



An Examination of Mobile Homes in Rural Pennsylvania

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Executive Summary

National trends and other data suggest that mobile homes are an important feature of rural America's and rural Pennsylvania's housing landscape, providing greater affordability, availability and flexibility than traditional site-built housing.

These trends and data also suggest that, like mobile home residents nationwide, rural Pennsylvania's mobile home residents may face issues of land tenure, financing and ownership, spatially restrictive institutional barriers, and increased vulnerability to hazards not experienced by traditional site-built homeowners. Little is known with certainty, however, because mobile home data specific to rural Pennsylvania are difficult to find and, when located, difficult to work with. This study, conducted in 2007-2008, sought to paint an accurate portrait of mobile homes and mobile home residents in rural Pennsylvania, and, from that portrait, identify mobile-home-related public policy considerations.

To complete the study, the researchers conducted a phone survey of all 48 rural Pennsylvania county tax assessment and related offices to find mobile home data in electronic format. They used a representative sample of the data to determine the nature and geography of mobile homes in rural counties. Finally, they conducted a mail survey to learn more about mobile homes and their residents. The combination of phone survey, data analysis and mail survey provided a clear picture of mobile homes in rural Pennsylvania.

Following are some of the major findings from the study:

- Mobile homes in rural Pennsylvania are much older, much smaller, and in much poorer condition than the national average; most have never been moved.
- Most mobile homes are primary residences, most residents have lived in their mobile homes for decades, and nearly all residents are satisfied with their housing choice.
- Most mobile homes are located in rural municipalities far from services and employment, requiring residents to drive considerable distances every day.
- Most mobile home residents own their mobile home, but most do not own the land on which the home sits, living either in mobile home parks or on single plots of varying acreages; land rents and mobile home mortgages tend to be low.
- Most rural mobile homes are inhabited by older white individuals with a high school education; many are retired married couples and widowed individuals living on very small pensions; and only a small proportion are younger individuals with families.
- Many mobile homes are located in floodplains and are at high risk of flood damage.
- The wide variety of formats and definitions used by tax assessment and other county offices result in incompatible mobile home data that are extremely difficult, if not impossible, to reconcile and use.

In terms of policy, the researchers recommend the following considerations:

- Ensure that comprehensive policies to address affordable housing in rural areas include mobile homes.
- Enact legislation to protect mobile home owners from wholesale eviction resulting from the sale of mobile home parks.
- Develop strategies with large employers and local governments to encourage and subsidize car pool, park-and-ride, and other transportation management programs.
- Provide information, incentives, and help to weatherize mobile homes on leased land.
- Initiate programs that move mobile home residents out of floodplains.

Introduction

Relevance of Mobile Home Study

As the housing choice of nearly 20 million Americans nationwide, mobile homes¹ are an important but understudied feature of the American housing landscape (U.S. Census, 2005a). Having grown steadily since World War II, new mobile home construction now accounts for one out of every seven new housing units in any given year (HUD, 2002). This growing popularity has been attributed to the relative affordability, availability and flexibility of mobile homes as compared to traditional site-built housing (Genz, 2001). Mobile home residents, however, face unique challenges related to this housing type.

Affordability

In a historically tight American housing market, housing advocates have recognized the mobile home as an increasingly important component of the unsubsidized affordable housing sector (HUD, 2002). The relative affordability of mobile homes puts homeownership within reach of millions of households and is perhaps the single largest contributor to their increasing popularity (Genz, 2001). For example, in 2005, the average price of a single-wide mobile home in Pennsylvania was \$38,900, and the average price of a double-wide was \$63,600 (U.S. Census, 2005b), while the average cost of a new, unoccupied, conventional site-built dwelling was \$165,344 (U.S. Census, 2005a). Because mobile home owners, on average, have significantly lower incomes than owners of site built homes (Genz, 2001), and affordable housing alternatives continue to dwindle, the relative importance of mobile homes in the affordable housing market can be expected to grow.

Availability and Flexibility

The availability and flexibility of mobile homes also contributes to their popularity in the American housing market. Mobile homes can be shipped nearly anywhere in the 48 contiguous United States, including locations where it would be difficult or expensive to find a builder or supplies. In addition, due to their smaller overall square footage, mobile homes require less physical space than most newly constructed site-built homes. Moreover, because they rest on a chassis, mobile homes do not require a foundation or a basement – meaning that it is

possible to site them nearly anywhere permitted by building codes (NAHB Research Center, 2000).

Ironically, the same unique qualities that make the mobile home a popular alternative housing choice also create unique challenges for its residents. Mobile home owners face issues of land tenure, financing and ownership, spatially restrictive institutional barriers, and increased vulnerability to hazards not experienced by traditional site-built homeowners. Often these issues arise, in part, from the mobile home's historical classification as a travel trailer, the vestiges of which persist even though mobile homes have become a more permanent housing solution.

Land Tenure and Ownership

Land tenure is one quality that distinguishes the mobile home from virtually any other type of permanent housing. By definition, the earliest mobile homes were designed to be transient, and land was not included in their purchase (Wallis, 1991b). Mobile homes were sited in campgrounds and parks, designed for temporary use. However, over time, mobile homes have increasingly become less "mobile." In fact, according to the U.S. Census, 60 percent of mobile home owners in 2005 stated that their mobile home had never been moved (U.S. Census, 2005a). While mobile home owners may purchase land and subsequently place their homes upon it, roughly half of the mobile home owners in the United States lease the land for their mobile home (Foremost Insurance Group, 2005). This unique land tenure situation produces distinctive challenges and vulnerabilities for mobile home owners. Wallis (1991b) explains that as early as the 1950s and 1960s, mobile home park tenants (who typically owned their home but rented their park lot) were often required to comply with oppressive park regulations including gratuitous fees and visitor and utilities restrictions. Wallis suggests that these abusive practices arose in part from the absence of the "clear and significant" rights afforded to traditional homeowners, and were often exacerbated by the scarcity of park space. For example, where there was high demand and few vacancies, a park operator could force prospective tenants to purchase a unit from the operator or from selected dealers. The enforcement of other rules could even include eviction: a tenant late on rent could discover his home sitting outside the park (Hart et al., 2002).

Although landlord-tenant protections have been extended to mobile home owners since that time, land-leasing mobile home owners still encounter hardships related to land tenure. High demand for limited park space continues to be an issue for mobile home park residents today, and land values in the real estate market

¹ *Mobile home* was the official term used for a manufactured home built before June 1976, when the name formally changed to *manufactured home*. In 2005, the majority of residents living in this housing type referred to them as "mobile homes." Only 16 percent called them "manufactured homes." This work will refer to these dwellings as mobile homes (Foremost Insurance Group 2005).

in some areas have tempted park owners to sell their land to developers. Across the country, park sales have forced mobile home owners to relocate their homes (often at their own expense) to other mobile home parks (The Spokesman Review, 2007; The Idaho Statesman, 2007; Deseret Morning News, 2006; Saemann, 2007). Complicating this issue are the regulations governing age and condition maintained by remaining parks: even if a resident's home is in moveable condition (many are not), the owner of an older mobile home may have trouble locating a park that is willing to accept it. In perhaps the most extreme example of the relative housing insecurity faced by mobile home owners, those that cannot move their homes for one reason or another are forced to abandon them (Sarasota Herald-Tribune, 2008).

Institutional Issues and Barriers

Institutionally, mobile home owners face unique issues in financing and real estate. As opposed to the traditional mortgages offered for site-built homes, financing procedures for most mobile homes today are similar to those for automobiles – yet another holdover from the housing type's origins as a travel trailer (NAHB Research Center, 2000). In what has been cited as a salient example of the “poor pay more” effect, this specialized type of lending results in interest rates up to 5 percentage points higher than a regular mortgage (Genz, 2001). Additionally, manufactured housing lenders specialize in subprime lending, which itself can be as much as 3 percentage points higher (Genz, 2001; Renuart, 2004). Mobile home residents are also disproportionately affected in the wake of the current U.S. housing crisis, in which the American housing market is experiencing high rates of foreclosure (RealtyTrac, 2008). Mobile home foreclosure is a much more rapid process than traditional home foreclosure and can be completed in as little as 30 days (Capozza et al., 2005). By contrast, traditional foreclosures typically takes several months, during which time a debtor may be able to halt the process by paying delinquent payments and fees. Early legislative responses by some states to address the foreclosure crisis have not engaged the special needs of mobile home residents, leaving little relief for mobile home residents at risk of losing their homes (Grand Forks Herald, 2008).

Because mobile homes do not appreciate in value at the same rate as traditional site-built houses (in fact, two thirds of mobile homes actually depreciate, much like an automobile), mobile home owners are denied much of the financial flexibility and opportunity offered by traditionally financed site-built housing (Capozza et al., 2005; Genz, 2001). Although touted as an affordable alternative to site-built housing, mobile home ownership

can put residents at risk for a number of other hidden costs. For example, Salamon and MacTavish (2006) found that high energy costs associated with older, poorly insulated mobile homes can quickly consume small household budgets. Poor quality structural features including fixtures, trim, and floor coverings lead to high costs of repair and maintenance for mobile home residents (Consumers Union, 2002), and those living in the oldest mobile homes may face a losing battle trying to maintain homes designed for short-term use.

Other institutional barriers encountered by mobile home owners have a distinctly geographic bent. Historically, mobile homes were often restricted to the campground-like parks that were established to serve them during their travel trailer days (Wallis, 1991a). By the end of World War II, mobile homes began to be perceived as a threat to both real estate values and to a community's “moral character,” and in many communities, the parks themselves were limited to commercial and industrial areas (Wallis, 1991b). Over time, Wallis argues, unfavorable zoning regulations in cities pushed mobile home development to more rural locations.

It is possible that mobile home owners are today faced with many of the same spatial and social limitations encountered by their historical counterparts. A study using Geographic Information Systems (GIS) found that, all things being equal, proximity to a mobile home decreased the value of nearby site-built residential properties in North Carolina (Wubneh and Shen, 2004). Social inequality continues to be an issue for mobile home residents, especially in the face of increasing economic stratification (MacTavish and Salamon, 2006). A 1998 survey of 199 North Carolina county and municipal planning directors found that administrative districts can differ in the level of zoning restrictions pertaining to mobile homes; municipalities tend to be much more restrictive toward mobile homes than counties (Lowrey, 1998). These restrictive zoning regulations can force mobile homes farther away from community services. In fact, in a rural context, when compared to other forms of housing, mobile homes have been shown to be farthest away from all community services including hospitals, health care clinics, and police and fire stations (Shen, 2005). For non-critical (but still essential) services including banks, restaurants, shopping centers and daycare centers, mobile residents were forced to travel two to three times longer distances than residents in single-family homes (Shen, 2005).

In addition to the social stigma associated with the housing type, from a strictly financial perspective, it is easy to understand why local governments do not have incentives to create a mobile home friendly environment. Because mobile home values are much lower than those

of other types of housing and often do not have associated taxable land, communities receive much less property tax revenue from mobile homes.

Increased Vulnerability to Hazards

An important issue faced by mobile home owners is their increased vulnerability to environmental hazards. In their work, geographers and sociologists recognized that as part of the built environment, mobile homes offer comparatively little reliable protection in the face of various hazards (Borden et al., 2007; Cutter and Emrich, 2006; Montz and Tobin, 2005; Morrow, 1999; Whitehead et al., 2000). In addition, mobile homes can, in some cases, be more exposed to certain hazards. Compared to other forms of housing, for instance, a higher percentage of mobile homes can be found in flood zones (Shen, 2005). This enhanced exposure to floods may date back to their historically “mobile” nature: since it was assumed that mobile homes could easily be moved, they were often permitted in flood plains (Wallis, 1991b). Mobile homes also experience a much higher rate of fire deaths than other home types, with older mobile homes at highest risk (Parker et al., 1993; Runyan et al., 1992).

Many mobile home owners are vulnerable to hazards not only because of their physical exposure in structurally inferior housing and their proximity to certain hazards, but also due to their lower income status. Poverty has been identified as an important component of social vulnerability (Fothergill and Peek, 2004), and since mobile home owners have lower incomes, on average, than owners of site-built houses, it follows that they are subject to a “double whammy” of vulnerability (Morrow, 1999). Residents living in older mobile

homes are particularly vulnerable because state and federal regulations requiring the use of tiebacks and other devices to strengthen homes against hurricanes and other hazards have only recently been required and applied to mobile homes built after the regulations were implemented. In a deadly tornado outbreak in Florida, for example, all 21 fatalities were in mobile homes that were more than 16 years old, predating the more stringent Florida tie-down regulations (Herald Tribune, 2007).

Although the increased vulnerability to hazards experienced by mobile home residents has been evident for some time in the academic community, there has been little progress on the part of local, state, and federal policies to mitigate this issue. Leslie Chapman-Henderson, president of the Federal Alliance for Safe Homes, called mobile homes “one of the true ticking time bombs” (St. Petersburg Times, 2007a). Important to this research, community officials cite the lack of data on mobile homes as a prohibiting factor to further mitigating action (St. Petersburg Times, 2007b).

The Problem with Mobile Home Data

It is clear that while mobile homes may have certain advantages over traditional site-built houses, they also have problems often related to their traditional roles as transient and temporary housing. Despite these issues, however, the role of the mobile home as an important form of housing in the United States shows no sign of deteriorating, creating a mounting need to understand the housing type. Despite the rich potential for academic study in this area, investigation of mobile homes and their residents is sparse in the academic literature. Recent work on mobile homes primarily includes the historical overviews of mobile home development referenced above

(Hart et al., 2002; Wallis, 1991b), ethnographic studies of community and human development in mobile home parks (Hackenberg and Benquista, 2001; MacTavish, 2001, 2006; MacTavish and Salamon, 2006), and anecdotal references to mobile home residents as a population vulnerable to both natural hazards and housing insecurity (Borden et al., 2007; Cutter and Emrich, 2006; Davis, 2006; Morrow, 1999; Whitehead et al., 2000; Williams et al., 2005). One explanation for the lack of academic research about mobile home residents could be the absence of accessible data.

The three main sources of statistical data on mobile homes include the U.S. Census Bureau, the Manufactured Housing Institute, and the Foremost Insurance Group, each of which produce data at the national and state-level, but have distinct limitations. The U.S. Census Bureau collects basic data on mobile home residents in the decennial census. However, the housing type category is found only on the census “long form,” where data are collected from one out of every six or seven households and are weighted to represent the entire population. This process introduces a certain amount of error, which can be particularly significant for rural areas where estimates can vary by up to 50 percent for even the most basic information, such as the total number of mobile homes (U.S. Census, 2007). The Manufactured Housing Institute follows trends in the mobile home business community including the number of new mobile home shipments and overall market share, but it does not research demographic characteristics of mobile home owners (Manufactured Housing Institute, 2007). The Foremost Insurance Group uses a market-research firm to survey a non-random panel of mobile home users, seeking data that reveal many

characteristics of mobile homes and mobile home residents not sought by the Census Bureau – especially those data that relate to the mobile home market (Foremost Insurance Group, 2005). However, the Foremost Insurance Group does not release its data at scales smaller than the state. Additionally, since 2005, the survey has been conducted solely online. This methodology is problematic because it excludes mobile home owners who do not have access to the Internet, perhaps biasing the sample. It also reduces comparability between recent data and previous surveys, which were conducted via mail (Foremost Insurance Group, 2005).

Although each of these sources produces valuable information for their own purposes, they fall short of producing the type, quality, or geographical resolution of data required by policymakers to address many of the issues mentioned earlier. Nevertheless, there is one very rich source of data on mobile homes that can be found at the county and local level. Each county in the U.S. collects detailed data on mobile homes for local tax and planning purposes. Mobile home owners are required to register their homes with the local tax office, so this data source provides comprehensive coverage of the mobile homes in any given county. Tax assessment data collected can include information on year built, size, land tenure, value, and more. The quality of these data is limited in that they are unstandardized and vary from state to state and county to county in their quality, format, and accessibility.

One reason for the lack of accessible information on this type of housing and its residents could be that mobile homes are notoriously difficult to categorize – they have historically occupied a “grey area” between house and automobile. Mobile homes are built, sold, and financed like automobiles, but increasingly they are taxed and regulated like traditional homes (Hart et al., 2002). In addition, because many owners do not own the land beneath their mobile home, uncertainty often exists as to whether a mobile home is private property or real property (Wallis, 1991a). These ambiguities make collecting data on mobile homes difficult, particularly at smaller spatial scales where, to establish laws and regulations for insurance, financing, zoning, and taxing, public and private sector organizations have resolved classification differences individually. The availability of this information, therefore, varies spatially and presents a challenge for researchers attempting to collect and analyze data on mobile homes.

Academic investigation into the demographic and geographic characteristics of mobile home residents

would increase understanding of how these characteristics change over time and which issues affect mobile home residents. Only detailed analysis of this housing type and its residents can unearth this type of policy-relevant information. Nonetheless, it is clear from the summary of available data that any investigation must include a methodology for addressing data limitations.

Mobile Homes in Rural Pennsylvania

The above issues affecting mobile home residents and data availability are particularly relevant in rural² Pennsylvania, where mobile homes make up roughly 11 percent of the housing stock and are second in quantity only to single-family, detached houses (U.S. Census, 2005a). Statewide, however, mobile homes make up less than 5 percent of the housing stock, illustrating a rural-urban divide in choice of housing. A rural context also provides an appropriate backdrop for the study of mobile homes, which have been described as “a new rural community form” (MacTavish and Salamon, 2001) and products of “the rural ghetto” (Davidson, 1996).

Mobile home residents of rural Pennsylvania are likely to face many of the same problems as mobile home residents in other states, such as land tenure and ownership issues, and natural hazards (particularly with regard to flooding). Furthermore, mobile home data quality and accessibility are highly variable in rural Pennsylvania: some rural counties have digital operations while others operate with paper systems. In sum, due to its proportionally large mobile home resident population, this population’s exposure to a variety of home ownership, land tenure, and natural hazards issues, and the varying degrees of mobile home data quality and accessibility, there is a great need for research on rural Pennsylvania’s mobile homes.

Goals and Objectives

The research goals were to paint an accurate portrait of mobile homes and mobile home residents in rural Pennsylvania. To accomplish these goals, the researchers looked to: establish the nature of mobile homes in rural Pennsylvania, including these dwellings’ location, age, condition, and occupancy; to depict home and land ownership issues surrounding mobile homes, including zoning, financing, value, taxation, portability, lot size, leasing arrangements, and infrastructure; to describe the demographic and economic characteristics of mobile home residents in rural Pennsylvania; and to develop public policy considerations.

² This research used the Center for Rural Pennsylvania’s rural county definition in which “a county is rural when the number of persons per square mile within the county is less than 274” (The Center for Rural Pennsylvania, 2007).

The research, which was conducted in 2007-2008, had three phases. The first consisted of a phone survey of rural county tax offices to determine the condition and availability of county-level mobile home data. The second analyzed tax assessment data on mobile homes and mapped their density and distribution in several rural counties. The last implemented a mail survey of mobile home residents in rural Pennsylvania.

Methodology

Phase One: County Office Phone Survey

To determine the condition and availability of mobile home data at the county level, the researchers called the tax offices of all 48 rural counties in Pennsylvania. In many cases, they had to contact multiple offices in each county to locate and obtain information about available data on mobile homes. Contact generally began with the county tax assessment office and progressed to county mapping, geographic information system (GIS), or management information system (MIS) departments. Rural county offices often keep complementary information in different formats, and some counties outsource certain data storage and output operations to private companies. For each office (generally no more than two per county), the researchers recorded data categories, costs, data request procedures, and other pertinent information in a database. After compiling this information, they compiled socioeconomic statistics to inform the choice of counties for Phases Two and Three.

Tax Assessment Data

The researchers found that most county offices keep tax assessment data in digital form, although a few still operate paper-card systems. For those offices compiling digital tax

assessment data, the researchers needed to identify the data categories the county keeps for mobile homes and to establish how it codes mobile homes. The type of coding system used by the office determined whether it was possible to extract mobile home data separately from data for other residences. The researchers found that nearly every county office uses a different coding system for their mobile home data. Some of these systems were easy to query while others were more difficult to query, which heightened the potential for extraction error.

Other data issues became evident during the phone survey. For example, the researchers found that the term “mobile home” varies in meaning from county to county – both in personal communication and in the coding systems themselves. In some counties, only single-wide mobile homes are coded uniquely as mobile homes or “trailers” in the digital databases, and double-wide mobile homes are coded as regular residences. Other data variations included coding mobile homes on a foundation or on more than 10 acres as a regular residence or an agricultural property, respectively. Some counties admitted that their mobile home data are significantly flawed due to data entry error and the difficulties inherent in classifying mobile homes. Some counties explained that although

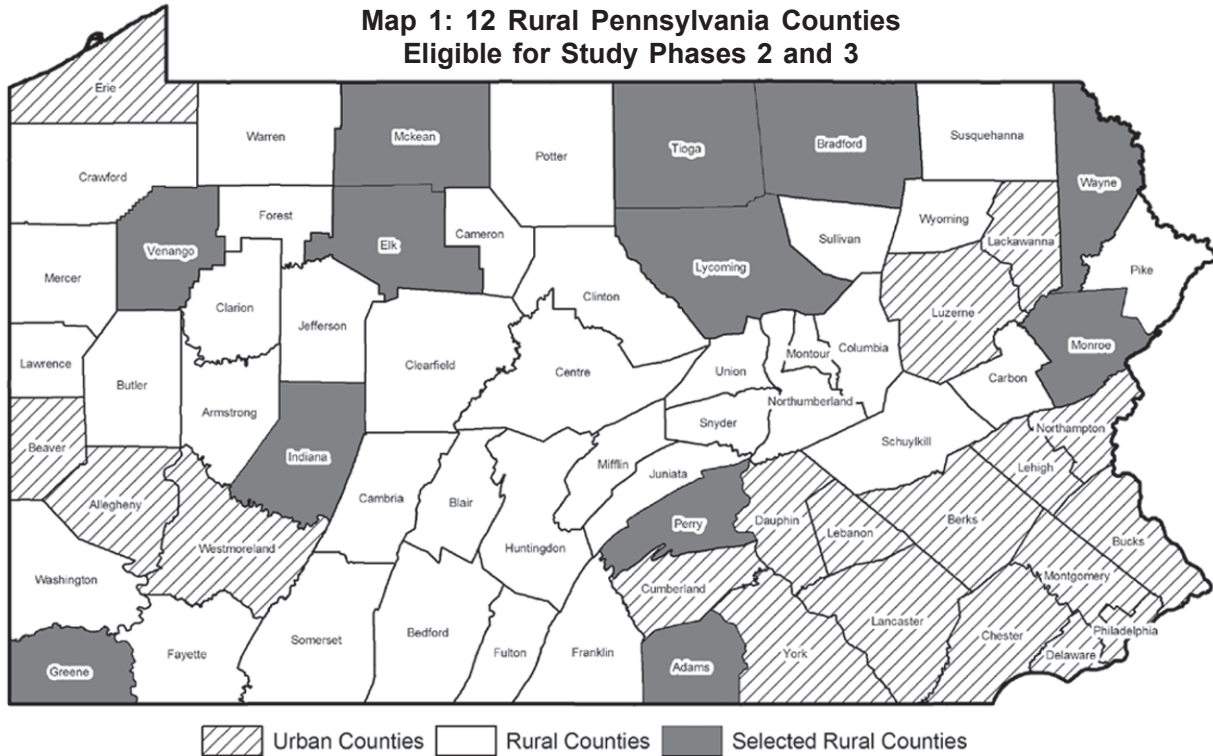
all fields were available in digital form, some of the variables were stored in different digital databases and were not, in fact, extractable.

These data quality issues excluded most Pennsylvania rural counties from further study. The double-wide issue was particularly significant, affecting nine counties that otherwise would have been suitable for further consideration. Of the 48 rural counties, 19 counties had tax assessment data in a form suitable for

Table 1: Overview of Mobile Home Data in Rural Pennsylvania Counties

County Name	Available Digital Tax Assessment Data	Available Digital Geographic Data
Adams	YES	YES
Armstrong	Limited	NO
Bedford	Limited	NO
Blair	Limited	NO
Bradford	YES	Limited
Butler	NO	NO
Cambria	Limited	NO
Cameron	NO	NO
Carbon	Limited	YES
Centre	Limited	YES
Clarion	Limited	NO
Clearfield	Limited	YES
Clinton	Limited	YES
Columbia	Limited	YES
Crawford	NO	NO
Elk	YES	YES
Fayette	YES	NO
Forest	YES	NO
Franklin	Limited	NO
Fulton	Limited	YES
Greene	YES	YES
Huntingdon	Limited	YES
Indiana	YES	YES
Jefferson	Limited	NO
Juniata	Limited	YES
Lawrence	Limited	YES
Lycoming	YES	YES
McKean	YES	YES
Mercer	NO	NO
Mifflin	Limited	YES
Monroe	YES	YES
Montour	YES	NO
Northumberland	Limited	NO
Perry	YES	YES
Pike	Limited	YES
Potter	Limited	NO
Schuylkill	Limited	YES
Snyder	NO	NO
Somerset	YES	Limited
Sullivan	YES	NO
Susquehanna	Limited	NO
Tioga	YES	YES
Union	Limited	YES
Venango	YES	YES
Warren	YES	NO
Washington	NO	NO
Wayne	YES	YES
Wyoming	YES	NO

Map 1: 12 Rural Pennsylvania Counties Eligible for Study Phases 2 and 3



extracting mobile home information (Table 1). However, to enable geographic comparison, the researchers also had to have accessible geographic tax parcel data.

Geographic Data

The availability of geographic tax parcel data in rural counties is limited. Although most rural counties have digital tax assessment information on mobile homes, roughly half of the counties do not have accessible tax parcel data in GIS form. At the time of the study, 13 counties were in the process of digitizing parcel maps into a GIS, but digitizing is a time-consuming procedure often requiring several years to complete. Of the 48 rural counties, 24 had complete and accessible geographic tax parcel data at the time of the research (Table 1). Some counties have worked around these issues by digitizing their tax parcel maps in conjunction with the building of “911” emergency networks. A few counties have internal access to digital tax parcel data, but have not yet made that information available to the public, and some counties have inaccurate or outdated geographic data.

Data Costs

The cost of both digital assessment data and geographic data in rural counties was extremely variable. Tax assessment data costs ranged from no charge to nearly \$300 for essentially the same data. Geographic data have a much greater cost range, varying from no charge to

\$8,000 for a single countywide tax parcel layer. Many county offices indicated that it is possible to request an educational or government discount when ordering the data, and several offered the data at no charge. For the counties that had accessible and usable assessment data and geographic data, most of them quoted cumulative costs of less than \$300 for both datasets.

Phase Two: Detailed Mobile Home Inventories for Selected Counties

Following the completion of Phase 1, the researchers contacted the rural Pennsylvania counties chosen for further study (Map 1) to purchase tax assessment and parcel data.

The researchers cleaned and recoded the data for analysis. Support was required from each county to define the variables because the county offices often used different definitions for any given variable. For example, most tax assessment offices keep two types of variables on age – actual year built and effective year built. Effective year built is a figure based on the actual year built, minus the physical depreciation of the structure, which for mobile homes can be quite great. Because year built data were requested generally, several counties sent effective year built instead of the intended actual year built data. The same issue arose with square footage (heated square feet versus exterior building footprint),

Table 2: Tax Assessment Variables Relevant to Mobile Homes Available from Selected Rural Counties

	Adams	Bradford	Elk	Greene	Indiana	Lycorning	McKean	Monroe	Perry	Tioga	Venango	Wayne
# of Mobile Homes	X	X	X	X	X	X	X	X	X	X	X	X
Building Type		X		X		X	X	X	X		X	X
Age	X	X		X		X	X	X	X	X	X	X
Square Footage	X	X		X	X	X	X	X	X	X	X	X
Acreage	X	X	X	X	X	X	X	X	X	X	X	X
Property/Land Use Type	X		X				X			X		
Building Value		X		X	X	X		X	X	X	X	
Land Value		X		X		X		X		X	X	X
Improvement Value			X									X
Total Assessed Value	X		X		X				X			X
Condition		X		X								X
Class						X	X					
Foundation Type	X					X						X
Exterior Type				X		X	X					
Roof Type				X								
Heat Type				X		X	X	X				
A/C Type				X		X	X					
Sewer Type									X			
Road Type									X			
Water Source									X			

and value (building value versus improvement value, which also includes porches, garages, outbuildings, and even cabins on the property).

When recoding and cleanup for the available variables were completed, the researchers derived descriptive statistics about mobile homes in each county including actual age, heated square footage, building type, class, condition, and acreage (see results section for an explanation of these variables). As with the quality of data, the breadth of detail available on mobile homes in each county varied dramatically – from merely acreage and total value in Elk County to the flooring type and number of bathrooms for every mobile home in Greene County (Table 2). The number of cases available for analysis ranged from 7,200 to nearly 46,000 – the total number of mobile homes summed over the 12 counties – depending on the variable.

After deriving descriptive statistics for each county, the tax assessment data were connected to digital tax parcel maps obtained from these counties, thereby allowing a geographic analysis of these data. The researchers used GIS and the tax parcel number, an identification number common to both the tax assessment data and the tax parcel map. However, in making this connection, it became apparent that there are three major problems with the way most of the counties store their data:

1. *Tax parcel numbers are not stored in the same format.* In many cases, tax assessment and mapping offices do not use the same standards for data storage, meaning that even if the parcel numbers themselves are the same, their formats are different enough to make the GIS unable to match the numbers. To connect these numbers in GIS for any given county, extensive recoding of the thou-

sands of mobile homes is necessary using spreadsheet software.

2. *Mobile homes on leased land are given a unique parcel number that does not refer to the parcel where they are sited.* Mobile homes are a unique form of housing because they can be sited on land owned by someone other than the mobile home owner. Consequently, it is necessary to assess the taxes for the land and the structure separately, so the identification number given to mobile homes is not the same as the number on the parcel map where that mobile home sits. Some counties maintain a separate field for the parcel on which a mobile home is sited, but many do not, instead adding a suffix to the number or

otherwise altering it. For each of these cases, the researchers consulted with the county to determine how to identify the parcels on which these mobile homes are sited and how to recode their identification numbers so as to tie them back to that parcel. This process required considerable recoding, and, in some instances, the county could not help the researchers match these numbers. These counties – Bradford and Elk – were therefore excluded from the geographic analysis.

3. *Digital tax parcel maps were of insufficient quality to be used in the analysis.* Three counties provided digital tax parcel maps, but it was impossible to connect tax assessment data to these files due to the way individual parcels were stored in their files. These counties (Greene, Perry and Tioga) were therefore excluded from the geographic analysis. Once the data were recoded and

cleaned, the researchers added the tax assessment information to the GIS with varying degrees of success. For many reasons, anywhere from 0.01 to 7.6 percent of tax assessment records did not join to the parcel maps in any given county. In the end, however, it was possible to include seven counties in the Phase 2 geographic analysis: Adams, Indiana, Lycoming, McKean, Monroe, Venango, and Wayne.

After the tax assessment information was added to the tax parcel maps, the researchers generated statistics to describe mobile home density and distribution, the percent in urban and rural³ municipalities, and the number of parcels intersecting floodplains (for a detailed description of the methods used, see Aman, 2008).

Phase Three: Demographic Survey of Selected Counties

The purpose of the survey was to determine household characteristics, views, and attitudes of mobile home residents, and to collect selected information about the mobile homes in which these residents live, to compare with and complement the data received from tax assessment offices.

The survey was sent to equal numbers of households in nine rural counties: Adams, Greene, Indiana, Lycoming, McKean, Monroe, Perry, Venango, and Wayne. These nine counties were chosen based on the quality of the tax assessment available from each county, their geographic distribution, and their socioeconomic makeup. No weighting was given to any one county because the aim was to determine the overall characteristics of mobile home owners, and to see if there were important differences between counties.

A random sample of residents was selected based on two types of land tenure: leased land and owned land. Fifty-five percent of the total surveys (or 76 per county) were sent to residents on leased land and 45 percent (or 62 per county) were sent to residents on owned land, reflecting a total sample of 1,242 households. To lower the response error associated with potentially erroneous address information, respondents were asked to complete the survey only if they resided in a mobile home for at least part of the year.

³ In determining a municipality's status as rural or urban, the researchers applied the Center for Rural Pennsylvania's definition in which "a municipality is rural when the population density within the municipality is less than 274 persons per square mile or the municipality's total population is less than 2,500 unless more than 50 percent of the population lives in an urbanized area, as defined by the U.S. Census Bureau. All other municipalities are considered urban" (The Center for Rural Pennsylvania, 2007).

It should be noted that because the tax assessment offices send mail only to the mobile home owner, this survey may have bypassed mobile home residents who rent the mobile home. However, based on conversations with tax assessment offices in each county, the researchers determined that the percentage of residents who rent mobile homes is very low (less than 10 percent), and the potential response from mobile home renters would be negligible.

By the end of the data collection period, 385 completed surveys were returned for a general, overall response rate of 31 percent.

With one exception (Greene County), eastern counties had higher response rates than western counties in the sample. The range was not large, however: the county with the most returned surveys was Adams County with 55 (14 percent of the returns) whereas the county with the least was McKean County with 35 (9 percent of the returns).

Results

The Nature of Mobile Homes in Rural Pennsylvania

According to both tax assessment data and survey data, mobile homes in rural Pennsylvania are serving as long-term housing for many residents. Tax assessment data show nearly 47 percent of all mobile homes were built prior to 1980. Mail survey percentages in this category are lower, showing roughly 35 percent built before 1980. It is possible that this discrepancy arises from the presence of very old, vacant homes on the tax rolls. Since survey respondents were asked to complete the survey only if they lived in a mobile home for at least part of the year, most respondents (about 91 percent) reported that their mobile home serves as their primary residence. Almost all of the remaining mobile homes are used as seasonal, weekend, or vacation homes, with none reported as vacant. Even so, both sources confirm that mobile homes in rural Pennsylvania are much older than those at the national level, where only 22 percent were built prior to 1980.

According to the survey results, mobile homes in rural Pennsylvania are not particularly mobile. Nearly 55 percent have never been moved and 20 percent have not been moved for at least 10 years. These numbers are probably underestimates because nearly 9 percent of the sample did not know if their mobile home had ever been moved.

Class and condition tax assessment data on mobile homes is sparse in rural counties, with only two counties (Lycoming and McKean) storing data on class, and three counties (Bradford, Greene and Wayne) keeping data on

the condition of mobile homes. Class is defined by the county offices as pertaining to the overall quality of a mobile home's construction, whereas condition describes the current state of the building. Most mobile homes in the study counties (86 percent) fall under the "standard" or "economy" classes. Forty-seven percent of mobile homes in Bradford, Greene, and Wayne counties are considered in average condition, but perhaps more telling is the percentage of mobile homes (45 percent) deemed below average in these rural counties.

Most mobile homes in rural Pennsylvania are relatively small. According to the survey data, 62 percent are single-wide, 32 percent are double-wide, and less than 1 percent are triple-wide. Five percent fall into the "other" category, suggesting that they are part of a complex structure that blends the mobile home with a site-built structure. Tax assessment data show 77 percent of all mobile homes are single-wide. In addition to being smaller, data show these single-wide mobile homes are much older than their double-wide counterparts. The median year built for single-wide mobile homes in the sample is 1977, whereas the median for double-wide homes is nearly 20 years newer. It follows, therefore, that single-wide mobile homes are also in much poorer condition than double-wide mobile homes – 55 percent are in below-average condition, compared to only 12 percent of double-wide homes.

The spatial organization of mobile homes varies among the seven study counties. For example, in Lycoming County, most mobile homes cluster in the southern municipalities, whereas in Adams County, they distribute evenly across the county. Adams County, however, has many large mobile home parks in comparison to Indiana County, where there

are not only fewer parcels with multiple mobile homes, but also fewer mobile homes on those parcels. The percentage of parcels with more than one mobile home varies among the study counties, ranging from less than 7 percent in Wayne County to more than 39 percent in Venango County. Lycoming County has the greatest number of parcels (41), with more than 10 mobile homes, suggesting more mobile home parks in that county. In the seven counties, mobile homes are primarily located in rural municipalities.

According to the geographic analysis of tax assessment data, many mobile homes in rural Pennsylvania are located on parcels that intersect the 100-year floodplain. The percentage of mobile homes in each county ranges from around 12 percent in Indiana County to almost 36 percent in Adams County. The number of parcels with multiple mobile homes intersecting the floodplain was also determined for each county and ranged from 17 in Monroe County to 120 in McKean County. A parcel's partial presence in the floodplain, of course, does not necessarily mean that the mobile home itself is in the floodplain. However, the 100-year floodplain is by nature an estimate of probability and does not represent a firm barrier to flood waters. Given the acknowledged structural vulnerability of this housing type to all types of hazards, intersection was determined to be an appropriate criterion. Spot checks of randomly selected aerial photographs showed that many mobile homes are indeed found in floodplains. Although by no means comprehensive, these figures provide one measure of the degree of physical exposure to flooding experienced by mobile homes in each of the study counties.

Home and Land Ownership Issues

The mail survey found that mobile home residents refer to their dwelling in many ways: 35 percent call them mobile homes, 24 percent call them trailers, and 20 percent simply call them houses. Only 8 percent and 6 percent refer to them as "modular" and "manufactured homes," respectively: 6 percent use other terms to reference their mobile home.

Mobile home living is a long-term housing choice for most residents. Only 15 percent of survey respondents reported having lived in any mobile home for less than five years, and 31 percent have lived in one for less than 10 years. In contrast, 30 percent have lived in a mobile home from 10 to 19 years, and 38 percent have live in one for 20 years or more. Moreover, these residents have lived in their current mobile homes for a long time: 5 percent moved into their current residence before the 1970s, 11 percent settled there in the 1970s, 18 percent in the 1980s, 31 percent in the 1990s, and 35 percent since 2000. Respondents are also happy with their choice of housing: more than 50 percent are very satisfied with living in a mobile home and 39 percent are somewhat satisfied. Only 6 percent are somewhat dissatisfied and 3 percent are very dissatisfied.

Survey results show that owners of mobile homes use the same mix of fuels used by site-built homeowners to heat their homes. Most mobile homes (41 percent) use fuel oil or kerosene, which probably reflects the large proportion of mobile homes built before the 1980s when fuel oil lost favor as the on-site fuel of choice. Other fuel types include bottled or tank gas (22 percent), piped gas (17 percent), electricity (12 percent), wood (4 percent), and other (3 percent).

Less than 3 percent of survey respondents reported renting their dwelling; nearly all own their home. It is important to note, however, that this number is probably artificially low because (as reported earlier) the survey was mailed to owner addresses available from the tax rolls and not necessarily to renters.

Nevertheless, according to both tax assessment data and survey results, more mobile home residents in rural Pennsylvania rent or lease their land (52 percent and 57 percent, respectively, according to tax assessment and survey results) than own it (48 percent and 43 percent, respectively). According to survey respondents, 67 percent of mobile homes are located on private property, 31 percent are in mobile home parks, and 2 percent are in other circumstances. Although 50 percent of survey respondents said their mobile homes are located on less than one acre of land, with most of those being on plots in mobile home parks, the other 50 percent said they live on much larger parcels of land: 25 percent live on 1 to 2.9 acres, 7 percent live on 3 to 4.9 acres, 6 percent live on 5 to 9.9 acres, 6 percent live on 10 to 24.9 acres, and 6 percent live on 25 acres or more. Almost all residents are satisfied with the location of their mobile home (70 percent are very satisfied and 22 percent are somewhat satisfied).

Survey results show that, of those residents who lease their land, rents are less, on average, than those of site-built rental apartments:⁴ 43 percent pay \$200 to \$299, 22 percent pay \$300 to \$399, 5 percent pay \$400 to \$499 and less than 4 percent pay \$500 and greater. On the other end, 16 percent pay \$100 to \$199 and 11 percent pay less than \$100. In 43 percent of these rentals – primarily most of those in mobile home parks – some combination of water, sewer, and garbage are included in the rent.

The mail survey found that one third of all mobile home residents have a debt on their dwelling, with 24 percent having a traditional home mortgage,⁵ and 9 percent having a personal property loan. This relatively high proportion of traditional mortgages is the result of the mortgage industry standard for doublewide mobile homes on permanent foundations and owned land to be financed by a regular mortgage (Stewart, 2008). Of the

residents with debt, 24 percent have monthly payments greater than \$600, 20 percent pay \$500 to \$599, and 15 percent pay \$400 to 499. The remaining 42 percent pay less than \$400, with 7 percent paying less than \$200. Eight percent with mortgages or loans have their taxes included with their payments, but the remaining residents do not. Similarly, 10 percent with mortgages or loans have some or all of their home insurance included with the payment, but the rest either pay their insurance separately (more than 84 percent) or have no insurance (4 percent).

Demographic and Economic Characteristics of Mobile Home Residents⁶

Survey data indicate that respondents are primarily female (56 percent). Only 4 percent are in their 20s and 11 percent are in their 30s. The most common age group for respondents is the 50s (26 percent), followed by the 60s (21 percent), 40s (17 percent), and 70s (14 percent). Eight percent are 80 or older, with three respondents being in their 90s.

It is therefore no surprise that older adults, often without children, inhabit the mobile homes of rural Pennsylvania. The survey also revealed that most mobile homes (60 percent) have two adults, and a large proportion (27 percent) has just one adult. Nine percent have three adults and 3 percent have four adults. Sixty-nine percent have no children, 26 percent have one or two children, and 5 percent have three children.

The respondents are overwhelmingly white – more than 95 percent of the sample. Two percent of the respondents are Native American, whereas blacks, Asians, Hispanic or Latino, and other racial groups or ethnicities are less than 1 percent each of the sample.

Fifty-six percent of the survey respondents are married, 18 percent are divorced, 4 percent are separated, 15 percent are widowed and 8 percent have never married.

The survey found that the respondents have varying educational backgrounds. Six percent did not go beyond 8th grade, and an additional 13 percent did not finish high school. High school graduates make up the majority of

⁴ Apartment rents for a selection of eight central Pennsylvania municipalities (Bellefonte, Bloomsburg, Danville, Lewisburg, Lewistown, Lock Haven, Selinsgrove, and Williamsport) from the U.S. Census Bureau, Census 2000 Summary had a mean monthly rent of \$376. These apartment rental costs are likely to be much higher now, putting a greater distance between them and the costs of mobile home land rental.

⁵ The average percentage of households with traditional home mortgages is 24 percent, but ranges from a low of 14 percent in Indiana, Venango, and Wayne counties to a high of 53 percent in Lycoming County. This wide range is deceptive, however, and at least partly reflects the small numbers involved (N=5 in Indiana, Venango, and Wayne counties and N=18 in Lycoming County). These data offer no clear conclusions about county distributions of traditional mortgages.

⁶ The survey requested, “The adult member of your household who has the next birthday be the one to complete the survey.” This request aimed at producing a snapshot of adult mobile home residents without burdening the respondents by asking them for details on every adult resident.

mobile home residents at 49 percent. Nineteen percent have some college with no degree, 8 percent have an associate's degree, and 4 percent have a bachelor's degree. Only 1 percent have a postgraduate degree.

Mobile home residents in rural Pennsylvania have limited access to the Internet. Although 39 percent have high-speed service, 23 percent have dial-up service, 2 percent have some other type of service, and 30 percent do not have access to Internet service. In addition, 6 percent do not know if they have service.

The survey results suggest that mobile home residents are not all poor, but most do not have large total household incomes. Over 14 percent of the households made between \$50,000 and \$75,000 in 2007, and 8 percent made more than \$75,000. More telling, 15 percent of the households made \$40,000 to \$49,999, 18 percent made \$30,000 to \$39,999, 19 percent made \$20,000 to \$29,999, 19 percent made \$10,000 to \$19,000, and 8 percent made less than \$10,000.

This income distribution can partly be explained by the employment information reported by the respondents. Forty-nine percent are employed full time, 6 percent are employed part time, and 4 percent are unemployed. Twenty-nine percent of the sample are retired and 12 percent are disabled.

According to the survey data, almost all of those respondents who work drive to work alone in their own vehicle (93 percent). The remainder carpool (3 percent), walk or ride bicycles or motorcycles (1 percent), or use company vehicles (1 percent). Only two respondents work at home. Those who drive to work often drive relatively long distances. Twenty-nine percent drive 20 to 34 miles to work each day, 8 percent drive 35 to 49 miles, and another 8 percent drive 50 miles or more. In

contrast, 21 percent drive 10 to 19 miles each day, 16 percent drive 5 to 9 miles, and 19 percent drive less than 5 miles.

The comments provided by respondents on what they like and dislike about mobile home living were interesting and instructive. The features of mobile home living that respondents most commonly like are the low cost of the dwelling, the relatively low taxes, and the satisfaction of ownership. Their most common dislikes are the overall low quality of construction and the rent they pay to site their homes. Many respondents dislike the fact that instead of appreciating like a site-built house, their mobile home depreciates like a car. Although some respondents find their mobile homes to have adequate space and even to be roomy, others complain about the small size of the rooms and the lack of a basement, an attic, and closet space. Nearly all respondents like the easy cleaning and maintenance of their mobile home, both inside and out. Many respondents find their mobile homes poorly insulated, being too cold in the winter and too hot in the summer; many complain about the cold floors. Many respondents think that their mobile homes are unsafe in severe weather. In sum, and coupled with overall satisfaction reported earlier, these comments suggest that affordability trumps the drawbacks that come with mobile home living.

Objectives Not Met

Mobile Home Values

Although the researchers had originally planned to include mobile home values in this analysis, they could not include this information. In Pennsylvania, counties determine mobile home values in varying ways. Some counties refer to a record book of established depreciated values

(much like a "Blue Book" for an automobile). Other counties establish mobile home values the same way as they do standard housing – by sending a county official out to the home to estimate its value at intervals (called a "revaluation"), and then applying a standard appreciation or depreciation algorithm to determine taxes during the off years. The problem is that the counties individually determine how often the revaluations take place and these intervals range from once every 3 or 4 years to over 25 years.

In addition, as discussed in the Methodology section, counties frequently use and store many different variables that pertain to a mobile home's value. For instance, building value pertains to the value of the mobile home alone, whereas improvement value also includes porches, garages, outbuildings, and even cabins on the property. Some counties assess mobile home values using only the building value, and some only the improvement value – making it impossible to establish this standard measure. To compare mobile home values between and within counties, it is crucial to determine a standard measure of value for the structure.

Thus, assessed mobile home values vary widely in terms of accuracy and comparability both within and between counties. For example, in Bedford County, the date of the last revaluation for regular housing was 2001, but mobile homes had not been revalued since 1957. To determine the assessed value of older mobile homes, the Bedford County tax assessment office depreciates the mobile home values from a book published by the National Automobile Dealer's Association (NADA) by 40 percent (Dively, 2007). This procedure contrasts with Carbon County, where all mobile homes were revalued in 2000, with the rest

of the housing stock, and the values are somewhat accurate within the county (Martino, 2007). However, comparability of mobile home values within each county can also vary because mobile homes that have recently been bought or sold are typically assessed based on current market rates and therefore have much more accurate assessed values, compared with those that have been owned by the same person for many years.

According to one tax assessment official, it is possible to compare assessed values between counties using a “common-level ratio,” which is the rate of assessed value to market value for each county (Hummel, 2007). This is the type of procedure used by the Pennsylvania State Tax Equalization Board to “determine annually the aggregate market value of taxable real property in each political subdivision and school district throughout the Commonwealth of Pennsylvania” (STEB, 2008). Because the common-level ratio is different for each year and each county, the difficulty involved in performing these calculations for every mobile home in the study exceeded the time constraints imposed by this project. Thus, mobile home value was ultimately excluded from the analysis after several tax assessment offices advised against drawing any conclusions or comparisons from the county assessed value data.

Zoning and Infrastructure Analysis

To compare spatial patterns across rural Pennsylvania, the researchers chose geographic variables that are widely available from all seven counties chosen for the geographic analysis. Zoning and infrastructure layers are not widely available or affordable from rural county offices, which prohibited an in-depth analysis of zoning and infrastructure patterns as they related to mobile home density and distribution.

Conclusions

Mobile homes in rural Pennsylvania tend to be old, single-wide structures. Most have never been moved and many are in below-average condition. They are primary residences and long-term housing choices of the people who live in them, with large numbers of residents living in their mobile homes for decades. Almost all mobile home residents are satisfied with their housing choice.

Mobile homes in rural Pennsylvania are overwhelmingly located in rural municipalities. Many are located in or adjacent to a 100-year flood plain. Most mobile home dwellers do not own the land occupied by their mobile homes: mobile homes are found largely on private property, but many are also found in mobile home parks. Most mobile home residents own their dwellings out-

right. Given the lower incomes of residents and the relatively low monthly costs of rents and mortgages, mobile homes serve as an important source of affordable housing in rural Pennsylvania. Based on the high cost of heating and maintaining older structures in poor condition, however, many rural Pennsylvanians may feel stress from escalating fuel costs.

A high percentage of mobile homes are inhabited by older, white individuals, many being retired married couples and widowed individuals living on very small pensions. Many other mobile home residents are middle-aged workers driving relatively large distances to work each day. A surprisingly small proportion of mobile home residents are younger with families, and those families tend to be relatively small. Most mobile home residents have high school educations and some college. Incomes reflect this combination of age and education.

The condition of mobile home data varies considerably across the counties of rural Pennsylvania. Each county maintains unique data entry and storage systems for both mobile home tax assessment data and related geographic data, making cross-county comparisons difficult and time-consuming. However, tax assessment offices in many counties collect rich and descriptive data on mobile homes, so if data were digitized and standardized, all counties in rural Pennsylvania would be eligible for this type of analysis and a clearer portrait of mobile homes and mobile home residents would emerge.

Policy Considerations

Land Insecurity and Resident Rights

This analysis of tax assessment and mail survey data shows that many mobile homes in rural Pennsylvania are aged structures in below-average condition on leased land. Land-leasing mobile home owners face unique vulnerabilities related to the “grey area” of inhabiting a structure that is akin to a house or an automobile. Restrictive mobile home park regulations or the sale of mobile home park land can induce forced relocation for residents. The Pennsylvania Mobile Home Park Rights Act (Act 261 of 1976) requires mobile home park owners to notify residents in writing of their planned eviction, but unlike legislation passed by other states (Center for Policy Alternatives, 2008), the act provides no first right of refusal for mobile home park residents to purchase the land, nor does it require park owners to pay relocation expenses. Thus, if their mobile home park is closed or converted to another use, mobile home residents in rural Pennsylvania must bear the considerable costs of relocating. Those who own older homes in poor condition are at a higher risk of being unable to

relocate, as their homes can be restricted from entering a new mobile home park (Spokesman Review, 2007; Idaho Statesman, 2007; Deseret Morning News, 2006; Saemann, 2007). Tax assessment and mail survey data show that mobile home residents in rural Pennsylvania may be particularly vulnerable to these types of land insecurity issues. Pennsylvania lawmakers could consider following other states in the enactment of legislation designed to protect mobile home owners from mobile home park sale evictions. Policy requiring mobile home park proprietors to help pay mobile home owners' relocation costs, or to offer mobile home owners first right of refusal in the purchase of mobile home park land may help greatly in alleviating these issues.

The Nature of Mobile Homes

In the wake of a historically tight housing market in the 1990s and early 2000s, mobile homes have been promoted by housing advocates as an affordable alternative to traditional site-built houses (Genz, 2001). More restrictive building codes in many states have contributed to better-constructed mobile homes. In addition, greater availability of mobile homes makes the dream of homeownership a reality for many people.

This analysis suggests that living in "fresh, new" mobile homes of "adequate quality" is the experience of comparatively few mobile home residents in rural Pennsylvania. Because mobile homes are built in factories to very specific standards, perhaps there may be a tendency to generalize the character of this housing type across space. These

results, however, show that the nature of mobile homes can vary dramatically from place to place. Higher maintenance and utility costs and exposure to a higher risk of fire and other hazards are experienced by residents living in older mobile homes. The Pennsylvania Department of Community and Economic Development sponsors a Weatherization Assistance Program⁷ that provides assistance to low-income residents by making houses more energy efficient, thereby lowering utilities costs. According to a Weatherization Assistance Program official, in some rural counties, more than 50 percent of program participants are mobile home residents who are also disproportionately in need of crisis services (especially furnace replacement) in the winter (Kimmel, 2008). Unfortunately, at the time of the research, the Weatherization Assistance Program had a one-year backlog of eligible clients requesting assistance. With skyrocketing energy costs, additional funding for this program would help those mobile home residents most in need of assistance.

Mobile Homes in a Rural Context

Eighty-nine percent of mobile homes in the survey were located in rural municipalities. Mobile homes are increasingly typical of rural areas (MacTavish and Salamon, 2003), and the research presented here shows that such characterization is true for rural Pennsylvania: mobile homes are overwhelmingly located in the most rural areas of the state. Thus, the unique needs of mobile home residents are interwoven with the special issues that affect rural populations. This rural context may

compound the unique vulnerabilities of mobile home residents. For instance, rural residents in general tend to have fewer affordable housing choices, and there is currently a shortage of affordable housing in rural Pennsylvania (Mookerjee et al., 2006), which may be in part why mobile homes are so popular in the region. Thus, recognizing that mobile homes are a significant form of housing in rural Pennsylvania, policymakers should include mobile homes in any comprehensive strategies to address the affordable housing shortage, such as collaborations between state and local housing agencies. Currently, county housing authorities do not include direct support for mobile home park development: public housing projects are typically multifamily dwellings. Moreover, although the federal Department of Housing and Urban Development's (HUD) Section 8 rental assistance can be used by mobile home residents that rent their home or lot, one rural county housing authority official reported that few mobile home park owners accept rental assistance vouchers, preferring instead to avoid the paperwork involved with processing the vouchers (Racioppa, 2008).

Another agency involved with the promotion of affordable housing in the commonwealth is the Pennsylvania Housing Finance Agency (PHFA), which issues tax credits for developers of multi-family housing developments, provides mortgage subsidies for low-income, first-time home buyers, and operates a foreclosure prevention program (Stewart, 2008). The PHFA has only recently begun to include specific support for mobile home buyers and developers in their outreach efforts, and the budget for mobile home development is very small (Stewart, 2008).

⁷ The American Recovery and Reinvestment Act of 2009, passed after this research was completed, also provides funding for weatherization.

Additional support for HUD and PHFA programs specific to mobile homes could encourage private interests to invest in mobile home parks, thereby alleviating the affordable housing shortage in rural counties where multi-family rental properties may not be the most appropriate affordable housing solution.

Another example of a rural concern that may disproportionately affect mobile home residents is their distance from community services and work. It is well understood that rural residents travel farther to access community services and commute to jobs (Tigges and Fuguitt, 2003). Results of this survey showed that 93 percent of workers who live in mobile homes in rural Pennsylvania commute alone and nearly half travel more than 20 miles to work. Because mobile home residents, on average, possess considerably lower incomes than residents of site-built houses, the additional transportation costs incurred to access services and jobs may be especially burdensome – particularly in the face of record-breaking gas prices (New York Times, 2008). A consortium of Pennsylvania state agencies concerned with rural Pennsylvania, labor, and transportation (such as the Pennsylvania Department of Community and Economic Development, Pennsylvania Department of Transportation, and Pennsylvania Department of Labor and Industry) could work with large employers and local governments to develop strategies to encourage and subsidize car pool, park-and-ride, and other transportation management programs. Programs targeting mobile home dwellers alone likely would not be viable, but programs targeting rural commuters more broadly might be practicable. Such programs would be popular not only because they would help rural Pennsylvanians, but also because they could relieve congestion, reduce parking needs, and improve air quality around the workplace.

In promoting any type of program directed toward mobile home residents in rural Pennsylvania, it is important to note that nearly one-third of mobile home residents do not have access to the Internet. Hence, any type of outreach communication must be by mail or other means.

Vulnerability to Natural Hazards

Due to their historical role as travel trailers, mobile homes have often been permitted in floodplains (Wallis, 1991). Although the National Flood Insurance Program restricts this practice today, hundreds of mobile homes in rural Pennsylvania still reside in floodplains. Understanding this fact can help policymakers better prepare for and respond to natural hazards in their communities. State government (Pennsylvania Emergency Management Agency or Pennsylvania Department of Community

and Economic Development) should consider getting these rural Pennsylvanians out of harm's way by working with local governments to identify spaces available in mobile home parks outside floodplains to help move these mobile homes to those spaces, and to provide alternative housing for those mobile homes that cannot be moved.

Mobile Home Data

The phone survey of county offices revealed that mobile home data are poor across rural Pennsylvania, not necessarily because counties do not collect the data, but because it is difficult to standardize. Simple data formatting and archiving standards could eliminate these problems, thereby enabling a complete picture of the distribution of rural Pennsylvania's mobile homes. As many counties in Pennsylvania are still in the process of "going digital," state policymakers have an opportunity to aid county offices in establishing and maintaining data standards that will facilitate coordination, provide their communities with useful information for a variety of purposes, and make it possible to develop policies to protect and promote this large proportion of the state's population.

Specific recommendations include:

1. Standardize tax parcel number formats. Require tax assessment and mapping offices within and between counties to use the same parcel numbering system for both tax assessment and geographic (GIS layer) data.
2. Standardize mobile home classification and coding. Encourage tax assessment offices to use a structure classification system that allows all mobile homes to be identified as separate from site-built houses. Make sure that the system includes a way to link leased-land mobile homes to the tax parcel on which they are sited.
3. Provide technical support for counties digitizing tax assessment and geographic data. Conversations with county tax assessment offices indicated that when counties decide to embark on the costly and time-intensive process of putting their tax assessment information in digital form, they would greatly benefit from simple, technical guidance. Officials in many counties reported experiencing major problems as a result of making poorly informed decisions in-house and with the results of outsourced work. State guidelines and technical assistance would be very useful to counties at every step of the process.

Since more states rely on individual county offices to collect, manage, and store information for tax assessment purposes, standardizing tax assessment data is a big challenge. Few states regulate how counties accomplish

this task, with some notable exceptions. For instance, the State of Indiana maintains the Department of Local Government Finance (DLGF), which is charged with “publishing property tax assessment rules and annually reviewing and approving the tax rates and levies of every political subdivision in the state” (Indiana Department of Local Government Finance, 2008). The Indiana DLGF oversees collection, standardization, and storage procedures for every county in the state and put in place state regulations that address many of the data issues encoun-

tered in Pennsylvania (Bennington, 2008). Indiana has an 18-digit tax parcel number format used by every county tax assessment and GIS office in the state. Mobile homes are classified and coded the same way in each county, and even building values are calculated using the same formula (Bennington, 2008). Pennsylvania could use this as a model to improve the collection and management of digital tax assessment data and thereby open up this rich source of information for many purposes.

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