross rent is not provided. The utility allowance is estimated by calculating the median value of the difference between gross rent and rent for the entire dataset (where both have been provided) as a percentage of the rent. This median utility rate percentage for Hamilton County was found to be 18.3%, and is used for rental (where gross rent is not provided) as well as owner-occupied housing cost calculations.

For owner-occupied units (and units that are available for sale), housing cost is calculated based on Home Value, and is an estimate of the housing cost for a hypothetical new resident, rather than the existing resident. The calculation includes a hypothetical mortgage payment, mortgage and homeowner's insurance, and estimated property tax. The following additional variables were used to calculate the monthly housing cost:

30-year fixed rate mortgage interest rate: 3.44% (Freddie Mac Mortgage Rates Survey, July 2016)

Down-payment: 3% of Home Value subtracted from mortgage amount (Fannie Mae low down payment mortgage minimum requirement)

Private mortgage insurance: 0.72% of mortgage amount, annually (estimate)

Homeowner's insurance: 0.35% of home value, annually (Federal Reserve Bureau estimate)

Property tax: 1.774% of home value, annually (median rate in Hamilton County, Ohio, according to smartasset.com calculator)

Utilities: 18.3% of monthly mortgage payment (based on median value of utility cost for rental households in Hamilton County)

Using these variables, monthly rental costs are estimated for all renter occupied and vacant-for rent households, based on current rent rate and utility allowance. Monthly owner costs are estimated for all owner-occupied and vacant-for sale households, based on current home value and a hypothetical mortgage that a purchaser would need to purchase the home.

Housing units are counted and tabulated by monthly housing cost for Hamilton County overall, for Urban and Suburban sub-geographies, and for renters and owners. The table on the following page shows examples of how housing units are classified as Affordable and Available (or not), depending on household income and housing costs.

Housing Gap Methodology (cont.)

The following table provides example households and shows how these households are classified within the income thresholds used in the gap analysis:

✓ = Affordable and Available

| Household Income Examples (and % of income spent on housing) | Household Income Thresholds | | | | |
|---|------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | \$14,678 or less | \$24,464 or less | \$39,142 or less | \$48,927 or less | \$58,712 or less |
| | Monthly Housing Cost | | | | |
| | \$367 or less | \$612 or less | \$979 or less | \$1,223 or less | \$1,468 or less |
| <i>Makes \$10,000 Spends \$225/month (27%) on housing</i> | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Makes \$30,000 Spends \$500/month (20%) on housing</i> | Not Affordable or Available | Not Available | ✓ | ✓ | ✓ |
| <i>Makes \$10,000 Spends \$417/month (50%) on housing</i> | Not Affordable | ✓ | ✓ | ✓ | ✓ |
| <i>Makes \$40,000 Spends \$500/month (15%) on housing</i> | Not Affordable or Available | Not Available | Not Available | ✓ | ✓ |
| <i>VACANT For rent at \$900/month</i> | Not Affordable | Not Affordable | ✓ | ✓ | ✓ |

