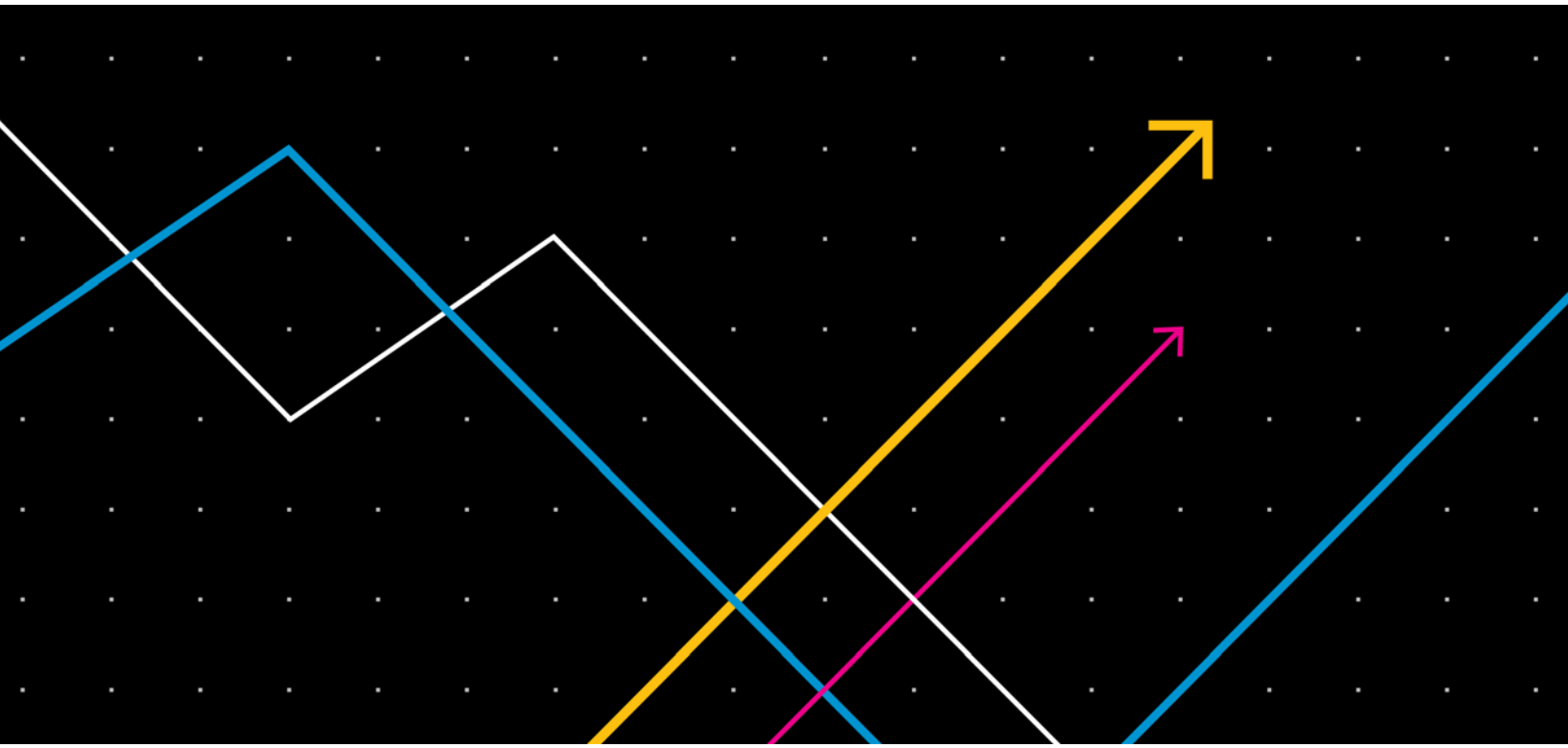

RESEARCH REPORT

Housing Connecticut's Future

Meeting the State's Affordable and Accessible Housing Needs

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ABOUT THE URBAN INSTITUTE

The nonprofit Urban Institute is a leading research organization dedicated to developing evidence-based insights that improve people's lives and strengthen communities. For 50 years, Urban has been the trusted source for rigorous analysis of complex social and economic issues; strategic advice to policymakers, philanthropists, and practitioners; and new, promising ideas that expand opportunities for all. Our work inspires effective decisions that advance fairness and enhance the well-being of people and places.

ABOUT FAIRFIELD COUNTY'S CENTER FOR HOUSING OPPORTUNITY

Fairfield County's Center for Housing Opportunity facilitates the intentional production, preservation, and protection of a full spectrum of housing that fosters communities of opportunity for all Fairfield County residents. A strategic partnership between Fairfield County's Community Foundation, Partnership for Strong Communities, Regional Plan Association and Supportive Housing Works, FCCHO utilizes a collaborative, data-driven framework, aligning regional resources to deliver impactful systems change and equitable housing solutions.

ABOUT THE CONNECTICUT DEPARTMENT OF HOUSING

The Department of Housing (DOH) strengthens and revitalizes communities by promoting affordable housing opportunities. DOH seeks to eliminate homelessness and to catalyze the creation and preservation of quality, affordable housing to meet the needs of all individuals and families statewide to ensure that Connecticut continues to be a great place to live and work.

ABOUT THE CONNECTICUT DEPARTMENT OF SOCIAL SERVICES

The Department of Social Services (DSS) delivers and funds a wide range of programs and services as Connecticut's multi-faceted health and human services agency. DSS serves about 1 million residents of all ages in all 169 Connecticut cities and towns. It supports the basic needs of children, families, older and other adults, including persons with disabilities.

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Executive Summary

In March 2020, the study team was charged with two primary tasks: First, complete a full assessment of Connecticut's affordable and accessible housing; and second, use that assessment to deliver a road map that would inform the strategic deployment of state resources to best meet the housing needs of Connecticut's vulnerable and low-income residents for years to come.

With a grant from the Connecticut Department of Housing funded through the Department of Social Services, Fairfield County's Center for Housing Opportunity assembled an unparalleled project team of national and local housing and data experts to undertake this study and coordinated the delivery of a comprehensive and expertly vetted combination of data, tools, and recommendations to the state. This work lays the foundation to ensure that Connecticut establishes and maintains the inventory and analysis capacity required to strategically and equitably meet the complex and fluid housing needs of all its residents.

As project manager, the nonprofit research organization Urban Institute led the study team, drawing on the breadth and depth of the institute's national experience in community research and housing policy to ground this work in best practices and expert demographic and data analysis. Supporting Urban's research team, Corporation for Supportive Housing provided analysis expertise and deep local knowledge of the challenges and housing barriers faced by Connecticut's most vulnerable populations. Leading Connecticut researchers at DataHaven delivered critical state-specific data fluency and analysis capacity. Source Development Hub, a health- and housing-focused software engineering group, developed and launched a web-based, live inventory of the state's affordable and accessible housing stock, integrating the study's data findings and ensuring statewide capacity for shared understanding of supply and demand for affordable and accessible housing and for ongoing progress tracking and accountability.

The analysis presented in this report relies on several data sources to provide the most up-to-date estimates of current and future affordable and accessible housing needs.

- **American Community Survey (ACS) five-year microdata.** An annual survey conducted by the US Census Bureau, the ACS is the most comprehensive source of data on people, households, and housing units in the US. The study team used the ACS sample that combines five years of data (2014–18) to improve the precision of estimates.
- **National Housing Preservation Database.** Compiled by the Public and Affordable Housing Research Corporation and the National Low Income Housing Coalition, this database integrates

information from the US Department of Housing and Urban Development (HUD) and the US Department of Agriculture on federally assisted housing projects and units.

- **Housing and Urban Development Housing Inventory Count.** Through a special request, the study team obtained data from HUD on housing choice vouchers and other federally assisted housing.
- **State administrative data on assisted and accessible housing.** Through a special request, the study team obtained data from the Connecticut Departments of Housing and Social Services and the Connecticut Housing Finance Authority on the assisted and accessible housing in their portfolios.
- **CoStar data.** To provide information on naturally occurring affordable housing, the study team obtained summary tabulations of data collected by the CoStar Group on unassisted, large multifamily rental housing developments and rents.

Key Questions and Takeaways

The study findings are organized around three questions about housing in Connecticut.

Who Lives in Connecticut, and What Kind of Housing Do They Occupy?

After growing through most of the past decade, Connecticut's population has been declining in recent years. Two-thirds of household growth since 2000 has been in Fairfield, Hartford, and New Haven Counties, but domestic outmigration has driven Connecticut's population decline since 2011, despite an increase in international immigration. The state's population is also aging. The number of adults ages 60–74 has increased more than 50 percent since 2000, while the numbers of people under age 19 and ages 35–59 have declined. And while the state's white population is significantly larger than populations of other races or ethnicities in every county, Connecticut is becoming more racially and ethnically diverse. The Latino[1] population is the fastest-growing in the state, while the white population is declining overall and in nearly every county. Connecticut has seen stable shares of population reporting disabilities of various types, with cognitive and ambulatory disabilities the most commonly reported.

[1] In this report, Latinx/Latino/Latina/Hispanic individuals and households in Connecticut are referred to as "Latino" to align with variables in the American Community Survey, which provided most of our demographic information. The study team acknowledges that "Latino" does not fully encompass the identity of all such residents in Connecticut and remains committed to using inclusive language wherever possible.

As populations change, demand for housing unit types will likely change as well. For example, an increase in vacant single-family homes in rural areas owing to death or outmigration may not meet the demand of new households of international migrants who may prefer smaller or multifamily housing unavailable in many of Connecticut's suburbs. Older householders may be interested in downsizing once their children leave home, and they will have greater needs for accessible housing.

Housing production activity, based on building permits issued for new construction, declined sharply during the Great Recession (2007–09) and has not returned to pre-recession levels. Planned small multifamily (two-to-four-unit) housing permitting is negligible compared with single-family and large multifamily developments, but large multifamily (five-or-more-unit) housing permits have increased overall in recent years.

All counties increased their net housing units between 2000 and 2018. Fairfield County added the most multifamily housing and Hartford County the most single-family housing. And although Connecticut's annual housing production levels have dropped dramatically, vacancy rates have remained fairly steady across the state, largely because of the decreasing population.

Connecticut's declining population reflects three demographic trends. First, relatively more people are migrating out of the state than into it. Second, as in many states, Connecticut's population is aging: by 2040, the number of residents ages 75 and older will increase by over 68,000. Meeting the housing requirements of older people will become increasingly important. Third, the state is projected to become more diverse, with a larger number of households headed by people who are Latino, Black, or Asian and a sharp decline in households headed by white people.

Are Affordable Housing Resources Meeting Resident Needs?

For this study, housing affordability is defined relative to household income using cost bands that represent percentages of county median incomes. For assessing current housing supply and needs, this report uses a standard criterion of affordability based on a household paying no more than 30 percent of its income on housing costs. Of the nearly 2.2 million housing units in Connecticut, the largest share is affordable to households in the mid-low-income band, defined as 51 to 80 percent of county median income. This cost band includes households with people working as janitors, administrative assistants, and carpenters. In contrast, relatively few housing units are affordable to low-income (31 to 50 percent of county median income) and very low–income (30 percent or less of county median income) households. The affordability shortage is particularly acute for very low–income households, which include people working as cashiers or in child care, as well as people who are unemployed.

Two-thirds of Connecticut households own their homes. In addition to providing housing stability, owning a home can be a path toward wealth-building and economic self-sufficiency. The national gap in homeownership by race and ethnicity is also prevalent in Connecticut. While 76 percent of whites in the state own their homes, only 57 percent of Asians, 40 percent of American Indians, 39 percent of Blacks, and 34 percent of Latinos own their homes.

Affordable housing in the state comes from both market-rate and assisted units. Market-rate affordable housing, often referred to as naturally occurring affordable housing (NOAH), is unassisted but can be affordable for various reasons, including its presence in low-cost markets. The average rent for large multifamily market-rate buildings has increased across all counties, while the rental apartment stock of this type has increased in some counties and stayed flat in others. Production and price increases for market-rate rental housing are most dramatic along the I-95 to I-91 and Hartford rail line corridors, while areas far from those transit corridors have seen less growth. Counties that had higher increases in market-rate larger multifamily rental housing also had lower increases in average rent.

Assisted housing bridges the gap between housing costs and household incomes through either regulations or government support. The most prevalent forms of housing assistance in Connecticut are federal housing choice vouchers and Section 8 project-based rental assistance. State housing programs provide additional affordable units, most notably the Moderate Rental Housing program, housing with restrictive covenants, and Tax Credit Assistance Program units.

As is true elsewhere, Connecticut will face a challenge preserving the affordability of assisted housing units. Over the next 20 years, thousands of units with Section 8 project-based rental assistance, Low-Income Housing Tax Credit (LIHTC), and other forms of assistance will reach affordability contract or compliance period end dates, creating a potential for loss. While experience has shown that most owners will renew their Section 8 contracts, the state government should work with HUD to monitor these projects and identify preservation strategies for those that seem at risk of loss.

Comparing the numbers of households (need) and housing units (supply) at respective income and cost bands indicates the gaps in affordable housing supply. Currently there are 86,068 more very low–income households than housing units affordable to such households. No county in Connecticut has enough affordable housing units to meet the needs of its very low–income households; Fairfield, Hartford, and New Haven Counties have the largest gaps. Although the total number of very low–income households will decline through 2040, that decrease will not be enough to close the current gap.

Are Accessible Housing Resources Meeting Resident Needs?

In its 2020–24 consolidated plan for community development, the Connecticut Department of Housing reaffirmed its vision to "ensure everyone has access to quality housing opportunities and options throughout the state" (2020, 1). This report identified four distinct categories of accessible units: Type A, Type B, federally assisted accessible units, and housing with services. However, a lack of standard accessible unit tracking, reporting protocols, and data made it difficult for the study team to get a clear, comprehensive picture of the accessible housing supply and gaps in the state.

Type A and Type B accessible units are provided by the private market as a stipulation of the Connecticut State Building Code, which requires multifamily developers to set aside a certain percentage of units and ensure they meet differing levels of accessibility standards. Using CoStar data, the study team estimates that unassisted multifamily rental buildings with five or more units have 2,742 Type A and 32,611 Type B accessible units. Most privately produced units meeting the state's highest accessibility standard are in counties with urban areas such as Fairfield, Hartford, and New Haven, and around the University of Connecticut in Tolland County.

The state Department of Housing offers housing assistance programs for people with many types of disabilities. Most of the state's programming is directed to older residents through the Rental Housing for Elderly Persons (13,311 units) and Congregate Housing for the Elderly (9,382 units) programs. Accessible units are also provided within federally assisted housing, which tend to be in urban areas. Federal assisted housing programs for low-income and very low–income households often are designed with requirements to provide a certain share of accessible units, constructed in accordance with the Uniform Federal Accessibility Standards or an equivalent or stricter standard. Data on such units are largely not collected or reported. For example, a study team survey of public housing agencies in the state revealed that most do not track their supply of accessible units.

In addition to units required to have structural adaptations, this study examines housing accompanied by a service component (supportive housing) that allows people with a cognitive, independent living, and/or self-care disability to thrive in independent living situations. Units in this category include the state Rental Assistance Program for special populations, DMHAS Supportive Housing Program, LIHTC and HTCC supportive housing set-asides, and the federal 811 program and Veterans Affairs Supportive Housing vouchers. Through administrative data sources, the study team identified 3,140 supportive housing units across these programs for individuals and 588 for families. Tolland County has no supportive housing, which is concerning.

According to the ACS, 302,446 households (or 22 percent of total households) in Connecticut include at least one member with a disability. Generally, a larger share of low- and very low–income households report having at least one member with a disability than households with higher incomes. Roughly a third of assisted housing in Connecticut needs to be designed for residents who have a disability, especially people with physical, ambulatory, and cognitive disabilities. Fairfield, Hartford, and New Haven Counties have the largest number of households that include someone with a disability; Hartford and Fairfield Counties also have higher numbers of very low–income households that include someone with a disability. Across the state, renter households that include someone with a disability are more likely to be cost burdened than renter households that do not have someone with a disability.

The need for housing with services (or supportive housing) was identified using the following characteristics: two or more active conditions (health/mental health/behavioral health) or one condition that rises to the level of a disability, monthly income of less than $750, and at least one episode of homelessness in the past three years. The greatest demand for supportive housing is in Fairfield, New Haven, and Hartford Counties, which have the largest populations. The current supply of supportive housing cannot meet current needs.

Largely because of an aging population, Connecticut will see an increasing need for housing units that are accessible for people with mobility and sensory needs. By 2030, the state is projected to have 27,600 more households with either mobility or sensory needs; by 2040, that number will grow to over 44,000. The need for accessible housing will grow in all counties, with the largest increases in Fairfield, New Haven, and Hartford Counties.

Recommendations: Guiding Principles

As the study team began this work, the COVID-19 pandemic had yet to lay bare the deep housing inequities fracturing the social fabric of our communities, states, and country. As the year progressed, however, those inequities, and their implications for the health and well-being of both people and economies, became undeniable. The need to center equity in housing policy and practice has never been more clear or urgent in Connecticut.

Irrespective of the area of work, Connecticut will be better able to meet its residents' housing needs and facilitate more efficient and equitable economic development if it embeds proactive investment, regional planning, and prioritization based on need into its practices.

PROACTIVE INVESTMENT

The production of assisted and accessible housing units is complex, transactional, and (at present) largely driven by developer initiative. Developers identify projects and apply to the state for subsidies based on what works financially and meets the state's subsidy program threshold for affordability. In this way, state dollars are leveraged with private investment to produce and preserve affordable and accessible units. The state then measures its housing strategy's success by looking at subsidy transactions executed, and the number of units produced that are affordable and accessible at specific area median income levels over a defined period.

While this traditional development process does encourage and produce affordable and accessible units throughout Connecticut, it is highly reactive: it deploys state resources based on opportunities identified and sited by developers, not necessarily based on community needs or a coordinated strategy to improve housing access. In other words, the current process adds units to the state's affordable and accessible inventories, but it does not ensure the right volume of units at the right cost bands in the right locations.

By committing to a data-driven, proactive investment and policy approach, Connecticut could target populations in each county where the need for housing at designated cost bands and accessibility levels is greatest and prioritize housing investments accordingly. By directing resources more strategically based on a regional planning approach and by prioritizing based on need, Connecticut can better leverage its housing investments to alleviate barriers to economic growth and reduce the cost and accessibility burdens for renters and homeowners most in need of relief.

REGIONAL PLANNING

By identifying and quantifying gaps in the state's housing stock geographically, the data highlight the opportunity to deepen impact through a regionally focused policy approach. Applying a geographic lens to housing investments would help Connecticut balance local needs against a larger, statewide strategy to distribute the costs and benefits of economic growth more equitably and rationally.

A regional planning approach would focus on how housing is distributed within counties. It would promote patterns of development, both privately and publicly funded, that are sustainable and forward-looking and that leverage other community assets such as schools, transit, and public amenities. A regional planning approach would also ensure that each city and town in the state is providing its fair share of affordable and accessible housing and is capturing the full range of benefits offered by proximity to thriving labor markets. Unless all towns in a labor market add housing in the face of growing demand, they will fail to capture economic growth potential for households and neighborhoods

and instead promote negative spillovers (poor education, health, and job outcomes that create burdens on the state).

PRIORITIZATION OF RESOURCES BASED ON NEED

Prioritizing state resources based on population need is not a new concept for Connecticut. Since 2015 it has been a cornerstone of the state's plan to address homelessness that uses a common assessment tool to rank people experiencing homelessness by their likelihood to die on the streets and deploys resources accordingly. In just five years, this approach has ended veteran homelessness and family chronic homelessness and has reduced the number of people experiencing chronic homelessness by 78 percent. This unprecedented success in addressing homelessness has earned Connecticut a national reputation as a state leader on this issue.

Taking a similarly targeted approach to the production, preservation, and protection of affordable and accessible housing for cost-burdened residents could transform the state's ability to make its vision of ensuring housing for everyone a reality. This report offers county-specific population and demographic trends and analyzes those trends against the backdrop of each county's current affordable and accessible housing inventory. These data and analyses could be used to recalibrate Connecticut's affordable and accessible housing strategy by prioritizing state funding of assisted units based on the identified housing needs of its most cost-burdened populations.

Recommendations: Priority Actions

Though the guiding principles laid out above offer a framework for how the state might better meet residents' urgent housing needs, this study has uncovered specific priority actions that the state would benefit from taking. These actions fall into the four categories: produce, preserve, protect, and document and monitor.

PRODUCE

Given the size of the gap between the supply of housing and the number of households needing housing in the lowest cost bands, the state faces an urgent mandate to see more housing produced to both prevent private-market prices from rising further and to create a larger stock of low-cost units for cost-burdened households.

- Encourage regional fair share density apportionment frameworks for NOAH production
- Create regional guidelines for assisted housing production targets

- Adjust qualified allocation plan criteria to incentivize LIHTC siting based on cost burdens and avoiding concentration
- Take a transit-oriented approach to assisted housing production
- Create a dual-targeted assisted accessible housing strategy

PRESERVE

Creating new affordable housing is much more expensive than strategically preserving existing NOAH and assisted units. However, since the vast majority of these units will face pressure to convert to higher-market rents and many of the assisted units' contracts will expire in the next 10 to 15 years, the state will need to act strategically in preserving affordability.

- Create and maintain a database of affordable and accessible housing
- Build and support preservation networks
- Prioritize funding for mission-driven developers to create and preserve affordable housing
- Encourage housing owners to extend affordability covenants and maintain properties
- Acquire or incentivize maintaining the quality and affordability of NOAH units
- Incentivize public housing agencies to preserve and improve the state's public housing stock, particularly to upgrade units to meet higher accessibility standards

PROTECT

While the first two categories focus on housing units, the state should also take a tenant-based approach to housing by protecting residents from discrimination, displacement, and rapidly rising rents.

- Ensure fair and equitable access to housing by expanding and enforcing antidiscrimination protections
- Require owners of rental properties to obtain residential business licenses
- Consider allowing localities to enact regulations that stabilize rents and strengthen fair rent commissions
- Provide emergency assistance to low-income renters and homeowners facing financial challenges that could cause them to lose their homes
- Provide financial or legal counsel to households most at risk of eviction or displacement

MONITOR AND DOCUMENT

Accomplishing the above actions to produce, preserve, and protect requires data to understand regional housing needs and capacities, to help priority populations, and to track and hold housing system actors accountable for making progress.

- Unify assisted housing documentation formats and timing across providers
- Train housing providers on how to document and monitor accessible housing
- Encourage housing providers to report accessible housing or special purpose voucher allocations and availability on their websites
- Improve HTCC, Flex, and RAP program data documentation practices

Implementation

This study is intended to provide Connecticut with the most comprehensive data available on current and future housing conditions and a road map to identify and meet the housing needs of low-income and disabled households over the next two decades. The guiding principles of proactive investment, regional planning, and prioritization based on need provide a framework to ensure the highest and best use of Connecticut's housing resources going forward. The study team took care to ensure that the recommendations categorized by theme to produce, preserve, protect, and document and monitor affordable and accessible housing throughout the state fit within the six growth management principles of Connecticut's 2018–2023 Plan for Conservation and Development:

1. Redevelop and revitalize regional centers and areas with existing or currently planned physical infrastructure
2. Expand housing opportunities and design choices to accommodate a variety of household types and needs
3. Concentrate development around transportation nodes along major transportation corridors to support the viability of transit options
4. Conserve and restore the natural environment, cultural and historical resources, and traditional rural lands
5. Protect and ensure the integrity of environmental assets critical to public health and safety
6. Promote integrated planning across all levels of government to address issues on a statewide, regional, and local basis

Care was also taken to ensure the study's recommendations complement the 2020–24 Connecticut Consolidated Plan for Housing and Community Development.

The study team acknowledges the complexity of housing needs in the larger context of state priorities, especially in light of COVID-19, which will make funding challenging in the coming years.

However, ensuring Connecticut meets the housing needs of its current and future households has never been more important for the state's recovery and well-being. Housing is foundational, and it provides the critical infrastructure upon which communities live and economies are built and stabilized. Our data and analysis highlight the benefits of a deeply coordinated statewide housing effort with work on energy, transportation, health care, economic development, and data and administration.

The recommended actions to recalibrate Connecticut's housing policy approach and practices will require increased capacity and coordination across sectors at state and regional levels, but the study team believes it is an investment Connecticut cannot afford to *not* make as it strives to "use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare … and fulfill the social, economic, and other requirements of present and future generations of Connecticut residents" (Department of Energy and Environmental Protection State Policy, chapter 439, §22a(1)).

Introduction

The Connecticut Department of Housing, in conjunction with Connecticut Department of Social Services, commissioned this study of affordable and accessible housing in May 2020 to examine how strategic deployment of state resources could best meet the current and future housing needs of Connecticut's vulnerable and low-income residents. This report provides the first comprehensive look at affordable and accessible housing needs in Connecticut. Prepared collaboratively by Fairfield County's Center for Housing Opportunity, Urban Institute, Corporation for Supportive Housing, Data Haven, and Source Development Hub (the study team), the data presented here inform the following questions:

- Who lives in Connecticut, and what kind of housing do they occupy?
- Are affordable housing resources meeting resident needs?
- Are accessible housing resources meeting resident needs?
- What can Connecticut do to best meet the current and future housing needs of low-income households and households that include someone with a disability?

Questions about affordable and accessible housing resources and needs are answered based on the present situation in the state and its counties and the study team's projections of future needs. The concluding chapter provides policy and program recommendations for the state to address the affordable and accessible housing gaps identified in the analysis, as well as to improve the state's ability to have reliable data for tracking progress toward housing goals and outcomes.

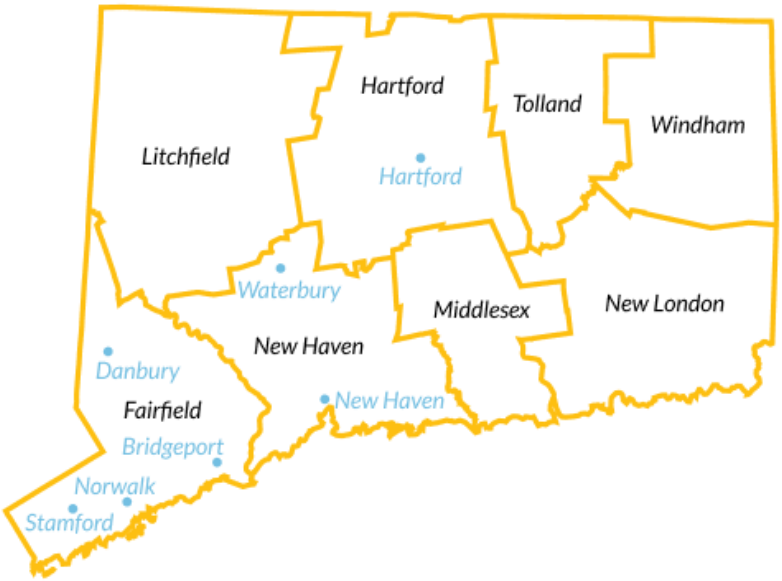
The COVID-19 pandemic of 2020 has indisputably highlighted the critical role that safe, stable, affordable, and accessible housing plays in the well-being of households and communities. The disparity in housing opportunity by income level, race, and zip code laid bare by the pandemic and economic turndown underscores the importance of data-driven policymaking and community planning and development. The study team hopes that our analysis, findings, and recommendations can guide Connecticut in a targeted, proactive, and holistic approach to ensuring the housing needs of all residents are met going forward.

This report is written for a non-expert audience. Where it is necessary to use technical terms, those terms are explained in the text and exhibits. Additional definitions can be found in appendix A.

Although counties do not have governing bodies, they are the primary unit of analysis because of their consistency over time, regional implications, and widely available aggregated data. Figure 1 shows the eight counties in Connecticut.

FIGURE 1

Connecticut's Counties and Most Populous Cities, 2019



Sources: Census Bureau and CTData.

The analysis presented in this report relies on several data sources to provide the most up-to-date estimates of current and future affordable and accessible housing needs. The major sources are summarized in box 1. Further details on data sources and analysis methods are provided in appendix B.

To help local, regional, and statewide planners, and program staff better use the data in this report, the study team has created a companion online, open-source housing data tool, Afford CT (www.affordablehousing.tools). The tool's data visualization component gives policymakers, housing practitioners, and stakeholders across Connecticut a shared understanding of the state's inventory of assisted and accessible housing units. Such an understanding supports the development of common housing targets and goals, the alignment of assets and resources, and shared accountability across agencies, organizations, and sectors.

BOX 1

Major Data Sources

This report uses several data sources to provide the most current information available on populations and housing in the state. The most commonly used sources are listed below.

- **American Community Survey (ACS) five-year microdata obtained from IPUMS-USA** (Ruggles et al. 2020). An annual survey conducted by the US Census Bureau, the ACS is the most comprehensive source of data on people, households, and housing units in the US. The report uses the ACS sample that combines five years of data (2014–18 for current conditions) to improve the precision of estimates.
- **National Housing Preservation Database (NHPD)**. Compiled by the Public and Affordable Housing Research Corporation and the National Low Income Housing Coalition, this database integrates information from the US Department of Housing and Urban Development (HUD) and the US Department of Agriculture (USDA) on federally assisted housing projects and units.
- **Housing and Urban Development Housing Inventory Count.** Through a special request, the study team obtained data from HUD on housing choice vouchers and other federally-assisted housing.
- **State administrative data on assisted and accessible housing.** Through a special request, the study team obtained data from the Connecticut Departments of Housing, Social Services, and the Connecticut Housing Finance Authority on the assisted and accessible housing that are in their respective portfolios.
- **CoStar data**. To provide information on naturally-occurring affordable housing, the study team obtained summary tabulations of data collected by the CoStar Group on unassisted, multifamily rental housing units and rents.

These data largely reflect conditions before the COVID-19 pandemic, which has affected economic and housing conditions throughout the US. While precise information on the pandemic's impact is still limited, data indicates that the number of households who have difficulty paying their monthly rent or mortgages has increased (CBPP 2020). While the longer-term impact is uncertain, the pandemic will likely exacerbate many of the housing issues raised in this report.

Finally, to help improve the quality of Connecticut's housing data, and the ability to integrate data reliably across different local sources, appendix D has sample data collection structures that state agencies and others can adopt for future data collection and reporting, which would greatly enhance the companion data platform, providing increased capacity for ongoing, data-driven policy and collaborative planning.

Who Lives in Connecticut, and What Kind of Housing Do They Occupy?

Population and Housing Takeaways

The latest demographic and housing data reveal several prominent trends affecting current and future housing needs in the state.

- After growing through most of the past decade, Connecticut's population has been declining in recent years.
- Two-thirds of household growth since 2000 has been in Fairfield, Hartford, and New Haven Counties.
- Housing production activity, based on building permits issued for new construction, declined sharply during the Great Recession (2007–09) and has not returned to pre-recession levels.
- Connecticut's future population, which is projected to decline over the next two decades, reflects three demographic trends: relatively more people migrating out of the state than into it, an aging population, and a decline in white population.

Population and Household Trends

Between 1990 and 2018, Connecticut's population increased by about 294,000 people, but that growth was unevenly distributed across the eight counties (table 1). All counties increased in population between 1990 and 2010, but only Fairfield County's population increased between 2010 and 2018. Hartford County's population held steady during that period, while the remaining six counties' populations declined. These trends suggest that future housing needs will vary regionally and that meeting those needs will depend on each county's population and household characteristics.

Domestic outmigration has driven Connecticut's population decline since 2011, despite an increase in international immigration since then. In Litchfield and Middlesex Counties, deaths have outpaced births, leading to a net decrease in natural population (figure 2). Demand for housing unit types will likely change as populations change. For example, an increase in vacant single-family homes in rural areas owing to death or outmigration may not meet the demand of new international migrants, who may prefer smaller or multifamily housing unavailable in many of Connecticut's suburbs.

TABLE 1

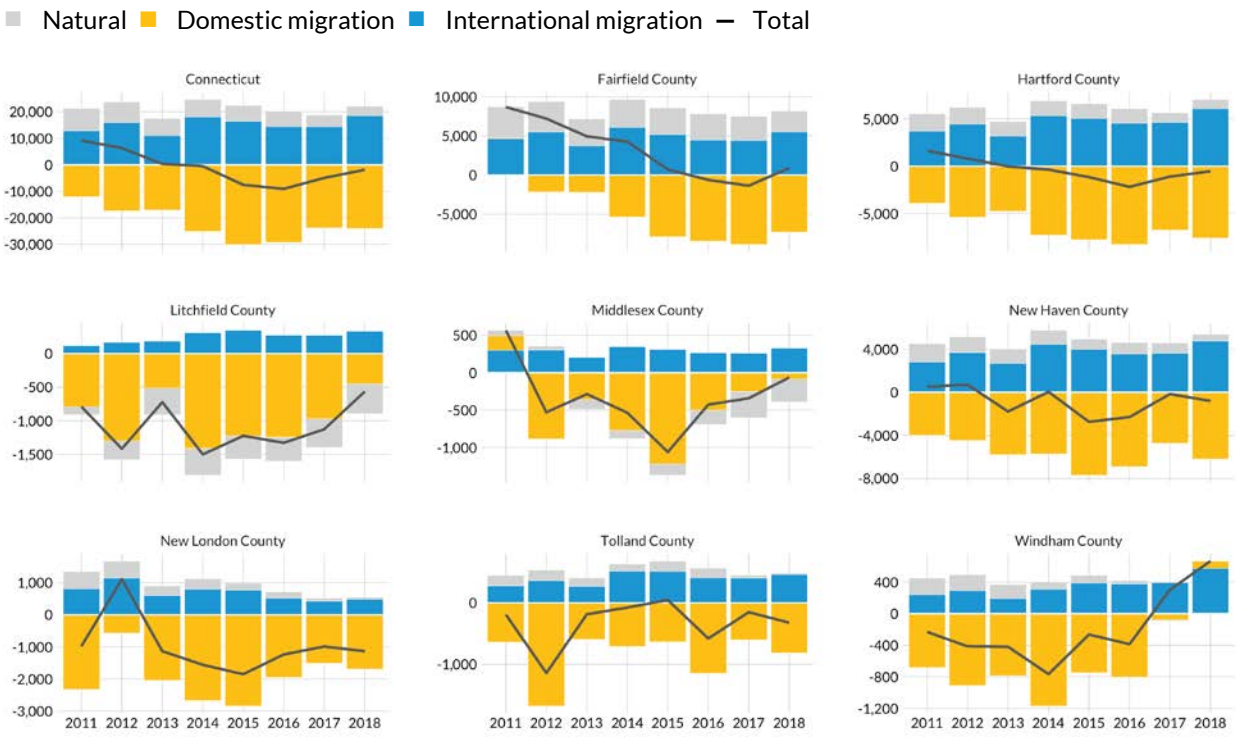
Population by County, Connecticut, 1990–2018

	1990	2000	2010	2018	Change, 1990–2018	Change, 2010–18
Connecticut	**3,287,116**	**3,405,565**	**3,574,097**	**3,581,504**	**294,388**	**7,407**
Fairfield County	827,645	882,567	916,829	944,348	116,703	27,519
Hartford County	851,783	857,183	894,014	894,730	42,947	716
Litchfield County	174,092	182,193	189,927	183,031	8,939	-6,896
Middlesex County	143,196	155,071	165,676	163,368	20,172	-2,308
New Haven County	804,219	824,008	862,477	859,339	55,120	-3,138
New London County	254,957	259,088	274,055	268,881	13,924	-5,174
Tolland County	128,699	136,364	152,691	151,269	22,570	-1,422
Windham County	102,525	109,091	118,428	116,538	14,013	-1,890

Source: ACS 2014–18 data.

FIGURE 2

Population Change by Component, Connecticut and Counties, 2011–18



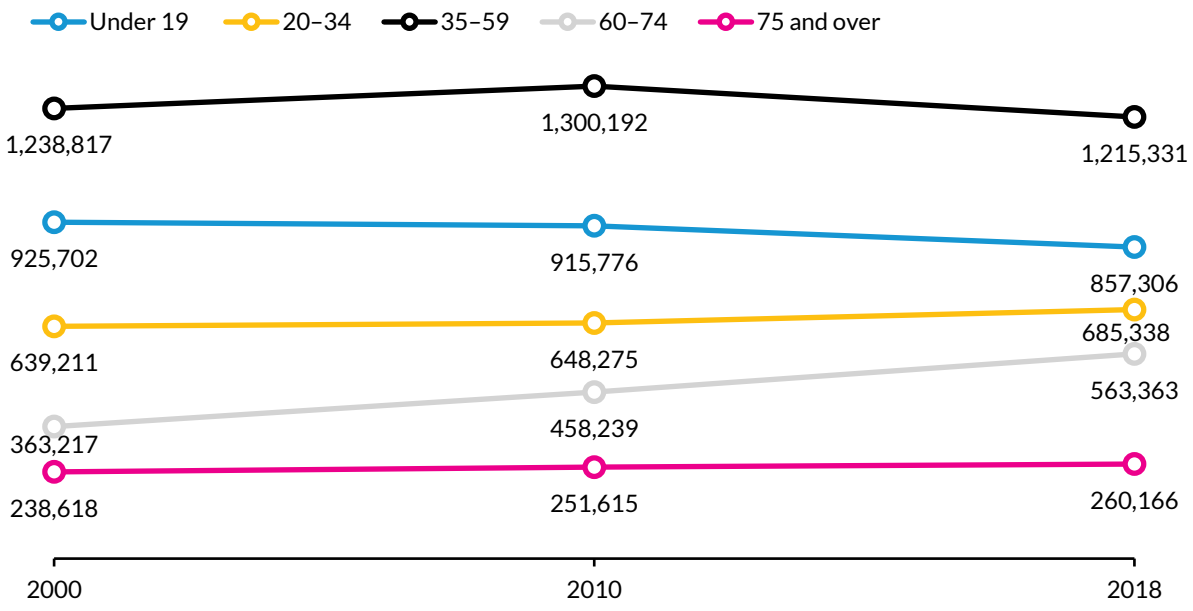
Source: ACS 2014–18 data.

Note: Natural population change equals births minus deaths in the area.

The state's population is also aging. The number of adults ages 60–74 has increased by more than 50 percent since 2000, while the number of people under age 19 and ages 35–59 have declined (figure 3). As discussed later in this report, these trends will influence demand on housing in Connecticut: older householders may want to downsize once their children leave home, and older households will have greater needs for accessible housing.

FIGURE 3

Population by Age Group, Connecticut, 2000–18



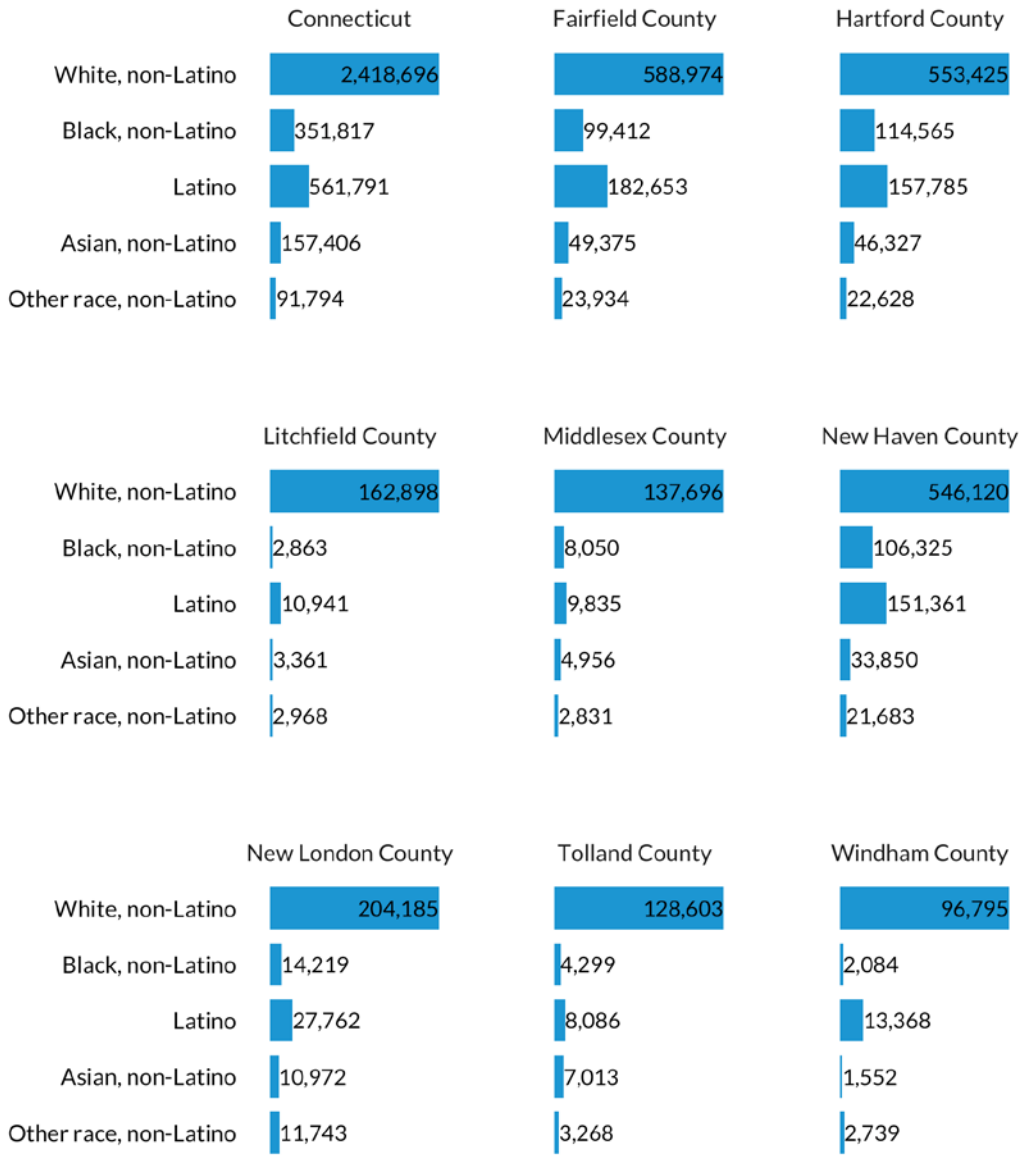
Source: ACS 2014–18 data.

Connecticut's white population is significantly larger than its populations of other races or ethnicities in every county. However, Fairfield, Hartford, and New Haven Counties are slightly more racially and ethnically diverse, with people who identify as Black, Latino,[2] and Asian making up a greater share of the overall populations in those counties (figure 4). Windham County also has a sizeable Latino population, and New London County has a large Native American population (included within "other race, non-Latino" in the figure).

[2] In this report, Latinx/Latino/Latina/Hispanic individuals and households in Connecticut are referred to as "Latino" to align with variables in the American Community Survey, which provided most of our demographic information. The study team acknowledges that "Latino" does not fully encompass the identity of all such residents in Connecticut and remains committed to using inclusive language wherever possible.

FIGURE 4

Population by Race and Ethnicity, Connecticut and Counties, 2018



Source: ACS 2014–18 data.

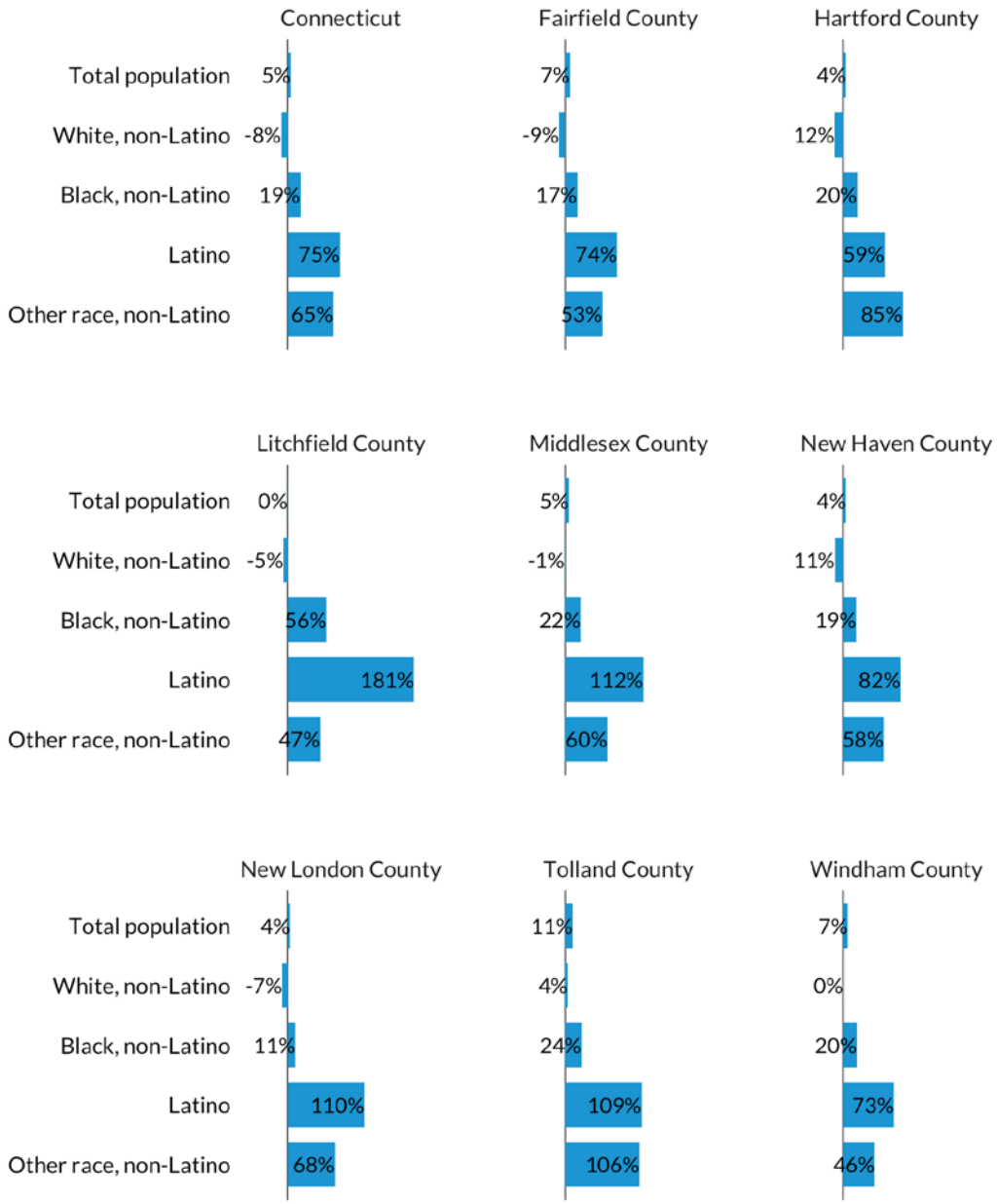
Note: "Other race, non-Latino" includes people who do not identify as Latino and identify as American Indian/Alaska Native, Native Hawaiian/Pacific Islander, "some other race," and two or more races.

Looking at changes between 2000 and 2018, Connecticut's population is becoming more racially and ethnically diverse (figure 5). The Latino population is the fastest-growing in the state—Latino populations in Litchfield, Middlesex, New London, and Tolland Counties have more than doubled—while the white population is declining overall and in nearly every county. Children and young adults are more

racially and ethnically diverse than older adults, suggesting the state's population will continue to diversify as younger people age and have children.

FIGURE 5

Population Change by Race and Ethnicity, Connecticut and Counties, 2000–18



Source: ACS 2014–18 data.

Note: "Other race, non-Latino" includes people who do not identify as Latino and identify as American Indian/Alaska Native, Native Hawaiian/Pacific Islander, "some other race," and two or more races.

Examining disability status, Connecticut has seen stable shares of the population reporting disabilities of various types. The ACS allows households to identify six types of disabilities that members of their household may have:

- **Ambulatory:** having serious difficulty walking or climbing stairs
- **Cognitive:** having difficulty remembering, concentrating, or making decisions because of a physical, mental, or emotional problem
- **Hearing:** being deaf or having serious difficulty hearing
- **Independent living:** having difficulty doing errands alone, such as visiting a doctor's office or shopping, because of a physical, mental, or emotional problem
- **Physical/self-care:** having difficulty bathing or dressing
- **Vision:** being blind or having serious difficulty seeing, even when wearing glasses

The most commonly reported disabilities statewide are cognitive and ambulatory (table 2). An average of 6 percent of all Connecticut residents have an ambulatory disability, and 4 percent report a cognitive or independent living disability. Windham County has the highest share of its population reporting a disability (14 percent), though Hartford, New Haven, and Fairfield Counties report the highest number of people with disabilities. Though counties' total populations have risen since 2010 and populations reporting disabilities have risen as well, the share of the population reporting disabilities has remained unchanged across counties and disability types. This stability indicates that the number of people with disabilities has not changed significantly as a result of genetic, social, or environmental influences, and that needs for different types of disability-related services may be consistent.

TABLE 2

Number of People (and Share of Population) Reporting Disabilities by Type and County, Connecticut, 2018

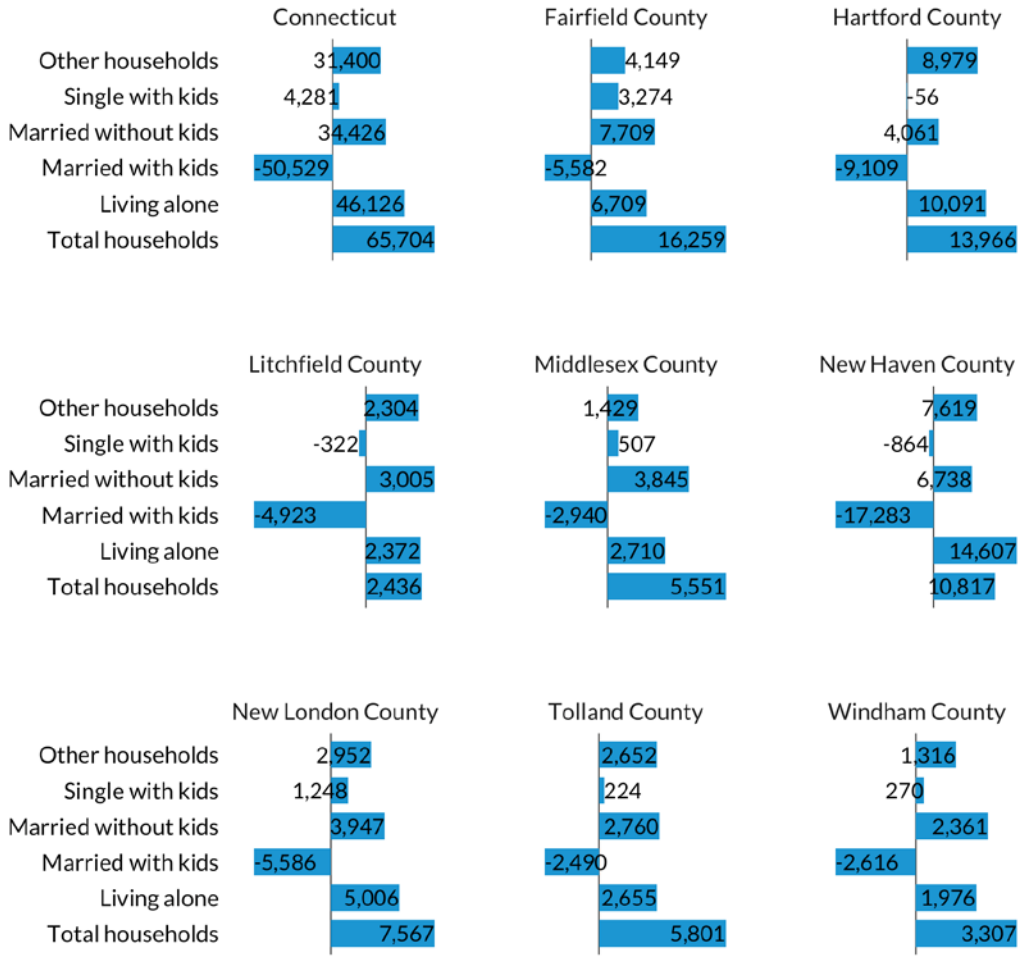
	Fairfield	Hartford	Litchfield	Middlesex	New Haven	New London	Tolland	Windham
County population	936,043	881,056	179,743	160,501	847,128	256,016	148,218	115,137
Total reporting disability	85,146 (9%)	101,448 (12%)	19,819 (11%)	17,970 (11%)	95,541 (11%)	31,261 (12%)	14,906 (10%)	15,844 (14%)
Ambulatory	41,538 (4%)	53,542 (6%)	9,203 (5%)	7,995 (5%)	49,672 (6%)	15,699 (6%)	6,628 (4%)	8,122 (7%)
Cognitive	32,467 (3%)	44,140 (5%)	6,563 (4%)	6,997 (4%)	35,493 (4%)	9,946 (4%)	5,825 (4%)	6,321 (5%)
Hearing	22,480 (2%)	29,244 (3%)	6,925 (4%)	4,941 (3%)	25,594 (3%)	10,476 (4%)	4,170 (3%)	4,481 (4%)
Independent living	29,293 (3%)	41,340 (5%)	7,264 (4%)	6,553 (4%)	36,810 (4%)	8,529 (3%)	4,868 (3%)	5,733 (5%)
Self-care	17,209 (2%)	24,473 (3%)	3,675 (2%)	3,147 (2%)	17,589 (2%)	4,514 (2%)	3,039 (2%)	3,539 (3%)
Vision	16,882 (2%)	20,560 (2%)	3,138 (2%)	1,976 (1%)	16,068 (2%)	4,546 (2%)	2,457 (2%)	2,740 (2%)

Source: ACS 2018 one-year estimate data.
Note: People may report more than one disability.

Between 2000 and 2018, Connecticut gained about 66,000 households (figure 6). Looking across county totals, Fairfield County leads the state in growth with more than 16,000 new households; Hartford and New Haven Counties have also added more than 10,000 households each. In terms of household composition, households made up of married couples with children decreased by more than 50,000—a 16 percent decline since 2000—while all other household types increased. New Haven County has the largest decrease in households of married couples with children, accounting for more than a third of the state's drop in those households. In most counties, the number of people living alone has increased substantially, further underscoring a need for smaller units and units affordable to single-earner households. Households composed of married couples without children also have increased in each county. Those households may have specific housing needs depending on whether and when they choose to have children.

FIGURE 6

Change in Households by Type, Connecticut and Counties, 2000–18



Sources: ACS 2014–18 data and the 2000 decennial census.

As of 2018, about two-thirds of Connecticut's households owned their homes and one-third rented them. Fairfield, Hartford, and New Haven Counties have higher shares of renter households than the other five counties. More than 78 percent of all renter households live in those three counties.

Since 2000, the number of owner- and renter-occupied households has increased, with renter-occupied households increasing more quickly in Fairfield and New Haven Counties and owner-occupied households increasing more quickly in the remaining six counties, partially because of the rental housing available in each county (table 3). Together, renter households in Fairfield, Hartford, and New Haven Counties account for 83 percent of the growth in renter households statewide, underscoring the disparity in development in Connecticut's urban areas.

TABLE 3

Households by Homeownership Status, Connecticut and Counties, 2000–18

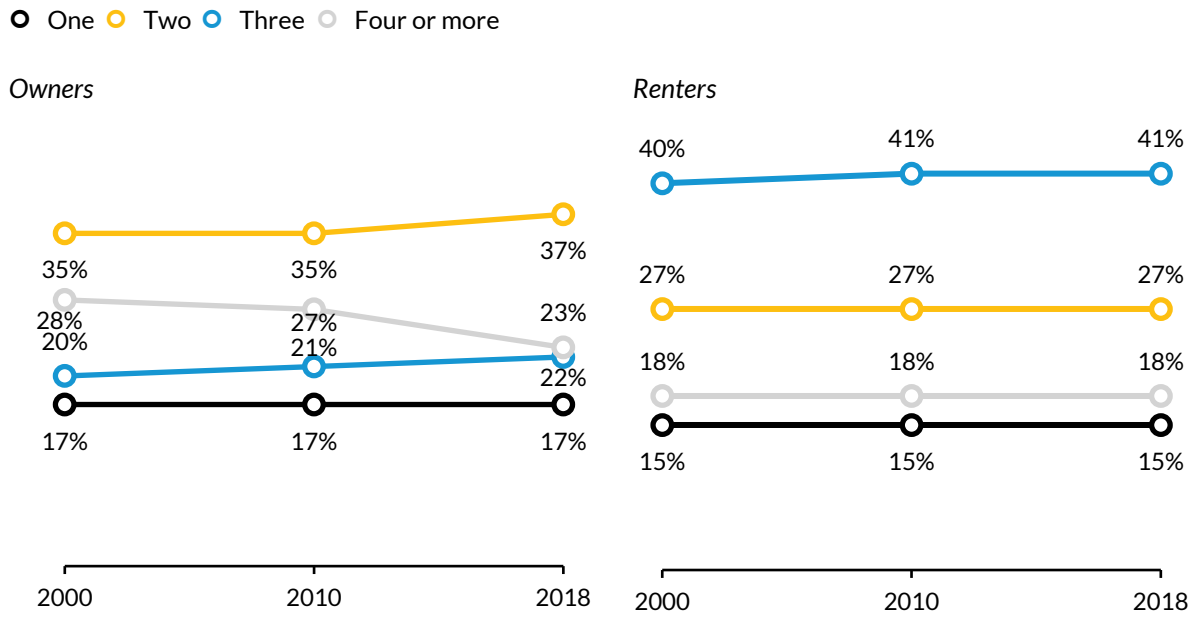
	Homeowners		Renters	
	Total, 2018	Change since 2010, total (percent)	Total, 2018	Change since 2010, total (percent)
Connecticut	**907,134**	**37,405 (4%)**	**460,240**	**28,299 (7%)**
Fairfield	229,169	4,653 (2%)	111,322	11,606 (12%)
Hartford	225,112	9,837 (5%)	123,952	4,129 (3%)
Litchfield	57,079	3,290 (6%)	16,908	-854 (-5%)
Middlesex	49,262	5,037 (11%)	17,630	514 (3%)
New Haven	204,295	2,978 (1%)	125,562	7,839 (7%)
New London	71,459	4,897 (7%)	35,943	2,670 (8%)
Tolland	39,798	3,489 (10%)	15,434	2,312 (18%)
Windham	30,960	3,224 (12%)	13,489	82 (1%)

Source: ACS 2014–18 data.

Since 2000, homeowning households with four or more people have decreased by about 25,000, or 5 percentage points, and one-person homeowner households have increased by 17,000, or just over 1 percentage point (figure 7). In other words, owner-occupied households are trending toward having fewer occupants, indicating a potential growing need for smaller homes. The number of occupants in renter-occupied units has held relatively steady since 2000.

FIGURE 7

Share of Households by Number of Occupants, Connecticut, 2000–18



Sources: ACS 2014–18 data and 2000 decennial census.

While renter-occupied housing units generally have fewer occupants, they also have fewer rooms and bedrooms. Therefore, renter households are more likely than owner households to be overcrowded, which is defined as having more than one person per room. Overcrowding occurs when households with several people cannot afford units large enough for each person to have a room. Four percent of renter-occupied households in Connecticut were overcrowded in 2018, compared with less than 1 percent of owner-occupied households, potentially indicating a demand for more large units affordable to renters. Households with more than one person per room are susceptible to health concerns, such as stress and increased viral transmission.

Adjusted for inflation, median household income statewide has increased from $72,000 in 2000 to $81,000 in 2018 (table 4). Median income in 2018 was highest in Fairfield County ($102,000) and lowest in Windham County ($69,000). Earned income disparities exist along racial/ethnic and gender lines, with white and male workers out-earning and realizing greater income increases than nonwhite and female workers. This trend also holds for households headed by white people or men compared with nonwhite and female heads of household. The regional differences in income play a role in the affordability of units.

TABLE 4

State and County Median Household Incomes, Connecticut, 2018

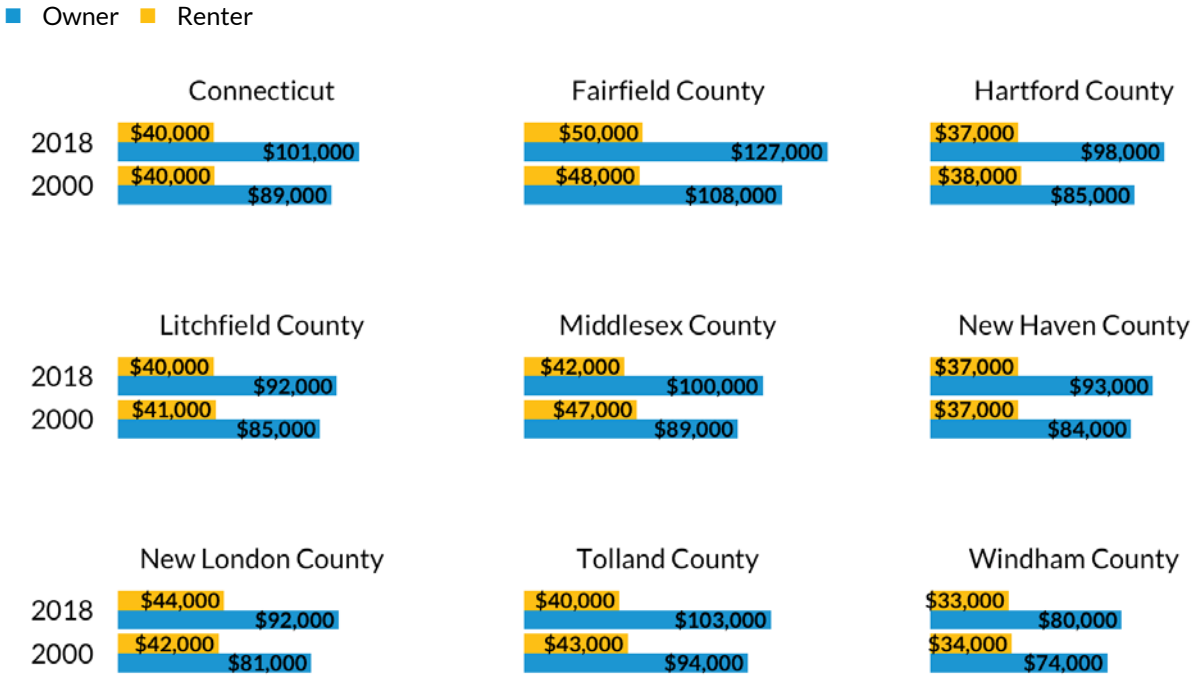
	Median household income
Connecticut	$81,000
Fairfield	$102,000
Hartford	$76,000
Litchfield	$80,000
Middlesex	$86,000
New Haven	$71,000
New London	$78,000
Tolland	$88,000
Windham	$69,000

Source: ACS 2014–18 data.

Income disparities are apparent between owner-occupied and renter-occupied households. Statewide and adjusted for inflation, median incomes for renter-occupied households have not changed appreciably since 2000, while median incomes of owner-occupied households have increased about $12,000 (figure 8). This gap exists in each of Connecticut's eight counties. The cost of rent continues to increase as renters' incomes stagnate, leading to more cost-burdened renters.

FIGURE 8

Change in Median Income by Tenure and County, Connecticut, 2000–18



Sources: ACS 2014–18 data and 2000 decennial census.
Note: All dollar amounts are inflation adjusted to 2017 dollars.

Commute Patterns

When households have trouble affording housing near employment centers, they may move elsewhere, leading to longer commute times. In Fairfield County, for example, the town of Bridgeport "has a high concentration of residents with lower-wage jobs, and most travel to surrounding towns for work; this is seen in the net inflow of lower-wage workers in the suburbs of Fairfield (5,600), Westport (4,000), and Trumbull (2,600), combined with the strikingly large net outflow of lower-wage workers seen in Bridgeport (16,000), the largest outflow in the state" (Abraham et al. 2019, 51).

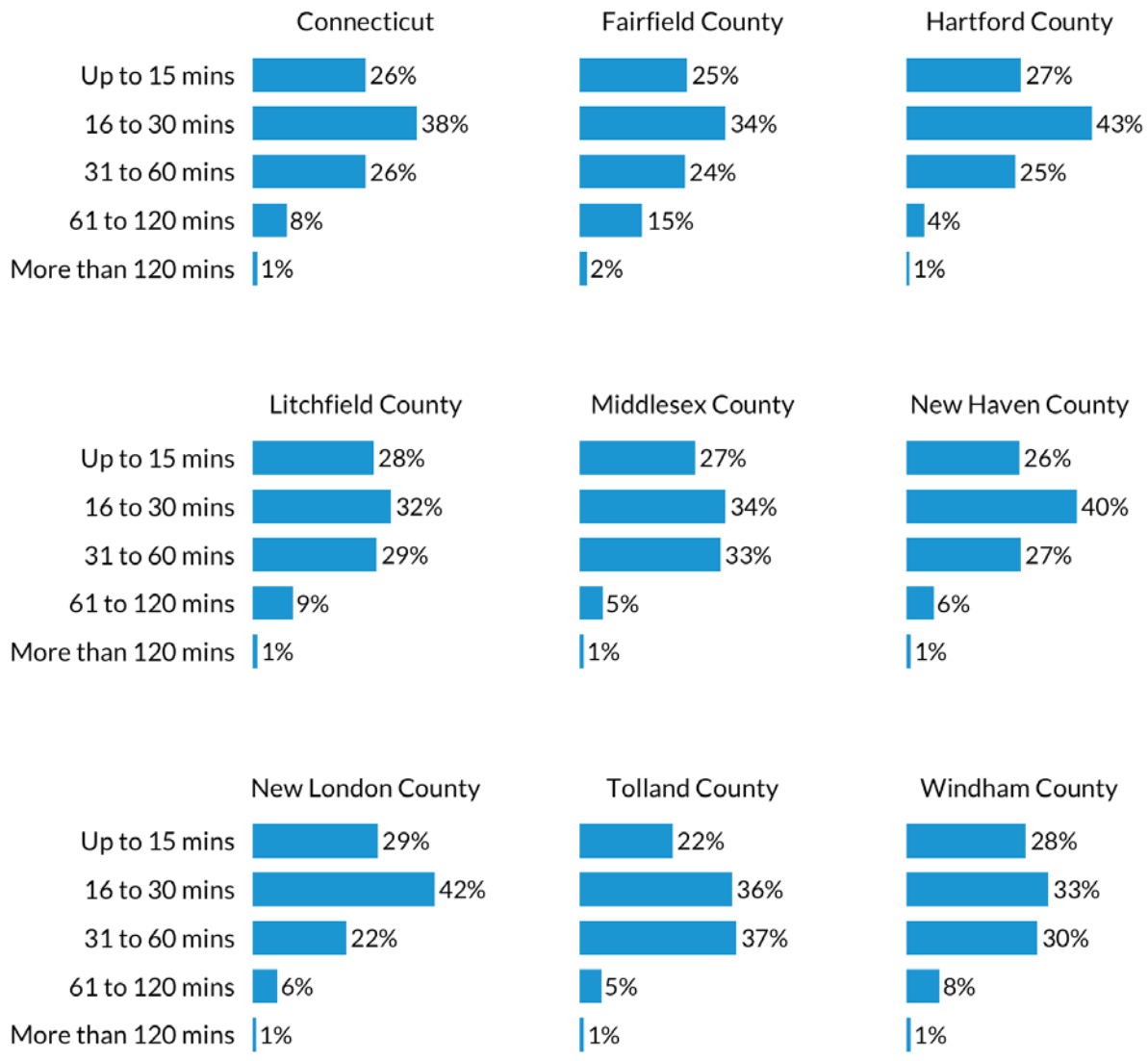
Tolerable commute thresholds generally lie between 30 to 45 minutes each way (Angel and Blei 2015), and longer commutes indicate a stronger potential mismatch between where jobs are and where workers live. If workers have to live farther from their workplace to afford housing, long commutes affect households' quality of life, reduce productivity, and contribute to employee turnover, especially among low- and moderate-wage workers (Shearer, Vey, and Kim 2019). In addition to contributing to transportation issues such as traffic congestion, this mismatch prevents efficient allocation of labor

resources, potentially leading to higher unemployment rates and longer-than-average spells of joblessness (Stacy et al. 2020).

More than a third of Connecticut commuters spend 16 to 30 minutes traveling each way to work, while 9 percent spend more than an hour (figure 9). The share of workers commuting more than an hour is highest in Fairfield County, at 17 percent, partly because of its proximity to New York State, where many higher-wage jobs are located (Abraham et al. 2019, 51).

FIGURE 9

Share of Commuters by Travel Time to Work and County, Connecticut, 2018

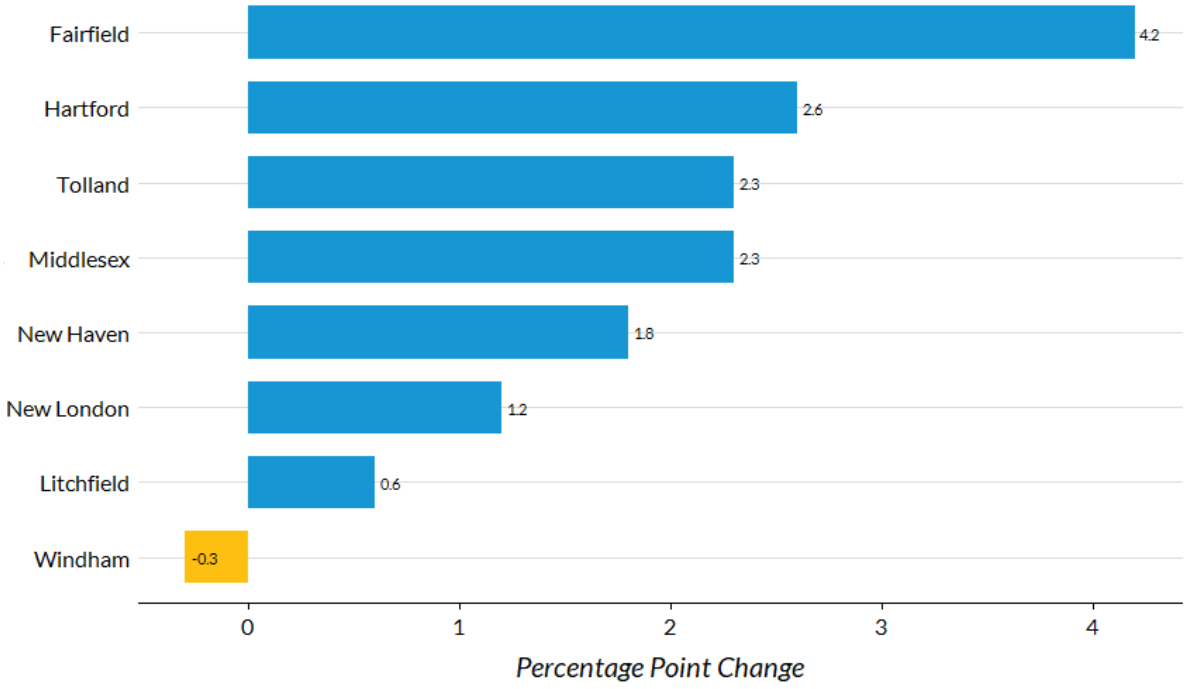


Source: ACS 2014–18 data.

Commute times in Connecticut have generally increased since 2012, with counties' patterns remaining generally the same relative to each other over time (figure 10). Over 50 percent of commuters take less than 30 minutes to get to work; New London and Hartford Counties have the highest proportion of commuters (74 and 73 percent, respectively) enjoying short commutes. In contrast, Fairfield and Litchfield Counties have the highest proportion of commuters with long (60+ minute) travel times to work, and these two counties (as well as New Haven and Tolland) saw this proportion rise between 2012 and 2018.

FIGURE 10

Change in Share of Commuters with Travel Time to Work 30 Minutes or Longer by County, Connecticut, 2012 to 2018



Source: ACS 2014–18 data.

Ensuring that there is an appropriate mix of housing affordability close to job locations, particularly for lower-wage workers for whom housing and transportation costs can be a significant portion of their household budget, will help alleviate commuting problems and reduce hardships for many workers.

Housing Characteristics and Trends

The stock and flow of housing supply across Connecticut responds to and spurs market demand; together, these forces determine market pricing and overall affordability. The dynamics of this system are highly segmented by unit type (single- or multifamily), ownership status, size or number of bedrooms, cost band, and geography.

Building Permits

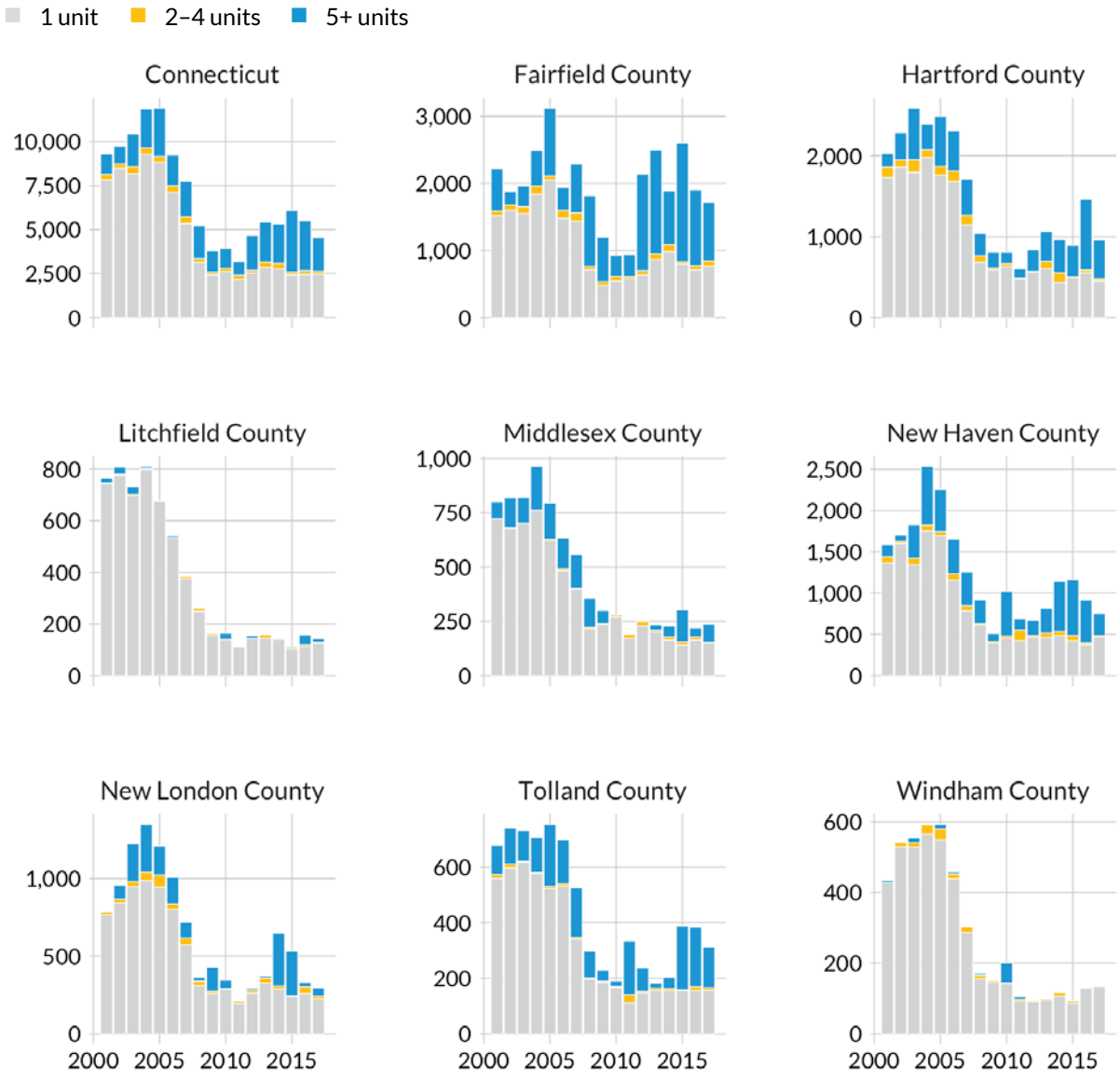
Housing production activity, based on building permits issued for new construction, declined sharply during the Great Recession (2007–09) and has not returned to pre-recession levels (figure 11). Housing production trends in Connecticut vary across single-family, small multifamily (two to four units), and large multifamily (five or more units) developments. Single-family properties predominated between 2001 and 2006, with roughly 8,300 building permits issued annually on average. Single-family permits dropped steadily starting in 2007, falling to just 30 percent of 2001 levels by 2018 with an average of just 2,500 units permitted a year between 2011 and 2018.

In keeping with national patterns, small multifamily production in Connecticut is negligible compared with single and large multifamily production, and it has dropped since the early 2000s. Small multifamily developments represented just 3 percent of total building permits in 2017 compared with 55 percent for single-family and 42 percent for large multifamily. Often called "missing middle housing" because of its low production trends and the widespread zoning codes that make it impossible to build, small multifamily properties tend to be more naturally affordable than large multifamily housing and allow neighborhoods to gradually increase in density closer to transit and employment centers (NAHB 2019).[1] Permits for this housing have decreased from a statewide average of 300 a year between 2001 and 2011 to 200 a year between 2012 and 2018. The most productive counties, Fairfield and Hartford Counties saw an average of 77 and 74 permits, respectively, issued annually between 2001 and 2017.

Large multifamily housing production has increased overall in recent years, growing from an average of 1,600 permits annually between 2001 and 2011 to 2,500 permits between 2012 and 2017. This increase was clustered in a few counties (Fairfield, Hartford, and New Haven) that saw increases of 180 to 1,760 permits a year. New London and Tolland Counties also saw increases in permits for larger multifamily developments in some years.

FIGURE 11

Housing Permits Issued Annually by Units in Building, Connecticut and Counties, 2001–17



Source: Connecticut Department of Economic and Community Development Annual Construction Report data, 2000–17.
Note: These data show the number of housing units (not buildings) permitted, not necessarily constructed.

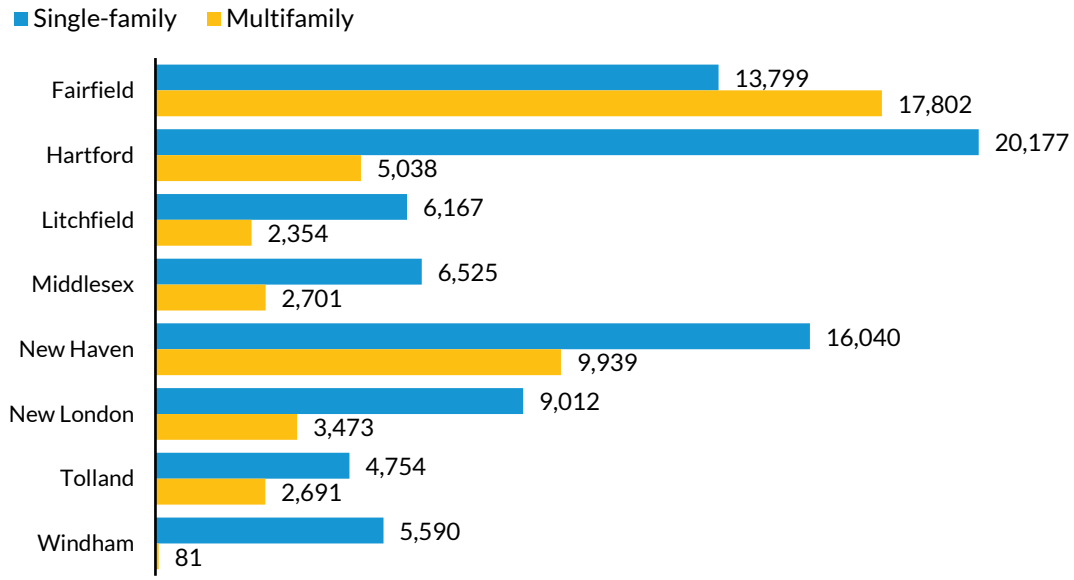
Changes in Housing Supply

Building permits reflect developers' intentions to construct new housing but may not always result in units being built. In addition, losses from housing that is demolished, destroyed, or taken out of use reduce the housing supply. Looking at the change in housing units by building type and county between

2000 and 2018 (figure 12), all counties experienced net housing unit increases, but Fairfield, Hartford, and New Haven Counties led the state. Fairfield County added the most multifamily housing (40 percent of the total net increase since 2000), and Hartford County added the most single-family housing (25 percent of the total net increase). The picture painted by these numbers is similar to that in other parts of the US in the past two decades: a growing preference by working-age people to live in or near larger urban centers (Fry 2020). While the state may incentivize certain types of housing production, ultimately the nature of that production (scale and housing type) must closely relate to the economic function of the towns within each county and the residential preferences of new households.

FIGURE 12

Net Change in Total Housing Units by Building Type and County, Connecticut, 2000–18

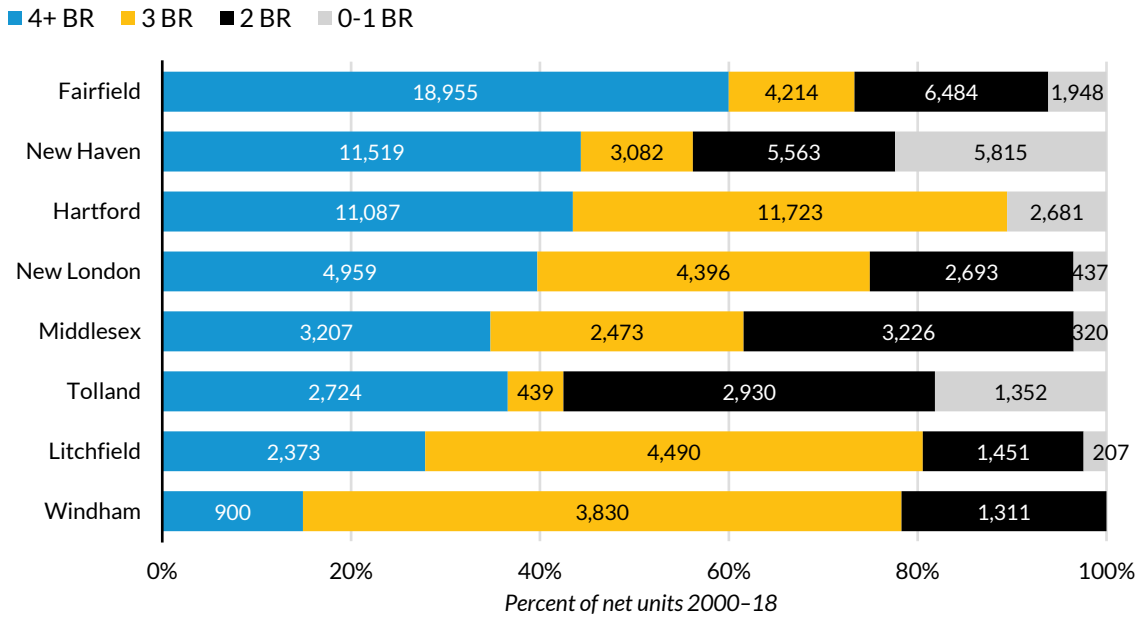


Sources: ACS 2014–18 data and 2000 decennial census.
Note: Includes occupied and vacant housing units.

Fairfield and New Haven Counties also had the highest quantity and proportion of net new four-or-more-bedroom housing units suitable for higher-income or larger households (figure 13). In contrast, Hartford and New Haven Counties have the highest counts of net new studio and one-bedroom units, which are typically lower cost and demanded by smaller households or single people. Nearly 80 percent of net new housing in Windham and Litchfield Counties has more than three bedrooms. While attractive to larger households, counties with less studio, one-, or two-bedroom housing may not be amenable to newly forming younger households and elderly households.

FIGURE 13

Net Increases in Total Housing Units by Bedroom Size and County, Connecticut, 2000–18



Sources: ACS IPUMS data, 2000 and 2018.
Note: Negative production numbers in some categories because of demolition or loss were reported as zero.

Vacancy

Housing vacancy rates (or the proportion of units left unrented or unsold) indicate the balance between supply and demand for property types or housing; high vacancy rates could indicate an oversupply of units, and low vacancy rates could indicate an insufficient supply. Though Connecticut's annual housing production levels have dropped dramatically, vacancy rates have remained fairly steady across the state between 2000 and 2018 (figure 14), largely because of the decreasing population. Multifamily vacancies are higher than single-family vacancies, and rental vacancies are higher than ownership vacancies, though trends vary by county. The state's most populated counties (Fairfield, Hartford, and New Haven) have maintained steady vacancy rates and standard patterns, though rates briefly rose and fell around 2010. However, Middlesex County saw dramatic increases in for-sale and rental multifamily vacancies while New London County saw decreases in multifamily vacancies. Litchfield County saw a dramatic transfer from multifamily rental vacancies to single-family rental vacancies. These changes in trends indicate a need for highly tailored housing production policies to avoid producing housing units of types (single versus multifamily) and ownership model (rental versus sale) in low demand for the area.

FIGURE 14

Vacancy Rates in For-Rent and For-Sale Housing by Building Type, Connecticut and Counties, 2000–18

Sources: ACS 2014–18 data and 2000 decennial census.

Demographic and Household Projections

The previous discussion outlined Connecticut's population and housing trends to date. This section projects population and household changes. To create these projections the study team analyzed population trends from 2000 to the present and extended these patterns through 2040. (Appendix B fully describes the projection methodology.) These projections have implications for the quantity, types, and affordability of housing that Connecticut will need in the future, as discussed later in this report.

Connecticut's projected population reflects three demographic trends: relatively more people migrating out of the state than into it, an aging population, and a decline in white population. While the state experienced positive but moderate population growth between 2004 and 2014, Connecticut's population began to decline in 2019 (table 5). This decline is projected to continue over the next two decades.

TABLE 5

Past and Future Annual Population Change, Connecticut, 2004–40

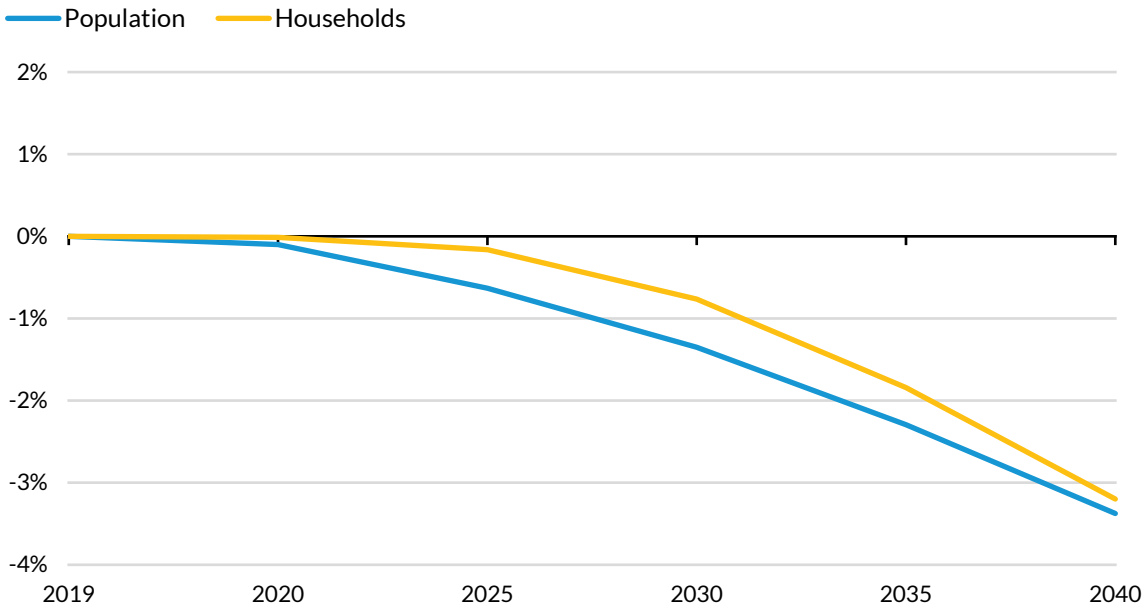
Time span	US Census estimates	Study projections
2004–09	+0.38%	
2009–14	+0.18%	
2014–19	-0.16%	
2019–25		-0.11%
2025–30		-0.14%
2030–35		-0.19%
2035–40		-0.22%

Source: Authors' analysis of ACS and Census data.
Note: These figures represent the percentage change in population since the previous period. They are not cumulative or related to a base year.

The number of households is also projected to decrease in the future, but more slowly than the population, reflecting a later trend toward smaller household sizes. While the decline by 2025 is slight (0.2 percent), it will steepen to over 3 percent by 2040 because, as the population ages, older households will have fewer people (figure 15). In comparison, while the population decrease will start out faster (0.6 percent by 2025), by 2040 it will be a little over 3 percent as well.

FIGURE 15

Projected Cumulative Percentage Change in Population and Households, Connecticut, 2019–40



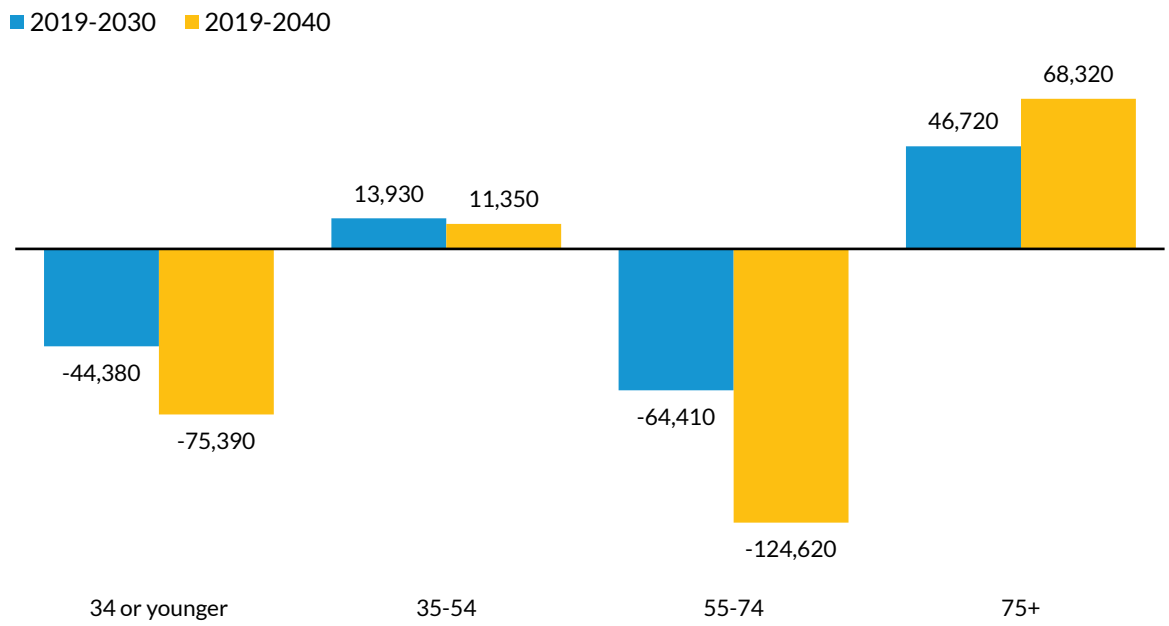
Source: Authors' analysis of ACS and Census data.

Within these overall trends are striking demographic changes that will impact Connecticut's future housing needs. As in many places, the state's population is aging, and meeting the housing requirements of older people will become increasingly important. Connecticut is projected to experience decreases in people ages 34 and younger, as well as those ages 55–74 (figure 16). While the population ages 35–54 will grow slightly, the largest increase is projected for people ages 75 and older. By 2040, the state's oldest residents will grow by more than 68,000 people.

The state is also projected to become more diverse, with more households headed by people who are Latino, Black, or Asian and fewer households headed by white people by 2040. As noted in the earlier discussion of population change, more people are migrating out of Connecticut to other places in the US, while more people from overseas are moving into the state. These trends underlie the projected demographic shifts shown in figure 17.

FIGURE 16

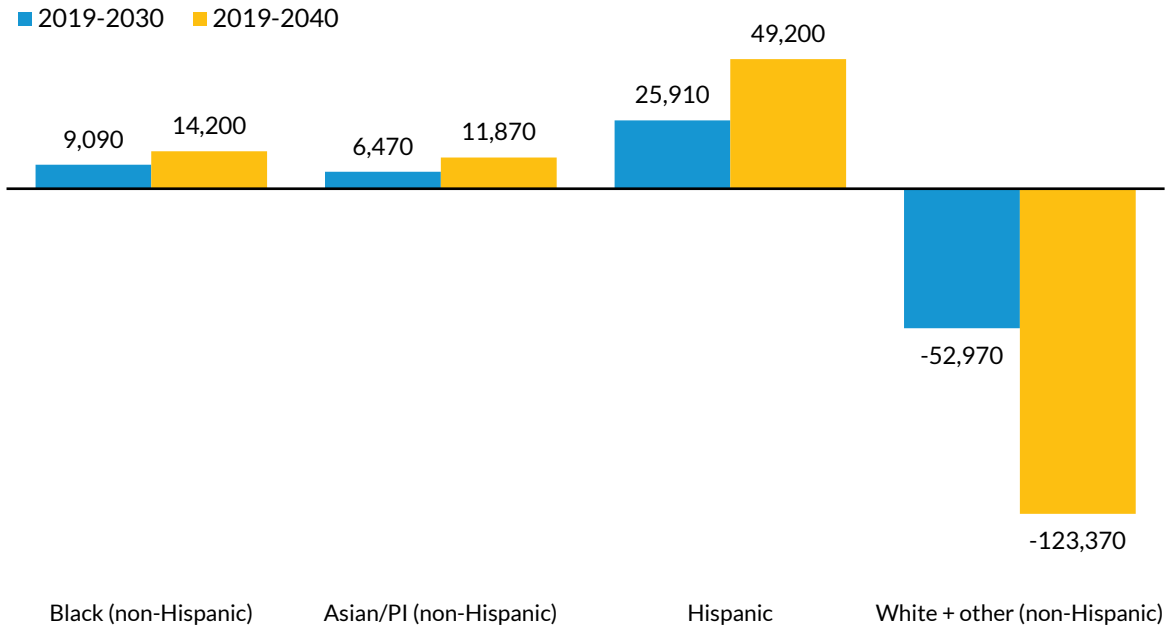
Projected Change in Population by Age Group, Connecticut, 2019–40



Source: Authors' analysis of ACS and Census data.

FIGURE 17

Projected Change in Households by Race/Ethnicity of Householder, Connecticut, 2019–40

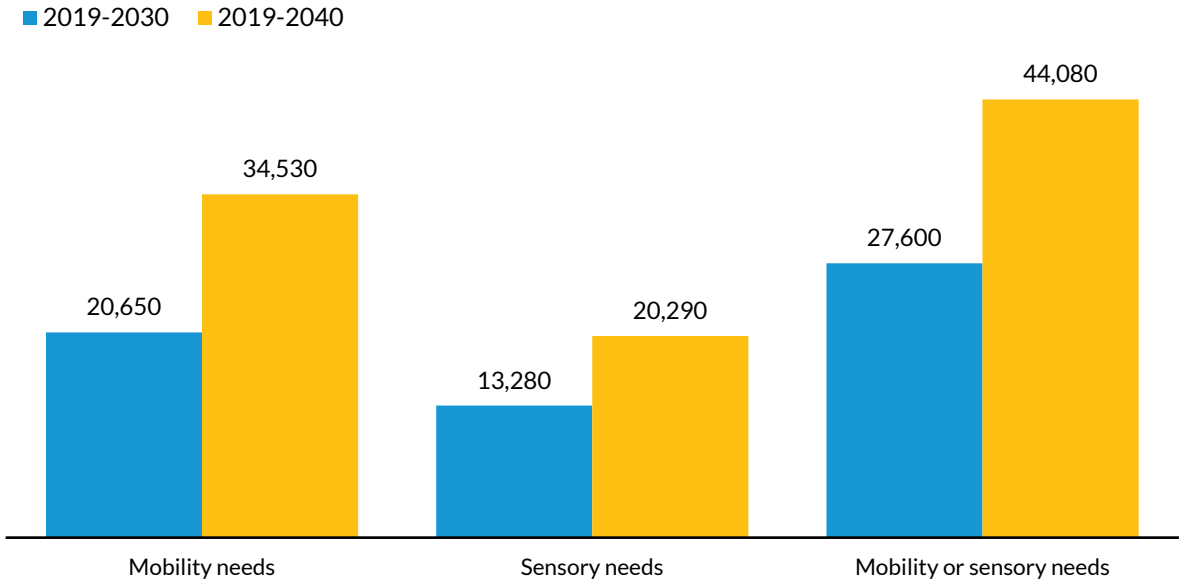


Source: Authors' analysis of ACS and Census data.

In addition to becoming more diverse, the state will see an increase in the number of households that have at least one member with a disability (figure 18). Households with a member with a mobility disability (defined as ambulatory, self-care, independent living, or cognitive disabilities on the ACS questionnaire) will increase 17 percent from 121,205 in 2019 to more than 140,000 in 2030. Meanwhile, households that have at least one member with a sensory disability (defined as either vision or hearing difficulties) will also increase 17 percent from 76,798 to more than 84,500 in 2030. Some households have members with both these disabilities, and these households will increase from more than 162,000 in 2019 to roughly 178,400 in 2030. These trends run parallel to the projected increase in elderly people but also follow trends that project an increase in low-income people, who tend to have higher rates of disabilities. Within the overall increase of households with a member with a disability, people with mobility limitations will increase most quickly, indicating a larger need for specialized accessible housing.

FIGURE 18

Projected Change in Households by the Presence of at Least One Person with a Reported Disability, Connecticut, 2019–40



Source: Authors' analysis of ACS and Census data.
Note: Households with multiple people in each need category are only counted once within that category.

Population and Housing Conclusions

- While in recent years, Connecticut's population has begun declining, between 2010 and 2018, it increased by 7,407 (or 0.2 percent) to 3.58 million. That growth occurred almost entirely in Fairfield County (which grew by 3 percent) as all other counties (especially Litchfield, Middlesex, and New London) saw an average decline of 1.3 percent due to strong outmigration, low birth rates, and relatively low international immigration. Connecticut's population is also becoming more diverse, with the state's large white population aging and declining even as young, nonwhite populations (primarily Latino) are growing across all counties.
- Connecticut gained roughly 66,000 households between 2000 and 2018, with roughly two-thirds of those new households forming in Fairfield, Hartford, and New Haven Counties. These households are much less likely than in the past to be married couples with children; instead, a higher and growing share is single-person households and married couples without children. These households traditionally need smaller and more affordable homes.
- The state has wide splits in household homeownership trends. Generally, the number of homeowner households increased 4 percent and renter households 7 percent. Renter households increased in greater numbers in Fairfield and New Haven Counties (accounting for 83 percent of all renter household growth in the state), and homeowning households increased in greater numbers in the remaining six counties. Homeowner households' incomes rose while renting households' incomes stayed steady or fell.
- Commute times for households across Connecticut's counties have increased slightly since 2012 but a great deal in Fairfield County, where in 2018, 15 percent of households commuted to work more than one hour each way. Other counties that saw an increase are New Haven, Litchfield, and Tolland. Increased commute times can indicate either that available nearby jobs are declining or that rising housing prices near jobs and inflexible, low-density single-family zoning patterns have pushed workers to move farther from employment centers.
- Between 2001 and 2011, Connecticut issued permits for an average of 6,000 single-family, 300 small multifamily (two to four unit), and 1,600 large multifamily (more than five units) projects a year. Between 2011 and 2018, single-family and small multifamily permits issued fell to a respective average of 2,500 and 200 projects a year as large multifamily permits increased to 2,500 a year. Most multifamily permitting occurred in Fairfield, Hartford, and New Haven Counties.

- Connecticut's projected population reflects three demographic trends: relatively more people migrating out of the state than into it, an aging population, and a decline in white population. The state's population is projected to shrink at an increasing rate, with the average rate of decline increasing from 0.11 percent annually between 2020 and 2025 to 0.22 percent annually between 2035 and 2040. By then, Connecticut residents ages 75 and older will have increased by more than 68,000 people as residents ages 34 and younger will have declined by more than 75,000 people; thus, meeting the housing requirements of older people will become increasingly important. Additionally, the state's Black, Asian, and Hispanic residents will increase by 14,000, 12,000, and 49,000, respectively, as white residents decline by 123,000.
- By 2030, the state is projected to have 27,600 more households with either mobility or sensory needs. By 2040, that number will grow to over 44,000.

A housing system that supports the needs of a diverse population provides housing at a range of rents and prices, using subsidies and other means where necessary to increase affordability beyond what the housing market provides. The next two chapters assess Connecticut's affordable and accessible housing needs, in light of current and future demographic and housing trends.

Are Affordable Housing Resources Meeting Resident Needs?

Affordable Housing Resources Takeaways

Data on affordable housing resources in the state revealed several findings on the challenges Connecticut residents face in finding appropriately priced housing for their needs.

- Counties that had higher increases in unassisted multifamily rental housing units also had lower increases in average rent.
- The most prevalent forms of housing assistance in Connecticut are housing choice vouchers and Section 8 project-based rental assistance.
- Over the next 20 years, thousands of units with Section 8 project-based rental assistance, Low-Income Housing Tax Credit (LIHTC), and other forms of assistance will reach affordability contract or compliance period end dates.
- Connecticut has a gap of 86,000 housing units affordable to households with very low incomes. Although the total number of very low–income households will decline through 2040, the decrease will not be enough to close the current gap.

These data largely represent conditions before the COVID-19 pandemic, which has negatively impacted the ability of many households to pay their housing costs. In addition, the pandemic has disproportionately increased housing hardships for Black and Latino communities.[2]

For this study, housing affordability is defined relative to household income using cost bands that represent percentages of county median incomes (table 6). County median incomes are used as the basis for defining the cost bands since local housing market prices relate closely to regional wages or incomes. (Appendix B provides specific values for the household income and housing cost ranges for each county.)

For assessing current housing supply and needs, this report uses a standard criterion of affordability based on 30 percent of a household's income.[3] Housing units are considered affordable if total costs—rent, utilities, mortgage payment, real estate taxes, fees, and other costs associated with living in the unit—are less than 30 percent of a household's income. Housing units that require a

household to pay 30 percent or more of its income are considered unaffordable. Households paying 30 percent or more of their income on housing are considered cost burdened.

TABLE 6

Household Income and Housing Affordability Cost Bands

Cost/income band label	County median income (CMI) range
Very low	≤ 30 percent of CMI
Low	31–50 percent of CMI
Mid-low	51–80 percent of CMI
Mid-high	81–120 percent of CMI
High	≥ 121 percent of CMI

Source: Authors' calculations based on ACS 2014–18 data.
Note: Cost bands are defined according to HUD's definition of affordable housing costs, which is 30 percent of a household's income. Thus, the cost bands are 30 percent of the income band definitions (see appendix A).

Current Affordable Housing Supply

Of the nearly 2.2 million housing units in Connecticut, the largest share is units that are affordable to households in the mid-low-income band, or 51–80 percent of county median income (figure 19). This cost band includes households with working people such as janitors, administrative assistants, and carpenters. The preponderance of mid-low units is consistent across all counties, although Fairfield County has relatively larger numbers of mid-high- and high-cost units.

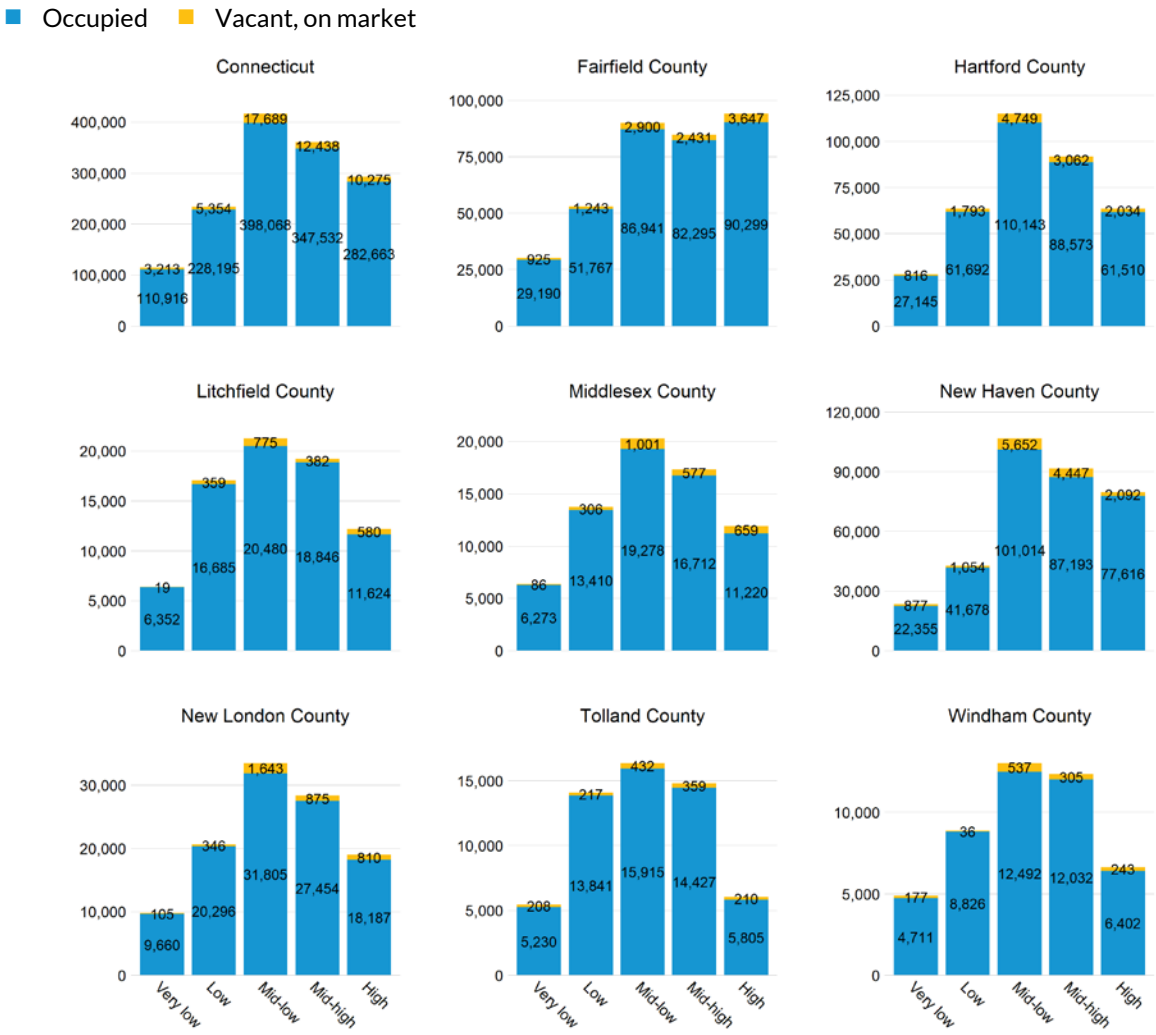
In contrast, relatively few housing units are affordable to low-income (31–50 percent of county median income) and very low–income (30 percent or less of county median income) households. The shortage is particularly acute for very low–income households, a cost band that includes people working as child care workers and cashiers, or people who are unemployed. Since the private housing market rarely can provide housing that is affordable for them, households in the very low–income band often require housing assistance.

Although there may be relatively fewer housing units in the higher-cost bands, these households can also afford housing in lower bands. Therefore, having fewer units affordable in those cost bands does not mean that mid-high-income households (including people who work as managers, truck drivers, and teachers) or high-income households (including people who work as lawyers, nurses, and financial analysts) have limited housing options. It can mean, however, that these households crowd out lower-income households from less-expensive housing, as discussed later.

The data above summarize affordability for homeownership units and market-rate rental units, as well as assisted housing, which is regulated or subsidized in some way to make units affordable. The rest of this chapter presents additional data on these three types of housing.

FIGURE 19

Total Housing Units by Cost Band, Connecticut and Counties, 2014–18



Source: IPUMS ACS data 2014–18.

Notes: Each county's cost band cutoffs are unique and laid out in table B.1 in appendix B. The state totals were created by summing all units within the same cost band (e.g., very low) across all counties rather than by assessing the number of units available by the state's median income cost bands. Vacant apartments and homes for sale have imputed costs based on contract rent plus imputed utilities, and homes for sale have owner costs imputed based on county average mortgage rates (2019 HMDA data for approved first-lien mortgages for homes intended for owner occupancy), the median mill rate for each county, and imputed utility costs.

Homeownership

Two-thirds of Connecticut households own their homes. In addition to providing housing stability, owning a home can be a path toward wealth-building and economic self-sufficiency. Though some households may not want to purchase homes, those that do can face many barriers. For instance, home values in Connecticut are higher than the US average.[4] Households may also face challenges with obtaining mortgage financing or saving sufficient funds for a down payment.

The national gap in homeownership by race and ethnicity is also prevalent in Connecticut. Although 76 percent of whites own their homes, only 57 percent of Asians, 40 percent of American Indians, 39 percent of Blacks, and 34 percent of Latinos own their homes.[5] According to analysis from Urban Institute, the city of Bridgeport has the fifth-highest gap in white and Black homeownership rates in the US.[6] The National Association of Homebuilders also finds that, "The regional cluster with the largest gap between white and Hispanic or Latino homeownership rates is in the New England region, especially in Connecticut and Massachusetts" (Ford 2018, 5). Denying homeownership opportunities is a result of discriminatory policies and practices, both locally and nationally, that have prevented people of color from building wealth.

Since 2000, Connecticut has not seen major increases or decreases in average home values in most counties (table 7). Despite a small decline, Fairfield County has the highest average home value in the state, more than 40 percent above the next-highest, Middlesex County, and more than double the average home value in Windham County. Windham County has the largest increase in home values however, at 15 percent, while Middlesex County home values have grown 6 percent. Relatively higher home values in some communities could be a barrier to homeownership.

TABLE 7

Average Home Values by County, Connecticut, 2000–20

County	Average home value, 2000	Average home value, 2020	Percent change, 2000–20
Fairfield	$421,240	$418,565	-1%
Middlesex	$279,795	$295,922	6%
Litchfield	$249,329	$249,763	0%
New London	$245,221	$245,896	0%
Tolland	$240,433	$239,394	0%
New Haven	$229,819	$234,386	2%
Hartford	$233,443	$226,712	-3%
Windham	$176,625	$202,339	15%

Source: Zillow Research ZHVI Data 2020.
Note: Values are inflation adjusted using 2020 dollars.

Market-Rate Multifamily Rental Housing

Market-rate affordable housing (or unassisted housing), often referred to as naturally occurring affordable housing (NOAH), can be affordable for various reasons, including because it is in low-cost markets. Since the ACS does not distinguish between assisted and unassisted housing, this study relied on CoStar data on multifamily rental buildings with more than five units to better understand market-rate affordable apartments. While CoStar's data do not include two-to-four-unit multifamily properties they do identify assisted properties, which are filtered out of the data presented here. CoStar data also only reliably allow analysis starting in 2007.

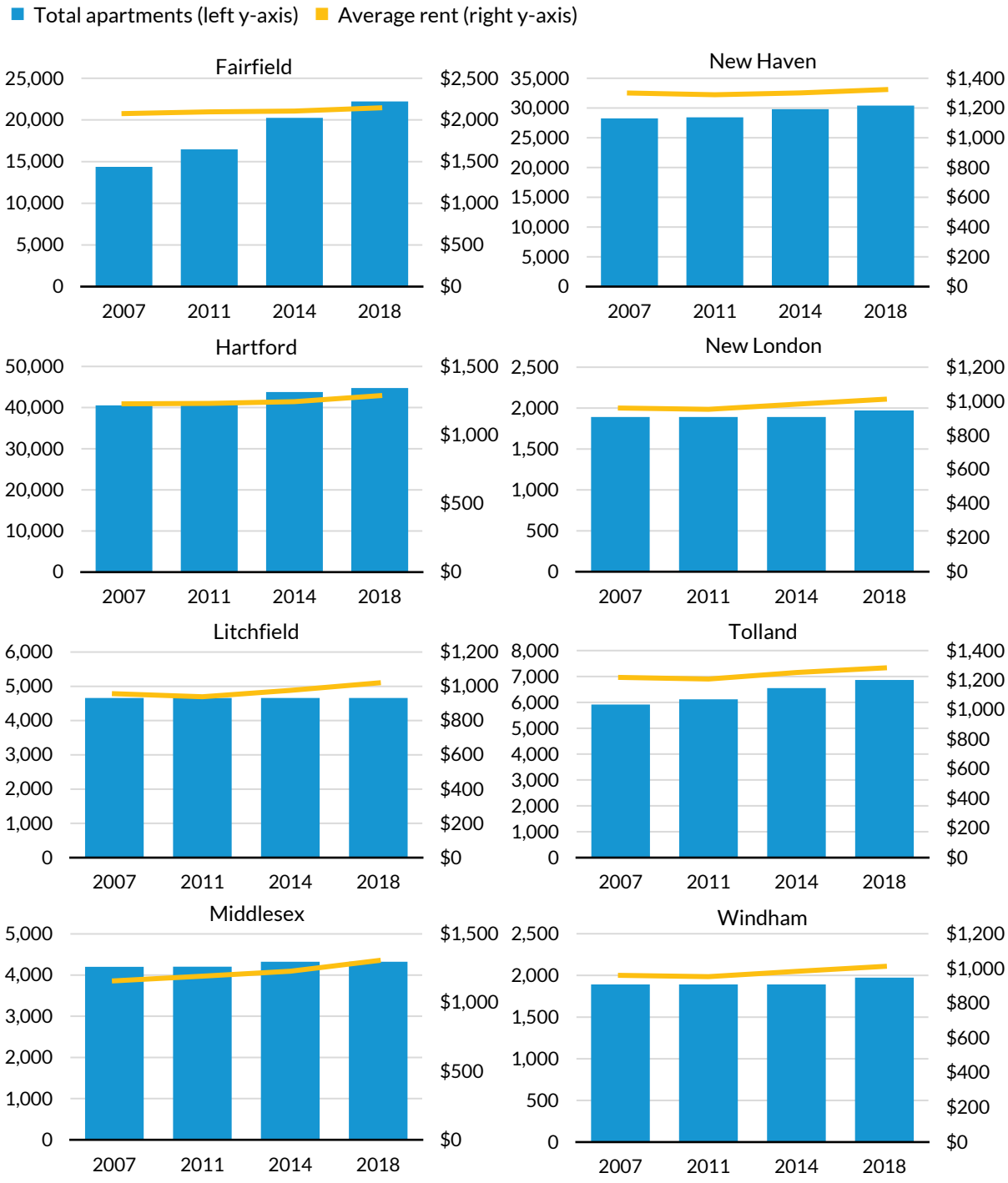
The average rent for five-plus-unit buildings increased across all counties, while the stock of rental apartments of this type increased in some counties and stayed flat in others (figure 20). Rental housing production and price increases were most dramatic along the I-95 to I-91 and Hartford rail line corridors (running from Connecticut's southwest through north-central counties), while areas far from those transit corridors saw less growth overall.

Average monthly rent in unassisted multifamily housing has increased across the state. The size of the increases appears to correlate with the change in NOAH rental stock. Counties that saw high increases in NOAH production, such as Fairfield, saw lower increases in rent, whereas counties such as Middlesex or Litchfield, which had virtually no increases in NOAH rental stock, saw relatively larger increases (figure 21).

Naturally occurring affordable housing characteristics vary across counties, but rental units in large multifamily properties most commonly have one or two bedrooms (table 8). The only exception to this pattern is Litchfield County, which has more NOAH rentals with three or more bedrooms. This finding is consistent with the household demographic data, which show that rental units are more likely to have fewer bedrooms and to be overcrowded.

FIGURE 20

Numbers of Apartments and Average Monthly Rents for Unassisted, Multifamily Rental Properties with Five or More Units by County, Connecticut, 2007–18

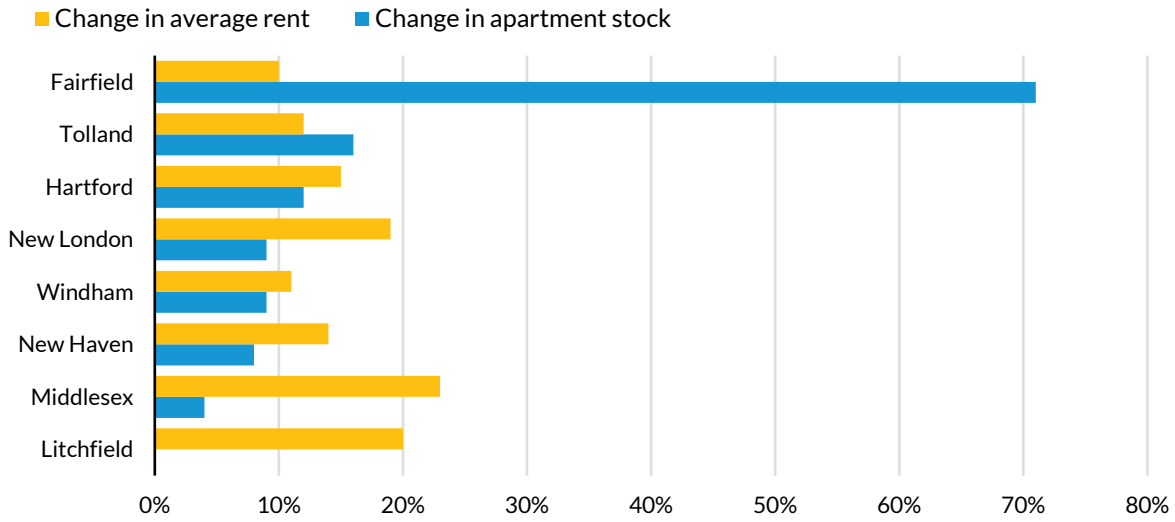


Source: Study team analysis of CoStar 2020 data.

Notes: These data are based on counts and average monthly rents of units in apartment buildings with five or more units and exclude any assisted or rent-controlled units. All rent amounts are expressed in inflation-adjusted 2018 dollars.

FIGURE 21

Percentage Change in Apartments and Average Monthly Rent for Unassisted Multifamily Rental Properties with Five or More Units by County, Connecticut, 2007–20



Source: Authors' analysis of CoStar 2020 data.
Note: The data include all apartments in buildings with five or more units and exclude all subsidized and rent-controlled units.

TABLE 8

Apartments in Unassisted Multifamily Rental Properties with Five or More Units by Bedrooms, Connecticut and Counties, 2020

Region	Studio	One-bedroom	Two-bedroom	Three-or-more-bedroom
Fairfield County	1,994	8,099	7,060	848
Hartford County	2,556	14,235	15,321	1,390
Litchfield County	810	842	2,134	2,559
Middlesex County	299	2,063	1,684	211
New Haven County	2,818	10,605	8,772	980
New London County	748	2,550	4,184	446
Tolland County	74	3,775	2,805	52
Windham County	51	489	810	81
Connecticut	**9,350**	**42,658**	**42,770**	**6,567**

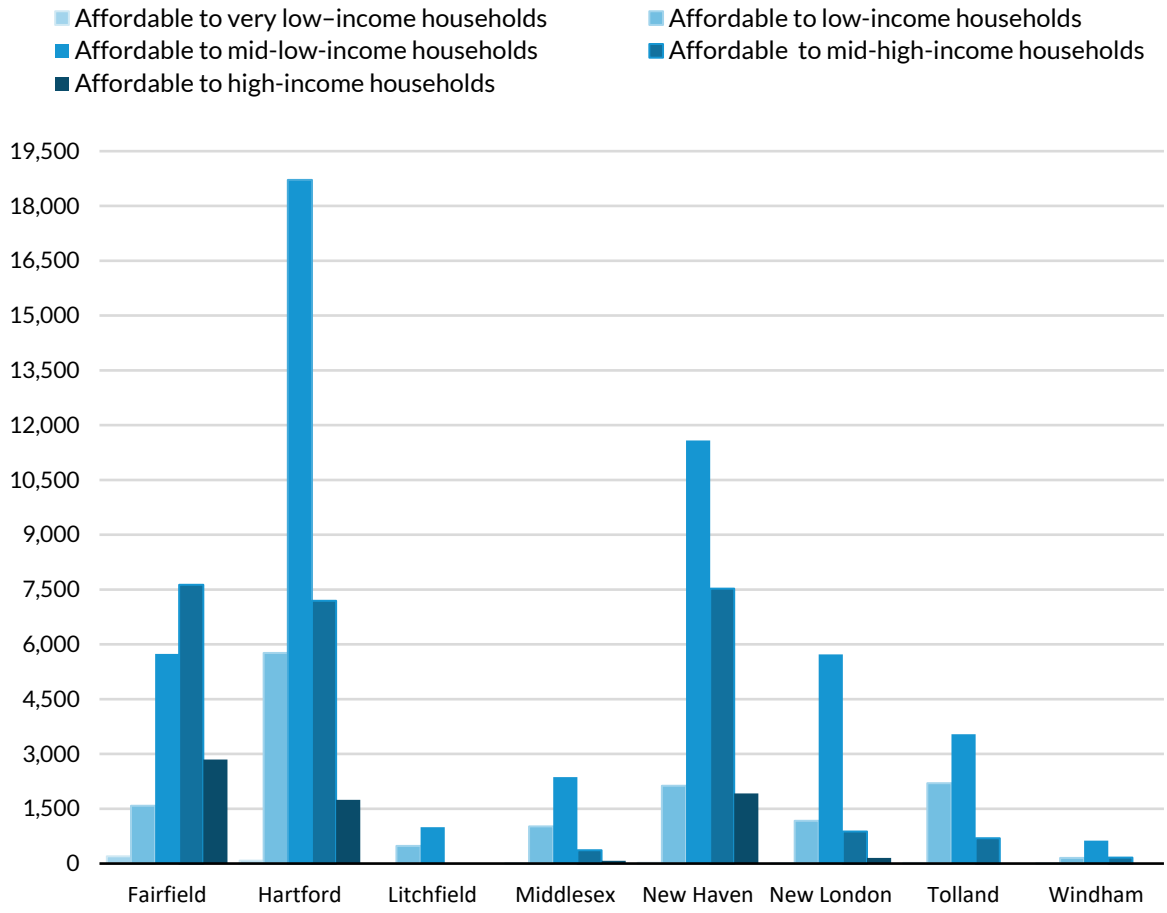
Source: Authors' analysis of CoStar 2020 data.
Note: These data only include apartment in buildings with five or more units and exclude any assisted or rent-controlled units.

Apartment rents in unassisted buildings with five or more units follow the patterns seen in housing overall, with most units affordable to the mid-low cost band and virtually no units affordable to households with very low incomes (figure 22). As noted earlier, the private market generally does not provide housing affordable to the lowest-income households without subsidies. Hartford and New Haven Counties, which have more densely populated urban areas, have more units in five-plus-unit rental buildings, most of which are affordable to households with mid-low incomes. Fairfield County

also has many apartments in larger rental properties, but more of these units are in the mid-high cost band. This finding falls in line with larger patterns seen in Fairfield County, where housing is more expensive than in the rest of the state.

FIGURE 22

Apartments in Unassisted Multifamily Rental Properties with Five or More Units, by Cost Band and County, Connecticut, 2020



Source: Authors' analysis of CoStar 2020 data.
Note: Rental unit counts exclude any subsidized or rent-controlled apartments.

Assisted Housing

Assisted housing is any housing that receives government support or is regulated to bridge the gap between housing costs and household incomes. These programs take many forms. They can provide ownership or rental units, can be run by federal or state agencies, apply to rural or urban contexts, and be tied to either households or housing units. Assisted housing is a necessary part of the housing system,

because the private market, on its own, cannot provide housing that is affordable to the lowest-income households. Assisted housing can also provide households with more equitable access to communities that provide opportunities for good jobs, quality schools, and other essential services.

Table 9 describes Connecticut's state-based assisted housing programs. Connecticut has many state-funded and -directed programs that include deed restrictions or restrictive covenants, assisted living programs, project bond financing, community housing development corporation funding, homeless housing, market-rate conversions, permanent supportive housing, tax credit assistance, and urban homesteading. Programs that focus on the provision of accessible housing (rental programs for elderly people or supportive housing) are presented in the next chapter.

Connecticut's largest concentration of state-funded assisted housing units comes from its Moderate Rental Housing Program followed by restrictive covenant and Tax Credit Assistance Program (TCAP) units (table 10). The vast majority of programmatic assistance is channeled within Hartford County, which boasts twice as many instances of subsidies as the next highest-county (Fairfield) and four times as many as the third-highest (New Haven County). Litchfield and Tolland Counties receive no programmatic investments outside the Moderate Rental Housing Program and limited equity cooperatives. Many of these subsidy instances, though, may overlap with each other or with federal subsidies in a single unit and thus cannot be summed within counties to determine a count of unique assisted units within a single county.

Table 11 lists the most prominent federal programs used to provide affordable housing in the US. These programs provide the strong base of assisted housing that Connecticut's state-based programs build on and complement.

As of June 2019 (table 12), housing choice vouchers represented the largest source of assisted units in the state (43,886). Section 8 project-based rental assistance and vouchers is the second-largest source (27,682 assisted units), followed by public housing (14,238 assisted units). Note that, since the unit counts in tables 10 and 12 do not attempt to match units within the same developments, these counts are for individual subsidy programs only and cannot be added across programs. This issue of subsidy layering is addressed on page 43.

Text continues on page 42

TABLE 9

Connecticut State-Funded or State-Directed Assisted Housing Programs

Name	Description
Affordable Housing Program	Effective since 2001, this program is the Department of Housing's (DOH's) primary housing production program. Frequently referred to as the "flexible" housing program, it provides grants, loans, loan guarantees, deferred loans, or any combination thereof for the development and preservation of assisted housing.
Bond-financed housing	These assisted housing units are financed through state and local government long-term borrowing through bond sales.
Community Housing Development Corporation (CHDC) housing	CHDCs compete for grant funding from HUD for housing projects, which may be rehab or new construction, as a part of the HUD HOME Investment Partnership program. Communities that qualify for a HOME grant must set aside at least 15 percent of that allocation for CHDCs to use in developing assisted housing.
Deed-restricted housing	A program wherein the properties have deeds that contain covenants or restrictions that require the dwelling unit(s) be sold or rented at or below prices that will preserve the unit(s) as affordable housing for households with incomes below 80 percent AMI.
Limited equity cooperative housing	A limited equity cooperative is a homeownership model in which residents purchase a share in a development (rather than an individual unit) and commit to resell their share at a price determined by a formula—an arrangement that maintains affordability at purchase and in the long term.
Moderate Rental Housing Program	This program is overseen by the Connecticut Housing Finance Authority (CHFA) and was created to offer low-interest loans and/or grants to developers and owners of low- and moderate-income rental housing. Recipients of funds are required to regularly provide CHFA and/or DOH with documentation that demonstrates their compliance with specific financial, insurance, property, tenant, and lease requirements.
Mutual housing	Mutual housing is constructed or rehabilitated and then owned by a nonprofit mutual housing association. Low- and moderate-income families become members of that association through application and (1) participate in the ongoing operation and management of such housing, (2) have the right to continue living in such housing for as long as they comply with the terms of their occupancy agreement, and (3) do not have an equity or ownership interest in such housing.
PRIME (Private Rental Investment Mortgage and Equity) housing	This 1993 program allowed the state to provide loans and grants to developers to create developments with a certain percentage of units set aside for low-income residents, with subsidies lasting for at least 15 years. These subsidies cover the difference between the unit's rent and utility costs and 30 percent of the tenant's income. In return for its investment, the state received equity interest in the property.
Restrictive covenants	Covenants placed on homes that impose a maximum rent and tenant eligibility standards for a fixed period in exchange for an investment.
SURP (Small Units Rental Program)	A CHFA-run program from the 1990s that provided subsidies for small rental units in exchange for affordability restrictions.
Urban Homesteading Program	This program offers loans to individuals or a grant to a CHDC for the purchase and rehabilitation or construction of homes on vacant, abandoned, or otherwise state-prioritized and designated properties.

Source: Connecticut Department of Housing.

TABLE 10

State-Assisted Housing Program Units, Connecticut and Counties, 2019

	Connecticut	Fairfield	Hartford	Litchfield	Middlesex	New Haven	New London	Tolland	Windham
Affordable Housing Program	467	60	233	-	-	54	93	-	27
Bond-financed housing	768	-	679	-	89	-	-	-	-
Community Housing Development Corporation housing	356	-	-	-	40	316	-	-	-
Deed-restricted	4,872	3,000	741	92	154	712	138	35	-
Limited equity cooperatives	498	-	303	28	16	122	22	-	7
Moderate Rental Housing Program	5,402	1,715	2,006	46	198	498	666	85	188
Mutual housing	176	69	107	-	-	-	-	-	-
PRIME (Private Rental Investment Mortgage and Equity) housing	660	115	403	-	-	-	142	-	-
Restrictive covenants	1,034	485	309	-	64	118	58	-	-
SURP (Small Units Rental Program)	87	35	-	-	28	7	17	-	-
Urban Homesteading Program	14	-	14	-	-	-	-	-	-

Source: Connecticut Department of Housing 2019 data.

TABLE 11

Federal Assisted Housing Programs

Name	Income restriction	Description
Multifamily Mortgages (FHA, HUD)	Varied	A wide range of government-insured loans for the purchase, refinancing, construction, and renovation of apartments, mobile homes, cooperatives, assisted living facilities, skilled care nursing homes, and critical access hospitals.
HOME Investment Partnerships Program (HUD)	<80% AMI, though 90 percent must be under 60% AMI	Offers the greater of either formula allocation or $3 million block grant to jurisdictions to use flexibly toward affordable housing development or provision needs. These include site acquisition or preparation, construction, and rehabilitation or tenant-based rental assistance.
Low Income Housing Tax Credits (LIHTC) (IRS)	<50% AMI or <60% AMI	Offers either a 4 or 9 percent tax credit over 10 years to multifamily rental developers in exchange for 30 years of rent restrictions (for properties put in service since 1990) or 15 years (for earlier properties). Tax credits are awarded to developers by local allocating agencies; the Connecticut Housing Finance Authority is the main allocating agency for the state. Only 20 percent of units must be rent restricted if offered to households with incomes below 50 percent AMI, while 40 percent of units must be restricted if offered to households with incomes less than 60 percent AMI.
Public Housing (HUD)	<80% AMI	Government-owned and local public housing agency–operated housing for low-income residents, 40 percent of which must have incomes <30 percent AMI. Residents pay 30 percent of adjusted income or 10 percent of gross income.
Rural Housing Loans: Section 515 (USDA)	Not defined	Provides subsidized mortgages for developers to build and manage rural rental housing. Residents pay 30 percent of income or basic rent, whichever is greater.
Rural Housing Loans: Section 538 (USDA)	Not defined	Provides mortgage guarantees for rural multifamily (5+ unit) rental housing providers. Must be combined with another subsidy program (LIHTC, 515, Section 8) that sets affordability terms.
Supportive Housing: Section 202 (HUD)	Elderly residents <30% AMI	Capital advances to supportive housing providers.
Multifamily Housing: Section 236 (HUD)	<80% AMI	Provides mortgage assistance to multifamily property owners in exchange for income restrictions on rental units. Was replaced by the Section 8 new construction and rehabilitation program in 1974. Few Section 236 developments are active today, but existing projects may require interventions to preserve affordability (HUD 2016).
Housing choice vouchers (HCV) (HUD)	<50% AMI	Offers a portable subsidy that covers the difference in cost for eligible housing units (meets health, safety, and appropriate rent standards), private-market rental units, and 30 percent of voucher-holder's adjusted income. HCVs are administered by local public housing agencies, and 75 percent of vouchers must go to households with incomes below 30 percent AMI.

Name	Income restriction	Description
Section 8: Project-Based Rental Assistance and Project-Based Vouchers (HUD)	<80% AMI	Initiated during construction or renovation, Section 8 project-based rental assistance provides housing assistance payment contracts to landlords in exchange for guaranteeing affordability of rental units. Households contribute 30 percent of their adjusted income for rent and utilities while HUD pays the landlord the difference. Contracts have specific terms but can be renewed. New project-based rental assistance contracts are no longer being issued. Project-based vouchers offer similar assistance but offer the possibility of tenants converting to a housing choice voucher, if one is available.
Section 8: Single Room Occupancy (SRO) (HUD)	Homeless	Offers 10-year contract to SRO landlords, guaranteeing payment of difference between 30 percent of tenant's adjusted income and unit rent, in exchange for rehabilitation and maintenance of units.
Tax Credit Assistance Program (TCAP) (HUD)	<50% AMI or <60% AMI	A federal housing grant program administered by HUD that assists LIHTC projects funded during 2007, 2008, and 2009 as part of the American Recovery and Reinvestment Act.

Sources: Center on Budget and Policy Priorities Policy Basics, National Housing Preservation Database program descriptions, and US Department of Housing and Urban Development.

Notes: AMI = area median income; FHA = Federal Housing Administration; HUD = US Department of Housing and Urban Development; IRS = Internal Revenue Service; USDA = US Department of Agriculture.

TABLE 12

Assisted Housing Units by Federal Subsidy Sources, Connecticut and Counties, June 2019

	Connecticut	Fairfield	Hartford	Litchfield	Middle-sex	New Haven	New London	Tolland	Windham
FHA-HUD Multifamily Mortgages	12,020	1,424	3,358	554	826	4,969	547	231	111
HOME Investment Partnerships Program	2,906	729	1,188	145	-	608	61	175	-
LIHTC[a]	10,811	2,177	3,402	429	172	2,801	1,078	446	306
TCAP (Tax Credit Assistance Program)/Exchange	910	223	222	-	-	151	254	-	60
Public Housing (and Section 8 RAD)	14,238	4,618	3,505	576	298	4,364	276	216	385
Rural Housing Loans: Section 515	1,702	136	236	205	302	107	240	53	423
Rural Housing Loans: Section 538	120	-	-	-	120	-	-	-	-
Section 202	275	37	146	-	22	24	17	24	5
Section 236	63	-	-	-	-	63	-	-	-
Housing choice vouchers	43,886	7,401	20,293	305	1,450	12,515	514	586	822
Section 8: Project-Based Rental Assistance and Vouchers	27,682	5,618	7,740	696	797	8,721	2,438	701	971
Section 8: SRO Program	67	29	-	11	-	27	-	-	-
Households (for reference)	*1,370,746*	*340,189*	*350,408*	*74,143*	*66,971*	*330,572*	*107,827*	*55,683*	*44,953*

Sources: Connecticut Housing Finance Authority, Connecticut Department of Housing, and Housing and Urban Development Agency 2019 data; ACS 2015–19 population data; National Housing Preservation Database 2019 data.

Notes: Since multiple subsidies can often be used in the same development, the unit counts above do not represent unduplicated numbers of assisted housing units and should not be added together across programs. See table 10 for a breakdown of all Connecticut state subsidy programs.

[a] This row contains all data for LIHTC 4 percent, 9 percent, and 4 and 9 percent combined tax credit units.

Hartford and New Haven Counties have the largest numbers of households benefiting from housing choice vouchers, followed by Fairfield County. The number of housing choice vouchers that can be issued is limited by the program funding available in the federal budget. Although the number of vouchers has increased (see below), the vouchers available are insufficient to cover all eligible households, resulting in long waiting lists for this subsidy. Even for tenants who have a voucher, their ability to use it can be limited by several factors, including the availability of housing that meets quality and cost standards and the willingness of landlords to accept voucher holders as tenants. Although it is illegal in Connecticut for a landlord to refuse to rent to a tenant solely because they are using a housing choice voucher (Schaeffer-Helmecki 2018), landlords can refuse to rent to someone for other reasons, and discrimination against voucher holders is a documented phenomenon (Cunningham et al. 2018).[7]

Despite Fairfield County's large population, the numbers of assisted units of most types is relatively low, but it has the most deed-restricted and public housing units. The two rural housing support programs offer greatest coverage per resident to Middlesex and Windham Counties.

Most of the programs noted above are maintaining affordability for existing assisted units, not creating new units. The LIHTC program is the largest generator of new assisted housing in the state (and nationally). Although the state's total LIHTC units are at most a third the number of housing choice vouchers, LIHTC units are increasing (table 13). Consistent with national trends, the supply of housing choice vouchers is also increasing, and public housing units are decreasing. It should be noted that housing choice vouchers and LIHTC are complementary programs, since LIHTC increases the supply of moderately priced rental housing that is suitable for voucher holders (Kingsley 2017).

TABLE 13

Subsidized Units by Subsidy Type Over Time

Year	Housing choice vouchers	LIHTC	Public housing
2000	31,246	7,264	17,807
2010	37,604	12,127	15,600
2018	42,327	15,476	14,104

Source: US Department of Housing and Urban Development (HUD) Picture of Subsidized Households data, 2000, 2010, and 2018.

Note: The HUD data in this table, which are the only source that provides historical counts of assisted units, may disagree with the sources used in table 12 In particular, the Connecticut Housing Finance Authority claims that HUD data overestimate the number of LIHTC units.

Because assisted housing developers have to pay market-based development and management costs but cannot recoup those costs at market rates, they often need to layer multiple subsidies to make projects financially viable with lower rents. Table 14 summarizes data that matches projects across different assisted housing programs to determine unique counts of units with particular subsidy combinations. Because state and federal data systems do not provide a reliable means of matching projects across programs, this matching cannot be done for all assisted properties.

TABLE 14

Federal Subsidy Types by Frequency of Layering, Connecticut, June 2020

	CT State Subsidies		FHA and HUD Multifamily Mortgages		LIHTC		HOME	
	Projects	Units	Projects	Units	Projects	Units	Projects	Units
Subsidy alone	240 (83%)	13,617 (83%)	6 (6%)	452 (4%)	109 (55%)	6,156 (44%)	128 (64%)	1,279 (24%)
Subsidy + one other type	41 (14%)	2,331 (14%)	81 (80%)	10,056 (86%)	73 (36%)	6,261 (45%)	57 (29%)	3,103 (59%)
Subsidy + two other types	8 (3%)	449 (3%)	14 (14%)	1,221 (10%)	18 (9%)	1,524 (11%)	14 (7%)	916 (17%)
Most commonly paired program(s)	LIHTC, Section 8 project-based subsidies		Section 8 project-based subsidies		HOME		LIHTC	

Source: Authors' analysis of National Housing Preservation Database and CHFA 2020 data.
Note: Because Connecticut state subsidies include many subtypes and programs, not all Connecticut state subsidies will be bundled with other programs or subsidies at the same rate.

The majority of LIHTC, FHA and HUD multifamily mortgage subsidies, and HOME Investment Partnerships Program subsidies are combined with at least one other subsidy. HOME Investment Partnership Program units have the highest probability of being combined with at least two other subsidy programs, while most Connecticut state-sponsored projects are funded with just one subsidy.

SPATIAL ANALYSIS OF ASSISTED UNITS

While the number of subsidies per county may tell us about overall coverage, the quality of housing these subsidized units provide depends in large part on their location and proximity to such life essentials as public transit, medical facilities, grocery stores, and schools. The following section explores the spatial relationship of public housing sites to these essential amenities.[8] The number of sites per county may indicate the spread of assisted housing across the state; but because sites are mostly concentrated in Fairfield, Hartford, and New Haven Counties, which also have the highest number of assets, cross-county comparisons are less helpful than within-county assessments of the adequacy of essential amenities close to assisted housing sites.

The vast majority of assisted housing sites in two counties have excellent access to public transit (which includes all forms of public transit available through CT Transit, Greater Bridgeport Transit, and Shoreline East) while the majority of assisted housing residents in the other counties have poor public transit access (table 15). Despite its density, Fairfield County has disappointing access to transit: only 56 percent of sites are located within a half-mile of transit. Looking at transit access another way, New Haven County has 39 transit stops within a half-mile of an assisted site (as a median), whereas Fairfield County has just nine. Roughly 90 percent of sites in Hartford and New Haven Counties have access to a public transit stop within a half-mile in contrast to Litchfield, Windham, Tolland, and Middlesex Counties where less than 40 percent of assisted housing site residents have a transit stop within a half-mile. Indeed, Litchfield and Windham Counties' poor transit access means that only 55 percent and 31 percent of the counties' respective assisted housing site residents have a public transit stop within a 15-minute drive from their homes. For residents who rely on public transit, housing sites without access to a transit stop within a half-mile or even a 15-minute drive may present strong challenges for access to job opportunities and healthy living options.

TABLE 15

Assisted Housing Site Distance to Public Transit by County, Connecticut, 2020

County	Number of assisted housing sites	Number of sites with transit stop within ½ mile	Share of sites with transit stop within ½ mile	Share of sites with transit stop within 15-minute drive	Average minimum distance to transit stop (miles)
Fairfield	948	530	56%	80%	0.081
Hartford	1,023	909	89%	100%	0.094
Litchfield	105	30	29%	55%	0.143
Middlesex	82	33	40%	99%	0.114
New Haven	737	671	91%	99%	0.078
New London	186	51	27%	74%	0.26
Tolland	68	26	38%	94%	0.112
Windham	51	11	22%	31%	0.354

Source: Tidytransit (R package) Connecticut Transit Data 2020 from MobilityData (mobilitydata.org).
Note: Transit stops include CT Transit, Greater Bridgeport Transit, and Shoreline East.

Access to health resources (defined as businesses with a pharmacy license, which includes pharmacies, hospitals, nursing facilities, and assisted care facilities) is much more homogeneous across the state than access to public transit. Nearly all assisted housing sites have access to a health resource within a 15-minute drive, though only an average of 45 percent of sites across the state have access within a half-mile (table 16).

TABLE 16

Assisted Housing Site Distance to Medical Facilities by County, Connecticut, 2020

County	Number of sites	Number of sites with health resource within ½ mile	Share of sites with health resource within ½ mile	Share of sites with health resource within 15-minute drive	Average minimum distance to health resource (miles)
Fairfield	948	536	57%	100%	0.233
Hartford	1,023	423	41%	100%	0.249
Litchfield	105	46	44%	96%	0.246
Middlesex	82	28	34%	100%	0.229
New Haven	737	520	71%	100%	0.212
New London	186	105	56%	99%	0.231
Tolland	68	18	26%	100%	0.276
Windham	51	17	33%	100%	0.34

Source: CT Data (data.ct.gov) CT Health Resources: Pharmacies, Hospitals, Nursing Facilities, and Assisted Care Facilities 2020.

Of primary concern for resident health and well-being, access to grocery stores (which in public data sources unfortunately includes convenience stores) varies wildly across the state; some counties demonstrate rich grocery access for public housing residents and others nearly none (table 17). Just 7 percent of sites in Tolland County are near grocery stores, which stands in contrast to the 26–40 percent located near transit stops, medical facilities, and schools. Similarly, in Hartford, New London, and Windham Counties, only 47 percent of sites are near grocery stores. A brief look at the underlying data, though, indicates the problem is more the limited availability of grocery stores (especially in Hartford and Tolland Counties) than the fact that assisted housing sites are farther away from grocery stores than unassisted housing.

TABLE 17

Assisted Housing Site Distance to Grocery Stores by County, Connecticut, 2020

County	Number of sites	Number of sites with grocery store within ½ mile	Share of sites with grocery store within ½ mile	Share of sites with grocery store within 15-minute drive	Average minimum distance to grocery store (miles)
Fairfield	948	603	64%	100%	0.133
Hartford	1,023	481	47%	100%	0.159
Litchfield	105	45	43%	97%	0.225
Middlesex	82	31	38%	100%	0.231
New Haven	737	496	67%	100%	0.192
New London	186	88	47%	99%	0.137
Tolland	68	5	7%	100%	0.296
Windham	51	24	47%	100%	0.293

Source: CT Data (data.ct.gov) CT Grocery Stores 2020.

Note: Grocery stores are categorized as any business within Connecticut that possesses a state grocery and beer vendor license.

Access to quality education resources matters a great deal for breaking intergenerational poverty and ensuring quality of life for children in low- and very low–income households. Almost all assisted housing sites in Connecticut are within a 15-minute drive of a grade school, though less than 65 percent are within a half-mile (table 18). The average minimum distance to school is highest in Tolland and Litchfield Counties, which also (in addition to Windham and Middlesex Counties) have the lowest share of sites within a half-mile of a grade school. Again, this emphasizes the need for low-income and very low–income households in these more rural counties to own cars and drive to access schools and jobs. Having assisted housing within a 15-minute drive or even a half-mile, though, does not indicate access to quality education, and the state should reevaluate these distances in conjunction with school quality indicators.

TABLE 18

Assisted Housing Site Distance to Grade School by County, Connecticut, 2020

County	Number of sites	Number of sites with grade school within ½ mile	Share of sites with grade school within ½ mile	Share of sites with grade school within 15-minute drive	Average minimum distance to grade school
Fairfield	948	425	45%	100%	0.276
Hartford	1,023	526	51%	100%	0.299
Litchfield	105	39	37%	99%	0.328
Middlesex	82	31	38%	100%	0.288
New Haven	737	463	63%	100%	0.27
New London	186	96	52%	100%	0.311
Tolland	68	20	29%	100%	0.368
Windham	51	15	29%	100%	0.286

Source: CT Data (data.ct.gov) CT Grade Schools 2020.

Note: This dataset covers all officially listed public educational organizations in Connecticut as of October 1, 2020, and was filtered to include all facilities that covered education up until the 8th grade.

Overall, public housing developments in New Haven County appear to have the best access to assets within a half-mile: 91 percent of sites are near transit, 71 percent are near medical facilities, 67 percent are near grocery stores, and 63 percent are near grade schools. Nearly all sites in every county are within a 15-minute drive of schools, grocery stores, and medical facilities. The average distance to the closest asset by county is generally consistent: assisted units in most counties are within 0.10 mile of a transit stop, 0.21 miles of a grocery store, 0.25 miles of medical resources, and 0.3 miles of a grade school. The greatest variability is with transit.

ASSISTED UNIT PRESERVATION

As is true elsewhere, Connecticut will face a challenge in preserving the affordability of assisted housing units. Many forms of housing assistance have end dates on their contracts or affordability terms. For

programs with assistance contracts, such as Section 8 project-based rental assistance, landlords may renew their contracts, allowing them to continue to receive subsidies and provide affordable housing. For the LIHTC program, affordability terms are fixed at 15 or 30 years, after which property owners are no longer required to keep units affordable. More recently, however, Connecticut has specified a 40-year affordability commitment as part of its baseline threshold for LIHTC developments (CHFA 2020).

Over the next 20 years, thousands of assisted units in Connecticut will reach subsidy end dates (table 19). Many, but not all, of these units may require intervention by the state or other organizations to preserve their affordability. For example, by 2040, almost all the state's Section 8 project-based rental assistance properties will reach their contract end dates. The Department of Housing and Urban Development (HUD) and the owners decide whether to renew these contracts, but owners must notify HUD and residents a year in advance of their intention to opt out of their contract. While experience has shown that most owners will renew their contracts, the state should work with HUD to monitor these projects and identify preservation strategies for those that seem at risk of loss. Loss of federal Section 8 assistance is particularly critical for Connecticut because, once gone, those subsidies cannot be transferred to another property or owner.

TABLE 19

Cumulative Assisted Units with Federal Subsidy End Dates between 2020 to 2040 by Subsidy Program, Connecticut

Subsidy type	2020 baseline unit count	2025	2030	2035	2040
FHA-HUD Multifamily Mortgages	12,020	1,790	1,088	151	333
HOME Investment Partnerships Program	2,906	648	1,005	1,026	227
Section 202	275	128	76	71	0
Section 8 PBRA	24,728	4,863	1,129	8,302	8,839
LIHTC 15-year compliance period	6,898	3,451	2,963	484	0
LIHTC extended-use period	13,655	426	4,105	2,226	3,290
Rural Housing Loans: Section 515	1,702	24	49	246	568

Source: Authors' analysis of National Housing Preservation Database (NHPD) 2020 data.
Notes: The LIHTC compliance period baseline excludes units in properties that have already passed the 15-year milestone. The LIHTC extended-use period is based on 15 or 30 years, depending on when the project was placed in service. The NHPD LIHTC data in this table, which are based on HUD sources, are the only data available with compliance and extended use end dates. The counts of LIHTC units in this table disagree with the counts in table 12, which are based on CHFA data. CHFA claims that HUD data overestimate the number of LIHTC units.

LIHTC properties have two relevant end dates. All LIHTC projects have a 15-year compliance period, during which investors face large penalties if affordability is not maintained. Reaching the end of the 15-year compliance period is a notable milestone for LIHTC projects,[9] as units may require

reinvestment and renovation to remain viable (Khadduri, Climaco, and Burnett 2012). It is important for the state to monitor LIHTC projects as they approach the end of the compliance period to determine if reinvestment is needed or to help owners develop appropriate strategies for preservation.[10]

LIHTC projects placed in service on or after 1990 are also required to remain affordable for an extended-use period, typically another 15 years, for a total of 30 years of affordability. While state agencies continue to monitor project affordability compliance, violations during the extended-use period are not reported to the IRS and will not likely result in recapture of tax credits, which would be a severe penalty for investors (Kroger 2015).

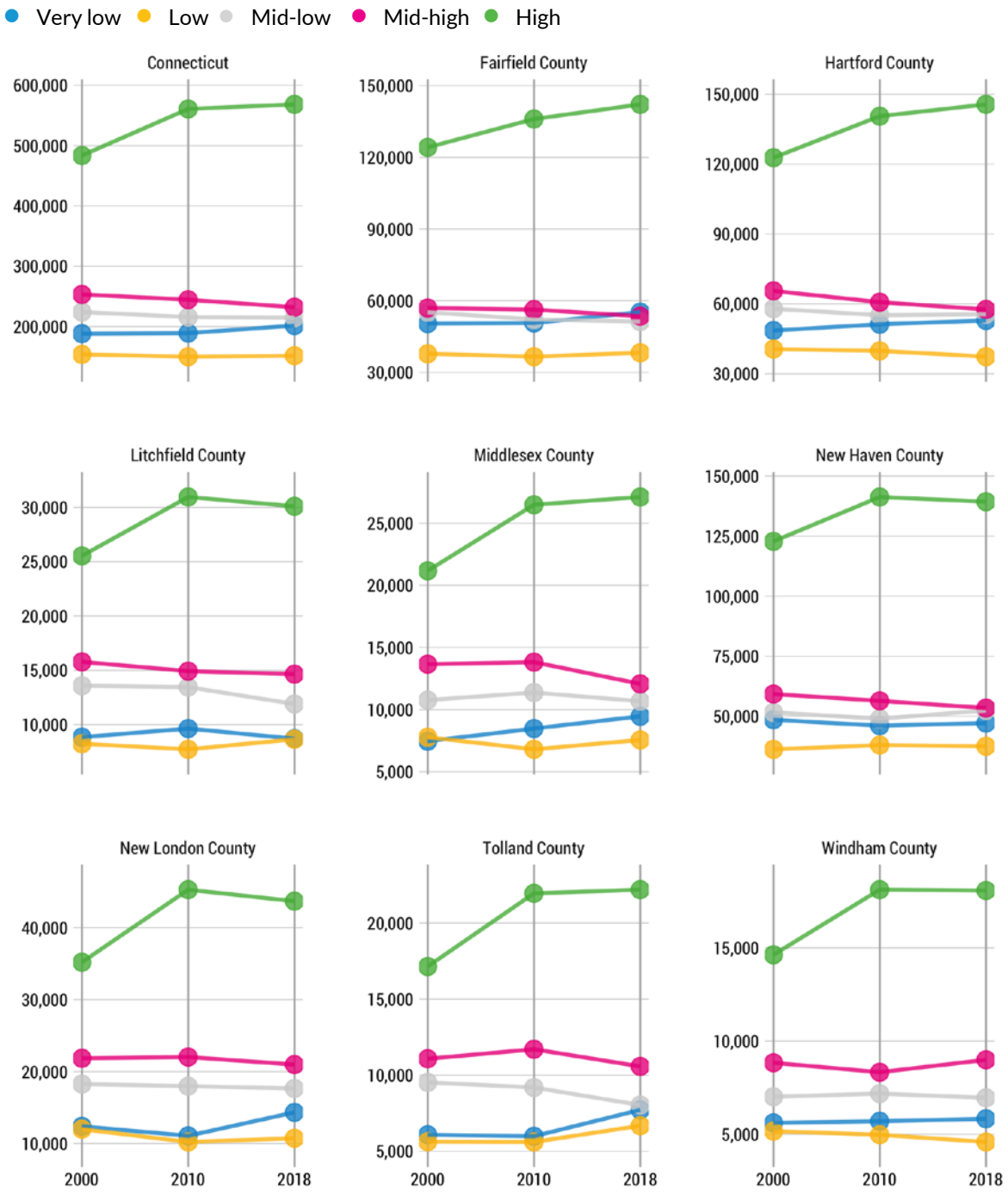
As noted, many current owners in federal subsidy programs will choose to continue providing affordable housing without further intervention, so determining which properties are at risk is key to an effective preservation strategy. Factors that increase the risk of affordable housing loss include high housing values such that market rent–to–contract fair market rent is less than 80 percent, proximity to transit, high median rents relative to the region, low poverty rates, low shares of assisted units, and building rehabilitation needs.[11] Properties with mission-driven owners or owners who receive more benefit from the subsidized rents than they would on the private market are also less likely to be at risk of loss. The state can conduct a risk assessment (such as the one used in Montgomery County, Maryland)[12] using quantitative measures to help decide which properties require preservation action.

Current Affordable Housing Needs

Figure 23 summarizes the numbers of households in each of the five income bands, which correspond to the level of housing affordability they need. Very low– and low-income households (those with incomes below 50 percent of the county median) have consistently represented about 23–27 percent of households in each county and have increased only slightly since 2000. The share and number of high-income households (those with incomes above 120 percent of the county median) have risen across the state since 2000. Very low– and low-income households, although a smaller share of all households, are growing in number in some counties despite continuing to face barriers to affordable housing such as increasing rents, stagnating housing production, and market-rate housing that is unaffordable to them.

FIGURE 23

Households by Income Band, Connecticut and Counties, 2018

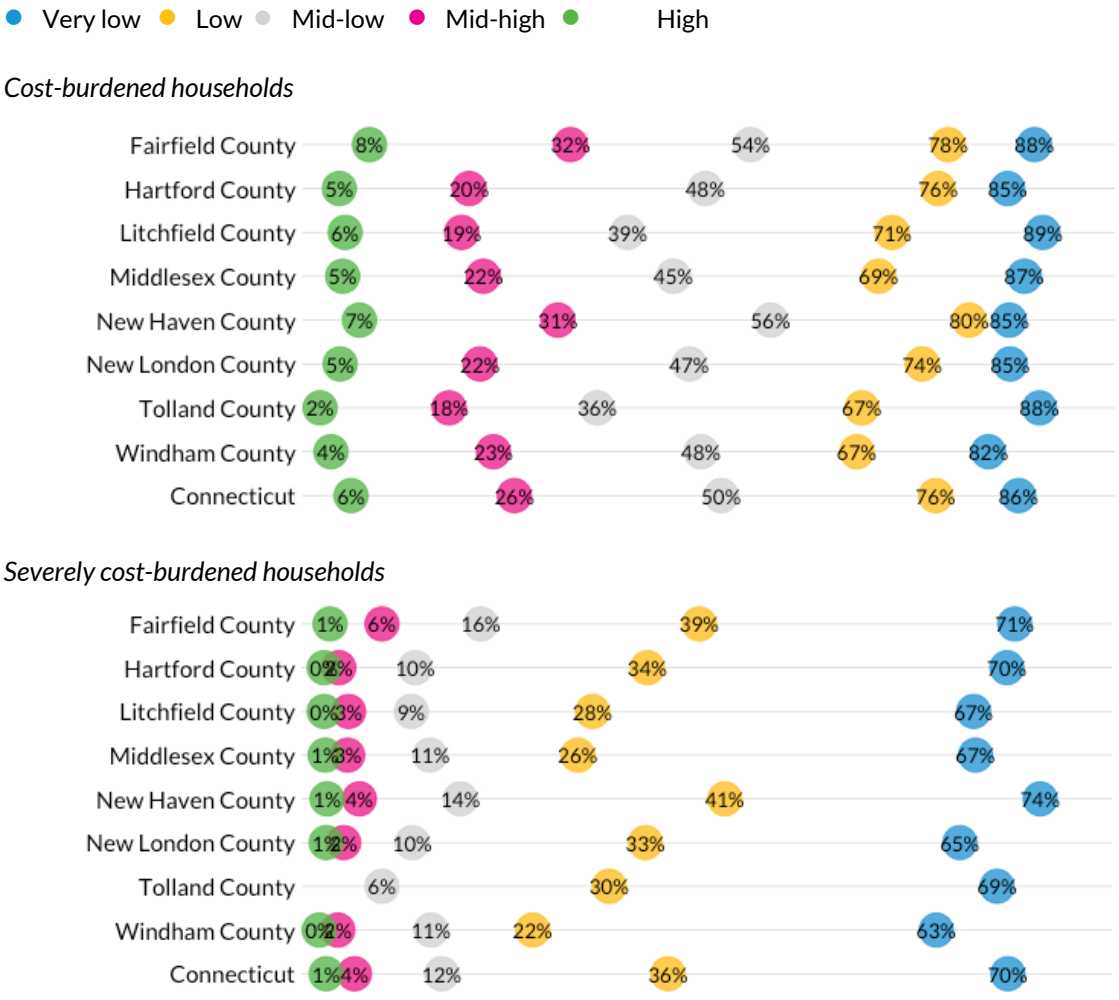


Source: IPUMs 2018 ACS, and Census data.

Given the challenges facing very low– and low-income households, it should come as no surprise that many of them face cost burdens. Roughly 16 percent of very low–income households are paying 30–50 percent of their incomes on housing, and another 70 percent are paying 50 percent or more of their income on housing. In total, 86 percent of very low–income households have a housing cost burden (figure 24). Three-quarters (76 percent) of low-income households are cost burdened, and 36 percent are severely cost burdened. Mid-low- and mid-high-income households also face cost burdens that vary from county to county, but they have relatively low severe cost burden rates. High-income households have virtually no severe cost burden rates and single-digit cost burden rates.

FIGURE 24

Percentages of Cost-Burdened Households by Income Band, Connecticut and Counties, 2018



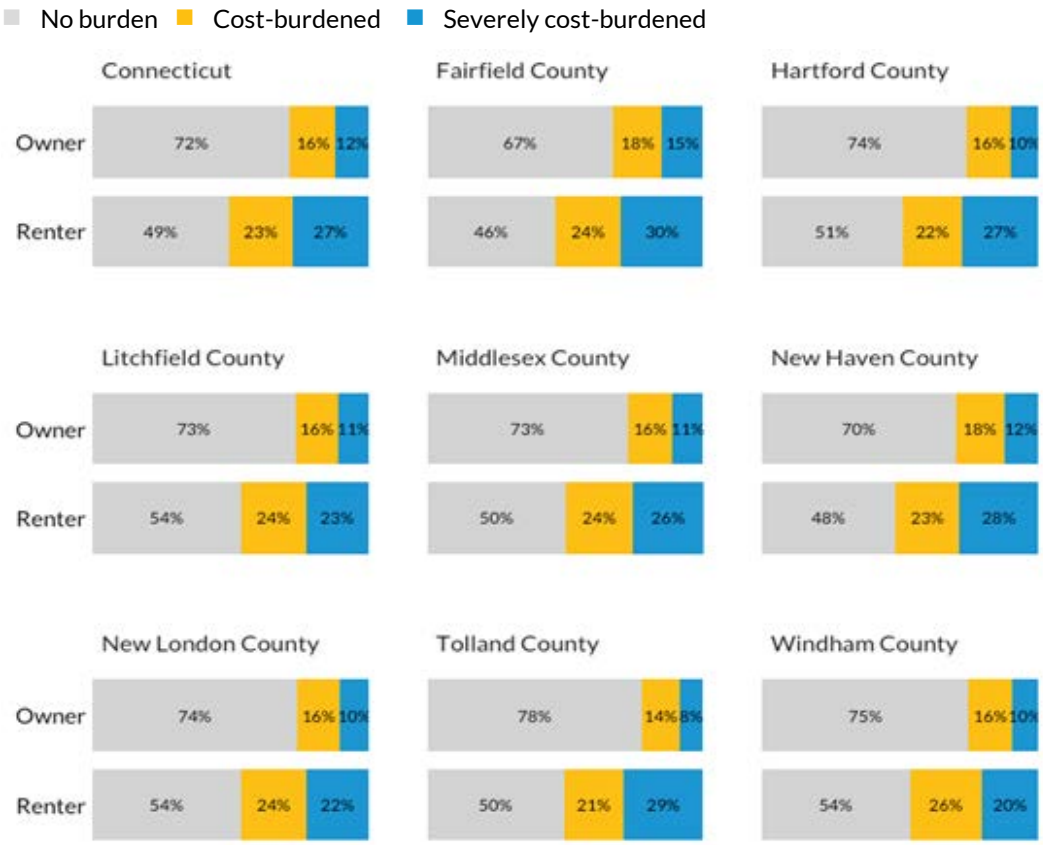
Source: ACS IPUMS 2018 data.

Note: Cost-burdened means a household spends at least 30 percent of its income on housing. Severely cost burdened means a household spends at least 50 percent of its income on housing. Severely cost-burdened households are a subset of cost-burdened households.

The prevalence of cost burdens varies by the race and ethnicity of the household head as well as whether the household owns or rents its housing. On the whole, 50 percent of renters across the state are cost burdened or severely cost burdened, compared with only 28 percent of owners, and these rates are consistent county by county (figure 25). This finding is consistent with national trends, since renters tend to have lower incomes than homeowners, on average.

FIGURE 25

Shares of Cost-Burdened Households by Homeownership Status, Connecticut and Counties, 2018



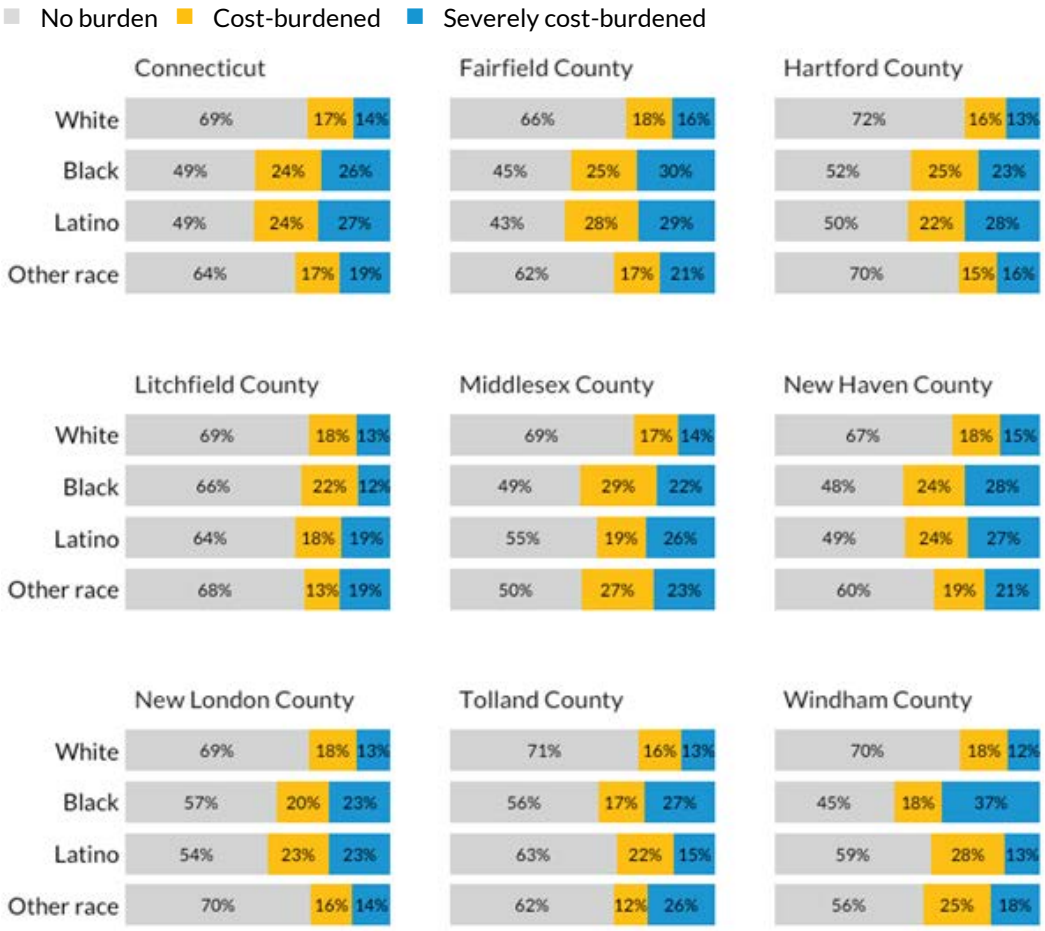
Source: IPUMS ACS 2018 data.
Note: Cost-burdened is defined as spending 30 percent or more of household income on housing; Severely cost-burdened is defined as spending 50 percent or more of household income on housing.

When broken down by race, only 21 percent of white householders are cost burdened or severely cost burdened, compared with 50 and 51 percent of Black and Latino householders, respectively (figure 26). Across counties, severe cost-burden and cost-burden rates vary by the race and ethnicity of the householder, but these disparities are generally present throughout the state. The higher cost burdens

faced by Black and Latino households represent a fair housing challenge for the state that is addressed in the recommendations chapter (page 84).

FIGURE 26

Percentages of Cost-Burdened Households by Race/Ethnicity of Household Head, Connecticut and Counties, 2018



Source: IPUMS ACS 2018 data.
Note: White refers to white-only, non-Hispanic and Black refers to Black-only, non-Hispanic. Other race includes Asian, American Pacific Islanders, Native Americans, and all other races (non-Hispanic).

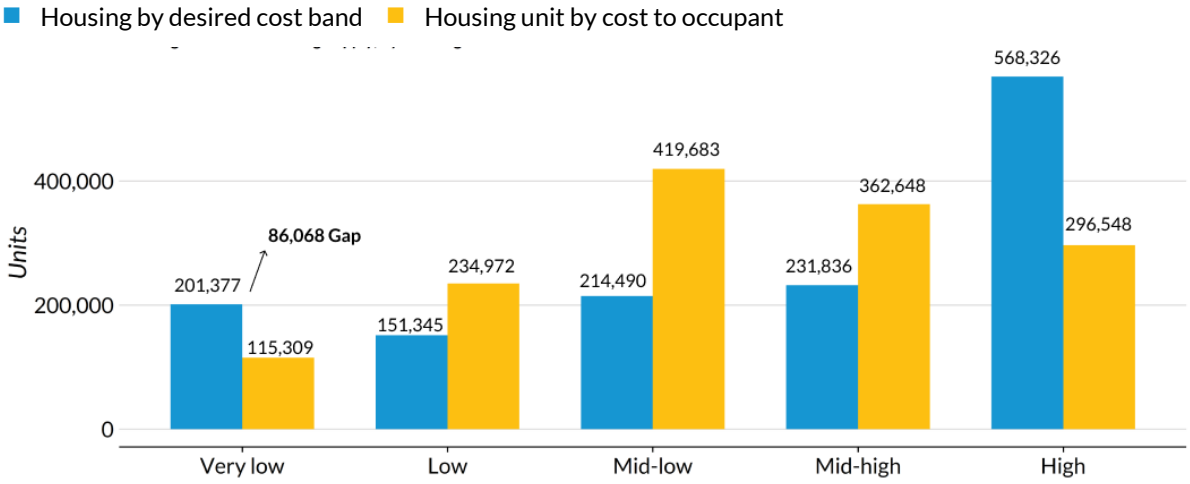
The cost burden data and other data in this section largely represent conditions before the COVID-19 pandemic, which has negatively impacted the ability of many households to pay their housing costs. In addition, the pandemic has disproportionately increased the hardship for Black and Latino communities. According to data from the US Census Bureau, Latinos in Connecticut reported higher rates of being unable to pay their next month's rent or mortgage than the state's average.[13]

Affordable Housing Gap Analysis

Comparing the numbers of households (need) and housing units (supply) at respective income and cost bands indicates where there are gaps in affordable housing supply. Currently there are 86,068 more very low–income households than housing units affordable to such households (figure 27). The high cost burden rates for very low–income households arise from this shortage of affordable housing units in this income band. Although most other income bands appear to have a surplus of affordable units, the large gap in high-cost housing units means that high-income households are competing with lower-income households for less expensive housing, exacerbating the affordability challenges for lower-income homeowners and renters.

FIGURE 27

Comparison of Housing Needs and Supply by Income/Housing Cost Band, Connecticut, 2018

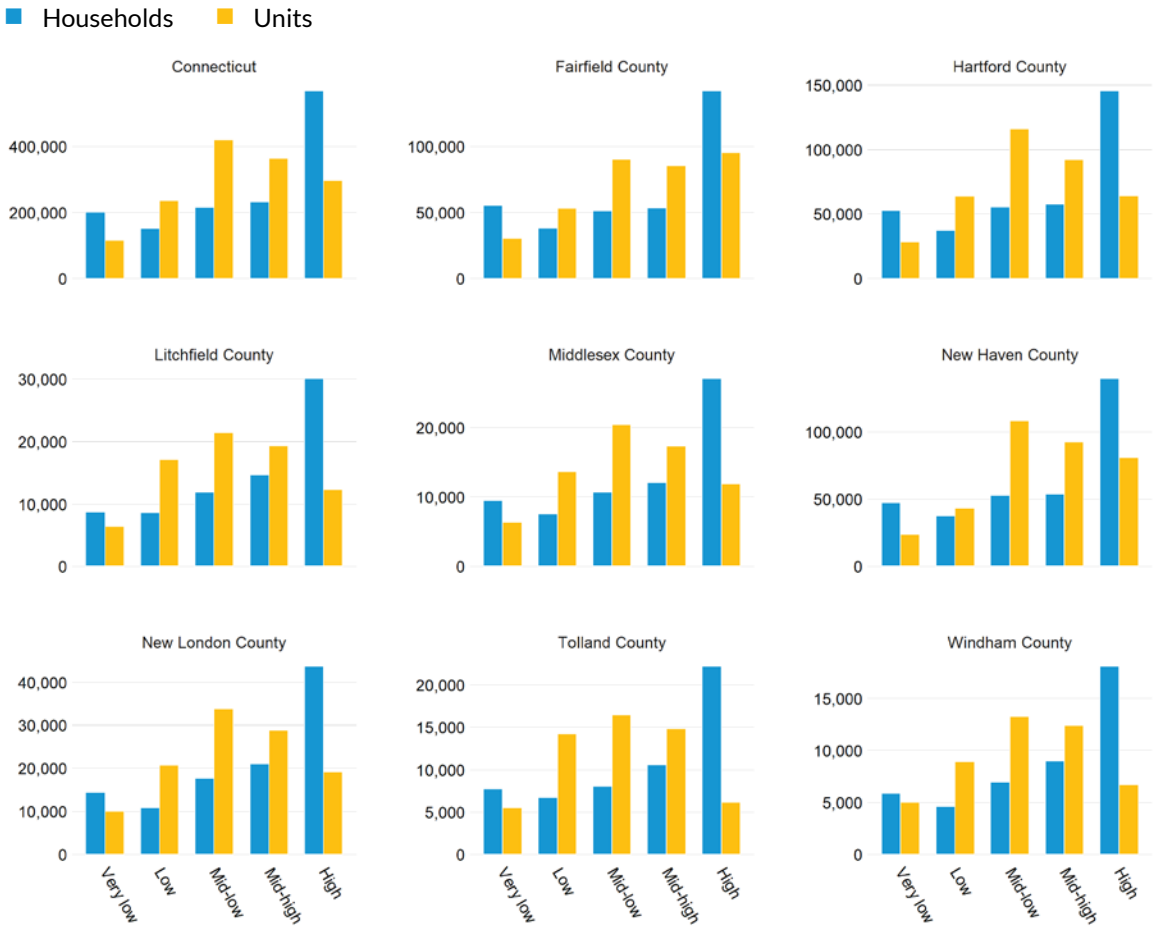


Source: Authors' analysis of ACS and Census data.

No county in Connecticut has enough affordable housing units to meet the needs of its very low–income households. The largest gaps are in Fairfield, Hartford, and New Haven Counties, which have gaps between 24,970 and 23,610 units (figure 28).

FIGURE 28

Comparison of Housing Needs and Supply by Income and Housing Cost Bands, Connecticut and Counties, 2018



Source: ACS 2014–18 data.
Note: Unit counts include vacant units.

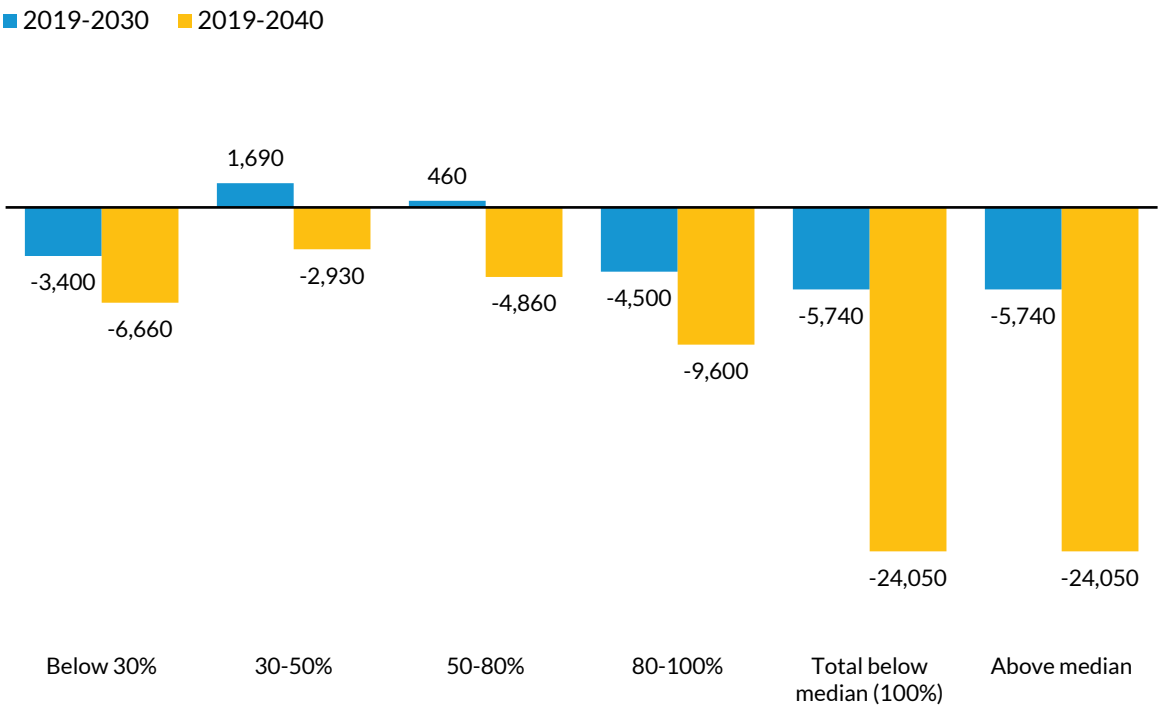
Future Affordable Housing Needs

Because of the projected decline in households, Connecticut will need fewer housing units overall. Based on the study team's projections, the total number of households in the state will decline by over 11,000 by 2030 and over 48,000 by 2040 (figure 29). Very low–income households will decrease steadily over the next 20 years, with about 6,600 fewer such households by 2040. This decrease, however, will not be enough to close the current 86,000 affordable housing supply gap for such households. At the same time, low- and mid-low-income households will increase slightly through 2030 but then will decline by 2040.

FIGURE 29

Projected Change in Households by Income, Connecticut, 2019–40

Income as percentage of county median



Source: Authors' analysis of ACS and Census data.

The overall state trend of declining need for housing units across affordable levels is generally consistent across counties, especially over the longer, 20-year timeframe (table 20). Nevertheless, there are some exceptions. Fairfield County will need more low- and mid-low units through 2030 and more mid-high units through 2040. New Haven County will also need more low- and mid-low units over the next 10 years. Tolland and Windham Counties are the only ones projected to have more very low–income households by 2040, even if those increases will be modest.

Of course, despite the overall projected decline in households, new housing construction will still be needed to replace aging housing or housing that is destroyed, demolished, or taken out of active use.

TABLE 20

Projected Change in Households by Income Band and County, Connecticut, 2019–40

	2019–30				2019–40			
	Below 30%	30–50%	50–80%	80–100%	Below 30%	30–50%	50–80%	80–100%
Fairfield	-260	760	1,130	-860	-1,730	-400	-470	560
Hartford	-170	740	-90	-1,470	-780	-410	-1,960	-1,370
Litchfield	-170	-30	-540	-290	-340	-520	-1,300	-880
Middlesex	-770	120	-100	130	-900	-90	-480	-570
New Haven	-810	280	310	-1,340	-1,740	-590	-1,310	-2,600
New London	-890	-180	-400	-210	-1,410	-850	740	-2,690
Tolland	-360	0	190	-210	10	-270	-60	-770
Windham	20	10	-40	-260	230	190	-20	-1,300

Source: Authors' analysis of ACS and Census data.

Note: County numbers may not add to state totals because of rounding. Income bands are percentages of county median income.

Affordable Housing Conclusions

- Like most places in the US, Connecticut has few housing units affordable to very low–income households. While relatively more units are affordable for low- and mid-low-income households, they are competing against higher-income households and may be crowded out of those opportunities.
- Average home values in the state range from $419,000 in Fairfield County to $202,000 in Windham County. Apart from a 15 percent inflation-adjusted increase in Windham County and a 6 percent increase in Middlesex County, home values in the state have not changed much since 2000.
- Average rents in unassisted (NOAH) multifamily rental properties with five or more units rose in some counties after 2007 but remained flat in others. Over the same period, the numbers of apartments in this type of housing increased the most in Fairfield County, growing 70 percent. Counties that saw high increases in NOAH production saw lower increases in rent. Most NOAH units in large multifamily properties are concentrated in the mid-low-cost band, and almost no apartments in these properties are affordable to very low–income households.
- The most prevalent form of housing assistance in Connecticut is housing choice vouchers, which help more than 43,800 households obtain affordable housing. Section 8 project-based rental assistance and project-based vouchers provide more than 27,700 assisted units, while public housing has about 14,200 units. According to data from CHFA, the LIHTC program

accounts for at least 10,800 assisted units and, along with housing choice vouchers, represents a growing portion of the assisted housing stock.

- Over the next 20 years, thousands of assisted units in Connecticut will reach subsidy end dates and may require intervention by the state or other organizations to preserve their affordability. Among these are more than 23,000 units of Section 8 project-based rental assistance with expiring contracts and more than 6,000 LIHTC units that will reach the end of their compliance period. While not all these units will require action to remain affordable, determining which properties are at risk is key to an effective preservation strategy.
- While very low– and low-income households represent a relatively smaller share of all households, they are growing in number in some counties, despite continuing to face barriers to affordable housing, such as increasing rents, stagnating housing production, and market-rate housing that is not affordable to them.
- In total, 86 percent of very low–income households are housing cost burdened, with 70 percent severely cost burdened. Three-quarters (76 percent) of low-income households pay at least 30 percent of their income on housing, and 36 percent paying 50 percent or more. Housing cost burdens are higher for renters than homeowners and for Black and Latino householders than white householders.
- Comparing affordable housing supply with the needs of households reveals a gap of 86,000 housing units affordable for very low–income households. No county in Connecticut has enough affordable housing units to meet the needs of its very low–income households.
- The total number of households in the state will decline by over 11,000 by 2030 and by over 48,000 by 2040. While very low–income households will also decrease by 6,600 over the next 20 years, that decline will not be enough to close the current 86,000 affordable housing supply gap for such households.

Are Accessible Housing Resources Meeting Resident Needs?

Accessible Housing Resources Takeaways

- The lack of standard tracking and reporting protocols and data makes it difficult to get a clear, comprehensive picture of Connecticut's accessible housing supply.
- Most privately produced units meeting the state's highest accessibility standard are in counties with urban areas such as Fairfield, Hartford, New Haven, and around the University of Connecticut in Tolland County.
- Accessible units are also provided within federally assisted housing, which tends to be in urban areas. Most public housing agencies in the state, however, do not track their supply of accessible units.
- Roughly one-third of assisted housing in Connecticut needs to be designed for residents with a disability, especially those with physical, ambulatory, and cognitive disabilities. The current supply of supportive housing is insufficient to meet current needs.
- Largely because of an aging population, Connecticut will see an increasing need for housing units that are accessible for people with mobility and sensory disabilities.

In its 2020–24 consolidated plan for community development, the Connecticut Department of Housing reaffirmed its vision to "ensure everyone has access to quality housing opportunities and options throughout the state" (2020, 1). Ensuring access to housing for Connecticut residents with disabilities remains a critical and complex component of the state's housing strategy and will become increasingly important as the state's population ages.

To assess Connecticut's accessible housing landscape, this study categorizes disabilities using the six distinctions in the ACS IPUMS disability data: self-care, visual, auditory, independent living, ambulatory, and cognitive. Because these six population-level distinctions do not exist as housing typologies in Connecticut, the resulting mismatch across datasets complicates analysis of the gap between supply and demand for accessible housing. Suggestions to improve the availability of accessible housing data in Connecticut are included in the study's recommendation section (page 86).

Current Accessible Housing Supply

To adequately assess Connecticut's complex inventory of housing accessible to residents with disabilities, this study identifies four distinct categories of accessible units: Type A, Type B, federally assisted accessible units, and housing with services. This section defines each of these four categories and estimates aggregated inventories for each by county.

Private-Market Type A and Type B Units

These accessible units are provided by the private market as a stipulation of the Connecticut State Building Code, which requires multifamily developers to set aside a certain share of units that meet differing levels of accessibility standards (Type A and Type B standards), defined in box 2.

BOX 2

Accessible Housing Type A and B Units

Type A Unit: A dwelling unit or sleeping unit designed and constructed for accessibility in accordance with the Connecticut State Building Code and the provisions for Type A units in ICC A117.1. A Type A unit has some elements that are constructed accessible (e.g., 32-inch [813-mm] clear width doors with maneuvering clearances and lever hardware) and some elements designed to be added or altered when needed (e.g., grab bars can be easily added in bathrooms since blocking in the walls is in place) This unit type is more accessible than a Type B unit.

Type B Unit: A dwelling unit or sleeping unit designed and constructed for accessibility in accordance with Connecticut State Building Code and the provisions for Type B units in ICC A117.1, consistent with the design and construction requirements of the federal Fair Housing Act. A Type B unit is constructed to a lower level of accessibility than a Type A unit. While someone who uses a wheelchair could maneuver in a Type B unit, the technical requirements are geared more toward people with lesser mobility impairments.

Sources: Harwood W. Loomis, "Type A and Type B Dwelling Units," presentation given at the Office of Education and Data Management Career Development Series, Hartford, Connecticut, April 2017; and "Accessibility Requirement for Buildings," HUD, accessed July 7, 2020, https://www.hud.gov/program_offices/fair_housing_equal_opp/disabilities/accessibilityR.

The Connecticut Building Code also regulates the accessibility standards for Type A and Type B units. To determine specific unit counts for these accessibility categories, the project team analyzed the 2005, 2016, and 2018 statutes and the 2009, 2011, and 2013 amendments to those statutes and

applied the specific unit count requirements for Type A and Type B units at time of construction to Connecticut's multifamily housing stock (table 21). The quality and consistency of these data would be vastly improved if the Connecticut Department of Administrative Services required building inspectors to report on verified accessible units as they issue certificates of occupancy.

TABLE 21

Type A and Type B Units by County, Connecticut, 2020

County	Type A	Type B	2018 population (for reference)
Fairfield	1,433	15,814	943,332
Hartford	678	8,640	891,720
Litchfield	7	66	180,333
Middlesex	45	462	162,436
New Haven	295	3,688	854,757
New London	17	209	265,206
Tolland[a]	250	3,523	150,721
Windham	17	209	116,782

Sources: CoStar Market Data Multifamily Buildings with 5+ Units, 2000–20, and ACS 2018 data.

[a] The large number of Type A units in Tolland County, which is rural, can be attributed to the many multifamily developments that support the University of Connecticut and are targeted to people associated with the university.

Between 2005 and 2009, all multifamily buildings were required to include 10 percent (or at least one) Type A accessible unit. A 2009 amendment to the Connecticut Building Code, however, required only *buildings with 20 or more units* to make 10 percent of units Type A accessible. As a result of that change, Type A units are concentrated in urban settings where 20-plus-unit multifamily developments are predominantly located. Based on calculations off those standards and housing production data since 2000, the distribution of accessible units is highly uneven. Even though Hartford County and New Haven County have only 100,000 fewer residents than Fairfield County, Fairfield has roughly twice as many Type A and Type B units as Hartford and four times as many as New Haven. Though these supply totals are related to private-market development patterns, they result in a skewed provision of accessible units across counties that likely leads to shortages of accessible housing in New Haven and Hartford Counties. In contrast, Tolland County has markedly high rates of accessible housing production. Overall, these data indicate that the state cannot depend on the private market to generate adequate accessible units that are distributed proportionately across the state's population, let alone by household disability needs.

Connecticut State-Funded Accessible Units

The state Department of Housing offers various assistance programs for people with many types of disabilities. Most of the state's programming is directed toward older residents (table 22) through two programs. The Housing for Elderly Persons Program provides grants and loans to nonprofit housing developers and public housing agencies (PHAs) to develop assisted housing for elderly adults and people with disabilities with low incomes. Congregate Housing for the Elderly similarly provides assisted housing for elderly adults through PHAs and nonprofits, but the funds are distributed in four categories: rental assistance, core services, expanded core services, and assisted living services. There are 25 state-funded elderly congregate housing facilities for low- and moderate-income adults older than 62 who need assistance but can live independently. Four of these facilities have special assisted living nursing and medical services provided by a licensed assisted living service agency; thus, these units are a subset of congregate housing units.

TABLE 22

Number of Housing Units in State-Directed Programs for Elderly People, Connecticut and Counties, 2019

	Housing for Elderly Persons Program	Congregate Housing for the Elderly	Congregate Housing for the Elderly: Assisted Living
Connecticut	**13,311**	**9,382**	**226**
Fairfield	2,796	2,042	-
Hartford	3,913	3,051	125
Litchfield	980	353	-
Middlesex	532	325	45
New Haven	2,685	2,121	56
New London	1,187	748	-
Tolland	740	397	-
Windham	478	345	-

Source: Connecticut Department of Housing 2019 data.
Note: The third column (Congregate Housing for the Elderly: Assisted Living) is a subset of the second column (Congregate Housing for the Elderly).

Federally Assisted Accessible Units

Federal assisted housing programs for low-income and very low–income households often require developers and participants to provide a certain percentage of accessible units. These units must be constructed in accordance with the Uniform Federal Accessibility Standards (UFAS) or an equivalent or stricter standard. To determine the supply of federally assisted units, the project team applied the UFAS to Connecticut's housing stock data from the National Preservation Database. According to the UFAS,

new construction housing developments with five or more units must make 5 percent of dwelling units, or at least one unit (whichever is greater), accessible for people with mobility disabilities. An additional 2 percent of dwelling units, or at least one unit (whichever is greater), must be accessible for people with hearing or visual disabilities.[14] The project team calculated the number of accessible units across assisted housing types using these UFAS proportions, and the results indicate that assisted units with an accessibility component do not follow the same trend as non-assisted units (table 23). New Haven County has approximately 50 percent more assisted accessible units than both Fairfield and Hartford Counties. However, again, the distribution of these units across counties does not track population proportions or need.

TABLE 23

Federally Assisted Accessible Units by County, Connecticut, 2020

County	Mobility accessible units	Hearing/vision accessible units
Fairfield	98	50
Hartford	106	55
Litchfield	23	17
Middlesex	15	7
New Haven	166	112
New London	43	24
Tolland	24	10
Windham	5	3

Source: Authors' calculations based on National Housing Preservation Database assisted housing data, 1991–2020.
Note: Federally assisted units inventoried for this study come from developments with five or more assisted housing units in the National Housing Preservation Database after 1991.

To collect additional information on Type A, Type B, and federally assisted accessible housing supply across the state, the study team administered a survey to Connecticut's 67 PHAs, which yielded a 34 percent response rate. The survey intended to determine current assisted accessible housing supply based on the number and type of accessible units in PHA portfolios. In contrast to the private-market-calculated data, the responding PHAs reported more Type A units than Type B units (table 24). The 23 survey respondents reported a total of 4,449 units of public housing, but only 8 stated that they had a record of their accessible units. While this is a small sample of PHAs statewide, it points to a lack of understanding and knowledge of accessible housing units at the PHA level. Connecticut needs to develop a system of tracking accessible housing in PHA portfolios.

TABLE 24

Accessible Units Reported in Public Housing Agency Survey, Connecticut, 2020

	Units
Type A Units	133
Type B Units	94
Fair Housing Units	9

Source: Corporation for Supportive Housing survey of public housing agencies, September 2020.

The HUD 202 program is notable for providing assisted accessible housing for disabled seniors in Connecticut. The study team contacted all 24 HUD 202 developments in Connecticut and asked about the accessibility of their units. Only three developments responded. Two respondents could identify their development's Type A and B units and Fair Housing units. The third respondent had recently completed a capital needs assessment and understood the modifications needed to bring the development up to current accessibility standards.

Housing with Services

In addition to units required to have structural adaptations, this study examines housing accompanied by a service component that allows people living with a cognitive, independent living, or self-care disability to thrive in independent living situations. This kind of housing is a subtype of assisted accessible housing. It is typically funded through state or federal program dollars (e.g., from HUD or Medicaid) and serves people with disabilities who have a history of homelessness and low or very low incomes that would prevent them from securing access to and retaining tenancy in private-market accessible housing.

Housing deemed accessible because of a service component, also known as supportive housing, was identified using administrative data collected through interviews with state and federal partners. The best data on the supply of housing with services in Connecticut are for units funded through the HUD Continuums of Care (COCs) and tracked in the HUD Housing Inventory Count (HIC). Reported by the state's two COCs, the HIC data cover several programs, including LIHTC and Housing Tax Credit Contribution (HTCC) supportive housing set-asides, the HUD 811 program, Connecticut Housing Finance Authority supportive housing portfolio, and Department of Mental Health and Addiction Services (DMHAS) Supportive Housing Program, as well as supportive housing units funded by the COCs themselves. Despite being the best available data, HIC reporting varies by COC and may not consistently include all the units in these programs. Nevertheless, the HIC indicates better

proportionate coverage per population across the state, but Tolland County's lack of supportive housing is concerning (table 25).

TABLE 25

Connecticut Supportive Housing Supply by County, 2019–20

County	Individuals	Families
Fairfield	1,276	240
Hartford	559	95
Litchfield	111	16
Middlesex	94	23
New Haven	894	163
New London	118	40
Tolland	0	0
Windham	88	11
Total	**3,140**	**588**

Source: HUD Housing Inventory Count, 2020.

Note: This study uses the HUD Housing Inventory Count because it provides the most comprehensive data and geographic indicators for individuals and households accessing supportive housing.

Supportive housing vouchers throughout the state add some additional supply to this category, which are captured in the following programs: Connecticut Rental Assistance Program (RAP) for special populations, HUD 811, and Veteran Affairs Supportive Housing (VASH) program. The Connecticut Department of Housing has dedicated most RAP funding to "specialty" populations. In total, 4,898 units for specialty populations served disabled households across the state in fiscal year 2020 (table 26). This includes a mix of project-based and tenant-based vouchers. Additionally, there are 70 units of HUD 811 and 805 units of VASH housing vouchers throughout the state. Both these housing programs have supportive services accompanying the units. VASH has much higher coverage across the state than HUD 811 but, like other federally assisted accessible housing, is concentrated in New Haven County.

TABLE 26

Supportive Housing Vouchers by Type and County, Connecticut, 2020

County	Specialty RAPs	HUD 811	VASH
Fairfield	0	20	114
Hartford	0	16	189
Litchfield	0	0	22
Middlesex	0	0	15
New Haven	0	29	368
New London	0	5	58
Tolland	0	0	14
Windham	0	0	6
Unknown	4,898	0	19
Total	**4,898**	**70**	**805**

Sources: Connecticut Department of Housing 2020 data; US Department of Veterans Affairs 2020 data.

In addition to these state-run programs and federally assisted units, Connecticut's LIHTC and HTCC programs include supportive housing set-asides that contribute to the state's supply of housing with services (table 27). The number of units covered by the HTCC supportive housing set-aside is unavailable and therefore excluded from the table. These units, although set aside for supportive housing, fall under various service requirements and are dependent on available funding. Some supportive housing developments use DOH specialty RAPs to achieve affordability, but privacy protections associated with tenant-based vouchers, coupled with limited geographic information for RAPs, precluded the study team from identifying unit–RAP pairings.

TABLE 27

Connecticut LIHTC Supportive Housing Set-Asides by County, 2011–19

County	Units
Fairfield	143
Hartford	164
Litchfield	0
Middlesex	0
New Haven	205
New London	64
Tolland	16
Windham	26
Total	**618**

Source: Connecticut Housing Finance Authority Low Income Housing Tax Credit (LIHTC) award announcements, 2011–19.

Current Accessible Housing Needs

Given the information collection and privacy protections established by the Fair Housing Act, demand for accessible housing in Connecticut is difficult to determine. As discrimination in housing based on disability is prohibited, most housing providers do not know and therefore cannot report or track the specific disability or disabilities of individual residents.

To determine current demand for accessible housing in Connecticut, therefore, the project team used a mixed-methodology analysis approach. First, a quantitative analysis of ACS IPUMS 2018 disability data for mobility and vision impairments was performed to identify demand for Type A, Type B, and federally assisted units based on population characteristics. Next, Connecticut HMIS 2019 disability data for permanent supportive housing were used as a proxy to determine the need for housing with services. A qualitative assessment of the three key state agencies administering housing with services (the Department of Children and Families [DCF], the Department of Mental Health and Addiction Services [DMHAS], and the Department of Developmental Services [DDS]) was used to

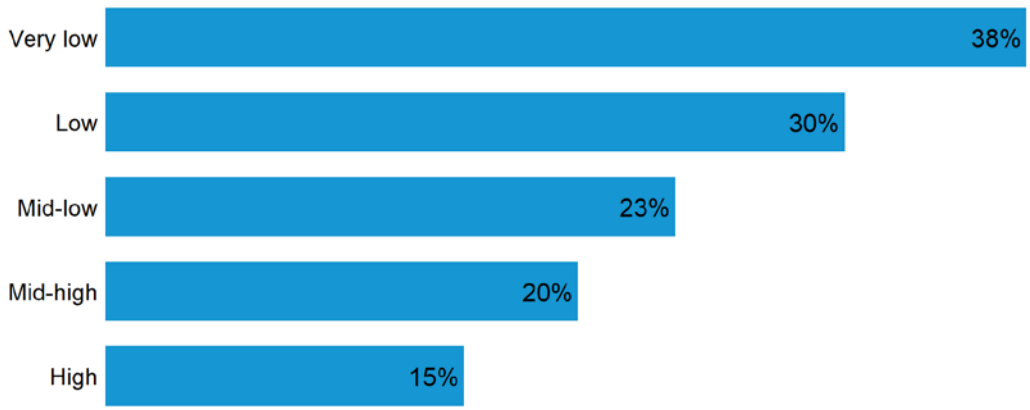
estimate accessibility need based on program waiting lists. While these data provide a framework to quantify accessible housing demand across the state using available data, a coordinated, cross-agency needs assessment system should be pursued to generate a more complete, ongoing picture of accessibility needs.

Demand for Type A, Type B, and Federally Assisted Units

According to the American Community Survey, 302,446 households (or 22 percent of total households) in Connecticut have at least one member with a disability. This is slightly lower than the national rate of 25.6 percent (Altman and Blackwell 2016). Generally, the presence of someone in a household with a disability correlates with income: a larger proportion of low- and very low–income households report at least one member with a disability than households in higher income brackets (figure 30). From another perspective, households that include someone with a disability are much more likely to have very low or low incomes relative to households that do not have someone with a disability (figure 31). These data indicate that roughly a third of assisted housing in Connecticut needs to be designed with disabled residents in mind.

FIGURE 30

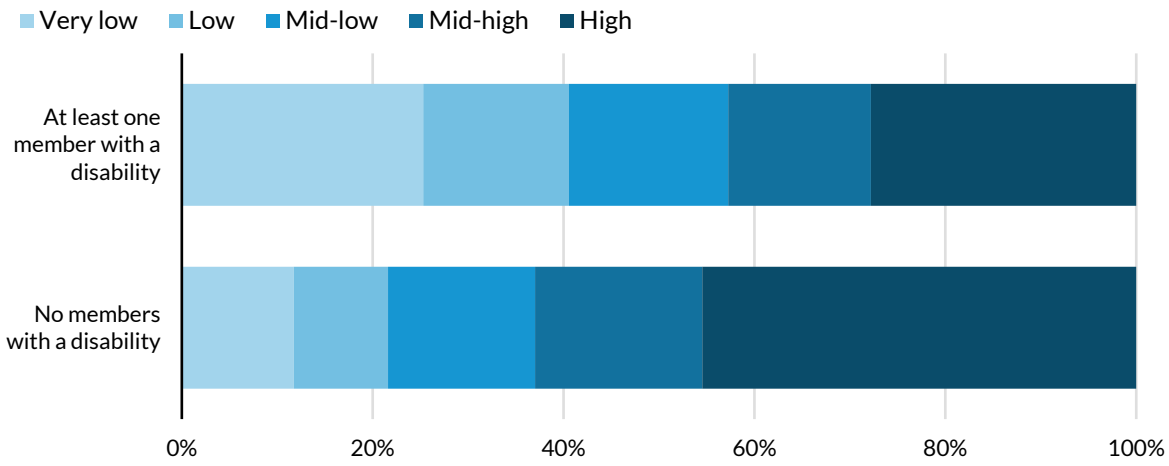
Share of Households That Include a Person with a Disability by Income Band, Connecticut, 2018



Source: ACS IPUMS 2018 data.

FIGURE 31

Share of Households with and without Someone with a Disability by Income Band, Connecticut, 2018



Source: IPUMS ACS 2018 data.

Not all disabilities require the same kinds of accommodation in housing, nor do they have the same relationship to income. The correlation between having a member with a disability and having lower incomes is strongest in households where a member has a physical, cognitive, or ambulatory disability (figure 32). These patterns likely relate to the household's ability to maintain regular employment while managing someone's disability.

FIGURE 32

Share of Households with a Person with a Disability in Each Income Band, Connecticut, 2018

Source: ACS IPUMS 2018 data.

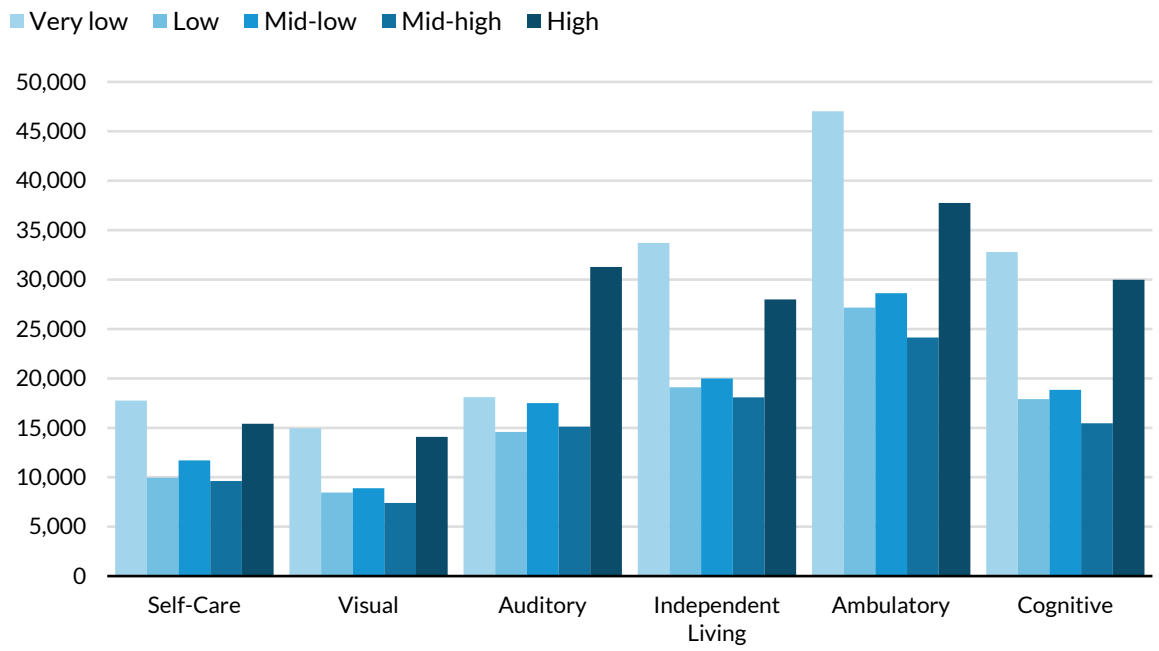
Notes: Cognitive disability: having difficulty remembering, concentrating, or making decisions because of a physical, mental, or emotional problem. Physical/self-care disability: having difficulty bathing or dressing. Ambulatory disability: having serious difficulty walking or climbing stairs. Independent living difficulty: having difficulty doing errands alone, such as visiting a doctor's office or shopping, because of a physical, mental, or emotional problem. Vision disability: being blind or having serious difficulty seeing, even when wearing glasses. Hearing disability: being deaf or having serious difficulty hearing.

In terms of numbers (rather than proportions), nearly twice as many Connecticut households include someone with an ambulatory, independent living, or cognitive disability as include someone with a self-care, visual, or auditory disability; the former group also tend to be the households with very low incomes (figure 33). Additionally, more very low–income households have a member with a disability than households in other income brackets (the high-income category represents all households with incomes above 120 percent of their county median, so it naturally has the next-highest number). The distribution of households across these income bands and disability types indicates that

Connecticut needs many more assisted accessible units that are affordable to very low–income households and can accommodate residents with ambulatory, cognitive, and independent living needs.

FIGURE 33

Households That Include Someone with a Disability by Income Band and Disability Type, Connecticut, 2018

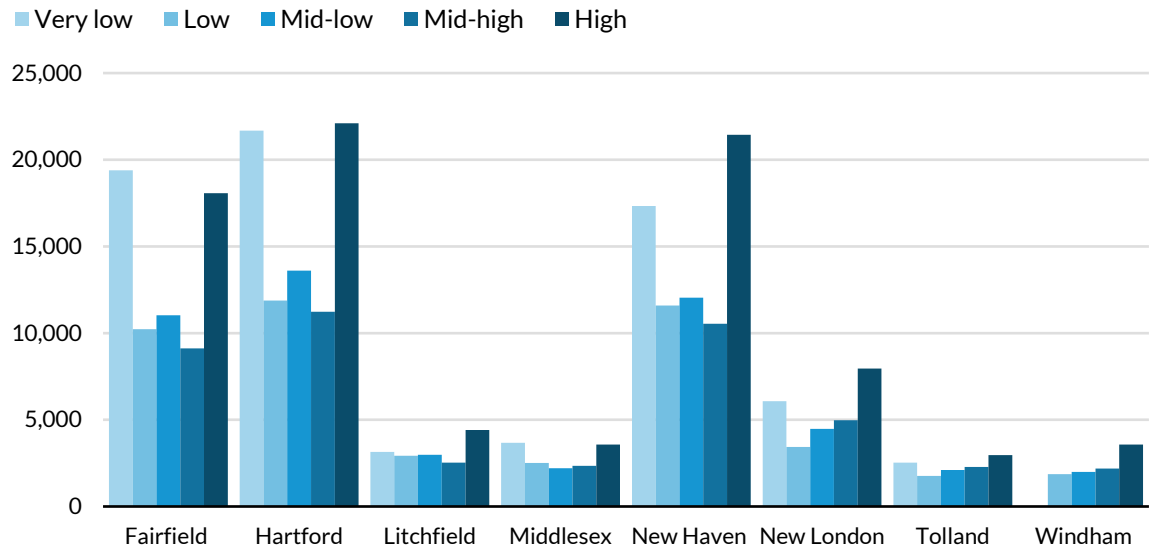


Source: ACS IPUMs 2018 data.
Note: These capture households with at least one member who has a disability of the following types. See Page 11 or Appendix B for definitions of disability categories.

Looking at geographic distribution, Fairfield, Hartford, and New Haven Counties have the most households that include someone with a disability; Hartford and Fairfield Counties also have high numbers of very low–income households that include someone with a disability (figure 34). The distribution of these households may indicate which counties offer access to housing or services that accommodate the needs of people with disabilities. However, the distribution of incomes by households that include someone with a disability may be dually causal—that is, low-income households that include someone with a disability may choose to move to these counties or they may be low income *because* they live in those counties. Regardless of the causal directionality, this figure indicates greater need for assisted accessible housing units in Fairfield, Hartford, and New Haven than in any other counties in Connecticut.

FIGURE 34

Households That Include Someone with a Disability by Income Band and County, Connecticut, 2018



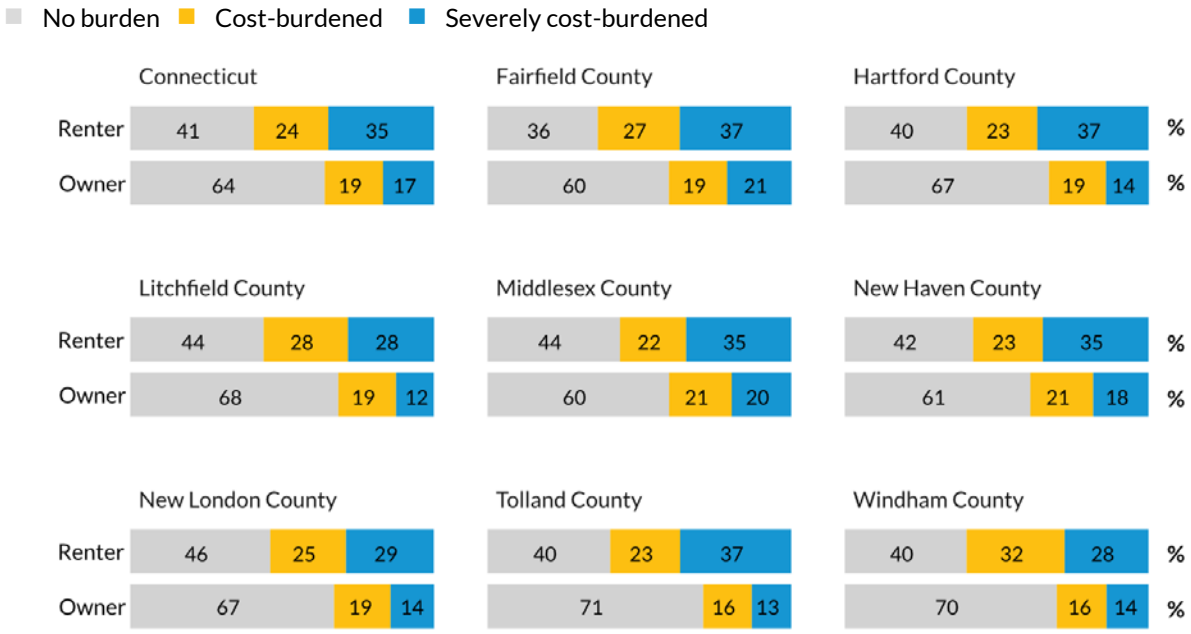
Source: ACP IPUMS 2018 data.

Beyond income levels, though, the share of income spent on housing among households that include someone with a disability indicates where the gap between incomes and housing costs, and thus the need for assisted accessible housing, is greatest. Renters overall have lower incomes and higher cost burden rates than homeowners (51 percent of renter households versus 28 percent of homeowning households); thus, this discussion focuses on cost burden rates between renter households with and without members with a disability.

Across the state, 59 percent of renter households that include someone with a disability are cost burdened compared with 48 percent of renter households that do not include someone with a disability (figure 36). The difference in cost burden rates between disability versus non-disability households is greatest in Windham County (20 percentage points) and Hartford County (15 percentage points). This indicates that having a household member with a disability either greatly reduces income-earning capacity or greatly increases housing costs for renter households in those two counties; therefore, these households greatly need either income support or rent subsidies. Overall cost burden rates for renter households with a member with disabilities were highest in Fairfield, Tolland, and Windham Counties, while severe cost burden rates were highest in Fairfield, Hartford, and Tolland Counties. Combining that information with the volume data in figure 35 indicates that the largest population of cost-burdened and severely cost-burdened renter households that include someone with a disability is in Hartford County.

FIGURE 35

Percentages of Cost-Burdened Renter Households by Presence of Someone with a Disability, Connecticut and Counties, 2018

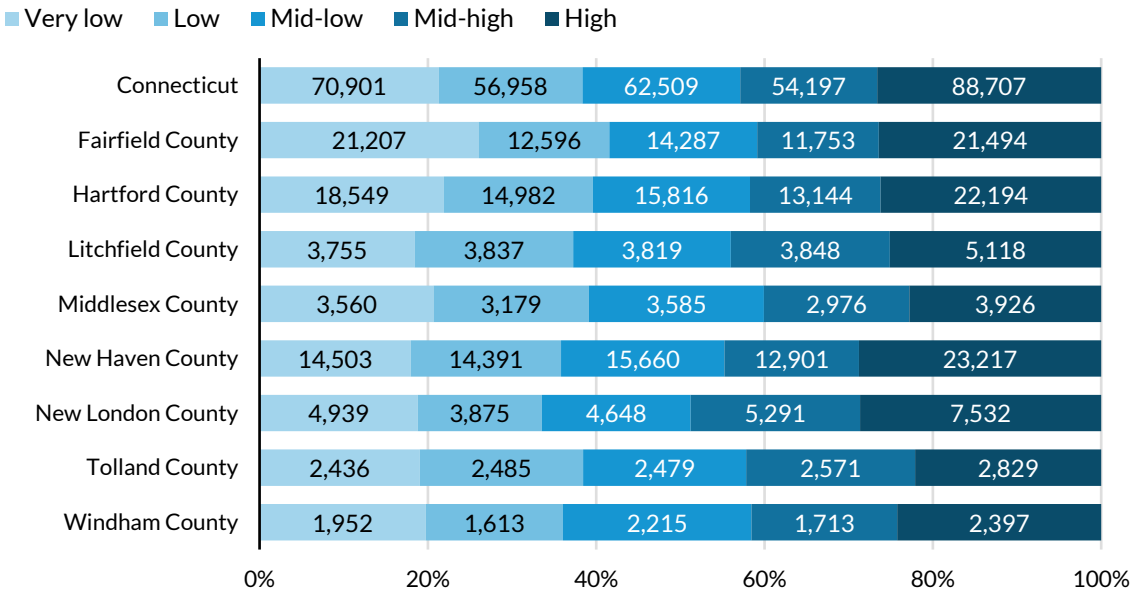


Source: ACS IPUMS 2018 data.

Elderly populations requiring housing assistance are not always easy to identify because of differing retirement ages, family arrangements, and homeownership statuses. However, looking at the distribution of households with a head age 65 and older by income band indicates where state subsidized elder care facilities may be needed across Connecticut (figure 36). Fairfield and Hartford Counties have both the highest number and largest shares of very low–income elderly households, though Middlesex County has the lowest proportion of elderly households with mid-high or high incomes. Litchfield, New Haven, and New London Counties have the highest proportion and populations of mid-high- and high-income elderly households. Nevertheless, the distribution of elderly households across income bands is fairly constant across the state.

FIGURE 36

Number and Share of Households with a 65+ Year-Old Head by Income Band, Connecticut and Counties, 2018



Source: ACS IPUMs 2018 data.

Comparing data on household heads age 65 and older with the supply of state-directed program housing for elderly populations (see table 21, page 60) reveals a potential need to increase state-funded elderly assisted accessible housing resources across the state. For example, in Fairfield and Middlesex Counties, the assisted accessible program units cover less than 25 percent of very low–income elderly households. Other county's assisted accessible units cover at least 33 percent of elderly households, rising to more than 40 percent in Tolland and Windham Counties, but that still leaves a large unmet need. And, as discussed in the Demographic and Household Projections section (see page 24), Connecticut's senior population will likely increase over the next two decades.

Demand for Housing with Services

The need for housing with services across Connecticut counties was identified using the following characteristics: two or more active conditions (health/mental health/behavioral health) or one condition that rises to the level of a disability, monthly income of less than $750, and at least one episode of previous homelessness in the past three years. Based on these criteria, the greatest demand for housing with services is in Fairfield, New Haven, and Hartford Counties, the counties with the largest populations (table 28).

TABLE 28

Individuals and Families Qualifying for or Needing Supportive Housing by County, Connecticut, 2019

County	Individuals	Families
Fairfield	670	34
Hartford	349	30
Litchfield	27	4
Middlesex	25	3
New Haven	441	57
New London	132	14
Tolland	3	1
Windham	26	1

Source: Connecticut HIS 2019.
Note: Supportive housing need is reported directly by Coordinated Access Network homeless client exit records or shelter recommendations.

Additional qualitative findings on demand for housing with services include in-depth interviews with staff members from the DCF, DMHAS, and DDS. Interviews were conducted to understand the need and supply of supportive housing and other affordable housing with services across state agencies. This qualitative analysis yielded the following themes across the state's three accessible housing priority populations, (1) people experiencing homelessness, (2) people with intellectual and developmental disabilities, and (3) DCF-involved families who are either experiencing homelessness or at risk of homelessness:

- All three priority populations have long waiting lists for supportive housing.
- The supply of supportive housing varies year to year based on federal and state resources available to the specific department and populations.
- Each state agency has unique waiting list policies and open and close lists based on resources, making it difficult to determine need based on waiting lists.

Table 29 presents what interviewees reported as their programs' waiting lists. Unfortunately, these numbers don't reflect a current picture of total unmet demand because waiting lists often close and reopen unpredictably and because waitlisted households may be double registered or their needs may have changed. However, comparing these reported waiting list sizes to the total number of documented supportive housing units across the state indicates gross unmet needs. Summing all units reported in tables 25, 26, and 27 (generously assuming no double-counting between datasets) yields just over 10,000 supportive housing units in the state, while the waiting lists show needs for at least an additional 3,300 units, requiring an expansion of at least 30 percent.

TABLE 29

Interview-Reported Demand for Supportive Housing, Connecticut, 2020

Program	Waiting list or current demand
DMHAS supportive housing	1,817
DCF-involved families (homeless or at risk)	700
People with intellectual and development disabilities who meet DDS criteria	850[a]

Source: Department of Mental Health and Addiction Services (DMHAS), Department of Children and Families (DCF), and Department of Developmental Services (DDS) internal agency reporting data, 2020.

[a] Approximately 100–200 families are ready to exit the program if a permanent voucher were available.

Because of the different programmatic requirement of each state agency and different definitions of homelessness, the DCF and DDS demands are not captured in the supportive housing analysis. Many of these households are served by different crisis systems. This indicates that the supportive housing gap analysis discussed later underrepresents the actual need for this intervention; a more accurate number would include households on waiting lists and in other crisis/institutional settings.

Accessible Housing Gap Analysis

There are 157,999 households in Connecticut that have one member with an ambulatory, self-care, visual or auditory disability and are in the very low– or low-income band, indicating that they would need both an affordable and accessible housing unit. There are only 758 federally assisted accessible units in the state. This gap is largely a problem with data availability and tracking of accessible units' provisions, but it indicates strongly that these households are not having their needs met. Supply of Type A, Type B, and federally assisted units is driven directly by housing development and geography, as all units are tied to and regulated by construction and renovation requirements in the state Building Code and UFAS. While the greatest supply of accessible units in these three categories exist in Fairfield, Hartford, and New Haven Counties, those counties also represent the greatest future need for housing with services.

Looking within that population of households with a member with a disability at the subset of households that need supportive housing and comparing that subset to the number of units available, the current supply of supportive housing is clearly insufficient to meet current needs. Based on the annual turnover rate of current units of housing with services, Connecticut will need to ensure the following number of supportive housing units by county annually (table 30).

TABLE 30

Connecticut's Annualized Need for Supportive Housing by County

County	Individuals	Families
Fairfield	490	0
Hartford	266	16
Litchfield	11	2
Middlesex	11	0
New Haven	308	33
New London	115	8
Tolland	3	1
Windham	13	10

Source: Authors' analysis of HMIS intake assessment data.

The largest investment in housing with services needs to be made in Fairfield, Hartford, New Haven, and New London Counties. Also, the need housing with services is much greater for individuals than for families.

Future Accessible Housing Needs

Largely because of an aging population, Connecticut will see an increasing need for housing units that are accessible for people with mobility and sensory needs. As noted earlier, by 2040 the state is projected to have an additional 68,000 residents ages 75 and older. Many of these people will need accessible housing accommodations, in housing they live in either on their own or with others, such as family members. By 2030, the state is projected to have 27,600 more households with either mobility or sensory needs (see figure 18, page 25); by 2040, that number will grow to over 44,000. Mobility challenges, including people with substantial difficulty walking or climbing stairs, are the most common reason for needing accessible housing. But many people with sensory challenges, such as blindness, deafness, or a severe vision or hearing impairment, will also require accommodations for their needs.

Estimates of future household accessible housing needs are based on projections of ACS data on people with disabilities, but they also incorporate external estimates of the need for accessible housing. The study team used the Survey of Income and Program Participation to determine the rate at which people in disability categories would need accessible housing. The team also incorporated projections from Mercer, Inc. (2019) about the proportion of Medicaid-eligible elderly, blind, and disabled people needing long-term care and the proportion of that population using home and community-based services. The study team adjusted the projections of accessible housing needs upward to align with these proportions for the relevant subpopulations, specifically to account for the Mercer-projected shift

from nursing facility to home and community-based services. (Appendix B includes more details on the projection methodology.)

The need for accessible housing will grow in all counties across the state, with the largest increases in Fairfield, New Haven, and Hartford (table 31). About 7,040 additional households in New Haven County will need accessible units by 2030, and over 11,000 by 2040. While Fairfield County has a somewhat smaller increase over the next decade, the county will require over 12,000 accessible housing units to accommodate future household needs by 2040. Harford County will have an increase of about 9,860 households with accessible housing needs over the next 20 years.

TABLE 31

Projected Change in Households by Presence of Someone with Accessible Housing Needs and County, Connecticut, 2019–40

	2019–30			2019–40		
County	Mobility needs	Sensory needs	Mobility or sensory needs	Mobility needs	Sensory needs	Mobility or sensory needs
Fairfield	4,620	2,960	6,150	9,710	5,960	12,510
Hartford	4,940	3,240	6,540	7,940	4,690	9,860
Litchfield	1,450	970	1,920	1,830	1,220	2,370
Middlesex	830	590	1,190	1,310	720	1,700
New Haven	5,490	3,090	7,040	9,010	4,570	11,140
New London	1,630	1,130	2,270	2,210	1,370	2,960
Tolland	680	550	1,030	960	720	1,370
Windham	1,010	750	1,470	1,560	1,040	2,170

Source: Authors' analysis of ACS and Census data.
Note: County numbers may not add to state totals because of rounding. Households with multiple people in each need category are only counted once within that category.

While these projections of accessible units rely the best information available, additional demographic changes are looming that the study team's projections could not incorporate, but which create tremendous uncertainty about the future housing arrangements for the elderly. These changes include fewer households with children and fewer children overall, as well as rising rates of divorce/non-marriage for people reaching retirement age. Combined with the observed rise in renting instead of ownership for householders reaching retirement age, these trends suggest an increase in the elderly population that will need to move out of their current households for accessibility and affordability reasons, but who may have no clear housing alternatives.

In addition, while the study team's projections have provided separate estimates of affordable and accessible units, data limitations prevent making reasonable estimates of future needs for accessible housing at specific affordability levels. Nevertheless, current ACS data indicate a strong relationship

between affordable and accessible housing needs. For instance, people below retirement age (64 and younger) who are in households with incomes less than twice the federal poverty level are about twice as likely to have accessibility needs than the overall population. Conversely, someone at retirement age with accessibility needs is about twice as likely to be in a lower-income household.

For people at or above retirement age (65 and older), if they are in households with incomes less than twice the poverty level, they are about 1.6 times as likely to have accessibility needs than the overall population, and if they have accessibility needs, they are about 1.6 times as likely to be in a lower-income household.

Accessible Housing Conclusions

- Connecticut produces a set of market-rate accessible units as a standard share of its multifamily housing production, though these are only required in buildings with at least 20 units. Consequently, the greatest concentration of privately produced units meeting the state's highest accessibility standard are in urban areas such as Fairfield County (1,433 units), Hartford County (678 units), New Haven County (295 units), and around the University of Connecticut in Tolland County (250 units).
- Connecticut also produces accessible units as a standard share (the greater of 5 percent or at least one unit for mobility disability and the greater of 2 percent or at least one unit for visual or hearing disability) of its federally-assisted units. The programs these shares apply to include all programs listed in the affordable housing chapter (HUD programs that create from section 202, 238, 515, 8; LIHTC, HOME; FHA-HUD Multifamily Mortgages; and public housing). These units are primarily concentrated in New Haven and Hartford Counties, following the general distribution of federally subsidized units.
- Public housing agencies in the state, when surveyed, did not track accessible units within their portfolios. Only roughly a third of respondents had any record of their accessible units. Consequently, the supply of accessible units within public housing is unknown.
- State and federal supportive housing—which includes units from the RAP, DMHAS SH, LIHTC and HTCC SH set-asides, 811, and VASH vouchers—follows similar patterns to the privately produced accessible housing. It is concentrated in urban areas, with the majority of households served located in Fairfield, New Haven, and Hartford Counties. Notably, Tolland County has no record of any supportive housing outside 14 families supported through VASH and 16 through

LIHTC set-asides, while Windham County served just 17 families and offered 26 units across all supportive housing programs. However, the distribution of specialty RAP services across counties is unknown.

- Data from statewide surveys on disability rates by income bands indicate that roughly one-third of assisted housing in Connecticut needs to be designed for residents who have a disability (especially for residents who have physical, ambulatory, and cognitive disabilities). Among very low–income households across the state, 47,000 include someone with an ambulatory disability, 33,700 include someone with an independent living disability, and 32,800 include someone with a cognitive disability, though many of these household counts may overlap. Very low–income households that include someone with a disability live primarily in Hartford County (21,676 households), Fairfield County (19,392 households), and New Haven County (17,337 households).
- Most people experiencing a disability in Connecticut fall into the very low– and low-income band; this is especially true for Fairfield, Hartford, and New Haven Counties. This indicates the need for assisted accessible units. The demand for assisted accessible units for Fairfield, Hartford, and New Haven Counties is 19,000, 21,000, and 16,500 units, respectively. The documented assisted accessible housing supply for these counties is 148, 161, and 278 units, respectively.
- Need for supportive housing is highest among people in Fairfield and New Haven Counties, where 670 and 441, respectively, qualified for supportive housing in 2019. Waiting lists for supportive housing programs, though, are long. Interviews with Connecticut state supportive housing providers revealed excess demand of 1,817, 700, and 850 units for DMHAS, CFH, and DDS programs.
- Largely because of an aging population, Connecticut will see an increasing need for housing units that are accessible for people with mobility and sensory needs. By 2040 the state is projected to have an additional 68,000 residents ages 75 and older. Many of these people will need accessible housing accommodations, in housing that they live in either on their own or with others, such as family members. Again, by 2030, the state is projected to have 27,600 additional households with either mobility or sensory needs, and that number will grow to more than 44,000 by 2040.

Where Does Connecticut Go from Here?

As evidenced by the commission of this study, Connecticut recognizes that affordable and accessible housing is an investment in the future well-being of the state and in all its residents. The costs associated with entire subgroups being unable to access the benefits of safe, affordable homes in thriving communities have proved both financially unsustainable and unjust. As housing advocates better understand how powerfully one's zip code is tied to opportunity, it becomes increasingly incumbent upon not only housing policymakers but all decisionmakers and community leaders to ensure all residents, no matter where they live in the state or what their incomes, have the chance to create the life they envision.

Based on the data and analysis in the previous chapters, Connecticut faces many challenging future decisions. While the state's population is projected to decline, the need for affordable housing will persist across all counties, and the need for accessible housing will grow as more people reach retirement age and beyond. In addition, Connecticut's population will become more racially and ethnically diverse, requiring the state to confront and change how residential opportunity has been inequitably distributed in the past.

To address these challenges, the study team proposes an approach to affordable and accessible housing policy in Connecticut that is data driven, targeted, and meets this unprecedented moment in the state's history. This approach aims to enable the highest and best use of the state's limited housing resources and to build impact metrics and accountability into policy planning and decisionmaking. The study team's proposed strategy is based on three guiding principles: proactive investment, regional planning, and prioritization of resources based on need. This chapter then applies these three principles within four kinds of actions the state could take—produce, preserve, protect, and document and monitor—to address gaps and opportunities identified in the state's current and future housing landscape.

Guiding Principles

Irrespective of the area of work, Connecticut will be better able to meet its residents' housing needs and facilitate more efficient economic development if it embeds the following principles into its practices.

Proactive Investment

The production of assisted and accessible housing units is complex, transactional, and (at present) largely driven by developer initiative. Developers identify projects and apply to the state for subsidies based on what works financially and meets the state's subsidy program threshold for affordability. In this way, state dollars are leveraged with private investment to produce and preserve affordable and accessible units. The state then measures its housing strategy's success by looking at subsidy transactions executed and the number of units produced that are affordable and accessible at specific area median income levels over a defined period.

While this traditional development process does indeed encourage and produce affordable and accessible units throughout Connecticut, it is highly reactive; it deploys state resources based on opportunities identified and sited by developers and not necessarily according to community needs or based on a coordinated strategy to improve housing access. In other words, the current process adds units to the state's affordable and accessible inventories, but it does not ensure the right volume of units at the right cost bands in the right locations.

Data provide an opportunity to improve this process. By committing to a data-driven, proactive investment and policy approach, Connecticut could target populations in each county where the need for housing at designated cost bands and accessibility levels is greatest and then prioritize its housing investments accordingly. By directing resources more strategically based on a regional planning approach and by prioritizing based on need, Connecticut can better leverage its housing investments to alleviate barriers to economic growth and reduce cost and accessibility burdens for renters and homeowners most in need of relief.

Regional Planning

By identifying and quantifying gaps in the state's housing stock geographically, the data highlight the opportunity to deepen impact through a more regionally focused policy approach. Applying a more geographic lens to housing investments would help Connecticut balance local needs against a larger, statewide strategy to more equitably and rationally distribute the costs and benefits of economic growth.

A regional planning approach would focus on how housing is distributed within counties. It would promote patterns of development, both privately and publicly funded, that are sustainable and forward-looking and that leverage other community assets such as schools, transit, and public amenities. A

regional planning approach would also ensure that each city and town in the state is providing its fair share of affordable and accessible housing and is capturing the full range of benefits offered by proximity to thriving labor markets. A failure by all towns in a labor market to add to housing stock in the face of growing demand and rising prices is a failure to capture economic growth potential for households and neighborhoods and instead a move that promotes negative spillovers (poor education, health, and job outcomes that create burdens on the state).

Prioritization Based on Need

Prioritizing state resources based on population need is not a new concept for Connecticut. Since 2015 it has been a cornerstone of the state's plan to address homelessness that uses a common assessment tool to rank those experiencing homelessness by their likelihood to die on the streets and deploys resources accordingly. In five short years, this approach has ended veteran homelessness and family chronic homelessness and has reduced the number of individuals experiencing chronic homelessness by 78 percent.[15] This unprecedented success in addressing homelessness has earned Connecticut a national reputation as a state leader on this issue.

Taking a similarly targeted approach to the production, preservation, and protection of affordable and accessible housing for cost-burdened residents could transform the state's ability to make its vision of ensuring housing for everyone a reality. This study offers county specific population and demographic trends and analyzes those trends against the backdrop of each county's current affordable and accessible housing inventory. These data and analysis should be used to recalibrate Connecticut's affordable and accessible housing strategy by prioritizing state funding of assisted units based on the identified housing needs of its most cost-burdened populations first.

IDENTIFYING POPULATIONS AND AREAS OF GREATEST POTENTIAL FOR HOUSING SUPPORT

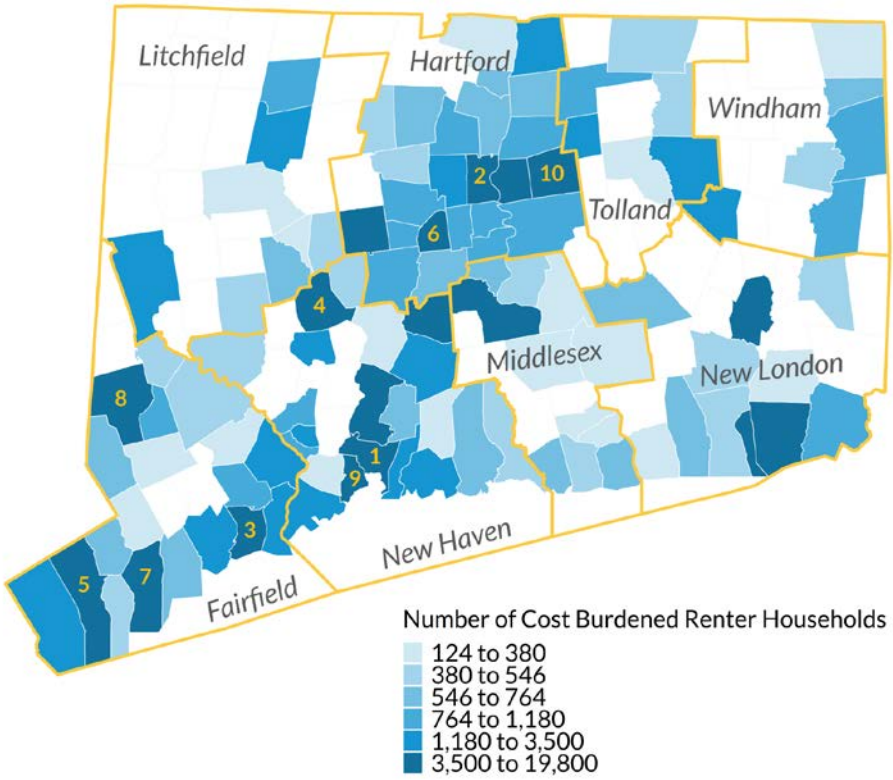
Incomes among renters have stayed steady even as rental costs have risen by at least 10 percent and by more in areas where the rental stock remains constrained (e.g., Hartford, New London, New Haven, and Middlesex Counties). Unsurprisingly, Connecticut's renter population faces much higher and rising rates of cost burdens than homeowners, and housing investments that support the economic well-being of renters may have higher marginal societal returns than those intended for homeowners.

The population of cost-burdened renters is particularly high in fast-growing markets such as those in Fairfield and New Haven Counties (figure 37). While the number of cost-burdened renters is highest in central cities, the share of cost-burdened renters is particularly high in smaller towns (except

Bridgeport), especially suburbs of larger cities (table 32). These data indicate that assisted housing is most needed in the central cities with large cost-burdened populations, but also that regional coordination (e.g., through fair share agreements) between large cities and their outlying suburbs may be necessary to ensure adequate production of rental housing to reduce the share of cost-burdened renters commuting into those central cities.

FIGURE 37

Number of Cost-Burdened Renters by Town, Connecticut



Source: ACS 2014–18 data.

Note: Map shows towns with at least 400 renters. The ten townships with the most cost-burdened renters are denoted by gold numbers: (1) New Haven City, (2) Hartford City, (3) Bridgeport, (4) Waterbury, (5) Stamford, (6) New Britain, (7) Norwalk, (8) Danbury, (9) West Haven, and (10) Manchester. See table 32 for total cost-burdened renter populations for these towns.

TABLE 32

Ten Connecticut Towns with the Highest Numbers and Shares of Cost-Burdened Renters

Rank	Town	County	Total renters	Number of cost-burdened renters	Percent of renters with cost burden
		By number of cost-burdened renters			
1	New Haven	New Haven	36,043	19,839	55
2	Hartford	Hartford	34,946	18,997	54
3	Bridgeport	Fairfield	29,433	17,489	59
4	Waterbury	New Haven	23,275	12,565	54
5	Stamford	Fairfield	23,279	11,904	51
6	New Britain	Hartford	16,718	7,608	46
7	Norwalk	Fairfield	13,910	7,038	51
8	Danbury	Fairfield	12,442	6,480	52
9	West Haven	New Haven	8,826	4,584	52
10	Manchester	Hartford	10,404	4,437	43
		By share of cost-burdened renters			
1	Mansfield	Tolland	2,479	1,702	69
2	Orange	New Haven	578	363	63
3	Monroe	Fairfield	561	351	63
4	Old Saybrook	Middlesex	884	547	62
5	Portland	Middlesex	632	387	61
6	Stratford	Fairfield	4,225	2,586	61
7	Brooklyn	Windham	794	482	61
8	Westbrook	Middlesex	647	390	60
9	Bridgeport	Fairfield	29,433	17,489	59
10	Windham	Windham	4,434	2,572	58

Source: ACS 2014–18 data.

In terms of proactively targeting populations and areas needing accessible housing investment, the state will need to focus on aging populations and the need for greater assisted accessible housing across the state but especially in towns with high Black, indigenous, and other peoples of color, and especially in some of the state's more rural counties.

As table 33 shows and table 30 reaffirms, the largest need for assisted accessible housing units is in the state's urban counties: Fairfield, Hartford, and New Haven. However, the share of very low–income households that include someone with a disability is highest in Windham and New London Counties (46 and 42 percent, respectively), indicating that a greater share of assisted housing in those counties needs to be made accessible for people with disabilities. While not all these disabilities are severe enough to require modified or supported accessible housing, the distribution of cases offers a helpful starting point for initial targeting and further investigation.

TABLE 33

Number and Share of Households with a Member with a Disability by Income Band and County

	Connecticut	Fair-field	Hart-ford	Litch-field	Middle-sex	New Haven	New London	Tolland	Wind-ham
Very low income									
Number	76,498	19,392	21,676	3,147	3,670	17,337	6,077	2,533	2,666
Share	38%	35%	41%	36%	39%	37%	42%	33%	46%
Low income									
Number	46,206	10,227	11,881	2,930	2,514	11,596	3,430	1,762	1,866
Share	31%	27%	32%	34%	33%	31%	32%	26%	41%
Mid-low-income									
Number	50,444	11,031	13,600	2,983	2,206	12,044	4,480	2,104	1,996
Share	24%	22%	24%	25%	21%	23%	25%	26%	29%
Mid-high-income									
Number	45,211	9,117	11,229	2,530	2,345	10,538	4,979	2,281	2,192
Share	20%	17%	19%	17%	19%	20%	24%	22%	24%
High income									
Number	84,087	18,072	22,105	4,415	3,572	21,438	7,957	2,959	3,569
Share	15%	13%	15%	15%	13%	15%	18%	13%	20%

Source: IPUMs ACS 2014–18 data.

Note: Share represents the percentage of all households within that income band that have at least one member with a disability.

More detailed data on the distribution of very low–income households with at least one member with a disability offer an even clearer direction for targeting the state's assisted accessible housing resources (figure 38). The ACS does not publicize household-level data by towns in geographies that have very low populations but instead offers Public Use Microdata Areas (PUMAs), which group as many towns within a county together as needed to ensure the privacy and representativeness of survey respondents. Analyzing the household disability data by PUMAs indicates that Connecticut would best meet the most pressing accessible housing needs of very low–income households by targeting assistance to and further exploring the town-by-town needs within the following:

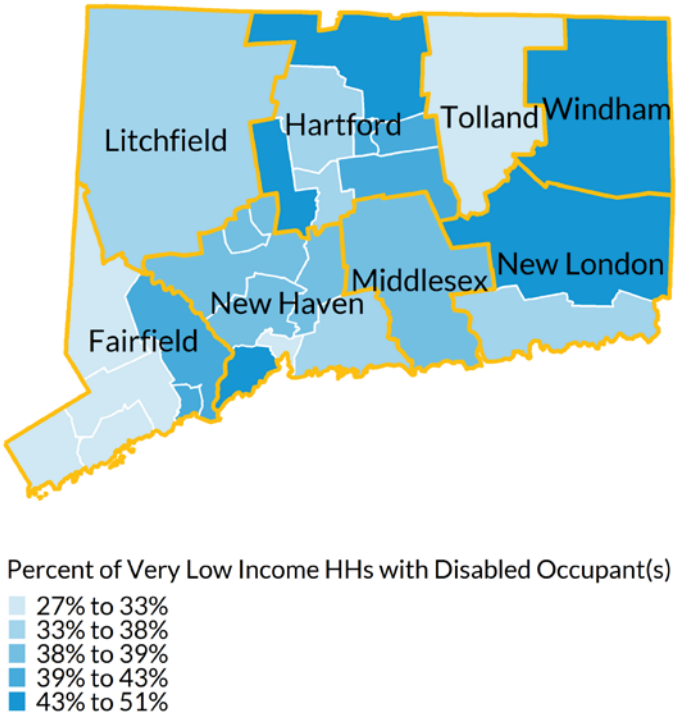
- Northern Hartford County, which include East Granby, Enfield, Hartland, Simsbury, Windsor, Windsor Locks, Canton, East Windsor, Suffield, Granby, Bloomfield, Ellington, Somers, Colebrook, and Barkhamsted towns
- West Haven, Milford, and Orange towns
- Northern New London County, which include Lisbon, Bozrah, Franklin, Griswold, Norwich, Preston, Scotland, Canterbury, Plainfield, Sterling, Sprague, and Voluntown towns
- Windham County
- Bristol, Southington, and Burlington towns

All these groups of towns have a high prevalence of disabilities among their very low–income households. At least 44 percent of the very low–income households within these PUMAs include

someone with a disability. Considering that these areas aggregate town-level data, the concentrations of very low–income households with disabilities are likely even higher in some towns and lower in others. Additionally, the counties without any lower-level data may be obscuring towns that have high concentrations, so a more detailed survey of disabilities may be warranted to better guide the state's accessible assisted housing dollars.

FIGURE 38

Connecticut PUMAs by Share of Very Low–Income Households That Include Someone with a Disability



Source: ACS IPUMS 2018 data.

Beyond the assessment of Connecticut's current distribution of populations with disabilities, our projections indicate that Connecticut's population will age appreciably as it decreases, which means an increasing demand for modifications of existing housing to ensure accessibility for older residents. In addition, more younger families will likely be bringing elderly adults to live with them, and these households may face financial burdens as they take on increased elder care responsibilities (reducing working hours) or expenses for home care. National research has shown that Asian, Black, and Latino families are more likely to live in households with two or more adult generations,[16] so as those populations increase in the state the trend toward multigenerational families will also grow.

At the same time, the study team's projections show a growing share of Connecticut's population will be childless and single or divorced with lower incomes following retirement, a trend that also increases the need for smaller assisted and accessible housing units. As a result, the state may need more and smaller housing units concentrated in its more urban counties (Fairfield, Hartford, and New Haven Counties) as Blacks, Native Americans, and other people of color that represent the bulk of renter households and have clustered in those areas increase in population while white populations age and decline in the state's other counties. However, these needs may change if the economic fortunes of these communities improve and these households seek homeownership in less urban counties.

In addition, the study team sees a need for a bifurcated accessible housing strategy. Such a strategy would target a broad spectrum of Type A, Type B, and supportive housing toward the areas identified in figure 39 to respond to the pressing need for assisted accessible housing in the present but also would prepare programs for assisted accessibility modifications (e.g., accessory dwelling units for caregivers) and housing production for rural, aging counties where residents will need independent living and self-care assistance and/or facilities.

Strategic Actions for the State

Although the principles and data laid out above offer helpful guidance for how the state might better meet residents' more urgent housing needs, this study has uncovered some specific priority actions that the state would benefit from taking. These actions fall into the following four categories: produce, preserve, protect, and document and monitor.

Produce

Given the size of the gap between the supply of housing and number of households needing housing in the lowest cost bands, the state faces an urgent mandate to see more housing produced to both prevent private-market prices from rising further and to create a larger stock of low-cost units for cost-burdened households.

ENCOURAGE REGIONAL FAIR SHARE DENSITY APPORTIONMENT FRAMEWORKS FOR NOAH PRODUCTION

This report's findings of low levels of small multifamily housing production across the state and the distribution of cost-burdened renters indicate that land use restrictions are preventing the creation of

market-rate affordable housing in suburbs surrounding core cities. For example, the town of Orange has the second-highest share of cost-burdened renters in the state. Despite a 15 percent rise in housing prices between 2015 and 2020, Orange has 90 percent of its land zoned for single-family homes, preventing the creation of more affordable multifamily rental housing that might slow the rise in housing costs and relieve some residents' and commuters' rent burdens (Seaberry 2018). Instead, Connecticut's urban centers (which have lower homeownership rates and higher Black and Latino populations) bear the greatest burden for providing assisted and affordable multifamily housing in an already dense urban core (Seaberry 2018). This concentration of poor populations exacerbates economic segregation, hampers regional economic growth, and creates negative spillovers (Davila, Abraham, and Seaberry 2020).

The most immediate solution to this problem is creating a regional planning and zoning framework for Connecticut's Regional Council of Governments that encourages towns whose residents' incomes are tied to central urban economies to increase their supply of housing in line with the economy's labor market growth. For example, the Fair Share Housing Model for Connecticut (Kinsey 2020) provides a framework for allocating regional housing needs fairly among towns. To accomplish this goal, the state would need to assess NOAH unit supply to identify their location, age, and exposure to market pressure. This step will enable the state to identify areas that have particularly low supplies of NOAH but high needs, and thus the greatest opportunity for adding to and capturing economic growth.

After adopting a regional framework, towns could be encouraged to meet their fair share of regional housing needs by various means. For example, the state could use incentive payments similar to Massachusetts' Chapter 40R program. Or it could encourage or require towns to modify local zoning to allow small multifamily development (e.g., duplexes, triplexes, and quadplexes) that blend easily into single-family neighborhoods and are more naturally affordable because of wood frame construction and lower parking requirements. These moves are key to enabling a mobile, adaptable workforce to move closer to Connecticut's most productive economic centers and distributing the economic activity and labor force across the region (Glaeser 2017; Shearer, Vey, and Kim 2019).

CREATE REGIONAL GUIDELINES FOR ASSISTED HOUSING PRODUCTION TARGETS

Labor markets span beyond a single town's administrative boundaries, and housing programs and policies should as well to enable a workforce that can adapt and move close to their jobs. However, most assisted housing programs do not support low-income residents' job access (Stacy et al. 2020). This requires assisted housing programs that consider regional supply rather than just town-by-town opportunities. Guidelines or allocation plans that spread out assisted housing production across

regional labor markets would support better labor flexibility and retention and thus increased earnings among low-income households while encouraging more efficient job allocation (Stacy et al. 2020). Modeled after New Jersey's Fair Housing Act's apportionment framework, The Open Communities Alliance's Fair Share Housing Model (Kinsey 2020) provides a way to both measure and distribute affordable housing siting targets based on regional need (i.e., severe cost burdens among low-income households) and towns' individual capacities (i.e., fiscal resources available and current shares of regional poverty and multifamily housing). Pairing such apportionment targets with state-based fiscal incentives or sanctions would improve low-income households' access to resource-rich neighborhoods while improving labor markets' equity and efficiency.

ADJUST QUALIFIED ALLOCATION PLAN CRITERIA TO INCENTIVIZE LIHTC SITING BASED ON COST-BURDENS AND AVOIDING CONCENTRATION

Research has found that states' qualified allocation plans (QAPs) can guide the siting of LIHTC units (Ellen and Horn 2018). Connecticut's current QAPs encourage affordability (preserving rental units for incomes below 50 percent AMI) and incentivize unit siting in resource-rich neighborhoods (CHFA 2020). However, they do not allocate any credits based on degree of need for assisted housing in the vicinity. Consequently, the state may be inefficiently offering credits in areas where there is high opportunity but little demand.

The percentage of renter households with housing cost burdens can indicate where low-income households may have job opportunities but insufficient housing options (Hsieh and Moretti 2017). The state can both ease housing insecurity and boost labor market efficiency by targeting housing assistance like LIHTC toward areas where high shares of renters have cost burdens. To ensure that the characteristics that enabled these developments to score the points necessary to qualify for the credit persist, the state should also require reporting on these facets during the LIHTC monitoring period.

Adding QAP points for the share of renter households with cost burdens would also further incentivize more LIHTC housing development outside urban centers, where such housing is predominantly located today, since suburban towns are among those with the highest share of cost-burdened renters (see table 32, page 83). However, QAP scoring may not be the only obstacle to a more equitable distribution of LIHTC units. Zoning and other challenges may also be factors, so an effective approach would reduce those barriers as well, ideally in the context of a regional fair share model.

TAKE A TRANSIT-ORIENTED APPROACH TO ASSISTED HOUSING PRODUCTION

As our spatial analysis shows, just under half of assisted housing sites in Fairfield County are within a half-mile of transit, and nearly no county has more than half of its assisted housing sites within a half-mile of a grocery store or grade school. For very low–income households, taking an assisted housing unit requires they also take on additional transportation and time costs because they have to maintain a vehicle and drive to pick up healthy food or bring their children to school. Improving assisted housing siting requires the state take a dual approach to not only encourage more public transit access near assisted housing sites (especially in resource-rich areas) but to site assisted housing nearer public transit access points.

CREATE A DUAL-TARGETED ASSISTED ACCESSIBLE HOUSING STRATEGY

This report shows that current and future accessible housing needs are bifurcated, with more present needs centered in urban cores among low-income communities while the state faces impending future needs among aging homeowners living alone. Consequently, one track in the state's approach to provide assisted accessible housing should focus on creating Type A, Type B, and service-supported accessible housing to meet current needs in Connecticut's urban counties (Fairfield, Hartford, and New Haven) while the other track focuses on preparing an in-home modification accessibility program for independent living across the state. As a market-based complement to these state-sponsored programs, in-home modification accessibility programs might also be paired with zoning reforms that allow the creation of accessory dwelling units for in-home caretakers or multigenerational living. Additionally, the state should review its current portfolio of assisted housing in Windham, Hartford, and New London Counties where over 40 percent of very low–income households include someone with a disability to assess the need for modifying assisted housing units' accessibility or targeting additional accessibility programming.

Preserve

Creating new affordable housing is much more expensive than strategically preserving existing NOAH and income-restricted units. However, since the vast majority of these units will face pressure to convert to higher market rents and many of the assisted units' contracts will expire in the next 10 to 15 years, the state will need to act strategically in preserving affordability.

CREATE AND MAINTAIN A DATABASE OF AFFORDABLE AND ACCESSIBLE HOUSING

A proactive approach to preserving affordable and accessible housing requires up-to-date data on properties that may need action to maintain affordability and housing quality. Sources such as the National Housing Preservation Database, which was used in this report, can be a starting point for tracking federally assisted properties, but the state should support developing more comprehensive data on locally assisted and unassisted properties that may require preservation. Such a database should include details relevant to preservation, such as information on property ownership, unit affordability, subsidy expirations, building age, and the intersection of federal and local actors engaged in the property.

In addition, with a needs-based approach the state would direct preservation resources to the properties at highest risk of loss and properties that provide affordable housing opportunities that would be difficult to replace. Understanding whether the property owner is mission driven to provide affordable housing or in a market where property values or rents are increasing, for instance, may indicate whether direct intervention is needed to preserve affordability. And, by comparing preservation costs with the costs of creating new affordable housing in the same area, the state can prioritize the use of local resources to maximize impact.

Such a database not only can inform individual preservation actions such as those undertaken by a preservation network (see next recommendation) but can be used to create a strategic preservation plan. For example, Montgomery County, Maryland, analyzed its stock of deed-restricted, assisted, and naturally occurring affordable housing to identify properties most at risk based on various factors. Based on these data, the county created a preservation framework that aligned the type of risks with potential preservation approaches and interventions, such as capital financing, land use planning, operating subsidies, and regulatory policies.[17]

BUILD AND SUPPORT PRESERVATION NETWORKS

A proactive approach to housing preservation requires the coordination of the efforts of many actors, including federal, state, and local agencies, community-based organizations, tenant assistance providers, and developers. Preservation networks currently operate in many places, including Colorado,[18] the District of Columbia,[19] Ohio,[20] Philadelphia,[21] and Oregon.[22] In Illinois, the Preservation Compact partners "work with the Interagency Council, composed of HUD, the city of Chicago, Cook County, and the Illinois Housing Development Authority, to share information and coordinate the identification and preservation of government-assisted properties at risk of being lost."[23]

The state can provide both financial and in-kind support (such as staff time to attend network meetings) to support preservation networks. Such networks can also help build the state's capacity to preserve affordable housing by serving as a conduit for technical assistance and training of members.

PRIORITIZE FUNDING FOR MISSION-DRIVEN DEVELOPERS TO CREATE AND PRESERVE AFFORDABLE HOUSING

According to a report by PAHRC and NLIHC, "For-profit ownership is a strong risk factor for market-rate conversion in multiple housing subsidy programs" (Aurand et al. 2020, 14). In contrast, mission-driven owners (often nonprofits) are more likely to be motivated by providing affordable and accessible housing. For this reason, the state should prioritize mission-driven owners when allocating resources for affordable housing preservation. Where opportunities are available, the state should also consider enabling nonprofit and mission-driven owners to acquire and maintain affordable and accessible housing that is owned by profit-motivated entities.

ENCOURAGE HOUSING OWNERS TO EXTEND AFFORDABILITY AND MAINTAIN PROPERTIES

Rising operating costs or expiring subsidy commitments may lead property owners to raise rents beyond the level that their residents and other households with low incomes in the region can afford, particularly in markets where property values and rents are rising. Expiring subsidy commitments present a particularly important preservation opportunity since the rents could increase substantially if owners opt out of ongoing participation.

As noted in this report, average rents in multifamily NOAH properties are rising, particularly in places where unit production has been slower. Rising rents often are a result of increased demand for housing relative to supply, but higher operating costs may also contribute, since property owners may lack the resources necessary to adequately maintain their properties without increased revenue. Private owners of assisted properties with expiring subsidies may be tempted to exit housing programs if they can get higher market rents.

The state could consider making resources available to private owners of assisted and unassisted housing in exchange for long-term affordability commitments. Such resources could be in the form of capital improvement loans, grants, or property tax abatements.

ACQUIRE OR INCENTIVIZE MAINTAINING THE QUALITY AND AFFORDABILITY OF NOAH UNITS

Given that most of the roughly 350,000 units affordable for very low– and low-income households come from the private market, ensuring their continued availability is critical for meeting Connecticut

residents' housing needs. Many of these units are affordable because the properties are older, in need of renovation, or in less desirable neighborhoods, but these units are also at risk of disappearing owing to building obsolescence and market pressures. Newly developed market-rate rentals that are affordable to lower-income households are rare; thus, the best way to ensure ongoing access is through preservation. Preservation can, under the right circumstances, allow the state to maintain its stock of NOAH units in increasingly high-priced areas, bypass expensive negotiations over new developments, and prevent displacement of current residents (Treskon and McTarnaghan 2016).

Strategies for preserving NOAH units typically have to come through legal or programmatic channels because mission-oriented investors or the state must compete in the same market as market-rate developers. One legal mechanism is to offer building residents the right of first refusal, or the opportunity for residents to collectively (either informally or as a tenant union) negotiate a contract to purchase the building. Programmatically, cities can offer funds (e.g., using National Housing Trust Fund dollars or HOME funds) to landlords to entice them to keep the unit affordable in exchange for a subsidy (which may have strings attached, such as unit renovation). This might be combined with an effort to convert these private units into permanently affordable or deed restricted housing. Table 34 offers a wider range of options for preserving NOAH units.

INCENTIVIZE PUBLIC HOUSING AGENCIES TO PRESERVE AND IMPROVE THE STATE'S PUBLIC HOUSING STOCK, PARTICULARLY TO UPGRADE UNITS TO MEET HIGHER ACCESSIBILITY STANDARDS

Our survey of HUD 2020 development managers indicated that the majority (74 percent) did not have accurate records of their developments' standing in terms of meeting accessibility standards nor their stock of accessible units. To ensure that the state's current investments can continue to meet accessibility needs, Connecticut should offer incentives or requirements for reporting developments' current stock of accessible units as well as the capital needed to bring older units up to current accessibility standards. This information will enable the state to target accessible housing preservation funds to PHAs with accessible units in areas with high capital needs that also have high levels of accessible housing needs.

TABLE 34

Policy Menu: Preserve Existing Housing Affordability

Strategy	Policy tools
Empower mission-driven organizations to acquire low and moderate cost rental properties at risk of loss	**Laws and regulations** ▪ Enact right of first refusal—to allow mission-driven organizations an advance window to acquire properties. **Public funding/resources** ▪ Provide financing for acquisition and/or rehabilitation—to enable nimble and lower-cost acquisition. **Voice/convening power** ▪ Create preservation networks and inventories—to enable advance preparation by public and nonprofit actors.
Maintain and improve the physical condition of low- and moderate-cost housing	**Public funding/resources** ▪ Fund light rehab programs—to finance required improvements in rented or owned housing. ▪ Fund moderate to substantial rehab programs—to address deferred maintenance and extensive repairs. ▪ Create energy-efficiency programs— to reduce ongoing operating costs and enable spending on upkeep. ▪ Rehabilitate public housing—to stop public housing units from going vacant because of disrepair. **Voice/convening power** ▪ Provide technical assistance and training—to help property owners identify feasible solutions.
Incentivize current property owners to maintain low or moderate rents	**Laws and regulations** ▪ Identify preservation-oriented subsidy priorities—to facilitate owners' commitment to low and moderate cost housing. **Public funding/resources** ▪ Enact property tax incentives for preservation—to reduce landlord costs in return for rent limits.

Source: Adapted from Margery Austin Turner, Leah Hendey, Maya Brennan, and Peter Tatian, *Meeting the Washington Region's Future Housing Needs* (Washington, DC: Urban Institute, 2019).

Protect

While the first two actions focus on housing units, Connecticut should also take a tenant-based approach to housing by protecting residents from discrimination, displacement, and rapidly rising rents.

ENSURE FAIR AND EQUITABLE ACCESS TO HOUSING BY EXPANDING AND ENFORCING ANTIDISCRIMINATION PROTECTIONS

The Fair Housing Act of 1968 expanded upon previous laws to prohibit discrimination in the "sale, rental, and financing of housing based on race, religion, national origin, sex, (and as amended) handicap

and family status" in the United States.[24] Connecticut state law adds to these protections by prohibiting discrimination based on marital status (except an unmarried, unrelated man and woman), sexual orientation, age (except minors), lawful source of income, and gender identity or expression.[25]

Despite these legal protections, housing discrimination persists to this day. National research using paired testing has found that people are denied equitable treatment in the housing market based on their race or ethnicity (Turner, Freiberg, et al. 2002; Turner, Ross, et al. 2002), whether they are using housing choice vouchers (Cunningham et al. 2018), their sexual orientation or gender identity (Levy et al. 2017), their family status (Aron et al. 2016), and their disability status (Levy et al. 2015; Turner et al. 2005). Additional research by the Connecticut Fair Housing Center (CFHC) has found that zoning practices in the Hartford metropolitan area have contributed to racial and ethnic segregation (2017c),[26] that Black homebuyers receive inequitable treatment when seeking mortgage financing (2017a), and that communities of color are less likely to obtain relief from mortgage servicers during the foreclosure crisis (2017b). Additional testing research by CFHC (2015b) has documented a range of discriminatory behaviors against Black and Latino renters and mortgage borrowers in the state, as well as inequitable treatment of people who are deaf or hard of hearing, who need assistance for independent living, and who identify as transgender.

To address these challenges, Connecticut should strengthen efforts to educate both housing market providers and consumers on fair housing laws, vigorously investigate and respond to fair housing violations, and actively remove barriers to fair housing access. *Affirmatively Furthering Fair Housing: A Guide for Housing Providers* (CFHC 2013) provides guidance on how to make the marketing and tenant selection policies of housing providers more equitable. While focused on recipients of federal housing funds, this guidance can be valuable for private market housing providers as well. The state's 2015 *Analysis of Impediments to Fair Housing Choice* cited a "lack of resources for fair housing education, enforcement, and mobility counseling" and noted that actors in the real estate industry have had a "limited understanding of fair housing laws, particularly with regard to reasonable accommodations of disabilities" (CFHC 2015a,198–99).

REQUIRE OWNERS OF RENTAL PROPERTIES TO OBTAIN RESIDENTIAL BUSINESS LICENSES

Rental registration and licensing policies provide jurisdictions with opportunities to coordinate with landlords and educate them on local laws and to implement incentives or other accountability mechanisms to ensure the provision of quality and affordable housing.[27] Licensing programs might include or require inspections to ensure that rental properties meet acceptable standards. As an example, the city of New Haven has a rental licensing program to ensure that the housing provided

meets minimum safety criteria and that landlords know about relevant codes and requirements as well as opportunities to interface and benefit from state housing programs. Other towns throughout the state would benefit from similar programs.

CONSIDER ALLOWING LOCALITIES TO ENACT REGULATIONS THAT STABILIZE RENTS AND STRENGTHEN FAIR RENT COMMISSIONS

Connecticut, along with 30 other states, currently preempts localities from enacting rent control or stabilization policies (NMHC 2020), which would regulate how much and how often landlords can increase monthly rents. The intention of rental regulation policies is to protect renters from rapid rent increases and maintain affordability in housing markets where real estate is appreciating.

While rising rents in many larger urban areas and the economic crisis brought about by the COVID-19 pandemic have created a renewed interest in rental regulation, such policies remain a controversial topic in housing policy. An Urban Institute review of recent research finds that "rent-control policies reduce rents for the tenants they target and provide additional benefits by increasing residential stability and protecting tenants from eviction.... However, recent research has found limited evidence that rent control contributes to broader socioeconomic goals, such as limiting gentrification, creating mixed-income neighborhoods, or decreasing racial disparities" (Rajasekaran, Treskon, and Greene 2019, 2).

In recognition of the challenges in maintaining affordability in gentrifying or appreciating markets, Connecticut could consider allowing localities to enact rent stabilization regulations that would provide certain levels of protections to renters while ensuring that landlords have sufficient income to maintain their properties and make a reasonable profit.

While enacting local rent stabilization would require action by the state legislature, under Connecticut law (CGS § 7-148b) any municipality has the authority to establish a fair rent commission that can "receive and investigate rent complaints, issue subpoenas, hold hearings, and order landlords to reduce rents for specific reasons."[28] Several Connecticut cities and towns have created fair rent commissions.[29]

While the purpose of a fair rent commission is to "control and eliminate excessive rental charges,"[30] it is unclear from publicly available information whether commissions are meeting this goal. While some commissions post meeting minutes online, others do not, and it appears that some commissions may not have met in years.[31]

Connecticut could strengthen the effectiveness of fair rent commissions and better track their results. Some ideas that the state could consider are the following.

- Compile and maintain a list of all fair rent commissions and commission members in the state that can be published on the state's website and used for outreach and communication.
- Incentivize and support larger municipalities that do not have fair rent commissions to establish them.
- Provide technical assistance and training for fair rent commission members to help them better execute their responsibilities. Identify and elevate best practices among commissions to encourage peer learning.
- Collect annual data on the activities of all fair rent commissions to track performance and results. Such data can include numbers of meetings held, numbers of cases heard by type of complaint, and commission findings for each case.
- If the statewide list of fair rent commissions reveals gaps in coverage, create a state-level or county-level fair rent commissions for people who live in municipalities that have not established a commission of their own. Such higher-level commissions could also be bodies of appeal where people can request an additional review of their cases.
- Review the current statute with community members and fair housing advocates to identify and close potential loopholes that may be prevent fair rent commissions from adequately protecting tenants. For example, landlords may be able to issue short-term leases as a way of circumventing fair rent commission review and oversight.

Implementing the last two recommendations above may require legislative action.

PROVIDE EMERGENCY ASSISTANCE TO LOW-INCOME RENTERS AND HOMEOWNERS FACING FINANCIAL CHALLENGES THAT COULD CAUSE THEM TO LOSE THEIR HOMES

Renters can face eviction for extremely small amounts of past-due rent, and homeowners can lose their homes because of property tax arrears. Many communities use emergency financial assistance funds to help people pay the past-due rent and taxes, avoiding housing displacement. An evaluation of a New York City program that combined social services with emergency financial assistance found that family homeless shelter stays were reduced by an estimated 22.6 nights (Rolston, Geyer, and Locke 2013).

Connecticut has two programs to address short-term financial hardships. Acting through the Department of Housing and the Housing Finance Authority, Connecticut created the Temporary Rental

Housing Assistance Program (TRHAP) to respond to the housing issues associated with the advent of COVID-19.[32] However, the TRHAP website indicated that intake for the program was being paused for two weeks starting on December 3 because of the large volume of interest, indicating the acute need for such assistance.

Also acting through the Department of Housing and the Housing Finance Authority, Connecticut created the Temporary Mortgage Assistance Program (TMAP) to respond to the housing issues associated with the advent of COVID-19. This program addressed the economic impact on housing stability. CHFA aids homeowners to prevent foreclosure actions. This assistance addressed the arrearages caused by income loss due to COVID-19 that have negatively impacted a household's ability to pay their full monthly mortgage over the next number of months. Households were eligible to receive up to $25,000 in total assistance for mortgage payments due beginning March 1, 2020.

The state should be commended for developing TMAP and THRAP as a response to the immediate crisis created by the pandemic. Nevertheless, financial hardship can affect households at any time. The state should consider making permanent this type of emergency assistance. And, while TMAP provides a valuable option for homeowners who would benefit from restructuring of their mortgage debt, others may be successfully helped by a grant that could help bridge a short-term financial shortfall. A permanent THRAP program could be expanded to include homeowners as well.

PROVIDE FINANCIAL OR LEGAL COUNSEL TO THOSE MOST AT RISK OF EVICTION OR DISPLACEMENT

The Eviction Lab documents that in 2016, 13,706 households were evicted in Connecticut. Evictions perpetuate a vicious cycle of housing instability that leads to poor outcomes in health, education, and employment. Even having an eviction petition filed damages a tenant's future ability to find housing. Increasing access to legal assistance, pretrial diversion strategies, and stronger legal protections for tenants are critical interventions to disrupt this pattern. Less than 10 percent of tenants have representation in eviction proceedings across housing courts nationwide, while landlord representation can reach highs of 85–90 percent (Desmond 2015; Engler 2010). Data shows tenants have significantly better outcomes when they have representation. New York City mandated and provided legal assistance to income-eligible tenants starting in 2017, and evictions there decreased by more than 30 percent in following years (New York City Human Resources Administration 2019).

While Connecticut has a statewide legal service organization, these services must be paid for out of tenants' pockets or offered pro-bono.[33] A state-sponsored, income-restricted program similar to New York City's legal assistance program could dramatically reduce evictions, interrupt the eviction poverty

cycle among low-income households, and enable more individuals to contribute to Connecticut's economic growth and development.

Monitor and Document

Accomplishing the above actions under produce, preserve, and protect requires data to understand regional housing needs and capacities and to proactively help priority populations. To better organize and use this data, the state should:

UNIFY ASSISTED HOUSING DOCUMENTATION FORMATS AND TIMING ACROSS PROVIDERS

This study uncovered numerous data limitations that prevented obtaining an accurate count of unique assisted and accessible housing units, which hampers the state's ability to know how well its programs meet needs. Housing program providers' varying documentation standards lead to duplication in records of assisted housing units and the inability to know how many units are available, how much subsidy each project has received, and what affordability standards are present within a development. Consequently, the study team recommends the state create a standard dataset template with clearly defined subsidy classification standards for housing providers to use in documenting their stock in a way that allows for the integration of both federal and state subsidies, and require that housing agencies and providers regularly upload these standard datasets into a centralized repository (sample provided in full report appendix). This will enable the state as well as third parties to better track inventory and subsidy dollars across localities to ensure they're meeting needs.

PROVIDE TRAINING TO HOUSING PROVIDERS ON HOW TO DOCUMENT AND MONITOR ACCESSIBLE HOUSING

Based on the survey results from 23 PHAs, the study team recommends targeting training to housing providers to track and monitor the accessibility of all units in their portfolio. Eight PHAs skipped the question asking whether they tracked accessible units and another eight confirmed that they do not track accessible units within their portfolio. The training on tracking accessibility could be an annual, pre-recorded or third-party requirement. By having PHAs equipped and incentivized to track and monitor accessible units, service providers could more easily connect clients in need of specific kinds of units with the appropriate housing authorities who offered those kinds of accessibility amenities.

ENCOURAGE HOUSING PROVIDERS TO REPORT ACCESSIBLE HOUSING OR SPECIAL PURPOSE VOUCHER ALLOCATIONS AND AVAILABILITY ON THEIR WEBSITES

PHAs and other housing providers do not consistently document or report accessibility offerings. A survey of PHA websites revealed just two with administrative plans (which identify accessibility preferences and unit availability) available on their website. Furthermore, special purpose vouchers (e.g., mainstream, NED, VASH, and FUP) are not tracked or coordinated between PHAs and DOH (or any other entities). Creating more transparency around housing provider accessibility offerings and preferences will help housing advocates, navigators, and households with disabilities access housing specifically for their needs.

IMPROVE HTCC, FLEX, AND RAP PROGRAM DATA DOCUMENTATION PRACTICES

This study's attempts to gather data on accessible housing supply uncovered numerous documentation gaps that, if filled, would enable better resource allocation. Most notable among these programs with gaps were these three:

- **HTCC (Housing Tax Credit Contribution):** The project team did not receive any information on units created through the HTCC program. CHFA should begin to track the units developed in this program, specifically the loan pools, supportive housing set-aside, and workforce set-aside.
- **Special funding rounds:** In the past DOH has funded various special funding rounds for affordable housing development. Many of them were targeted to special need populations (IDD, youth, homeless) but often were categorized under the general FLEX program. The study team recommends that DOH track these specific funding programs to help evaluate effectiveness.
- **State RAPs:** The way DOH tracks RAP data aggregates data across all programs, departments, and special allocations. Tracking RAP data in a way that separates out programs, departments, and special allocations and attaches these with user demographic data, but aggregates these divisions by zip codes, would facilitate better analysis on program usage and reach.

Final Takeaways

This study is intended to provide Connecticut with the most comprehensive data available on current and future housing conditions and a road map for the state to identify and meet the housing needs of low-income and disabled households over the next two decades. The guiding principles of proactive investment, regional planning, and prioritization based on need put forward in the preceding pages

provide a framework to ensure the highest and best use of Connecticut's housing resources going forward. Care was taken to ensure that the recommendations categorized by theme to produce, preserve, protect, document and monitor affordable and accessible housing throughout the state fit within the six growth management principles of Connecticut's Plan for Conservation and Development and complement the 2020-2024 CT Consolidated Plan for Housing and Community Development.

Housing is a complex issue demanding solutions that align multiple partners, agencies, and organizations. Leveraging the study team's unique combination of national and local housing policy and demographic expertise, this study blends national best practice with deep local knowledge to deliver a comprehensive set of solutions designed to meet Connecticut's specific housing challenges.

While this study provides a strong foundation for further action to address the state's housing needs, a static report cannot track progress or addresses ongoing changes. For this reason, the study team has created a companion online housing data tool as a platform for ongoing, coordinated housing investment and policymaking. The tool's data visualization component will provide policy-makers, housing practitioners and stakeholders across Connecticut a shared understanding of the state's inventory of assisted and accessible housing units, supporting the development of common housing targets and goals, the alignment of assets and resources, and shared accountability.

Finally, this year's COVID-19 pandemic has underscored the damaging consequences of abiding housing inequity that persist in Connecticut and across the nation. The loss of wages and other income caused by the pandemic has placed renters and homeowners who already struggled to afford their housing into even more perilous situations.[34] Households who must spend excessive amounts on housing are not able to save for and weather financial hardships like those caused by the current crisis (Pew Charitable Trusts 2018). Furthermore, lack of safe and stable housing can prevent people from engaging in practices such as self-quarantining and social distancing that are necessary to prevent further spread of the virus, complicating the public health response.[35] The pandemic has also made clear that those conditions often are a result of historic and current racial inequities, inequities that the crisis has worsened.

The guiding principles and specific strategic actions proposed in this report center equity in Connecticut's housing strategy. An equitable approach to addressing housing challenges will better position the state for a future that is prosperous and sustainable.

Appendix A. Key Definitions

This appendix defines important terms used throughout the report. While some may be common, others are more technical and, even in the housing profession, used in different ways. The list below clarifies how the study team uses these terms.

Accessible housing. Housing that enables independent living for people with disabilities, either by construction or modification (i.e., through renovation or installation of modifying elements) or by integration with service supports. Accessible housing can be privately funded or a type of assisted housing.[36]

Affordable housing. Housing that costs no more than 30 percent of a household's income. Affordable housing can be either assisted housing or naturally occurring affordable housing.

Area median income (AMI). Every year, the federal Department of Housing and Urban Development (HUD) develops income limits for its assisted housing programs by calculating the total income for the median (or middle) household in different regions of the country. AMIs vary by both region and household size.[37] Many states and localities use AMIs to establish income eligibility for locally funded housing programs.

Assisted housing. Housing that receives subsidies to be affordable, such as HUD or public housing agency–administrated housing, vouchers, and privately produced subsidized housing, as well as housing that is regulated to maintain affordability, such as deed-restricted and rent-controlled housing. Naturally occurring affordable housing is not considered assisted housing.

Cost burdened. A household that pays 30 percent or more of its income on total housing costs (including rent, mortgage payments, utilities, fees, and real estate taxes) is considered housing cost burdened (Schwartz and Wilson 2008, 1–3).

County median income (CMI). The median income of all households within a county, regardless of household size. This report uses CMIs as the reference point for income and housing cost bands because CMIs can be applied uniformly statewide while adjusting for differences in county incomes and costs.

Deed-restricted housing. Housing with legal limitations on how an owner can use the property. Deed restrictions can require owners to maintain long-term affordability of housing, usually in exchange for receipt of a government subsidy or a lower property acquisition price.

Family. Two or more people (one of whom is the householder) related by birth, marriage, or adoption and living together; all such people are considered members of one family (US Census Bureau, n.d., 79).

(Home)ownership status. The legal status under which people occupy their accommodation.[38] This report uses *ownership status* when talking about housing units and *homeownership status* when talking about people or households. Categories of ownership status include *owner housing* (both owned outright and mortgaged) and *rental housing* (both public and privately rented). Categories of homeownership status include *owner-occupied* and *renter-occupied housing*.

Household. All the people who occupy a housing unit. The occupants may be a single family, a person living alone, two or more families living together, or any other group of related or unrelated people who share living arrangements (US Census Bureau, n.d., 76).

Householder. A term used in the American Community Survey. In most cases, a householder is the person or one of the people in whose name the home is owned, being bought, or rented and who is listed on line one of the survey questionnaire. If there is no such person, any household member age 15 or older could be designated as the householder (US Census Bureau, n.d., 77).

Housing tenure. A more technical term for *homeownership status.*

Housing unit. A house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or, if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live independently from any other people in the building and that occupants can directly access from the outside of the building or through a common hall (US Census Bureau, n.d., 76).

Income/cost band(s). The groupings of households and housing units used in this report to define housing affordability. *Income bands* are defined based on household county median income (CMI):

- **Very low–income:** 30 percent CMI and below
- **Low-income:** 31–50 percent CMI
- **Mid-low-income:** 51–80 percent CMI
- **Mid-high-income:** 81–120 percent CMI
- **High-income:** 121 percent CMI and higher

Cost bands are defined using the same parameters but represent housing units that are under 30 percent of a household's income within each income band. Table B.1 lists the income and cost band ranges for each county.

Market-rate housing. Housing that is freely priced according to the local market, without any subsidies, price controls, or other restrictions that lower the cost to owners or renters.

Multifamily housing. Housing in a structure that consists of multiple units accessed through a common exterior building entrance. Multifamily housing can be either owner housing (condominiums or cooperatives), rental housing, or a mix of both types.

Naturally occurring affordable housing (NOAH). Market-rate housing units that are affordable to lower-income households.[39]

Owner housing. A housing unit that is occupied by its owners, vacant and for sale (including units in condominiums or cooperatives that are offered for sale only), or sold but not yet occupied (US Census Bureau, n.d., 38, 41).

Owner-occupied housing. Housing that the owner or co-owner lives in, including housing that is mortgaged or not fully paid for (US Census Bureau, n.d., 38).

Preservation (affordable). Actions taken to maintain the availability and affordability of housing units that are currently affordable to lower-income households but otherwise would not be because of changing market conditions, termination or expiration of subsidies or cost restrictions, deteriorating physical conditions, or other reasons. Affordable housing preservation methods include debt refinancing, provision of additional subsidies, and transfers of ownership.

Production. The construction of new housing units.

Project-based subsidies. Housing assistance payments that are tied to specific housing units and are provided to the households living in those units.

Project-based vouchers. Vouchers that subsidize a specific housing unit, rather than a household, as part of a public housing agency's federal housing choice voucher program. Project-based vouchers are used to create or maintain affordability in privately owned developments and can be converted to housing choice vouchers under certain conditions.[40]

Public housing. A federal program that provides subsidies to local public housing agencies that own, operate, and maintain affordable rental housing for eligible low-income families, the elderly, and people with disabilities.[41]

Rent control/stabilization. Laws and regulations that establish limits on the rents that private owners may charge for their housing units. Such policies aim to protect renters from rapid rent increases and

maintain affordability in housing markets where real estate is appreciating (Prasanna, Treskon, and Greene 2019, 1).

Rental housing. A housing unit that is occupied by renters, vacant and for rent, or rented but not yet occupied (US Census Bureau, n.d., 38, 41).

Renter-occupied housing. As defined by the American Community Survey, a housing unit that is occupied by someone other than its owner, whether rented or occupied without payment of rent (US Census Bureau, n.d., 38).

Single-family housing. Housing in a structure that consists of a single housing unit with an exterior entrance exclusive to that unit. Single-family housing may be a detached structure or may be physically attached to another building, such as a townhome or row house.

Subsidized housing. Housing that receives financial support (project based or tenant based) in exchange for providing affordable rental or ownership opportunities for low- and moderate-income people. Subsidized housing can be either public (i.e., public housing) or private (i.e., owned by landlords, partnerships, or for-profit or nonprofit corporations).

Supportive housing. An assisted housing unit (funded by HUD, Medicaid, or other programs) that is linked with flexible, voluntary support services designed to help families or people experiencing homelessness, as well as people with disabilities, stay housed and live more productive lives in the community.[42]

Tenant-based subsidies. Housing assistance that is tied to a household and moves with that household to help pay housing costs for eligible units. Housing choice vouchers are an example of tenant-based subsidies.

Unassisted housing. See *market-rate housing*.

Vacant housing (vacancy rate). Housing units that have no one living in them. The housing vacancy rate is the proportion of vacant-for-sale and vacant-for-rent units out of all vacant and occupied housing units (US Census Bureau n.d., 41-2).

Vouchers. A generic term for various tenant-based subsidy programs. The largest such program is housing choice vouchers, a federal program that is administered by local public housing agencies and allows very low–income families, the elderly, and people with disabilities to afford decent, safe, and sanitary housing in the private market. Since housing assistance is provided for the family or individual, participants may choose any housing that meets program requirements and are not limited to units in subsidized housing projects.[43] (Note: *Project-based vouchers* are a part of the housing choice voucher program but are not tenant-based subsidies.)

Appendix B. Data Sources and Methods

The following explanations of data sources and methods are organized by the chapter in which the data and analysis appear.

Who Lives in Connecticut, and What Kind of Housing Do They Occupy?

Population and Household Trends

DATA SOURCES

- American Community Survey (ACS) five-year estimates, 2014–18
- ACS microdata, US Census Bureau data downloaded from IPUMS-USA, 2000 5 percent sample; 2006–10, 2014–18
- US Census Population Estimates and Projections Component data, 2011–18
- US decennial censuses, 2000 and 2010

METHODOLOGY NOTES

Population change by component. Component data details population growth by natural change (births and deaths), as well as migration (domestic and international). Values in this chart were derived from population estimates for July 1 of each year from 2011 through 2018.

Population by race/ethnicity. In this report, Asian refers to non-Hispanic Asian, Black refers to non-Hispanic Black, Latino refers to Hispanic of any race, white refers to non-Hispanic white, and "Other race" is the sum of American Indian/Alaska Native, Native Hawaiian/Pacific Islander, people indicating "some other race" and people indicating "two or more races." In some instances, unless otherwise noted, Asian is grouped with "Other race."

Total households. Households are housing units occupied by one or more people. Group quarters—noninstitutional living arrangements for people not living in conventional housing, such as college dorms and nursing homes—are not counted as households.

Households by type. Households are divided into types, generally falling into two categories: "family," where household members are related by blood, marriage, or adoption; and "nonfamily," where household members are not related. For this report, households were grouped by the presence of children since those households often have specific needs and demands. "Other households" include other *non-family* households, in which the householder lives with people with whom they are not related (e.g., roommates), and other *family* households, which include households headed by someone living with a relative who is not a spouse or child (e.g., two siblings cohabiting).

Median household income. Median household income in this section was generated using estimates and rounded to the nearest thousand. Where data are shown before 2018, values have been inflation-adjusted to 2017 dollars to be comparable to 2018 estimates.

Housing Characteristics and Trends

DATA SOURCES

- ACS microdata, US Census Bureau data downloaded from IPUMS-USA, 2000 5 percent sample; 2006–10, 2014–18
- Connecticut Economic Digest monthly permit data by town, downloaded from Connecticut Department of Economic and Community Development (CT DECD), 2000–17[44]

METHODOLOGY NOTES

Annual housing permits. The CT DECD provides data on new housing construction permits divided by year and the number of units per building. All buildings between two and four units were summed, as were units in buildings with more than five units.

Change in housing units. Total units by building type is reported in the decennial census and ACS data for jurisdictions by building type, though units in two-to-four-unit multifamily buildings were bundled with units in five-or-more-unit multifamily buildings. These data also include vacant units.

Units by bedrooms. The census and ACS report number of bedrooms per unit, which enabled the summing of units by number of bedrooms. Where negative numbers were reported (because of loss of units), those are displayed as zero in the figure. The data include vacant units.

Demographic and Household Projections

DATA SOURCES

- US Census Bureau Population Estimates: Vintage 2020 (US Census Bureau 2020), using the midyear population estimates for 2014 and 2019
- CDC WONDER death rates, 2009–18 (Centers for Disease Control 2020)

METHODOLOGY NOTES

Populations are projected separately based on the population estimates for eight Connecticut counties for each race and ethnicity category (Black, Asian or Pacific Islander, Hispanic, white), each of which is broken down into 18 age brackets. The procedure for each projection by age is a modification of a Hamilton-Perry cohort procedure (Hamilton and Perry 1962; see also Swanson, Schlottmann, and Schmitt 2010). This method first calculates death rates to come up with population estimates, then uses those estimates to determine net migration, averages that net migration over time, then calculates an approximate birth rate. Together these steps give us population projects over time broken down by age and race/ethnicity that incorporate birth rates, death rates, and migration rates.

Are Affordable Housing Resources Meeting Resident Needs?

Current Affordable Housing Supply

Table B.1 summarizes the income and cost ranges used in defining cost/income bands in the study. Income bands are ranges of county median incomes (or state median income). Cost bands refer to the monthly housing cost that would be affordable to a household in a given income band.

For example, households in the very low–income band in Fairfield County earn up to 30 percent of Fairfield County's median income. Fairfield County's median income is $92,969, so households in the very low–income band earn up to $22,832—or about $1,903 a month. Housing is considered affordable when the monthly cost of housing does not exceed 30 percent of the household's monthly income. For very low–income households in Fairfield County, monthly housing costs of up to $571 are affordable.

TABLE B.1

Cost and Income Band Thresholds by State and County, Using County Median Income (CMI)

	Indicator	Median income (100% CMI)	Very low (0–30% CMI)	Low (31–50% CMI)	Mid-low (51–80% CMI)	Mid-high (81–120% CMI)	High (121% + CMI)
Connecticut	Annual income range	$76,106	<$22,832	$22,832–38,053	$38,053–60,885	$60,885–91,327	>$91,327
	Affordable monthly cost range	--	<$571	$571–951	$951–1,522	$1,522–2,283	>$2,283
Fairfield County	Annual income range	$92,969	<$27,891	$27,891–46,484	$46,484–74,375	$74,375–111,563	>$111,563
	Affordable monthly cost range	--	<$697	$697–1,162	$1,162–859	$1,859–2,789	>$2,789
Hartford County	Annual income range	$72,321	<$21,696	$21,696–36,160	$36,160–57,857	$57,857–86,785	>$86,785
	Affordable monthly cost range	--	<$542	$542–904	$904–1,446	$1,446–2,170	>$2,170
Litchfield County	Annual income range	$78,314	<$23,494	$23,494–39,157	$39,157–62,651	$62,651–93,977	>$93,977
	Affordable monthly cost range	--	<$587	$587–979	$979–1,566	$1,566–2,349	>$2,349
Middlesex County	Annual income range	$84,761	<$25,428	$25,428–42,380	$42,380–67,809	$67,809–101,713	>$101,713
	Affordable monthly cost range	--	<$636	$636–1,060	$1,060–695	$1,695–2,543	>$2,543
New Haven County	Annual income range	$67,128	<$20,138	$20,138–33,564	$33,564–53,702	$53,702–80,554	>$80,554
	Affordable monthly cost range	--	<$503	$503–839	$839–1,343	$1,343–2,014	>$2,014
New London County	Annual income range	$71,368	<$21,410	$21,410–35,684	$35,684–57,094	$57,094–85,642	>$85,642
	Affordable monthly cost range	--	<$535	$535–892	$892–1,427	$1,427–2,141	>$2,141
Tolland County	Annual income range	$84,916	<$25,475	$25,475–42,458	$42,458–67,933	$67,933–101,899	>$101,899
	Affordable monthly cost range	--	<$637	$637–1,061	$1,061–698	$1,698–2,547	>$2,547
Windham County	Annual income range	$64,774	<$19,432	$19,432–32,387	$32,387–51,819	$51,819–77,729	>$77,729
	Affordable monthly cost range	--	<$637	$637–1,061	$1,061–698	$1,698–2,547	>$2,547

DATA SOURCES

- ACS microdata five-year sample, US Census Bureau data downloaded from IPUMS-USA, 2014–18
- Home Mortgage Disclosure Act (HMDA) Dynamic National Loan-Level Datasets, Federal Financial Institutions Executive Council (FFIEC) data downloaded from ffiec.gov, 2019
- Mill rates for 2019 fiscal year, Connecticut Office of Policy and Management, downloaded from data.ct.gov
- Connecticut geospatial data (schools, grocery stores, health resources)
- National Housing Preservation Database (NHPD): Active and Inconclusive Properties, CT (2020), Public and Affordable Housing Research Corporation
- Connecticut Department of Housing (DOH) Governmentally Assisted List, 2019
- Connecticut DOH Deed-Restricted List, 2019
- Connecticut Housing Finance Authority (CHFA) Multifamily 8-37bb Housing Portfolio, 2020

- HUD Master Project-Based Voucher Log, 2020
- HUD Affordable Housing List, 2020

METHODOLOGY NOTES

Housing units by cost band. Cost bands refer the housing cost that would be affordable (up to 30 percent of a household's income) for households each income band (see table B.1). These values are based on county median incomes and therefore vary by county. Note that this estimate represents housing units by their cost, not households by their income (see notes on ***Households by income band***).

For occupied units, values are derived from ACS data, which aggregate contract rent and utilities for renters; and mortgage, taxes, insurance, and utilities costs for owners as well as condo fees and mobile home costs where applicable.

For vacant units, values were estimated using one of two approaches depending on the intended homeownership status of the unit:

- **Renters:** For units intended to be occupied by renters, the monthly contract rent and an imputed utilities cost are summed. The imputed utilities are estimated using the county average of the difference between contract rent, which is paid to landlords, and gross rent, which includes contract rent plus utilities.
- **Owners:** The monthly cost for for-sale units is the monthly cost estimate based on the sum of (1) the mortgage, assuming a 10 percent down payment on the home using ACS-supplied home values; (2) the average mortgage interest rate for first-time homebuyers, by county, derived from HMDA data for 2019; (3) private mortgage insurance estimated at 0.7 percent of the loan amount; (4) annual taxes estimated using the median 2019 mill rate, by county; and (5) imputed utilities by county (see **Renters** subsection above).

Connecticut and federally assisted housing units. We developed the unit counts through an in-depth analysis and deduplication process across the DOH, CHFA, and NHPD datasets (explained in more detail in appendix D). This process involved identifying unique developments and their unit counts by a geographic point, mapping these locations, and matching records of project names across datasets through fuzzy string matching. These methods allowed us to sum subsidy counts across datasets by geography and by individual projects/housing developments. Several assisted housing records, though, did not have address data and could not be mapped; thus, the table cannot provide the exact number of assisted units per town or county. The matched dataset also allowed us to, where projects had geographic identifiers and matched names, identify and quantify the number of subsidies overlapping in a single project.

Assisted unit expirations. Most assisted housing datasets included a variable on the subsidy contract start date, which we used to calculate the appropriate end date based on standard subsidy program contract lengths. We summed the number of units with valid subsidy contracts each year and subtracted that from the original 2020 baseline to project how many units' contracts would expire in each five-year interval.

Assisted housing units' distance to resources. We used R tidytransit to create a geospatial network map of roads and plotted both assisted housing developments and resources of interest to identify the share of assisted units within a half-mile or 15-minute drive of the resource of interest.

Current Affordable Housing Needs

DATA SOURCE

- ACS microdata five-year sample, US Census Bureau data downloaded from IPUMS-USA, 2014–18

METHODOLOGY NOTES

Households by income band. Income bands are estimated relative to 2018 county median income. For state values, estimates are relative to statewide median income. See table B.1 (page 108).

Cost-burdened households by income band. Cost burden is defined as spending more than 30 percent of household income on housing cost. Severe housing cost burden occurs when households spend 50 percent or more of household income on housing costs. The charts in this section show the proportion of households in each income band that are cost burdened and severely cost burdened.

Affordable Housing Gap Analysis

DATA SOURCE

- ACS microdata five-year sample, US Census Bureau data downloaded from IPUMS-USA, 2014–18

METHODOLOGY NOTES

Comparison of housing needs and supply by income and housing cost bands. These charts compare the supply of housing units that would be affordable to households within an income band to the number of households in each income band. When there are more households than units, a gap is present, indicating there is more demand than supply. See table B.1 (page 108).

Future Affordable Housing Needs

DATA SOURCE

- ACS five-year estimates, 2014–18

METHODOLOGY NOTES

Affordable housing projections are determined by using the 2014–18 ACS to obtain the full distribution of household incomes adjusted for household size and age composition for each five-year age group, racial/ethnic group, and county of persons identified as head of household. The distribution of needs-adjusted household incomes is then assigned to the projected counts of households for householders in each five-year age group, racial/ethnic group, and county. The projected median needs-adjusted household income is then moved to the 50th percentile of projected households. Projected changes in household income distributions thus reflect both the overall shift in the value of the median and the distributional shift to an increasing proportion of households far below the projected median.

Are Accessible Housing Resources Meeting Resident Needs?

Current Accessible Housing Supply

DATA SOURCES

- CoStar Market Data, multifamily buildings with 5+ units, 2000–20
- ACS 2018 data
- NHPD: Assisted Housing Post 1991
- Public Housing Authority survey designed and administered by CSH, September 2020
- HUD Housing Inventory Count 2020, sourced from Housing Innovations and Supportive Housing Works
- CT DOH Rental Assistance Program (RAP) breakdown by specialty program, fiscal year 2020
- Connecticut Department of Veteran Affairs, VASH vouchers by zip code, 2020
- CHFA LIHTC award announcements compiled by CSH, 2011–19

METHODOLOGY NOTES

Type A and Type B counts. The number of buildings and units under construction is provided in the CoStar market data on multifamily buildings with 5+ units. For this report, the production requirements

for Type A and Type B units in the Connecticut Building Code for the year of construction were applied to determine the new supply created.

Federally assisted accessible units. The National Housing Preservation Database data on federally assisted units developed post 1991 were used to determine the number of units that were constructed in accordance with the UFAS. For mobility-accessible units, 5 percent or one unit, whichever is greater, was applied to developments created after 1991. For hearing/vision-accessible units, 2 percent or one unit, whichever is greater, was applied to developments created after 1991.

Connecticut supportive housing supply. Supportive housing supply was determined by using data supplied by the state's two Continuums of Care. Project address data were then used to determine the county the project was located in. Supportive housing voucher data came from the CT DOH, HUD, and the Connecticut Department of Veterans Affairs. While HUD's 811 program offers vouchers to select populations (see the state's description), the state's Veterans Affairs supportive housing vouchers go to support homeless veterans. The DOH's State Rental Assistance Program is broken down by specialty programs:

- various Department of Mental Health and Addiction Services programs
- new RAP dollars
- various Department of Children and Family programs
- Money Follows the Person program run by the Department of Social Services
- state VASH units
- Scattered Site Supportive Housing: Social Innovation Financing Program and Connecticut AIDS Resource Coalition
- various Department of Development Services programs

LIHTC Supportive Housing set-aside. Data were compiled using award announcements from 2011 to 2019. Applicant data that included supportive housing units were matched with awards to determine the number of supportive housing units included in an award.

Current Accessible Housing Needs

DATA SOURCES

- ACS microdata, US Census Bureau data downloaded from IPUMS-USA, 2000 5 percent sample; 2006–10, 2014–18
- CT HMIS custom report provided by Connecticut Coalition to End Homelessness, 2019 intake assessment data

METHODOLOGY NOTES

Households with at least one member with a disability. All calculations of households with at least one member with a disability were based on ACS disability questions, which ask if any household members have the following disabilities:

- **Hearing difficulty:** Deaf or having serious difficulty hearing.
- **Vision difficulty:** Blind or having serious difficulty seeing, even when wearing glasses.
- **Cognitive difficulty:** Because of a physical, mental, or emotional problem, having difficulty remembering, concentrating, or making decisions.
- **Ambulatory difficulty:** Having serious difficulty walking or climbing stairs.
- **Self-care difficulty:** Having difficulty bathing or dressing.
- **Independent living difficulty**: Because of a physical, mental, or emotional problem, having difficulty doing errands alone such as visiting a doctor's office or shopping.

Respondents who report anyone of the six disability types are considered to have a disability, and any household head reporting having a household member with one of those disabilities was counted in the study's total of households with at least one member with a disability. Shares by household income, disability type, and county were calculated using the IPUMS household-level data.

Individuals and families qualifying for or needing supportive housing. Statewide need for supportive housing was determined using HMIS intake assessment data to estimate and project the percentage of households in our homeless system who have service and housing needs that are consistent with the intensive services and permanent subsidy provided by the supportive housing model. The characteristics used to identify households consistent with this need included having two or more active conditions (health/mental health/behavioral health) or one condition that rises to the level of a disability, monthly income of less than $750, and at least one episode of previous homelessness in the past three years. Data in HMIS are self-reported by the person participating in the intake interview.

Accessible Housing Gap Analysis

DATA SOURCES

- ACS microdata, US Census Bureau data downloaded from IPUMS-USA, 2000 5 percent sample; 2006–10, 2014–18
- CT HMIS custom report provided by Connecticut Coalition to End Homelessness, 2019 intake assessment data

METHODOLOGY NOTES

Connecticut's annualized need for supportive housing. These data came from our analysis of HMIS intake assessment data. The supply of supportive housing was subtracted from the need and annualized to determine the annualized need for supportive housing.

Future Accessible Housing Needs

DATA SOURCE

- ACS five-year estimates, 2014–18

METHODOLOGY NOTES

Future accessible housing needs are determined using the 2014–18 ACS to obtain the full distribution of households where at least one household member self-reported that they were unable to move without assistance/perform activities of daily living without assistance/take care of themselves without assistance, as well as vision and hearing loss, measured for each five-year age group, racial/ethnic group, and county of residence.

Our definition of an accessibility-needing household is one in which at least one member is severely disabled by Social Security standards for either mobility/self-care/activities of daily living or severe hearing/vision loss. The 2014 Survey of Income and Program Participation was used to scale the self-reported disability variables in the ACS to the population proportions of severe disabilities by Social Security Administration criteria, as tabulated by the Bureau of Labor Statistics Current Population Reports. This is then assigned to the projected distribution of households and the current probability of being an accessibility-needing household, conditional on the projected five-year age group, racial/ethnic group, and county of residence of each householder. This projection is then upwardly adjusted to account for the growing number of non-householder elderly people in proportion to the steady or falling numbers of households with nonelderly household heads. Lastly, this projection is again adjusted slightly upward to account for changes in Medicaid that will reduce the number of people living in long-term care nursing facilities.

Appendix C. State and County Population Projections

The following tables (C.1–C.9) provide the resulting data from the study's population and household projection work for the state and eight counties. These projections offer insight into the current and future composition of households and population by race, age and disability needs as of 2019, 2020, 2025, 2030, 2035, and 2040.

TABLE C.1

Connecticut Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	3,565,287	3,561,736	3,542,785	3,517,148	3,483,521	3,444,952
Total households	1,503,368	1,503,172	1,500,914	1,491,882	1,475,674	1,455,273
By adjusted household income level relative to state median						
Below 80%	625,703	626,311	625380	624,461	619,054	611,258
Below 50%	423,574	424,363	423082	421,869	419,396	413,984
Below 30%	279,658	279,284	278141	276,259	275,199	273,002
By accessibility needs of at least one household member						
Mobility needs	121,205	123,229	133,027	141,852	151,005	155,735
Sensory needs	76,798	78,122	84,521	90,082	95,124	97,088
Mobility or sensory needs	162,361	165,126	178,393	189,962	201,336	206,441
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of income in 2019	100.0	99.8	97.7	96.6	94.5	91.8
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.9	99.4	98.6	97.7	96.6
Households in year X as a percentage of households in 2019	100.0	100.0	99.8	99.2	98.2	96.8
By race and ethnicity of householder (%)						
Non-Hispanic Black	11.3	11.4	11.7	12.0	12.3	12.6
Non-Hispanic Asian or Pacific Islander	4.8	4.8	5.0	5.2	5.5	5.7
Non-Hispanic white or other race	67.6	67.4	66.1	64.8	63.3	61.7
Hispanic, any race	16.3	16.5	17.2	18.0	18.9	19.9
By age of householder (%)						
34 or younger	15.0	15.0	15.1	14.9	14.5	14.2
35–54	36.9	36.7	36.1	36.4	37.1	37.5
55–74	35.1	35.1	34.7	33.6	32.1	31.3
75+	13.1	13.2	14.1	15.0	16.3	17.0
By race and ethnicity of population (%)						
Non-Hispanic Black	11.9	12.0	12.2	12.4	12.7	12.9
Non-Hispanic Asian or Pacific Islander	5.8	5.8	6.1	6.3	6.5	6.8
Non-Hispanic white or other race	61.7	61.5	60.2	58.9	57.5	56.1
Hispanic, any race	20.5	20.7	21.5	22.4	23.3	24.3
By age of population (%)						
34 or younger	42.8	42.8	42.6	42.3	42.0	41.9
35–54	26.7	26.6	26.3	26.6	27.2	27.4
55–74	23.1	23.1	23.0	22.4	21.5	21.0
75+	7.4	7.5	8.0	8.6	9.4	9.8

TABLE C.2

Fairfield County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	943,332	943,084	941,540	938,362	933,015	926,140
Total households	361,571	361,865	363,093	363,115	361,201	357,477
By adjusted household income level relative to county median						
Below 80%	151,856	152,032	152,166	153,486	152,793	149,253
Below 50%	101,817	102,179	101,615	102,316	101,712	99,687
Below 30%	61,695	61,445	61,503	61,435	61,242	59,968
By accessibility needs of at least one household member						
Mobility needs	28,639	29,030	30,993	33,259	36,203	38,352
Sensory needs	17,521	17,773	19,059	20,484	22,235	23,479
Mobility or sensory needs	37,995	38,525	41,165	44,141	47,909	50,509
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of income in 2019	100.0	99.8	97.7	96.6	94.5	91.8
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	100.0	99.8	99.5	98.9	98.2
Households in year X as a percentage of households in 2019	100.0	100.1	100.4	100.4	99.9	98.9
By race and ethnicity of householder (%)						
Non-Hispanic Black	11.3	11.4	11.7	12.0	12.3	12.6
Non-Hispanic Asian or Pacific Islander	4.8	4.8	5.0	5.2	5.5	5.7
Non-Hispanic white or other race	67.6	67.4	66.1	64.8	63.3	61.7
Hispanic, any race	16.3	16.5	17.2	18.0	18.9	19.9
By age of householder (%)						
34 or younger	15.0	15.0	15.1	14.9	14.5	14.2
35-54	36.9	36.7	36.1	36.4	37.1	37.5
55-74	35.1	35.1	34.7	33.6	32.1	31.3
75+	13.1	13.2	14.1	15.0	16.3	17.0
By race and ethnicity of population (%)						
Non-Hispanic Black	11.9	12.0	12.2	12.4	12.7	12.9
Non-Hispanic Asian or Pacific Islander	5.8	5.8	6.1	6.3	6.5	6.8
Non-Hispanic white or other race	61.7	61.5	60.2	58.9	57.5	56.1
Hispanic, any race	20.5	20.7	21.5	22.4	23.3	24.3
By age of population (%)						
34 or younger	42.8	42.8	42.6	42.3	42.0	41.9
35-54	26.7	26.6	26.3	26.6	27.2	27.4
55-74	23.1	23.1	23.0	22.4	21.5	21.0
75+	7.4	7.5	8.0	8.6	9.4	9.8

TABLE C.3

Hartford County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	891,720	891,182	888,266	884,107	878,317	871,662
Total households	376,503	376,534	376,359	374,521	371,222	367,464
By adjusted household income level relative to county median						
Below 80%	155,304	155,761	155,765	155,782	154,456	152,151
Below 50%	105,088	105,410	105,589	105,656	105,361	103,895
Below 30%	68,462	68,634	68,391	68,295	68,047	67,683
By accessibility needs of at least one household member						
Mobility needs	30,667	31,176	33,588	35,609	37,653	38,604
Sensory needs	20,366	20,691	22,267	23,607	24,714	25,057
Mobility or sensory needs	41,512	42,192	45,424	48,052	50,472	51,370
Change in demand for affordable housing						
Adjusted median household income in X as a percentage of income in 2019	100.0	100.0	98.3	96.7	95.0	92.5
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.9	99.6	99.1	98.5	97.8
Households in year X as a percentage of households in 2019	100.0	100.0	100.0	99.5	98.6	97.6
By race and ethnicity of householder (%)						
Non-Hispanic Black	13.9	14.0	14.3	14.7	15.0	15.3
Non-Hispanic Asian or Pacific Islander	4.9	5.0	5.4	5.8	6.2	6.7
Non-Hispanic white or other race	65.6	65.3	63.7	62.0	60.3	58.5
Hispanic, any race	15.6	15.7	16.6	17.5	18.5	19.5
By age of householder (%)						
34 or younger	18.7	18.7	18.4	18.1	17.9	17.9
35–54	33.8	33.8	34.2	35.1	35.7	35.6
55–74	34.4	34.2	33.2	31.8	30.6	30.6
75+	13.1	13.3	14.2	15.0	15.8	15.9
By race and ethnicity of population (%)						
Non-Hispanic Black	14.5	14.5	14.8	15.0	15.3	15.5
Non-Hispanic Asian or Pacific Islander	5.9	6.0	6.5	7.0	7.4	8.0
Non-Hispanic white or other race	60.8	60.5	59.0	57.4	55.7	54.1
Hispanic, any race	18.8	18.9	19.8	20.6	21.5	22.5
By age of population (%)						
34 or younger	43.2	43.1	42.9	42.6	42.6	42.8
35–54	25.5	25.6	25.9	26.6	27.0	26.8
55–74	23.5	23.4	22.7	21.8	20.9	20.9
75+	7.8	7.9	8.5	9.0	9.5	9.5

TABLE C.4

Litchfield County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	180,333	179,767	176,876	173,471	169,557	165,378
Total households	77,013	76,911	76,269	74,961	73,113	70,961
By adjusted household income level relative to county median						
Below 80%	30,850	30,826	30,673	30,109	29,498	28,701
Below 50%	19,270	19,257	19,296	19,067	18,804	18,416
Below 30%	12,352	12,386	12,530	12,179	12,120	12,016
By accessibility needs of at least one household member						
Mobility needs	6,852	6,999	7,705	8,305	8,711	8,682
Sensory needs	4,441	4,546	5,011	5,408	5,684	5,662
Mobility or sensory needs	9,115	9,317	10,258	11,038	11,560	11,482
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of income in 2019	100.0	99.5	98.2	96.3	95.2	94.2
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.7	98.1	96.2	94.0	91.7
Households in year X as a percentage of households in 2019	100.0	99.9	99.0	97.3	94.9	92.1
By race and ethnicity of householder (%)						
Non-Hispanic Black	2.2	2.2	2.5	2.7	3.0	3.3
Non-Hispanic Asian or Pacific Islander	1.6	1.6	1.7	1.9	2.0	2.2
Non-Hispanic white or other race	91.1	90.9	89.9	88.8	87.5	86.1
Hispanic, any race	5.1	5.2	5.9	6.6	7.4	8.4
By age of householder (%)						
34 or younger	12.3	12.2	12.1	11.5	11.1	11.0
35–54	31.6	31.6	31.6	33.0	34.4	34.7
55–74	41.3	41.1	39.6	37.3	35.0	34.5
75+	14.8	15.1	16.7	18.2	19.5	19.8
By race and ethnicity of population (%)						
Non-Hispanic Black	2.4	2.4	2.7	2.9	3.2	3.5
Non-Hispanic Asian or Pacific Islander	2.2	2.2	2.3	2.5	2.7	2.9
Non-Hispanic white or other race	88.4	88.1	86.9	85.5	84.0	82.4
Hispanic, any race	7.1	7.3	8.1	9.1	10.1	11.2
By age of population (%)						
34 or younger	36.0	36.0	35.5	35.0	34.8	34.9
35–54	24.7	24.7	24.9	26.0	27.1	27.2
55–74	30.1	30.0	29.1	27.5	26.0	25.5
75+	9.2	9.4	10.5	11.4	12.2	12.3

TABLE C.5

Middlesex County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	162,436	162,105	160,358	158,174	155,504	152,505
Total households	73,506	73,449	73,084	72,279	70,971	69,450
By adjusted household income level relative to county median						
Below 80%	30,038	29,944	29,682	29,293	28,935	28,575
Below 50%	19,326	19,280	19,008	18,683	18,545	18,338
Below 30%	12,347	12,201	11,862	11,580	11,490	11,446
By accessibility needs of at least one household member						
Mobility needs	6,152	6,233	6,611	6,977	7,338	7,462
Sensory needs	3,110	3,171	3,478	3,704	3,847	3,834
Mobility or sensory needs	8,075	8,198	8,778	9,265	9,688	9,779
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of income in 2019	100.0	99.8	99.0	98.1	97.8	97.6
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.8	98.7	97.4	95.7	93.9
Households in year X as a percentage of households in 2019	100.0	99.9	99.4	98.3	96.6	94.5
By race and ethnicity of householder (%)						
Non-Hispanic Black	5.7	5.7	5.9	6.1	6.3	6.4
Non-Hispanic Asian or Pacific Islander	3.5	3.5	3.6	3.8	4.0	4.2
Non-Hispanic white or other race	85.4	85.2	84.6	83.8	82.8	81.8
Hispanic, any race	5.4	5.5	5.9	6.4	6.9	7.5
By age of householder (%)						
34 or younger	18.3	18.3	18.0	17.4	16.7	16.5
35–54	30.9	30.8	30.8	32.0	33.6	33.9
55–74	37.9	37.8	36.8	35.0	33.0	32.5
75+	12.9	13.1	14.4	15.6	16.6	17.1
By race and ethnicity of population (%)						
Non-Hispanic Black	5.8	5.8	5.9	6.1	6.2	6.4
Non-Hispanic Asian or Pacific Islander	3.2	3.3	3.5	3.7	3.9	4.1
Non-Hispanic white or other race	84.4	84.3	83.5	82.7	81.8	80.9
Hispanic, any race	6.6	6.6	7.1	7.6	8.1	8.7
By age of population (%)						
34 or younger	37.7	37.6	37.1	36.5	36.0	36.0
35–54	24.9	24.9	25.1	26.0	27.2	27.4
55–74	28.3	28.2	27.6	26.3	24.9	24.5
75+	9.1	9.3	10.2	11.1	11.9	12.2

TABLE C.6

New Haven County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	854,757	853,895	849,306	843109	835,018	825,775
Total households	370,091	370,032	369,399	366971	362,797	357,624
By adjusted household income level relative to county median						
Below 80%	154,830	155,197	155,104	154,610	153,366	151,192
Below 50%	104,307	104,530	104,576	103,781	103,228	101,983
Below 30%	704,08	70,479	70,315	69,603	69,382	68,670
By accessibility needs of at least one household member						
Mobility needs	29,893	30,448	33,136	35,381	3,7624	38,905
Sensory needs	18,302	18,629	20,173	21,392	22,464	22,867
Mobility or sensory needs	39,284	40,018	43,531	46,326	49,034	50,427
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of income in 2019	100.0	99.7	98.5	96.6	95.4	93.9
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.9	99.4	98.6	97.7	96.6
Households in year X as a percentage of households in 2019	100.0	100.0	99.8	99.2	98.0	96.6
By race and ethnicity of householder (%)						
Non-Hispanic Black	13.4	13.4	13.8	14.2	14.6	15.0
Non-Hispanic Asian or Pacific Islander	4.2	4.2	4.3	4.4	4.5	4.6
Non-Hispanic white or other race	65.3	65.0	63.5	61.9	60.2	58.4
Hispanic, any race	17.1	17.3	18.3	19.5	20.7	21.9
By age of householder (%)						
34 or younger	22.5	22.4	22.1	21.8	21.7	21.9
35–54	31.8	31.8	31.9	32.7	33.2	33.1
55–74	33.8	33.6	32.8	31.6	30.4	30.1
75+	12.0	12.2	13.1	13.9	14.7	14.8
By race and ethnicity of population (%)						
Non-Hispanic Black	14.1	14.2	14.5	14.8	15.2	15.5
Non-Hispanic Asian or Pacific Islander	4.3	4.3	4.4	4.6	4.7	4.8
Non-Hispanic white or other race	62.5	62.2	60.7	59.0	57.4	55.6
Hispanic, any race	19.1	19.4	20.4	21.6	22.8	24.1
By age of population (%)						
34 or younger	43.3	43.2	42.8	42.5	42.5	42.7
35–54	24.9	24.9	25.1	25.6	26.0	25.8
55–74	24.0	23.9	23.4	22.6	21.6	21.5
75+	7.8	8.0	8.7	9.3	9.9	10.1

TABLE C.7

New London County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	265,206	264,496	260,831	256,492	251,454	245,972
Total households	121,916	121,691	120,422	118,554	116,133	113,506
By adjusted household income level relative to county median						
Below 80%	50,453	50,281	49,714	48,986	48,110	48,933
Below 50%	35,512	35,486	34,988	34,443	33,823	33,253
Below 30%	25,137	24,933	24,563	24,249	23,987	23,727
By accessibility needs of at least one household member						
Mobility needs	9,648	9,815	10,637	11,276	11,791	11,855
Sensory needs	6,331	6,452	7,034	7,463	7,730	7,697
Mobility or sensory needs	13,335	13,571	14,715	15,603	16,259	16,292
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of year 2019	100.0	99.7	98.5	97.4	96.2	95.3
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.7	98.4	96.7	94.8	92.7
Households in year X as a percentage of households in 2019	100.0	99.8	98.8	97.2	95.3	93.1
By race/ethnicity of householder (%)						
Non-Hispanic Black	6.8	6.8	6.9	7.1	7.2	7.4
Non-Hispanic Asian or Pacific Islander	3.9	3.9	3.9	3.9	3.8	3.8
Non-Hispanic white or other race	78.8	78.6	77.9	77.0	76.1	75.2
Hispanic, any race	10.5	10.7	11.3	12.0	12.8	13.7
By age of householder (%)						
34 or younger	23.9	23.8	23.4	22.9	22.9	23.0
35–54	30.0	30.0	30.3	31.2	31.8	31.7
55–74	33.7	33.6	32.6	31.0	29.5	29.2
75+	12.3	12.6	13.7	14.9	15.9	16.1
By race and ethnicity of population (%)						
Non-Hispanic Black	7.4	7.4	7.5	7.6	7.8	7.9
Non-Hispanic Asian or Pacific Islander	4.3	4.3	4.2	4.2	4.2	4.2
Non-Hispanic white or other race	77.3	77.1	76.4	75.5	74.6	73.7
Hispanic, any race	11.1	11.2	11.9	12.6	13.4	14.2
By age of population (%)						
34 or younger	42.3	42.2	41.7	41.4	41.5	41.7
35–54	24.0	24.0	24.3	25.1	25.5	25.4
55–74	25.7	25.6	24.9	23.8	22.6	22.3
75+	8.0	8.2	9.0	9.8	10.5	10.7

TABLE C.8

Tolland County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	150,721	150,563	149,696	148,564	147,161	145,633
Total households	71,437	71,388	71,131	70,682	70,027	69,265
By adjusted household income level relative to county median						
Below 80%	30,928	30,863	30,757	30,756	30,663	30,610
Below 50%	24,242	24,195	23,935	23,881	23,886	23,981
Below 30%	19,820	19,759	19,470	19,457	19,608	19,827
By accessibility needs of at least one household member						
Mobility needs	4,072	4,148	4,497	4,749	4,984	5,031
Sensory needs	3,221	3,273	3,530	3,767	3,959	3,942
Mobility or sensory needs	5,917	6,029	6,544	6,943	7,280	7,285
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of year 2019	100.0	99.7	99.4	98.8	97.5	96.6
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.9	99.3	98.6	97.6	96.6
Households in year X as a percentage of households in 2019	100.0	99.9	99.6	98.9	98.0	97.0
By race and ethnicity of householder (%)						
Non-Hispanic Black	5.5	5.5	5.7	6.0	6.3	6.6
Non-Hispanic Asian or Pacific Islander	5.3	5.4	5.8	6.3	6.8	7.4
Non-Hispanic white or other race	83.6	83.4	82.3	81.0	79.7	78.2
Hispanic, any race	5.7	5.8	6.2	6.7	7.2	7.7
By age of householder (%)						
34 or younger	33.8	33.8	33.5	33.0	32.8	33.2
35–54	27.0	27.0	27.4	28.8	30.1	30.2
55–74	29.3	29.2	28.2	26.5	24.6	24.1
75+	9.8	10.0	10.9	11.7	12.5	12.5
By race and ethnicity of population (%)						
Non-Hispanic Black	4.2	4.2	4.4	4.6	4.8	5.0
Non-Hispanic Asian or Pacific Islander	5.0	5.1	5.5	6.0	6.5	7.0
Non-Hispanic white or other race	84.9	84.7	83.7	82.6	81.4	80.2
Hispanic, any race	5.9	6.0	6.4	6.9	7.3	7.8
By age of population (%)						
34 or younger	47.1	47.0	46.9	46.5	46.3	46.5
35–54	22.7	22.7	23.1	24.2	25.4	25.4
55–74	23.3	23.2	22.4	21.0	19.5	19.2
75+	7.0	7.1	7.7	8.3	8.9	8.9

TABLE C.9

Windham County Population and Household Projections, 2019–40

	2019	2020	2025	2030	2035	2040
Total population	116,782	116,644	115,912	114,869	113,495	111,887
Total households	51,331	51,302	51,157	50,799	50,210	49,526
By adjusted household income level relative to county median						
Below 80%	21,444	21,407	21,519	21,439	21,233	21,843
Below 50%	14,012	14,026	14,075	14,042	14,037	14,431
Below 30%	9,437	9,447	9,507	9,461	9,323	9,665
By accessibility needs of at least one household member						
Mobility needs	5,282	5,380	5,860	6,296	6,701	6,844
Sensory needs	3,506	3,587	3,969	4,257	4,491	4,550
Mobility or sensory needs	7,128	7,276	7,978	8,594	9,134	9,297
Change in demand for affordable housing						
Adjusted median household income in year X as a percentage of income in 2019	100.0	99.7	99.0	97.7	96.3	95.0
Change in household demographics						
Population in year X as a percentage of population in 2019	100.0	99.9	99.3	98.4	97.2	95.8
Households in year X as a percentage of households in 2019	100.0	99.9	99.7	99.0	97.8	96.5
By race and ethnicity of householder (%)						
Non-Hispanic Black	3.0	3.0	3.2	3.3	3.4	3.5
Non-Hispanic Asian or Pacific Islander	1.3	1.3	1.3	1.3	1.4	1.4
Non-Hispanic white or other race	84.6	84.4	83.6	82.6	81.6	80.4
Hispanic, any race	11.1	11.2	12.0	12.8	13.7	14.8
By age of householder (%)						
34 or younger	22.8	22.7	22.1	21.6	21.5	21.6
35–54	31.3	31.4	31.9	32.6	33.0	32.8
55–74	35.0	34.8	34.0	32.7	31.3	31.0
75+	10.9	11.1	12.1	13.1	14.2	14.5
By race and ethnicity of population (%)						
Non-Hispanic Black	2.8	2.8	2.9	3.0	3.2	3.3
Non-Hispanic Asian or Pacific Islander	1.4	1.4	1.5	1.5	1.6	1.6
Non-Hispanic white or other race	83.3	83.2	82.2	81.2	80.0	78.8
Hispanic, any race	12.4	12.6	13.4	14.3	15.2	16.2
By age of population (%)						
34 or younger	42.1	42.0	41.3	40.9	40.9	41.0
35–54	25.5	25.6	26.0	26.6	26.8	26.6
55–74	25.4	25.3	24.8	23.9	22.9	22.8
75+	7.0	7.2	7.9	8.6	9.4	9.6

Appendix D. Sample Data Collection Structures

The following sections outline this study's methodology for aggregating and analyzing subsidized housing units, and provides recommendations for the state of Connecticut's Department of Housing on the design and development of a standardized subsidized housing database

Dataset Aggregator Foundation Steps

Before starting work on the Connecticut Housing Assessment project, Source Development Hub expected that the subsidized units datasets we sourced from Connecticut's Department of Housing, the National Housing Preservation Database, the Connecticut Housing Finance Authority, and the US Department of Housing and Urban Development would be similar enough to allow us to develop a streamlined pipeline for uploading the files into our server and processing them so the relevant information could be maintained on a SQL database. Newer datasets and subsequent datasets from these sources would have encoded metadata that would permit automatic updating of older dataset versions in our database.

Initial Findings

Throughout our process of exploring the dataset structures and constructing an automated pipeline to handle the scrubbing, standardization, and analysis, we found that it was nearly impossible to remove a largely human element of data maintenance. This means that it is highly difficult, if not impossible, to maintain a highly accurate and precise inventory of all subsidized units, as currently recorded, because the data are so varied and disorganized.

The human element of data maintenance makes it difficult, if not impossible, to maintain an accurate inventory of all subsidized units because the data are varied and disorganized.

We found multiple instances through our data scrubbing (and subsequent pipeline) where we needed to intervene manually to clean the data. This resulted in instances where the dataset was provided hardcoded values using templates that we manually created after the fact. In other words, datasets were iteratively treated and examined for output that we would like and retreated based on our understanding of what seemed logical. This type of data scrubbing is difficult to maintain using an automated system, and we highlight evidence of these instances below.

Datasets Sourced

We sourced the following datasets from the following organizations: The National Housing Preservation Database (NHPD), Connecticut Department of Housing (CT DOH), the Connecticut Housing Finance Authority (CHFA), and US Department of Housing and Urban Development (HUD). These sources provided us with six different datasets (table D.1).

TABLE D.1
Assisted Housing Dataset Sources Used

Dataset	Source	Description
National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Public and Affordable Housing Research Corporation	List of all units on a federal subsidy, excluding project-based and housing choice vouchers; uncategorized list of state-subsidized units
Governmentally Assisted List (2019)	Connecticut Department of Housing	List of all state-subsidized units
Deed Restricted List (2019)	Connecticut Department of Housing	List of all deed-restricted units
Multifamily 8-37bb Housing Portfolio (2020)	Connecticut Housing Finance Authority (CHFA)	List of all CHFA-subsidized multifamily units
2020 Master PBV Log	US Dept. of Housing and Urban Development (HUD)	List of all project-based vouchers in the state
HUD Affordable Housing List	HUD, Hartford Field Office	List of all HUD-funded subsidized projects and total housing choice vouchers in Connecticut by public housing agency

Exploration of Dataset Structure

The raw datasets required reformatting so their information could be combined and grouped for the final analysis. Our group classified the datasets sourced into two relevant categories, which we referred to as "type 1" or "type 2." For both datasets, each row referred to a specific housing project or development, but we coded subsidies and subsidy subclasses differently.

- **Type 1** datasets were coded in such a way that each subsidy was allotted a subset of columns or blocks. These datasets coded specific subsidy column headers: if entries were not null within column, the subsidy was added to a total count. Type 1 has units associated with each subsidy as separate columns.
- **Type 2** datasets were coded such that one column encoded the subsidy type in a generic "Subsidy Class" column.

Table D.2 illustrates of Type 1 and Type 2 datasets.

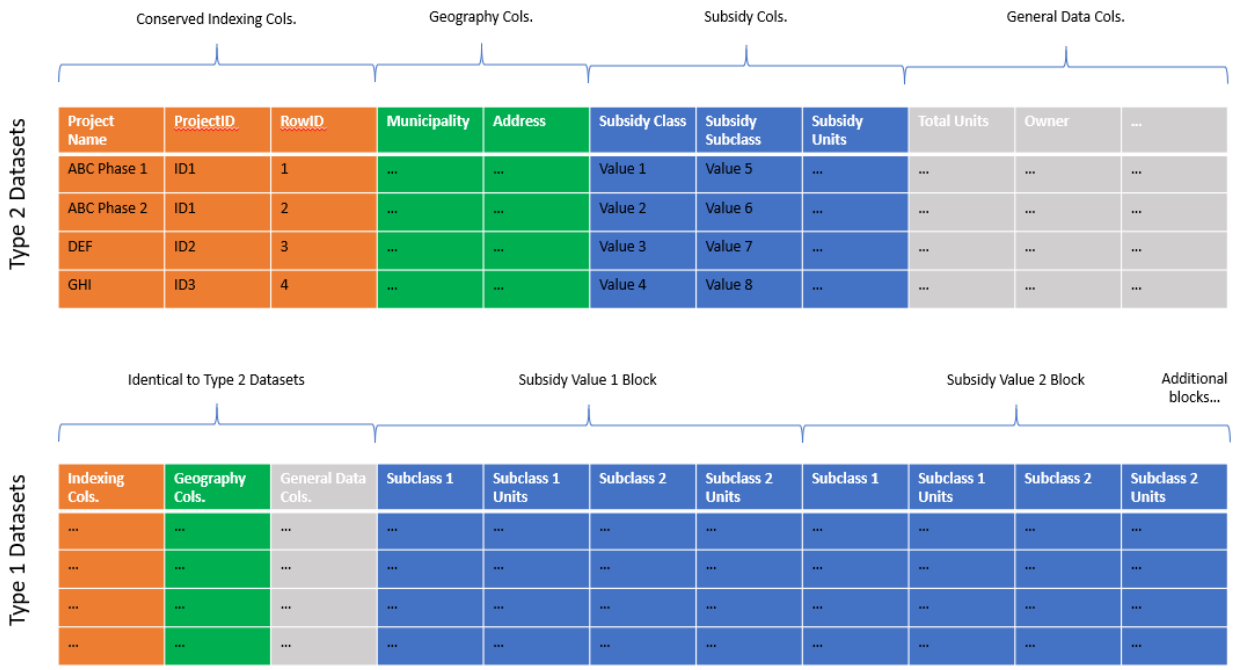
TABLE D.2
Classifying Datasets by Type 1 or Type 2 Subsidy Recording Structure

Dataset	Type
National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	1
Governmentally Assisted List (2019)	2
Deed-Restricted List (2019)	1
Multifamily 8-37bb Housing Portfolio (2020)	2
2020 Master PBV Log	2
HUD Affordable Housing List	2

Type 1 datasets encoded much more information because they could have several columns dedicated to individual subsidies for a given project, while Type 2 datasets could only have one subsidy for a given row (except for cases where that subsidy column encoded multiple subsidy values with a particular delimiter) (figure D.1). **The existence of variation between dataset column structure is a first consideration for a more robust future system for automated inventorying and cross-dataset compatibility.**

FIGURE D.1

Illustration of Type 1 and Type 2 Subsidy Recording Dataset Structures

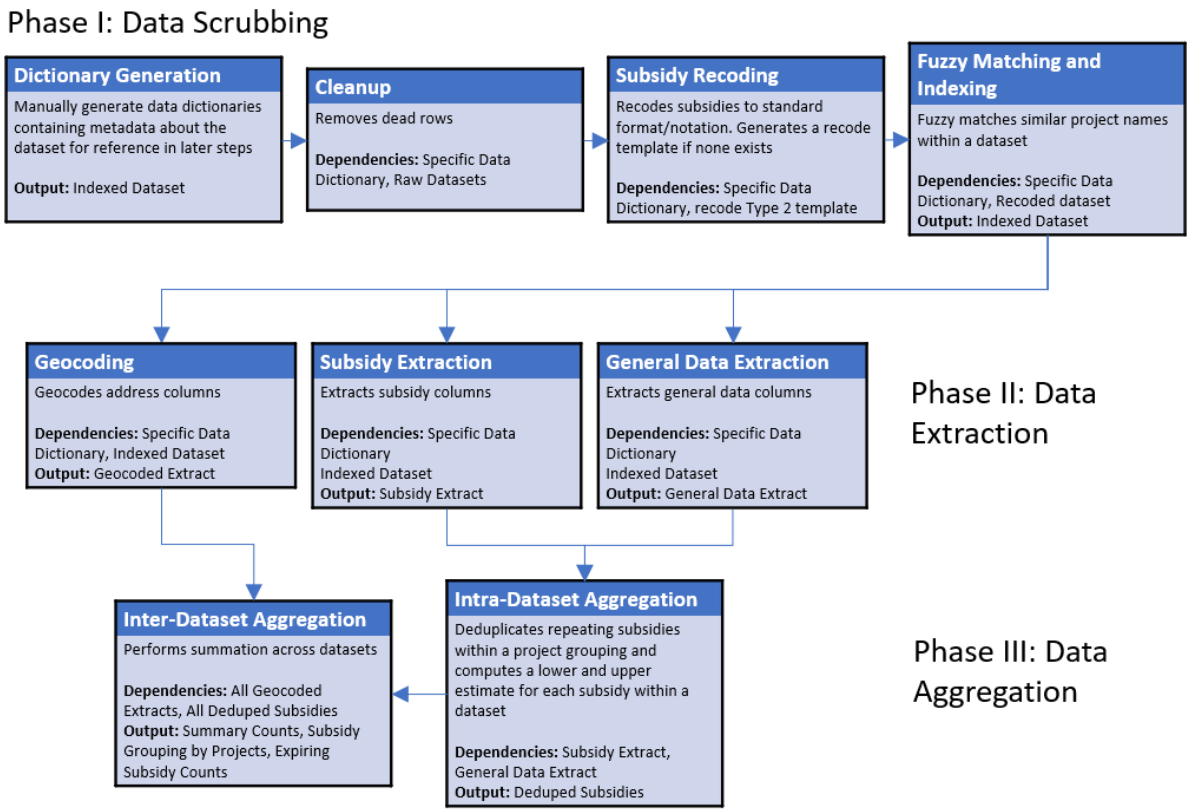


Assisted Housing Data Extraction Methods

We divided our data extraction and analysis pipeline into three phases. The first phase scrubbed the data and indexed it for processing, the second phase extracted relevant information from each dataset in standard form, and the third phase aggregated and computed sums of subsidized unit counts with respect to geography. Figure D.2 lays out the study's methods for generating different data outputs.

FIGURE D.2

Assisted Housing Data Aggregation Process Flow Chart



Phase I: Metadata Generation, Data Cleaning, and Indexing

DICTIONARY DESIGN

To organize the data, we created metadata for each dataset—that is, dataset dictionaries used to code for the relevant columns of data to extract from each file. We chose classification parameters based on examining all the datasets and identifying similar and necessary columns (figure D.3).

FIGURE D.3

Example Dataset Dictionary (Governmentally Assisted)

Column Variable	Classify	Metadata
RawDatasetName		
DatasetUID		
DatasetVersion		
DatasetType	Type.2	
OrgID		
Funder		
Administration		
Municipality	Address.City	
Project Name	Project.Name	Flag.ProjectID
Total	Unit.Total	
Family	Unit.Family	
Elderly	Unit.Elderly	
Handicapped	Unit.Handicap	
Rent		
Own		
Project Number		
Street Address #1	Address.StreetName	
Street Address #2	Address.StreetName	
Street Address #3	Address.StreetName	
Occ. Date		
Municipality.1		
Project Name.1		
Owner	Owner.Name	
Owner Address	Owner.Address	
City		
State		
Zip Code		
Management	Owner.Name	
Management Address	Owner.Address	
Management Address #2		
City.1		
State.1		
ZipCode		
Owner Type		
Contact		
Phone		
Agency		
Program	Subsidy.Name	

We designed our data dictionaries by noting common or standard elements across datasets. We identified the following minimum column information needed: project name, address, municipality, and subsidy. Type 2 datasets would have a single subsidy column while Type 1 datasets would have one or more subsidy columns.

SUBSIDY STANDARDIZATION

For dataset rows to be comparable when combining datasets (i.e., an apples-to-apples comparison), subsidies had to be coded in a standard format. Because each source referred to subsidies by its own standards, we developed a standard list of subsidies in consultation with both internal partners at the Urban Institute and with external collaborators at DOH and CHFA. The lack of standardization of subsidy names between datasets is a second consideration for a more robust future system.

The subsidy list was hierarchical, with a main subsidy class further broken out into subclasses as needed. For example, LIHTC projects were a main class containing subclasses of 4 percent and 9 percent credits. We designed recoding templates, which we called a "categorizer," that would rename each dataset's subsidies to the corresponding standard list value. Using our judgment and in consultation with our partners, we manually identified unique subsidy class/subclass values in each dataset and associated them to a standard list value. This process was laborious but crucial. Upon recoding, we expanded each Type 2 dataset to encode extra columns specifying the standard subsidy value for a given project or row. The associated dictionaries for Type 2 datasets were updated with new metadata. Type 1 datasets were unchanged, partly because our initial exploratory code used Type 1 datasets as a point of reference.

ROW INDEXING

Once the dataset subsidies were standardized, we created our own grouping indices, called "ProjectID," for a given row or group of rows. This indexing allowed us to identify and merge row data for projects with repeating ProjectIDs. The ProjectID was used to join related rows (i.e., data from the same housing project/development) across multiple data source extracts.

We used the concept of a project or development as the element of analysis and created our grouping index according to matching project names (with the corresponding dataset column specified in the data dictionary). Because multiple project names could refer to the same physical location (such as when a given property has phased projects), we used an inexact or fuzzy string match to group highly similar project names together. We used the union of two string-matching algorithms, Jaro-Winkler and Smith-Waterman, to capture most grouped projects.

In our initial row indexing, we used a stringent threshold of 0.9 (out of 1) to reduce false positives (incorrect matches). We further reduced false positives by eliminating the top two words found across all project names and only grouping similar project names within the same city or town (see figure D.4 for an example).

FIGURE D.4

Example of Indexed Grouping (NHPD)

Grouping That Matches Records for Two Phases of the Sheldon Common Co-Op

NHPD Property ID	Property Name	Property Address	City	Total Unit	RowID	Clean_Proj	Group Flag	ProjectID
1013604	SHELDON COMMON I CO-OP	110 Martin St	Hartford	7	101	sheldon common i coop	Hartford101	e1f74d0c-e861-4af8-b63f-209c93f9429f
1013606	SHELDON COMMON II CO-OP	120 Martin St	Hartford	2	109	sheldon common i coop	Hartford101	e1f74d0c-e861-4af8-b63f-209c93f9429f

MANUAL REINDEXING

A log file for all grouped rows was generated for data validation and additional examination. For rows that were incorrectly grouped and needed to be reindexed, we used a hardcoded template to regroup or drop specific rows. This step enabled us to fine-tune any unnecessarily grouped rows. We found that indexing and reindexing were necessary because not all datasets were internally indexed, and those that were (e.g., the NHPD) did not incorporate our concept of grouping related project names. The need to index within datasets is a third consideration for a more robust future system.

Phase II: Geocoding, Subsidy Data Extraction, and General Data Extraction

We performed the next three steps of our data processing after indexing. Because not all data encoded in a given column or subset of columns has a one-to-one relationship with those from another subset of columns, extracting this data in parallel with a common join column (i.e., the ProjectID index) allowed us to accurately and cleanly represent each type of extraction. Three types of extractions were performed for each dataset: addresses were extracted for geocoding, subsidy columns were extracted for counting, and general columns (including total unit counts) were extracted for comparison and as references for possible future analysis.

GEOCODING

The ways property addresses were recorded varied highly across datasets. Even within datasets, we found inconsistencies in how addresses were entered, including misspellings, extensive strings encoding apartment units, inclusion of special characters (such as parentheses), and incorrectly placed zip codes. Overall, the variation in which addresses are listed, which directly impacted our ability to geocode, is a fourth consideration for a more robust future system.

To address these formatting inconsistencies, we first removed trailing zip codes, which were difficult to geocode. We then used a context-free grammar (Python lark-parser library) and regular expression rules to parse out addresses by street number, street name, city, and state. The parser additionally filtered out optional “decorators,” such as units or apartments (e.g., Unit 1, Apt 3).

We used Google's Geocoding API to geocode the parsed addresses.[45] Each row in the geocoding output corresponded to a single address found within a project's row. For rows that encoded multiple addresses within the address column cell, we expanded the result to create multiple rows with the same reference ProjectID index. Those rows that returned errors were logged and flagged. We logged the type of geocoding result returned for every address as a readout of the quality of the address string. We considered the best strings as returning rooftop coordinates, and the worst as returning blanks. A comparison of three datasets (NHPD, Governmentally Assisted List, and Deed Restricted List) is seen below:

FIGURE D.5

Example Comparison of Different Dataset Geocoding Match Rates

LocationType	doh_dr_2019		doh_ga_2019		pahrc_ai_2020	
ROOFTOP	2195	86.08%	1674	66.35%	987	82.39%
RANGE_INTERPOLATED	128	5.02%	344	13.63%	149	12.44%
GEOMETRIC_CENTER	65	2.55%	185	7.33%	47	3.92%
APPROXIMATE	20	0.78%	116	4.60%	1	0.08%
(blank)	142	5.57%	204	8.09%	14	1.17%
Total	**2550**	**100.00%**	**2523**	**100.00%**	**1198**	**100.00%**

Note: DOH DR is CT DOH's deed restricted list, DOH GA is the governmentally assisted list, and PAHRC AI is the NHPD's list.

SUBSIDY EXTRACTION

We extracted subsidy values so Type 1 and Type 2 datasets subsidy columns remapped to a single subsidy class and subclass column for a given subsidy in a given row. For rows that encoded multiple subsidies within the subsidy column(s), we expanded the result to create multiple rows with the same reference ProjectID index.

For Type 1 datasets (NHPD and DOH Deed Restricted) the subsidy columns are subdivided into blocks with each row checked for the existence of a given subsidy block. For a given row, if a subsidy block exists, its column value(s) is/are captured. For Type 2 datasets (DOH Governmentally Assisted, CHFA 8-37bb, and HUD), the designated subsidy class and subclass columns are identified for a given row and the corresponding cell values are captured. Two other optional columns, subsidy unit counts and subsidy expiration dates, were encoded if such data were included in the source. The lack of direct or unambiguous subsidy counts in some datasets is a fifth consideration for a more robust future system.

As sourced, we had to manually pre-process both the 2020 Master PBV Log and the HUD Affordable Housing List because HUD had encoded multiple bits of information within single columns

that should have been split into separate columns. This included combining the total and subsidized unit counts of a given row within a single column as well as cases of inconsistent data entry. The need to pre-process datasets is a sixth consideration for a more robust future system. Figures D.6 and D.7 illustrate the conversion process for Type 1 and Type 2 datasets, respectively.

FIGURE D.6

Type 1 Dataset Reformatting Conversion Output

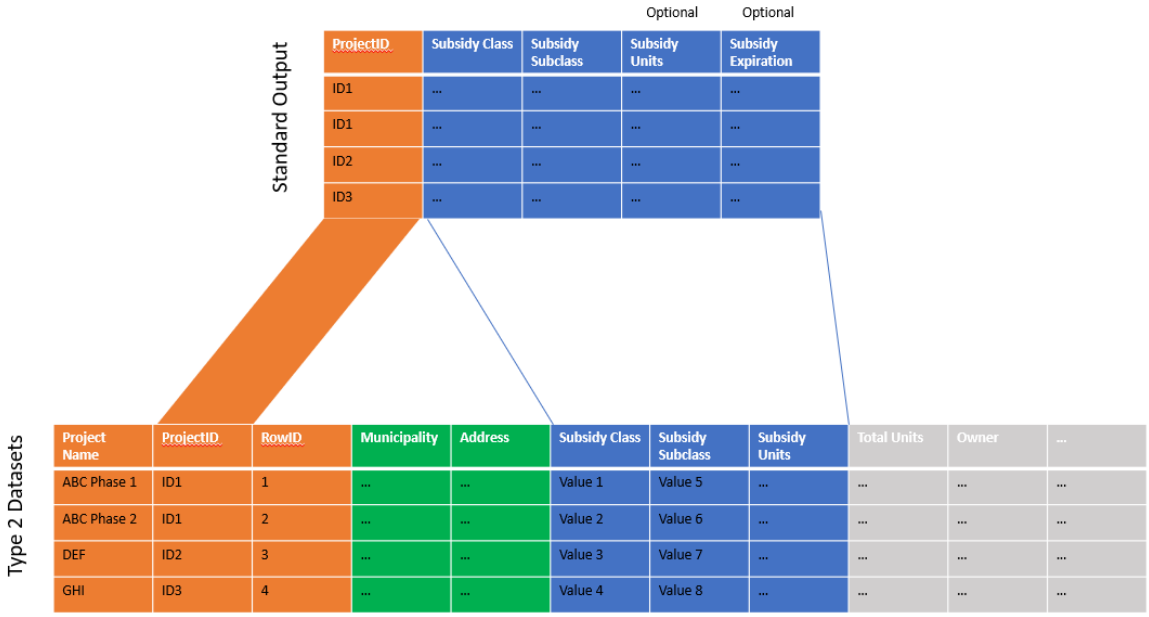
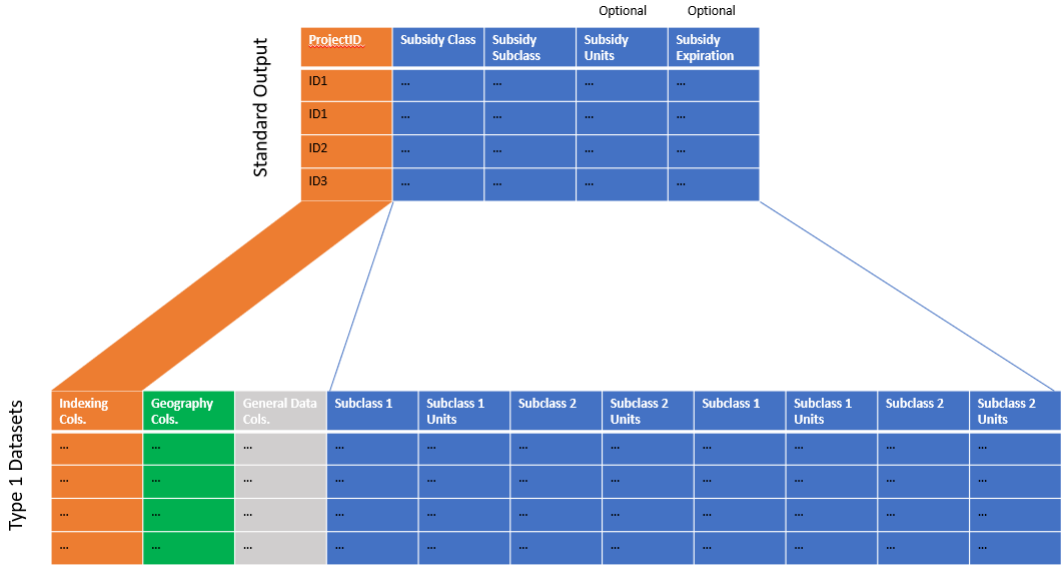


FIGURE D.7

Type 2 Dataset Reformatting Conversion Output



GENERAL DATA EXTRACTION

Other types of data, including the total units in each project (if available), were extracted in the final step, separating out data that was potentially useful for future analysis. We coded for a brief list of exceptions for grouped project names if we believed that the total number of units within that housing development did not equal the sum of units across the grouped rows. For example, the data source may have generated separate rows for the same housing development but repeated the total unit count in each record; adding those counts would result in too many units for the development. The inconsistency in column variables carried over between datasets and the need to hardcode total unit count within grouped project names are seventh and eighth considerations for a more robust future system.

Phase III: Deduplication and Aggregation

To this point, the process generated data that allowed us to create separate counts of projects and units for each subsidy class in the state of Connecticut. The data at this stage would not allow us to produce a deduplicated count of assisted units, however. Because subsidy programs are often layered in the same development, assisted units in those developments may be receiving multiple sources of assistance. And since the data for subsidy programs are kept separately, adding up assisted units reported by different agencies would result in counting the same units multiple times.

To address this, data grouped by project needed to be combined in a way that allowed proper deduplication and aggregation of subsidized projects and units.

SUBSIDY COUNT AGGREGATION

By formatting and extracting subsidy and general data, we were able to reconstruct data in such a way that our aggregation and analysis did not depend on hardcoded metadata (i.e., the data dictionaries) that pointed to specific locations within a dataset for the final analysis. This enabled us write code that was generalizable in aggregating the total subsidy count.

Intra-dataset aggregation: We first needed to validate subsidized unit counts within datasets to ensure that we did not double-count units and that those counts were reasonable (i.e., that they did not exceed the total number of units, both subsidized and unsubsidized, within a given development or ProjectID grouping). Double counting was primarily a concern for the NHPD dataset which allowed for two instance of a given subsidy subclass, but we developed a generalized subsidy grouping technique that was applicable to all possible future occurrences.

We considered several scenarios in aggregating subsidies within a given dataset since the fidelity of certain datasets was higher than others. While the NHPD data contained both total and subsidized unit counts, other datasets, like the DOH Governmentally Assisted List did not. Yet other datasets, such as the HUD Affordable Housing List, contained inconsistent records where only some contained the number of subsidized units. As mentioned previously, the inconsistency in the availability of these data makes it crucial to design a better standard (table D.3).

Because some datasets had information only on the total units for a given project or development, we needed to account for/describe the uncertainty of how many units were actually subsidized. To do so, we created a range of estimates, with lower and upper bounds. The lower bound would consider the scenario where a minimum number of units (generally one) were subsidized, and the upper bound would consider the scenario where all units were subsidized. Lacking additional information, we were unable to create a tighter range without factoring in arbitrary assumptions about the underlying nature of a subsidy. However, for datasets that had much higher fidelity and specified the exact number of subsidized units, we would take those values as the lower and upper bounds.

TABLE D.3

Data Types Available by Dataset

Dataset	Project name	Preexisting indexing	Municipality	Address	Total units	Subsidized units	Owner information
National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Governmentally Assisted List (2019)	Yes	Some, inconsistent	Yes	Yes	Yes	No	Yes
Deed Restricted List (2019)	Yes	No	Yes	Yes	No	Yes	No
Multifamily 8-37bb Housing Portfolio (2020)	Yes	No	Yes	Yes	No	Yes	Yes
2020 Master PBV Log	Yes	No	Yes	Yes	Yes	No	Yes
HUD Affordable Housing List	Yes	Some, inconsistent	Yes	Yes	Yes	Some	Yes

We first had to account for inconsistencies in missing data for datasets such as the HUD Affordable Housing List. We filled in missing subsidy unit information with a nominal flag value (generally one) to denote existence of that subsidy.

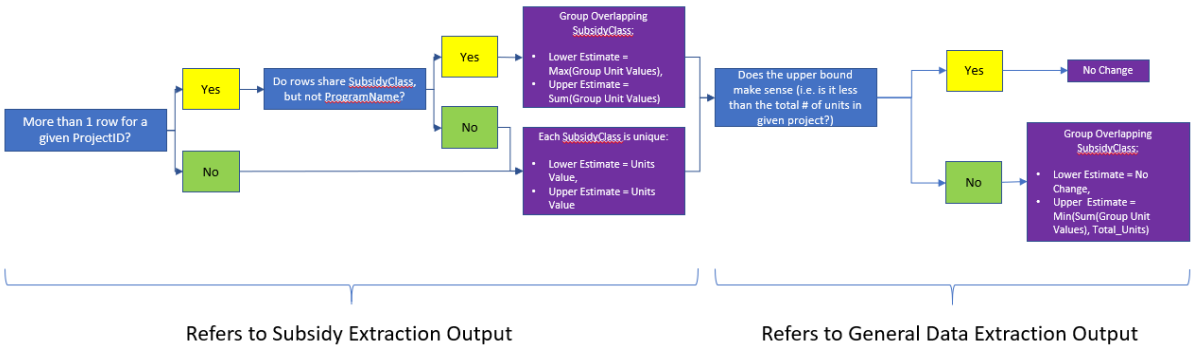
Next, we created our upper- and lower-bound estimates for a given subsidy with the above consideration of whether the dataset included subsidy unit counts. We then examined if there was any repeated subsidy class within a ProjectID. To aggregate repeating or duplicated subsidy class values within a given ProjectID, we considered the two scenarios where (1) there was maximum overlap in the number of housing units between those two (or theoretically more) repeated subsidies, and (2) there was minimum overlap between the repeated subsidies. In the first scenario, we coded the aggregated or deduplicated subsidy count to be the maximum value of the set. In the second scenario, we coded the aggregated subsidy count to be the sum value of the set. The exception to this process was for repeated subsidies that must be disjoint: deeds, which we considered always mutually exclusive of one another, were summed.

Finally, we compared our ranged estimates with the total unit count from the general data extract if such a count existed for the given dataset. We revised our estimates so the lower- and upper-bound estimates for a given subsidy within a ProjectID equaled or were less than the total unit count. We computed the total unit count as the sum of the unit counts of all project names within a given

ProjectID, except the hardcoded instances described in the general data extract section above. Figure D.8 illustrates the decision tree used during intra-dataset aggregation.

FIGURE D.8

Inter-Dataset Aggregation Simplified Decision Tree



Inter-dataset aggregation: Next, we considered the sum of all subsidies across datasets. Because datasets provided overlapping information on the same subsidies, summing the data would overcount the subsidized units. Instead, we developed a priority tree that specified two key parameters: (1) whether to sum (e.g., perform a "group by" function) a given subsidy by its class or subclass, and (2) which dataset to use to aggregate a particular subsidy. This allowed us to have granular control over which subsidies classes to group and which dataset to use for the summation. Figure D.9 describes the prioritization and summation.

FIGURE D.9

Prioritization and Summation Methods by Subsidy Class

Subsidy Class	Dataset to Prioritize/Use	Summation Method (Group By)
FHA HUD Multifamily Mortgages	National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Class
HOME	National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Class
LIHTC	Multifamily 8-37bb Housing Portfolio (2020)	Subclass
Public Housing	HUD Affordable Housing List	Class
Rural Housing Loans (Section 515)	National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Class
Rural Housing Loans (Section 538)	National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Class
Section 202	National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Class
Section 236	National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Class
Section 8 Non-Voucher Programs	National Housing Preservation Database: Active and Inconclusive Properties CT (2020)	Class
Section 8 Voucher Programs	HUD Affordable Housing List, 2020 Master PBV Log	Subclass
State Subsidies	Governmentally Assisted List (2019), Multifamily 8-37bb Housing Portfolio (2020)	Subclass
Deed Restrictions	Deed Restricted List (2019)	Subclass
Single Residency Occupancy	HUD Affordable Housing List	Class
Other Federal Subsidies	Multifamily 8-37bb Housing Portfolio (2020)	Subclass

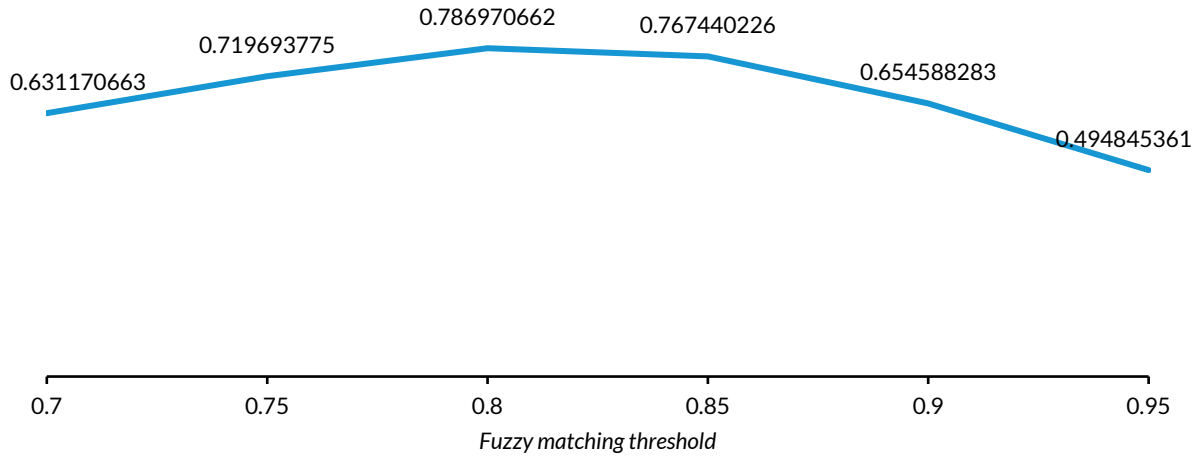
We summed counts at two geographic levels: counties and towns (denoted as Connecticut county subdivisions by the Census). This summation was extracted for (1) the total merged data, and (2) only for data within the NHPD dataset, which we used as a reference. Because of inconsistency in naming conventions for towns between datasets (i.e., some datasets used informal town names), we standardized the values for address columns using reference 2010 Census county and town shapefiles from the University of Connecticut's MAGIC library. We spatially joined each geocoded point to associate unique addresses to the correctly formatted county and town. Our final summation function took geography as an input argument so that we had the flexibility to sum across either a county or town. For housing choice voucher counts, we identified specific rows in the HUD datasets that were not geographically linked to any point but were attached to the town where the issuing public housing agency was located. These data had to be specially considered and added to the total summation. The inconsistency in naming convention for cities/towns between datasets and the existence of specially coded rows in certain datasets are ninth and tenth considerations for a more robust future system.

We also performed similar geographic summations based on subsidies with expiration dates, such as LIHTC and project-based Section 8. We summed units where a given subsidy had not yet expired in one-year increments from 2020 until 2060 (the last known instance of an expiring subsidy).

To understand how subsidies related to one another across datasets, we recreated ProjectID associations to complete our final summations of all project names across datasets. This allowed us to identify the specific bundle or permutation of subsidies associated with a physical project or property. To do so, we repurposed earlier code written for fuzzy matching. Given the observation that naming conventions across datasets were highly variable and inconsistent, we lowered the fuzzy matching threshold from 0.9. We empirically determined this lower threshold by grouping using a range of thresholds and performing a manual binary classification of validity. We then performed a sensitivity-specificity analysis by identifying the maximum Youden's Index (J) as the optimal value for thresholding. (The range of J-indices is shown in D.10 for this training set.) We then used this level of specificity to determine when a project or property was an accurate match across datasets. For this analysis we used the DOH Governmentally Assisted Dataset as a reference because it appeared the least standard dataset. Once we had chosen our level of specificity, we ran our fuzzy matching model across all three datasets to create a single unified dataset that offered a deduplicated estimate of projects and the upper limit of units by subsidy class per town and county as well as an estimate of the number of units and projects that layered various permutations of subsidy classes.

FIGURE D.10

Fuzzy Matching Training Set J-Index Ranges



Recommendations

We recommend a complete standardization for collecting and storing assisted housing data in Connecticut. As noted in the methodology section and summarized below, multiple pieces of evidence

suggest that a robust and automated housing database is impossible without restructuring the ways data providers collect, organize, and submit information. These limitations include the following:

- the variation between dataset column structures
- the lack of standardization of subsidy names between datasets
- the need to index within datasets
- the variation in address listings, which directly impacted our ability to geocode
- the lack of direct, unambiguous subsidy counts in some datasets
- the need to pre-process datasets
- the inconsistency in common or standard column variables between datasets
- the need to hardcode total unit counts within datasets
- the inconsistency in naming convention for cities and towns between datasets
- the existence of specially coded rows
- the inconsistent identification of housing developments across subsidy programs and datasets

The difficulties of automating a standardized inventory of subsidized units lie primarily in the fact that dataset providers organize their data in highly varied formats. Some providers appear to do little pre-processing, and some datasets seem better formatted than others. Overall, providers had no standard and consistent way of validating their data.

Although interagency data validation does not appear to be present, several structural elements were common across datasets. For instance, all datasets included a column for "project names," indicating that the elemental unit of analysis was a housing project or development. Additionally, there were columns for addresses, municipalities, subsidies, and units, which further indicated the importance of the geographic location of a project and its associated subsidies and units. Finally, there was often peripheral information encoded within each dataset, including information about the owners and/or the managers of a given project as well as subsidy expiration dates. These more common columnar data could be further improved and standardized to provide a comprehensive and comparable comparison.

To address the above difficulties, we recommend the creation of a new dataset template with clearly defined subsidy classification standards that accounts for both federal and state subsidies. Without the creation of this standardized dataset template for all applicable housing data providers, it is prohibitively complicated to provide ongoing subsidy tabulation accurately and consistently. Table D.4 lists the suggested design changes for a new, unifiable, standard database.

TABLE D.4

Limitations and Solutions for Creating a Standard Assisted Housing Database

Limitation	Solution
The variation between dataset column structures	Single dataset column structure. If possible, we recommend a Type 1 structure like the National Housing Preservation Database. The US Census Datasets (e.g., ACS) are similarly structured.
The lack of standardization of subsidy names between datasets	Standardized and publicly available codebook using the National Housing Preservation Database as a reference but including state subsidies and HUD programs. All housing data providers should have copies and references to this
The need to index within datasets	Single ruleset for indexing projects/developments. We recommend combining phased developments within a single physical property address.
The variation in which an address is listed, which directly impacted our ability to geocode	Standard formats for addresses with separate columns for decorators such as apartment unit values.
The lack of direct or unambiguous subsidy counts in some datasets	Correct for all missing data.
The need to pre-process datasets	Adherence to Tidy Data conventions.
The inconsistency in common or standard column variables between datasets.	Dataset must encode a minimum of address, subsidy unit total, total units in property, and subsidy expiration date. Entries should not be null if possible.
The need to hardcode total unit counts within datasets	Specify the total number of units within one physical property address.
The inconsistency in naming convention for cities/towns between datasets	Standardize naming of cities/towns to the exact names given by the US Census.
The existence of specially coded rows	Adherence to Tidy Data conventions. Eliminate all non-stratified rows so every row is comparable to another row.
The lack of consistent identification of housing developments across subsidy programs and datasets	Develop standard identification numbers for assisted housing developments in the state that are used across agencies.

Notes

[1] Also see "Statewide Zoning Code Research," Desegregate Connecticut, accessed December 14, 2020, https://www.desegregatect.org/ourdata.

[2] Shena Ashley, Alena Stern, Steven Brown, Yipeng Su, Ajjit Narayanan, Megan Randall, Tomas Monarrez, and Margery Austin Turner, "Tracking COVID-19's Effects by Race and Ethnicity: Questionnaire Two: Updates on People's Health, Housing, and Livelihoods between August 19 and December 21," last updated December 14, 2020, https://www.urban.org/features/tracking-covid-19s-effects-race-and-ethnicity-questionnaire-two.

[3] Although widely used, the 30 percent standard is a rough approximation of affordability. While meant to identify an appropriate share of a household budget that can be spent on housing while leaving sufficient resources for other needs, a uniform percentage may not accurately capture affordability for all households and income levels. Nevertheless, since the 30 percent standard is used by most federal and local housing programs to determine affordability, this report applies this standard. (For further discussion of the 30 percent standard, see Herbert, Hermann, and McCue 2018.)

[4] Comparative data on median home values by state available at "Access and Affordability: Interactive Map and Research on Three Barriers to Homeownership," last updated September 19, 2018, https://www.urban.org/policy-centers/housing-finance-policy-center/projects/access-and-affordability-interactive-map-and-research-3-barriers-homeownership.

[5] Data from 2014–18 American Community Survey, downloaded from http://data.ctdata.org/ on December 14, 2020.

[6] Alanna McCargo and Sarah Strochak, "Mapping the Black Homeownership Gap," *Urban Wire* (blog), Urban Institute, February 26, 2018, https://www.urban.org/urban-wire/mapping-black-homeownership-gap.

[7] Also see Jacqueline Rabe Thomas, "Separated by Design: How Wealthy Towns Keep People with Housing Vouchers Out," *Connecticut Mirror*, January 9, 2020, https://ctmirror.org/2020/01/09/separated-by-design-how-wealthy-towns-keep-people-with-housing-vouchers-out/.

[8] For large developments, the centroid, which may comprise multiple buildings, was used as the location.

[9] Affordable housing advocates have recently identified another potential threat to LIHTC properties at year 15, when new partners who were not part of the original syndication attempt to achieve outcomes that are not consistent with the original intentions for the project (Davenport 2020). Although few such attempts have been successful thus far, these actions have led to legal disputes and can jeopardize future affordability.

[10] See https://www.jdsupra.com/legalnews/lihtc-year-15-determining-the-right-89011/ for more on LIHTC year 15 strategies.

[11] "National Housing Preservation Database," Public and Affordable Housing Research Corporation and National Low-Income Housing Coalition, accessed December 14, 2020, https://preservationdatabase.org/documentation/data-sources/.

[12] "Montgomery County Preservation Study," July 16, 2020, https://montgomeryplanning.org/wp-content/uploads/2020/07/200716-Mont.-County-Preservation-Presentation.pdf.

[13] Data from the federal Household Pulse Survey for August 19–October 26, 2020, tabulated by the Urban Institute https://www.urban.org/features/tracking-covid-19s-effects-race-and-ethnicity-questionnaire-two (accessed December 14, 2020). Asian, Black, and multiracial renters and homeowners also reported higher rates of inability to pay next month's rent or mortgage than state average, but these differences were not statistically significant.

[14] "Accessibility Requirements for Buildings," US Department of Housing and Urban Development, Office of Fair Housing and Equal Opportunity, accessed December 14, 2020, https://www.hud.gov/program_offices/fair_housing_equal_opp/disabilities/accessibilityR.

[15] Connecticut Homeless Management Information System (HMIS) 2019 data, available at https://www.cthmis.com/.

[16] D'Vera Cohn and Jeffery S. Passel, "A Record 64 Million Americans Live in Multigenerational Households," *FactTank* (blog). Pew Research Center, April 5, 2018, https://www.pewresearch.org/fact-tank/2018/04/05/a-record-64-million-americans-live-in-multigenerational-households/.

[17] "Montgomery County Preservation Study," https://montgomeryplanning.org/wp-content/uploads/2020/07/200716-Mont.-County-Preservation-Presentation.pdf.

[18] Colorado Housing and Finance Authority, "Housing Leaders Partner to Preserve Affordability of Colorado Rental Units," news release, May 8, 2017, https://www.chfainfo.com/news/Pages/05082017-preserveaffordability.aspx.

[19] "DC Preservation Network," National Neighborhood Indicators Partnership, accessed December 14, 2020, https://www.neighborhoodindicators.org/activities/partner/dc-preservation-network.

[20] "Ohio Preservation Compact," accessed December 14, 2020, http://www.ohiopreservationcompact.org/.

[21] "Preservation Network," LISC Philly, accessed December 14, 2020, https://www.lisc.org/philly/our-priorities/affordable-housing/preservation-network/.

[22] "NOAH (Network for Oregon Affordable Housing)," accessed December 14, 2020, https://noah-housing.org/.

[23] US Department of Housing and Urban Development, Office of Policy Development and Research, "Models for Affordable Housing Preservation," *Evidence Matters*, Summer 2013, accessed December 14, 2020, https://www.huduser.gov/portal/periodicals/em/summer13/highlight3.html.

[24] "History of Fair Housing," US Department of Housing and Urban Development, accessed December 14, 2020, https://www.hud.gov/program_offices/fair_housing_equal_opp/aboutfheo/history.

[25] "Summary Grid of Fair Housing Laws," Connecticut Fair Housing Center, accessed December 14, 2020, https://www.ctfairhousing.org/wp-content/uploads/Summary-Grid-of-Fair-Housing-Laws-5.pdf.

[26] The report notes that zoning boards of appeals decisions that grant more flexibility in siting senior housing compared with assisted housing "has the effect of causing racial and ethnic segregation since Connecticut's elderly populations is overwhelmingly White while its population of families with children is nearing majority minority."

[27] "Rental Registration and Licensing," Center for Community Progress, accessed January 11, 2020. https://www.communityprogress.net/tool-1--rental-registration--licensing-pages-207.php

[28] John Moran, "Fair Rent Commissions: Duties and Obligations," Connecticut General Assembly, Office of Legislative Research, Report 2000-R-0691, July 12, 2000, https://www.cga.ct.gov/2000/rpt/2000-R-0691.htm.

[29] 211 of Connecticut lists 12 fair rent commissions on its website: https://www.211ct.org/search?terms=Fair%20Rent%20Commission&page=1&location=ct&service_area=connecticut. A web search found other commissions not on this list.

[30] Moran, "Fair Rent Commissions: Duties and Obligations," https://www.cga.ct.gov/2000/rpt/2000-R-0691.htm.

[31] Based on review of fair rent commission websites for Bridgeport, Danbury, Enfield, Hartford, New Haven, Newington, Stamford, and Westbrook.

[32] "Temporary Rental Housing Assistance Program (TRHAP)," Connecticut Department of Housing, accessed December 14, 2020, https://portal.ct.gov/DOH/DOH/Programs/TRHAP.

[33] "About Statewide Legal Services," Statewide Legal Services of Connecticut, accessed December 14, 2020, https://www.slsct.org/about-us.

[34] Solomon Greene and Alanna McCargo, "New Data Suggest COVID-19 Is Widening Housing Disparities by Race and Income," *Urban Wire* (blog), Urban Institute, May 29, 2020, https://www.urban.org/urban-wire/new-data-suggest-covid-19-widening-housing-disparities-race-and-income.

[35] University of Illinois at Urbana-Champaign, "Housing Instability Undermines Public Health Response to COVID-19 Pandemic," Phys.org, June 11, 2020, https://phys.org/news/2020-06-housing-instability-undermines-health-response.html.

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[38] Jake Wegmann and Alex Schafran, "A New Perspective on Housing Tenure," *Shelterforce*, September 28, 2016, https://shelterforce.org/2016/09/28/a-new-perspective-on-housing-tenure/.

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[42] "Supportive Housing," US Interagency Council on Homelessness, last updated August 15, 2018, https://www.usich.gov/solutions/housing/supportive-housing/.

[43] "Housing Choice Vouchers Fact Sheet," US Department of Housing and Urban Development, Office of Public and Indian Housing, accessed December 14, 2020, https://www.hud.gov/program_offices/public_indian_housing/programs/hcv/about/fact_sheet.

[44] Data were downloaded from https://portal.ct.gov/DECD/Content/About_DECD/Research-and-Publications/01_Access-Research/Exports-and-Housing-and-Income-Data.

[45] Although the National Housing Preservation Database contained geocoded coordinates, we re-geocoded all addresses for consistency.

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