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Transportation's Role In Affordable Housing

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Introduction

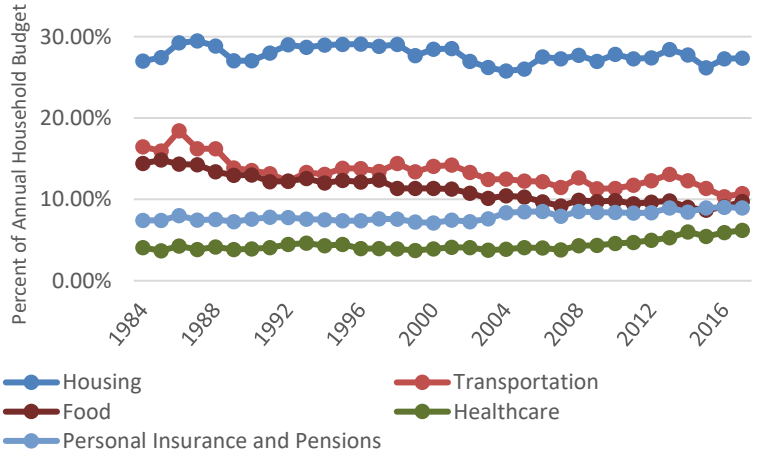
Recent research[1] points to increasing job density and clustering of economic activity in major metros across the United States. Between 2004 and 2015, job density in large metro areas increased faster than overall job growth compared to suburban and exurban counterparts, which shed jobs during the Great Recession and then added them back at a much slower rate than major metros. Overall job density during that period increased by 30 percent in large metros. Increased urban job density has profound impacts on housing affordability as where families choose to live is inherently linked to where they work. According to the National Association of Realtors[2], convenience to work is the second most important factor in a home buyer's decision of where to buy, outpacing affordability. Among all home buyers, 44 percent of home buyers said convenience to their job was a factor in choosing where to live. Among home buyers under the age of 29, 71 percent said it was a factor while 61 percent of those age 29 to 38 said it was a factor. Additionally, 12 percent of all buyers surveyed reported that a job change would be a factor in any decision to move. Among buyers under the age of 29 and those age 29 to 38, 18 and 20 percent respectively reported a willingness to move due to a job change.

Traditional measures of residential affordability only consider whether a household pays more than 30 percent of their income on housing, however given the interconnectedness of where people live and work, some have argued for including transportation costs in residential affordability evaluations. As a result, a more complete understanding of affordable housing in Connecticut requires an understanding and consideration of transportation costs faced by the typical worker and by CHFA borrowers and tenants. This brief aims describe the relationship between transportation costs in discussions of residential affordability and will provide additional context around the housing and transportation debates.

Regional Housing and Transportation Costs

The Northeast is densely populated making commuting and transportation difficult for many. According to the Bureau of Labor Statistics' 2016-2017 Consumer Expenditure Survey, transportation costs[3] make up the second largest portion of the average American's household budget. The average consumer in the Northeast Census[4] Region spent 38.85 percent of their pretax income on combined housing and transportation costs, 27.33 percent on housing and 10.52 percent on transportation costs. Historically, as seen in Figure 1, housing costs have been the largest portion of the average household's budget followed by transportation, food, personal insurance, and in recent years

Figure 1: Consumer Expenditures - Percent of Income (Northeast Census Region)



Source: Bureau of Labor Statistics - Consumer Expenditure Survey

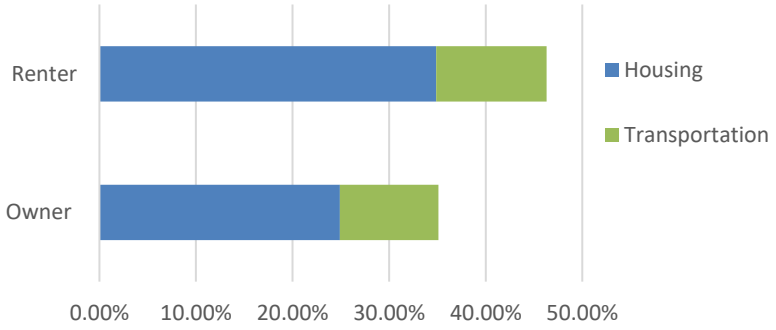
1. *Chad Shearner, Jennifer S. Vey, and Joanne Kim, "Where jobs are concentrating and why it matters to cities and regions" June 2019, Brookings Institution.*
2. *2019 NAR Home Buyer and Seller Generational Trends, April 2019*
3. *BLS Consumer Expenditure Survey considers Transportation costs as vehicle purchases, gasoline, fuels, and motor oil, other vehicle expenses, and public and other transportation.*
4. *Northeast Census Region includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, and New Jersey.*

healthcare costs. Transportation costs in the Northeast have actually declined as a percentage of income since 1984. The average consumer in the Northeast in 1984 spent 16.46 percent of their income on transportation while in 2017 they spent under 11 percent.

Broken out by housing tenure, renters are far more likely to be cost burdened by housing and transportation costs. In the Northeast, the average renter household spends 46.32 percent of their income in housing and transportation costs while the average homeowner spends 35.12 percent.

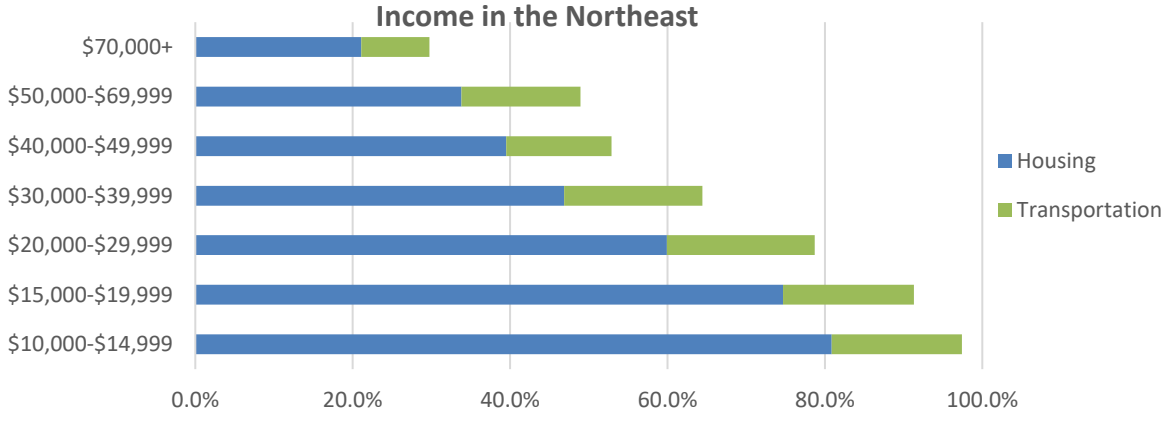
Lower income households also see more of their annual budget consumed by housing and transportation costs. The average low to moderate income household pays more as a percentage of their income relative to higher income households. For example, the typical household making $70,000 or more in the Northeast spends 21.1 percent of their income on housing and only 8.69 percent on transportation. Households making $30,000 to $39,999 on average spent 46.9 percent on housing and 17.85 percent on transportation, and for households earning under $15,000 housing and transportations costs can consume nearly their entire income.

Figure 2: Housing And Transportation Costs As a Percentage of Income - By Housing Tenure in the Northeast



Source: Bureau of Labor Statistics - Consumer Expenditure Survey (Table 3310)

Figure 3: Housing and Transportation Costs As A Percentage of Income in the Northeast



Source: Bureau of Labor Statistics - Consumer Expenditure Survey (Table Number 3103)

1. *Chad Shearner, Jennifer S. Vey, and Joanne Kim, "Where jobs are concentrating and why it matters to cities and regions" June 2019, Brookings Institution.*
2. *2019 NAR Home Buyer and Seller Generational Trends, April 2019*
3. *BLS Consumer Expenditure Survey considers Transportation costs as vehicle purchases, gasoline, fuels, and motor oil, other vehicle expenses, and public and other transportation.*
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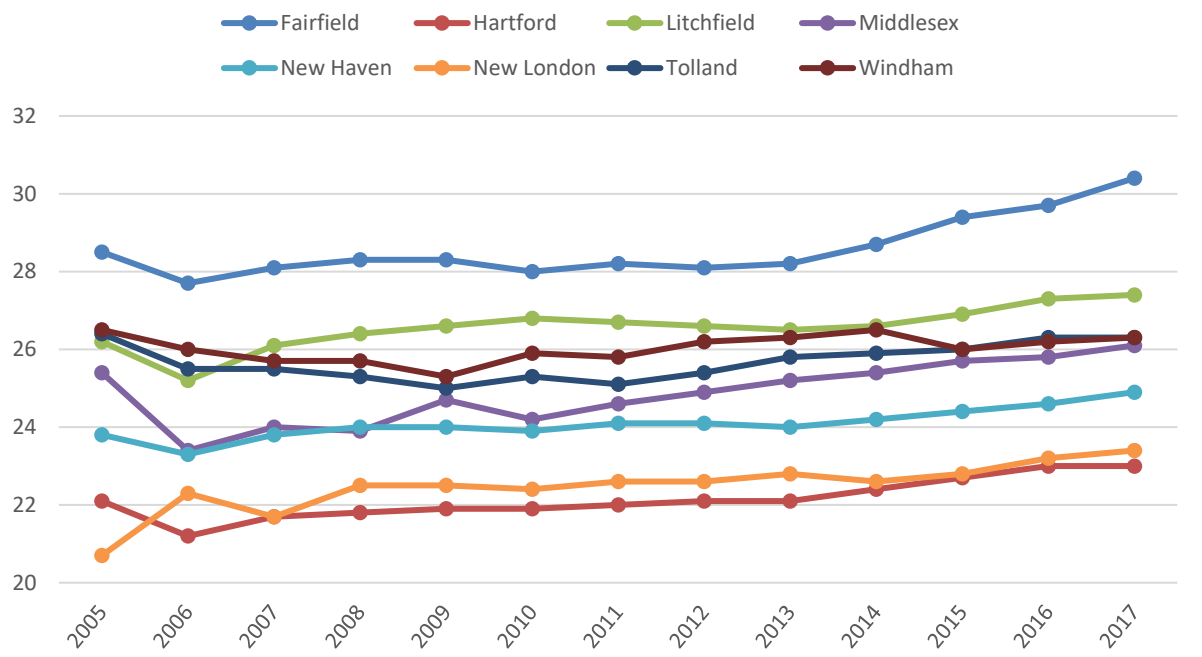
Housing and Transportation Costs in Connecticut

Between 2000 and 2012, the average Connecticut resident saw a decrease in the number of jobs near them. According a 2015 report[5], also from the Brookings Institution, from 2000 to 2012 the average resident in the Bridgeport, Hartford, and New Haven metro areas saw the number of jobs near them decrease by 0.4, 8.8, and 10.4 percent respectively, meaning Connecticut residents have to travel further for work on average. As one would expect increasing density of jobs in major metropolitan areas has put pressure on Connecticut's transportation infrastructure and on household budgets as families see increased commute times and transportation costs. The average commute time in Connecticut in 2017 was 25.98 minutes compared to 24.95 minutes in 2005, a slight but noticeable increase of 1.03 minutes. This increase is especially pronounced in Fairfield and New London Counties, which saw 1.9 and 2.7 minute increases respectively. The 1.03 minute increase in the average commute time across the state is equivalent to a reduction of 8.2 million work-hours of potential productivity per year[6].

Figure 4: Average Commute Times - Connecticut



Source: *American Community Survey, One Year Estimates, 2005 to 2017*

5. *Elizabeth Kneebone and Natalie Holmes, "The growing distance between people and jobs in metropolitan American, March 2015, Brookings Institution.*
6. *Calculated by multiplying 1.03 minutes per day by 250 works days and by the number of workers in the state (1.9 million according to CT-DOL – June 20, 2019)*

Additionally, a research report[7] from Apartment List highlights changes in commute times for U.S. workers. The average commute time in the U.S. according to Apartments List has remained relatively consistent at 25.5 minutes in 2017, only three minutes longer than it was in 1990. At the same time, the number of what Apartment List calls "super commuters", those with one way commute times of more than 90 minutes, and the number of Americans who work from home have increased significantly. Driven primarily by changes in preferences, improved technology, and a lack of affordable housing in major metros, since 2005 the number super commuters and the number of Americans who work from home have increased 31.7 percent and 76.0 percent respectively.

In Connecticut, as seen in Table 1, the Bridgeport-Stamford-Norwalk and Worcester, MA-CT metro areas saw significant increases in the percentage of workers facing commutes longer than 90 minutes and all of Connecticut's major metro areas saw jumps in the at-home workforce.

Table 1: Super Commuters and At-Home Workforce in Connecticut Metros

	Super Commuters (Commute > 90 Minutes)			Work from Home		
Connecticut Metro Area	Share of Full-Time Workforce (2005)	Share of Full-Time Workforce (2017)	Population Growth (2005-2017)	Share of Full-Time Workforce (2005)	Share of Full-Time Workforce (2017)	Population Growth (2005-2017)
Bridgeport-Stamford-Norwalk, CT	5.30%	7.10%	42.00%	3.80%	5.60%	56.00%
Hartford-West Hartford-East Hartford, CT	1.70%	1.30%	-20.00%	2.50%	4.40%	82.00%
New Haven-Milford, CT	2.90%	2.80%	-2.00%	2.10%	3.80%	80.00%
Worcester, MA-CT [8]	2.60%	3.20%	46.00%	2.50%	5.80%	170.00%

Source: *Apartment List Calculations of American Community Survey Microdata*

[7] *ApartmentList: "Traffic, Trains, or Teleconference? The Changing American Commute", March 14, 2019, https://www.apartmentlist.com/rentonomics/traffic-trains-or-teleconference-the-changing-american-commute/*

[8] *Includes Windham County, Connecticut*

Longer commute times in Connecticut and in the Northeast generally translate into the typical consumer facing increased transportation costs getting to and from work. The Center for Neighborhood Technology (CNT), a non-profit organization focused on economic development, climate resilience, and urban analytics, provides a comprehensive tool for measuring neighborhood affordability. The Housing and Transportation Index[9] (H+T Index) takes into account the costs of both housing and transportation, the second largest expense for most U.S. households. Traditional measures of neighborhood affordability only look at housing costs and consider spending under 30 percent of household income as affordable. According to CNT, 55 percent of U.S. neighborhoods are considered affordable using the 30 percent benchmark. The H+T Index sets the combined benchmark for housing and transportation costs at 45 percent of a household's income. Under this standard only 26% of U.S. neighborhoods are considered affordable.

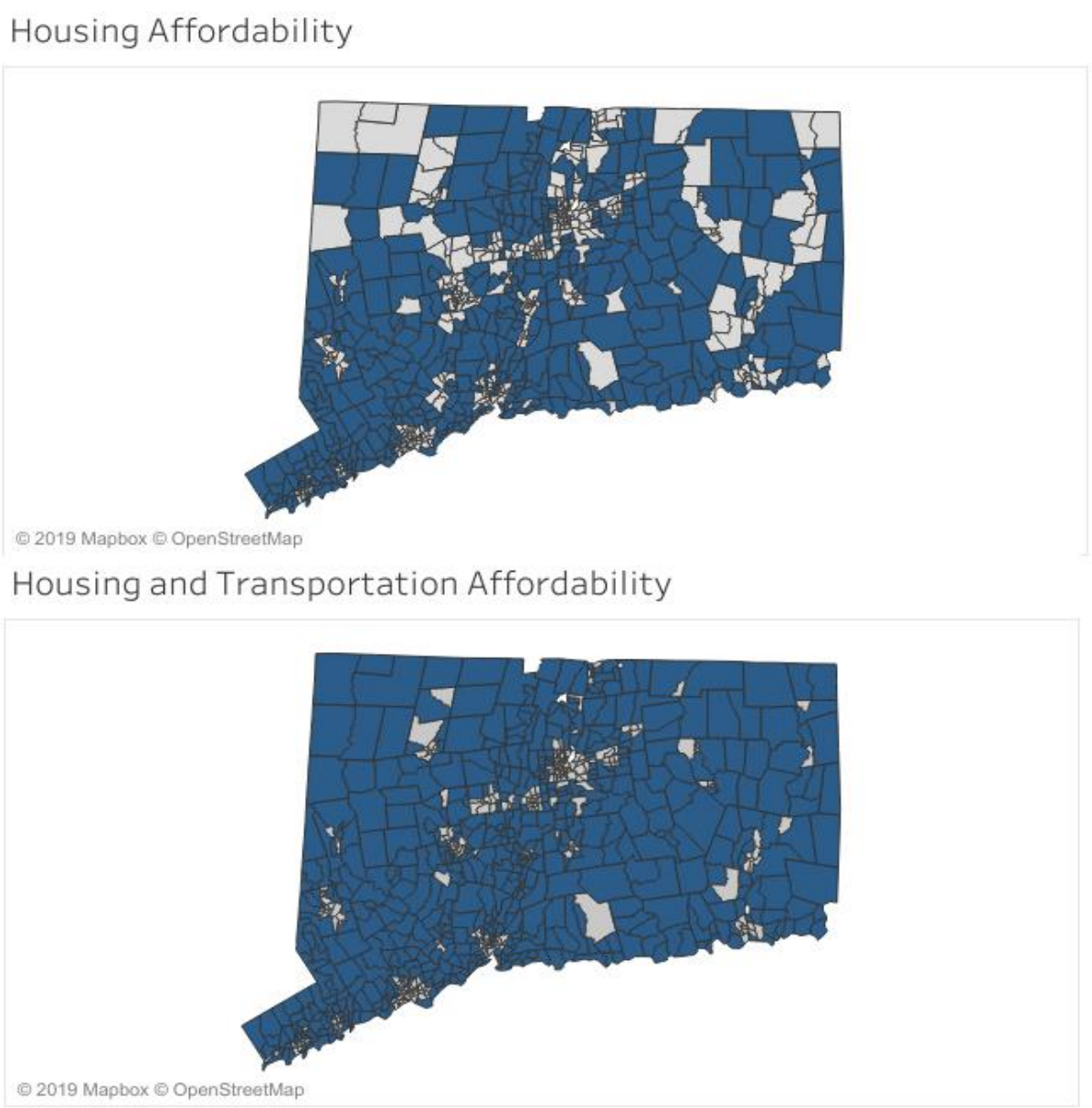
According to CNT data, households making the area median income in the average census tract in Connecticut spend 30.88 percent of their income on housing costs and 19.22 of their income on transportation costs. Households making 80 percent AMI spend 38.6 percent of their income on housing and 19.22 percent on transportation.

County	*Average 2017 Commute Time (In Minutes)*	*Housing & Transportation Costs (% of Income)*	*Housing Costs (% of Income)*	*Transportation Costs (% of Income)*	*Annual Vehicle Miles Traveled*	*Annual Transportation Costs*	*Annual Vehicle Ownership Costs*	*Annual Vehicle Miles Traveled Cost*
Fairfield	30.4	51%	34%	17%	21,275	$13,987	$10,614	$3,105
Hartford	23.0	47%	28%	19%	20,394	$12,936	$9,913	$2,976
Litchfield	27.4	50%	29%	21%	23,887	$14,917	$11,429	$3,486
Middlesex	26.1	52%	32%	21%	23,341	$14,516	$11,101	$3,407
New Haven	24.9	54%	33%	21%	20,578	$13,068	$9,953	$3,003
New London	23.4	50%	29%	21%	22,775	$14,147	$10,815	$3,324
Tolland	26.3	51%	30%	21%	23,556	$14,712	$11,272	$3,438
Windham	26.3	50%	27%	23%	24,109	$14,871	$11,351	$3,519

Source: Center for Neighborhood Technology & American Community Survey, 5 Year Estimates, 2013 - 2017

Figure 5: Housing Affordability for the "Typical" Household

Source: Center for Neighborhood Technology H+T Index



Housing and transportation cost burdens are not distributed evenly across Connecticut. CNT estimates that 391 of Connecticut's 833 census tracts have average housing costs of 30 percent for the typical household. When transportation costs are included, 523 of Connecticut's census tracts can be considered unaffordable, i.e. combined housing and transportation costs make up more than 45 percent of the typical households income. As seen in figure 5 (Tracts shaded in blue are considered cost burdened). Areas further from Connecticut's major metros, which have greater job density, are more likely to be burdened by transportation costs.

CHFA Borrower and Renter Transportation Costs

As discussion of transportation and infrastructure policy continues in Connecticut, it may become important to understand how the Connecticut Housing Finance Authority's single family borrowers and renters in CHFA financed developments commute to work, how long it takes them, and what it costs for them to get to work.

As seen in tables 2 and 3, using a weighted census tract average allows us to get a picture of the commuting and transit outlook for CHFA's borrowers and renters. On average, using American Community Survey data in table 2, we can see that CHFA single family borrowers/homeowners live in communities where they are more likely to drive to work relative to CHFA renters and the state average. CHFA renters are more likely to take public transit or walk to work. Both groups are slightly less likely to work from home relative to the state average.

According to CNT's tract level estimates in table 3, Single family borrowers are also more likely to live in communities with higher transportation costs, more vehicles per household, and more annual miles traveled per household. At the same time, CHFA renters are generally less likely to travel by car. They are more likely to live in communities where public transit ridership is higher. They are likely to live in areas where there are less vehicles per household, miles traveled per year, and have slightly lower transportation costs as a percentage of their income. Renters also appear to live in communities with higher neighborhood compactness and job access scores along with more households by land acreage.

Actual commute times appear to be fairly similar. As seen in Figure 6, commute times for both single family borrowers and multifamily renters appear to be clustered between 18 and 30 minutes, with an average of about 24 minutes each, slightly less than the statewide average of 26 minutes.

Table 2: Mode of Transportation to Work

	Weighted Average by Single Family Mortgages	Weighted Average by Multifamily Units	Statewide Average (Unweighted)
Drove to Work	**90.09%**	**83.11%**	**84.78%**
Took Public Transit	**3.18%**	**6.50%**	**5.62%**
Biked To Work	**0.23%**	**0.36%**	**0.31%**
Walked To Work	**1.98%**	**5.24%**	**3.23%**
Worked From Home	**3.72%**	**3.82%**	**4.82%**
Other Transportation	**0.63%**	**0.68%**	**0.69%**

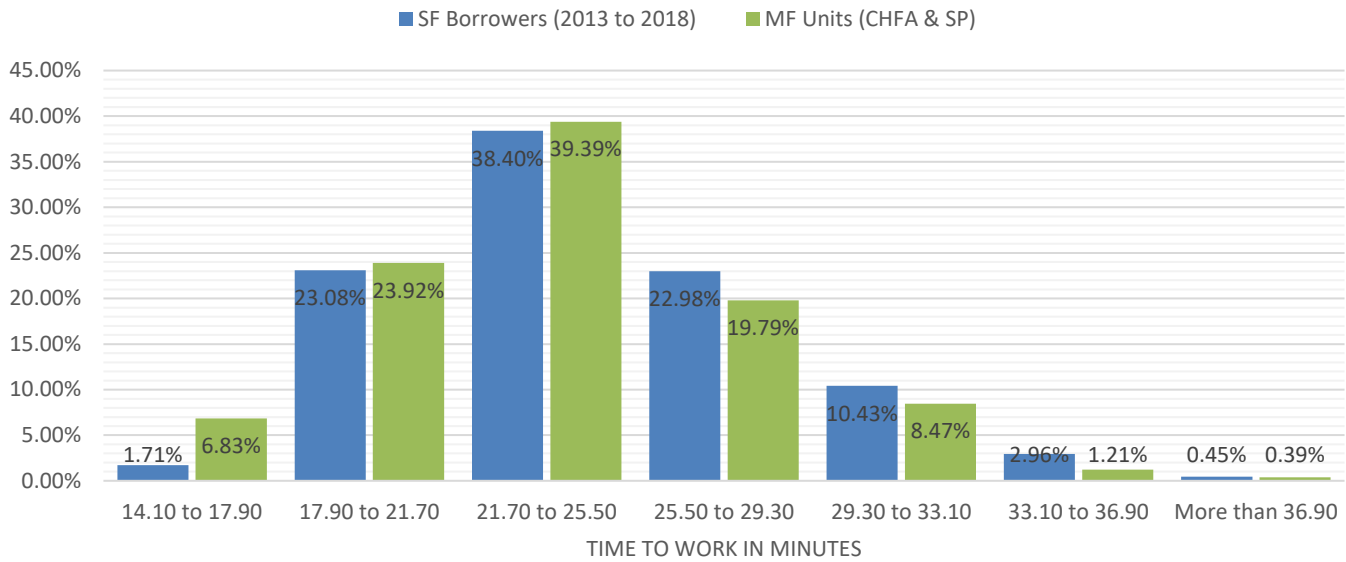
Source: *American Community Survey (2017 – 5 Year Estimates), CHFA*

Table 3: Transportation Times, Frequency, and Costs – Weighted Averages

	Weighted Tract Average by Single Family Borrowers	Weighted Tract Average by Multifamily Units	Unweighted Tract Average (AMI Households)
Commute Time (In Minutes)	**24.63 Minutes**	**23.82 Minutes**	**25.77 Minutes**
Housing and Transportation Costs (% of Income)	**48.52%**	**42.08%**	**50.02%**
Transportation Costs (% of Income)	**19.82%**	**17.70%**	**19.16%**
Vehicles Per Household	**1.83 Vehicles**	**1.64 Vehicles**	**1.81 Vehicles**
Annual Vehicle Miles Traveled	**21,609 Miles**	**19,130 Miles**	**21,235 Miles**
Transit Ridership Percentage of Workers	**2.94%**	**5.77%**	**3.85%**
Annual Transportation Costs	**$ 13,662.**	**$ 12,298**	**$ 13,512**
Annual Vehicle Ownership Costs	**$ 10,440**	**$ 9,342**	**$ 10,342**
Vehicle Miles Traveled Annual Cost	**$ 3,132**	**$ 2,758**	**$ 3,099**
Annual Transit Costs	**$ 68.31**	**$ 163.75**	**$ 111.32**
Annual Number of Transit Trips	**31.06 Trips**	**58.86 Trips**	**40 Trips**
Compact Neighborhood Score (0-10)	**4.43**	**6.54**	**4.64**
Job Access Score (0-10)	**6.62**	**7.32**	**6.89**
Household Density (Total Households per land acres)	**1.83**	**3.49**	**2.21**

Source: *Center For Neighborhood Technology, American Community Survey (2017 5 year estimate), CHFA*

Figure 6: CHFA Commute Times



Source: *2017 American Community Survey – 5 Year Estimates*

Conclusion

Traditional measures of residential affordability consider those who spend more than 30 percent of their income on housing as cost burdened. The Center for Neighborhood Technology (CNT) argues that residential affordability be redefined to include both housing and transportation costs. Under the 45 percent rule developed by CNT, we can see how increasing job density and increased reliance on cars affects the average household in Connecticut. Households already burden by high housing costs can face increased pressure when considering the added costs of getting to and from work limiting their ability to save for the future and be upwardly mobile.

Methodology

To estimate the average commuting and transportation times and costs, CHFA single family loans and multifamily rental units were grouped by census tract and paired with tract level ACS and CNT data. Because CHFA's borrowers and tenants are not equally distributed across Connecticut's census tracts, a weighted average was used to given more importance to the tracts with higher numbers of borrowers and tenants in them. To calculate the weighted average the ACS and CNT tract level estimate was multiplied by the number of single family loans in a tract. The weighted tract totals were then summed and divided by the total number of loans. This process was repeated for multifamily rental tenants.

This methodology produces an estimate of what the transit and commuting outlook is like in the communities where CHFA lends and supports multifamily development. These results should not be interpreted as direct description of CHFA's borrowers and renters. Rather, the results describe the communities and neighborhoods in which CHFA borrowers and renters tend to live.