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Mobile and Manufactured Homes In Central Appalachia and Alabama:

Age, Condition and Need for Replacement

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With Support from stakeholders:
Next Step, Fahe and CFED

VCHR

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Preface

This study provides a comprehensive snapshot of mobile and manufactured housing in Central Appalachia and Alabama and identifies the most pressing needs of residents in the region. Local housing partners plan to build on the findings of the report and develop policy recommendations to address the issues revealed in the study, in particular the cost burden of families living in manufactured housing. These recommendations will focus on shaping a federal manufactured housing replacement bill and strengthening ENERGY STAR programs, including advocating for the reinstatement of the Tennessee Valley Authority incentive program, supporting Duty to Serve credit, improving state housing financial agency lending programs and a supporting federal tax credit for home manufacturers.

Executive Summary

Manufactured housing, sometimes called "mobile homes," is an important part of the housing stock and is particularly important in the supply of affordable housing for low-income Americans. The Manufactured Home Construction and Safety Standards Program (HUD Code) established national design, performance and installation standards for manufactured homes built after June 15, 1976 ("Manufactured Home Construction and Safety Standards," 2015). In 1994, the HUD Code energy standards were updated, raising minimum insulation requirements and mandating whole house ventilation (Krigger, 1998). Homes built to these standards tremendously outperform their nonconforming counterparts in quality, energy use and safety (Manufactured Home Construction and Safety Standards 24 CFR 3280).

Mobile homes built prior to 1976 are considered the "worst housing stock" in America by affordable housing advocates and industry representatives (Vaughan & Patterson, June 2009). These homes suffer from leaking roofs, dangerous or inefficient heating sources, lack of insulation and deteriorating foundations (Cody, 2011; Vaughan & Patterson, June 2009). Replacement of these mobile homes is often recommended over retrofitting because energy efficient construction through building practices and materials is more cost-effective than weatherizing existing homes.

Mobile homes and HUD Code manufactured homes make up a large part of the occupied housing stock in Appalachian Alabama, Kentucky, Tennessee, West Virginia and Virginia, ranging from 13% to 19% of the occupied housing stock. Mobile and manufactured homes make up more than 25% of the occupied housing stock in some regions of Alabama and Kentucky. Further, older mobile and manufactured homes built before 1980 make up a significant portion of the mobile home stock in these states. West Virginia has the highest number of older, occupied mobile and manufactured homes: 32% of the state's occupied mobile and manufactured home stock was built before 1980, compared to 17% in Appalachian Alabama, 23% in Appalachian Kentucky, 18% in Appalachian Tennessee and 23% in Appalachian Virginia.

Older mobile and manufactured homes in Appalachian Alabama, Kentucky, Tennessee, West Virginia and Virginia have lower median values and higher energy usage than newer manufactured homes, which is evidence of their often-poor condition. Some residents of these homes even experience a housing cost burden[1] from utilities alone, with average monthly utilities costs requiring more than 30% of their household income. Residents of mobile and manufactured homes are far more likely to be housing cost burdened by utilities alone, compared to all households. More than 70,000 households living in mobile and manufactured homes in Appalachian Alabama, Kentucky, Tennessee and West Virginia pay more than 30% of their income for utilities, forcing many of these households to make tough choices between rent or loan payments, utilities and other necessities like food, transportation and health care. An energy-efficient home may give these households the financial stability they need to keep a job, keep their kids consistently in the same school, stay healthy and even begin to save for the future.

Residents of older mobile homes and newer manufactured homes face fairly similar housing cost burden rates.

[1] The U.S. Department of Housing and Urban Development (HUD) established the term "cost burdened" to define households that need more affordable housing. HUD defines cost-burdened households as "families who pay more than 30% of their income for housing… and may have difficulty affording necessities such as food, clothing, transportation and medical care." Households that pay more than 50% of their income for housing are considered "severely cost burdened" and may face even harder choices between paying for housing and other necessities.

However, household incomes tend to be lower among residents of homes built before 1980. The median income of residents of mobile and manufactured homes built before 1980 in each state is about 50% of the median income for each state. Older, low-value mobile homes may be the only housing option for these low-income households. Further, low-income residents of mobile and manufactured homes built before 1980 may not have the means to maintain, improve or replace their homes.

The high levels of cost burden among residents of mobile and manufactured homes suggest that these homes may be the only viable housing option for some households, rather than an affordable option. Residents of mobile and manufactured homes are cost burdened at a higher rate than the population overall and are overrepresented in the population of households that are cost burdened. Households that rent, rather than own, their mobile and manufactured homes are more likely to be cost burdened. Furthermore, cost-burdened residents living in older mobile and manufactured homes are *severely* cost burdened about half of the time. Cost-burdened households are most likely to be severely cost burdened in Alabama, where 58% of cost-burdened households living in mobile and manufactured homes built from 1970-1979 are severely cost burdened.

Low property values, high energy usage and high vacancy rates among older mobile and manufactured homes are all evidence of the low quality of the oldest mobile and manufactured homes in Central Appalachia and Appalachian Alabama. Many residents of these housing units experience severe financial burdens because they earn low incomes and face relatively high housing costs, with more than 70,000 households paying more than 30% of their income for utilities alone. In many cases, a new, more energy efficient home would offer these households the opportunity for financial stability and, in turn, the opportunity to provide for their children, build wealth for the future and age in place.

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Preface

This report focuses on housing that is popularly known as “mobile homes” and officially known as “manufactured housing,” but both of these terms can be confusing. The term “mobile homes” came into use when small trailers were built for temporary lodging to be towed behind cars and then more permanent housing that could be towed to and placed on a small lot or in a “trailer park.” These units were built in manufacturing plants with their own transaxles and wheels, with the wheels removed after the units were towed and placed for occupancy.

These early units fell outside the regulatory control of local building codes and were frequently built with uncertain quality and durability, although the units increasingly were being occupied as permanent housing. As production and occupancy of mobile homes created a pressing need for a relevant building code, Congress adopted a national code in 1976 to be administered by the U.S. Department of Housing and Urban Development (HUD) for any housing units built with a transaxle and steel chassis. At this point, the term “manufactured housing” or “HUD-Code housing” started to replace “mobile home” or “trailer,” particularly among housing professionals and code officials.

Although the terms frequently are used interchangeably (for example, many Census Bureau reports continue to use the term “mobile homes”), this report uses “mobile homes” to refer to units built before the adoption of the HUD Code (or when using Census Bureau data, for units built before 1970), and either “manufactured housing” or “HUD-Code housing” to refer to units covered by the HUD Code.

Literature Review

The Manufactured Home Construction and Safety Standards Program (HUD Code) established national design, performance and installation standards for manufactured homes built after June 15, 1976 ("Manufactured Home Construction and Safety Standards," 2015). These standards ensure that manufactured homes are safe, affordable and durable. The HUD Code requires that new homes meet certain expectations regarding design, fire safety, thermal protection, ventilation, plumbing, heating/cooling, electrical systems and site transportation. HUD-Code mobile homes are built to meet contemporary standards such as minimum window area, manually controlled mechanical ventilation systems, minimum insulation requirements and minimum appliance performance efficiency (Manufactured Home Construction and Safety Standards 24 CFR 3280). Homes built to these standards tremendously outperform their non-conforming counterparts in quality, energy use and safety (Manufactured Home Construction and Safety Standards 24 CFR 3280). Upon inspection and approval from the Office of Manufactured Housing at HUD, conforming homes receive a red certification label to alert consumers of their compliance ("Manufactured Home Construction and Safety Standards," 2015).

In 2005, HUD issued the Model Manufactured Home Installation Standards, which outline methods of on-site installation that are in compliance with the HUD Code. States have the option to operate their own installation program for manufactured homes; however, their standards must meet or exceed the protections of the federal installation standards (Manufactured Housing Institute, 2015a). The minimum required protections cover anchorage against wind; ductwork, plumbing and fuel supply systems; electrical systems and equipment; and exterior and interior close-up (Model Manufactured Home Installation Standards 24 CFR 3285, 2005).

Energy Usage and Energy Efficiency in Mobile Homes

The 1976 HUD Code established minimum energy efficiency standards depending on the location of the manufactured home within delineated climate zones ("Manufactured Home Construction and Safety Standards," 2015). In 1994, the energy standards in the HUD Code were updated for the first time since its adoption. This change raised minimum insulation requirements for manufactured homes and altered the thermal zoning map to more accurately depict climatic differences. In addition, this update mandated whole house ventilation and required additional ground anchors for severe weather-prone regions (Krigger, 1998).

Mobile homes built before the HUD Code was established are generally far less energy efficient than manufactured homes built after its adoption. Pre-HUD Code mobile homes consume approximately 53% more energy than every other kind of home and are concentrated primarily in the South (Vaughan & Patterson, June 2009). For some low-income individuals, energy bills can consume more than half their income on a regular basis (Vaughan & Patterson, June 2009).

Manufactured homes built to the updated HUD-Code energy standard still consume much more energy per square foot than do site built homes, approximately 850 MJ/m2 for manufactured homes and 450 MJ/m2 for site built (Nabinger & Persily, 2011). Many manufactured homes today are built for higher energy performance than required by HUD, but sales of inefficient smaller manufactured homes have increased in recent years (Eklund et al. 2012). The lack of timely updates to construction standards has created discrepancies between the HUD Code and other commonly accepted residential building standards, which are updated every three years (United States Government Accountability Office, July 2014). The U.S. Department of Energy establishes standards for appliances and equipment for new manufactured houses based on the most recent revisions to the International Energy Conservation Code (IECC).

Some causes of energy inefficiency in manufactured homes include air leakage and infiltration due to deteriorated weather strips, gaps in the marriage wall joining multiple parts of a home, inadequately sealed and uninsulated ductwork, gaps around wall registers and behind washers and dryers, and unsealed backing to the electrical panel; lack of insulation and inefficient heating systems; uninsulated doors; thermostats placed too close to a heating source; lack of vapor barrier in the roof cavity and below the home, which can lead to moisture penetration degrading the performance of insulation; and damage to the belly board caused by animals, deterioration or tearing, which allows the floor insulation to get wet and expose ductwork (Cody, 2011). The freeze-thaw cycle is particularly damaging to mobile homes, especially those installed on cinderblocks, and this is a major cause of many energy efficiency and safety issues. Significant improvements in foundation and anchoring systems for manufactured homes have been developed in the past 20 years (Cody, 2011). Energy performance can be improved with retrofits, such as using house wrap on exterior walls, sealing leakage sites, tightening the insulated belly layer and reducing leaks in the air distribution system (Nabinger & Persily, 2011).

There are a number of federal and state programs that provide assistance for retrofitting mobile and manufactured homes to improve energy efficiency. Each state has a Weatherization Assistance Program that serves residents of mobile and manufactured homes. In addition, residents of each state have access to the U.S. Department of Health and Human Services' Low Income Housing Energy Assistance Program (LIHEAP), which provides weatherization assistance in addition to energy cost assistance. Some local governments may also use CDBG or HOME funds to help residents of mobile and manufactured homes with energy efficiency improvements.

VCHR also identified a number of non-governmental programs that provide assistance for retrofitting mobile and manufactured homes to improve energy efficiency (for a list of all programs, see Appendix 1). For example, in Alabama, the Coosa Valley Electric Cooperative (CVEC) started a program to reduce peak demand from manufactured housing units. The program worked to retrofit manufactured homes with heat pumps through collaboration with local HVAC contractors. The cost of the retrofit was about $2,000 per home. CVEC and its power supplier, Power-South Energy Cooperative, helped the homeowners arrange financing by offering the homeowners a rebate of up to $600 on their monthly energy bill. In addition to installing heat pumps, CVEC made some energy-efficient improvements to the homes, such as replacing flexible crossover ducts with metal ducting and relocating thermostats away from fireplaces or areas with bad airflow. After these improvements, the co-op noticed significant energy savings in the months of January and February, averaging about 50%, or $150 per home. The resident payback period for the retrofit was calculated to be about three or four years. Later, the co-op began working with the manufactured home dealers to offer more energy-efficient units (Cody, 2011).

The Tennessee Valley Authority (TVA) EnergyRight Program is another important example. The Tennessee Valley Authority (TVA) EnergyRight New Homes Plan provides graduated rebates to incentivize the purchase (and manufacture) of all-electric, energy-efficient new homes that meet the program's energy efficiency standards. ENERGY STAR-certified manufactured homes meet the highest program standard, Certified Platinum. The program offers further incentives for the installation of advanced water heaters and electric heat pumps in new manufactured homes.

Mobile Home Replacement

Mobile homes built prior to 1976 are considered the "worst housing stock" in America by affordable housing advocates and industry representatives (Vaughan & Patterson, June 2009). These homes suffer from leaking roofs, dangerous or inefficient heating sources, lack of insulation and deteriorating foundations (Cody, 2011; Vaughan & Patterson, June 2009). Homes built post-1976 also have shown problems due to poor construction and placement standards. Early manufactured housing units are prone to formaldehyde exposure problems due to materials used (Sexton et al, 1989). In 1985, sections that set formaldehyde emission limits and increased ventilation standards were added to the HUD Code (Krigger, 1998). Replacement of these mobile homes is often recommended over retrofitting because energy efficiency construction through building practices and materials is more cost-effective than weatherizing existing homes. In addition, replacement relieves occupants of significant time and resource investments and is less disruptive for the residents (Salzberg et al, 2012).

VCHR has not identified any state or federal programs in the study region that specifically aim to replace pre-1976 or otherwise substandard mobile homes. VCHR found an example of a state-led mobile home replacement program in Maine, where mobile homes comprise about 8% of all housing. Between November 2008 and August 2010, the Maine State Housing Authority (MaineHousing) conducted a mobile home replacement pilot program aimed at replacing pre-1976 mobile homes with ENERGY STAR-certified manufactured homes (United States Government Accountability Office, 2013). MaineHousing was able to replace 35 manufactured homes with new ENERGY STAR-rated manufactured homes through this program. Eligible beneficiaries owned a pre-1976 mobile home that was not suited for weatherization. They were also required to own the land under their home. Beneficiaries were not required to pay an application fee or down payment. The program was funded using a combination of resources: $2 million came from the state's Housing Opportunities for Maine (Maine HOME) Fund and the remaining $148,000 of funding was in the form of mortgage financing from MaineHousing's Home Mortgage Program (United States Government Accountability Office, 2013). Beneficiaries of this program were meant to secure a 30-year first mortgage at a 5.25% interest rate using the Home Mortgage Program, as well as a second deferred mortgage using the Maine Home Funds. In this case, deferred mortgages meant that the homeowner did not have to pay any interest or principal as long as they were living in the home. Most of the beneficiaries could not afford the first mortgage and instead used the deferred mortgage to cover the entire cost of the new home. The pilot was so successful that in 2013, the state established an ongoing program called the Mobile Home Replacement Initiative (Maine State Housing Authority, 2014). Similar to the pilot program, this ongoing program is geared specifically toward low-income homeowners, and income limits are enforced (Maine State Housing Authority, 2014; United States Government Accountability Office, 2013). Other state replacement programs have been implemented in New York, Montana and Washington.

There are a number of nonprofit organizations that focus their work on replacing substandard mobile homes, all of which are located in Kentucky and Tennessee (see Appendix 1 for a full list). All of these programs aim to replace substandard homes with ENERGY STAR-rated manufactured or site-built homes. Generally, these programs offer financial or technical assistance to help residents replace their mobile homes with new manufactured homes. State and federal government programs also offer financing options that could be leverage for mobile home replacement.

Financing Manufactured Homes

In lending as well as state and local public policy, manufactured homes are often treated as personal property rather than real property, even though new units can now look as good, be built as well and last as long as traditionally built homes (National Consumer Law Center, 2009). Most site-built homes are financed by a real-estate mortgage. Manufactured homes classified as personal property are financed by chattel lending. "Chattel" is the legal term for personal property, as opposed to "real" property, which generally includes land and the structures attached to the land. Chattel loans, which include loans for televisions and automobiles, differ in many respects from mortgages. The Housing Assistance Council (2010) and the Consumer Financial Protection Bureau (2014) both estimated that approximately two-thirds of all new manufactured homes are secured through chattel loans. According to the National Consumer Law Center (2009), the key disadvantages to chattel financing of homes compared to conventional mortgage financing include shorter loan terms (typically 20 years instead of 30), higher interest rates (at least two to five percentage points higher) and a smaller pool of lenders from which to choose. In general, manufactured home owners typically pay higher interest rates for their loans than owners of site-built homes whether they receive chattel or real-property loans (Consumer Financial Protection Bureau, 2014). Most lenders typically will not finance pre-1976 mobile homes due to their lower quality, but owners may still be paying high-interest chattel loans for mobile homes not owned "free and clear."

Whether a home is classified as real or personal property also affects the home's potential to help the resident build wealth. Manufactured homes are more expensive to finance and have lower resale values when they are issued titles as motor vehicles rather than real estate because their values are assessed with "blue book" values that reflect significant depreciation. Taxing homes as personal property can reduce the homeowners' opportunities to enjoy property appreciation and build equity (National Consumer Law Center, 2009).

Unfortunately, residents of manufactured homes are more likely to be financially vulnerable than those of site-built homes. The median income for households that live in manufactured homes is roughly half that of families in other types of homes, and the median net worth of manufactured home residents is about one quarter that of other households (Consumer Financial Protection Bureau, 2014). These problems can be particularly acute when the home is on land leased in a mobile home park. In the United States, more than 20 million people live in manufactured housing and about half of these residents live in 50,000 mobile home parks throughout the country (MHAA, 2011). This form of housing tenure places mobile home residents at risk of eviction when parks are sold or redeveloped (Sullivan, 2014). The risk of mobile park closure is especially concerning in states that have not enacted statutes to regulate park redevelopment. In an effort to bring more stability to their lives, communities around the country have collectively purchased land from former operators in order to establish resident-owned communities (ROCs).

Methodology

Study Area

VCHR used the Appalachian Regional Commission counties in Alabama, Kentucky, Tennessee, West Virginia and Virginia as the basis for the study's geographic scope. Since the American Community Survey Public Use Microdata Sample (PUMS) data is the most accessible source of data regarding mobile homes (the term used in the ACS) and their residents, VCHR was constrained by the Public Use Microdata Areas (PUMAs). PUMAs are statistical geographic areas defined for the dissemination of PUMS data. VCHR required 5-year ACS data to construct reliable estimates at the sub-state level, so VCHR combined PUMAs to improve geographic overlap from the 2009-2011 ACS samples and the 2012 and 2013 ACS samples. VCHR used the "combined" PUMAs shown by state in Appendix 2 as the primary study area. VCHR has included some estimates for congressional districts and for counties to supplement the PUMA-level analysis.

Estimation of Mobile Homes Built 1970-1975

The PUMS includes responses regarding the year the respondents' homes were built. The responses are aggregated into categories: 1939 or earlier, 1940 through 2004 in 10-year increments, and each year from 2005 to 2013. This categorization allows VCHR to estimate the number of mobile homes built before 1970 directly, but requires an alternative method for estimating mobile homes built from 1970 through 1975. VCHR used mobile and manufactured home shipment data from 1970 through 1980, mobile and manufactured home placement data from 1974 through 1980 and manufactured home attrition rates from 1985 to 2011 to estimate the number of mobile and manufactured homes in the existing stock built from 1970-1979 that were built before 1976. VCHR assumed that mobile and manufactured homes were shipped to or within the South at the same rate that they were placed for residential use. VCHR also assumed that all mobile and manufactured homes shipped were eventually placed. VCHR applied a constant attrition rate of approximately 2.07% from the shipment year through 2013.[2] The attrition rate is average biennial decrease (rate of loss) in mobile and manufactured homes from 1985 to 2011. Finally, VCHR used the estimated percentage of the stock remaining in the South by year built (provided in parentheses in the last column of Table 1) to estimate the percentage of the 1970-1979 stock still on the ground in the Appalachian regions of Alabama, Kentucky, Tennessee, West Virginia and Virginia. The South Census Division includes all of these states.

Table 1:

Mobile Homes in Thousands					
Year	Mobile or Manufactured Homes Shipped to dealers in the US[3]	Total Mobile or Manufactured Homes Placed in the US[4]	Total Mobile or Manufactured Homes Placed in the South[2] (percent)	Estimate Mobile or Manufactured Homes Shipped to the South	Estimated 1970-1979 Mobile or Manufactured Homes Remaining in the South in 2013
1970	401		[5]206 (51%)	206	130.1 (11%)
1971	497		[3]256 (51%)	255	162.9 (14%)
1972	576		[3]296 (51%)	296	190.8 (16%)
1973	567		[3]291 (51%)	291	189.8 (16%)
1974	329	332	170.8 (51%)	169	111.3 (9%)
1975	213	229.3	110.8 (48%)	103	68.4 (6%)
1976	246	249.6	114.8 (46%)	113	76.0 (6%)
1977	277	257.5	112.5 (44%)	121	82.1 (7%)
1978	276	279.9	135.3 (48%)	133	91.5 (8%)
1979	277	279.9	145.2 (52%)	144	99.6 (8%)
1980	222	233.7	140.3 (60%)	133	93.3

[2] VCHR used longitudinal data regarding biennial mobile home losses to determine the average biennial decrease (rate of loss) in mobile and manufactured homes from 1985 to 2011. VCHR applied this rate as a constant attrition rate to maintain computation transparency and accuracy. A 1990 report from the Manufactured Housing Institute (MHI) substantiates the application of a constant attrition rate as noted in Manufactured Housing: A HUD USER Resource Guide published by the U.S. Department of Housing and Urban Development (1993, 14) " [MHI]...posits that the attrition rate for manufactured homes remains constant over their useful life." Alternatively, other researchers suggest that the attrition rate increases as units age (Gleeson 1988). VCHR did not have adequate data to apply an increasing attrition rate.

[3] Table number 1368, "Private Housing Starts, by Region, and Mobile Homes: 1970-1980." The Statistical Abstract of the United States 1981. Page 758.

[4] Table number 1303, "New Mobile Homes Placed for Residential Use and Average Sales Price, by Region: 1974 to 1984." Statistical Abstract of the United States 1986, 106, page 727.

[5] VCHR estimates, assuming as constant rate of placement from 1970-1974

Table 2:

Years	Total Loss[6]	Percent Lost
1985-1987	131	1.9%
1987-1989	111	1.6%
1989-1991	123	1.8%
1991-1993	184	2.6%
1993-1995	134	1.9%
1995-1997	157	1.9%
1997-1999	229	2.9%
1999-2001	447	5.0%
2001-2003	93	1.2%
2003-2005	143	1.6%
2005-2007	141	1.6%
2007-2009	68	0.8%
2009-2011	185	2.1%
	Average Biennale Percent Loss	2.1%

[6] Changed to non-residential, badly damaged or condemned, demolished or destroyed through disaster, or other loss; data aggregated from Table 4, "Housing and Neighborhood Quality – Occupied Units (Losses)" in the Housing and Urban Development (HUD) Components of Inventory Change (CINCH) reports 1985-2001 and "Forward-Looking Table A: Housing Characteristics in the HUD CINCH reports 2002-2011

Data Analysis

Mobile homes and HUD-Code manufactured homes make up a large part of the housing stock in Appalachian Alabama, Kentucky, Tennessee, West Virginia and Virginia, ranging from 13% to 19% of the occupied housing stock.

Table 3:

Appalachian Regions of	Total Occupied Housing Stock	Occupied Mobile & Manufactured Homes	Percent Mobile & Manufactured Homes
Alabama	1,293,463	173,249	13%
Kentucky	676,925	128,211	19%
Tennessee	1,168,563	158,099	14%
West Virginia	710,972	104,900	15%
Virginia	462,689	68,419	15%

Mobile and manufactured homes make up more than one in four occupied housing units in some regions of Alabama and Kentucky. In the combined region of Cherokee, Cleburne, Randolph, Clay and Talladega counties of Alabama, mobile and manufactured homes make up 25% of the occupied housing stock. Most of the mobile and manufactured homes in this region are concentrated in Talladega. In southeastern Kentucky, mobile and manufactured homes make up between 27% and 34% of the occupied housing stock, with the highest concentrations in Wolfe, Lee, Owsley, Breathitt, Perry, Knott, Leslie and Letcher counties. There are also a number of counties with extremely large numbers of mobile and manufactured homes: Jefferson County, AL, and Pike County, KY, have more than 11,000 mobile and manufactured homes and Kanawha County, WV, has nearly 11,000 mobile and manufactured homes (2014 ACS 1-Year Estimates). Both Jefferson County and Kanawha County are part of Metropolitan Statistical Areas, so their high numbers of mobile and manufactured homes are related to population size. Mobile and manufactured homes make up 4% of the housing stock in Jefferson County and 12% of the housing stock in Kanawha County. Pike County, KY, has the highest concentration of mobile and manufactured homes in the study region, 37% of the county's housing stock.

Age of the Mobile & Manufactured Housing Stock

West Virginia has the highest number and percentage of pre-1976 mobile homes, with about 36,000 mobile homes representing 28% of the mobile and manufactured home stock.

Table 4:

	Total Mobile & Manufactured Homes in Appalachian Regions of				
Year Built	**Alabama**	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**
Before 1970	11,168	9,671	10,411	11,676	6,229
1970-1975*	23,409	21,449	19,204	24,430	11,567
Mobile Homes Subtotal (percentage of total)	*34,577 (15.9%)*	*31,120 (19.8%)*	*29,615 (15.7%)*	*36,106 (27.6%)*	*17,796 (21%)*
1976-1979*	9,562	8,761	7,844	9,978	4,725
1980-1989	55,205	31,939	42,143	27,940	20,685
1990-1999	84,590	55,231	72,681	35,918	28,246
2000-2004	22,564	19,716	24,641	13,507	8,611
2005-2009	9,646	8,937	10,003	6,692	4,026
2010-2013	1,368	1,074	1,524	877	480
Total Mobile and Manufactured Homes	**217,512**	**156,778**	**188,451**	**131,018**	**84,569**

*VCHR estimation based on mobile and manufactured homes shipped to dealers annually 1970-1980, mobile homes placed in the South Census Division annually 1974-1976 and biennial mobile home attrition rates from 1985-2011.

West Virginia also has the highest number of older occupied mobile and manufactured homes: 32% of its occupied mobile and manufactured home stock was built before 1980, compared to 17% in Alabama, 23% in Kentucky, 18% in Tennessee and 23% in Virginia.

Table 5:

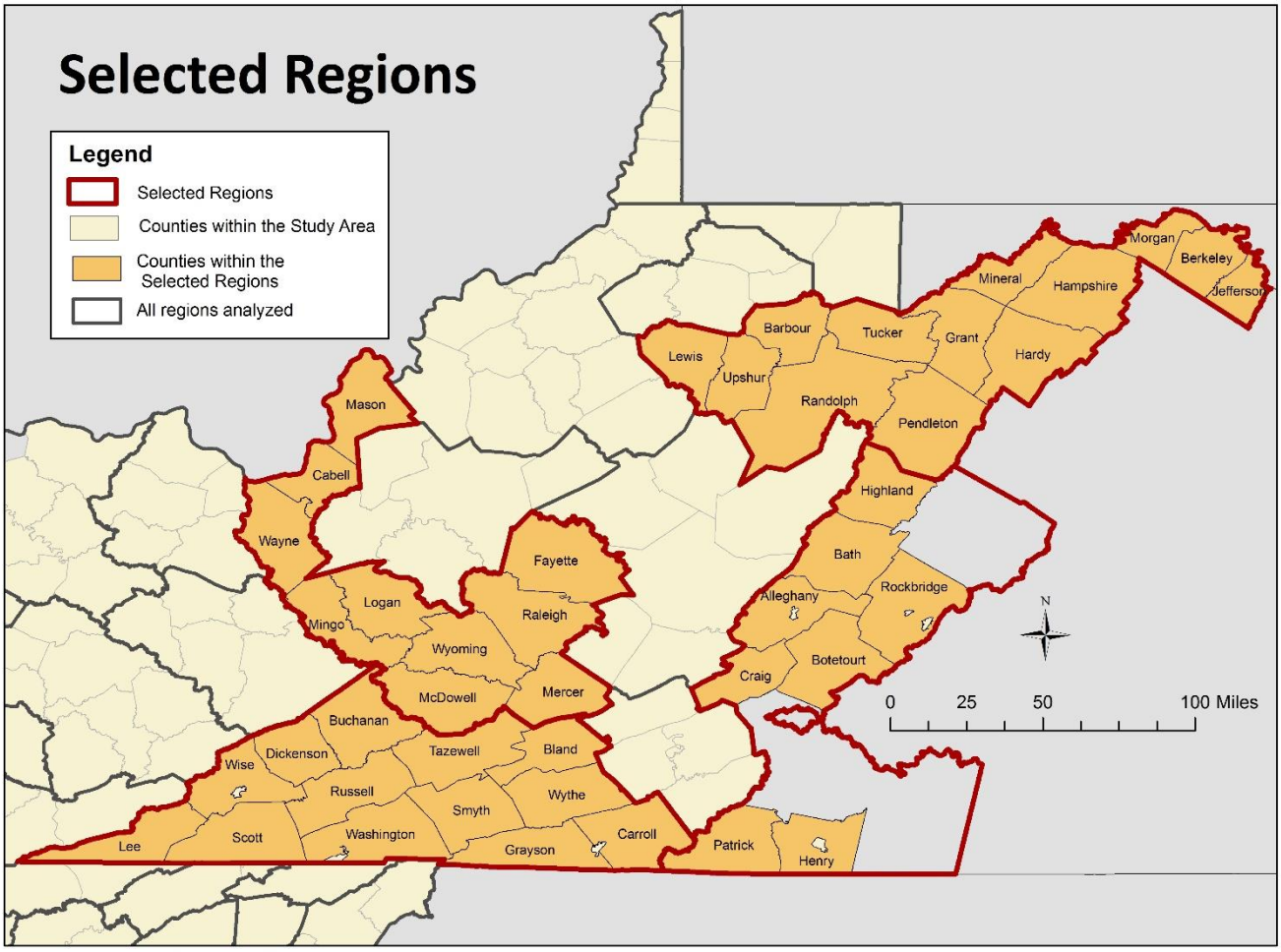
Number of Occupied Mobile & Manufactured Units and Occupancy Rate in Appalachian Regions of:					
Year Built	**Alabama**	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**
Before 1970	**6,521** (58%)	**6,125** (63%)	**7,118** (68%)	**7,832** (67%)	**3,957** (64%)
1970-1979	**22,756** (69%)	**23,531** (78%)	**21,592** (80%)	**26,209** (76%)	**12,021** (74%)
1980-1989	**43,633** (79%)	**24,945** (78%)	**34,100** (81%)	**22,736** (81%)	**16,898** (82%)
1990-1999	**71,780** (85%)	**47,594** (86%)	**62,986** (87%)	**30,464** (85%)	**24,301** (86%)
2000-2004	**18,692** (83%)	**16,811** (85%)	**21,269** (86%)	**11,269** (83%)	**7,183** (83%)
2005-2009	**8,746** (91%)	**8,313** (93%)	**9,568** (96%)	**5,713** (85%)	**3,618** (90%)
2010-2013	**1,121** (82%)	**892** (83%)	**1,466** (96%)	**677** (77%)	**441** (92%)

Mobile homes built before 1970 represent a very small part of the mobile and manufactured home stock (between 5% in Alabama and 9% in West Virginia) and an even smaller amount of the occupied mobile and manufactured home stock. VCHR is only able to estimate the number of occupied mobile homes built before 1970 for four sub-state regions (see the map on page 16) where the number of pre-1970 mobile homes is the greatest:

- The Eastern Panhandle of West Virginia and neighboring counties, including Lewis, Upshur, Barbour, Tucker, Randolph, Grant, Pendleton, Hardy, Mineral, Hampshire, Morgan, Berkeley and Jefferson counties, have 2,314 occupied mobile homes built before 1970.

- The southwestern border counties of West Virginia, including Mason, Cabell, Wayne, Mingo, Logan, Wyoming, McDowell, Mercer, Raleigh and Fayette counties have 1,352 mobile homes built before 1970.
- Far Southwest Virginia, including all the counties west of Bland, Wythe and Carroll counties has 1,846 mobile homes built before 1970.
- Alleghany Highlands, Roanoke Valley and West Piedmont of Virginia (Highland, Augusta, Bath, Rockbridge, Alleghany, Botetourt, Craig, Roanoke, Franklin, Patrick, Henry and Pittsylvania counties, as well as the independent cities, excluding Roanoke and Salem) have 1,836 mobile homes built before 1970.

VCHR estimated the number of mobile and manufactured homes built from 1970-1979 for many sub-state regions, because mobile homes built 1970-1979 are far more numerous and therefore, the ACS sample allowed for reliable estimation. VCHR estimates that approximately 71% of the mobile and manufactured homes built from 1970-1979 that are still in use today were built prior to 1976 when the HUD Code took effect.



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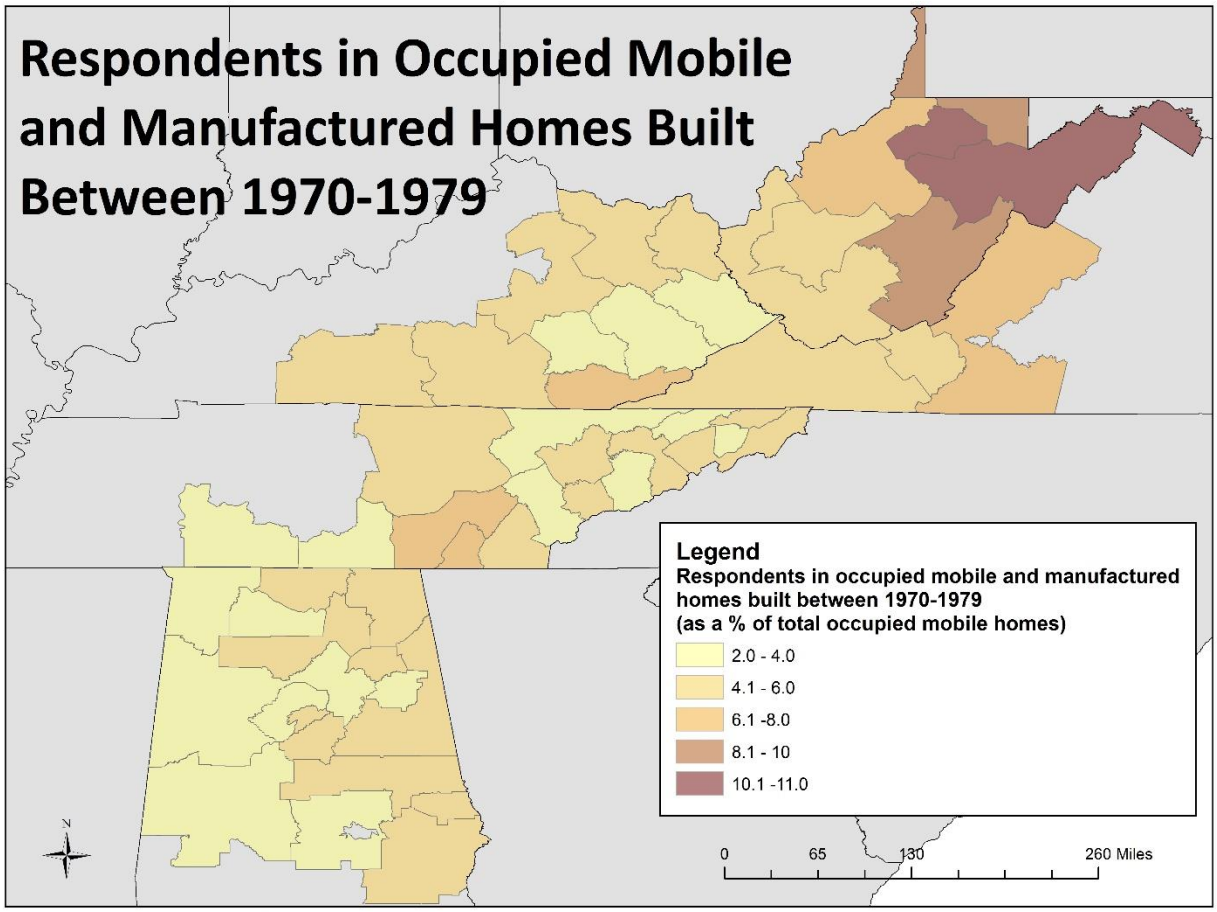
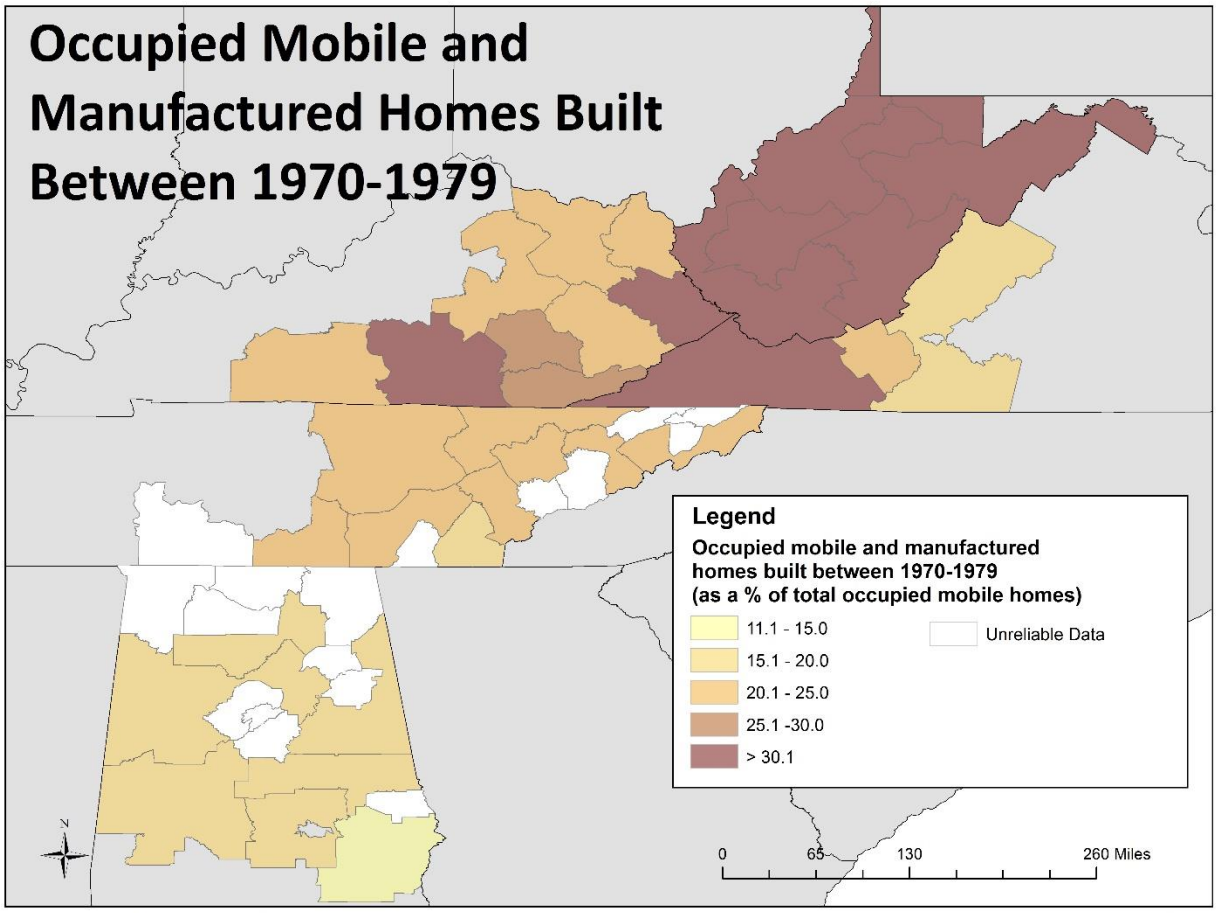

Respondents in Occupied Mobile and Manufactured Homes Built Between 1970-1979
Legend
Respondents in occupied mobile and manufactured homes built between 1970-1979
(as a % of total occupied mobile homes)
2.0 - 4.0
4.1 - 6.0
6.1 -8.0
8.1 - 10
10.1 -11.0
N
0
65
130
260 Miles
Virginia Center for Housing Research
Source: American Community Survey 2013 5 Year Data



Virginia Center for Housing Research

Source: American Community Survey 2013 5 Year Data

Vacancy

Occupied mobile and manufactured homes are our primary focus, since the condition of these housing units directly impacts residents' health, finances and economic opportunity. Nonetheless, vacant mobile and manufactured homes litter the landscape in some areas of the study region, and these homes, often unattended, may pose health and safety hazards to the surrounding communities. Further, the perceived blight that accompanies vacant, deteriorated homes has negative impacts on nearby property values and may contribute to negative stigmas associated with those communities and/or manufactured homes in general. Finally, vacant, deteriorating mobile and manufactured homes may have negative environmental consequences.

There are nearly 150,000 vacant mobile and manufactured homes in the Appalachian regions of Alabama, Kentucky, Tennessee, West Virginia and Virginia, including those for seasonal and recreational use. The largest number of vacant units is in Alabama. In each state, the year-round vacancy rate for mobile and manufactured homes in the study region is higher than the state-wide vacancy rate for all housing units. The largest difference between mobile and manufactured home vacancy and the state-wide vacancy rate is in West Virginia, where the 20% of mobile and manufactured homes are vacant, compared to only 10% of all housing units.

Table 6:

Vacancy Among Manufactured and Mobile Homes in the Appalachian Regions of						
	Alabama	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**	**Entire Study Region**
Total	217,512	156,778	188,451	131,018	84,569	778,328
Vacant (%)	44,263 (20%)	28,567 (18%)	30,352 (16%)	26,118 (20%)	16,150 (19%)	145,450 (19%)

Table 7:

2013 State-wide, Year-round Vacancy Rates				
Alabama	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**
16%	13%	11%	10%	15%

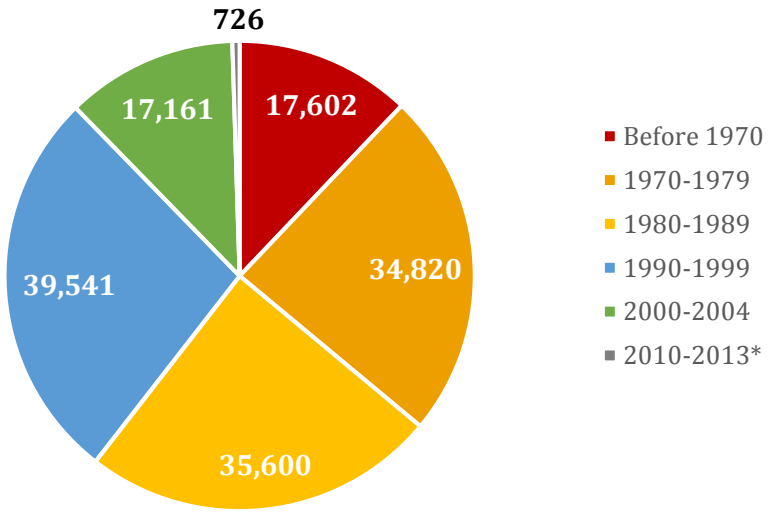
The older mobile and manufactured home stock has a higher vacancy rate than newer mobile homes (see table 8). As a result, mobile and manufactured homes built in the 1970s, 1980s and 1990s are represented fairly evenly, between 35,000 and 40,000 units for each decade, among all vacant mobile and manufactured homes (see chart 1).

Table 8:

Number of Vacant Mobile & Manufactured Homes (Vacancy Rate Among Units in Each Category of Year Built) in the Appalachian Regions of						
Year Built	**Alabama**	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**	**Entire Study Region**
Before 1970	**4,647** (42%)	**3,546** (37%)	**3,293** (32%)	**3,844** (33%)	**2,272** (36%)	**17,602** (36%)
1970-1979	**10,215** (31%)	**6,679** (22%)	**5,456** (20%)	**8,199** (24%)	**4,271** (26%)	**34,820** (25%)
1980-1989	**11,572** (21%)	**6,994** (22%)	**8,043** (19%)	**5,204** (19%)	**3,787** (18%)	**35,600** (20%)
1990-1999	**12,810** (15%)	**7,637** (14%)	**9,695** (13%)	**5,454** (15%)	**3,945** (14%)	**39,541** (14%)
2000-2013	**5,019** (15%)	**3,711** (12%)	**3,865** (11%)	**3,417** (16%)	**1,875** (14%)	**17,887** (13%)

Chart 1: Vacant Mobile and Manufactured Homes by Year Built

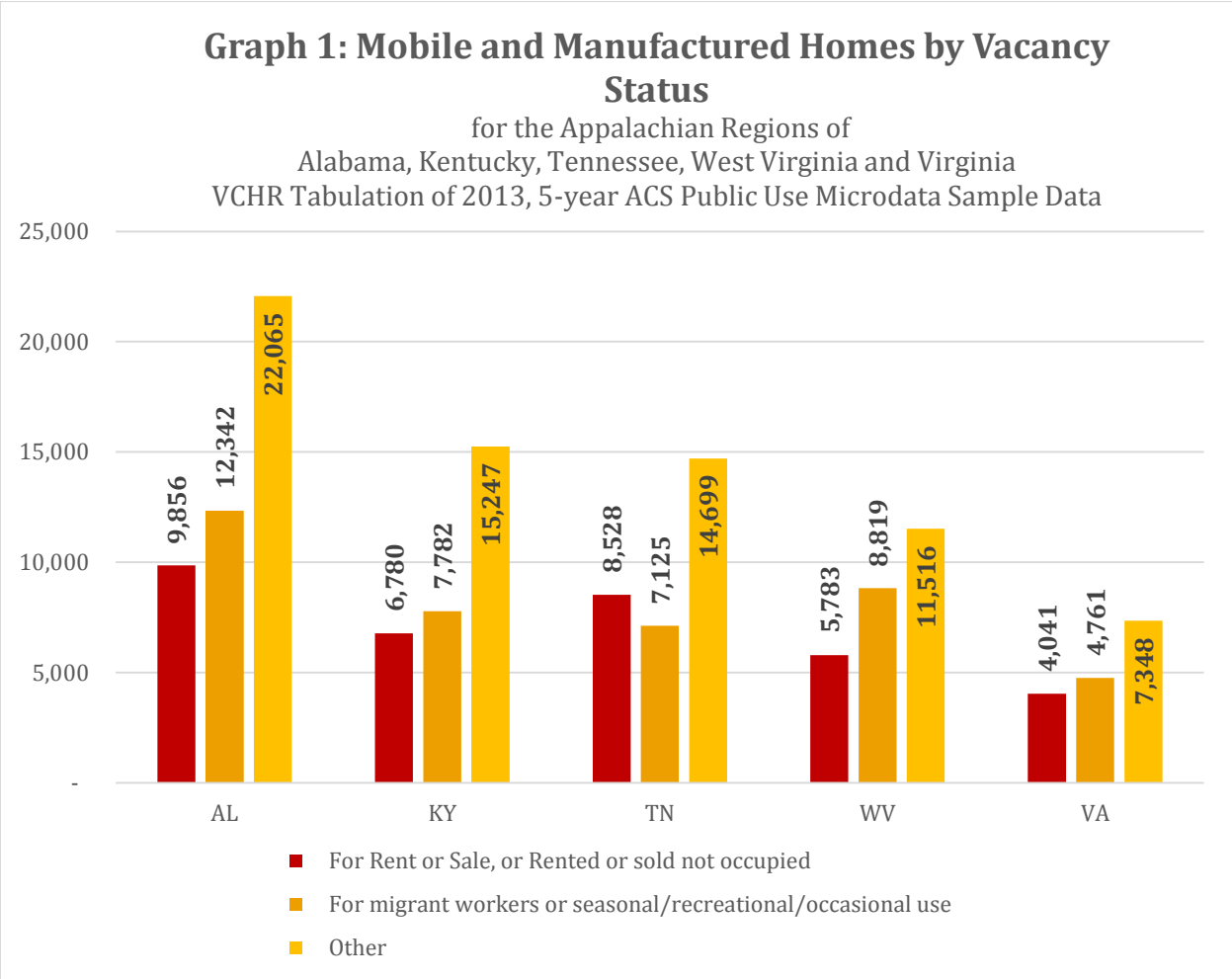
for the Appalachian Regions of
Alabama, Kentucky, Tennessee, West Virginia and Virginia
VCHR Tabulation of 2013, 5-year ACS Public Use Microdata Sample Data



*The estimate of vacant manufactured homes built from 2010-2013 is not reliable since the coefficient of variation is greater than 15% at a 90% confidence interval. We can reliably say that between 544 and 908 manufactured homes in the study region built between 2000 and 2013 are vacant.

The American Community Survey PUMS data also classifies vacant units as "for sale," "for rent," "sold, but not occupied," "rented, but no occupied," "for seasonal or recreational occasional use," "for

migrant workers" and "other." Approximately 16% of vacant mobile and manufactured homes are in transitional status, for rent or for sale. Another 8% are estimated to have been sold or rented, but are not yet occupied. Approximately 28% of vacant mobile or manufactured homes are held for seasonal, recreational or otherwise occasional use. Nearly half of vacant mobile or manufactured homes are classified as having some "other" status. "Other vacant" units are commonly units in which no one lives, units the owner does not want to rent or sell, units used for storage or units whose owners are elderly and living in a nursing home or with family members (Kresin, 2013). Units that have been abandoned, condemned or are scheduled for demolition also fall into this category (Kresin, 2013; US Census, 2014). These 75,000 vacant units that have some "other" status are of particular concern because they are the most likely to negatively impact property values, pose health and safety concerns or contribute to negative stigmas associated with mobile and manufactured homes in general.



Condition of Mobile and Manufactured Homes Built Before 1980

Red Flag Conditions

Approximately 7,351 mobile and manufactured homes in the study area have one or more of the following conditions:

- No sink
- No toilet
- No hot and cold running water
- No bath or shower
- No stove or range

Each of these conditions are interpreted as a "red flag," indicating that the mobile or manufactured home is likely to be in "substandard condition." These red-flag conditions are the most extreme housing deficiencies documented in the ACS, which does not provide any other measures of substandard conditions; therefore, it is important to note that they only capture a fraction of the mobile and manufactured homes with substandard living conditions. A mobile or manufactured home could be in severe disrepair and nearly uninhabitable, but still have complete plumbing and a kitchen.

The highest numbers of homes with red flag conditions are in Alabama and Kentucky.

Table 9:

Occupied Mobile and Manufactured Homes with Red-flag Conditions (percent of total Mobile and Manufactured Homes) in the Appalachian regions of					
	Alabama	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**
Total	1,991 (1%)	2,033 (2%)	1,421 (1%)	1,205 (1%)	701 (1%)

Red flag data is only reliable at the state level for all mobile homes, but the number of ACS respondents[7] who responded that their home has one or more of the red flag conditions indicates that there are some households living without basic housing amenities.

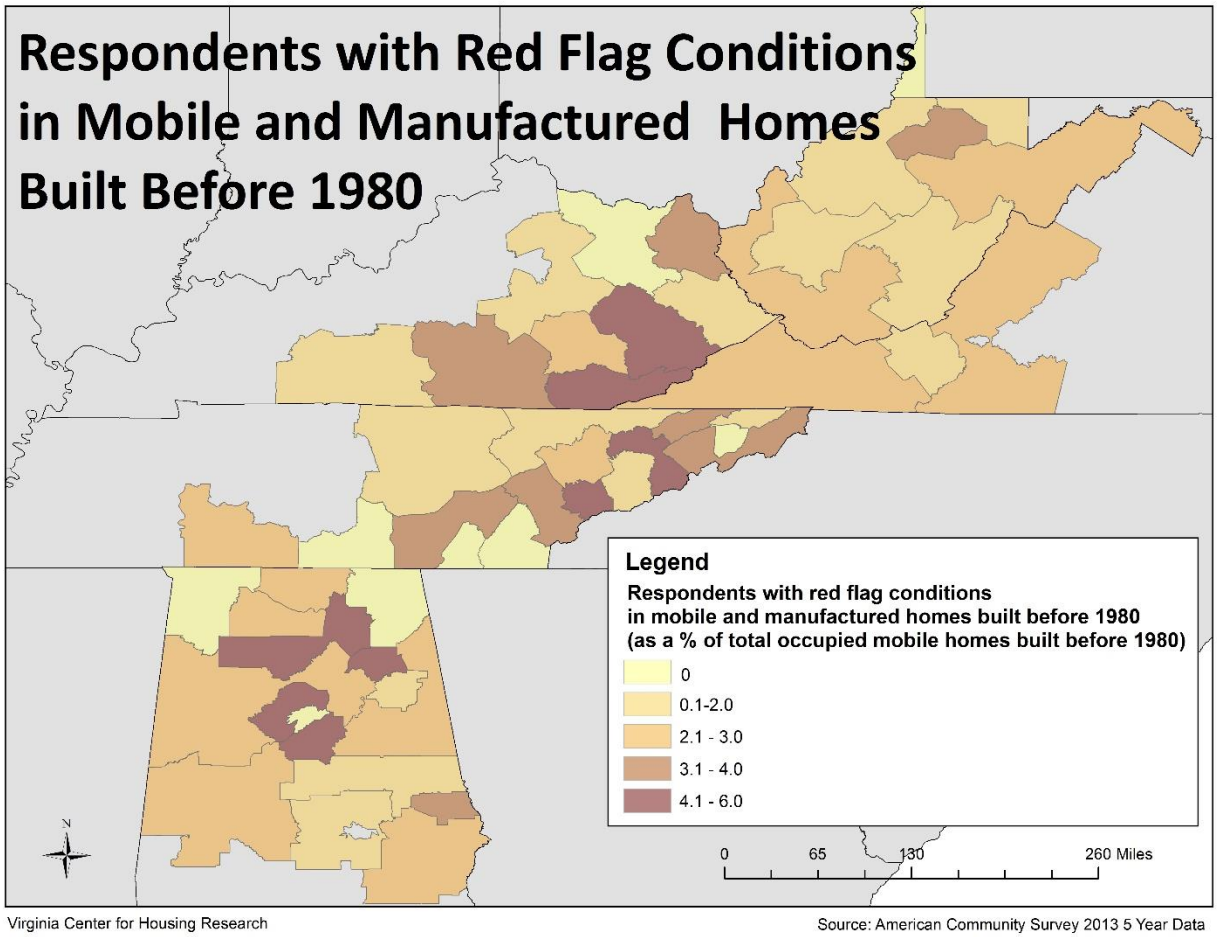
[7] "Respondents" are individual records available in the ACS PUMS data. We provide counts of these unweighted responses because the sample is too small to create reliable population estimates.

Table 10:

Households Living in Mobile Homes Built before 1970, ACS Responses, **in the Appalachian regions of**					
	Alabama	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**
Total Respondents	331	293	359	195	375
Respondents (Percent) with at Least One Red Flag Condition	7 (2%)	12 (4%)	10 (3%)	8 (4%)	7 (2%)
Households Living in Mobile and Manufactured Homes Built 1970-1979, ACS Responses, in the Appalachian regions of					
	Alabama	**Kentucky**	**Tennessee**	**West Virginia**	**Virginia**
Total Respondents	1,124	1,155	1,078	609	1,236
Respondents (Percent) with At Least One Red Flag Conditions	28 (3%)	28 (2%)	23 (2%)	11 (2%)	23 (2%)

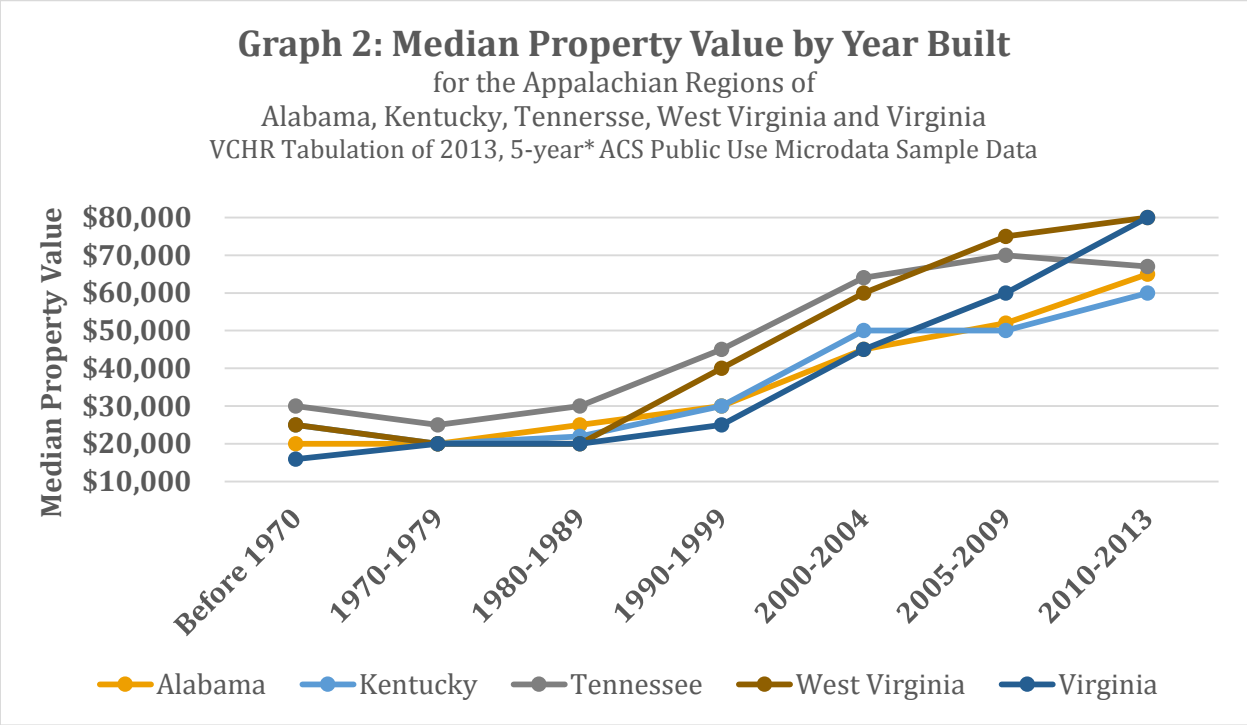
Kentucky and Virginia have the highest number of respondents living in mobile and manufactured homes built before 1980 with red flag conditions. Far-southwest Virginia had 12 respondents with red flag conditions, the highest number among all of our sub-state PUMA regions. The southwestern border region of West Virginia and the Eastern Kentucky region including counties of Pike, Martin, Johnson, Floyd and Magoffin both had nine respondents with red flag conditions.

Given the significant limitations of the ACS housing conditions measures, red-flag conditions underestimate the number of substandard mobile and manufactured homes in the study region. Using American Housing Survey data, we estimate that there are more than 300,000 mobile and manufactured homes nationwide that have complete plumbing and a kitchen, but are still in "inadequate" physical condition because they suffer from leaks, plumbing failures, heating problems, electrical problems, crumbling foundations and/or other deficiencies not reported in the ACS. These mobile and manufactured homes in "inadequate" condition represent about 4.6% of mobile and manufactured homes *without* red flag conditions, nationwide. Unfortunately, American Housing Survey data is not available for this study's geography.


Respondents with Red Flag Conditions in Mobile and Manufactured Homes Built Before 1980
Legend
Respondents with red flag conditions in mobile and manufactured homes built before 1980 (as a % of total occupied mobile homes built before 1980)
0
0.1-2.0
2.1 - 3.0
3.1 - 4.0
4.1 - 6.0
N
0
65
130
260 Miles
Virginia Center for Housing Research
Source: American Community Survey 2013 5 Year Data

Median Value

The values of mobile and manufactured homes typically decrease as the age of the homes increases, as shown in Graph 2. Mobile homes built before 1970 in Kentucky, West Virginia and Tennessee deviate from this trend, as do manufactured homes built between 2010 and 2013 in Tennessee. In Kentucky and West Virginia mobile homes built before 1970 have a median value of $25,000, which is higher than mobile and manufactured homes built between 1970 and 1989. This deviation is likely related to land value. These mobile and manufactured homes may be in desirable locations or their value may be associated with a parcel also owned by the resident.

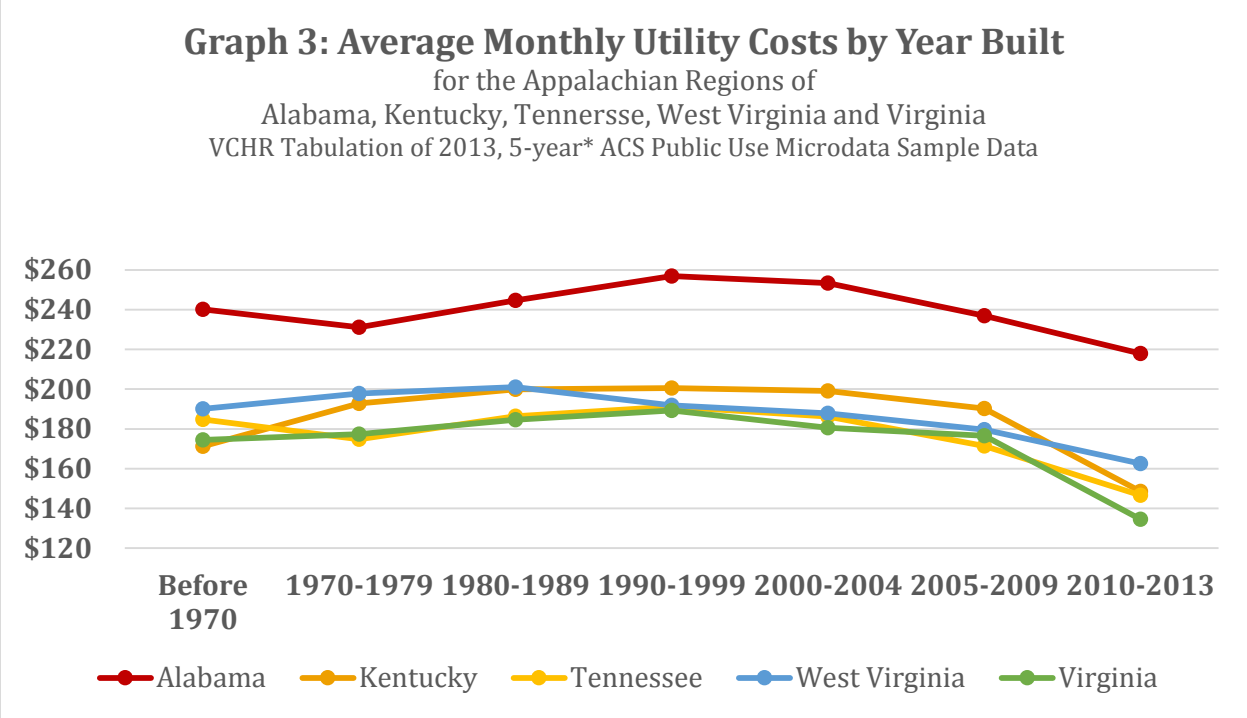


* The data displayed is a tabulation of ACS 2013, 5-year data. The 5-year data can be thought of as a five-year average that shows longer term trends. Five-year data is less reflective of market fluctuations and other temporary disturbances. Nonetheless, 1-year data can still be informative. Charts with 1-year data can be found in Appendix 3.

Utilities

For manufactured homes built in 1990 and later, average monthly utility costs tend to decrease as the age of homes decreases. Average monthly utility costs are less consistently correlated with year built for mobile and manufactured homes built before 1990. The size of mobile and manufactured homes produced has increased over time, which may explain the higher utility costs for newer units in some states. Only manufactured homes built in the last five years have significantly lower utility costs than older mobile and manufactured homes built before 1980. However, the data shows clearly that energy usage is lower for manufactured homes built after the HUD-Code energy standards were updated in 1994.

Households living in mobile and manufactured homes in Alabama have far greater utility costs than households in the other regions of our study area. Alabama households consume far more energy per capita than households in Kentucky, Tennessee, Virginia and West Virginia, possibly because Alabama has a much warmer climate and the homes must use more electricity to remain cool. Electricity rates in Alabama are not significantly higher or lower than any other state in the study region.



* The data displayed is a tabulation of ACS 2013, 5-year data. The 5-year data can be thought of as a five-year average that shows longer term trends. Five-year data is less reflective of market fluctuations and other temporary disturbances. Nonetheless, 1-year data can still be informative. Charts with 1-year data can be found in Appendix 3.

Tenure of Mobile Homes Built Before 1970 (through 1969)

Many mobile homes built before 1970 are vacant, but the majority are still in use. Higher vacancy among mobile homes built before 1970 may be indicative of low quality in the oldest part of the mobile home stock.

Table 11:

Appalachian Regions of	Mobile Homes Built Before 1970		
	Total	**Occupied** (Percentage of Total)	**Vacant** (Percentage of Total)
Alabama	11,168	**6,521** (58%)	**4,647** (42%)
Kentucky	9,671	**6,125** (63%)	**3,546** (37%)
Tennessee	10,411	**7,118** (68%)	**3,293** (32%)
West Virginia	11,676	**7,832** (67%)	**3,844** (33%)
Virginia	6,229	**3,957** (64%)	**2,272** (36%)

Most occupied mobile homes built before 1970 are occupied by owners who own their homes "free and clear."[8] Occupied mobile homes built before 1970 represent a very small part of the occupied mobile homes in each state, between 4% of occupied mobile homes in Alabama and 7% in West Virginia. A higher percentage of residents of mobile homes built before 1970 own their homes free and clear compared to residents of mobile homes overall: the difference is substantial in Alabama (13 percentage points), Kentucky (11 percentage points), and Virginia (13 percentage points).

There are approximately 3,718 mobile homes built before 1970 that are occupied by owners with a mortgage or loan in the study area. The ACS respondents who occupy mobile homes built before 1970 with a mortgage are too few to use their responses to create reliable estimates for the Appalachian regions of the states in our study area. Similarly, there are very few renter-occupied mobile homes built before 1970 and so there are only enough respondents to create reliable estimates for the study area in two states: Tennessee (2,264 renter-occupied mobile homes) and West Virginia (2,267 renter-occupied mobile homes). There are approximately 8,263 renter-occupied mobile homes built before 1970 in the entire study area.

Table 12:

Appalachian Regions of	**Occupied Mobile Homes Built Before 1970**			
	Total	**Owned Free & Clear** (Percent of Total)	**Owned with a Mortgage or Loan**	**Rented** (Percent of Total)
Alabama	**6,521**	**3,625** (56%)	***974**	***1,467**
Kentucky	**6,125**	**3,237** (53%)	***790**	***1,293**
Tennessee	**7,118**	**2,932** (41%)	***1,027**	**2,264** (32%)
West Virginia	**7,832**	**3,857** (49%)	***627**	**2,267** (29%)
Virginia	**3,957**	**2,206** (56%)	***300**	***972**

*Estimate not reliable (coefficient of variation greater than 15% at a 90% confidence interval).

[8] Whether or not a home is owned "free and clear" is derived from the ACS question "Is this house, apartment or mobile home—Mark (X) ONE box. [1] Owned by you or someone in this household with a mortgage or loan? Include home equity loans. [2] Owned by you or someone in this household free and clear (without a mortgage or loan)? [2] Rented? [3] Occupied without payment of rent?"

Tenure of Mobile and Manufactured Homes Built 1970-1979

Mobile and manufactured homes built from 1970 through 1979 have significantly lower vacancies and represent a much larger part of the occupied housing stock than homes built before 1970.

Table 13:

Appalachian Regions of	Mobile & Manufactured Homes Built 1970-1979		
	Total	**Occupied** (Percent of Total)	**Vacant** (Percent of Total)
Alabama	32,971	**22,756** (69%)	**10,215** (31%)
Kentucky	30,210	**23,531** (78%)	**6,679** (22%)
Tennessee	27,048	**21,592** (80%)	**5,456** (20%)
West Virginia	34,408	**26,209** (76%)	**8,199** (24%)
Virginia	16,292	**12,021** (74%)	**4,271** (26%)

In the study region, occupied mobile and manufactured homes built from 1970-1979 make up the smallest share of the occupied mobile and manufactured housing stock in Alabama (13%) and the largest share in West Virginia (25%). Compared to the four other states in our study region, West Virginia also has the highest number and proportion of occupied mobile- and manufactured-home stock, built before 1980.

Table 14:

	Occupied Mobile and Manufactured Homes by Year Built **(Percent of All Occupied Mobile and Manufactured Homes) In the Appalachian Regions of**				
	Alabama	Kentucky	Tennessee	West Virginia	Virginia
Built before 1970	**6,521** (4%)	**6,125** (5%)	**7,118** (5%)	**7,832** (7%)	**3,957** (6%)
Built 1970-1979	**22,756** (13%)	**23,531** (18%)	**21,592** (14%)	**26,209** (25%)	**12,021** (18%)
Built 1980-2013	**143,972** (83%)	**98,555** (77%)	**129,389** (81%)	**70,859** (68%)	**52,441** (76%)

Most residents of mobile and manufactured homes built from 1970-1979 own their home free and clear, similarly to residents of those built before 1970. Also, a higher percentage of residents of mobile and manufactured homes built from 1970-1979 own their homes free and clear compared to residents of all mobile and manufactured homes. The difference between ownership rates is substantial in each state of the study region: Alabama (12 percentage points), Kentucky (10 percentage points), Tennessee (8 percentage points), West Virginia (10 percentage points) and Virginia (11 percentage points).

Table 15:

Appalachian Regions of	Occupied Mobile & Manufactured Homes Built 1970-1979			
	Total	**Owned Free & Clear** (Percent of Total)	**Owned with a Mortgage or Loan** (Percent of Total)	**Rented** (Percent of Total)
Alabama	**22,756**	**12,299** (54%)	**2,217** (10%)	**6,602** (29%)
Kentucky	**23,531**	**12,390** (53%)	**2,281** (10%)	**6,416** (27%)
Tennessee	**21,592**	**9,125** (42%)	**3,464** (16%)	**7,058** (33%)
West Virginia	**26,209**	**15,092** (58%)	**2,575** (10%)	**6,549** (25%)
Virginia	**12,021**	**6,499** (54%)	**1,075** (9%)	**3,833** (32%)

Since the sample of residents of mobile and manufactured homes built from 1970-1979 is far greater than the sample of residents of older homes, we have reliable data for those homes owned with a loan (mortgage, chattel or secondary loan) and those that are rented. The share of residents of mobile homes built 1970-1979 with a home loan is far lower—by an average of 18 percentage points—than the percent of all mobile and manufactured home residents with a home loan. This ownership trend supports the idea that mobile and manufactured homes built before 1980 are more often owned free and clear because they have either been owned longer or were bought at a lower price, meaning that owners either have had a longer amount of time to pay of home loans or had a smaller initial loan.

The percentage of renters in mobile and manufactured homes built 1970-1979 is greater than the overall percentage of renters who occupy mobile and manufactured homes in each state: Alabama (7 percentage points), Kentucky (5 percentage points), Tennessee (6 percentage points), West Virginia (4 percentage points) and Virginia (5 percentage points). In the two states for which we have reliable data for both vintages, the rate of renting is similar among mobile and manufactured homes built 1970-1979 and older homes. In Tennessee, 33% of the occupied mobile and manufactured homes built 1970-1979 are rented, and 32% of the occupied mobile homes built before 1970 are rented; in West Virginia, the rates are 25% and 29%, respectively. There is enough data to estimate the percentage of households renting mobile and manufactured homes built from 1970-1979 in two of our sub-state regions. In the eastern part of West Virginia encompassing Lewis, Upshur, Barbour, Tucker, Randolph, Grant, Pendleton, Hardy, Mineral, Hampshire, Morgan, Berkeley and Jefferson counties, 39% of the occupied homes built 1970-1979 are rented. In the far southwest of Virginia, for all counties and independent cities (county equivalents) west of Carroll, Wythe and Black counties, 31% of the occupied homes built 1970-1979 are rented.

Cost Burden among Residents of Mobile and Manufactured Homes by Year Built, Tenure and Utilities

Residents of mobile and manufactured homes are cost-burdened at a higher rate than the population overall and are disproportionately cost burdened; that is, the percent of mobile home residents in the cost-burdened population is greater than the percent of mobile home residents in the population overall (see Table 16). Levels of cost burden among residents of mobile and manufactured homes may indicate that mobile and manufactured homes represent the only viable housing option for some households, rather than an affordable option. And even if the house is owned free and clear, it might not be particularly affordable due to the lot rent, taxes, utilities and other costs.

Table 16:

Mobile and Manufactured Households Over-Represented in Cost-burdened Population					
	Alabama	Kentucky	Tennessee	West Virginia	Virginia
Percentage of the Occupied Housing Stock	13%	19%	14%	15%	15%
Percentage of Cost-burdened Households	14%	21%	16%	16%	16%

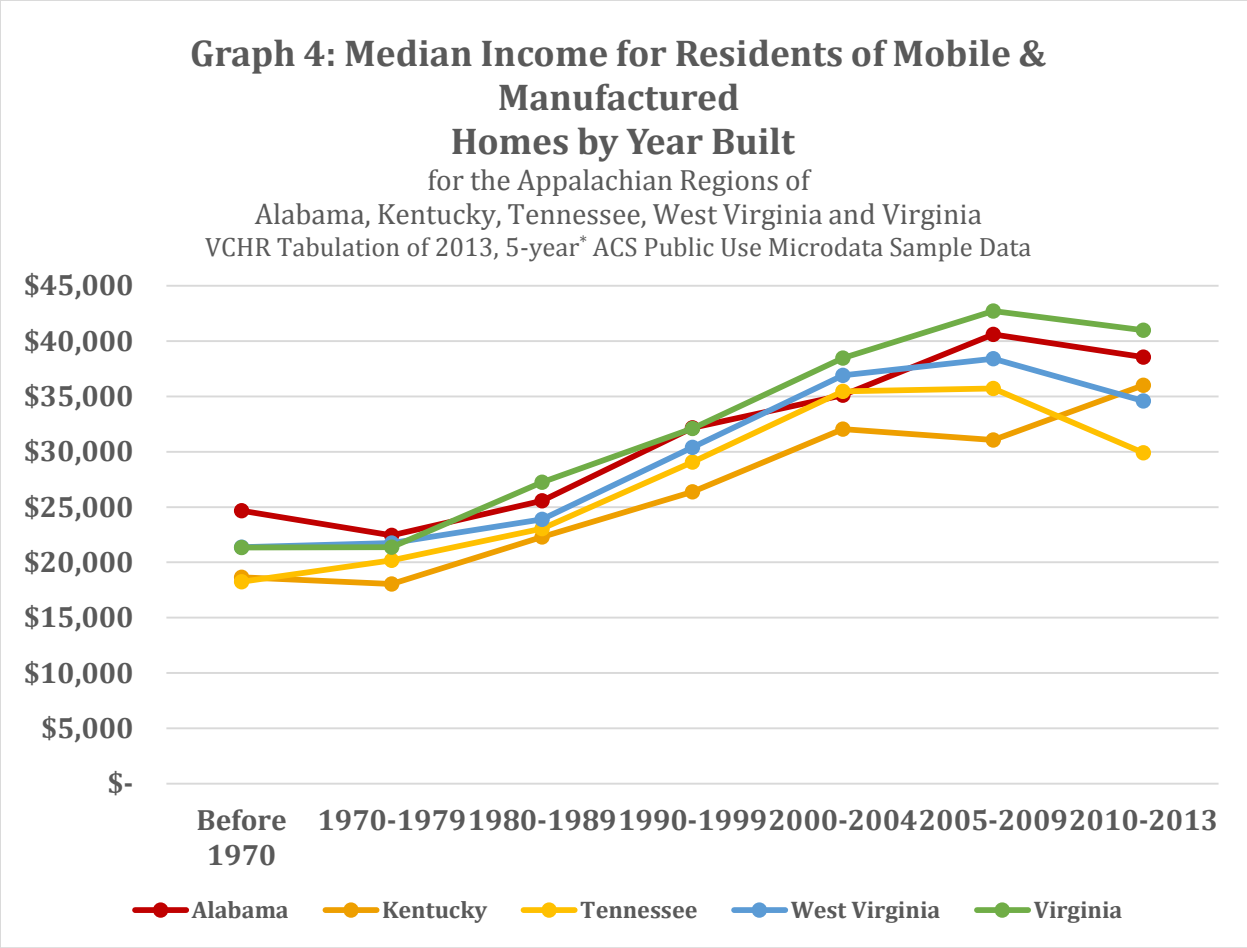
The rate of cost burden among residents of mobile and manufactured homes is fairly constant across the periods of manufacture, "year built" shown in table 17. Further, there are no discernable trends that indicate a correlation between cost burden and year built.

Table 17:

Number (Percent) **of Cost-burdened Mobile & Manufactured Households in Appalachian Regions of**					
Year Built	Alabama	Kentucky	Tennessee	West Virginia	Virginia
Before 1970	2,050 **(31%)**	1,532 **(25%)**	2,177 **(31%)**	1,833 **(23%)**	*900
1970-1979	6,569 **(29%)**	6,719 **(29%)**	7,299 **(34%)**	6,209 **(24%)**	3,282 **(27%)**
1980-1989	12,482 **(29%)**	7,059 **(28%)**	11,110 **(33%)**	5,277 **(23%)**	4,688 **(28%)**
1990-1999	20,114 **(28%)**	13,119 **(28%)**	18,859 **(30%)**	7,492 **(25%)**	7,077 **(29%)**
2000-2004	5,826 **(31%)**	4,831 **(29%)**	6,173 **(29%)**	2,339 **(21%)**	2,092 **(29%)**
2005-2009	2,451 **(28%)**	2,895 **(35%)**	2,987 **(31%)**	*1,168	*970
2010-2013	*293	*213	433 **(30%)**	*186	*153

*Estimate not reliable (coefficient of variation greater than 15% at a 90% confidence interval

However, household incomes tend to be lower among residents of older mobile and manufactured homes. The median income of residents of mobile and manufactured homes built before 1980 in each state is about 50% below the state's Area Median Income. The low median household incomes for residents of these homes also suggest that older, lower-valued mobile and manufactured homes may be the only option for some households: residents of mobile and manufactured homes built before 1980 may not have the means to replace their homes or improve their quality.



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Households that rent mobile and manufactured homes are significantly more likely than owners to face cost burdens, and homeowners with a home loan are more likely to face cost burdens than households that own their homes free and clear.

Table 18:

Tenure	Percentage Cost Burdened				
	Alabama	Kentucky	Tennessee	West Virginia	Virginia
Renting	50%	52%	53%	47%	48%
Own “free and clear”	18%	15%	13%	13%	15%
Own with a loan	35%	37%	38%	28%	34%

Residents of mobile and manufactured homes are far more likely to be cost burdened by utilities alone, compared to all households.

Table 19:

Residents Cost-Burdened by Utilities Alone					
	Alabama	Kentucky	Tennessee	West Virginia	Virginia
Cost-burdened Residents of Mobile & Manufactured Homes	49,785	36,368	49,038	24,504	19,162
Mobile Homes Occupants Cost Burdened by Utilities Alone (Percentage of Cost-burdened Residents of Mobile & Manufactured Homes)	25,302 (51%)	15,299 (42%)	13,824 (28%)	8,830 (36%)	7,011 (37%)
Percentage of all Households Cost Burdened by Utilities Alone	(32%)	(28%)	(22%)	(27%)	(23%)

Cost Burden among Residents of Mobile Homes Built Before 1970 (through 1969)

Approximately 27% of households living in mobile homes built before 1970—an estimated 8,492 households in our study—are cost burdened, paying more than 30% of their household income for housing. This rate of cost burden is about the same as the rate among all residents of mobile and manufactured homes (28%). Approximately 14% of households living in pre-1970 mobile homes—an estimated 4,357 households, and fully 51% of cost-burdened households—are *severely* cost burdened, spending more than half of their income for housing. This rate of severe cost burden is also about the same as the rate of cost burden among all residents of mobile and manufactured homes (13%). Residents of the oldest mobile homes are almost equally likely to be cost burdened as all mobile and manufactured home residents, but they are somewhat more likely to face severe cost burdens. Among households living in mobile homes built before 1970, Alabama and Tennessee have both the highest rates of cost burden and highest number of cost-burdened residents.

Residents of mobile homes built before 1970 are proportionately cost burdened relative to the share of mobile and manufactured home residents they represent. That is, cost-burdened households living in mobile homes built before 1970 represent 5% of the cost-burdened households living in mobile and manufactured homes and all households living in mobile homes built before 1970 represent 5% of all households living in mobile and manufactured homes.

Table 20:

Appalachian Regions of	Household Living in Mobile Homes Built Before 1970	
	Total	**Cost-burdened** (Percentage of Total)
Alabama	**6,521**	**2,050** (31%)
Kentucky	**6,125**	**1,532** (25%)
Tennessee	**7,118**	**2,177** (31%)
West Virginia	**7,832**	**1,833** (23%)
Virginia	**3,957**	***900**

*Estimate not reliable (coefficient of variation greater than 15% at a 90% confidence interval).

Cost Burden among Residents of Mobile and Manufactured Homes Built 1970-1979

Approximately 28% of households living in mobile and manufactured homes built from 1970-1979 are cost burdened, with the highest rate of cost burden in Tennessee. In each state, the share of cost-burdened households living in mobile and manufactured homes built 1970-1979 is proportionate to the share of all mobile and manufactured home residents living in homes built 1970-1979.

Cost-burdened residents living in mobile and manufactured homes are severely cost burdened about half of the time. Cost-burdened households are most likely to be severely cost burdened in Alabama, where fully 58% of cost-burdened residents of mobile and manufactured homes built 1970-1979 are severely cost burdened.

Table 21:

Appalachian Regions of	Households Living in Mobile & Manufactured Homes Built 1970-1979		
	Total	**Cost-burdened** (Percent of Total)	**Severely Cost-burdened** (Percent of Total) [Percent of Cost-burdened]
Alabama	**22,756**	**6,569** (29%)	**3,783** (17%) [58%]
Kentucky	**23,531**	**6,719** (29%)	**3,302** (14%) [49%]
Tennessee	**21,592**	**7,299** (34%)	**3,535** (16%) [48%]
West Virginia	**26,209**	**6,209** (24%)	**3,327** (13%) [54%]
Virginia	**12,021**	**3,282** (27%)	**1,754** (15%) [53%]

VCHR could construct reliable estimates for four sub-state regions where there are a relatively high number of occupied mobile and manufactured homes built from 1970-1979 and relatively high rates of cost burden among their residents.

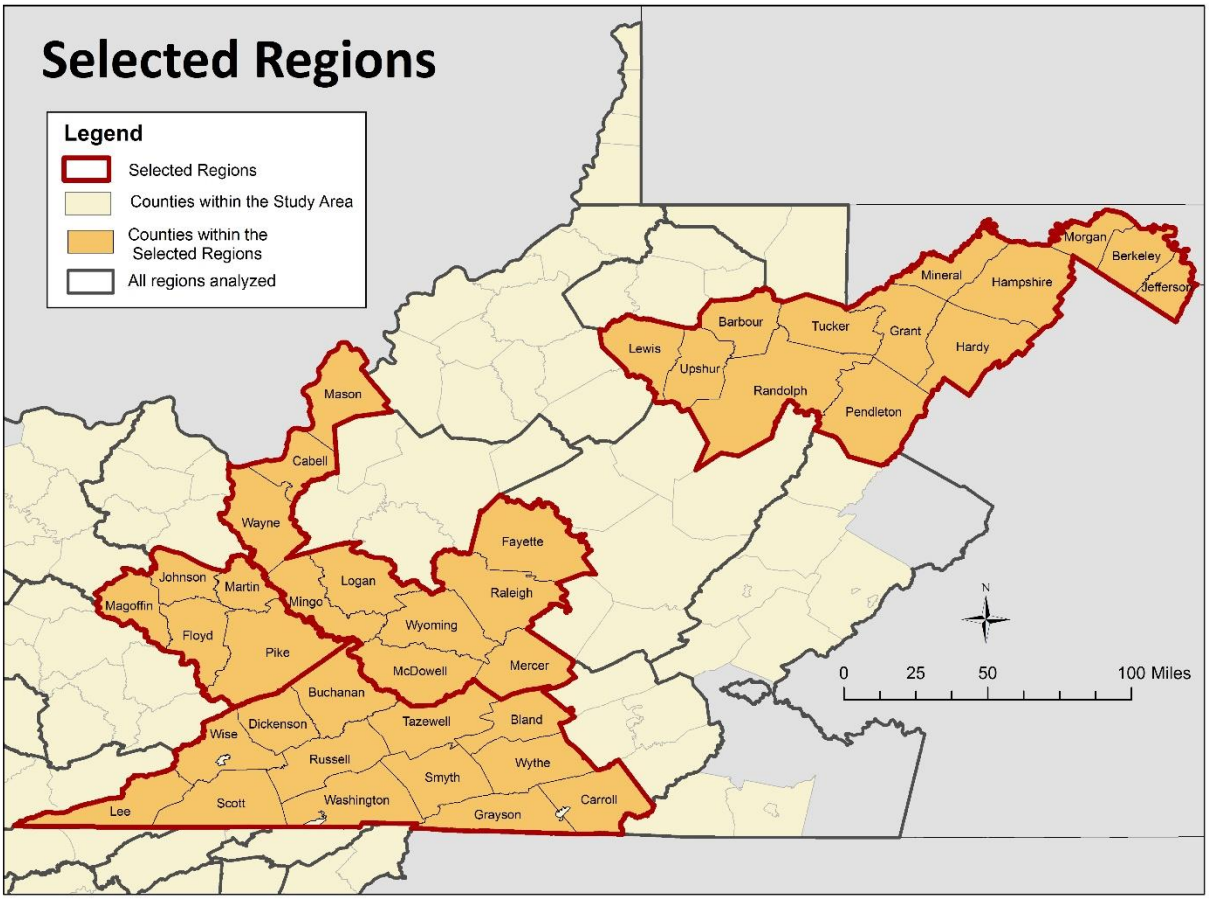

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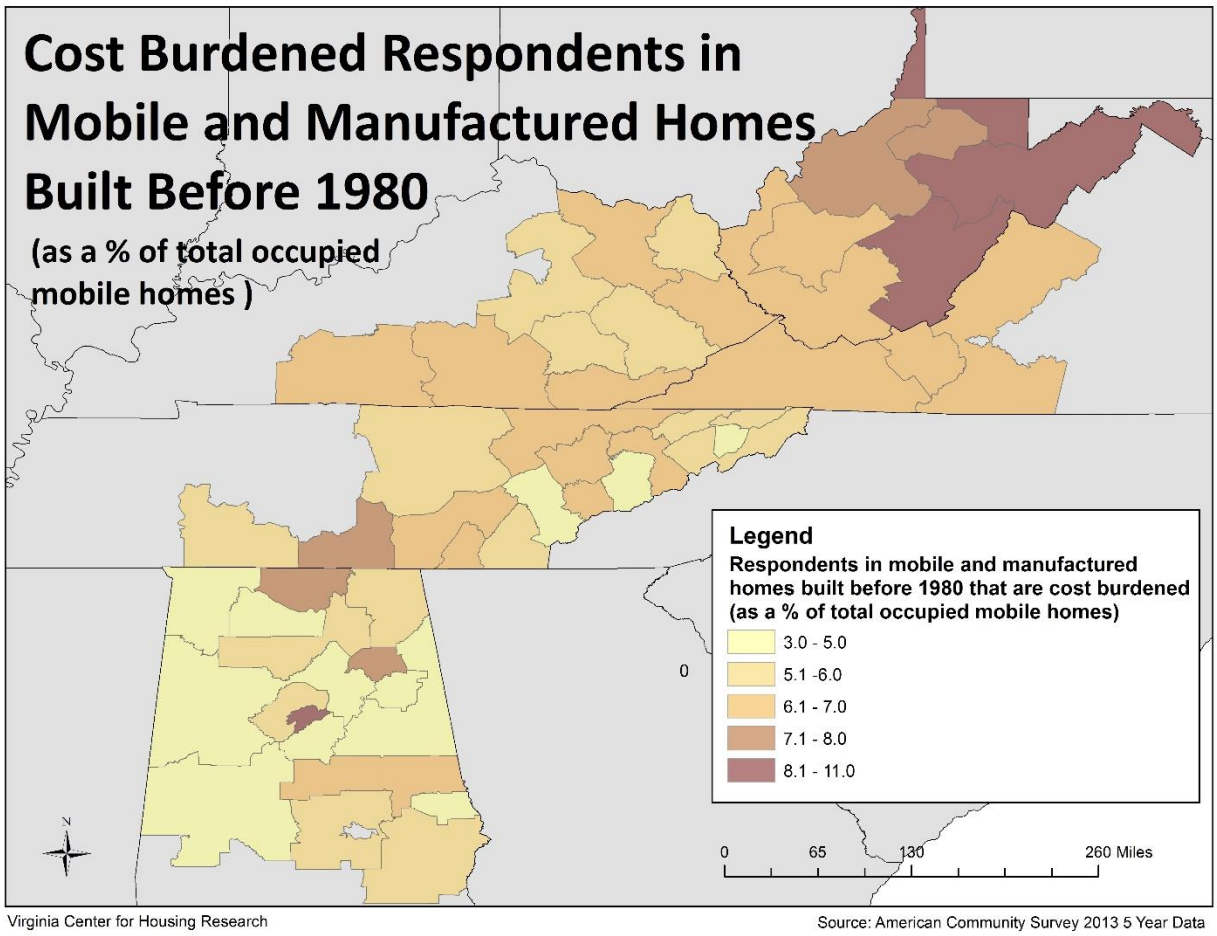
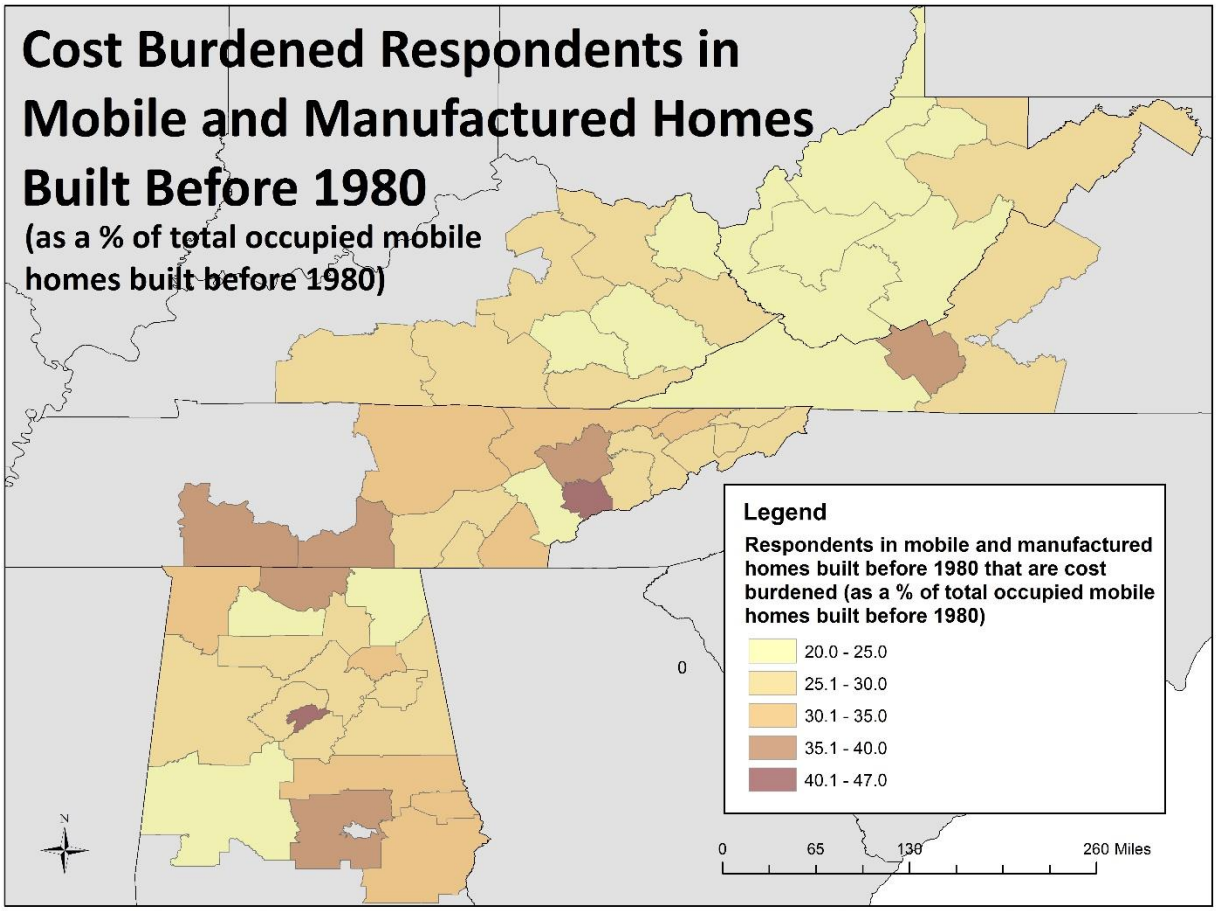
Table 22:

Cost-burden in Regions with High Numbers of Occupied Mobile and Manufactured Homes				
Region	Counties	Total Occupied Mobile & Manufactured Homes	1970-1979 Occupied Mobile & Manufactured Homes (Percentage)	Number (Percentage) Cost Burdened Households.
Eastern Kentucky	Pike, Floyd, Martin, Johnson, Magoffin	**19,863**	**4,394** (22%)	**1,104** (25%)
Western Panhandle of West Virginia	Lewis, Upshur, Barbour, Tucker, Randolph, Grant, Pendleton, Hardy, Mineral, Hampshire, Morgan, Berkeley, Jefferson	**21,281**	**5,155** (24%)	**1,351** (26%)
Southwestern West Virginia	Mason, Cabell, Wayne, Mingo, Logan, Wyoming, McDowell, Mercer, Raleigh, Fayette	**30,260**	**7,384** (24%)	**1,876** (25%)
Far Southwest Virginia	Bland, Wythe, Carroll, Galax, Grayson, Smyth, Tazewell, Smyth, Buchanan, Dickenson, Russell, Washington, Bristol, Wise, Norton, Scott, Lee	**36,136**	**7,856** (22%)	**1,920** (24%)


Cost Burdened Respondents in Mobile and Manufactured Homes Built Before 1980
(as a % of total occupied mobile homes)
Legend
Respondents in mobile and manufactured homes built before 1980 that are cost burdened (as a % of total occupied mobile homes)
3.0 - 5.0
5.1 -6.0
6.1 - 7.0
7.1 - 8.0
8.1 - 11.0
0
0 65 130 260 Miles
Virginia Center for Housing Research
Source: American Community Survey 2013 5 Year Data


Cost Burdened Respondents in Mobile and Manufactured Homes Built Before 1980
(as a % of total occupied mobile homes built before 1980)
Legend
Respondents in mobile and manufactured homes built before 1980 that are cost burdened (as a % of total occupied mobile homes built before 1980)
20.0 - 25.0
25.1 - 30.0
30.1 - 35.0
35.1 - 40.0
40.1 - 47.0
0
65
130
260 Miles
N
Virginia Center for Housing Research
Source: American Community Survey 2013 5 Year Data

References

Alabama Department of Economic and Community Affairs. (2015). Energy Assistance Programs. Retrieved August 4, 2015, from http://www.adeca.alabama.gov/Divisions/energy/Pages/EnergyAssistance.aspx

Aman, D. D., & Yarnal, B. (2010). Home sweet mobile home? Benefits and challenges of mobile home ownership in rural Pennsylvania. *Applied Geography, 30*(1), 84-95. doi: 10.1016/j.apgeog.2009.09.001

Blount County Community Action Agency. (2015). Weatherization Assistance Program. Retrieved August 5, 2015, from http://www.blountcaa.org/programs/weatherization/

CFED. Assests and Opportunites Scorecard. Retrieved January 2016, from http://scorecard.assetsandopportunity.org/latest/measure/resident-ownership-titling-and-zoning-of-manufactured-homes

CFED. (2016b). I'M Home Program Overview. Retrieved January 2016, from http://cfed.org/programs/innovations_manufactured_homes/program_overview/

Cody, E. (2011). Retrofitting Manufactured Homes for Improved Energy Efficiency: The National Rural Electric Cooperative Association (NRECA).

Consumer Financial Protection Bureau. (2014, September). *Manufactured Housing Consumer Finance in the United States*.

Corporation for Enterprise Development. (2015). Bringing it All Home: Manufactured Housing and the Future of Affordable Housing.

Dawkins, C. J., Koebel, C. T., Cavell, M., Hullibarger, S., Hattis, D., & Weissman, H. (2011). Regulatory Barriers to Manufactured Housing Placement in Urban Communities.

Database of State Incentives for Renewables & Efficiency (DSIRE). Accessed February 2016.

Eklund, K., Gordon, A., and Lubliner, M. (2012). Strategic Recommendations to Improve Energy Efficiency in Manufactured Housing. Olympia, Wash.: Washington State University Extension Energy Program.

Frontier Housing. (2012). How to Eliminate the Worst Housing Stock in America. Retrieved August 31, 2015, from http://www.frontierhousing.org/mhdr/

Gleeson, M. E. (1988). The expected life of mobile homes. *Socio-Economic Planning Sciences*, *22*(6), 271-276.

Housing Assistance Council. (2010). Improving MHDA: A Need to Better Understand Rural Mortgage Markets.

Innovations in Manufactured Homes. (2015). Corporation for Enterprise Development Retrieved August 31, 2015, from http://cfed.org/programs/innovations_manufactured_homes/

Kentucky Housing Corporation. (2015). Weatherization Assistance Program. Retrieved August 4, 2015, from http://www.kyhousing.org/Development/Single-Family/Pages/Weatherization-Assistance-Program.aspx

Kresin, Melissa. (2013). "Other" Vacant Housing Units: An Analysis from the Current Population Survey/Housing Vacancy Survey. Poster presented at the Annual Meeting of the Population Association of America. New Orleans, LA April 11-13, 2013.

Krigger, J. (1998). Your mobile home: Energy and repair guide for manufactured housing. Helena, MT: Saturn Resource Management.

Maine State Housing Authority. (2014). Mobile Home Replacement Initiative.

Manufactured Home Construction and Safety Standards. (2015). Retrieved June 23, 2015, from http://portal.hud.gov/hudportal/HUD?src=/hudprograms/mhcss

Manufactured Home Construction and Safety Standards 24 CFR 3280. (2001).
Manufactured Homeowners Association of America (MHAA). (2011). Around the Nation. Retreived October 1, 2015 from http://www.allparksallianceforchange.org/?q=book/export/html.
Manufactured Housing Institute. (2015a). Building Codes and Standards. Retrieved July 6, 2015, from http://www.manufacturedhousing.org/lib/showtemp_detail.asp?id=942&cat=Advocacy%20&%20Issues
Manufactured Housing Institute. (2015b). Summary of State Laws and Court Cases Regarding the Zoning, Placement, and Tax Treatment of Manufactured Housing. Retrieved July 6, 2015, from http://www.manufacturedhousing.org/lib/showtemp_detail.asp?id=606#TENNESSEE
Model Manufactured Home Installation Standards 24 CFR 3285. (2005).
Nabinger, S., & Persily, A. (2011). Impacts of airtightening retrofits on ventilation rates and energy consumption in a manufactured home. Energy and Buildings, 43(11), 3059-3067. doi: 10.1016/j.enbuild.2011.07.027
National Consumer Law Center. (2009). Manufactured Housing Resource Guide: Titling Homes as Real Property. Prepared for I'm Home: Innovations in Manufactured Homes, January 2009.
Smart MH Kentucky. (2015). About Smart MH Kentucky. Retrieved September 3 , 2015, from http://smartmh/about/
Salzberg, E., Lubliner, M., Howard,, L., Gordon,, A., & Eklund, K. (2012). *Cost implications of retrofit vs. replacement of manufactured housing*. Olympia, Washington: Washington State University Extension Energy Program.
Sexton, K., Petreas, M. X., & Liu, K. S. (1989). Formaldehyde exposures inside mobile homes. Environmental Science & Technology Environ. Sci. Technol., 23(8), 985-988.
Sullivan, E. (2014). Halfway Homeowners: Eviction and Forced Relocation in a Florida Manufactured Home Park. *Law & Social Inquiry,* 39(2), 474-497.
Tennessee Housing Develoment Agency. (2015). Weatherization. Retrieved August 5, 2015, from http://thda.org/business-partners/weatherization
Tennessee Manufactured Housing Foundation. (2015, April 1). Giving Matters. Retrieved August 31, 2015, from http://givingmatters.guidestar.org/profile/1068043/tennessee manufactured-housing-foundation.aspx
Tennesseee, the State of. (2015) Tennesse Code Annotated. Chapter 126 Manufacutred Homes. Retrieved January 2016 from http://www.tnmha.org/TMHA2/html.pages/Licensing/links/TCA%2068-126.pdf
Tucker, M., & Carter, D. (1988). Energy Conservation Programs for Mobile Home Owners. San Jose, California: Office of Environmental Management, City of San Jose.
U.S. Census Bureau. (2014). Housing Vacancies and Homeownership (CPS/HVS): Second Quarter 2014.
Retreived May 2016, from http://www.census.gov/housing/hvs/files/qtr214/q214def.html
U.S. Department of Agriculture Rural Development. (2015). USDA Announces Affordable, Long-Term Mortgages For Energy Efficient Manufactured Homes. Retrieived May 2016 from http://www.rd.usda.gov/newsroom/news-release/usda-announces-affordable-long-term-mortgages-energy-efficient-manufactured
U.S. Department of Agriculture Rural Development. (2016). Programs and Services for Individuals. Retrieived May 2016 from http://www.rd.usda.gov/programs-services/programs-services-individuals

U.S. Department of Agriculture Rural Development. (2016). Handbook (HB) 1-3550, Chapter 12. Retrieived May 2016, from http://www.rd.usda.gov/files/3550-1chapter12.pdf
U.S. Department of Health and Human Services. (2015). About LIHEAP. Retrieved July 17, 2015, from http://www.acf.hhs.gov/programs/ocs/programs/liheap/about
U.S. Department of Housing and Urban Development. (2015a). Combination Mortgage Insurance for Manufactured Home and Lot. *Benefits.gov.* Retrieved July 15, 2015, from http://www.benefits.gov/benefits/benefit-details/502
U.S. Department of Housing and Urban Development. (2015b). HUD- Manufactured Housing and Standards -- Alternative Construction Introduction. *HUD.gov.* Retrieved July 15, 2015, from http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/rmra/mhs/faqs
U.S. Department of Housing and Urban Development. (2015c). Manufactured Home Loan Insurance (Title I). Retrieved August 4, 2015, from http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/title/manuf14
U.S. Department of Housing and Urban Development. (2015d). Office of Manufactured Housing Programs. *HUD.gov.* Retrieved July 15, 2015, from http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/rmra/mhs/mhshome
U.S. Department of Housing and Urban Development. (1993). *Manufactured housing: A HUD USER resource guide*. Washington, D.C.: U.S. Dept. of Housing and Urban Development, Office of Policy Development and Research, 14.
United States Government Accountability Office. (2013). Manufactured Homes: State-Based Replacement Programs May Provide Benefits, but Energy Savings Do Not Fully Offset Costs (GAO-13-373).
United States Government Accountability Office (2014, April). MANUFACTURED HOUSING: Efforts Needed to Enhance Program Effectiveness and Ensure Funding Stability (GAO-14-410).
Vaughan, E., & Patterson, O. (2009, June). Energy Use in Mobile Homes: A Challenge for Housing, Energy, and Climate Policy: Environmental and Energy Study Institute.
Virginia Department of Housing and Community Development. (2016). Retreived June 2016, from http://www.dhcd.virginia.gov/index.php/business-va-assistance/manufactured-housing-mh/manufactured-housing-mh-overview.html
Virginia Department of Housing and Community Development. (2016). Emergency Home and Accessibility Repair Program (EHARP) Retrieved April 2016, from http://www.dhcd.virginia.gov/index.php/housing-programs-and-assistance/71-emergency-home-and-accessibility-repair-program-eharp.html
West Virginia Office of Economic Opportunity. (2015). West Virginia Weatherization Assistance Program. Retrieved August 5, 2015, from http://www.cad.state.wv.us/OEO.htm

Appendix 1: Programs and Policies

Federal Programs

The U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP): This program, initiated in 1976, sets aside grant money for states, territories and some Indian tribes to reduce the cost of weatherization services for low-income homeowners. Weatherization retrofits are aimed at increasing energy efficiency and reducing heating and cooling costs for the homeowners. WAP is generally used to make modest repairs on existing housing. Salzberg, Howard, Gordon and Eklund (2012) found that weatherization measures taken in older, pre-HUD Code mobile homes did not produce enough savings to justify the investment and recommended mobile home replacement as better long-term investment.

Federal Housing Administration (FHA) Combination Mortgage Insurance for Manufactured Home and Lot Program: This program insures mortgage loans to manufactured home buyers when made by FHA-approved lenders (U.S. Department of Housing and Urban Development, 2015a).

The United States Department of Agriculture's Rural Development (USDA RD) 502 Program: This program provides direct or guaranteed low-cost mortgages to purchase new homes in fee-simple transactions. USDA RD launched pilots to offer loans in communities in certain states in 2015 and 2016 (U.S. Department of Agriculture Rural Development, 2015).

USDA RD 504 Program: This program provides loans and grants for repairs to remove a health or safety hazard for owner-occupied homes, including manufactured homes on a permanent foundation (or placed on one with program funds). For loans, funds can be provided to residents leasing land if their property is "covered by a lease with an unexpired portion of not less than 2 years beyond the term of the promissory note". For grants, "the remaining lease period must be at least five years (U.S. Department of Agriculture Rural Development, Retrieved 2016)."

Manufactured Home Installation Program: This program is meant to ensure that states have minimum standards in place for installation of manufactured homes. In the event that a state does not have such standards, HUD requires that trainers of installers be registered with HUD and that installers be licensed by HUD (U.S. Department of Housing and Urban Development, 2015d).

Manufactured Home Dispute Resolution Program: This program aims to resolve disputes between homebuyers and manufacturers, retailers and installers of manufactured homes. The main goal is to quickly correct or repair defects (U.S. Department of Housing and Urban Development, 2015d).

Construction and Safety Program: This program provides consumers with information regarding buying, setting up and maintaining manufactured homes (U.S. Department of Housing and Urban Development, 2015d).

Alternative Construction Letter Program: This program allows manufacturers to use new technology to build innovative manufactured homes without conforming to the Manufactured Home Construction and Safety Standards, 24 CFR Part 3280. Manufacturers must receive permission from

HUD before beginning construction and shipment of these homes (U.S. Department of Housing and Urban Development, 2015b).

Community Development Block Grants (CDBG): This program provides grants to address affordable housing development needs. These funds can be used to purchase and preserve manufactured housing communities (Corporation for Enterprise Development, 2015).

HOME Investment Partnership Program: This is another program that provides funding to states and localities to develop or rehabilitate affordable housing (Corporation for Enterprise Development, 2015).

The FHA 207M Mortgage Insurance Program: According to CFED, "[t]his program insures lenders against loss on loans used to finance the development of new manufactured home communities or to upgrade older ones" (Corporation for Enterprise Development, 2015).

HUD's Section 213 Mortgage Insurance for Cooperative Housing: This program provides insured mortgage loans for the construction, renovation and purchase of cooperative housing projects (Corporation for Enterprise Development, 2015).

U.S. Department of Health and Human Services' Low Income Housing Energy Assistance Program (LIHEAP): This program helps low-income households pay home energy costs and weatherize their homes (U.S. Department of Health and Human Services, 2015).

HUD's Manufactured Home Loan Insurance (Title I): According to HUD, "[t]his program insures mortgage loans made by private lending institutions to finance the purchase of a new or used manufactured home" (U.S. Department of Housing and Urban Development, 2015c).

Corporate Tax Credit for the Construction of Energy Efficient New Home: According to DSIRE, "[t]he federal Energy Policy Act of 2005 established tax credits of up to $2,000 for builders of all new energy-efficient homes, including manufactured homes constructed in accordance with the Federal Manufactured Homes Construction and Safety Standards. Initially scheduled to expire at the end of 2007, the tax credit was extended several times, and is now set to expire at the end of 2016" (DSIRE, Accessed 2016).

State Policies

Most states have a State Administrative Agency (SAA) that is charged with enforcing the HUD Code locally; however, states may not establish their own laws regarding mobile home safety and construction unless they are identical to federal standards ("Manufactured Home Construction and Safety Standards," 2015). In addition to the rules set forth by the HUD Code, states may establish laws governing zoning, taxation, deed restrictions and placement. Alabama, Kentucky, Tennessee, Virginia and West Virginia state codes are relevant to this report's study area. Below, VCHR has provided selected policies adopted by each state that affect mobile or manufactured home owners and residents.

Alabama

- Alabama has no statewide zoning laws regarding mobile and manufactured homes (Dawkins et al., 2011).
- Manufactured homes are considered real property when a homeowner is also the exclusive owner of the land beneath their home (Manufactured Housing Institute, 2015b), but Alabama does not allow homeowners in resident-owned cooperatives to convert their homes from personal property to real property (CFED, Accessed 2016). Per Alabama Department of Revenue Administrative Rules, mobile homes located on land owned by the mobile home owner are subject to a one-time ad valorem tax and must display a tax decal on the outside of the home, same as the registration decal. Further, manufactured homes will be treated as improvements to the property and considered real property not subject to property taxes.

Kentucky

- In Kentucky, local governments may choose whether or not to prescribe zoning laws to limit where mobile and manufactured homes can be located. Localities can prevent mobile and manufactured homes from being installed in residential areas with incompatible housing values by setting compatibility standards. State Senate Bill 197 (which became law in 2003) requires cities and counties in Kentucky to consider mobile and manufactured homes as viable affordable housing options and allow them to be installed among such housing if they meet the compatibility standard for that neighborhood (Dawkins et al., 2011).
- Manufactured homes are considered real property when a homeowner is also the exclusive owner of the land beneath their home (Manufactured Housing Institute, 2015b), but Kentucky does not allow homeowners in resident-owned cooperatives to convert their homes from personal property to real property (CFED, Retrieved 2016).

Tennessee

- Multi-sectional manufactured homes in Tennessee cannot be excluded from single-family residential zoning districts as long as they have the same general appearance as site-built homes.
- Manufactured homes are considered real property as long as they have the same general appearance as site-built homes (Manufactured Housing Institute, 2015b). Per Tennessee state code: "Any movable structure and appurtenance that is attached to real property by virtue of being on a foundation, or being underpinned, or connected with any one (1) utility service, such as electricity, natural gas, water or telephone, shall be assessed for tax purposes as real property as an improvement to the land where located; however, in cases where the movable structures are attached to land occupied and used as trailer or mobile home parks where the owner of the land is renting spaces or lots for maintaining the movable structures, the owner of the movable structures shall be responsible for the additional tax imposed by reason of the improvement, and the owner of the land shall be granted a lien against the movable structure to secure the payment of the municipal and county taxes."
- In addition to the HUD-Code seal, certified installers are required to place an installer's seal on the inside panel of the electrical panel box. The state or local electrical inspector shall not authorize electricity to be turned on at the home if no installation decal is on the home when the electrical installation is done (The State of Tennessee, 2015).

Virginia

- Virginia law requires that both single-section and multi-section permanently sited manufactured homes be allowed to be installed in agricultural, horticultural and forest zoning districts with the same standards as other residential structures (Manufactured Housing Institute, 2015b). Whether a mobile or manufactured home is real or personal property is decided on a case-by-case basis (National Consumer Law Center, 2009).
- According to the Virginia Department of Housing and Community Development (2016), "Local code officials handle the permits, inspections and issuance of the certificate of occupancy (CO) for the installation and related site work for manufactured homes under the authority granted to them by the Virginia Construction Code (VCC)".
- The Virginia Code (2016) was amended in 2014 to add a new section (Section 46.2-653.1) that governs the conversion of manufactured homes to real property: "After a manufactured home has been titled in the Commonwealth and at such time as the wheels and other equipment previously used for mobility have been removed and the unit has been attached to real property owned by the manufactured home owner, the owner may convert the home to real property in accordance with the provisions of subsection B. The provisions of this section constitute the only manner by which a manufactured home owner may convert a manufactured home to real property."
- The Virginia Manufactured Home Lot Rental Act (MHLRA) outlines the requirements and rights of landlords and tenants in manufactured home parks.

West Virginia

- West Virginia has no statewide zoning laws regarding mobile and manufactured homes. Real property records must record land and buildings separately. There is no universal classification as real property (Manufactured Housing Institute, 2015b).
- Manufactured homes may be classified as real property when the home is "permanently attached" to the real estate.

Policy Summary

Table 23: Select Policies Governing Mobile and Manufactured Homes
Information in this table was compiled from CFED online resources and state codes.

	Inspection Seal Posting Requirement	**Specific Protection from Eviction in a Land-lease Community**	**Conversion from Personal to Real Property**
Alabama	Yes, for used homes. Used homes resold must affix an Alabama resale decal. Registration is required and must be posted for rented homes or homes on rented land.	None	Yes, only if land and home is owned and permanently affixed to the property. Homes built in 1990 or later are required to be initially titled before conversion.
Kentucky	Yes, detailed system of "B-sealing" and preventing these homes from being occupied.	None	Yes, only if land and home is owned and permanently affixed to the property.
Tennessee	No, but certified installer seal required to be posted.	None	Yes, only if land and home is owned and permanently affixed to the property.
Virginia	No, left up to localities.	Yes, 90 days' notice if evicted; 180 days if purpose of park is to change.	Yes, only if land and home is owned and permanently affixed to the property. Used homes must be initially titled as personal property before being converted.
West Virginia	No, left up to localities.	Yes, three-month notice; six months if over 25 tenants are affected.	Yes, only if land and home is owned and permanently affixed to the property. Mobile homes or manufactured homes built on a permanent chassis and designed to be used as a dwelling are exempt from titling requirements.

National Nonprofit Initiatives

I'M HOME: A national nonprofit initiative run by CFED, I'M HOME is an initiative designed to unlock the potential of high-quality manufactured housing as a key source of affordable and appreciating housing. The mission of I'M HOME is to ensure that families who purchase manufactured homes are able to build

wealth through homeownership. The I'M HOME Network includes 48 state and local partners in 35 states, including Eastern Eight Community Development Corporation in Eastern Tennessee (CFED, 2016). http://cfed.org/programs/innovations_manufactured_homes/

State Programs

Alabama

Alabama Weatherization Assistance Program: The Alabama Department of Economic and Community Affairs contracts with local community action agencies and the Central Alabama Regional Planning and Development Commission to offer weatherization services to low-income households. The elderly, people with disabilities and families with children are given priority. Eligible applicants must have incomes at or below 200% of the federally established poverty level. Services consist of installing attic, wall and floor insulation; sealing ductwork; performing HVAC system tune-ups and repairs; repairing leaky and/or faulty windows and doors; and replacing incandescent light bulbs with highly efficient compact fluorescent light bulbs (Alabama Department of Economic and Community Affairs, 2015).

Kentucky

Kentucky Weatherization Assistance Program: Community Action Kentucky administers this federal program through a network of 22 local Community Action Agencies. Eligible applicants can have an annual household income of no more than $23,340 for a single person household, plus $8,120 per additional family member. Services include installing insulation, sealing the exterior, repairing ducts and replacing heating equipment (Kentucky Housing Corporation, 2015).

Manufactured Housing Done Right®: Nonprofit affordable housing provider Frontier Housing, in partnership with Clayton Homes, the nation's largest producer of manufactured homes, developed a line of manufactured homes targeted for mobile home replacement. This line of homes is ENERGY STAR-rated, meets the requirements of the HUD Code and USDA Rural Development and also meets the Design Standards of Kentucky Housing Corporation's Universal and Minimum Design. Manufactured Housing Done Right® distributes the homes to nonprofits nationwide, as well as providing training and technical assistance to enable organizations to effectively utilize the system. The program also provides responsible lending and homeowner education to assist in financing mobile home replacement. They work with homeowners to secure volume discounts and ensure the homes meet federal and state qualifications for down payment assistance, grants and mortgages. This program started at Frontier and has since separated into a national entity (Frontier Housing, 2015).

SmartMH™: Louisville-based nonprofit Next Step Network sponsors the SmartMH™ KY Alliance, a partnership of the manufactured housing industry, lenders, retailers, utilities, nonprofits and public stakeholders (SmartMH™ KY, 2015). The goal of the partnership is to increase access to ENERGY STAR manufactured homes by identifying lenders and connecting potential owners of manufactured homes with loans that have reasonable terms and rates, as well as down payment or utility cost assistance. East Kentucky Power Cooperative, Tennessee Valley Authority and Kentucky Housing Corporation homebuyers can qualify for an ENERGY STAR upgrade at a low or no cost (Next Step, http://www.nextstepus.org/).

Tennessee

Tennessee Weatherization Assistance Program: Tennessee Housing Development Agency is responsible for implementing this program to help low-income households lower their energy costs (Tennessee Housing Development Agency, 2015). Eligible applicants must be at or below 200% of the federal poverty guideline (Blount County Community Action Agency, 2015). Services include weather stripping, caulking and insulating attics, walls and floors (Tennessee Housing Development Agency, 2015).

TVA EnergyRight: According to DSIRE, "[t]he Tennessee Valley Authority (TVA) EnergyRight New Homes Plan provides incentives for all-electric, energy-efficient new homes by offering graduated rebates for new homes. Homes built at least 7% better than code qualify for the entry level of the program, while those built 15% better qualify as energy right Platinum or Platinum Certified (ENERGY STAR Certified). A variety of efficiency standards must be met in order to reach the specified levels. In addition, incentives are offered for advanced water heaters installed in new homes. The EnergyRight Manufactured Homes Program promotes the installation of electric heat pumps in new manufactured homes. A rebate of $500 is available to customers when a qualifying heat pump is purchased from participating wholesaler. Program features include a network of HVAC contractors and incentives" (DSIRE Program Database, 2016).

Tennessee Manufactured Housing Foundation: Established in 1995 by the Tennessee Housing Association to provide assistance for manufactured homeowners who are disadvantaged due to income or circumstance, the Foundation assists in the repair and improvement of existing manufactured homes and provides replacement manufactured homes in certain situations (Tennessee Manufactured Housing Foundation, 2015).

Virginia

Manufactured Housing Licensing Transaction Recovery Fund: The recovery fund is available to claimants if the Virginia Manufactured Housing Board finds that a manufacturer, dealer, broker or salesperson has violated any of the Manufactured Housing Construction and Safety Standards and the person or group does not pay the awarded amount to the claimant within 30 days.

Virginia Weatherization Assistance Program: The Virginia Department of Housing and Community Development administers this federal program, which provides a number of services to owners of manufactured homes, including HVAC inspections, repair and replacement; air sealing; duct repair, sealing and insulation; wall insulation; attic insulation; floor insulation; mobile home belly board repair and insulation; mobile home roof cavity insulation; water heater tank and pipe insulation; compact fluorescent light bulbs; water flow reducers; and refrigerator replacements for efficiency.

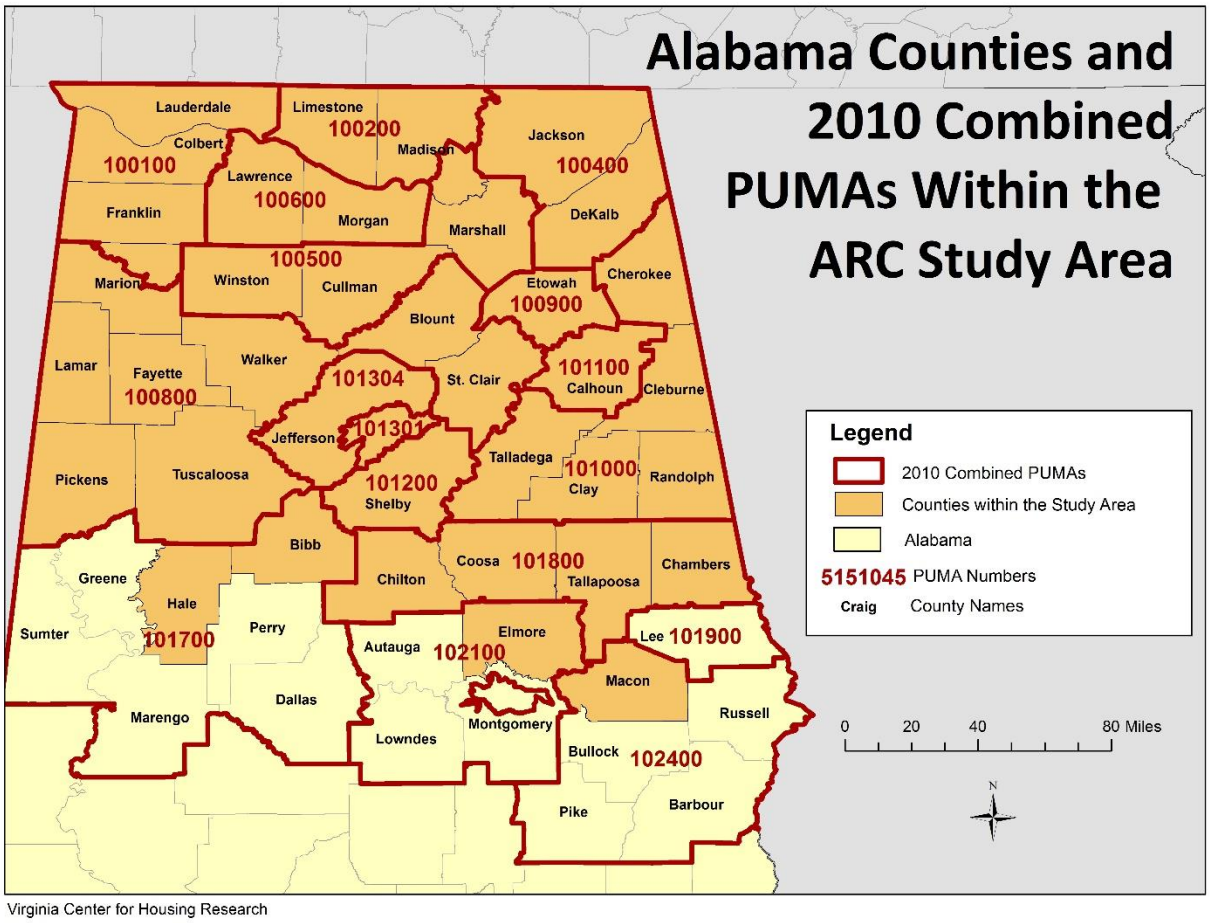
Emergency Home and Accessibility Repair Program: "The Emergency Home and Accessibility Repair Program (EHARP) provides funds to remove urgent, emergency health and safety hazards. It also addresses physical accessibility barriers for low-income Virginians. The program provides funding to local administrators to undertake physical repairs that improve housing conditions. Eligible repairs can include plumbing, structural, electrical, roofing, as well as installation of wheelchair ramps and other accessibility modifications (Virginia Department of Housing and Community Development, Retrieved 2016)."

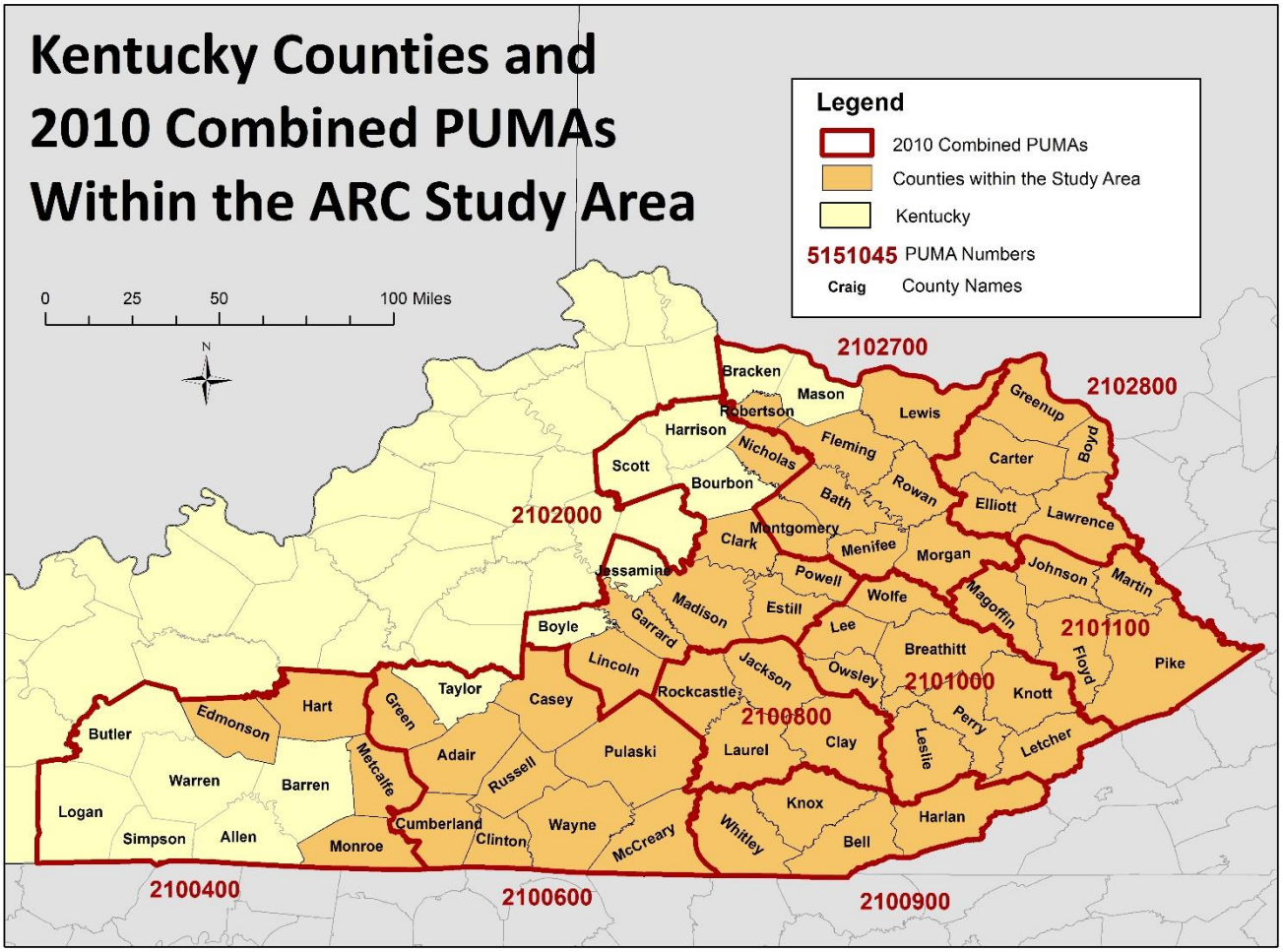
West Virginia

West Virginia Weatherization Assistance Program: The West Virginia Office of Economic Opportunity contracts with 13 local community action agencies to administer this program for low-income households

needing weatherization assistance. Services include installing insulation, reducing air-infiltration, performing heating and cooling tune-ups and modifications and, when appropriate, replacing units for energy efficiency and safety (West Virginia Office of Economic Opportunity, 2015).

Appendix 2: Study Area Maps





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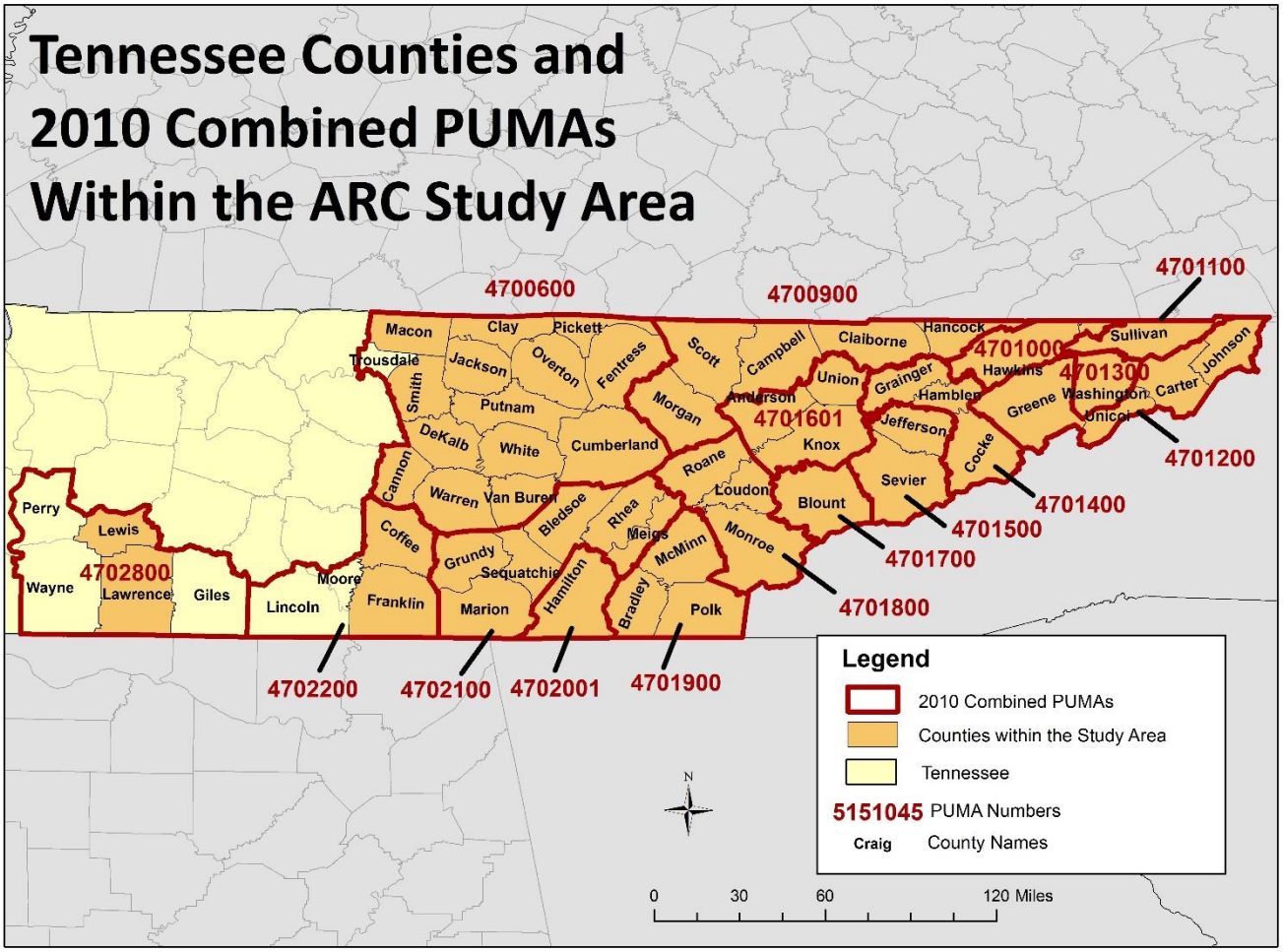

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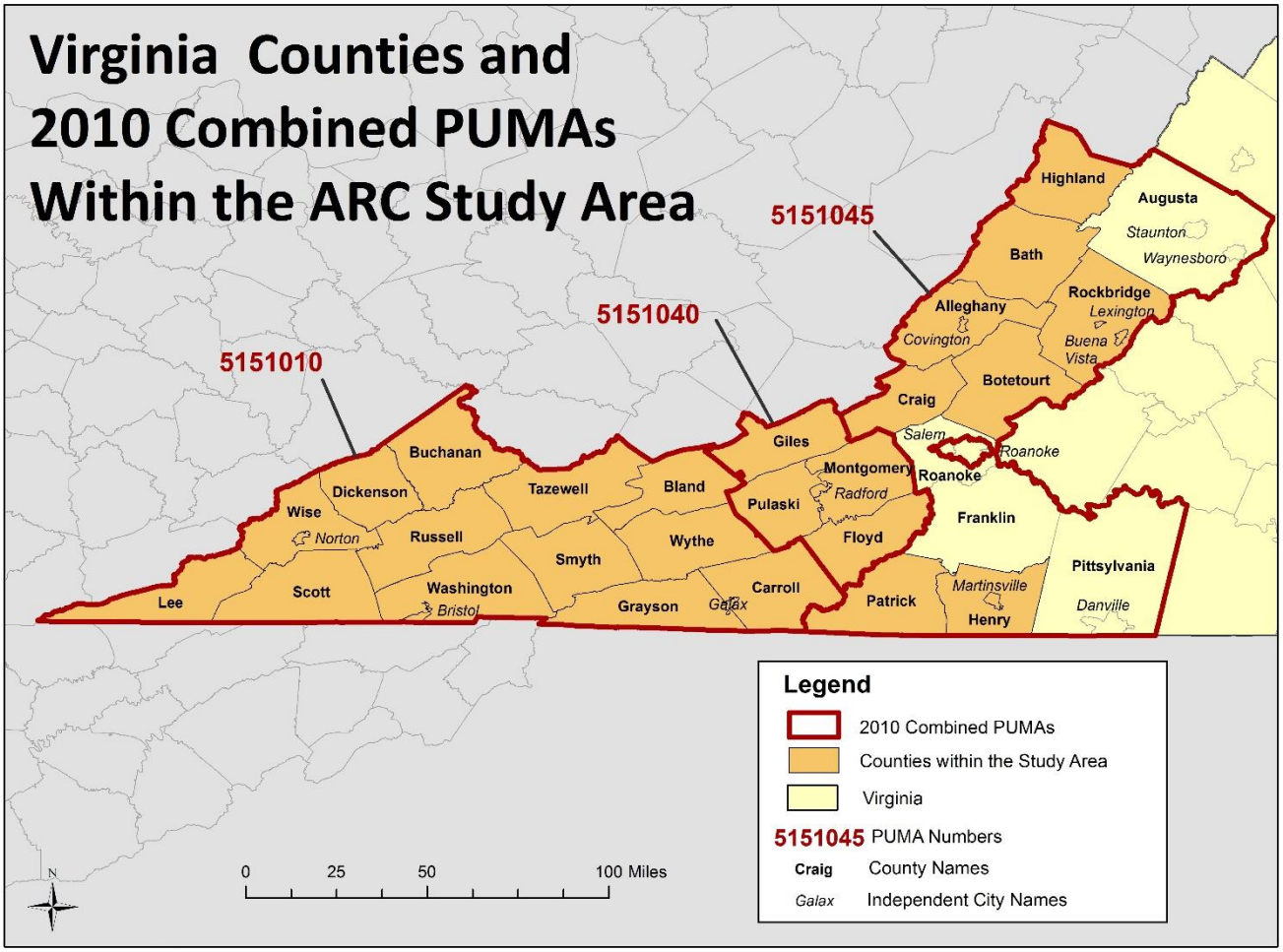

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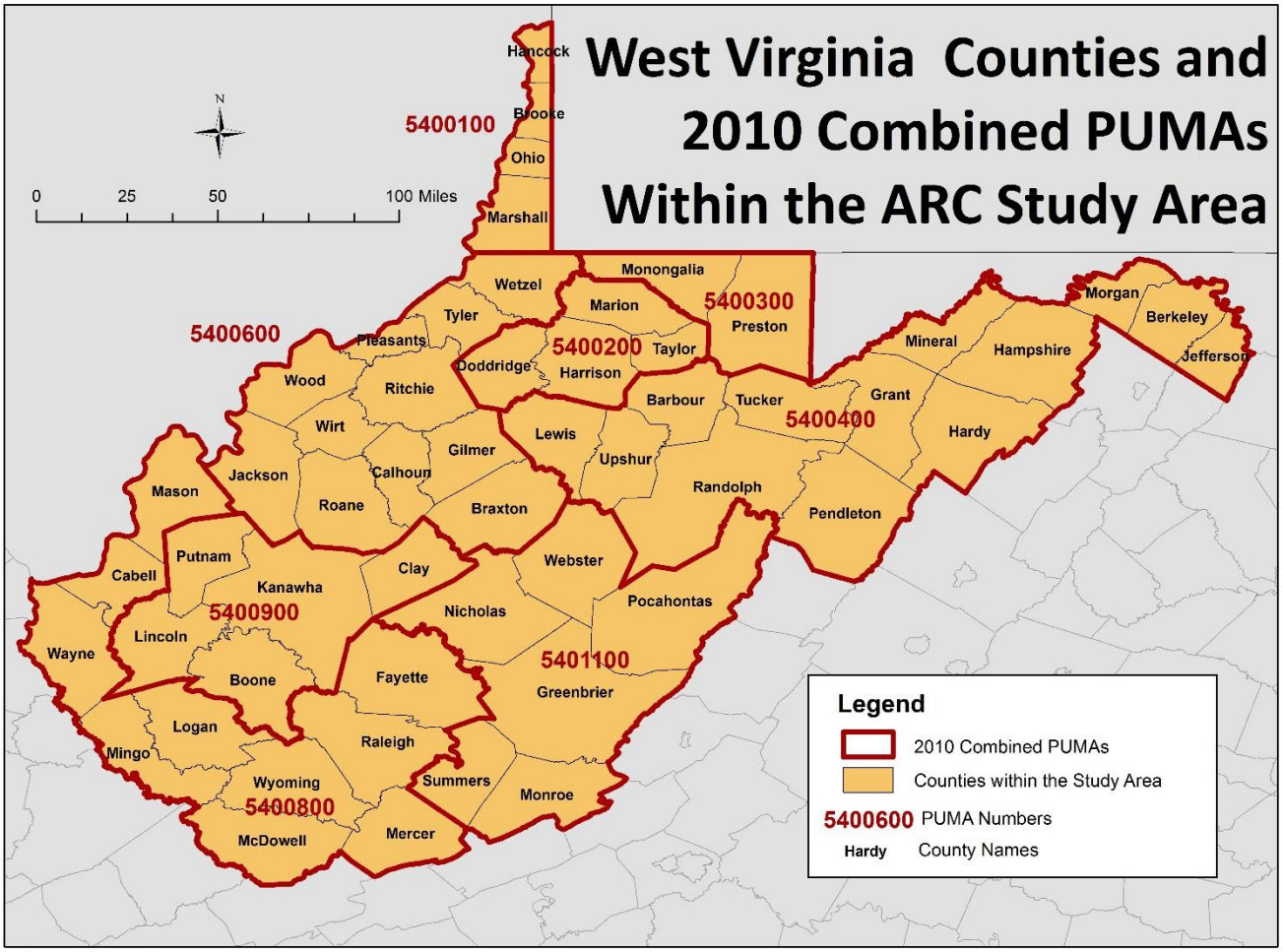
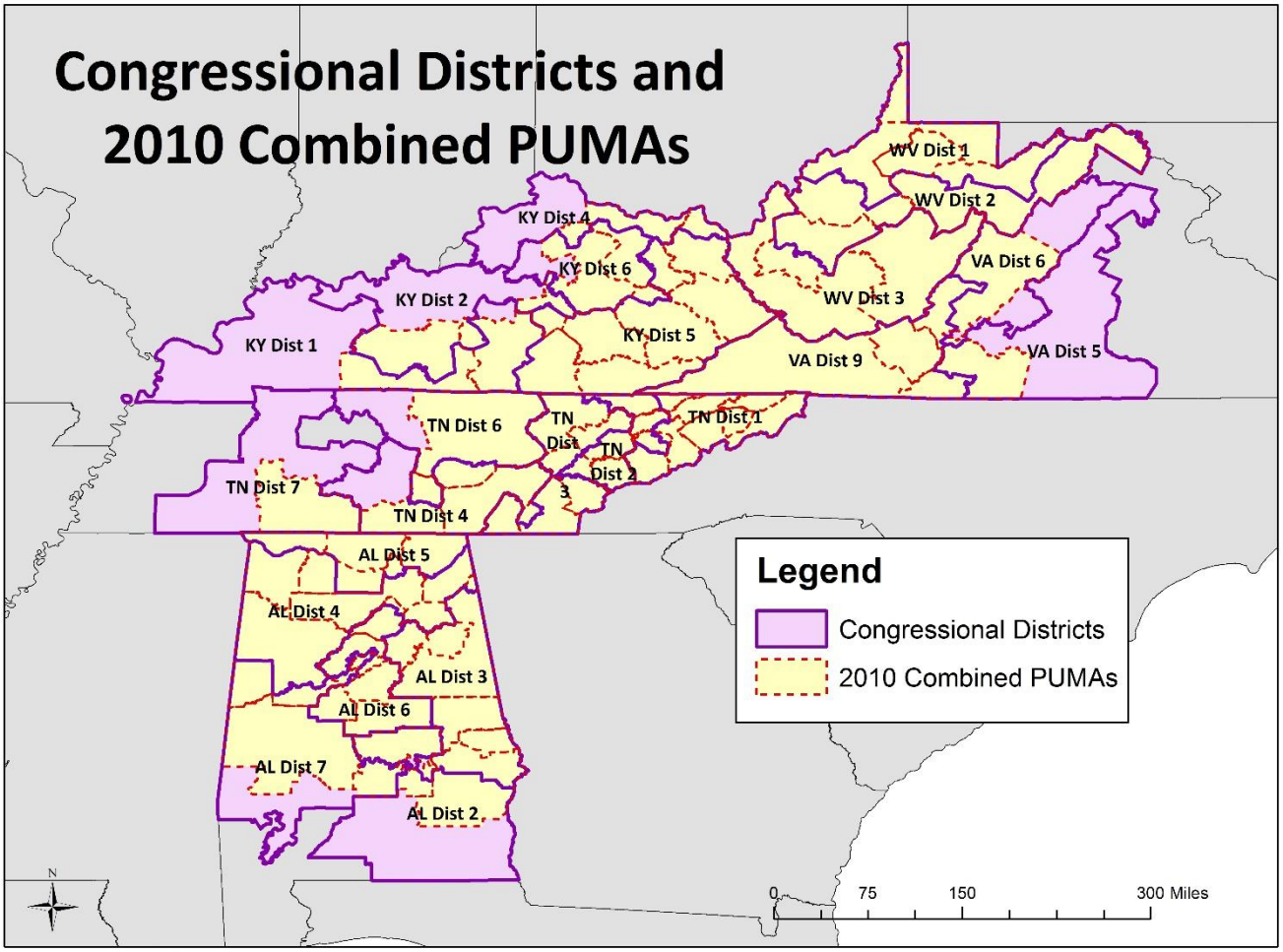


Virginia Center for Housing Research



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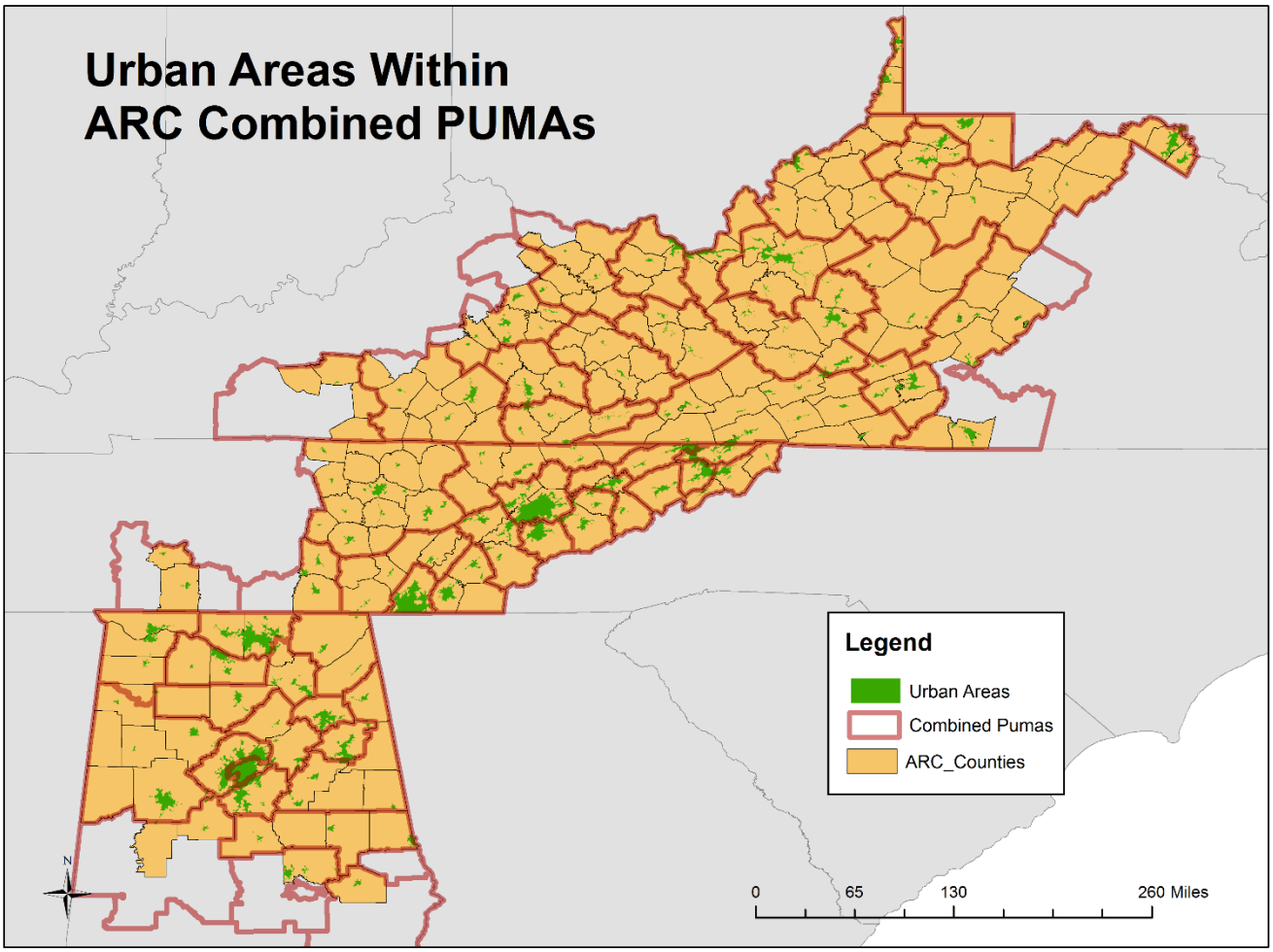

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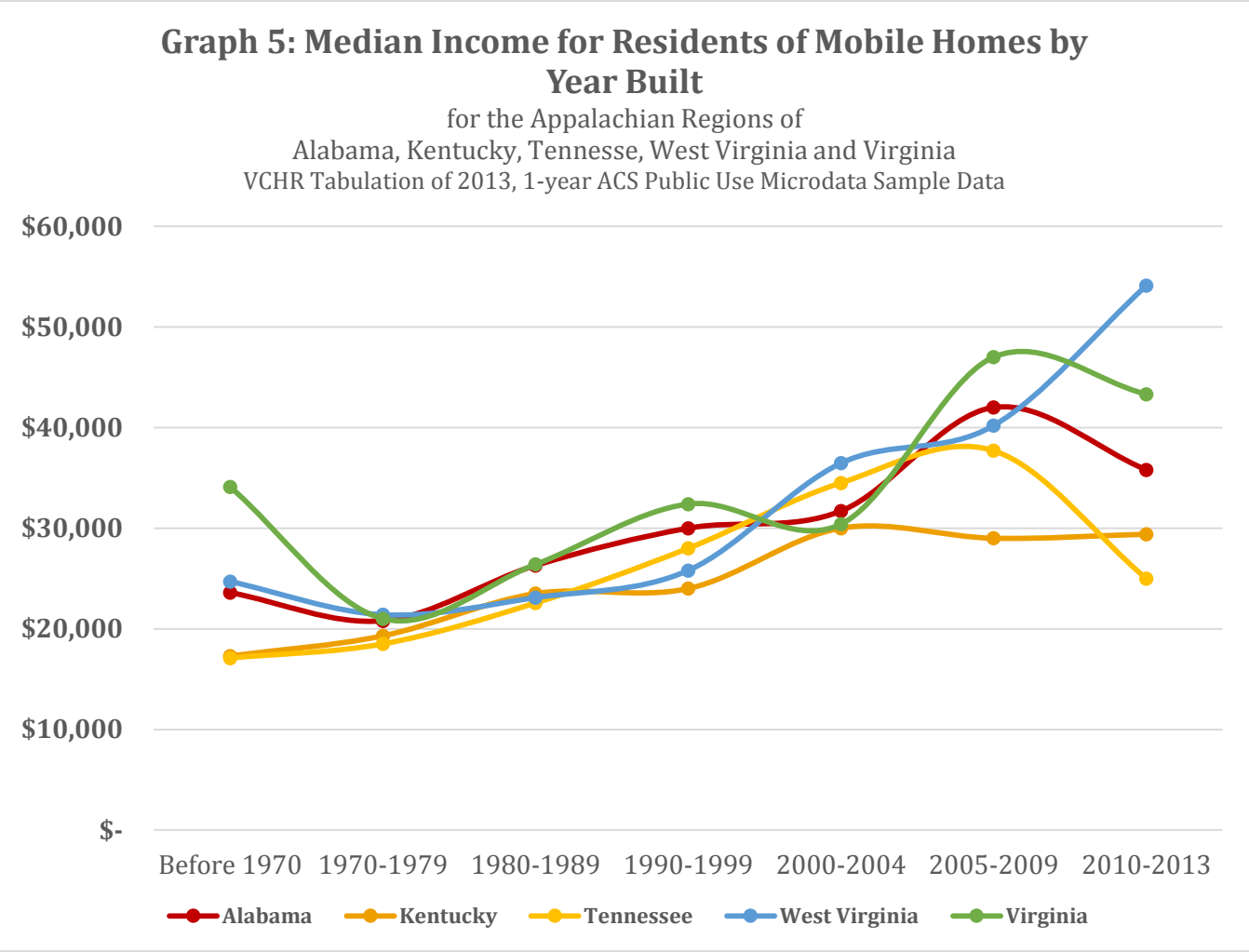
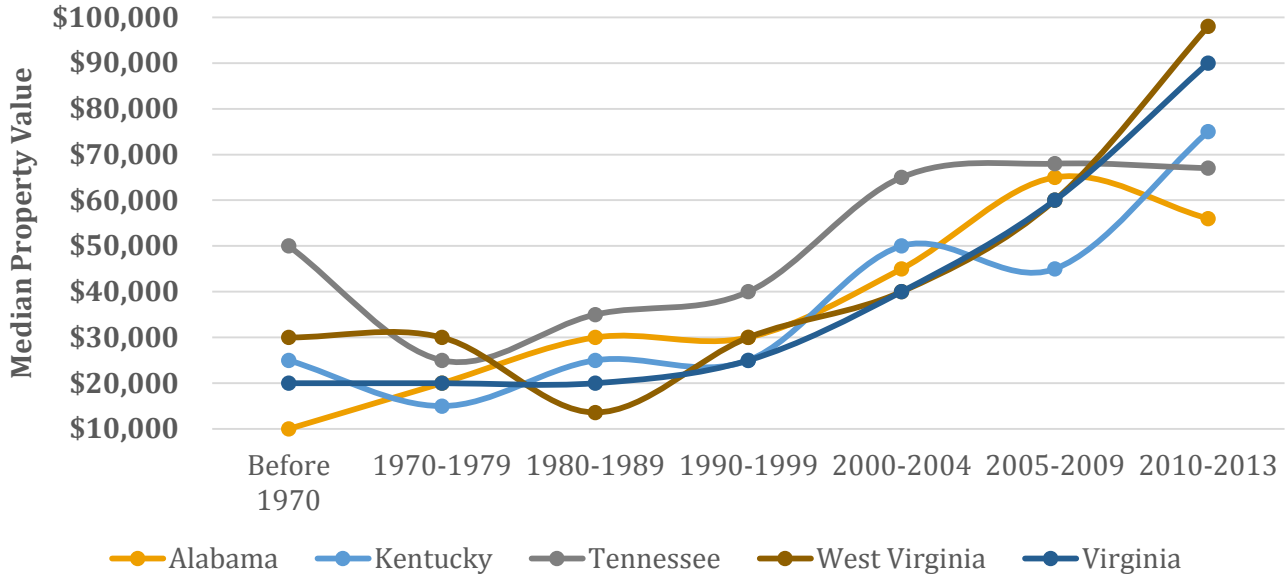
Appendix 3: 1-year Data Graphs



Graph 6: Median Property Value by Year Built

for the Appalachian Regions of
Alabama, Kentucky, Tennesse, West Virginia and Virginia
VCHR Tabulation of 2013, 1-year ACS Public Use Microdata Sample Data



Graph 7: Average Monthly Utilities by Year Built

for the Appalachian Regions of
Alabama, Kentucky, Tennesse, West Virginia and Virginia
VCHR Tabulation of 2013, 1-year ACS Public Use Microdata Sample Data