MARCELLUS NATURAL GAS DEVELOPMENT'S EFFECT ON HOUSING IN PENNSYLVANIA: 2015 UPDATE

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

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Executive Summary

In 2011 the Center for the Study of Community and the Economy (CSCE) at Lycoming College was commissioned by the Pennsylvania Housing Finance Agency (PHFA) to research the effects that the Marcellus Shale natural gas industry had on housing across the Commonwealth of Pennsylvania. In 2015 PHFA commissioned CSCE to revisit the issue. The new research consisted of over 50 interviews of local elected officials, county and municipal planners, housing authority officials, social service agency representatives, developers, realtors, and gas company representatives on the following issues: 1) rental housing affordability and availability, 2) owner-occupied housing, and 3) related development activity. The interviews were conducted in Bradford, Lycoming, Greene, Susquehanna, Washington, and Westmoreland Counties. In addition secondary housing data from the Census and the U.S. Department of Housing and Urban Development, amongst others was analyzed. Finally, information was gathered on the use of local Act 13 Impact Fee funds on housing.

The most critical finding of the prior 2011 study was the interconnectedness of the rental housing market. The ramp up of Marcellus development caused a shortage of rental housing units, with low income individuals and families being most affected. As housing became in short supply, prices rose. The better quality apartments were taken by gas employees at high rents. Everyone else had to settle for living in lower quality apartments with higher rents, causing a housing crisis that forced those in the lowest quality housing out of the rental market into couch surfing or other forms of homelessness.

Revisiting the issue in 2015 there is a continued lack of availability in affordable rentals, though the situation is no longer in crisis, partly because of a lessening of drilling activity and partly because of an ability to adapt. While rents had doubled or tripled during the Marcellus build up they have fallen by a much smaller percentage. Although rents have leveled off in all communities and even declined somewhat in many areas, they are not back to pre-Marcellus levels. Low-income renters who do not have access to subsidized housing are often still forced to rent overpriced units. Many of these units have declined in quality due to renting to gas workers so that they are not acceptable to be included in the HUD housing voucher program. One area, senior housing, did see additional development due to tax incentives and the packaging of government funding.

While in 2011 it was thought that there would be a shortage of owner-occupied housing, a broad-based shortage did not develop as anticipated. The 2015 research found that while the situation of price and availability differs between counties, a gap exists in the access to mid-priced or ‘starter’ homes. Development costs price new construction out of reach for many buyers in this segment. Older existing homes are available but are not of interest to many buyers because they lack the skill, money, or time for needed renovations. Even if of interest, because of condition issues, such older homes are difficult to finance. This lack of these so-called ‘starter’ homes has helped to keep demand for rental housing high.

Prior to the arrival of natural gas development, the lack of population growth in much of the Marcellus region resulted in limited housing development and limited existing for-profit and not-for-profit development capacity. By 2015, with considerable geographic variation, local developers have expanded their activity somewhat and a few outside developers have entered local markets. While there has been some development across housing market segments, it has been uneven compared to need. While development activity in the affordable rental segment was facilitated by the tax credit and PHARE programs administered by the state, the use of local Act 13 funds for housing was restricted to a few select areas.

Recommendation Summary

Based on the analysis conducted here, the following recommendations are proposed: Existing programs that package together tax-credits, PHARE funds, local Act 13 funds, and private dollars to develop affordable housing for low income residents and seniors should be continued. A second recommendation would be to work in communities with significant housing impacts to help local officials to better understand how existing programs can be combined and utilized to increase the supply of affordable housing.

Because a consistent theme across the counties was the need for new construction of owner-occupied homes at price points available to young professionals, another recommendation would be to develop programs that would enable developers to make available new building sites with reduced development costs that would need to be passed on to the consumer.

An additional theme was that the existing housing stock did not meet the needs of prospective buyers because of the condition typical of older homes on the market. The lack of financing available to rehabilitate older homes that the purchasers could otherwise afford also prevented renters from becoming owners. Something should be done to mitigate the risks of unknown surprises common to rehabilitation projects; those risks apply to both the owner and to the financing entity. Therefore, a recommendation is to develop programs that would incentivize buyers and creditors to take on rehabilitation projects.

Introduction

In 2011 the Pennsylvania Housing Finance Agency (PHFA) commissioned the Center for the Study of Community and the Economy (CSCE) at Lycoming College to research the effects of the Marcellus Shale natural gas industry, broadly defined, 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.

Serving to update and expand on the 2011 study, the research presented here is based on returning to interview more than 50 stakeholders in the six counties (Bradford, Greene, Lycoming, Susquehanna (which was substituted in this study for Sullivan), Washington, and Westmoreland) to determine how changes in the natural gas industry and responses to the housing impacts have evolved since 2011. In addition, it analyzes the available secondary housing data from the Census and the U.S. Department of Housing and Urban Development, among others, to understand how the housing picture has changed with the evolution of the unconventional natural gas industry in Pennsylvania. Finally, it explores the use of natural gas impact fee funds made available under Pennsylvania's Act 13 of 2012 to local governments.

The state of unconventional natural gas development in Pennsylvania is ever changing. At the time of the 2011 study, the industry was still building to its peak level of development activity. Since then, largely due to low natural gas prices, the scale of activity has diminished, more in some areas than in others. The evidence suggests that Pennsylvania should expect the industry to regularly experience surges and declines in activity, and in related housing effects, for decades to come. In 2011, it was recommended that communities focus their housing attention on overcoming challenges that preexisted the gas industry, but were exacerbated by it, so as to not fall into the trap of overbuilding for changing gas industry housing needs. It is anticipated that the current decline in activity will reverse course in the coming one to three years, and another surge will increase housing impacts. Because the industry will rely more heavily on a local workforce than it did in the first surge and because initial steps have been completed to respond to the first surges' housing impact, it is anticipated that pressure on the housing market will be once again felt, but to a lesser degree. Therefore, continued planning should occur to alleviate the challenges that those surges in gas activity exacerbate.

As the following pages indicate, the relatively short passage of time over the last few years, along with the recent declines in activity, have led to relatively limited housing responses by the public and private sectors. When housing has been developed, it has come largely in one of three forms: higher end apartments and owner-occupied homes, tax-credit and impact fee-funded affordable rental housing, especially for seniors, and hotels, largely focused to the gas market.

This report concludes that the first period of surge and decline in gas activity has revealed several gaps in existing strategies to deal with housing impacts. Among the most important observations is that economic and regulatory forces have limited the development of moderately-priced owner-occupied homes and the rehabilitation of similarly valued older homes. This gap creates additional pressures on the rental housing market during surges in gas development because market-rate renters have fewer options to become home-owners at prices they can afford. With an enlarged market-rate renter population helping to drive up rents, the lower income renters suffer.

Varying Marcellus Natural Gas Development

The development of unconventional natural gas follows the Marcellus Shale geographic formation. Within that formation, development has been unevenly distributed. Table 1 provides a classification for each county in the Commonwealth based on natural gas development activity. The analysis of housing impacts presented in the report will generally compare those counties with moderate to high levels of unconventional gas development with those with low levels to no gas development activity. These comparisons will help the reader to distinguish between those housing changes occurring throughout Pennsylvania from those primarily occurring in the areas with development activity, and thus potential resulting from that activity.

Table 1: Classification of Counties by Marcellus Activity Level

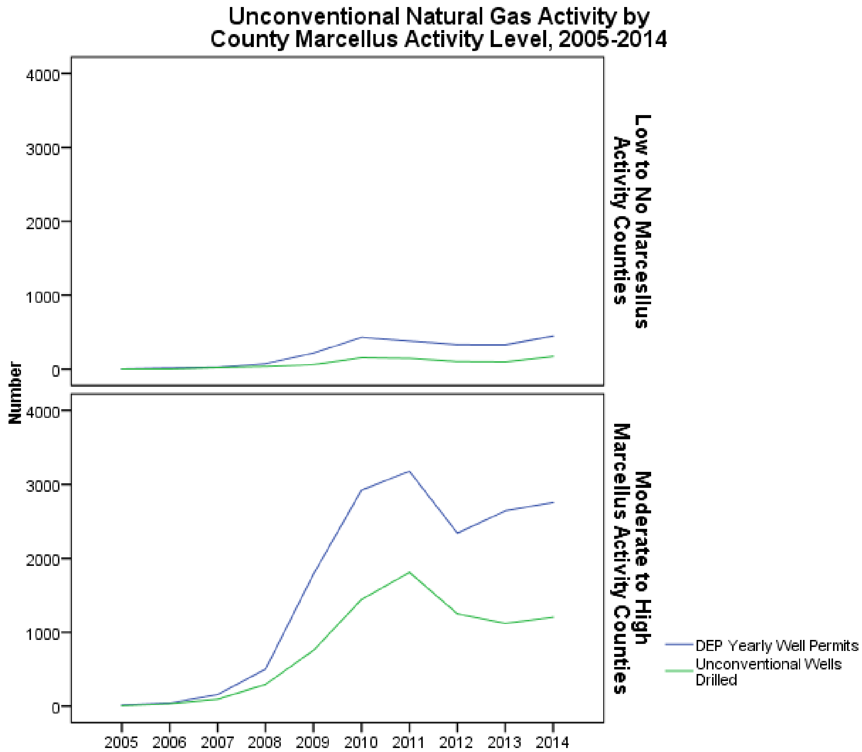
High Marcellus Activity Counties	Greater than 750 unconventional wells drilled
Moderate Marcellus Activity Counties	Between 100 and 750 unconventional wells drilled
Low Marcellus Activity Counties	Between 10 and 100 unconventional wells drilled
Token Marcellus Activity Counties	Less than 10 unconventional wells drilled and receiving Act 13 revenue
Non-Marcellus Counties	Less than 10 unconventional wells drilled and not receiving Act 13 revenue

High Marcellus Activity Counties	Moderate Marcellus Activity Counties	Low Marcellus Activity Counties	Minimal Marcellus Activity Counties	Non-Marcellus Counties	
Bradford	Butler	Elk	Cambria	Adams	Luzerne
Washington	Fayette	McKean	Blair	Berks	Mifflin
Susquehanna	**Westmoreland**	Potter	Venango	Bucks	Monroe
Lycoming	Wyoming	Lawrence	Warren	Carbon	Montgomery
Greene	Armstrong	Allegheny	Columbia	Chester	Montour
Tioga	Clearfield	Centre	Crawford	Cumberland	Northampton
	Sullivan	Jefferson	Lackawanna	Dauphin	Northumberland
	Clinton	Indiana	Bedford	Delaware	Perry
		Beaver	Huntingdon	Erie	Philadelphia
		Cameron		Franklin	Pike
		Mercer		Fulton	Schuylkill
		Somerset		Juniata	Snyder
		Clarion		Lancaster	Union
		Forest		Lebanon	Wayne
				Lehigh	York

In **bold**: Qualitative interviews conducted in these counties.

Figure 1 provides a picture of how Marcellus development occurred over time in areas of moderate to high activity compared to those areas with little to no activity. In active counties, development generally began to accelerate around 2008 through 2011. Due largely to declining prices for natural gas, development activity directly related to well drilling began to decline somewhat around 2012.

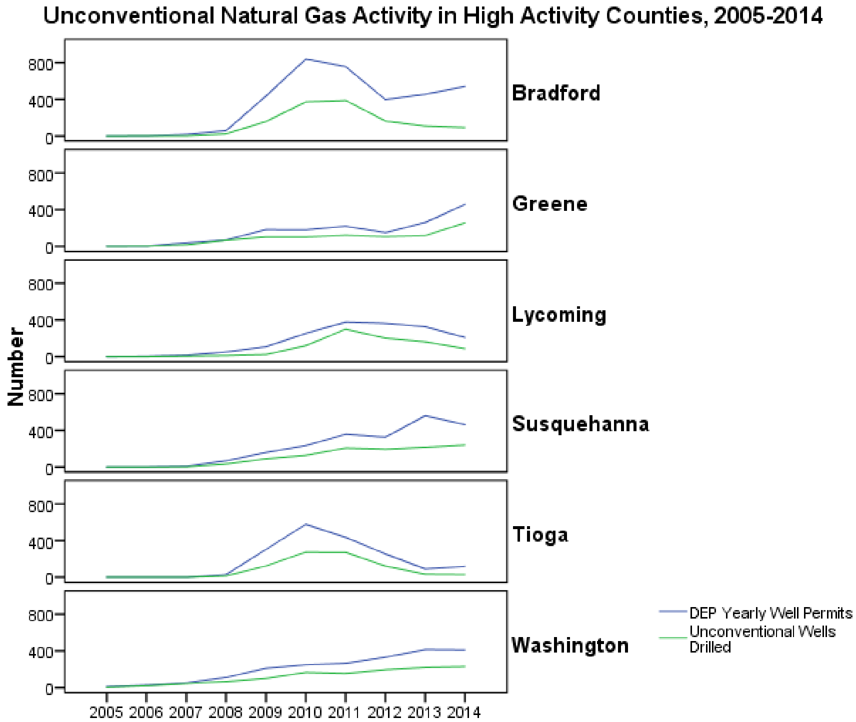
Figure 1



Source: Created by the authors using data from the Pennsylvania Department of Environmental Protection (DEP)

The timing of drilling activity in counties seeing the most Marcellus development activity varied somewhat as can be seen in Figure 2. The active counties in the northern part of the state, Bradford, Susquehanna, and Lycoming Counties, by 2014 saw a decline in drilling activity that continued into 2015. The highly active counties in the southwest, Greene and Washington Counties, had not seen significantly declining activity by 2014. The likely causes of the different patterns include the presence of wet gas and more extensive pipeline infrastructure in the southwest versus dry gas and still developing pipeline infrastructure in the north. The case of Westmoreland provides a needed contrast, especially in the qualitative analysis, both in terms of having a more moderate level of gas development and also greater levels of prior housing development due to its proximity to Pittsburgh.

Figure 2



Source: Created by the authors using data from the Pennsylvania Department of Environmental Protection (DEP)

Rental Housing Demand

The issue of the availability and cost of rental housing was a crisis situation in four of the six counties when the initial 2011 housing study was conducted. At that time Greene, Bradford, Lycoming and Sullivan Counties were 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. This resulted in renters, especially those at the economic margins, having to accept substandard housing options, and a growing, but largely hidden, level of homelessness. Of the counties then studied, the only one not seeing significant Marcellus-driven housing impacts for low income residents was Westmoreland. All other counties stated that lack of affordable rentals was either a major issue or a crisis situation.

Revisiting the issue in 2015 found that, due to lessening drilling activity, adaptation by housing stakeholders, and a limited increase in new housing supply, rental prices have leveled off in most communities and even declined somewhat in a few. They have not returned to pre-Marcellus levels. With the passage of time, according to those interviewed, a few low-income renters have moved out to neighboring counties that have not been affected by drilling. Low-income renters who have stayed in affected communities have learned that paying their rent is paramount so they are not evicted; however they now turn to social services more often for increased help with their other bills. Other low-income renters are in housing that—while overpriced—cannot pass inspection to be included in the HUD housing voucher program.

Rental Property Issues Due to Marcellus Development

There were three issues that faced counties in 2011 due to increased economic development and population growth caused by Marcellus development. First increased demand for housing exceeded the number of available rental housing units. Second the quality of the available rental housing units was unacceptable to renters. The third issue was that the higher cost of rentals were making apartments unaffordable to a growing share of those seeking to rent.

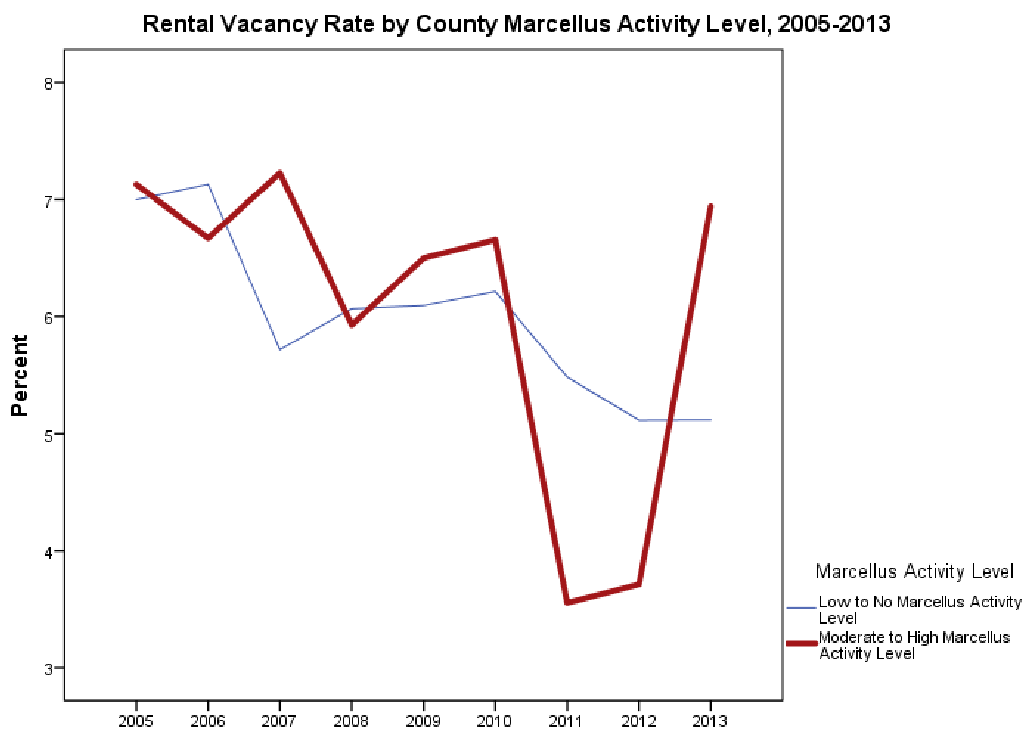
There have been some significant changes since 2011. In most of the larger communities there is now sufficient availability of rental housing units to meet demand for middle income and higher renters. These communities have seen an increase in upscale rental housing units with amenities. These units, aimed at people employed at the professional level, did not exist in many communities in the past.

However there is still an issue of lack of availability for low income renters. In addition, low income renters, even when they find apartments, still face the issue of poor quality rentals; landlords did not typically reinvest the increased income coming from higher rents into improving the quality of these lower-end units. Finally while the price of rentals has declined since the peak of gas activity, the prices are still higher than pre-Marcellus.

Shortage of Rental Housing Units

In some counties the shortage of rental housing units had other causes than Marcellus development. The nationwide housing crisis of 2008 resulted in people having homes foreclosed and, as a result, they needed to move into rental properties. Since that time it has been more difficult for people to get mortgages which means more people remain in the rental market. In addition the high cost of starter homes and increased down payment requirements means people are renting longer before a home purchase is possible. Some counties experienced other economic development that affected the number of rental housing units needed. For example, Westmoreland County's rental market was affected by the fact that colleges in the area were expanding graduate and doctoral programs and these adult students were renting apartments.

Figure 3



Source: Created by the authors using data from the U.S. Census Bureau's American Community Survey (ACS)

The shortage in available rental housing units that coincided with the growth of Marcellus development is reflected in the data on rental vacancy rates. As can be seen in Figure 3, rental vacancy rates declined in counties with significant Marcellus development activity[1] both absolutely and relative to other counties through 2012. With natural gas development beginning to decline in 2013, vacancy rates rose sharply.

Quality of Rentals Housing Units

The state of housing available to low income renters has worsened overall. Gas employees, often young men working long hours at dirty, physically-demanding jobs, were hard on rental property; the level of wear and tear was higher than typically seen by landlords according to those interviewed. Many of the available rentals in rural areas are in older buildings or homes were quality was already an issue. According to those interviewed, many landlords did not use the increased rent revenue to repair or improve their premises.

Based on information from those interviewed, if units were rented through the HUD program they would be required to be inspected and pass at a specified level of quality. When renting to gas employees, these inspections were no longer necessary. With gas activity slowing, some landlords have wanted to again participate in the HUD housing program. However, their units are in too bad a condition to be approved for rental to people with vouchers.

Instead of improving their property to meet the standards, some landlords rent to low-income people who do not have vouchers. These individuals and families double up in units so they can afford the rent. However the housing is in such bad condition, that if social service agencies become aware that families

[1] Analysis of changes in housing patterns in counties experiencing natural gas development is complicated because the Census Bureau's American Community Survey data are based on sample estimates. ACS data are released as either one-year, three-year, or five-year estimates. The advantage of one-year estimates in the current study is that dramatic changes such as those occurring in the Marcellus region will be reflected immediately. One disadvantage is that the sample sizes in rural counties are quite small, such that the Census does not release one-year sample estimates for counties with a population of less than 65,000. Of the fourteen counties seeing the moderate to high levels of Marcellus development, seven are not included in the one year estimates. In addition, because of small sample size, one-year estimates in counties near the threshold size may see more volatility year-to-year in their data due to sampling error and not a result of actual changes in the underlying housing conditions.

Three-year estimates are available for counties as small as 20,000 people. However, the primary disadvantage of the three-year estimates is that they smooth out dramatic changes that may occur in a county's housing circumstances. For example, if a county's vacancy rates were to dramatically decline in 2010, that drop would not be immediately apparent from the 2010 three-year data, because that data includes samples from 2008 and 2009. Only two years later with the 2012 three-year estimates with the pre-drop vacancy rates phased out would the drop become apparent. Five-year estimates only exacerbate this issue.

Finally, the Census Bureau began conducting the ACS (replacing the decennial Census' long form) in 2005, therefore the three-year estimates only date to 2007 and five-year estimates only date to 2009. Thus, these estimates are also disadvantaged by the lack of sufficient pre-Marcellus baseline data.

Faced with the choice of masking the rapid rate of change by using three or five year data or of excluding small population counties from the analysis, the choice was made to demonstrate the rapid rate of change and sacrifice analysis of the possibility that the housing impact outcomes may differ across counties seeing gas development based on population variances.

are living in the units, the children would be at risk of being removed from the homes. In Lycoming County, at least one community has stepped up codes enforcement which has had split outcomes: some properties have been rehabilitated to eliminate codes deficiencies and others have been closed, displacing their low-income occupants with few remaining housing options.

An incentive program was established in Bradford County that would provide money for renovations in exchange for lowered rents. Landlords did not respond to the incentive because, according to interviews, the application was cumbersome. Others expressed the view that landlords didn't want to commit to low rents for the required seven years.

Prices of Rental Housing Units

All of the studied counties had fairly stable rental prices prior to Marcellus development. All then experienced an increase in rental prices at the same time that Marcellus development was ramping up. The increases ranged from 50 percent to 300 percent depending on the amount of available rentals and the level of gas development activity. With lessening demand, rental prices have fallen. The declines range from 25 percent in some counties to 50 percent in others. None of the counties have returned to pre-Marcellus rent levels, according to those interviewed.

When asked why rents have not come down more, the consensus of those interviewed is that the landlords will leave units empty rather than rent at lower prices as they don't want to miss the opportunity of the next gas industry activity upswing. Having gotten use to higher revenue, they are reluctant to sign long term leases with low rents.

The data on gross rents confirms the impressions of those interviewed both in 2011 and in 2015. As Table 2 demonstrates, rents increased in absolute and relative terms in the counties seeing significant Marcellus gas development. In the table, one can see that, while generally rents in high gas development counties had been lower than other counties, the gap has closed considerably. By 2013, rents exceeding $750 made up more than a third of all gross rents in those highly active counties.

Table 2: Distribution of Gross Rents of Occupied Units by County Marcellus Activity Level, 2005 & 2013

		Less than $200	$200 to 299	$300 to 499	$500 to 749	$750 to 999	$1,000 to 1,499	$1,500 or more
Low to No Marcellus Activity Level	2005	4.2%	4.0%	16.9%	35.0%	23.7%	12.4%	3.9%
	2013	1.7%	3.9%	8.1%	23.8%	27.4%	25.1%	9.9%
Moderate to High Marcellus Activity Level	2005	7.8%	7.6%	34.2%	35.8%	9.7%	3.1%	1.8%
	2013	2.6%	7.0%	17.6%	37.9%	21.7%	9.7%	3.6%

Source: Created by the authors using data from the U.S. Census Bureau's American Community Survey (ACS)

Because the growth of the natural gas industry in affected counties also saw some resident's incomes increase, it is possible that the growing rents seen were matched with equivalent or larger growth in incomes, such that the burden of higher rents did not affect renters' real purchasing power. Data presented in Table 3 considers the rent burden, comparing the higher activity counties in 2013 to other counties and against the same counties in 2005. The share of the rental population in more highly active counties paying 30 percent and higher of their household income towards rent grew from 40.2 percent in 2005 to 43.6 percent in 2013; that growth, however, matched similar growth in high levels of rent burden in counties without heavy drilling. Further investigation would be necessary to determine if the cause of the similar patterns were the same in each county type—for example, the effects of the national recession—or if different factors are in play more so in one area than in another.

Table 3: Gross Rents as a Percentage of Household Income (GRAPI) by County Marcellus Activity Level, 2005 & 2013

		Less than 15%	15 to 19.9%	20 to 24.9%	25 to 29.9%	30 to 34.9%	35% or more
Low to No Marcellus Activity Level	2005	14.2%	13.6%	12.5%	11.9%	8.4%	39.4%
	2013	12.5%	12.5%	12.0%	11.8%	8.9%	42.4%
Moderate to High Marcellus Activity Level	2005	18.4%	14.3%	14.0%	13.1%	7.7%	32.5%
	2013	18.0%	14.0%	12.4%	12.0%	9.0%	34.6%

Source: Created by the authors using data from the U.S. Census Bureau's American Community Survey (ACS)

Factors that Affect Adequacy of Supply, Quality and Prices

Both in 2011 and 2015 it was found that the availability of a sufficient number of rental housing units of good quality and at affordable prices is dependent upon two factors. First, the stage of the development of the gas industry in an area has an effect because gas employees arrive in waves, each wave having a distinctive housing need. Second, the state of the rental housing prior to the growth of Marcellus gas development shaped the ability of a particular county to absorb increased demand. For example, in counties where the population was large and included a stock of newer housing, the effect of the Marcellus development was less noticeable.

Stage of Marcellus Development

The issue of employment waves continues to affect the adequacy of supply. When Marcellus development surged, there was not a resident workforce skilled in the industry. As a result, workers with the necessary skills to develop the needed infrastructure were brought to the area. These employees have gradually been replaced with local hires. The need to bring in workers from other areas remains for some skilled workers, but the industry prefers to hire locally whenever possible. As a result, the percentage of out of state gas employees that need to find new housing has declined sharply.

Secondly, the energy industry has always gone through cyclical periods of development. When energy prices are high, companies actively seek out new sources of supply to earn additional revenue. As they bring more supply to market, prices will decrease and the energy companies will cut production until increased usage of energy again drives up prices. Due to low gas prices, among other issues, the industry is currently slowing new well development in most areas. This has lessened the pressure on rental housing leading to a decline in rents, but rarely to where they were pre-Marcellus.

State of Housing Rentals before Marcellus Development

The issue of a lack of adequate housing pre-Marcellus, which was exacerbated by Marcellus development, continues to affect Green, Bradford, Lycoming, and Susquehanna Counties. In Washington County, the pre-existing availability of rental housing and its ongoing development has meant the impacts created by Marcellus development have been largely absorbed.

Population Groups Affected by Affordable Housing Shortage

Both in 2011 and 2015 it was found that populations most affected by the shortage of affordable housing included low income individuals and families. In addition, senior citizens that would have liked to downsize and move into an apartment—because upkeep on the family home became more difficult—found limited options. The disabled, of which there are a growing number, also needed to compete for the limited affordable housing units. Finally those most affected became homeless.

Low Income Housing

Low income renters continue to be hit the hardest by Marcellus development. At the start of the activity many low income renters faced eviction and, if they couldn't find an affordable new place to rent, homelessness. Because housing options were limited in their communities, when demand for rental housing drove up prices, they had nowhere else to go. By 2015 more rental housing units are available to low income renters, as some landlords are no longer renting to gas employees, however, most low income renters are still worse off than pre-Marcellus as many are renting properties that are below standard quality and at relatively high rents because they have no other choices.

Section 8 vouchers proved to be inadequate to meet the needs of low income renters at the peak of gas development. An analysis of HUD's Fair Market Rents (FMR) across levels of Marcellus development reveals that while rents are generally higher in the parts of the state without gas development, the pattern of rent increases over time is largely the same in areas with drilling activity as in other areas. These highly correlated increases in FMRs across the state occurred despite the evidence, qualitative and quantitative, of dramatically increasing rents in areas with significant gas development.

The disconnect between FMRs and real rents is likely the result of the methods by which FMR's are calculated. FMRs, in part, are calculated on the basis of 5-year estimates from the ACS and adjusted by applying a regional or local Consumer Price Index (CPI).[2] The net effect is that FMRs are likely to smooth out dramatic, real world changes that may occur because the method of calculation assumes some level of stability across time and space. Hence, FMRs during the peak levels of housing impacts resulting from

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[2] For more details on the methods used in FMR calculation, visit www.huduser.gov/portal/datasets/fmr/fmrs/FY2015_code/2015summary.odn

gas development did not keep pace with conditions on the ground, creating additional challenges for housing authorities seeking to help families with vouchers that did not reflect real-time market rents.

In addition, landlords pulled out of the voucher program which meant there were fewer units available even if clients had a voucher. This was a problem not just for the low income recipients applying for vouchers but also for the social services agencies administering the program. The success for an agency depends on their use of vouchers. If the vouchers are not used, the agencies' budget for the next year is cut.

For example, in Lycoming County if people who couldn't find a rental within thirty days at a price where they could use their voucher, the voucher went on to the next family. The housing authority was no longer able to give a family an extension if they couldn't find an apartment in thirty days because of the risk to their budget.

Another issue arises from the example of Susquehanna County. When people there were unable to use HUD Section 8 vouchers, officials asked for a fair market rent increase to pay 125% rather than the standard 110% request. They received approval but that meant they depleted their budget helping fewer families because program budgets did not increase in response.

In 2015, most counties report clients' ability to use vouchers has improved. They also generally report that while the wait to receive a voucher is shorter, there is still a substantial wait and wait lists are often closed to new applicants.

The other traditional strategy for providing housing solutions to low-income residents—public housing—also saw waiting lists lengthen and close in response to increased housing pressure for low income residents during the growth of gas development. The recent reduction in housing pressure has not, however, led to excess capacity in public housing. Housing authorities were not able to increase the supply of public housing units both because of budget constraints and restrictions in federal law. With the supply of public housing constant, officials continue to see significant waiting lists for existing units.

For low income renters without access to a voucher or public housing, the availability of rentals has also increased, but units are still priced higher than they can afford, and as mentioned, are of low quality; however, they will agree to rent because they are desperate. If they cannot double up to share the cost of rent, they often find they can only afford to pay the rent for two or three months and then get evicted. The resulting bad credit record then makes it impossible to find a new place to rent.

Therefore, finding housing is only one part of the solution. Some of those interviewed expressed that there is also a need to teach many low income renters how to be good tenants. They argue that too many low income renters lack the skills to successfully budget their money and that the key to the needed change was to teach clients this skill.

Crisis Housing for the Homeless

The availability of housing to be used in crisis situations has improved. In 2011, few communities had dedicated homeless facilities, and there were no hotel or motel rooms available for temporary placement for those in need of emergency housing. In crisis situations when people had nowhere to live, social service agencies had no option except to send those in need out of the county. Now, because additional hotels have been built there are empty rooms available for crisis housing, however, hotel room rates are more expensive than what was paid pre-Marcellus. For example, in Bradford County families can now be put in hotels for emergency housing, but the room rate is $138 a night, where before Marcellus it was $50 to $60 a night.

In 2015, because housing is no longer in a crisis shortage situation, the number of evictions of low income renters has dropped to pre-Marcellus levels resulting in less homelessness according to those interviewed. Homelessness data to confirm these impressions is difficult to gather however, especially in rural areas where the homeless do not congregate as they might in an urban setting. The standard method to measure homelessness is the point-in-time survey, which even when done with adequate resources can result in highly variable results. Generally, the count is held in winter, further affecting accuracy. In the northern counties, one cannot survive outside during the winter, so friends and family will take people in. However once the weather becomes warmer, they are asked to leave. They will then find temporary shelter, live in campgrounds, or are homeless.

That being said, the point-in-time estimates conducted by Pennsylvania’s Continuum of Care (CoC) network provide the most complete and accurate results available. While the data is dated, as it is only available up to 2010, it should be noted that it reports an increase in demand for homelessness services at a time when the number of beds to meet their various housing needs were not growing, and in some cases, declining.

Senior Housing

In the 2011 study it was found that a lack of senior housing can affect the entire housing market. If seniors are unable to move out of their homes and into senior housing options, their homes are unavailable for possible resale to alleviate housing pressure in other housing market sectors. In 2015 it was found that senior housing has benefited most from PHARE and local Act 13 funding with development of senior housing projects underway or completed in several of the counties where interviews were conducted. The companies that specialize in tax subsidized housing have taken advantage of the opportunity to use these funding sources to increase the supply of housing available to seniors. However proposed senior housing projects can be delayed or scrapped when faced with one or more obstacles. For example, one project in Lycoming County was delayed and another was abandoned when each was not approved to receive tax credits. In Washington County, a senior housing project failed when local officials would not approve a permit. The housing authority could have conducted a legal battle but that would have cost money they did not have.

Housing for Persons with Disabilities

Some of the same issues that face seniors also face those with disabilities. While more housing has become available, both seniors and the disabled are eligible for the limited number of new units coming on line. There are a growing number of disabled individuals eligible for housing benefits, paralleling the growing number of seniors and causing a continuing increase in demand for housing to meet their needs.

Landlord Response

In 2011 it was found that landlords responded to the increased demand for rental property by raising rents. A few landlords did not raise rents and stayed with current renters, but these were the exception. Many landlords did not renew leases or even evicted current renters so that they could raise the rent and market their units to gas industry employees. Some landlords responded by fixing up current rentals and rehabbing buildings to create more rental housing units of the higher quality demanded by professional level gas employees.

Renting to Locals

In 2015 it was found that more landlords have returned to renting to local residents. One of the reasons some landlords expressed for continuing to rent to local residents even during peak housing demand was a desire to not displace their friends and neighbors. This happened more in smaller communities where landlords and tenants knew each other. Some landlords have no interest in renting to gas employees if the workers are looking for short term (three to six month) leases. Gas companies had been doing long term rentals for multiple units that they then made available to these employees. This now rarely takes place. Those interviewed also pointed to the increased wear and tear on the properties that generally occurs when renting to gas employees as a reason to only rent to locals.

Renting to Gas Employees

The 2011 study found that the many gas employees relocating to the area were in need of housing in areas with few available units. Many landlords decided to rent their units to these gas employees at high prices so as to make money while the industry ramped-up. While existing units were marketed to gas employees there were few traditional apartments developed specifically for these workers.

In 2015 it was found that almost all gas employees are now local hires. Landlords are now faced with declining rental housing demand from gas workers. However, rather than rent units at lower prices to local residents, those interviewed, indicated that many landlords are keeping units vacant.[3] They may be doing so as not to miss any upturn in prices by being tied into a long-term lease at a lower price. According to those interviewed many landlords only own a few units and used the increased revenue to pay off their mortgages. Since they now have little costs to maintaining the property with only taxes and insurance to pay, they can afford, at least temporarily, to wait for higher rental prices to return.

Rehabbing Properties

Those interviewed consistently reported that those landlords who had not previously invested in improving their properties did not start to do so because of increased rental income. There was no reason to invest money in properties that were being rented to gas employees as they were forced to rent whatever was available. In addition, many of the rental housing units in rural communities are in older homes. It does not make economic sense for landlords to invest in improving these properties because the investment cannot be recouped through a higher sales value on the home.

[3] The data included in Figure 3 suggest a growing vacancy rate in rental housing in the most recently available year—2013.

Even if the landlord is willing to do so, one challenge in rehabilitating properties is the rising cost of labor. The ratio contractors previously used to calculate costs was that labor would be one-third of the expense and materials would be two-thirds. Now, with the increased labor costs it is fifty-fifty with the overall cost even higher, as materials have also gone up in price.

In limited circumstances money was invested to rehabilitate older buildings in downtown areas to create upscale apartments. For example, because a number of companies located regional headquarters in Lycoming County, downtown Williamsport needed housing for professional staff and saw such rehabilitation[4]. With the lessening of demand from gas employees these units are now rented to professionals in other industries. While the rents have been lowered, the initial high rent repaid the developer for the cost of the amenities that were added during rehabilitation of the property. This type of unit is also of interest to both young professionals and retirees, an option unavailable to these demographics prior to Marcellus.

In communities where the rehabbing of older buildings into higher end rental housing units occurred, those units served as a catalyst for downtown rehabilitation and resulted in reinvigoration of community activity resulting from the increased number of residents living downtown. In small towns, such as Troy, and larger towns, such as Williamsport, people started to enjoy going out to eat and other activities more than in the past. This could have resulted from a higher income, more opportunities to spend money, or both. Those interviewed credited Marcellus development for increased economic activity that has continued even after the energy industry slowdown.

Incentivizing Landlords to Rehab

Previously social service efforts were focused on providing short term assistance to prevent people from becoming homeless and helping those who had lost their rental housing units. As the situation has stabilized, in 2015 it was found that more effort is being placed on incentivizing landlords to rehab their properties.

For example, Greene County now has a program using PHARE funds to provide funding to landlords to improve properties. Only landlords with a good working relationship with HUD can apply to use the program. Landlords get $7,500 that they can use to make improvements to a unit. They also need to invest their own money as in almost all cases the renovations will be more costly. In return for receiving the funding they commit to renting the improved units to renters with vouchers. Two landlords with one unit each are now using the funds with two more landlords currently applying. This program was designed to encourage landlords to buy out housing currently owned by other landlords who have no interest in making improvements. As a result, housing stock in the community will improve and more HUD units will be available.

Another approach is using codes enforcement to encourage rehabilitation. During the rental crunch when market rate renters were forced into housing of poorer quality in Jersey Shore in Lycoming County

[4] The other primary area for locating regional headquarters—the Southpointe area in Washington County—saw new development to meet this need.

tenants began to complain to the borough, resulting in the adoption of a rental inspection ordinance in 2014. Enforcement first focused on safety issues and required landlords to upgrade their substandard properties. Local officials hope that over time, the general condition of the housing stock will improve and nearby undeveloped lots will become more desirable for new housing.

Non-profit and Subsidized Development

In 2011, the non-profit development capacity in the Marcellus region trailed far behind the need for housing. This situation was much more urgent than the need for for-profit development; both because of the desperate need of the displaced residents discussed elsewhere in this report and because the market forces were 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.

Since then, some existing developers have stepped up their development of such projects and there have been some projects developed by developers new to the area. Both have generally sought financing that includes tax credits and PHARE funds. Generally, when that funding is awarded the projects are developed. When the funding is not awarded, the projects are delayed to await future funding cycles. While in a very limited number of cases, developers have also partnered with local governments to receive local Act 13 funds, some organizations involved in tax-subsidized housing developing projects dismiss asking for local ACT 13 funding. They knew the funds were already committed for needs such as safety, fire, police, and infrastructure. Developers are not coming specifically because of gas development; word has spread about the growth in housing needs and some are also aware of potential PHARE and local ACT 13 funding sources.

Many of these subsidized housing developments have been targeted to seniors, both because of need and because they face fewer NIMBY objections faced by other forms of subsidized housing. Senior housing directly serves the elderly by providing them with an alternative to staying in family homes that they neither need nor can maintain. Senior housing serves another population. By allowing seniors to move out of their houses, these houses can then be used by families. While many of these older homes will need significant upgrades, they are well positioned in towns in which many people now want to live.

Owner-Occupied Housing

The 2011 housing impact study showed that in contrast to the dire need for rental properties reported in most counties, the concern about the availability of owner-occupied housing was somewhat lower. While experiencing less pressure then rental housing, there was still a concern that there was an insufficient supply of good quality housing at an affordable price range. This shortage was the result of the economic decline of the areas that now had drilling. This economic decline had led a generation of young people to leave the area in search of economic opportunity. As a result, little new single family housing had been built. While limited, the increased demand still resulted in higher 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 clearly did not increase at the same rate as they increased for rentals. Instead, the growing upward pressure on the owner-occupied housing market was partially because home prices had risen more slowly than rent.

In 2015, prices of owner occupied homes have still remained largely stable in areas with significant natural gas drilling as can be seen in Table 4. There was variation, however, across market segments and geographic location. The largest owner-occupied housing pressure was seen in the areas with the densest commercial and residential populations. In addition, towns that are home to regional gas headquarters have the highest demand for owner occupied housing. Now with gas activity down, affected towns such as Towanda (in Bradford County) that were home to heavy drilling activity have fairly light owner-occupied housing pressure.

Table 4: Mix of Values of Owner Occupied Housing Units by County Marcellus Activity Level, 2005 & 2013

		Less than $50,000	$50,000 to 99,999	$100,000 to 149,999	$150,000 to 199,999	$200,000 to 299,999	$300,000 to 499,999	$500,000 to 999,999	$1,000,000 or more
Low to No Marcellus Activity Level	2005	10.0%	22.8%	20.3%	15.3%	15.3%	11.8%	3.8%	0.7%
	2013	9.3%	15.5%	16.3%	17.5%	21.0%	14.7%	4.8%	0.9%
Moderate to High Marcellus Activity Level	2005	15.3%	32.6%	23.4%	13.6%	9.5%	4.3%	0.2%	1.1%
	2013	13.5%	23.4%	18.9%	18.1%	14.8%	8.8%	2.0%	0.4%

Source: Created by the authors using data from the U.S. Census Bureau's American Community Survey (ACS)

Supply and Demand across Segments

The 2015 research found that the situation for owner-occupied housing differed between the northern and southern counties that were studied. While in the northern counties there was some growth in demand for houses, it was mostly for moderately priced homes. There are currently homes for sale at all price points in the northern counties, but many are older homes that are in poor condition. In the southern counties, both Washington and Westmoreland Counties have new homes available at higher prices but also lack affordable starter homes. In Greene County there is a shortage of both starter homes and new higher priced homes.

High End Segment

Existing homes in Lycoming County at higher price points now sell within three months, where it used to be six to eight months prior to Marcellus development; realtors indicate that this is a reasonable length of time for these homes in this market segment, therefore demonstrating an adequate balance between supply and demand. In Washington County professional employees buy homes for $400,000 to $500,000 and up. One developer in Washington County is building a phase of an existing development with 170 new homes priced $300,000 and above. There will be buyers not just because of the gas industry, but because many other companies have headquarters in the area. The market for higher end homes is being driven by the availability of good jobs both in the county and in Pittsburgh. However, while there has been the completion of higher end homes in existing subdivisions in Washington County, according to those interviewed developers have not sought approval for new developments. These patterns can be found at the higher end of the housing market in other communities as well, of course dependent on a community's overall level of economic development.

Starter Home Segment

The problem often expressed in 2015 amongst those interviewed across all counties was that young people find it difficult to get started in the housing market as they cannot find the preferred affordable new construction starter homes. Even if willing to purchase an older home, it is difficult to find older lower priced homes that do not need expensive rehabilitation. An additional issue is that financing the needed rehabilitation has become more difficult.

There are few to no new starter homes—priced in the $100,000 to $175,000 range depending on the community—on the market. When rents increased due to Marcellus gas housing pressure, renters who could qualify for a mortgage sought to purchase homes because a mortgage would be no more expensive than rent. This increased demand meant the few available starter homes spent little time on the market and prices for these moderately priced homes rose, however, no building development occurred in response to this increased market demand. Starter homes are not being built because developers do not find them profitable; it is no longer possible to build new homes that can be sold at a low price. Therefore home buyers in this price range must look for an older home to purchase. For example, in Greene County where older homes with a level of quality that allows them to be eligible for VA and PHFA mortgages sell well if they are moderately priced, there are not enough older homes that can meet the requirements and receive mortgages to meet demand.

Challenges to the Purchase of Existing Starter Homes

Marcellus development has had the effect of highlighting pre-existing housing market issues. As has been stated, moderately priced homes, or starter homes, are in short supply in all counties, in part due the cost of rehabilitation and the issue of financing older homes. Because of these issues, renters leaving the rental market by buying an affordable, older home does not happen to the degree one might expect. Instead, the instances where rehab is occurring often involve individuals who received money from royalties improving their own homes, rather than as a means to increase the availability to moderate-priced, owner-occupied homes. While it was known that most of the housing in the rural counties was older, the problems associated with rehabilitation became more apparent when renters faced additional pressure to move into the owner-occupied housing market.

Expense of Rehabbing Older Homes

If homes come on the market at prices ranging from roughly $125,000 to $175,000, in good condition, and in a neighborhood attractive to buyers, they sell as soon as they come on the market; such short times on market at those price points are evidence of a shortage of homes. For homes coming on the market in poor condition or needing renovation or in less attractive areas, sales come slower according to those interviewed.

For young people in the housing market, it often takes two incomes in the family to qualify for a mortgage. As a result they have little time and energy for undertaking improvements. In addition they are already buying a house whose mortgage they can just pay and have no additional money to spend on improvements. They are also reluctant to purchase older homes because they lack the energy efficiencies that are now standard in newer homes, meaning higher heating and cooling bills for owners.

While some suggest that developers might take on rehabilitation and fill the gap unmet by buyers, developers are generally not interested in rehabbing properties because of the unknown cost of repairs. They cannot put together a business plan when expenses are unknown.

Difficulty of Financing Older Homes

Another factor limiting the move from renting to buying is related to the financing of homes that are in need of rehabilitation. While before the credit crisis financing was readily available to fund the purchase and rehabilitation of an older home, those financing options are now much more limited. Even when young professionals overcome higher debt levels often connected to their education and increased down payment requirements, the limited financing options for rehabilitation and a reluctance of many homebuyers to take on the time and money of rehabilitation projects lead to a depressed market for older homes. Even when a sale might be agreed upon, once the home inspection is completed the buyer knows that the cost of the needed improvements is more than they can afford and the seller also does not have the money or is unwilling to make the needed improvements.

Even when a buyer is willing to take the time and expense to rehabilitate an older home it is still harder to get a mortgage than when purchasing new construction. Even when an offer is made on an older home, it can be difficult to close the deal, as they often appraise too low, home inspections are a problem, and there are often code violations. Other financing concerns also exist. Previously a bank would give a loan for over the sales price of the house with the expectation that the additional funds would go towards the needed home improvements. This funding is no longer available as banks are concerned that the home will not be able to be sold in the future at a high enough price to return the investment of what was spent on rehabilitation. If rehabilitation was to occur, and the improved house was to be sold, it would then be priced the same as a newer home. Because most people would prefer to purchase the newer home, the rehabbed house would be left unsold.

One program with strong potential to overcome some of these challenges is worth noting. As an extension of their work to develop a new senior housing complex, the housing authority in Greene County is starting a program to entice young families to move into housing that seniors are leaving behind. They plan to work with local banks to help these families get mortgages and rehabilitate these older homes to meet their needs.

Challenges to the Construction of New Starter Homes

In addition to the challenges of meeting the demand for moderately-priced, owner-occupied homes with pre-existing housing, four issues connected to the construction of moderately priced homes have become more apparent and prevented more renters from buying. First, the development of new homes, especially in roughly the $125,000 to $200,000 price range, is not financially feasible because of increased land prices and development costs. Land prices are up in the Marcellus region because of mineral rights, increased economic activity, and the limited availability of developable land with access to water and sewer infrastructure. An additional factor is that the cost of labor is driving up house prices. High development costs due to increasing federal, state, and local regulations are also affecting the construction of affordable homes. These fixed costs do not add to the value of a home from the perspective of a buyer, and are much easier to fold into the costs of a development of $350,000 home than one of $175,000 according to those interviewed. Finally, questions about the stability of an area's economic base further limit housing development; no developer is going to build without feeling assured that there will be buyers who can afford the purchase price and are willing to invest in the area long-term.

The lack of development of starter homes results from the difficulty of making a profit on building and selling small houses targeted at middle income buyers. A developer explained he would love to build small houses, but there is no money in them. If he did build such houses, he must build in volume. If he is only making eight to nine percent on a moderately priced house he must build 250 or more a year to earn an adequate profit for his company. Many affected areas do not have the growth needed to justify that rate of construction.

Lack of Developable Land

The geography of much of the area impacted by gas development means there is little available flat land with utility access available for development. Land that is viable for development has seen increased pricing as land owners seek to profit both from their mineral rights and the increased demand for surface rights. People who own farmland are reportedly not interested in selling except at a high price as they have heard of other people who have done so. It is true that if the land was needed by gas companies or was purchased by developers because of its proximity to infrastructure it sold for high prices. Those commenting on the issue report that many sellers do not realize that all property does not have a similar value.

Those interviewed gave examples of landowners' unreasonable price expectations. For example, a successful developer in Lycoming County has also made offers on other pieces of property but has been unable to conclude a deal because the owners are asking for too high a price. Landowners do not understand that the developer can only pay so much per lot. In this case the developer knows that his purchase price per lot must be around $8,000. He was offered a piece of property for $300,000, the price put on by an appraiser. As the size of the property would only allow for eleven homes, the resulting price per lot would have been almost $30,000. Even if land can be purchased, after infrastructure costs are added to the cost of the land developers reported needing to sell lots for at least $50,000 to $60,000 to be profitable. Such lot costs leave little in the budget for construction if a home is ultimately to sell for $175,000. Thus, few new homes in that moderate price range have been developed.

While the few scattered housing projects that exist may have been started with the thought that they might be of interest to gas employees, most of the houses have been bought by local residents. For example, in northern counties there are isolated projects but no sustained effort to build more homes because of the costs associated with developing hilly land lacking infrastructure. These costs then have to be added to the cost of house construction. The only way this makes economic sense is if the price of the house is high and it is difficult in the northern counties to support much high end housing.

Those interviewed believe that one of the long term results of the increased cost of land development due to the nature of the landscape and environmental regulations will be the building of more townhomes. Two groups of buyers are attracted to townhomes: young, first time buyers who find them affordable and older adults looking to downsize and limit work on landscaping and maintenance. However in rural areas, where people have little experience with townhomes, residents may not be familiar with these advantages.

Cost of Labor

Some builders had trouble maintaining their workforce during the gas boom. For example, in Washington County it was hard to find skilled workers. Everyone who applied knew what gas workers are paid, so the first question a potential worker who comes to the construction site asks is how much the job pays. If the builder says he pays $12 an hour, the worker says he wants $15. If the builder is forced to pay the $15 an hour, his costs increase. Additionally, subcontractors would often quote high prices to outside developers. One developer from outside the area who is working in Lycoming County solved the problem by bringing with him his own workers and then had the expense of providing housing.

Regulation

State and federal regulations have hampered development efforts in some areas. For example, Athens Township in Bradford County had to put a moratorium on some residential development because of sewer capacity issues. In Lycoming County, Loyalsock Township was under similar restrictions to adding equivalent dwelling unit (EDU) capacity to their sewer system, preventing housing development there for a time. In addition, storm water management regulations add to the difficulty of developing new housing sites by driving up the costs of building lots, and by extension, the price of the final house. This particularly affects moderately priced home construction.

Lack of Economic Base

Another factor that affects housing in the counties studied (except for Westmoreland and Washington) is the lack of a stable economic base that provides employment opportunities to the community's young people. If someone does not have a job, they cannot buy a house. If they have an education and there is no opportunity to find a job, they leave the area.

For example, in Bradford County one limiting factor on housing demand is a concern about the economic future of the area and the possibility of losing other industries through closures. As there are so few jobs available, even the rumor of this happening decreases housing demand. For housing developers to build homes there needs to be secure long-term employment opportunities. In Susquehanna County, house prices are below what they were pre-Marcellus. This is caused by the continuing decline in the availability of jobs for young people. With exceptions, most young people will need to find work outside the county resulting in an average age of a county resident being around 60 years old. As a result, no new market rate home development is taking place.

Related Development Activity

The bulk of this report focuses on the housing needs of low-to-moderate income residents as impacted by the unconventional natural gas industry in Pennsylvania. However, as noted in the original research conducted in 2011, the housing market is interconnected. That is, changes in the supply and demand for housing in one market segment affect other segments of the housing market. This section touches on development activity generally and, more specifically, development activity in other market segments that have indirectly affected the availability, price, and quality of housing for the residents that are the focus of the remainder of the report.

Development Activity

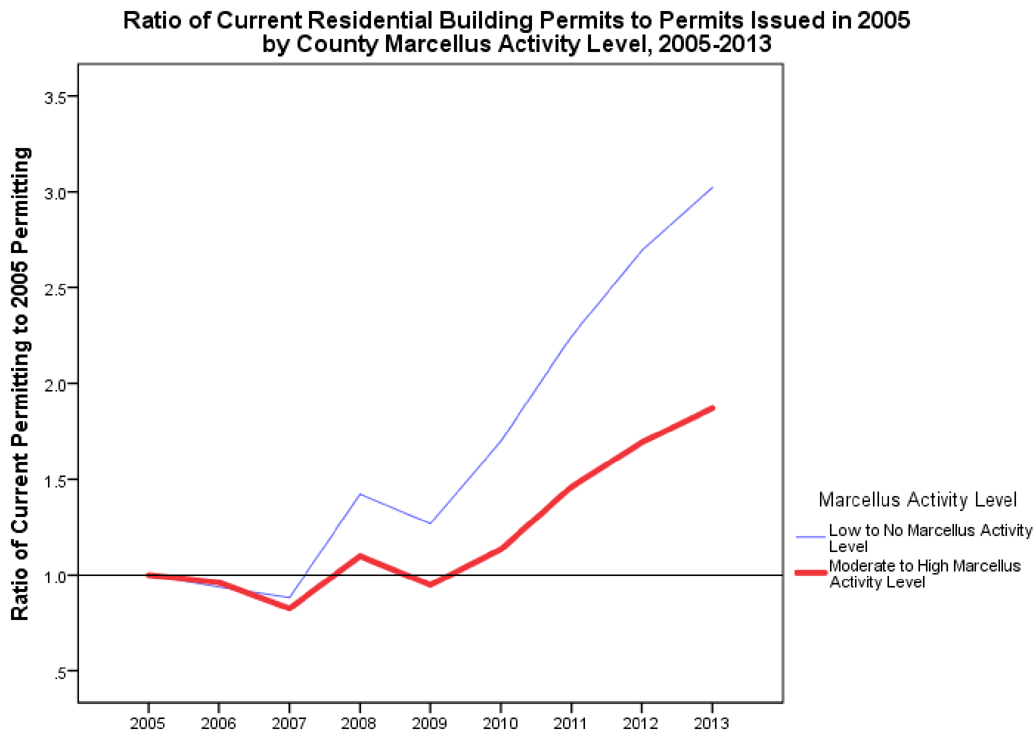
In 2011 outside of Westmoreland and Washington Counties, there was very little in terms of local development capacity pre-Marcellus. Development that occurred was small scale and sporadic. Generally, developers acted when individual opportunities arose. If it was present at all, housing development was only a small part of their overall business portfolio. The few developers who worked 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. Because housing development was not an ongoing process and because existing developers were not readily available to take advantage of the Marcellus-driven opportunity, in 2011 many observers lamented the lack of local response upon the initial surge of Marcellus demand. Even when local developers acted, it was often at a relatively modest scale.

By 2015, local developers had increased their activity, but this is mostly at the higher end of the market. Many local developers in rural counties have a business model based on building six to seven homes a year plus renovation work. Very few have experience with housing development on a larger scale. Tax credit-funded housing, especially when combined with PHARE funds and, to a limited extent, local Act 13 dollars, have spurred subsidized development in some areas. Existing developers have increased the number of subsidized projects they have sought to complete, and a few new developers from outside the area have entered this market.

Local officials related their conversations with additional housing developers from outside the area that were attracted by news of the housing shortage, however, only a limited number entered the market. Fit was often an issue; the business models of developers coming from larger markets require building homes in volume and selling the houses immediately. Most of the impacted housing markets can only absorb a limited number of new housing units each year. Market uncertainty and the relatively small scale of housing growth made the math untenable.

Quantitative evidence of residential development since the beginning of unconventional gas development can be seen in Figure 4. The counties with active Marcellus development saw significant growth in residential building permits starting about 2010, consistent with the timing of natural gas development. While growth in permitting activity in non-Marcellus areas was even faster in the same time period, it should be noted that it is likely that the general residential construction trends in active Marcellus counties, because of their rural nature and previously economic stagnation, are likely to have been flat for some time looking backward relative to non-Marcellus Counties. Thus, the new growth in those impacted counties, even if it did not keep pace with the more urban counties not impacted by Marcellus development, is significant and likely the result of gas activity.

Figure 4



Source: Created by the authors using data from the U.S. Census Bureau's Building Permits Survey
Notes: (1) Ratios used because the populations of counties without natural gas activity far exceed those with activity. Direct comparison of absolute numbers is therefore not useful. (2) Growth of permitting activity in counties with significant Marcellus development, while not keeping pace with the other, more urban counties, is significant and likely the result of gas activity. In the absence of natural gas development, permitting in those areas would likely have been slower, consistent with their recent history of economic stagnation.

Development of Interconnected Market Segments

The following sections discuss development activity in several market segments that have interconnected effects on the availability of affordable rental or owner-occupied housing addressed elsewhere in the report.

Market Rate Apartment Development

In 2011 it was found that developers from outside the region had begun to focus their attention on the opportunities presented by Marcellus gas development. While there were a number of developers that expressed interest in 2015, it was found that only a few completed their plans. Generally, successful projects were ones that met other existing needs and the presence of increased natural gas-related housing demand helped to make the project viable by reducing the risk to the developer and financiers that prevented such a project from proceeding in the pre-Marcellus environment. A positive impact of gas development to the housing market can thus be said to be serving as a catalyst to implement needed housing development.

Hotel Development

The authors' prior work on the role that hotels play in providing for the housing needs of the natural gas workforce[5] found that in addition to those staying in an area for a few nights for work, many natural gas employees prefer to stay in hotels over the effort of finding and renting short term housing. Because of the increased demand for hotel rooms, there has been hotel development in most Marcellus affected counties; in the most active counties, that growth has exceeded 50 percent.

Many questioned whether such robust hotel growth would be sustainable with the scale back of natural gas development. From a housing standpoint, available hotel space provides slack capacity to absorb population shifts in the short-term with less shock to existing residents. Thus, several of those interviewed indicated they felt that when gas development increased once again, their communities would be somewhat better positioned than during the first cycle of development.

Campgrounds and Trailer Parks

Some gas workers found housing in campgrounds and trailer parks, both existing and new, which meet short term, transient housing needs. A property owner can provide sites after putting in a minimal septic system. In most areas they can get temporary approval for two years for such land use after which they can then apply for an extension. After there is no longer any need for this type of housing, the property can revert to its prior status or the septic system can be utilized to develop a single home site. According to a housing official, more of this type of development should have been done, with proper regulation, to take pressure off rentals.

[5] *Assessing the Housing Needs of Marcellus Related Hotel Guests in Lycoming County* (2012), included as part of *The Impacts of The Marcellus Shale Industry on Housing in Lycoming County* (August 2012) and available at lyco.org/Portals/1/PlanningCommunityDevelopment/Documents/MarcellusShaleHousingStudy.pdf.

Act 13

Pennsylvania's Act 13 of 2012 created two sources of revenue related to housing. It specifically allocates impact fee monies in to the Pennsylvania Housing Affordability and Rehabilitation Enhancement Fund (PHARE). It also directs funds to counties and municipalities impacted by unconventional natural gas development to be used in one of thirteen categories, including housing. While PHFA has good knowledge of the expenditure of PHARE dollars, Act 13's reporting requirements for the expenditure of local funds are minimal. Therefore, the authors were tasked with tracing the use of local Act 13 funds for housing purposes with attention to be focused on those projects and programs funded with local Act 13 dollars and not matched with PHARE funds.

Table 5 shows the self-reported Act 13 spending on housing for the 2011-2013 reporting cycles. The $1.45 million spent by local governments for housing may seem a small share of the in excess of $313 million distributed to local governments under Act 13 over those three years. However, it should be noted that no data exists on the ultimate use of over $129 million of the funds because in the original reports, local governments listed "Capital Reserve Fund" as the allowed use category. No subsequent reporting of the funds' use is required. Additionally, a bit more than $33 million is unaccounted for in local government reports.

Table 5: Local Governments' Allocation of Act 13 Funds to Housing, 2011-2013

County or Municipality	Act 13 Funds Spent on Housing*	Project also received PHARE funds
Clearfield County	$100,000.00	No
Greene County	$550,000.00	Yes - $450,000
Greene County - Cumberland Township	$80,000.00	Yes
Indiana County	$10,000.00	No
Lycoming County	$610,000.00	Yes
Lycoming County - Williamsport City	$100,000.00	Yes
Total:	$1,450,000.00	

*Note: Data provided here comes from PUC reporting. PHFA's data indicates that Clarion County also allocated $10,000 in local Act 13 funds to a project with linked PHARE funds. Also, where the PUC data has Cumberland Township allocating $80,000, the PHFA data has the figure at $100,000. It may be that the PHFA figures include either expenditure of prior year Act 13 funds, originally reported to PUC in the category of "Capital Reserve Funds", or commitments of future Act 13 revenue. Local governments are not required to report to the PUC the ultimate dispensation of Capital Reserve Funds under Act 13.

Source: Created by the authors using data from Pennsylvania's Public Utility Commission (PUC) and Pennsylvania Housing Finance Agency (PHFA)

During interviewing, when county and municipal officials were asked about the use of these funds for housing, they often indicated that other areas were considered higher priority. Some recognized the need for housing, but chose to allocate the newly available resources in other areas. Others indicated that while a housing need existed, they indicated that the sense was that the local government's role in housing was limited. Generally, respondents indicated that the funds were used to fund long-delayed and needed infrastructure projects. The data on Act 13 spending is consistent with those impressions. The largest categories for local governments' Act 13 spending were Public Infrastructure Construction at $83 million and Emergency Preparedness and Public Safety at $38 million.

Non-PHARE-Funded Local Housing Projects and Programs

This section reports on the use of local Act 13 dollars for housing in Clearfield County, Greene County and Indiana County, in each case involving spending that was not matched with PHARE dollars.

Clearfield County

Clearfield County reported using $100,000 for housing with their 2013 funds. In 2011-2012, the county conducted a Housing Needs and Market Assessment. As a result, they created an Affordable Housing Trust Fund, funded with a document recording fee for deeds and mortgages as allowed under the Optional County Affordable Housing Act 137 of 1992. Each year they solicit proposals from local partners to receive grants from the Trust Fund to achieve the goals laid out in the assessment.

Half of the 2013 Act 13 funds the county allocated for housing were set aside as a match for a senior housing project for which the county sought tax credits and PHARE funding. After failing twice to secure tax credits, the project has since been abandoned. The remaining funding was divided between the county's Affordable Housing Trust Fund and planning staff salaries.

Greene County

Greene County reported allocating a total of $550,000 for housing with their Act 13 funds for the 2012 reporting year. Of that, $450,000 was matched to one of two PHARE-funded projects—one to rehabilitate or replace dilapidated housing units and another to construct a senior housing project. The remaining $100,000 was allocated as seed money to further expand the rehabilitation/replacement program overseen by the Redevelopment Authority as anticipated in their PHARE-funded program.

In each case, the projects were identified by the county housing team and received support from the relevant county municipalities. Greene County developed a housing plan in 2012, and they hired a consultant to conduct a housing market assessment in 2015. Currently, construction is underway on both a senior housing facility and the first of the Redevelopment Authority's projects.

Indiana County

Indiana County reported allocating $10,000 for housing with their 2012 funds. Those funds were to be used to cover the costs of land development planning and to seek a variance from Indiana Borough as the first steps to develop permanent housing units targeted to homeless disabled veterans on land donated to the county for that purpose. That project has been abandoned due to resistance from the borough to grant the variance which would have placed the housing units in a single family zoning district.

The abandoned plan was to be a second development similar to one that is currently under construction by the county's nonprofit development partner, having received $150,000 in PHARE funds. The need for both projects was established through work by the county's local housing option team (LHOT) in 2009 and 2010 who noted a surge in the area's homeless population that they attributed to the housing crises, gas development impacts, and increased demand for student housing. That work helped to prompt a housing study conducted by a hired consultant, which identified affordable housing needs for veterans, families, and seniors. The implementation of the county's housing response targeted to veterans is likely also attributable to the presence of a county commissioner who advocates for the needs of veterans, who make up a significant share of the county's population[6].

[6]Housing needs receiving attention in a small community can heavily depend on the opinions expressed by a local public official. Their opinion, formed by their personal experience, can serve to emphasize or deemphasize a need and the appropriate response.

Recommendations

The first recommendation would be to continue existing programs that package together tax-credits, PHARE funds, local Act 13 funds, and private dollars to develop affordable housing. Persistent private and public partners have added affordable housing by marshalling these combined resources to add to the housing supply for those most impacted by natural gas development. Whether senior-oriented or more broadly targeted affordable housing, given the interconnected housing market any increase in supply can have positive ripple effects throughout the market. The scale of such development has not been to the extent where there can be a directly measurable effect on a community's rents. However, at the very minimum, those living in newly developed housing units had additional options that did not exist previously.

A second recommendation would be to work in communities with significant housing impacts to help local officials better understand how existing programs can be combined and utilized to increase the supply of affordable housing. Through the interviews it became clear that some officials had greater awareness than others of these programs and how they might be combined to alleviate housing impacts. A concerted effort to demonstrate how a community might benefit from additional targeted housing, financed creatively, might help. Increased communication between the development community and local officials would also help to overcome existing barriers to development as part of the housing response.

Next, a consistent theme across the counties was the need for new construction of owner-occupied homes available to young professionals and others at moderate price points. Such a shortage predates the development of Marcellus natural gas, but became more apparent because the pressure on rental markets at the peak of gas development had no relief valve, and renters were unable to enter the owner-occupied marketplace via moderately priced new homes. Setting aside the temporary problem caused by the national credit crisis, the primary cause was the cost of development which has risen to such a point that moderately priced homes cannot be built on lots that cost in excess of $50,000. Therefore, another recommendation would be to develop programs that would enable developers to make available new building sites with reduced development costs that would need to be passed on to the consumer.

Another theme was that the existing housing stock did not meet the needs of prospective buyers because of the condition typical of older homes on the market. The lack of financing available to rehabilitate older homes that they could otherwise afford also prevented renters from becoming owners. If a home can be purchased for $75,000 and, after $50,000 of rehabilitation, meet an owner's needs and also upgrade a community, then something could be done to mitigate the risks of unknown expenses common to rehabilitation projects. Those risks apply to both the owner and to the financing entity. Therefore, another recommendation is to develop programs that would incentivize buyers and creditors to take on rehabilitation projects.

One final recommendation comes from observations that emerged during analysis of housing data from the American Community Survey. The data shows that the high prices of fuel oil during the study period did not translate directly into a growth in the use of “utility gas”, i.e. the natural gas being produced in the Commonwealth. Instead, consumers shifted their heating fuel towards electricity. This study did not rigorously explore reasons for this unexpected pattern. However, anecdotal evidence coming from side comments made during interviewing on other topics more central to the study suggest that while a desire exists for consumers to use the natural gas coming from under their feet, barriers exists preventing consumers from converting to natural gas. Many do not have service providing utility gas near their homes. Utility companies will often not charge to bring service from the street into a home, if the home is converting to gas heat. However, if no service exists, then it is economically infeasible for the utility to extend the line unless a number of consumers on a given street agree to convert simultaneously. This level of coordination amongst neighbors to convert at the same time often precludes service expansion. The further that homes in a given area are spaced apart, the more of a challenge this problem becomes.

Our recommendation is to explore this topic more fully. Fuel oil heating costs, while currently lower than in recent years, are predicted to rise faster than natural gas heating costs. To the degree housing cost savings can be realized for those converting to natural gas, and to the degree that increased use of natural gas can have positive economic benefits to the Commonwealth as a producer, then overcoming these barriers to access utility gas would be doubly beneficial.

Interview Subjects

Developers

Al Clapps
Developer, Gentry Development

Shawn Najowicz
President, Washington County Builders Association

Dennis Phelps
CEO, The Trehab Center Inc.

Greg Rhodes
President, R&L Construction

Greg Simmons
Financial Products Developer, ACTION Housing Inc.

Ray Venema
President, Susquehanna Builders Inc.

Industry Officials

Mike Mackin
Manager, Community Development, Range Resources

Pat Marty
Government Relations Advisor, Anadarko

Bonnie Morris
Public Relations, Cabot Oil & Gas

Kim Price
Public Relations, Rice Energy

Elected Officials

Dan Close
Manager, Borough of Troy, Bradford County

Vince DeCario
Chairman, Board of Supervisors, Derry Township, Westmoreland County

Bill Groves
Chairman, Board of Supervisors, Cumberland Township, Greene County

Alan Hall
Chairperson, County Commissioners, Susquehanna County

Joseph Hamm
Borough Manager, Jersey Shore Borough, Lycoming County

Chuck Morris
County Commissioner, Greene County

Walter Reed
Mayor, Hughesville Borough, Lycoming County

Planning Officials

Chris Bova
Deputy Director, Planning and Development, Westmoreland

Jodi Brennan
Director, Planning and Community Development, Clearfield County

Dave Calvario
Executive Director, Redevelopment Authority, Greene County

Lisa Cessna
Executive Director, Planning Commission, Washington County

Janenne Goliash
Legislative Assistant, Office of Senator Yaw, Bradford County

Kurt Hausammann
Director, Planning and Community Development Department, Lycoming County

Jeffrey Leithauser
Development Manager, Planning Commission, Washington County

Jeff Marshall
Chief Clerk, Greene County

Deborah Rush
Chief Clerk, Cumberland Township, Greene County

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

Robert Templeton
Planning Director, Susquehanna County

Jason Theakston
Land Use Planner, Washington County

Kim Wheeler
Deputy Director, Planning and Community Development, Lycoming County

LuAnn Zak
Deputy Director, Community Development & Housing, Office of Planning & Development, Indiana County

Housing Authority

Karen Allen
Executive Director, Housing Authority, Susquehanna County

Stephen Hall
Executive Director, Housing Authority, Washington County

Jim Meehan
Regional Housing Coordinator, Self-Determination Housing Project of Pennsylvania, Inc.

Marilyn Severson
Executive Director, Housing Authority, Lycoming County

Amy Switalski
Director, Housing and Family Services, Greene County

Mike Washowich
Executive Director, Housing Authority, Westmorland County

Social Services

Karen Bennett
Administrator, Human Services Department, Greene County

Bill Blevins
Director, Human Services, Bradford County

Jennifer Johnson
Housing/Homeless Services Coordinator, Department of Human Services, Washington County

Terry Smart
Case Manager, County Assistance Office, Susquehanna County

Elly Smith
Children and Youth Director, Bradford County

Tim Smith
Managing Attorney, North Penn Legal Services, Bradford County

Rosann Pelleschi
Housing Consultant, Housing Coalition, Lycoming County

Realtors

David Arnold
Realtor, Remax, Geene County

Raul Azpiazu
Realtor, Century 21, Bradford County

Bob Bustamante
President, Westmoreland Realtors Association

Stephanie Calder
Relator, Fish Realty, Lycoming County

Barry Crumrine
Realtor, ReMax, Washington County

Angie Hall
Realtor, ReMax, Susquehanna County

Karen Mitchell
Realtor, Century 21, Susquehanna County

Eugene Shaylor
Broker, Northern Tier Real Estate, 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.
Associate 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

Research support was provided by:

David Gordon
Research Associate, Center for the Study of Community and the Economy
Lycoming College

Appendix A: Research Questions

Rental Demand

Change in Demand / Adequacy of Supply:

1. How has the level of demand for rentals, both apartments and houses, changed since the Marcellus industry activity peaked in 2011? When did you start to notice this change? What do you believe was its cause?
2. As of now, is a shortage or excess of rental housing capacity in the area?
    a. How does that compare to the years prior to Marcellus and during the peak?
3. How does the existing rental stock in the area fit with the current demand and current renters' desires?
4. Do you find there are shortages or excesses in particular geographic areas or at different price points? Has this changed since activity peaked?
5. Have you noticed if landlords have a preference of renting to local residents or new gas workers? Are there any new groups who are entering the rental market?
6. Are there any new units being developed? If so are they for specific groups?

Price Points / Desired Features:

1. What are the most important criteria that new residents are looking for in rental housing?
2. Have long-term residents criteria changed over the last few years?
3. What location and size of apartment is desired by long-term versus new residents?
4. What is the cost each renter group is willing (able) to pay?

Rehabilitation / New Construction:

1. Has there been a change in the age profile of the existing rental stock?
2. In what condition is older rental stock?
3. Is there any new rental housing currently being built or proposed?
4. Are current renters are looking for new rental units or older, or does it not matter?

Rental Marketing:

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

ACT 13:

1. Are you aware of any changes in housing stock due to use of ACT 13 funds?
2. Were you part of the decision making process or consulted about the use?

Rental Affordability/Housing Availability

Rents / Home Prices:

1. Have prices changed over the last few years for all properties or for specific types of properties?
2. Are the housing needs of existing renters and home buyers being met? Where does it fall short?
    a. Is that true of those households with low to moderate incomes?
    b. How are people with disabilities and older adults continue to be affected?
    c. Are there different effects for households at different income levels?

Displacement:

1. How has the ability of renters to afford current rents changed since when Marcellus activity peaked?
    a. Are they finding housing they can afford?
    b. Is the situation similar to before Marcellus activity?
    c. If not, how is it different?

Housing Agency / Social Service Response:

1. Have the housing challenges facing social services agencies changed since Marcellus peaked?
2. Has the demand for subsidized housing changed?
3. How have housing and social service agencies responded to this change?
4. Are their responses adequate to meet the need?
5. Do they have funding available to meet the need?

ACT 13:

1. Are you aware of any changes in housing stock due to use of ACT 13 funds?
2. Were you part of the decision making process or consulted about the use?

Appendix B: LIHTC and PHARE Act 13 Data

Table 6: Low Income Housing Tax Credits (LIHTC) in Act 13 Counties, 2005-2016

County	Total Units (2005-2010)	LIHTC Funding (2005-2010)	Total Units (2011-2016)	LIHTC Funding (2011-2016)	Total Units (2005-2016), per county	LIHTC Funding (2005-2016), per county
ALLEGHENY	2,761	$ 49,347,637	2,158	$ 30,714,009	4919	$ 80,061,646
ARMSTRONG	44	$ 695,501	-	$ -	44	$ 695,501
BEAVER	79	$ 1,225,974	101	$ 1,170,925	180	$ 2,396,899
BLAIR	64	$ 814,722	129	$ 1,557,111	193	$ 2,371,833
BRADFORD	40	$ 603,664	228	$ 3,326,855	268	$ 3,930,519
BUTLER	50	$ 6,630,158	109	$ 1,340,688	159	$ 7,970,846
CAMBRIA	51	$ 392,538	-	$ -	51	$ 392,538
CAMERON	-	$ -	-	$ -	0	$ -
CENTRE	124	$ 1,697,218	244	$ 4,913,626	368	$ 6,610,844
CLARION	108	$ 4,222,871	-	$ -	108	$ 4,222,871
CLEARFIELD	-	$ -	-	$ -	0	$ -
CLINTON	20	$ 332,547	-	$ -	20	$ 332,547
COLUMBIA	533	$ 7,922,427	40	$ 935,421	573	$ 8,857,848
CRAWFORD	56	$ 359,314	-	$ -	56	$ 359,314
ELK	24	$ 208,243	20	$ 377,238	44	$ 585,481
FAYETTE	192	$ 2,753,185	24	$ 705,043	216	$ 3,458,228
GREENE	-	$ -	52	$ 878,050	52	$ 878,050
HUNTINGDON	-	$ -	-	$ -	0	$ -
INDIANA	149	$ 1,990,796	-	$ -	149	$ 1,990,796
JEFFERSON	77	$ 1,141,963	272	$ 1,764,496	349	$ 2,906,459
LAWRENCE	50	$ 4,760,892	-	$ -	50	$ 4,760,892
LYCOMING	72	$ 823,914	272	$ 1,764,496	344	$ 2,588,410
MCKEAN	-	$ -	-	$ -	0	$ -
MERCER	80	$ 5,732,990	365	$ 4,605,880	445	$ 10,338,870
POTTER	-	$ -	-	$ -	0	$ -
SOMERSET	141	$ 7,174,406	56	$ 1,351,312	197	$ 8,525,718
SULLIVAN	-	$ -	-	$ -	0	$ -
SUSQUEHANNA	48	$ 6,673,618	64	$ 614,284	112	$ 7,287,902
TIOGA	11	$ 251,107	91	$ 1,366,544	102	$ 1,617,651
VENANGO	-	$ -	120	$ 1,173,878	120	$ 1,173,878
WARREN	-	$ -	-	$ -	0	$ -
WASHINGTON	48	$ 574,844	48	$ 889,834	96	$ 1,464,678
WESTMORELAND	344	$ 10,381,234	77	$ 1,709,716	421	$ 12,090,950
WYOMING	-	$ -	20	$ 340,298	20	$ 340,298
TOTAL	**5,166**	**$ 116,711,763**	**4,490**	**$ 61,499,704**	**9656**	**$ 178,211,467**

Table 7: PHARE Act 13 Funding in Act 13 Counties, 2012-2015

County	PHARE Act 13 Funding (2012-2015)
ALLEGHENY	$ 100,000
ARMSTRONG	$ 179,500
BEAVER	$ 448,750
BLAIR	$ 181,500
BRADFORD	$ 4,852,034
BUTLER	$ 1,265,000
CAMBRIA	$ 150,000
CAMERON	$ 83,000
CENTRE	$ 254,500
CLARION	$ 254,250
CLEARFIELD	$ 296,500
CLINTON	$ 654,000
COLUMBIA	$ 100,000
CRAWFORD	$ -
ELK	$ 176,000
FAYETTE	$ 1,132,810
GREENE	$ 3,550,164
HUNTINGDON	$ 125,000
INDIANA	$ 420,000
JEFFERSON	$ 405,000
LAWRENCE	$ 213,750
LYCOMING	$ 6,100,000
MCKEAN	$ 172,750
MERCER	$ 19,000
POTTER	$ 286,895
SOMERSET	$ -
SULLIVAN	$ 250,000
SUSQUEHANNA	$ 4,211,000
TIOGA	$ 1,911,788
VENANGO	$ 8,800
WARREN	$ 240,000
WASHINGTON	$ 2,894,000
WESTMORELAND	$ 915,000
WYOMING	$ 1,593,000
TOTAL	**$ 33,443,991**