

MARCELLUS NATURAL GAS DEVELOPMENT'S EFFECT ON HOUSING IN PENNSYLVANIA

Jonathan Williamson, Ph.D.

Director, CSCE

Chair, Department of Political Science

Williams@lycoming.edu

Bonita Kolb, Ph.D.

Co-Director, CSCE

Associate Professor of Business

Kolb@lycoming.edu

Center for the Study of Community and the Economy (CSCE)

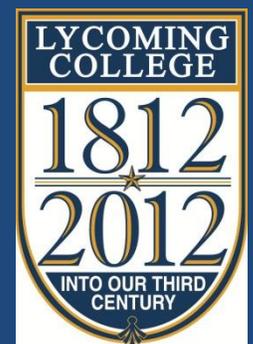
Lycoming College

Williamsport, PA 17701

October 31, 2011



*A project funded by
the Pennsylvania
Housing Finance
Agency (PHFA) to
The Center for the
Study of Community
and the Economy
(CSCE) at Lycoming
College*



Acknowledgments

The authors would like to acknowledge Bryce Maretzki of the Pennsylvania Housing Finance Agency (PHFA). PHFA's funding made the study possible. Maretzki provided advice to guide the direction of the study which resulted in richer and deeper analysis of these critical topics.

We'd also like to acknowledge Jim Meehan, Regional Housing Coordinator for Futures Community Support Services and a member of Housing Alliance of Pennsylvania's board of directors for understanding CSCE's mission and the research interests of the authors as well as the needs of PHFA. Meehan's vision and persistence helped to bring the two organizations together as partners on this project. He also supplied valuable insights and contacts as the project unfolded.

Finally, the authors would like to acknowledge the many individuals who took time to speak to us about their experiences with housing across the Marcellus region. Without their experiences and insights, there would be nothing to report. We feel privileged to pass along their collective wisdom.

Table of Contents

Acknowledgements.....i

Executive Summary.....1

Introduction3

Rental Demand7

Owner-Occupied Housing.....16

Rental Affordability and Availability26

Development Capacity35

Afterward: After the Flood47

Postscript: Authors’ Recommendations51

Interview Subjects55

Research Team60

Research Questions61

Executive Summary

Commissioned by the Pennsylvania Housing Finance Agency (PHFA), the Center for the Study of Community and the Economy (CSCE) at Lycoming College researched the effects that the Marcellus Shale natural gas industry, broadly defined, is having on housing, also broadly defined, across the Commonwealth of Pennsylvania. CSCE conducted interviews with over 70 stakeholders in six counties (Bradford, Greene, Lycoming, Sullivan, Washington and Westmoreland) including local elected officials, county and municipal planners, housing authority officials, social service agency representatives, landlords, developers, realtors, gas company representatives and new residents on four broad issues: 1) rental housing, 2) owner-occupied housing, 3) housing affordability and availability, and 4) the capacity of the development community to meet demand for housing.

Several broad themes emerged from the interviews. First, the severity of the housing problem attributable to Marcellus Shale development depends on the nature and scale of the growth of the natural gas industry in a given county or community and on the existing pre-Marcellus capacity of that county or community to absorb the increased demand for housing. Generally, communities experiencing the highest Marcellus activity relative to their size are experiencing the most difficult housing problems. In addition, counties where gas producers and service companies are establishing regional headquarters see more and longer term housing impacts than communities where there is only drilling and pipeline activity.

Counties that have previously experienced population growth due to other industries in the area or an influx of commuters from neighboring larger cities have existing development capacity. In these areas there are local and regional builders who are familiar with the areas housing needs and are experienced in working with the area's zoning regulations and county and city officials. These builders are ready to respond to any increase in housing needs.

Second, the effects of increased housing demand are broad-based, but the negative impacts are felt heaviest by those living at the economic margins. While rents and home prices are increasing at nearly all price points, the impacts of the housing shortage are falling heaviest on those whose housing situation was most at risk prior to the Marcellus industry growth, namely the non-working poor, seniors, the disabled and, newly, the working poor. Never having extensive housing options, these groups are faced with few choices in most affected communities, often limited to substandard housing or "couch surfing" homelessness.

Additionally, the natural gas industry has a wide variety of housing needs with varying time frames. Two waves of gas industry employment correspond to the evolving housing needs of industry employees. For the first transitory wave of gas workers, housing needs are being met with hotels, gas-company sponsored temporary residential facilities (often called man camps), campgrounds and a community's rental housing stock.

The second, more permanent, wave of gas employees are more diverse in background and have a more diverse set of housing needs. They will take advantage of a full range of long term housing options including rentals and owner-occupied housing. With a diverse set of job titles and experience levels, these second wave employees can expect to be located in an area for their entire careers, or their replacements will be if they were to move on. Included in this group are gas employees native to Pennsylvania with newly-found financial stability that will increase demand for owner-occupied housing as they look to translate their new financial status into more desirable living conditions.

As these new residents move into the Marcellus region, a disconnect exists between the housing expectations of this second wave of employees and the available owner-occupied housing. Most residents moving into the region are looking to buy new homes in move-in condition with all the modern conveniences. Instead, they find an aged housing stock in poor condition and lacking modern touches.

Finally, the capacity of the development community varies considerably from county to county in its ability to meet the need for additional housing. Counties with little pre-Marcellus development are struggling to attract development to meet the new circumstances. Barriers to development include the lack of local developers, a tight financing market, inadequate utility-served land available for development, regulatory hurdles, and lingering doubts about the Marcellus Shale gas industry. Market rate housing development, especially in select counties, is further along in meeting the increased need for housing than is the case for subsidized housing development in the most problematic counties.

The report concludes with an addendum and a postscript. The addendum is the result of the flooding that occurred in north-central and northeastern Pennsylvania in September 2011 just as this report was being completed. At the request of PHFA, the authors returned to Lycoming and Bradford Counties to assess the flood's impact on the existing housing situation. Topics include the housing options of displaced families, namely shelters, moving in with relatives and camping out, as well as the flood's effects on existing rental properties, the use of FEMA trailers, and increased homelessness. Finally, the long term housing issues that the flood exacerbated are discussed.

In the postscript, the authors lay out several broad recommendations that decision makers might consider as they begin to develop a response to the housing shortages created by Marcellus development. While the body of the report can stand alone as a description of the changing housing circumstances since the arrival of Marcellus development, the authors were asked to add their personal recommendations given their broad perspective on the issues identified in the report. Topics covered the timing of market-based responses and likely impediments or shortcomings to market-driven responses zoning board and planning commission capacity, infrastructure capacity, senior housing solutions, aging housing stocks, and gas industry engagement.

Introduction

The first slickwater hydraulically fractured gas well in Pennsylvania's share of the Marcellus Shale formation was drilled in 2004 by Range Resources. In the intervening seven years, the Commonwealth has seen a boom in the natural gas industry, leading to a wide range of effects on local communities. The nature of these effects is subject to significant debate. Without engaging in the qualitative debate over the net effects of the Marcellus Gas play, this study describes the effects that the Marcellus gas industry, broadly defined, is having on housing, also broadly defined, across the Commonwealth of Pennsylvania.

Commissioned by the Pennsylvania Housing Finance Agency (PHFA), the Center for the Study of Community and the Economy (CSCE) at Lycoming College was asked to gain a better understanding of statewide Marcellus-related housing issues across four interrelated areas: rental housing, owner-occupied housing, affordability and availability, and the capacity of the development community to meet demand for housing. This research stands in conjunction with another research project focused on quantitative analysis of Marcellus-related housing data by the Institute for Public Policy and Economic Development at Wilkes University funded by the Department of Community and Economic Development (DCED).

In this study, CSCE conducted interviews with over 70 stakeholders across six counties affected by the development of the Marcellus Shale natural gas industry in Pennsylvania: Bradford, Greene, Lycoming, Sullivan, Washington and Westmoreland. Stakeholders included local elected officials, county and municipal planners, housing authority officials, social service agency representatives, landlords, developers, realtors, gas company representatives and new residents. Most interviews were conducted in-person, although three were completed by telephone due to scheduling issues. The research questions that guided the interviewing are included in this report, as are the list of stakeholders interviewed. The stakeholders were assured their responses would not be individually identifiable in the final report.

The counties selected for this study are not the only counties where significant Marcellus activity is occurring. Table 1 indicates the population for each of the counties included in the study as well as two measures of Marcellus activity for each county: the number of Marcellus wells drilled in 2011 by the beginning of August and the number of well permits by county for the same time period, according to data available from the Department of Environmental Protection (DEP). The included counties represent a range of population, geographic location, Marcellus activity and demographic diversity that makes them representative of the other counties in the Marcellus Shale play. The housing effects experienced in the studied counties are likely to be similar in other counties in the Marcellus Shale play. Obviously, the timing of the industry's growth in a county or specific local factors could lead to variations in the experienced housing effects. Other counties in Pennsylvania to which these housing effects might apply

because they are seeing significant¹ Marcellus activity include Armstrong, Butler, Clinton, Fayette, Indiana, Potter, Susquehanna, Tioga, and Wyoming Counties.

Table 1: Population and Marcellus Activity for Included Counties

	2010 Population	2011 Marcellus Wells Drilled*	2011 Well Permits Issued (Gas & Oil)*
Bradford	62,622	241	435
Greene	38,686	60	143
Lycoming	116,111	150	219
Sullivan	6,428	10	21
Washington	207,820	89	213
Westmoreland	365,169	30	153

*As of 8/3/2011

Several broad themes emerged from the interviews. First, the severity of the housing problem attributable to Marcellus Shale development depends on the nature and scale of the growth of the natural gas industry in a given county or community and on the existing capacity of that county or community to absorb the increased demand for housing. Among the counties studied, Bradford County has experienced the highest level of Marcellus activity thus far, both in absolute terms and relative to its population. By comparison, Marcellus activity in Westmoreland County has been relatively modest thus far, especially factoring in its relatively large population. Counties seeing higher levels of activity relative to population are experiencing more housing impacts.

Relatedly, the types of Marcellus activity in a given county make a difference in the housing impacts. Some areas, such as Sullivan County, have seen drilling and pipeline construction, but for a variety of reasons are not attracting a large number of gas producers or their support companies to establish permanent regional headquarters. By comparison, both Lycoming and Bradford Counties have seen a large number of producers and service companies establish permanent locations. Where drill site and pipeline workers' housing needs are transient, the regional headquarters employ staff with permanent housing needs. Such employees will work at the site over a long period, or their replacements will. Such communities where these businesses are located are seeing a significant growth in housing demand that will likely be sustained for the foreseeable future.

Significant variation exists in each community's ability to absorb demand for additional housing. In counties like Bradford, Greene and Sullivan, prior to Marcellus Shale activity, there was both a small population base and a long period of population stability and/or decline. These communities have little track record of providing new housing development. In a mid-sized county like Lycoming, the population traditionally was stable or experienced a decline. While some Lycoming communities are now experiencing housing difficulties similar to Bradford, Sullivan and Greene, communities in the county's designated growth corridor had a sufficient economic base to sustain a modest level of development

¹ Defined here simply as having ten or more Marcellus wells drilled in 2011 through July according to DEP data.

activity, especially related to revitalization efforts in the decade prior to the arrival of Marcellus activity. In northern Washington County and Westmoreland County, suburban development has long been a way of life. Only the rural communities, especially in the south of Washington County, face difficulty absorbing the increased housing demand.

The second theme to emerge from the interviews was that while the effect of increased housing demand is broad-based, the negative impacts are felt heaviest by existing residents on the economic margins. The rental market is defined by increased rents and limited availability at nearly all price points in four of the six counties studied. The demand for owner-occupied housing is increasing, with homes selling fast and prices beginning to rise, especially for homes in the middle of the market. Once again the problem is most severe in the counties with the least capacity for increasing the supply of housing due to limitations on development discussed below.

The impacts of the housing shortage are falling heaviest on those whose housing situation was most at risk prior to the Marcellus industry growth. Providers of affordable housing traditionally met the needs of low income individuals and families dependent on government assistance, including the non-working poor, the working poor, senior citizens and the disabled. The housing options for these groups have always been limited, at times forcing such tenants into substandard housing. The increased demand for housing has created competition for even the least desirable housing, leaving increasing numbers of these individuals with few options beyond “couch surfing” and other forms of homelessness. In addition, housing providers are seeing new clients turning to them for help: the independent working poor, who traditionally made due financially on their own. Prior to Marcellus, these independent working poor had sufficient incomes to pay the low rents typical of these small town communities. With rents doubling and tripling, they have lost their economic self-sufficiency and been forced to look for assistance.

The third theme to emerge from the interviews was that the natural gas industry has a wide variety of housing needs with varying time frames. There are two waves of gas industry employment with corresponding housing needs among industry employees. The first wave of gas workers is transitory in nature. Their housing needs are being met with hotels, gas-company sponsored temporary residential facilities (so called, “man camps”), campgrounds and a community’s rental housing stock.

The second wave of gas employees is more permanent in nature. With a diverse set of job titles and experience levels, these employees can expect to be located in an area for their entire careers, or their replacement will be if they were to move on. Their housing needs are quite diverse because they include a broad mix of blue and white collar, working to upper-middle class, straight-out-of-school to young families to empty nesters. Their housing needs are and will be met by rental and owner-occupied housing, both existing and to be developed. Included in this group are Pennsylvania natives with newly-found financial stability that will increase demand for owner-occupied housing as they look to translate their new financial status from either higher wages or gas leases into more desirable living conditions.

As this second wave of gas employees settles into their new communities, a significant problem is the disconnect between their desired housing options and the existing housing available to them. While many moving into Pennsylvania are looking to buy newer homes in move-in condition with all the

modern conveniences, they are finding and complaining about the aged housing stock, the amount of time and money required to make such housing livable and the lack of modern touches available to them.

For the final theme, the interviews revealed how much the development capacity to meet the increased demand for housing varies from county to county. Low population counties, especially those without significant pre-Marcellus development, face the greatest difficulty attracting new development. The barriers to development include the lack of local developers, a tight financing market, inadequate utility-served land available for development, regulatory hurdles, and lingering doubts about the veracity of the size and scope of the Marcellus Shale gas industry. Notwithstanding these barriers to development, developers of market rate housing, defined throughout the study simply as housing where development is not supported by tax credits and rents or mortgages are not subsidized, are beginning to unfold plans that should relieve the housing strain at least in some counties. The path forward for subsidized housing solutions appears less clear. In some communities, the barriers will be relatively easy to overcome; in others the road will be considerably more difficult.

Rental Demand

The issue of the availability and cost of rentals was discussed with interviewees in all counties. The responses ranged from no concern with the availability of rentals to a crisis situation. Four of the six counties studied are experiencing a moderate to severe shortage of rental property, resulting in price increases as high as double or triple those that existed prior to Marcellus development and leading renters, especially those at the economic margins, having to accept substandard housing options, including a growing, but largely hidden, level of homelessness. Landlords are responding to this shortage. Some have decided not to take advantage of the opportunity to raise rents, while others are evicting current renters so that they can double or even triple the rent. The negative effects of this rental property shortage include gas employees feeling they are being gouged and current residents being displaced.

Factors that Affect Adequacy of Supply

The availability of a sufficient number of rental units depends upon two factors. First, the stage of the development of the gas industry in the area has an effect on the availability of rentals. Gas employees seem to arrive in waves, each wave having a distinctive housing need. Second, the availability and quality of rental property available before the Marcellus started to be developed affects the current situation. If the county population is large with a stock of newer housing, the effect of the Marcellus development is less noticed.

Stage of Development:

The first wave of employees to arrive included gas company management employees who set up the infrastructure of the industry. After doing so, they may be moved to a new location. The other component of this wave is the drillers and support personnel who follow the rigs or construct new pipelines or compressor stations. If a rig is moved to a new county or state or once construction is complete, these workers also move. This first wave, transient workforce is primarily interested in renting rather than buying. Their short term housing needs within a given area may last from just a few months to a couple of years. These housing needs may also surge and decline over time in response to variations in the level of drilling, fracking and production in a given area.

The second wave of gas employees includes out-of-state gas company office and field workers as well as native Pennsylvanians who have recently been hired. These second wave employees will reside in their respective communities for the long term; respondents from the industry conservatively estimate that drilling will occur for at least thirty years with production occurring for even longer. As a result, industry representatives generally see their employee's long term housing needs as permanent or at least extending to the foreseeable future. Even if the individuals in these long term positions should move or quit, the position will be refilled. While they may choose to rent short term to learn more about the

area, to get a better understanding of the permanency of their posting or for personal reasons, this group often wishes to eventually buy a home. At that point they may remain in the rental market longer than they would otherwise prefer if they are unable to find a suitable home to purchase.

The existence of two distinct waves of gas and service company employees leads to significant differences in the housing effects from one community to the next. Some communities will only experience drilling activity and therefore much of the housing demand will be from employees of gas companies and also related service companies who follow drilling operations. The housing demand in those communities will depend on how long drilling occurs and may not be constant as drilling activity may wax or wane in a specific geographic area.

In other communities, gas companies and service companies are establishing regional offices with a permanent staff to meet the companies' needs for all or a significant portion of the companies' Marcellus activity. The housing needs in areas where these regional headquarters are established are significantly higher and solutions will need to be oriented more towards the long-term.

Bradford County is furthest along in development of the play and is home to the regional headquarters of Chesapeake Energy. This county is also experiencing the most severe lack of rental property. Lycoming County is also experiencing an increased demand for rental property as it is now the home to regional headquarters of Anadarko and Range, along with many gas industry service companies. The rental demand in Lycoming County is from employees working in the county but also from gas company employees unable to find rental units in Bradford County who now commute from cities such as Williamsport.

Greene County is starting to see a ramp up of drilling activity with more rigs moving into the area. In addition they are now home to facilities for Halliburton and other service companies. Sullivan County is seeing less demand for rental property as there is little drilling yet taking place. However, there are now pipelines being built in the county, and it is anticipated that there will be more drilling in the future. Washington and Westmoreland Counties are not evidencing an increasing strain on rentals as there is not as much drilling taking place relative to the existing population and housing availability.

State of Rental Property Development:

The second factor is the development of the rental market. Washington and Westmoreland County previously had a sufficient supply of rental property. In fact, both have a growing number of rental units to meet the needs of people who chose to live outside of Allegheny County and commute into Pittsburgh. The other four counties have had declining populations due to a past lack of economic development. As a result, it was common for young people to leave the area and, therefore, there has been little need to build rental units which would provide homes for young professionals. These counties are now experiencing a rental housing shortage.

Rental Property Issues Due to Marcellus Development

There are four issues faced by counties that are seeing increased economic development and population growth due to Marcellus development. First is if the number of available rental units can meet the demand. Second is if the quality of the available rental units is acceptable to renters. The third issue is if the price of rentals meets the renters' expectations. Finally is whether the size, type and amenities in the rental unit meet the preference of renters.

Shortage of Rental Units:

Westmoreland County was unique in that interview respondents felt that there was not a shortage of rentals and that existing capacity is meeting any immediate needs. If there was additional demand due to gas employees arriving to work on the Marcellus play, it was not being noticed. Around the Greensburg area there has been a trend for older homes to be converted into student housing. There has been no sign that these houses are now being switched from student housing to be rented to gas employees. In the northern part of the county, there is a well-developed housing industry that provides both rental and owner occupied housing for commuters who work in Pittsburgh.

In Washington County respondents felt that current rentals were full but that no housing crisis exists. There is also the view that the rise in rental demand may be the result of the poor economy rather than activity involved in developing the Marcellus. For example, the additional renters may be people whose homes were foreclosed on and so they are now renting. In addition, people who may have been ready to move into the housing market by purchasing remain in the rental market because they are unable to meet the increasingly stringent mortgage requirements. Therefore, additional local renters might be increasing the demand, not Marcellus developments.

Some landlords in Washington County do report receiving more calls on rentals than in the past. However, because Washington County has other economic and industrial development, interviewees are unsure if this is due to Marcellus activity. If there is a rental shortage, it is in the area in and around the city of Washington rather than the county as a whole.

One knowledgeable Washington County stakeholder stated that there will be an increasing need for rentals as evidenced by the full hotels across the county. Several communities across the county are investigating and implementing restrictions on drilling. The stakeholder believes this lack of a welcoming business environment might encourage Marcellus workers to rent rather than buy as they do not know if the industry will be in the area long term.

In Lycoming, Greene, Sullivan and Bradford counties the situation is very different. All counties are experiencing an insufficient supply of available rental property. The demand is so tight that scams for nonexistent rental houses in the area are showing up on Craig's List.

One of the issues creating demand for upscale rentals is that some gas employees, although they have high incomes, are not able to get a mortgage to purchase a home due to the requirement to put 20

percent down. Young gas employees also may not have the credit history to buy a house. In addition, professionals who own houses in other states may find them difficult to sell. Even if they can sell their house, they cannot obtain a bridge loan to cover the down payment on the new home before they receive the funds from the sale of the old home. All of these facts mean that these employees will be looking for rental units.

In communities that are home to colleges or universities, some student housing is being switched to rental units for gas employees. However no community states there is a shortage of student housing. Some state this is because there was a student housing surplus before Marcellus development.

Quality of Rentals:

One of the more frequent complaints from gas employees who are renting property is the lack of quality. Drillers, who mostly work, eat and sleep, are not excessively concerned about the appearance and amenities of where they live. However in the counties that are experiencing the most drilling activity, they are being forced to pay high rent for substandard housing.

Some of the housing being rented to gas employees is decrepit to the point of being uninhabitable. While current rental units might look acceptable from the outside, once inside, potential renters discover that the properties have not been maintained and, therefore, are of very low quality. As one employee stated, he looked at a house where he was afraid to walk across the porch because it was ready to collapse. These gas employees are very upset that they cannot find decent affordable housing.

There is also a quality issue with more upscale rentals including both apartments and homes. Many of the rental units available are dated with no modern touches such as granite countertops or large closets. Also many employees moving to the area are familiar with apartment complexes with amenities such as swimming pools and fitness centers. The gas employees do not understand why these types of units are not available.

Rental Prices:

In both Westmoreland and Washington counties there is a wide variety of available rental properties from low cost rentals in more rural areas to high end rentals outside of Pittsburgh. In the rural areas of Washington County low end rent is from \$520 to \$620 per month for a one bedroom apartment. Apartments that are closer to the city of Washington or in the Pittsburgh commuter area are more expensive. Areas in Washington County are seeing some upward pressure on the cost of rent, but the increase has been recent after having been static rents for many years.

In all other counties, the demand for rental properties is pushing the price much higher. The lowest range was a 50 percent increase, with many communities experiencing a doubling or even tripling of rents. High quality apartments are seeing the highest prices. Upscale 'executive' rental units in Williamsport are going for as much as \$2,500-\$3,000 per month. As one gas employee stated she is paying more for her downtown apartment in Williamsport than she would have had to pay to live in an upscale urban apartment in Denver.

To get a decent full house rental, in some areas gas employees must pay a minimum of \$2,500 a month. This is true in all counties seeing development. For example when a house in Lycoming County became available at \$2,500 per month it was rented immediately. Two years ago the very same house rented for \$900 a month. A small older house that rented for \$600 three years ago, now rents for \$2,000.

It is not unusual for a landlord of a desirable property to raise the rent during the rental process because of demand. For example, a gas employee rented before he arrived in Williamsport only to find the landlord raised the rent another \$150 a month when he moved in.

In some smaller communities in Lycoming County there are not many rental units. Owner-occupied homes are not often sold and are therefore have not been purchased by landlords to convert into rentals. For the few rental units available there is not the same level of rental price increase. Landlords in these areas are often not full time landlords but merely own rentals to supplement their incomes. They are interested in long term renters from within the community and not gas employees who may not stay in the area. Turnover costs landlords both time and money and they prefer to rent to locals, either seniors or young people who are establishing their first home. However even these landlords are raising the rent after years of not doing so but only 5 to 10 percent.

In Bradford County, a small ranch home now rents for \$1,500. It is difficult to compare this with past rents as there was hardly any market for rental homes pre-Marcellus. Before Marcellus activity began to drive up demand, older homes that were not well maintained by local landlords were sometimes rented out to low income residents with Section 8 vouchers. Once Marcellus activity began, many of these landlords evicted the low income renters so they could rent to gas employees for more money. However the gas company employees are very unhappy that they must pay high rent for substandard units, but with no other options, they still pay the rent because they must have someplace to live.

Sullivan County, which has a small population, also has not seen an influx of gas workers as companies are not locating to the county. However the county is seeing an overflow of workers from Bradford County to the north and Lycoming County to the south. The usual rent for Sullivan County in the past was \$400 a month, but now most landlords have at least doubled the rent. On the rare occasion that a landlord chooses to not increase rents upon vacancy, gas employees wonder what problems the unit has to warrant such cheap rent.

Eagles Mere, in Sullivan County, demonstrates the unique situation of some communities. Being an affluent community most residents are not interested in renting to gas employees or supportive of the industry. There are rental homes that have traditionally been rented only during the summer. While they now could be rented on a short term basis during the rest of the year, the owners are often not interested in renting to gas employees. This is also true of affluent areas in other counties.

Preferences of Renters:

According to a local real estate agent, the first wave of gas employees stayed in hotels. When they did rent they were looking for short term rentals of one-bedroom apartments. These were often the land men and employees involved in permitting. On the other hand, the drillers were looking for units with

multiple bedrooms so that they could split the rent. The second wave of employees is bringing their families and looking for long term rentals, at least until they choose to buy. They prefer newer, three or four bedroom homes. If they are renting apartments, they prefer upscale units.

They all want housing that is move-in ready. If it is an apartment, first wave employees not only want the unit furnished but also to include housekeeping service. The employees, both drillers and professionals, are expected to put in long hours at work and they do not have the time or interest in fixing up a home or doing housework.

Gas employees coming from outside the area are not looking for a rental in a specific community. Instead they are interested living anywhere within a 30 minute commute time of where they are going to be working. Many of these employees remain on-call even during their off hours and, therefore, must live close to the worksite.

The interviews revealed a consistent set of features new residents were looking for in rental units. Almost all gas employees want newer units, either houses or apartments. Units older than 20 years are not of interest. Gas employees prefer rentals over hotels as it allows them to get away from the job and to feel more at home. However, when renting units the gas companies want everything included in the price, such as utilities and housekeeping. This makes life easier by saving the employee's time and if the employer is paying, makes billing and maintaining accounts easier. While gas employees often have pets, most rental ads state 'no pets'. This creates a greater shortage of available rental units for gas employees. They also want street or off street parking for multiple vehicles. Most gas employees have company trucks plus their own car or truck or both.

Landlord Response

Landlords are responding to the increased demand for rental property. A few have decided to not raise rents and stay with current renters. More landlords are not renewing leases or even evicting current renters so that they can raise the rent to a level that only gas industry employees can pay. Some landlords are responding by fixing up current rentals and also rehabbing buildings to create more rental units. Finally landlords are targeting the gas employee marketplace with both traditional rental units and campgrounds.

Staying with the Locals:

Even in counties where the demand for rental units is high, some landlords, typically those who have had the same elderly renters for 10 to 15 years or longer, do not plan to cancel their leases so they can rent to gas employees. These landlords are raising rents nominally, but this is after years of no increases at all. Some landlords are not interested in renting to gas employees because they don't want smokers or pets and because they believe all gas employees are short term renters. In addition, gas employees have a reputation for being rough on rental properties, requiring significant repair and upgrades upon vacancy.

Some local residents who previously might have sold their homes when they moved are now renting them out. They do so because not only can they get a high rental income, they believe that home prices will rise and they are reluctant to sell until they do so. However most of these landlords prefer to only rent to either locals or long term renters because they are concerned about wear and tear on the property that might result from renting to more transient employees.

Marketing to Gas Employees:

One landlord explained he must charge at least \$600 a month for rentals to cover expenses. As a result of previously low rents, many landlords were not making much money off their rental property when it was rented to local residents. Therefore it is understandable that landlords are taking advantage of the opportunity to increase their rental income by getting higher rents from gas employees. Some of these landlords are taking property that was formerly rented to local residents or students, raising the rent and actively courting gas employees. Landlords are even breaking existing leases to rent to gas employees. These actions squeeze local people, both working professionals and low income residents, out of the market.

For landlords, it is easy to rent apartments to gas employees. Word of mouth is sufficient and there is no need to advertise. One landlord said he was afraid to list an apartment because of the number of phone calls he would receive. Because there are so many more available renters than units, the landlords can be choosier about to whom they rent. If a unit is advertised the price may not even be mentioned so the landlord can negotiate. If advertising is necessary, most landlords need to go no further than Craigslist to fill a vacancy.

In some rural communities only a few rental houses are available and the quality of these houses is poor. To cope with this lack of housing, campgrounds are popping up. These are a low cost alternative for first wave drillers. For example, in Bradford County there is an increase in campgrounds for RV's. Four RV's can be parked on a piece of property before zoning requires a septic system. Therefore many local residents who own a large enough piece of land are renting out space to four RV owners. This is understandable since the landowner can get up to \$1000 a month per RV. However, as one county planner pointed out, if a septic system was required, these lots could then be used for single family homes in the future.

Rehabbing Properties:

Many of the larger communities in the counties studied have numerous small, inadequately maintained houses that are rental properties. These homes became rentals when they were purchased by investors because there was no market for them among people interested in purchasing a home. Many of these houses that were originally rented to residents with Section 8 vouchers are now rented to gas or service company employees. Because of the unhappiness of the gas employee renters over the quality of the property, a new investor market is starting to buy some of this substandard housing to rehab and rent. These units will still not meet the needs of the professional gas employee with a family, but will meet the needs of drillers who may not have as high standards. However, rehabbing existing low quality housing units is not seen as an answer to the rental shortage. As one landlord explained, while there is

plenty of substandard housing that could be improved, it is cheaper to build new units because the poor condition of the properties means the landlord cannot accurately estimate rehab costs.

Some landlords are looking at nontraditional buildings to convert into housing. There are builders in Washington and Lycoming County looking at old school and other public buildings to rehab into rentals. One school in Washington County has already been converted into one bedroom units, with the developer looking at other possible conversion possibilities.

Effects of Lack of Availability

The lack of available rental property affects both gas employees and locals. Gas employees have to pay high rents even though not all can afford to do so. Meanwhile long term renters who are not in any subsidized rent program are having their leases ended and are unable to find new housing. Local professionals who before were able to rent quality apartments are being forced to move out of the area. Lastly, low income renters are being squeezed out of the market entirely.

Gas Employees:

Many gas employees have to pay rents above the level they can afford. They are required to come to Pennsylvania by their companies, but not all have per diems or sufficient salaries to afford high rents. Many also have families back at home they must support and resent being 'gouged' by the local landlords. In addition some gas companies state the lack of housing is making it difficult to recruit workers to the area.

Chesapeake has responded by building a housing facility for almost 300 people in Bradford County. When it opened it was mostly filled with out-of-state workers. Even though most of the workforce is now local and lives within commuting distance, many workers still prefer to live at the facility during their weeks on duty because transportation to and from drill sites and meals are provided. Otherwise they are exhausted and able to do little more than sleep after both the long work hours and the long commute home to their families. If gas companies can buy or rent a multi-unit facility for their workers, they will do so as it is cheaper than paying for hotel rooms. However, not all communities welcome such facilities.

Long Term and Professional Renters:

Because of rent increases many local renters now have to live in properties that they previously would not have found acceptable. This has resulted in complaints to government officials about housing conditions. As a result there has been an acknowledgment for a need for increased rental inspection.

One of the effects of the increase in rents is the displacement of local young professionals. Many have to move out of their own communities to find acceptable housing at affordable rents and then commute long distances to work. Local professionals are often paying more in rent than they would on a mortgage

payment, but are not at the stage of life where they are ready to purchase a home, particularly given more stringent financial requirements.

An example of the effect rent increases are having on local renters is in Bradford County where the lack of affordable rentals has resulted in local teachers having to commute an hour and half one way to work. While the time issue makes this difficult, the winter weather can make it almost impossible.

Another effect of the lack of housing can be seen in towns with universities. Recently hired professors are having trouble finding housing. There was not a lot of excess capacity of quality rentals acceptable to professionals before Marcellus, and the situation has only gotten worse.

Low Income:

The shortage of rental units is affecting the availability of low income renters to find any housing. This is true in all counties with a rental shortage. While low income individuals may be eligible for a Section 8 housing voucher, even if they receive one, they have no place to use it. The problem is compounded by the fact that families waiting to get into low income housing cannot sign a lease on another apartment as they must be ready to move if they find a unit that accepts Section 8. If, when their name comes up on the list, they do not find an available rental, they will go to the bottom of the list and start the wait all over again.

Owner-Occupied Housing

Owner-occupied issues were also discussed with respondents in all counties. Relative to the dire need for rental properties reported in most counties, current concern about the availability of owner-occupied housing was somewhat lower. However, there is an expectation that the demand for owner-occupied housing will grow and shortages will become larger as the Marcellus activity continues to increase. At this time, three of the six counties studied are experiencing a shortage of owner-occupied housing with home prices also rising in a fourth. The shortages result in price increases and a backlog of residents remaining in rental housing, creating additional shortages in that sector.

The second wave of employees described earlier has only begun to relocate to affected areas. While most of the natural gas producers have established their regional headquarters, their ultimate staffing levels have not been realized. For example, Chesapeake's Towanda location had 1,400 employees when we visited; they indicated plans to grow to 4,000 employees. Anadarko's headquarters in Williamsport just added 10,000 square feet in office space, their second or third expansion in little more than two years.

The housing needs of the second wave of employees are more permanent than the first wave. These employees come from both outside the region as well as Pennsylvania. In both cases, they expect to be employed here either for their entire careers or as they move up within their organizations and potentially move out of the area, their positions will remain and be filled by replacements. Those filling these often supervisory or professional positions have a wide diversity of housing needs, ranging from 20-somethings looking for apartments, townhomes or starter homes, to families with children with a range of housing needs to empty-nesters wrapping up their careers and potentially looking to downsize. One realtor had a good gauge on the buying patterns of the employees of the smaller service companies: six months to a year after a company moves into the area, once the company is established and becomes profitable, the employees begin to buy.

The housing needs of the Pennsylvania natives in this second wave of employment vary considerably as well. Some local hires do not require a change in housing needs at all. However, we did hear of a significant number of Pennsylvanians finding employment within the gas industry and moving into the Marcellus region from communities like Lancaster and York. Obviously, their arrival adds to the housing pressure these Marcellus communities face. Finally, we found evidence that the economic opportunities provided by Marcellus employment are also leading those native to the Marcellus region now employed in the gas industry to look to upgrade their housing situation. One employer described his typical employee as a local person who previously worked seasonal jobs—construction in the summer and snow plowing in the winter—without a reliable income to enable him to achieve middle class status. Now that employee with higher hourly wages and nearly unlimited overtime can offer his family a higher standard of living. The first thing the families will do after buying new vehicles or home electronics is start shopping for a nicer house.

Increased Demand

In the studied counties most heavily affected by Marcellus activity, the shortage of owner-occupied houses is approaching that of rental housing. The shortage is greatest in Bradford County, followed in order by Greene, Lycoming, Sullivan, with Washington and Westmoreland Counties having no reported shortages attributable to Marcellus activity. It is quite the contrast to the national housing picture when prospective buyers indicate that realtors are advising them to make offers the day a property is listed because quality listings go within a day or two at (or sometimes above) asking price.

The timing of the increase in demand for owner-occupied housing seems to trail the market for rental housing by about six months to two years. One realtor described the arc of the real estate changes as first starting with large surge in land sales as speculators looked to lock up mineral rights before the general public became aware of the looming leasing boom. Once the dollar value of leasing became better understood, land sales took a nose dive, as did the number of people willing to list their homes for sale, even if their prospects of a large royalty payoff were relatively modest because of limited land holdings. As demand increases for owner-occupied homes, time-on-market for listings declines and prices begin to creep upward. That said, some homes remain on the market for longer periods because they fall outside the high-demand price range, they have condition issues, or the seller has out priced the market. In the tightest markets, such as in and around Towanda, a realtor indicated that often only small parcels and townhomes stay on the market for long. Because homes are selling quickly, new residents moving into the area work closely with local realtors to find listings before they are snapped up. Realtors who build relationships with a company often benefit from referrals as the employment levels within the company grow.

A shrinking supply and increasing demand, of course, drives up prices. Respondents from all the pressured counties reported some increases in owner-occupied home prices, but many also reported them being relatively modest. Prices for owner-occupied housing are clearly not increasing at the same rate as they are for rentals. Indeed, the growing upward pressure on the owner-occupied housing market is partially because home prices have risen more slowly than rent. In many Marcellus communities it has become significantly cheaper to buy than rent. While this situation is likely to return to equilibrium over time, for now it is helping to increase demand for owner-occupied homes.

Most observers pointed out that the changes in the owner-occupied housing market are likely too recent to appear in housing data. Instead the evidence is likely to remain anecdotal or indirect for the near term. Realtors and new residents reported that homes, once placed on the market, come under contract very quickly. In addition, they reported that homes have been sold at or above their asking price, a rarity for home sales in these communities even during the national housing boom. New residents working in the gas industry, having lived in a variety of areas given their line of work, noted that this was the hardest place to find housing. Several described extensively long searches to look for adequate housing; a sign of both the limited availability and the available housing stock does not meet their expectations.

Limiting factors:

Several respondents explained why housing data may lag the conditions on the ground in Marcellus communities. Flat sales prices may be the result of upward pressure locally counteracted by forces driving down prices that are affecting the national housing market. In addition, sellers are expecting prices to have risen faster than the market will bear, leading in some cases longer average time-on-market, rather than shorter as one would expect in a hot housing market.

Another factor explaining the limited effect of Marcellus industry growth on measurable change in home prices is simply timing. Many affected communities are experiencing peaks in first wave housing demand, but have only begun to see second wave growth. In other words, the hotels are full with transient workers, the rentals are full of transients and the new “permanent” workforce, but those workers have only begun to purchase their permanent homes in the Marcellus communities. They are waiting to see if the assignment will be permanent, to learn enough about the community to decide where to live or to find a specific home to meet their needs. In addition, the local populations, that will look to upgrade their existing housing because of the wealth generated by their new gas jobs, have just begun to consider that option. It is expected that the demand for owner-occupied homes increase for the foreseeable future.

Also moderating home sale prices is the ability of homebuyers to obtain financing. While homes often receive offers and go under contract relatively quickly, closing the sale is often delayed and/or the home returns to the market because buyers are unable to get financing. The problems are largely the result of additional scrutiny that financial institutions are placing on applicants, requiring higher credit scores and larger down payments to name the most common issues. While at one time banks offered buyers, especially first time home buyers, financing packages with little or no down payment, new regulations often require 20 percent down payments. For families trying to buy their first home, the requirement can be an insurmountable barrier, leaving them in the rental market longer than someone in a similar situation just a few years earlier.

Similarly, credit requirements have gotten more stringent. In the wake of the subprime mortgage crisis and facing scrutiny from regulators, banks have reduced or eliminated financing options that enabled those without established credit or with poor credit histories to purchase a home. Once again, the result is more pressure on rental housing and limited increases in home sale prices. That said, some respondents reported better financing luck with local banks who may be less tied down with the bad loans limiting the national banks and who are experiencing an influx of deposits from gas royalties.

In addition, some buyers face difficulty obtaining credit due to their inability to sell homes in the markets where they are coming from, likely weighed down by the national housing slump or upside-down mortgages. Since 2008, the housing market in much of the rest of the country has made it difficult for homeowners to sell their homes, pay off existing mortgages and have any equity left over to apply to home purchases in Pennsylvania. If a gas industry employee cannot sell their home, then they may be forced to leave their family behind when they come to work in Pennsylvania and find rental housing in the meantime. The result is a strain on their family budget while supporting two households and added pressure on Pennsylvania’s rental markets. If their home does sell, but at a price at or below

what they owe on the mortgage, they would be forced to start over in Pennsylvania with little money for a down payment or possibly damaged credit. As a result, they could be forced to remain in the rental market longer than they might otherwise prefer, putting additional pressure on rental housing in the Commonwealth and serving to limit price increases in owner-occupied homes.

Finally, some of those interviewed also reported difficulty getting home appraisals to match sales prices, preventing financing from moving forward. If an appraisal does not match the contracted sale price of a home, then underwriters do not allow financing to go forward. The problem appears to be the result of a combination of factors. Home sellers clearly have an incentive to increase the price of their home, and for suitable homes, buyers will make offers at or near the asking price because of the lack of housing supply to choose from and the desire to escape from the even more costly rental market. Yet, appraisers have faced scrutiny from regulators since the start of the housing crisis, leading to more conservative appraisals than were typical during the national housing boom. In addition, the comparable sales figures that the appraisers use to determine a home's appraised value can fail to capture rapid price increases seen in some areas due to a shortage of housing supply and high demand.

Local Variations:

In Bradford County, there is a severe shortage of single family homes, forcing gas industry employees and other professionals like teachers and government employees into significant commutes from as far away as New York's southern tier or Lycoming County to find adequate housing. Few houses are listed for sale, as owners hold on to mineral rights or are reluctant to sell because other housing options, such as a senior who might otherwise look to downsize, are not available. Houses that are listed are snapped up quickly. Prices have increased significantly at all but the very high end.

In Greene County, the owner-occupied housing market was tight even before the growth of the Marcellus industry. Observers suggested that the early housing shortage was a result of the lack of development combined with increased demand for those looking for cheaper housing options willing to commute to Morgantown, WV to the south or Washington County to the north. In addition, Consul Energy has absorbed some housing within the county by buying out homeowners affected by long-wall coal mining. One realtor estimated that 25 to 30 percent of the tightness in the owner-occupied housing market was attributable to Marcellus gas development, with the remainder due to historically low interest rates and commuters to Morgantown, Uniontown and Washington looking to purchase Greene's relatively cheaper housing.

In Lycoming County, the owner-occupied housing pressure varies considerably from one part of the county to another. Housing demand is high in developed areas that have easy commuting access to drilling areas within the county and in more rural neighboring counties. There is also significant pressure in and around Williamsport because gas producers and service companies have established regional headquarters in the area.

By comparison, Sullivan County has not seen outsiders buying homes, primarily because there are few companies establishing permanent headquarters in the county. In a few cases, gas employees are buying hunting cabins as alternatives to hotels or rental housing, but the practice does not appear to be

widespread. Gas workers tend to live in Bradford or Lycoming Counties, where drilling started first and commute to Sullivan.

Washington (except in a limited number of southern or rural communities, where the pattern is similar to Greene County) and Westmoreland Counties have not seen a measureable impact in the demand for owner-occupied homes as a result of Marcellus activity.

Supply

The supply of owner-occupied homes in many of the Marcellus communities is less than one would normally expect. In Greene County for example, according to one realtor, you would generally expect to see 125-150 homes in the \$125,000 to \$250,000 price range listed on the MLS. For much of the summer of 2011, that number was closer to 80. Similar stories were found in communities throughout the Marcellus region. The reduced supply of available homes for sale is an indirect indicator of the shortage of housing. Low numbers of listings are likely the result of one of two forces. Either homeowners who might normally choose to sell their homes are holding onto them longer, thereby reducing the supply of available home or homes when listed are being put under contract and changing hands, thereby taking them off the market faster. Either way, the result is a shortage in supply with resulting increases in the prices of homes in that price range.

Stakeholders interviewed indicated that increased sales of homes in that price range to meet increased Marcellus demand is only part of the equation. In addition, it was found that senior citizens who might normally decide to sell their homes and downsize into an apartment, either designed for seniors or not, are staying in their homes longer because of the lack of availability in the rental market. In communities with aging populations, when seniors are prevented from downsizing, the result can be a measurable decline in available housing coming on the market.

Similarly, the supply of available housing in rural communities is being affected by the complications that result from the value of mineral rights. In this regard, there are a variety of responses to report. Several interviewees indicated that homeowners with significant land were unwilling to put their homes up for sale (when they otherwise might) because of the value they perceived in the mineral rights. From the homebuyers' perspective, other stories indicated that prices of such homes were over-inflated as sellers attempted to extract the entire gas value of their property at the time of sale. Buyers were sometimes unwilling to purchase without mineral rights given the uncertainty that the lack of control over those rights might bring to their use of the surface of the land. Still other stories indicated that financial institutions were reluctant to finance transactions that did not include the transfer of mineral rights or were unable to appraise property accurately due to uncertainty about the mineral rights issue. In short, when an acre or more of land is involved in a potential residential transaction, the mineral rights issue can slow down or stall entirely the property's sale. This problem should work itself out as the market (including buyers, sellers, realtors, banks and attorneys) become more familiar with the complexities of mineral rights and how to factor them into a sales transaction.

Foreclosures:

At a time when much of the rest of the country is dealing with massive levels of home foreclosure, most respondents asked about foreclosures indicated that they did not appear to be on the rise in the region, as they have been in the remainder of the country. A Bradford County realtor indicated that there were no foreclosed properties available now, although there had been before the Marcellus boom. While most reported little foreclosure activity, two comments were heard that seemed to counter that impression, both from Lycoming County. In one case, a realtor commented that foreclosed homes are pushing appraisals lower, making it difficult for buyers to get financing and forcing homes to stay on the market longer than one would otherwise expect in such a tight market. Another stakeholder indicated that foreclosures were not providing relief to the housing crunch because buyers were not able to secure the deals they hoped for on a foreclosed home; instead banks were sitting on the properties for reasons unknown to the respondent.

Price Points & Desired Features

Interviewed subjects were asked about the price points and desired features that are in short supply in the owner-occupied housing market. Generally speaking, the most desired price range falls in the middle of the market from around \$125,000 to \$250,000. As a result of the increased demand, this price range is in short supply in many communities, outside the less-affected communities of Washington and Westmoreland Counties. In terms of desired features, there is a significant disconnect between the homes predominantly available in the Marcellus region and the expectations of new residents moving in to work in the gas industry. Where new residents are looking for new construction, open floor plans and modern touches, the bulk of available housing dates from the 1880s to the 1950s and much of it has condition issues.

Prices:

The highest demand for housing, both from new residents and buyers from within the region falls within the \$125,000 to \$250,000 price range. While some upper management is willing and able to spend \$300 to \$400,000 or more, the vast majority of the demand is at this price point. Realtors and new residents noted the number of lower priced homes that remained on the market, but that most new residents rejected considering these homes for condition and location issues.

New residents complained that new housing in Pennsylvania is more expensive for what you get than housing in places like Houston, Texas. Several complained about their company's regional wage differential which indicates that communities in northern Pennsylvania have a low cost of living. However, they argue, average housing prices used in such calculations are driven downward because of an excess of low-quality, cheap housing. In fact, they claimed newer homes here might cost \$50,000 to \$100,000 more than "back home" for the same features. One concluded he had effectively taken a pay cut to come here even with a relocation package. In addition, Pennsylvania's typical property tax rate is reportedly significantly higher than their experiences, further driving up housing costs. High taxes were

reported as the reason that gas employees in Bradford County avoided purchasing homes in New York State.

Realtors generally report only modest increases in house prices in most communities. However, new residents did complain of gouging when sellers learned that a potential buyer worked in the gas industry. Several realtors confirmed that some houses that remained on the market in what would otherwise be considered the “sweet spot” price wise had outpaced pricing for the conditions, despite realtor’s advice to the seller.

Availability:

Another story came from a new resident who prior to moving to Pennsylvania set aside a week to look for a home to purchase with his wife. They had planned to spend a week traveling the area to look at different housing options. However after indicating their preferences to their realtor, they realized that the number of available housing units was so small, it would only take two days before they ran out of homes coming anywhere close to meeting their criteria, rather than the planned for week. Few homes in their price range were on the market, and of those available most were older than they preferred and had condition issues. They ended up picking the house they disliked the least. They paid around \$250,000 and had to put in another \$30,000 to make it suitable to meet their needs. Representatives from one company indicated that the scarcity of suitable housing affected their ability to recruit people from outside the area. They reported losing an employee who couldn’t find a local home to purchase and got tired of the hour commute he faced daily.

Location:

Generally speaking, gas employees with fixed work sites, more common among second wave than first wave employees, prefer to be located within a thirty minute commute of their worksite. The largest housing pressure was seen in the areas with the densest commercial and residential populations. For example, in Bradford County, the heaviest pressure for owner-occupied housing is in and around Towanda. Sullivan County, which is experiencing relatively light second wave employment, has fairly light owner-occupied housing pressure thus far. In Lycoming County, the heaviest owner-occupied housing pressure is in Williamsport and the surrounding communities. In Greene County, the heaviest owner-occupied demand is in and around the county of Waynesburg.

Age:

New residents complain most about the lack of new housing stock, by which they mean less than 10 years old. Clearly a clash of cultures exists between the bulk of the communities in the Marcellus region (except for suburban sections of Westmoreland and Washington Counties) and the new residents. Many of the new residents moving into the state are moving from suburban locales in states like Texas, Louisiana, and Colorado. The suburban housing stock in their former communities is quite new in comparison to that found in the older communities of Pennsylvania. Most of the Marcellus communities within Pennsylvania have seen little in terms of population growth and therefore have not seen the creation of new housing stock in generations.

This disconnect between the newcomers' housing expectations and the available housing in these communities is immediately obvious. One gas industry employee pointed out that many houses in Bradford County are older than the state of Oklahoma. One couple complained about looking at fifteen houses and finding nothing acceptable because every house was built before 1950. Another new resident didn't want to look at house more than ten years old, but was told only 10 percent of houses in the communities they were considering that met criteria. Employees in one office joked that they had all looked at the same ten unacceptable houses.

Condition:

New residents have a strong preference for purchasing homes in move-in condition. They have no time to fix up a home. At most, they are willing to paint the interior to meet their personal preference, but at least one indicated they would prefer even having curtains already in place at purchase.

Instead, they are finding that the older homes they find themselves stuck with all have problems that must be immediately addressed. One of the more unfortunate new residents we spoke to shared their experience of first having rented a house, being forced to move because the house leaked, then buying but almost immediately having to gut their newly purchased home because of mold problems. More typical were needed upgrades ranging from new roofs or HVAC systems to dated kitchens and bathrooms.

Features:

The problems that new residents have with older homes do not exclusively focus on age and condition. Most new residents prefer the more open and airy floor plans of new home design. They prefer large walk-in closets scarce in older homes. They don't want to deal with the potential problems that an older roof, older wiring and older mechanical systems may require. Where locals may look at 1950s wiring in a home and see no problem, one new resident reported doubts when told by an electrician that the original wiring in a home from that era was fine. New residents tend to prefer homes with attached garages, a feature not typically available in older homes. Several new residents complained that local builders do not pay attention to details they have come to expect, including quality countertop materials, high quality appliances and bullnose drywall corners. A final complaint that new residents from the plains of Texas and Oklahoma have is rocky landscapes and the lack of homes on level lots.

Rehabilitation

Second wave gas employees who are new to Pennsylvania generally express a strong preference for newer housing. Few place value in the character of the historic housing options often available to them. The lack of new housing and the desire of communities to funnel new residents (and their investment) into upgrading an often deteriorated older housing stock lead to further disconnect in the market place. As a result many older homes on the market do not sell very quickly, according to local realtors. Some new residents who purchase older homes are settling, and remain unsatisfied with the choice they made.

No Time for Rehab:

Even locals and the small share of new residents interested in fixing up an older home do not have the time, because of the long hours typically worked in the industry. The typical employee works an average of 60 to 80 hours per week, sometimes considerably more. Many work two weeks on with 14 twelve-hour shifts followed by a week off. Many of the jobs are physically exhausting. When home, they said the last thing they wanted to do was more work. They preferred to rest or spend time with family.

Resale Worries:

Among those coming from outside the area and unfamiliar with the older housing stock prevalent in many Pennsylvania communities is a fear that it will be difficult to resell an older home. Resale is an important factor because many, but not all, expect to move in the middle term as the geographic profile of natural gas development continues to evolve or as their own careers lead to promotions or other opportunities in different parts of the Marcellus Shale or other natural gas plays. They perceive that newer houses are easier to sell. They are also likely especially sensitive to resale concerns given that a number of them have faced (or continue to face) difficulty selling homes in their prior locations due to the current national housing market

Too Expensive to Fix Up:

Excluding those who have a passion for older homes and are therefore willing to tackle rehabilitation projects regardless of cost, there is a general fear of the unknown that prevents rehabilitation from being a significant source of owner-occupied homes to meet the increased demand for housing. Potential home owners and developers alike reported that the problem with rehab work is the difficulty in estimating expenses. Respondents indicated that older homes need more money than they can afford to fix up and make livable. That problem is exacerbated when homeowners cannot find workmen to do the needed work, the contractors won't return prospective clients' calls, or contractors appear to gouge gas employees with high quotes. Potential developers are also reluctant to get into the rehab business because home prices have not yet increased enough to cover the additional costs.

Efficiency:

Another concern expressed by new residents is the worry about high utility costs of old homes. They indicated that they preferred the energy efficiency of newer construction to keep energy costs down.

Evidence that Rehab is Occurring:

Even with the general reticence towards Marcellus communities' older housing stock, evidence was found that rehab is meeting some of the housing need. Realtors report some of the new residents moving in have purchased older homes, albeit at times reluctantly. One gas employee noted that they decided to purchase an older home because the taxes were considerably lower. We heard reports that older houses in need of rehabilitation are becoming harder to come by and they are being purchased by individuals working on them themselves either to be their own home or for resale. Finally, local officials in at least two communities reported a small but steady increase in permits to rehabilitate single family homes.

As a final note on rehab, several observers commented that even if the reluctance towards older homes could be overcome, there still would not be enough supply to meet the growing need for houses.

Rental Affordability and Availability

This section of the report will address the issue of affordable housing for low income individuals including the working poor. It will also describe the current response of social service agencies to the change in rental availability.

Only in Westmoreland County was it found that there was no lack of available rentals for low income residents attributable to Marcellus development. The Pittsburgh commuter housing market in the northern part of the county keeps it immune from boom and bust housing issues with a steady development of new housing options. This local development capacity, along with no major influx of gas employees, means that the county is not experiencing a rental market shortage. While there is a need for subsidized housing, that need has not changed due to Marcellus development.

Washington County is starting to feel some effects from Marcellus development. Social service clients who have housing vouchers report a bit more difficulty in finding acceptable rental units. This change is most pronounced in the Washington city downtown area. However social service agencies have not had to ask for an increase in the amount of Section 8 vouchers. In addition the majority of people using vouchers are able to find housing that will accept them although not necessarily in the neighborhood which they prefer. This demonstrates that any increase in rental prices have not been so extreme as to price Section 8 voucher users out of the market. However, where previously there was not a waiting list for vouchers in Washington County, but now they do have a short list. This may indicate that the rental affordability issue is just starting to appear. If this is true, Washington County may soon face the same issues as counties under more housing stress.

Greene, Bradford, Lycoming and Sullivan Counties Status

In the three northern counties studied, an insufficient number of affordable rental income units has affected low income individuals and families, the elderly, and people with mental or physical health issues. The same is true in Greene County in the southwestern part of the state. The effects these groups are experiencing include living in substandard housing, loss of housing, inability to use Section 8 housing vouchers and a lack of crisis housing options. The only available short term response from social service agencies that are faced with these issues has been to change the value of housing vouchers, negotiate with landlords and provide short term assistance. According to social service agencies, the only available long term response is additional housing until the situation stabilizes. Some agencies state they feel beleaguered with the community seeming to be unaware of the rental shortage problem and the resulting threat of homelessness to community members.

The social service agencies are trying to help those seeking housing but there is a limit on what they can do based on limited housing availability and housing funds. Because of their limited financial resources

and the inability of social services to provide enough help, people needing housing assistance are barely managing. According to a social service worker in Lycoming County they are now functioning at a survival level. They can pay the rent and that is all.

Population Groups Affected by Affordable Housing Shortage

Low Income Renters:

Low income individuals and families, including the non-working poor and the working poor dependent on government assistance, are the traditional clients of social service agencies. In the past they have been able to find housing even though it may have been substandard rentals. If rising rents force them out of these homes, there is literally no place else to go as they are already at the bottom of the housing market.

Besides clients social service agencies have traditionally been assisting, they are seeing a new population of independent working poor clients that had managed financially on their own before but whom are now seeking help. These new clients have jobs that previously have paid enough for them to live without government assistance. However they are now facing rent increases that they can't afford. As one social service agency employee in Bradford County stated if this is not because of increased rents due to Marcellus development, then it is "a heck of a coincidence."

In addition people are arriving from outside the area because of economic opportunity. These are unemployed individuals who are coming from other areas of the country to Pennsylvania to look for jobs in the gas industry. They are not coming alone but are bringing their families. Once they arrive they discover they cannot find affordable housing while they conduct a job search. While the numbers are currently small, this is another group adding to the housing shortage and arriving at the doors of some social service agencies.

Seniors:

Social service agencies are finding it increasingly difficult to provide subsidized housing for the elderly. In fact the waiting lists have become so lengthy that the elderly can now die while they are on the list waiting for housing. This stress on housing availability for the elderly would probably be true even without the Marcellus development because of the aging of the population and longer life expectancy. However now there are two causes of additional pressures on senior housing availability due to the development of the Marcellus. First the elderly must now compete for units with disabled community members who have lost housing. In addition the lack of housing for seniors means they are staying in family homes that no longer meet their needs. As a result these homes are not available for rent or purchase by community members.

An example of the first effect can be found in Sullivan County. This county, even with its small and stable population, is now facing a problem due to a shortage of senior housing. A lack of affordable housing in neighboring Bradford County is causing an increase of disabled people coming to Sullivan County to seek

housing. Disabled individuals receive priority in housing before local elderly residents. As a result a subsidized housing development for low income renters which had been renting at 80 percent elderly and 20 percent disabled is now flipped and is renting at 20 percent elderly and 80 percent disabled. Because the disabled have priority in housing, Bradford County disabled are displacing Sullivan County's elderly population.

The second issue caused by a lack of subsidized housing for the elderly is that they must now stay in their own homes rather than move. This causes a hardship particularly after the death of spouse. If the spouse had a pension, the remaining spouse must live on a reduced income and now can't afford the upkeep of the home which will then deteriorate. Another issue arises if the home is in a rural area and the elderly home owner no longer is able to drive. Getting to the stores and doctor appointments becomes a problem. Even if the elderly person still drives, they may no longer wish to do so because of the dramatically increased truck traffic on rural roads due to drilling activity.

The elderly staying in their homes means that the houses they are currently living in are not available for purchase or rent by either local families or families moving into the area. These families need the space that the elderly no longer need.

Individuals with Mental and Health Issues:

The problems experienced by low income renters and the elderly are also affecting renters with mental and physical health issues. Not only can they no longer afford their housing due to rent increases but clients with mental health issues find the Marcellus development difficult. The changes in the community such as new people and traffic can be difficult for individuals with mental health issues to tolerate.

Because there is insufficient housing stock to respond to this problem, social service agencies are trying to do long term master leases. If a cooperative landlord can be found, the agency is requesting a lengthy lease that will provide housing to the mentally ill on an ongoing basis. While this does not solve the availability problem, at least the social services agency will know that that some clients will have housing for a while.

In addition social service agencies are now spending more money using transitional housing vouchers for the disabled. For the members of this group waiting for a housing voucher is not an option. By law housing must be provided to the disabled. If necessary, funds must be taken from another budget to cover this expense and this is what is being done

For renters with health issues, the unavailability of affordable housing just adds to the difficulties of people facing multiple struggles. There is little the social service agencies can do in these situations. For example in Bradford County a client with health issues was already living in substandard housing when she got behind with the rent. As a result the landlord evicted her with only a month notice. The most social services could do was appeal to the landlord for a bit more time to find a new home.

Resulting Problems

The problems faced by the non-working poor, the working poor, seniors, and the mentally and physically disabled groups include living in substandard housing, the inability of the current HUD Section 8 voucher program to meet housing needs, the loss of housing and growing homelessness, and the inability of social service agencies to provide housing in crisis situations. In addition other social service problems experienced by families are worsened because of the lack of housing.

Substandard Housing:

Much of the housing stock in the Pennsylvania counties in the study is of older construction. Some of the housing used by low income people on housing assistance was already of lower quality due to age and neglect. However, low income residents are now being pushed into even more substandard housing that is barely livable. At the same time the working poor must now live in housing conditions which they find unacceptable. As prices have increased everyone has had to lower their idea of acceptable standards.

Some landlords were already lax in maintaining their properties, but now with the increased number of people looking for rentals, they are even less motivated to keep properties up to code. In areas with the most acute shortage of low income housing, because people are desperate they are tolerating deplorable conditions as they have no place else to go. Low income renters in substandard housing are afraid to complain for fear of eviction. They fear that if the house doesn't meet HUD standards, landlords will simply drop out of the program and rent out the property to gas employees for even more money. For example a renter in Bradford County did not have hot water for months but did not complain. She had no other housing options so would rather stay in substandard housing than have no housing at all.

The rental shortage is also affecting community residents who have jobs and are long term renters. They are being displaced at the end of their leases when landlords increase the rent, sometimes even doubling it or more. As a result they then must move into substandard housing for the very same rent they had been paying for a decent apartment.

Inability to Use Section 8 Vouchers:

All of the counties that administer the HUD Section 8 housing assistance program are now dealing with longer waiting lists for clients to receive the vouchers. As a result some counties have closed their lists and are no longer taking names. Lycoming County had recently reopened their list to receive new names when they had 80 people waiting. Once the list was reopened the list quickly grew to 600 names. Renters are told that the wait for Section 8 vouchers is now six months to two years. In Sullivan County the vouchers value are adequate and landlords are still willing to negotiate. However, the county has only 36 units, but has a waiting list of 60 individuals and families waiting for housing. As a result it might be two years before they can receive housing assistance.

Even if renters have existing vouchers, they still face a problem. Many fewer landlords are accepting vouchers because they can easily get more rent than they would under the voucher program. HUD bases the Section 8 rent off average area rents, but the data that is used is outdated. Therefore the value of the voucher is too low compared to the market rate.

The social service agencies are working closely with landlords to encourage them to continue housing low income renters with vouchers. However many landlords are dropping out of the program entirely. Unfortunately, if the client cannot find a landlord and the voucher is not used, that client again goes to the bottom of the waiting list.

Loss of housing:

While it might not be surprising to realize that low income renters are affected by rising rents, it is also true of long-term renters, who have stable, but not well paying jobs. If these renters can no longer afford the rent being charged, they must look for lower cost housing on their own. Even though there is a lack of affordable housing, these individuals have incomes that are too high for them to qualify for assistance.

Sometimes the landlord will use any excuse to break a lease so that the unit can be rented at a higher price. Renters without leases are being asked to leave by their landlords with 30 days' notice or sometimes even less for such infractions as leaving toys in the yard. Those renters who have leases find that landlords are not willing to renew the lease, which leaves renters with nowhere to go and scrambling to find any acceptable housing situation.

For both non-working and working poor who can't pay the rent, social services tries to help with advice and assistance, but sometimes cannot. When this happens and the family or individual loses housing, they may move in with either a friend or relative. Usually the friend or relative is also on limited income and, therefore, the living conditions are far from ideal. After wearing out their welcome at one household, the family or individual will move in with a new friend or relative. If they can't sleep on the couch, they are even pitching tents in the backyard. A common name for this action is couch surfing and it is not a permanent solution to the housing problem.

Some social service agencies believe this couch surfing allows communities to deny the homeless problem because the people who are doubled up with friends or family or living in campgrounds are not noticed. However, these social service agencies feel that if the housing issues of low income renters are not addressed, it will not be long before the homeless will be noticed because people will be sleeping on grates. It needs to be remembered that many social service clients are single women with children; they may not be able to find a job in the gas industry, either because of family circumstances or the physical requirements of the most commonly available jobs.

Another issue that causes loss of housing is that the working poor often have jobs without benefits. As a result if the family or individual get behind on their rent because of illness, instead of working with them, landlords are now more likely to evict so they can raise the rent. With gas employees moving into the area, low income renters have to compete for a limited supply of rental housing. When this happens

the low income renter loses. However according to more than one social service agency, if the market builds more housing for higher income individuals, low income residents will be able to get back into the rental market. If instead, the overall housing shortage continues much longer, within a year there could be homeless living on the streets. As a result of the housing shortage people who have been living on the margin are being pushed over the edge.

However, according to a social service agency employee, the rental shortage is having one positive effect. Low income families are becoming more responsible tenants because they can't afford eviction. The local low income community may not have time to keep abreast of most news events but they are all aware of the affordable housing shortage. Prior to Marcellus activity, it was not uncommon for renters with many employment and family problems to simply wait until they got evicted when they got behind in the rent. In the past, even if evicted there was always a landlord at a less desirable unit willing to rent to them. Now they know they must be more responsible because if evicted they have very limited housing options.

Aggravation of Other Social Service Problems:

The Marcellus development is affecting every aspect of social services not just housing. According to more than one social service agency, financial assistance for housing is cost effective. If the family cannot find housing and becomes homeless, social services may need to take temporary custody of the children and the cost of providing foster care is very high.

It might be asked why these families stay in areas where they cannot afford housing or find jobs. They stay because they have families and friends in their communities that provide support systems to help them survive tough times. If they move to a new area with more housing options, this support will be lost. For families dealing with separation or divorce the problem is complicated by family custody issues. The mother or father cannot leave the area, because if one parent moves outside the jurisdiction of the court, custody can be lost.

In Greene County this breakup of families is already happening. When a family becomes homeless, children must be placed in foster care. However because there is no homeless shelter in Greene County the parents must be housed in a shelter in Washington County and the family is not just physically but geographically separated. Last year in Greene County the documented homeless count was zero, this year the count was 40, of which ten were single individuals and 30 were family members. It is not only homelessness that is causing family breakups. Children can be taken from their families and placed in foster care because of inadequate or substandard housing.

In Bradford County two or three families living together is now standard and over a dozen children were placed in foster care because of a lack of acceptable housing. Social service agency employees also report an increase in DUI and drug abuse. They believe this increase is caused by the stress brought about by overcrowding and worry about housing. Some counties are hoping that resident property owners that receive money from royalties may be willing to fund shelters to help with the problem, but, as of yet, this has not happened.

Lack of Crisis Housing:

Social service agencies are often faced with emergency housing needs, due to a fire, family crisis or other situation. Previously social service agencies used inexpensive motels for housing homeless families in emergency situations. However because all the motels and hotels are full, this option is no longer available. When families in crisis situations appear at the agencies, they can't provide emergency housing for them.

For example last year when there was a fire in senior housing in Greene County, the social service agency would have normally put the residents displaced in hotels. However now this is not a choice as the hotels are full. In Bradford County, because there are no available hotel rooms, clients in emergency situations are placed in hotels in Elmira, New York. On one occasion, a family had to be placed in a Potter County campsite for emergency housing because there was no other option available. As a result of the situation, Bradford County is now planning for their first homeless shelter. The housing crisis has come at a time of a general increase in the cost of living and cut backs in social service programs at the state and federal level. As one social service agency employee stated this is a bad time to be poor and crisis has become the norm.

Social Service Agency Response and Needs

Social service agencies have limited ability to respond to the problems described above. They have somewhat increased the value of housing vouchers, provided short-term assistance, negotiated with landlords and advocated for additional housing. The social service agencies have little ability to respond because they face a lack of funding. For example, in Bradford County, the monthly allotment for housing assistance in social service agencies was usually gone by the third week of month. Now it is gone much sooner. In addition, agency officials struggle to overcome denial by members of the community about the nature of the situation they face. They have found some ways to provide short term help but do not see this as a solution to the problem. They see the only solution to the housing problem long term is to provide more affordable housing units.

Section 8 Vouchers Value Increase:

One way social service agencies have tried to cope is by increasing the value of the Section 8 vouchers. Federal rules state that the value can be increased a certain percentage over prevailing rents. However the total amount of funding for Section 8 vouchers is capped. This means if the dollar amount of each voucher is increased, there will be fewer available vouchers. Also, as one social service agency employee stated, if the value of housing vouchers is increased and the supply of housing is not increased, rental prices will just be inflated even more.

Short Term Assistance and Landlord Negotiation:

The amount paid for by a housing voucher is the fair market rent. However, this amount is outdated and, therefore, too low. There is a program that can help close the gap between the voucher amount and what the renter can pay to help forestall eviction. This is a program designed to provide short term

assistance to help renters until they could find appropriately priced housing. However, in the current rental market once this short term assistance has been used and the client still can't find affordable housing, they are back at the door of social services.

Another response by social service agencies has been to work directly with landlords to lessen problems caused by low income renters. They hope that this approach will encourage more landlords to keep accepting Section 8 housing vouchers even if they could get more rent by not doing so. Some landlords like the dependability of receiving the rent directly from the government and having the assistance of social service agency personnel when the landlords have problems with renters. However not enough local landlords are willing to work with agencies to meet the demand.

Additional Housing Needed:

When workers within the gas industry can pay three to four times the rent that can be afforded by low income renters, there is no way that an increase in the value of housing vouchers can solve the problem. Every agency stated that the only low term solution was to provide more affordable housing. However there was disagreement whether the priority should be for senior housing, housing for the working poor or for a multi-tiered approach.

Senior housing is now the focus in some counties because it is both needed and because funding is available. Counties that have a high senior population, many of whom are on fixed incomes, see two benefits to the development of more senior housing. Besides providing subsidized housing for the elderly, it would free up family homes that could then be rented or sold to community members. As one social service agency employee stated, in a perfect world, the answer would be a 'campus' setting for senior housing that would also meet their needs by including stores and services.

One county felt the greatest need is housing is for low income workers. This is because not only are these individuals affected by increased rent they are also affected by the general rise in the cost of living. While some social service agency workers felt that the worst of the housing pressure is upon them, others feel the housing crunch is going to get much worse. No one sees rents decreasing any time in the foreseeable future, especially for units for low income workers.

Some social agencies believe the need is for tiered housing that would accommodate different housing needs rather than only focusing on low income workers or seniors. Such approaches are consistent with thinking that mixed-income housing communities are better long-term solutions than traditional projects which concentrated and isolated low income families, which can exacerbate the problems that can follow such populations. Some of the agencies are working on finding partners and writing grants to help address the problem. However they are doubtful of getting any assistance. One social service agency worker spoke passionately about the need to develop multi-family low income housing as families can't wait two months or two years for a place to live.

However an affordable housing development proposed in Greene County ran into problems before it could be built. While the housing was desperately needed, the neighbors opposed the development because they viewed the low income housing as negatively affecting their property values. According to

those interviewed, the problem is finding a location for affordable housing that meets the business plan required by the funding source and yet has enough space around the development to deflect NIMBY-ism. As a result in Greene County the county commissioners have organized a task force to plan for future housing needs.

Development Capacity

Much of the Marcellus region has experienced little in the way of population growth or housing replacement in decades. Outside the suburban Pittsburgh areas within Washington and Westmoreland Counties, stable and aging populations spanning thirty years and more have required little more in terms of housing development than the construction of single homes, the occasional small scale apartment building or a modest rehabilitation project in most communities. As a result, at the onset of Marcellus Shale development the region's existing development capacity, both in terms of for-profit and not-for-profit developers and the communities' ability to accommodate new housing development was quite limited. As the Marcellus industry has come to have a larger impact on communities, the development capacity has thus far failed to keep up with increasing housing demand, especially in the most impacted communities of Bradford, Greene and to a lesser extent Lycoming Counties. That negative initial assessment comes with a caveat that planning for housing development is underway, albeit more extensive in the for-profit sector and the areas with more infrastructure capacity than in the alternatives.

While a number of stakeholders lamented that they were not seeing development occurring, reports were heard from a number of people in or related to the development community about their development plans. This response varies greatly from county to county. Plenty of development is occurring in Westmoreland and Washington Counties, but with very little of it occurring in response to Marcellus effects. A significant amount of development related to for-profit, not-for-profit, rental and owner-occupied housing is in the pipeline in Lycoming County that is directly attributable to Marcellus activity. However, it is yet to be determined if the planned housing will be adequate to meet the needs. Negligible development is occurring in Sullivan County, but their Marcellus-induced housing need is not yet very considerable. Very little development is underway in Bradford and Greene Counties even though the demand for housing solutions is extremely high.

The Presence of Local Developers

Outside Westmoreland and Washington Counties, there was very little in terms of a local development community pre-Marcellus. Development that occurred was small scale and sporadic. Generally, developers acted when individual opportunities arose and made housing development only a small part of their overall business portfolio. Their businesses generally included commercial real estate development, rental property management, and construction, along with a diverse range of other possibilities. The few developers working on tax-subsidized developments generally worked in a wide geographic area in the north or concentrated much of their work in metropolitan Pittsburgh (rather than in the more rural parts of Washington or Greene Counties) in the south. To give a sense of the lack of development capacity in some counties, there are no members of the Washington Builders Association, which covers Washington and Greene Counties, from Greene County.

Because housing development was not an ongoing process and because existing developers were not readily available to take advantage of the Marcellus-driven opportunity, many observers lamented the lack of local response upon the initial surge of Marcellus demand. One local leader indicated they had approached locals to encourage development activity, only in one case to be rebuffed by someone indicating they were operating at capacity in another aspect of their business. In another case, they interacted with a potential developer indicating willingness to cooperate on developing housing solutions, but no plan of action was subsequently forthcoming. Another official expressed frustration that developers are not taking advantage of opportunities. Therefore, while public officials seem to think there is capacity available locally to respond, they express concern when no developer steps forward ready to act. Later in this section, the potential reasons for apparent inaction will be discussed.

Even when local developers act, it is often at a relatively modest scale. To take Lycoming County as an example, a local builder of modular homes, not normally in development, added a small scale project (approximately 40 lots) to their business portfolio as a means to test the waters and to keep their workforce busy during the unusually slow period for their industry. However as of now only eight homes are being constructed on the lots. Two apartment complexes are currently under planning or construction in the Williamsport/Loyalsock Township area, each with around 40 units. In both cases, the projects are driven by local developers. There are other smaller projects publically reported distributed across the County and a number of larger projects reportedly in the works, but not yet publically acknowledged. Lycoming County appears to have the most active local development of the four highly impacted counties in the study. As modest as the local developer response in Lycoming County has been, the response in Bradford, Sullivan and Greene Counties is even less vibrant.

New Development Opportunities

Developers from outside the region have begun to focus their attention on the opportunities presented by Marcellus gas development. As one Greene county official indicated, two years ago developers wouldn't have returned a phone call. Today, they call regularly or drive in and ask to be shown around. Outside development interest is growing both because of the opportunity presented by the region's economic growth and demand for housing and because of the lack of other housing development opportunity elsewhere due to current economic conditions. One planning official was told by a developer that "he is here to make his next million." Several local officials indicated hearing that state housing officials were directing outside developers into the region. Even the gas companies report contact from larger developers coming from outside the region; they are looking to get a better gauge of the companies' future housing needs.

Local officials are attracted to the potential that outside developers bring because they are perceived to have the capital and skills for large development and they bring a team of their own people experienced with the process. An official in Lycoming County, after lamenting how potential local developers have long shied away from brownfield development, indicated optimism for moving forward on redeveloping one brownfield site because an outside developer with successful experience completing such projects

elsewhere had come forward and was willing to take on the risk. Once the project is well underway, the official was told, the outside developer planned to sell the holdings to a local developer to complete, while the outside developer moved on to start the next project. If outside developers successfully demonstrate the viability of redeveloping brownfield sites, local developers may be more willing step forward on future projects.

Current Activity

The timeline for development of new housing appears to be closely related to the timeline of gas industry development in the communities under study. During the “land men” phase of development and the early drilling work, the general public in Marcellus communities remain largely uninformed about the changes occurring in their midst. As rigs move into an area, the natural gas workforce begins to grow, and the number of out-of-town license plates makes their presence obvious. The public then develops an understanding of the new industry growing in their midst. Only subsequently does the housing impact begin to become apparent and felt by local residents as reported elsewhere in this study.

At the point a housing shortage already exists, the development community, to the degree it exists, begins to become aware of the emerging business opportunity. They must then begin their planning and due diligence process to determine 1) whether the apparent opportunities are real, 2) whether they want to respond, 3) what the appropriate response may be, 4) where they might locate their project, 5) how they intend to finance it, 6) design and approvals, 7) construction, marketing and sales. The shortest time period we have encountered in our discussions with developers for steps 4 through 7 is about eleven months. More typically these visible steps take one to two years for more developers to work through.

The timing of these preliminary steps may vary with the developer’s own circumstances and perception of the opportunity presented by gas development. The timing of the growth of the gas industry varied from community to community, but typically the first sign of significant changes came around 2007 or 2008. It took the course of the next year or two for the scale of change to get on most people’s radar. Even then, in most communities it remained a question as to how long the industry would remain to impact the community and in particular its housing stock. Only in 2010 or 2011 did the emerging housing crisis become apparent in the affected communities and did many locals come to terms with the durability of the changes brought on by the gas development.

It is not surprising then that development of housing in affected communities has just begun. Even absent any barriers slowing the process down, as discussed elsewhere in this section, the timing has led to the initial projects just now having the possibility of coming on line. Clearly, significant barriers have prevented significant activity from getting any further through the planning process than it has thus far. We heard many more reports from developers about potential plans than actual shovels turning dirt.

Where activity is occurring, it tends to be in smaller scale developments of 4 to 50 units rather than any larger scales housing developments which may come later and obviously take longer to plan.

Generally speaking, very few developers are looking to build houses on spec. Reasons include the uncertainty of the scale and duration of the housing need and the reluctance of banks to finance such projects given recent events in the national housing market. One developer who had constructed a small number of spec homes lamented that he had not received more calls from gas employees about purchasing a home. He wondered if the housing situation was all that bad if his properties were not being snapped up very quickly. Another developer's comments likely explain the shortcomings the first developer faces in his project. The second developer indicated that the way to get into the housing market for gas employees is by partnering with a realtor that has established relationships with the gas companies. Passive marketing of owner-occupied homes is not adequate, especially for new developments and in areas where owner-occupied housing availability is not in yet crisis.

Non-profit and Tax-Subsidized Capacity

The non-profit development capacity in the Marcellus region trails far behind the need for housing. Here the situation is much more dire than for the for-profit development, both because of the desperate need of the displaced residents discussed elsewhere in this report and because the market forces are not driving the solutions as is beginning to be the case for market rate housing. Much of the affordable housing need in many of the rural and small town communities was traditionally met by the availability of an oversupply of aging housing stock. The few tax-subsidized and non-profit developers working in the region (for example, Trehab and Susquehanna Valley Development Group Inc.) traditionally pursued small scale housing projects to fill specific niches in the communities where they worked. Examples include the Nichols Court, a senior apartment building in Williamsport and the Golden Eagle Housing Development, a rehabilitated apartment development for low to moderate families in Towanda. Alternatively, simply no such local developers existed in the county and they are starting from scratch, building relationships with organizations from outside the immediate area (for example, Greene County's outreach to ACTION Housing of Pittsburgh).

Trehab, a community action agency CHDO working in the northern tier, indicated they were trying to accelerate their level of housing work in the area, with the goal of creating 50 to 60 units per year for the next few years. They have submitted four projects for state approval and are hoping to receive funding for two or three to enable them to begin to fill the severe need for affordable housing in the region. They are also working to attract investment from the natural gas industry to help fill the funding gap and enable them to move forward with planned projects. They indicated that such money would also be important to show PHFA that there is local buy in for their projects. Once the projects are approved, construction will take a year.

ACTION Housing, a Pittsburgh-based non-profit housing developer, is expanding its traditional geographic range by looking at sites in Washington and Greene Counties due to the need created by

Marcellus. They are working with the Greene housing task force to develop elderly housing. They are also looking to develop tax-credit programs to create additional projects down the road.

The reaction of one for-profit developer that has invested heavily in tax-subsidized housing in the northern tier may point to additional problems for meeting the affordable housing need. This developer appears to be shifting focus towards market rate housing given the opportunities in that sector. In an area where little profit was traditionally available in market rate housing, tax-subsidized programs were attractive options; with government budgets tight and programs becoming more scarce, the profit margins of Marcellus-driven market rate housing may limit the number of developers of affordable housing even further.

Local Response to Lack of Developers:

In Greene County, a recent fire displaced a number of low income seniors, exacerbating the already tight housing market for the county's low income population. Spurred on by both that crisis and the overall shortage of affordable housing made worse by Marcellus development, county leaders have put together a housing team and hired a consultant to develop a comprehensive housing plan and to specifically bring in a developer (ACTION Housing) for a senior housing project. Senior housing is seen as low hanging fruit for development that can be completed relatively quickly. Officials see it as improving the housing options for both seniors and for young families because the prior homes of the older residents would be available to the real estate market. Even so, one official estimated it could be three and a half years before the project might be complete, hardly a short time frame in a period of housing shortages.

The recent failure to move forward with a subsidized housing project hangs over the head of efforts to development of affordable housing in Greene County. A project was recently shelved after residents objected to its construction in their neighborhood. While officials underscore the urgency of the housing need, they appear to be moving somewhat cautiously to prevent another 'NIMBY' response to future proposals.

Greene County officials also lamented the lack of available resources to help to develop affordable housing projects. They pointed to their neighbor to the north, Washington County, as prospering from development and thus having the resources to meet the needs of their low-income population, pointing specifically to available revenue from casino impact fees.

Housing Authorities:

Housing authorities are struggling with a response to the shortage of housing. Most authority officials that were spoken to focused their attention on the problems related to Section 8 vouchers discussed elsewhere in this report. They devoted less attention to the issue of developing housing themselves or in conjunction with private partners. This reluctance to take on housing projects appears to be the result of two factors. First, housing authority officials in most of the region under study have not traditionally been in the business of creating housing. Instead, they have traditionally spent considerable effort trying to build relationships with local landlords by offering landlords assistance with tenants who fail to live up expectations in terms of paying rents and respecting their property. In exchange, the housing

authority officials have encouraged landlords to expand the availability of Section 8 housing and increase the quality of the housing they provide. As discussed elsewhere in the report, these relationships have become more difficult to maintain in the Marcellus era when landlords have options other than to rent to Section 8 tenants.

Housing officials also appear reluctant to take on construction and rehabilitation projects directly because of the lack of funding. Due both to the change in thinking about public housing and state and national budget circumstances, the availability of funding for such projects is quite limited. Add to that the problem of extensive approval processes and increased building expenses caused when contractors submit high bids due to the availability of gas industry work, housing authority-led development of additional housing are few in number. Budgets are further strained by requirements that residents have social services available to them. Finally, one official pointed to restrictions limiting their ability to provide public housing that exceeds 1999 levels. Our further research indicates that this limitation refers to the Faircloth limit pursuant to Section 9(g)(3)(B) of the United States Housing Act of 1937, which restricts housing authorities from receiving federal funding for public housing units that exceed the number of units the authority had in 1999.

While few housing authorities are taking on major construction projects, there are exceptions. The Tioga and Bradford County Housing Authority just completed a small senior housing project, the Liberty Cottages, in Liberty and the Lycoming County Housing Authority is exploring the development of a larger mixed-income, mixed-use development in Williamsport. As mentioned above, the housing taskforce in Greene County is looking at a senior housing project to replace one destroyed by fire in 2010.

Opportunities

Rehabilitation:

Many communities in the Marcellus region have an aging housing stock, much of which has been underutilized and poorly maintained as communities have struggled economically over significantly long periods of time. Developers were asked about the opportunity to rehabilitate appropriate portions of this aging housing stock as a means to alleviate housing pressures. Most reported that rehabilitation is too risky for developers because of what one individual called the “Oh my god” factor, referring to the unexpected costs that emerge once rehabilitation begins. While some respondents indicated a passion for older structures and an interest in doing rehab projects if funding were available to help with costs, most indicated that there was little profit to be had in rehab work. In addition, many rehabilitation candidate structures are located in more broadly run down areas, thus completed projects remain difficult to sell or rent. One local official argued that instead of money for rehabilitation, they would prefer demolition funds be made available to make areas available for new housing. The official reported landlords won’t rehab and developers don’t want the expense. It should be noted that even with the negativity, we found evidence through our interviews of rehabilitation work occurring in most of the communities studied. Such work may not be profitable on the scale that would attract attention

from larger developers, but some of the housing pressure will undoubtedly be absorbed in these rehabilitated properties. The most extensive evidence of these efforts was seen in Williamsport, Waynesburg and Towanda.

Gas Companies' Role:

A number of stakeholders spoken to, especially concentrated within the public sector, discussed the role gas companies could take on to help to provide housing relief in counties where they have set up operations. While some gas companies we spoke with discussed their willingness to help contribute to the solutions, other gas companies pointed out that they were not in the housing business and would not do it well. It should be noted that the gas industry is very decentralized with hundreds of support companies supporting a few dozen gas producers across the state. For a gas company to have the incentive to work directly with a developer to help fund a housing project would mean the development would meet the company's specific need in a specific location. While these small-scale projects are occurring, they will be unlikely to occur at the scale needed to relieve the overall pressure being felt in the Marcellus region.

Constraints on Development

Infrastructure:

The availability of infrastructure is the most significant barrier to new housing development in many of the rural and small town communities where natural gas development is having a significant impact. Where much of suburban Westmoreland and Washington Counties have traditionally had significant economic growth to justify infrastructure expansion that can now absorb the housing needs of the natural gas industry, the rural and small town counties that make up the rest of the study have not experienced any meaningful economic growth in decades. Their infrastructure, especially their water and sewer systems, has little capacity to absorb this new, unexpected growth.

Most severely impacted by the confluence between the lack of available land and available water and sewer is Bradford County. Communities served by water and sewer have either little remaining capacity in their systems or little available land prime for development. A number of communities have access to only water or only sewer, but not both. Major sections of the county rely exclusively on well water and septic systems, and are therefore not prime locations for dense housing development. A similar situation exist in Sullivan where there recently was interest from developers for a 40-unit development on four acres that went nowhere because the sewer authority could not handle the increased load. Only Dushore has the combination of available land and water and sewer capacity.

Another example of the shortage of sewer capacity comes from Lycoming County. Williamsport Sewer Authority provides sewer services to the city of Williamsport and several surrounding municipalities. The authority recently completed its Act 537 plan to comply with regulations related to the Chesapeake Bay initiative designed to reduce mineral discharges into the bay. It is in the process of completing upgrades in excess of \$100 million as part of the plan. As part of the process of these upgrades, it asked each

participating municipality to indicate its expected capacity needs so that the upgrades would be sufficient to meet the demand. These estimates were provided before the impact of Marcellus development was felt. The resulting infrastructure currently under construction will be inadequate to support significant new housing construction because it is based on assumptions of the status quo that had existed for decades rather than the emerging new levels of economic activity.

In Greene County, there appears to be a mixed bag. Some municipalities have limited capacity within their water and sewer systems to take on additional development, while there were reports of some areas with infrastructure available from capacity built years ago.

In areas where infrastructure issues are problematic, officials face a Catch-22. Additional housing is clearly needed. Developers understand they will need to contribute to or actually construct water and sewer lines, as well as roads and other infrastructure within their housing developments. While limiting the rate of development or at the very minimum driving up prices and making the development of affordable housing more difficult, such infrastructure work is the cost of doing business. The real problem remains the availability of capacity within existing systems. Developers can't go forward without infrastructure and existing local residents are not in a position to pay for utility upgrades.

On another topic related to infrastructure, the lack of available public transportation makes the development of affordable housing options difficult in rural counties. Low income residents without access to their own transportation cannot locate in housing outside population centers. This problem further limits the potential range of housing solutions.

Lack of Developable Land:

The availability of suitable land for development varies greatly from one county and community to the next. Washington and Westmoreland Counties, experienced with heavy suburban development, continue to have plenty of developable land, especially in areas closer to Pittsburgh. In the remaining counties, the availability of land can be a significant barrier to development. This problem comes primarily in two parts. First, as discussed in more depth above there are few lots available in many communities served by water and sewer. Without annexation powers, many of the older communities of both the northern tier and the southwestern part of the state are essentially fully built out. While they have some infill potential and it may be desirable to tear down some dilapidated properties, neither option will prove adequate to meet the need. Second, given the terrain of much of the Marcellus region little relatively level land remains available for development. Level land outside the flood plan and served by infrastructure is an endangered species. In addition, rural development is even further complicated by issues surrounding mineral rights and surface related to drilling and pipeline issues.

In Greene County, officials indicated the only way for development to occur in Waynesburg is to take down blighted properties. In a county that is 89 percent rural, only a handful of municipalities have access to both water and sewer and are therefore even in the position to consider taking on significant additional housing.

In Bradford County, officials from a number of communities expressed that while they would like to see development of new housing in their community and that they while they may even have infrastructure capacity to support new development, there was no suitable land available within their municipality to construct new housing. While these communities have typically not seen growth in decades, they often saw all the level land within their fixed borders developed in their periods of growth in the late 19th or early 20th centuries. Many of those structures remain in use today. Even when property within the municipality is underutilized, namely with deteriorated housing or outdated commercial properties, there is a reluctance to demolish and start over with new development.

In Sullivan County, the only utility-serviced area with significant acreage to potentially develop housing is Dushore. Other communities either have neither water and sewer or only one or the other, as discussed above. The lack of developable land is to the point that they are seeing an increase in families subdividing acreage into two lots to meet the housing needs of an extended family. Officials did indicate that lots originally created to meet the needs of hunters remained available in western part of county.

In Lycoming County, planning officials explained that the county's comprehensive plan identified a growth corridor in the municipalities along the Susquehanna River. They intend on trying to focus on growth areas and prevent sprawl into the more rural areas of the county. They indicated that there were a significant number of lots that had already been through subdivision decades before but has never been developed. Many of these were plotted in 1950s when the county's population peaked. These lots already had access to infrastructure and therefore development would be relative straightforward once the right developer decided to act.

Within Lycoming County, the highest demand for housing appears to be in Williamsport, but developers seem to be focusing more attention on surrounding boroughs because they have greenfield land available. That said, another Lycoming official suggested that as many as 200 homes could be constructed within Williamsport via teardowns or in-fill construction, although one person did point out that many of the city lots were too small for modern home footprints.

Planning:

Long range housing and development planning is critical to help developers know what will work and saves time and effort. Yet, rural counties, having little need to incorporate significant housing growth into their comprehensive plans for many years, are little prepared to provide guidance to developers. Their reactive position often serves to slow down development as developers are forced to adjust to the late-hour requirements imposed upon them. In one case in Greene County, an affordable housing project was blocked by concerned neighbors partially because there was little prior guidance from officials to help direct the project and a failure to adequately market the project to the community. With a plan in place, there will be process for developers to follow. To be able to adequately address planning for housing development, local officials need to add to develop new areas of expertise.

Financing Difficulties:

Given the national housing crisis, the availability of financing to both developers and home buyers has the potential to be a major stumbling block for relieving the housing pressure being experienced in the

counties with significant Marcellus development. Banks and other mortgage owners across the nation have realized massive losses. Because of pressure by the government through Freddie Mac and Fannie Mae to increase scrutiny of applicants' credit worthiness and residences' appraised values, loans have become harder to come by. Developers and home buyers alike indicated the difficulty they had securing loans, especially from larger regional or national banks.

Local (in practice, really regional) banks are in a slightly different circumstance in terms of being prepared to make housing loans to both developers and home buyers. While they are subject to the same underwriting scrutiny as the larger banks, they 1) better understand the circumstances on the ground leading to the demand for additional housing that can the national banks and 2) they are often flush with deposits from their customers' natural gas royalties that they need to turn around and loan out in order to turn a profit. As they have become more comfortable with the idea that the natural gas industry would be around for a long time, these local banks have been more willing to provide financing.

With recent events in mind, lenders see residential housing development as particularly risky. They have higher expectations for developers to put a significant share of the project costs up front than they once did. This higher capital requirement makes the deals harder to put together for all but the most well-capitalized developers and thereby slows down the development timeline. Indeed, one developer we spoke to was able to circumvent the problem of financing by funding their residential apartment project entirely from within their groups of partners. Using a coalition of partners helped not only to fund the project but also to diversify the risk for each member of the partnership group.

Another not-for-profit discussed turning to investors from out of the area who might be looking for an opportunity given the lack of profitable options currently available given the national economic picture. Several observers indicated the potential of partnerships between gas companies and developers to enable funding for projects. These partnerships could come in the form of upfront payments by the gas company in exchange for a given amount of housing or of leasing of a significant share of a project before it is built as a means to secure bank financing. Developers made it clear that bank financing was particularly difficult if the plan was to build on spec.

Workforce Availability:

Given the level of hiring seen from the gas industry, there might be some concern about the availability of skilled labor to work in the construction industry. In an ironic twist, the current recession is working to the Marcellus region's advantage in this regard. Developers did not indicate that a current shortage existed for skilled construction workers. While there are undoubtedly some construction workers switching over to the gas industry, plenty remain to work on emerging construction projects. In addition, individuals looking for work have come into the Marcellus region when development projects require their skills. This is particularly true in the southwest where union labor is available from Pittsburgh and where construction workers' commute does not exacerbate the housing shortage.

Some development is beginning to utilize modular construction. The benefit of this from a workforce standpoint is efficiency and also the slack capacity of Pennsylvania's modular companies. Modular construction techniques require fewer workers to build a home than do traditional construction

techniques, relieving any shortage in skilled labor that may emerge as developers respond to housing shortages. In addition, increased demand for modular homes helps to alleviate the effects of the stalled housing market beyond the Marcellus region, which is severely affecting the state's modular industry.

While generally speaking, contractors remain available for housing projects, we did hear from a few stakeholders that building costs are up. Concentrated in Bradford County thus far, these comments pointed to jobs coming from the gas companies as the source of higher bids from contractors. One housing authority official indicated they received fewer bids than expected, likely because the other construction companies were engaged in gas work. The project had to be scaled back and additional funding was sought as a result of the higher-than-expected bids.

Regulation:

Developers and others desperate to expand housing availability in the Marcellus zone report that regulations significantly slow the development process. They argue that we are not seeing more private sector development because of the regulatory restrictions. Several stakeholders involved in non-for-profit development agreed that regulatory requirements drove up project costs and restricted their ability to meet housing needs.

Communities in the Chesapeake Bay Watershed have been struggling to pay for upgrades to sewer systems brought on by mandates to reduce nitrogen and phosphate pollution of the bay. These efforts predate the Marcellus era, but the associated costs make it more difficult for municipal sewer systems to add capacity given the costs and debt taken on by the sewer authorities.

Some developers felt local zoning requirements restricting the placement of RVs and 5th wheels on private property should be relaxed as a means to create immediate relief of the housing issue. Such development, they argued would be particularly beneficial to provide for the short term housing needs of the transient portion of the natural gas workforce.

Other developers argued that local officials, unused to dealing with development projects, fail to realize that time is money. They urged officials to help them by ensuring faster communications so that any problems, even those as simple as addressing incomplete paperwork, can be fixed quickly and project timelines can stay on track. One developer shared a strategy of working proactively to stay in touch with government officials to ensure that unnecessary delays were prevented.

Another developer lamented the soft costs that government regulation creates, from permitting and inspections to tap-on fees, which drove up the price of rents on newly constructed apartments.

Still another developer argued that local regulations drove up the price of homes in Williamsport specifically. Under that city's building code, new construction must meet minimum square footage requirements, but the code specifically only counts "habitable" space towards the requirement. Habitable space excludes closets and the space taken up by cabinets, etc. The result is that homes must be larger and more expensive, making the construction of affordable housing difficult.

Still another developer made the case that construction regulations change every year, making it difficult and expensive to build. He cited an example of expensive roof trusses needing to be reengineered for snow loads, even though no roofs had ever failed under the old design.

Finally, another developer argued that new requirements for inspections related to water drain-off added to the cost of a project, but not to the appraised value. Such soft costs could not be passed on to buyers who didn't value them and whose lenders didn't factor them into appraisals.

Lingering Doubts:

Another constraint that continues to affect the market response for the increase in demand for housing can be classified as lingering doubts about the size and duration of the gas industry. Most stakeholders have developed an understanding that the drilling and production of natural gas will be happening in the Marcellus region for decades to come, barring unforeseen circumstances with energy prices and policy. Even so, their understanding has only fully developed in the last year or two. Others continue to harbor doubts about some aspect of the future of the industry or another. Those doubts continue to slow the progress of housing development in the region.

The perception of the length of time gas companies will be active in the area varies considerably from one stakeholder to the next. If there is a single question being asked most often, it is how long this will last. Early in the process, many understood that gas drilling would largely be complete in five to ten years. Over time, the predictions have lengthened to greater than thirty years and beyond the horizon of the foreseeable future. Some observers continue to cling to earlier predictions. For them, then, the current housing problem is a temporary one to be dealt with on an ad hoc basis and with an eye to preventing over-development. A number of stakeholders worried about the effects that excess housing would have on communities after the drillers left. They also questioned the ability to turn a profit on projects needed only for a short period of time. In addition, several expressed concern that the political and economic environment could lead to a sudden end to the industry in the state; "Are gas companies staying for real? I believe they are but they could pull out as fast as they come in. Then what happens to my 30 homes or rentals?" stated one cautious landlord.

Stakeholders believing the gas industry would be active for the long haul felt that such ideas were ill informed or simply too negative. Several pointed to the level of capital investment being made by gas companies as evidence of their long term intentions. Attitudes about the potential oversupply of housing were also labeled as too negative. Even once the gas industry's work eventually declines, they argued that there would always be a need for safe, affordable housing. They argued that the current gas development will sustain additional long term economic activity in a broad array of industries that can take advantage of the ready supply of energy, leading to sustained housing need even once active drilling ends decades down the road. As a result, they believe concerns about housing oversupply are unfounded because we have no means to accurately predict future need.

Afterward: After the Flood

Research for this study was conducted over the summer of 2011. Over seventy people were interviewed in six counties in the southwestern and northeastern areas of Pennsylvania. Different effects were felt depending on the availability of existing housing stock and the stage of the development of the natural gas drilling industry. Two of the most impacted northern counties were Bradford and Lycoming. Social services agencies, in particular, were very vocal that increasing rents and the lack of available single family homes for purchase were negatively impacting the counties' residents. Some interviewees repeatedly used the words 'crisis situation'. If the question had been asked as to what would happen in their communities if a major flood took out a significant amount of existing housing stock, it is difficult to imagine how the interviewees would have responded.

Sadly, this is exactly what happened. Because of the new stress on housing caused by the September 2011 flooding, additional research was conducted in Lycoming and Bradford Counties to assess the flood's impact on housing. Social service representatives who worked directly with flood victims and individuals affected by the flood were interviewed. The questions asked involved what was happening to those who had to leave their homes due to flood damage in light of existing Marcellus-related shortages. The topics covered in this afterward include the housing options of displaced families, namely shelters, moving in with relatives and camping out. In addition, the effect on existing rental properties, FEMA trailers, and increased homelessness are addressed. Finally, the long term housing issues that the flood exacerbated are discussed.

Immediate Response:

Immediately after the flood, a wide range of organizations and individuals pitched in to help take in the victims of the flood. More than one respondent praised the efforts of gas companies which supplied money, people and equipment to help flood victims. In addition, individual volunteers and organizations helped with cleanup efforts.

Most people displaced by water damage were able to move in with family or friends. For those who did not have this option, churches and fire halls opened their facilities to house families and individuals with no place to go. Many of these institutions were not set up to be shelters but opened their doors because they believed it was the right thing to do. Such shelters could not be a long term solution because not only were these facilities not designed to be shelters, the organizations were also losing needed income they received through renting out their facilities for local events.

Most people wanted to get out of the shelters and back into their own homes as quickly as possible. When the shelters were closed, however some shelter residents still had no place to go as their homes remained unlivable. One social service agency employee described the 'tough love' needed to move a 90-year old woman to a different housing option because she simply wanted to go home, which was not possible.

In Lycoming County, displaced residents were also able to be housed in older motels. Because of the number of hotels being built around Williamsport, gas company employees are able to stay in new facilities, leaving vacant rooms in less desirable motels. In Bradford County, there were no hotel or motel rooms of any type available.

Relatives:

Both in Lycoming and Bradford Counties, the primary means of dealing with the loss of housing was to move in with relatives and friends. While this makes sense as a means to handle the immediate aftermath of the flood, it is not a long term solution. While relatives might first welcome the flood victims, overcrowding and any prior family tensions can quickly lead to problems. In addition there are the practical considerations of longer commute times if the relatives live farther from work and the additional expense to the host family of increased food and utility bills. One family has doubled in size from seven people in the house to fifteen. Seven in a small house is livable, fifteen is not.

If the flood victims cannot return to their own homes but are asked to move out of their relatives' house, it is unknown what will happen to them.

Camping Out:

Once the waters receded, some residents were able to move back home by moving into a camper. For example, one family is living in a fifth wheel on their lot and believes they will be there through the winter because of the extensive damage to their home. While many incidents were heard of this living arrangement, it is not a solution for many in part because it is now difficult to find a camper to rent.

Because of this, some people are simply camping out in their damaged home. They are living in the second floor while they repair the damage to the first floor. Fewer instances of this arrangement are occurring as the damaged homes are without utilities because most electrical and heating systems were in the basement and were ruined.

Rental Property:

Rental properties, both multifamily residences and single family homes, were affected. It is anticipated that most rental property will be recovered because of the money to be made in the current rental market. For those rental units that are recovered and renovated, it is anticipated that rents may be even higher than pre-flood rents because the demand for rental housing will now be increased even further by those who have lost their homes. In addition the units will be improved, which will allow the landlord to ask for more in rent. The further increase in rents can already be seen in Lycoming County where some homes are now renting for \$3,500 a month in the Williamsport area. Alternatively, some interviewees expressed concern that after the full extent of damage is known, some landlords might decide to take a tax loss on the property rather than rebuild.

FEMA Trailers:

Many of the people interviewed made reference to the arrival of FEMA trailers although only one person knew of someone who was already living in one, a women in her seventies in Lycoming County. There were a number of concerns expressed about the arrival of FEMA trailers. First, no one was excited

about the prospect of living in one because of all the negative publicity regarding FEMA trailers after Hurricane Katrina.

However, the main concern is where to put them. In Lycoming County, officials are looking for available plots in existing mobile home parks. In Bradford County, where more homes are needed, officials are looking for a plot of land with the needed infrastructure that is flat and large enough to house multiple trailers.

The last concern with FEMA trailers is what will happen when they are pulled out in 18 to 24 months. No one anticipates that the needed housing will be available for these families as they will also be competing for housing with the new residents who are still moving into the area.

Homelessness:

Everyone states that there is now more homelessness. Where this summer respondents indicated homelessness was just an emerging issue, now it is in the flood-affected regions in force. Social service agencies employees stated that they had no answers, and families are being passed from office to office. The Red Cross and other disaster agencies are only structured to help in the short term and cannot provide long term assistance.

An incident was shared about a gas worker who before the flood had been living with his pregnant wife in a tent by the river. No one knows where they are living now. It was not just longtime residents who were affected, but also new gas workers who lost homes and possessions. Some were told they did not need flood insurance and have now lost everything. As one social worker stated, just because your home is destroyed doesn't mean your mortgage does not need to be paid.

Long Term:

Although most people were trying to get back into their homes, officials at the disaster recovery center in Towanda shared insights into why this might not be possible. Some housing will be lost because it was too badly damaged. Many of the flood waters were fast moving, meaning homes are not just water logged but also had structural damage such as holes in the walls due to debris. Some homes were even moved off of their foundations. These homes may need to be totally rebuilt, and if the family does not have the financial means to do so, they may just walk away.

Other homes were not badly damaged by the flood but are now infested with mold. The flooded homes needed to be opened to dry out. Some people could not get back to their homes to do so, and others did not know to do it. Because of the amount of silt in the homes and the warm weather that followed the flood, the homes became a breeding ground for mold. To be saved, these homes will now need to be gutted. Again, the decision will need to be made if this is financially feasible.

In addition, the flooding compromised the heating oil tanks still used in many older homes in the area, contaminating the surrounding land. One family that wanted to repair their home is faced with an estimate of \$25,000 just to clean the land, which is making them rethink whether they can financially save their home. In other cases, if FEMA money is used, they may not be able to rebuild in a flood plain, or, if they do, they must build on stilts.

This is Home:

Despite all the stories of devastation, respondents indicated that “this is home” and that they are planning to stay in the area. Where they will live when there was already a shortage of housing, no one knows. As one social service agency employee stated, no one will know the full extent of the homeless problem until cold weather hits and those who are ‘camping out’ come in for help.

Postscript: Authors' Recommendations

Throughout this report, the authors have been careful to describe the housing changes as reported to us by the stakeholders we interviewed. We have remained true to their message while sorting and categorizing their responses so that others could develop a clear and comprehensive picture of the state of housing in Pennsylvania's Marcellus region as possible. In doing so, we have developed our own perspective on the nature of the housing problems in the region and potential solutions to those problems. We have carefully avoided injecting our perspectives into the report because we do not see that as the purpose of the report and we do not claim to be experts on housing policy generally.

Recognizing that we have a broad outlook on the housing issue in the Marcellus region having interviewed a wide range of stakeholders across the state, the research's sponsors at PHFA asked that we append the report with any recommendations we may have as a result of our close observations. All parties agreed that this section should stand separately to maintain the integrity of the reporting from the stakeholder interviews and to emphasize that our recommendations are based on our viewpoint on the report's findings.

With those caveats in mind, we'd like to conclude the report with observations and recommendations on steps that should be considered in response to the housing crisis facing many of the communities where we spent time. To begin, we believe that in large part the marketplace simply needs time to understand and then respond to the housing crisis. The pace of change in the communities of the Marcellus play has been extremely fast; while the first Marcellus wells were fracked in 2004, it was only 2007 or 2008 when natural gas showed up on local leaders' radar and 2009 or 2010 when the average citizen began to feel the effects. At first, many in the Marcellus region felt the phenomenon would soon pass or the changes would be small. For many communities, an understanding of the magnitude and duration of change only dates back nine to twelve months or roughly to the end of 2010 or the beginning of 2011.

Therefore, it should not be a surprise to find that housing developers are just beginning to implement their first round of housing plans. Communities with easy opportunities for housing development (due to the combination of available land or existing properties, available infrastructure, and cooperative local officials, etc.) have been the first to see development action. We expect that new housing development will accelerate and then plateau over the next two to five years in such communities and will serve to absorb much of the demand that has led to housing shortages and dramatically increased rents and sales prices.

That said the marketplace will be more successful in relieving the pressure for housing in some areas better than others. Some communities will not be as attractive to development activity as others even controlling for the high demand for additional housing. One impediment to development is the lack of capacity of local zoning and planning officials in some communities to meet the challenges presented by growth. In many Marcellus communities, the zoning and planning professionals as well as their

respective boards and commissions were blindsided with dramatically increased workloads, both directly related to gas exploration as well as the indirect projects that follow, including housing. In at least some cases, they have not been able to keep pace with the needs of the business community, including housing developers, seeking to profit from gas development. We would recommend that assistance be offered to help such understaffed entities develop expertise needed for this new environment and the organizational capacity to move more quickly than may have once been required of their small offices. Such assistance would help to accelerate the response to the housing crisis in those communities.

In addition, communities may wish to be proactive rather than reactive in dealing with increasing the capacity of local developers to provide new housing. Zoning and planning officials should meet with local builders to encourage development capacity by establishing a working relationship. Local builders may only have created housing on a small scale and may need to know that the municipality will be supportive of more development. Such efforts may also include the development of public-private partnerships as local conditions warrant, especially in terms of the development of affordable housing.

Another impediment to housing development is the lack of capacity in infrastructure systems to absorb new housing. Most often these infrastructure limits involve the availability of municipal water or municipal sewer. Water and sewer authorities have recently invested deeply in new facilities to meet new environmental standards; they are rarely in the position to make new investments in capacity growth. We would recommend working with local water and sewer officials to plan for increased capacity and to identify funding sources to carry out such plans.

Another area where market-based development may fail to address housing needs is senior housing. Whether through incentives or through direct expenditures, the easiest place to start to provide relief to the housing situation is likely through increasing the supply of housing for senior citizens. Senior housing was in high demand prior to Marcellus-driven housing shortages. Indeed, even if natural gas development were to suddenly stop, with Pennsylvania's aging population, quality senior living facilities would still be in high demand. While we are not experts on senior living options, it would seem there is a market for senior living options at a variety of price points both for residents seeking independent as well as assisted living options.

Senior housing may prove to be a useful option for public funds because it does not face nearly the political backlash that faces the development of many other subsidized housing options. Traditional public housing or properties who landlords accept Section 8 vouchers carry a stigma that often leads to NIMBY backlash or flight. Seniors' presence in a community does not usually spawn similar fears. If traffic and infrastructure needs are met, such facilities generally appear to be more acceptable to neighbors.

Expanding senior living options in the Marcellus region alleviates housing pressure across the market place. If seniors have attractive and affordable alternatives to staying in their home, their homes will find their way into the marketplace more quickly and provide housing options for those looking to

purchase. When those families purchase a home, they leave the rental market, serving to relieve pressure there.

There are no easy answers to the issue of the difficulty Section 8 housing voucher holders are having in finding rentals. It would seem a straightforward answer would be to request that the amount of the vouchers be increased. However simply increasing the voucher values to reflect higher fair market rates may result in the unintended consequence of pushing rents even higher. With more money in the system, demand for housing would increase; if the housing supply does not also increase, landlords may just raise rents even higher.

Finally, market forces may fail to assist Pennsylvania's older communities in taking full advantage of the Marcellus opportunity to deal with the problem of an aging and often deteriorating housing stock. The authors personally are advocates of revitalizing old homes, but for many of those moving from places like Oklahoma and Texas, Pennsylvania's older housing is an unattractive option. There are two possible responses leading to revitalization of these older homes and their neighborhoods. First, communities can work to market their older housing stock to gas-employed families native to the state, who may be more comfortable with the idea of owning an older home than someone new to Pennsylvania and who now may have the available income to refurbish one.

Second, private and public efforts can be made to invest in the rehabilitation of older housing stock to update major systems (roof, plumbing, electrical, HVAC), kitchens and bathrooms and general aesthetics to make older homes more attractive to new arrivals. From a public standpoint, such efforts could take the form of incentives targeted to developers or home buyers to rehabilitate.

Traditionally, such incentives were targeted toward low income home buyers. Under current housing conditions nationally, many such families will not qualify for loans. Therefore, programs designed as they once might have been may not see as much use. In addition, such incentives often concentrated low income families in urban setting which led to less than ideal outcomes where communities were not necessarily better off and the families, while now homeowners, did not have a positive support network to help them leverage that homeownership into successful and sustained economic and social progress.

Likely the most effective incentives for rehabilitating older housing would remove or greatly increase income restrictions so that any community with an aging housing stock could seek to attract all possible buyers who would be willing to take on the task of rehabilitation. While many newcomers will prefer to purchase or rent newer housing even with the availability of incentives, a share will find charm in an older home, combined of course with an incentive to make its rehabilitation affordable.

Our final recommendation is relatively broad: engage the natural gas industry. Everywhere we turn, we find public officials, planning professionals, business leaders and average citizens making the mistake of treating the gas industry as a single, unified entity with homogenous needs, including for housing. The industry is incredibly decentralized and those working in the industry have a full-spectrum of housing needs. There is no single catch all solution that will absorb the increase demand for housing facing many communities. Indeed, other than temporary, man-camp housing solutions to meet the temporary

housing needs in locations where drilling and pipeline work will be relatively short-term, it may be that targeting housing solutions specifically to the industry may be a mistake in itself. Instead, the development of new housing should focus on the needs of individuals and the strengths and weaknesses of the community where a particular project might be located. From a policy making standpoint, if public funds are to be allocated, they would probably most effective if as much discretion as possible were left to those closest to the local circumstances, whether that be county or municipal officials, developers or housing consumers.

The authors started the research process not knowing how long the gas industry will be in the area. Prior to the research project casual conversations among community members led to estimates from two to three years to twenty to thirty years. After interviewing people connected with the industry across the state, we now tend to agree with those who say the industry will be here for at least twenty to thirty years.

We also started the project with a concern about over building housing to meet the potentially temporary spike in housing demand created by the gas industry. While unforeseen economic or industry issues could change the decisions made by the exploration and drilling companies, the amount of investment leads us to now believe that the shortage of housing should not be thought of as a temporary need that will be gone in a few years. The companies are here to stay as long as there is product to be taken out of the ground. In addition, it may be that industries that depend on a supply of plentiful, reasonably priced fuel as part of the manufacturing process may be attracted to the area bringing even more jobs and a further need for housing.

However, we do believe that the current demand for housing will not increase at the same rate indefinitely. There will be peaks and valleys in the demand for additional housing that will vary from one community to the next and over time. Therefore, while housing levels will continue to be higher for an indefinite period, the demand slope will eventually level off. When that occurs depends on whether a community is home to regional headquarters and rate of housing development to meet increased housing demand.

Interview Subjects

Developers

Charlie Begley

First Vice President, The Washington County Builders Association

Ron Ciotti

Senior Housing Developer, ACTION Housing Inc.

Al Clapps

Developer, Gentry Development

Michael J. Clementoni

Executive VP, Muncy Homes Inc.

Lori Martin

Development Manager, Heartland Homes

Dennis Phelps

CEO, The Trehab Center Inc.

Greg Simmons

Development Compliance Specialist, ACTION Housing Inc.

Ray Venema

Owner, Susquehanna Builders Inc.

Robert Yoder

Developer, Susquehanna Valley Development Group Inc.

Industry Officials

Ron Baker

O-Tex Pumping LLC.

Jane Clements

Coordinator - Corporate Development, Chesapeake Energy

Brian Grove

Senior Director - Corporate Development, Chesapeake Energy

Mike Mackin

Communications Manager, Range Resources

Mike Narcavage

Manager - Corporate Development, Chesapeake Energy

Tim Pavelcheck
O-Tex Pumping LLC.

Erin Phillips
Housing Supervisor, Stallion Construction

Cameron Simon
Operations Manager, Stallion Construction

Kendall Simon
Office Manager, Stallion Construction

Andy Travis
Manager - Landowner Relations, Chesapeake Energy

Mary Wolf
Government Relations Advisor, Anadarko Petroleum Corporation

Tammy L. Yonkin
Sr. Human Resources Representative, Appalachian Division, Precision Drilling Company

County & Municipal, Elected & Planning Officials

Karen Bennett
Administrator, Greene County Human Services Department

Chris Bova
Deputy Director, Planning and Development, Westmoreland County

Lisa L. Cessna
Executive Director, Planning Commission, Washington County

Daniel Close
Manager, Borough of Troy

Vince DeCario
Supervisor, Derry Township

Robert Getz
County Commissioner, Sullivan County

Janenne Goliash
Legislative Assistant, Office of Senator Gene Yaw

Michael J. Hufnagel
Director, Office of Planning and Development, Sullivan County

Ted Kopas
Commissioner, Westmoreland County

Shawn M. Larson
Treasurer, Jersey Shore Borough

Robbie M. Matesic
Executive Director, Department of Economic Development, Greene County

Walter Reed
Mayor, Hughesville Borough

Rachelle Ricotta
County Community Development Planner, Department of Planning and Development, Lycoming County
Planning Office

Pamela Snyder
Commissioner, Greene County

Ray Stolinas
Planning Director, Bradford County Office of Community Planning & Grants

Jason Theakston
Land Use Planner, Washington County Planning Commission

Sam Thrush
Community Planner, Bradford County Office of Community Planning & Grants

Housing Authority

Stephen K. Hall
Executive Director, Washington County Housing Authority

Walter C. Kaminiski
Deputy Executive Director, Westmoreland County Housing Authority

Ashley Manchine
Housing Authority, Greene County

James McRath
Executive Director, Bradford County Housing Authority

Mark Roinick
Coordinator, Sullivan County Human Services

Beth Turner
Executive Director, Lycoming County Housing Authority

Landlords

Ralph Burchianti

Vice President, Community Bank and Landlord, Greene County

Tony Mussare

Landlord, Lycoming County

Richard Sweigart

Landlord, Sullivan County

Rick Wilson

Landlord, Bradford County

Social Services

Marlene Arnold

Case Manager/Life Skills Specialist, Southwestern Pennsylvania Human Services, Inc.

Linda Ashbaugh

Case manager, Southwestern Pennsylvania Human Services, Inc.

Cassie Blaney

Staff Attorney, North Penn Legal Services

William D. Blevins

Human Services Director/Administrator, Bradford County Human Services

Pamela Hicks

Social Service Director, Salvation Army, Lycoming County

Jennifer Johnson

Housing Services, Washington County

Rosann Pelleschi

Director of Community Building and Funds Distribution, Lycoming County United Way

Elly Smith

Director, Children and Youth Services, Bradford County

Realtors

Raul Azpiazou

President of the Bradford/Sullivan Association for Realtors and Realtor, Century 21 Jackson Real Estate

Bill Bangor

Owner, Bangor Real Estate

Linda Dunkle

Realtor, Kissinger, Bigatel & Brower Real Estate

Keith Harrington
Realtor, Northwood Realty Services

Tina Richlin
Realtor, Robin Real Estate

Mike Richmond
Realtor, Robin Real Estate

Mary Zeitler
President of the West Branch Valley Association of Realtors and Realtor, Fish Real Estate

Group Interviews

Eight Employees
Anadarko, Lycoming County

Six Employees
Chesapeake, Bradford County

Research Team

The research was conducted by Lycoming College's Center for the Study of Community and Economy (CSCE), a public service, applied research organization with a mission to conduct research and provide data analysis and planning on issues related to community and economic development and public policy. The interdisciplinary nature of faculty and staff involved in the Center provides an unbiased and complementary approach to the study of the communities that the Center serves.

The Center is built upon the idea that a growing economy is necessary to maintain a vibrant community and a vibrant community is required for economic growth. In taking an interdisciplinary approach to the study of public opinion, public policy, economic analysis and community development, the Center's primary goal is to improve the region's quality of life as it is defined in the broadest sense.

The Center's mission also extends to providing students with special opportunities to work with faculty in producing original, applied research. As future economic and community leaders, students involved in the Center's activities gain the opportunity to work in a real world laboratory to hone their ability to understand the challenges and opportunities they and their communities face.

The research team was led by the following individuals:

Jonathan Williamson, Ph.D.

Assistant Professor of Political Science
Chair, Department of Political Science
Director, Center for the Study of Community and the Economy
Lycoming College

Bonita M. Kolb, Ph.D.

Associate Professor of Business
Co-Director, Center for the Study of Community and the Economy
Lycoming College

Administrative support was provided by:

Anne M. Landon

Assistant Director, Institute for Management Studies
Lycoming College

Research Questions

Rental Demand

Change in Demand / Adequacy of Supply:

- How has the level of demand for rentals, both apartments and houses, changed since the Marcellus industry began to grow in this area? When did you start to notice this change?
- Aside from timing, do you have specific observations that connect the changes you are seeing to Marcellus Shale?
- How much excess rental housing capacity would you say exists in the area?
 - How does that compare to the years prior to Marcellus?
- How has changing demand affected rents?
- How does the existing rental stock in the area fit with the demand and renters' desires? How does it fall short?
- Do you find there are shortages in particular geographic areas or at different price points?
- Do you anticipate any changes to the above answers in the next year? Two years? What about in the future?
- Are the changes you are seeing likely to be temporary or permanent? What leads you to that conclusion?
- Have you noticed if landlords have a preference of renting to local residents or new gas workers?
- Are new units being developed for specific groups such as gas industry personnel?

Price Points / Desired Features:

- What are the most important criteria that new residents are looking for in rental housing?
- What location and size of apartment is desired?
- What is the cost renters are willing (able) to pay?

Rehabilitation / New Construction:

- What is the age profile of the existing rental stock?
- Does that age profile mesh with what renters are looking for?
- In what condition is older rental stock?

Rental Marketing:

- How are the rental units being marketed and advertised?
- Are marketing campaigns aimed at specific market segments?
- What are the ways that potential renters learn about the availability of units?

Owner Occupied Housing

Change in Demand / Adequacy of Supply:

- How much excess owner-occupied housing capacity exists in the area?
 - Has that changed since the Marcellus industry has come to the area?
 - Has there been a change in demand for owner-occupied homes?
- Aside from timing, do you have specific observations that connect the changes you are seeing to Marcellus Shale?
- How does the existing housing stock in the area fit with the demand and desired criteria? How does it fall short?
- Has there been a change in house prices in the past year?
- Are the changes you are seeing likely to be temporary or permanent? What leads you to that conclusion?
- To what degree are realtors being used for home sales and purchases?
 - Has that pattern changes in the last few years?
 - Are realtors used differently by different market segments (Marcellus-driven and traditional local)
- What is the current inventory of bank-owned properties (REO)?
 - How has that changed with the growth of Marcellus in the area?
- Has foreclosure increased or decreased in the last year? Two years?

Price Points / Desired Features:

- What are the most important criteria that new residents are looking for in owner-occupied housing?
- Has the style or size of the house sought changed?
- Do residents new to the area want rural, suburban or urban style housing?
- What price points are new residents most interested in when purchasing a home?

Rehabilitation / New Construction:

- What is the age profile of existing owner-occupied homes in the area?
- Does that age profile mesh well with people looking to purchase homes in the area?
- How much demand is there for new construction?
- Would they choose older homes if they were already rehabilitated?

Rental Affordability/Availability

Rents / Home Prices:

- Have prices changed for all properties or for specific types of properties?
- Are the housing needs of existing renters and home buyers being met? Where does it fall short?
 - Is that true of those households with low to moderate incomes?

- How have people with disabilities and older adults been affected?
- Are there different effects for households at different income levels?

Displacement:

- What has happened to renters who cannot afford raised rents?
 - Are they finding housing?
 - Is there a hidden homelessness problem?
 - Are they being driven into substandard housing?
 - Are they leaving the area?
 - If so, what is the effect?
- How much of the changes are related to Marcellus Shale and how much to other causes?

Housing Agency / Social Service Response:

- What challenges are housing and social services agencies facing related to housing given the growth of the Marcellus Shale industry?
- Is there an increased demand for subsidized housing?
- How have housing and social service agencies responded?
- Are their responses adequate to meet the need?
- Do they have funding available to meet the need?

Development Capacity

Non-profit Capacity:

- Do social service agencies have the resources to provide for the needs of low to moderate income households?
- Do they have plans to do so?
 - What do those plans entail?
 - Section 8?
 - Public Housing?
 - Private market units?
 - Other forms of rent subsidy or development cost subsidy?

For-Profit Capacity:

- What is the nature of the existing developer community?
 - What was their focus prior to Marcellus?
 - Have they begun to turn their attention towards Marcellus-created opportunities?
 - What is the strength of the existing developer community? What is its weakness?
- Are developers moving into the area to create more housing?

- What plans are currently in progress?
- Are there barriers to construction/permanent financing for projects?
- Are there issues related to zoning or land use that are affecting development?
 - What is the availability of suitable sites for rental and home ownership development?
- What styles/types of housing are developers planning to build?
- Have developers been active in rehabilitating existing housing?
- Is the existing construction workforce adequate for meeting the demand for development projects?
 - Are there barriers to expanding the workforce as needed to meet the demand?
- Have construction costs increased or decreased?
 - How has that change affected Marcellus-related development plans?

Would you be willing to refer/introduce us to other individuals/organizations that might be interested in talking with us for this study?