

The Experiences of Low-Income Pennsylvania Residents in Marcellus Shale Gas Communities of Bradford, Lycoming, Washington and Greene Counties

The Marcellus Shale Impacts Study Wave 2: Chronicling Social and Economic Change in Northern and Southwestern Pennsylvania

March 2017

Executive Summary

This research describes the perspectives of low-income adults in Pennsylvania communities that have experienced active Marcellus Shale natural gas development. In particular, attention is paid to how low-income adults describe changes in their communities that they understand as associated with the expanding natural gas industry, and how these changes may or may not have affected their economic and living circumstances. The data in this report come from key informant interviews with 39 adult respondents who were identified as low-income, as well as a smaller number of interviews with service providers associated with county social services, public housing agencies and food banks. The interviews and field work were conducted by the research team throughout the fall of 2014 in the northern tier of Pennsylvania in Bradford and Lycoming counties, and in the southwest corner of the state in Washington and Greene counties. These interviews were conducted as part of a larger, multi-sector case study assessment of Marcellus Shale development impacts.

Five main themes emerged from these interviews:

- Nearly all respondents described the effects of the shale gas industry on the cost and availability of housing and the difficulties in finding employment offering wages that might cover rising housing costs. Respondents spoke about housing costs as being a significant contributing factor to housing insecurity and general economic insecurity. Eight respondents described specifically being residentially displaced as landlords gave preferential treatment to gas workers who were seen as being able to pay higher rents.
- While some respondents were residentially stable over the 5-year period preceding the interview, many had experienced significant residential instability and/or homelessness. Five respondents were homeless at the time of the interview, and 16 reported being homeless in the 5 years preceding the interview. Nearly all respondents described how rising housing costs had contributed to their own residential instability and/or that of others whom they knew.
- While Marcellus Shale Gas development has been described by some industry advocates as a major source of economic development, respondents described how higher-paid employment opportunities in the industry were not widely available. They further related how, in their experience, many of the industry positions were filled by out-of-state workers. Respondents also noted the gendered structure of opportunity with women having fewer opportunities to access higher paid gas-industry-related work. While some respondents noted expansion of employment opportunities within service sectors (e.g., hotels, convenience stores, restaurants), these positions often did not provide full-time work or wages that would keep employees out of

poverty. Those respondents who were able to find work within the industry described difficult and often unsustainable and unsafe working conditions and/or job insecurity connected to fluctuations in the pace of gas development and, consequently, labor demand.

- Respondents described a mix of community changes above and beyond changes in the housing market, including increased crime (including prostitution) and drug use, much of which respondents either directly or indirectly attributed to the gas industry.
- Social service providers largely corroborate the experiences described by low-income county residents, in particular emphasizing the effect of tightened housing markets, rising costs, and the uneven access to economically sustainable employment opportunities.
- Low-income residents who were interviewed for this study tended to strongly believe that public policy makers had largely ignored or had remained unaware of the negative consequences of shale gas development, and especially as it has affected the most vulnerable segments of Pennsylvania communities.

This project was sponsored by a grant from the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly.

The Center for Rural Pennsylvania is a bipartisan, bicameral legislative agency that serves as a resource for rural policy within the Pennsylvania General Assembly. It was created in 1987 under Act 16, the Rural Revitalization Act, to promote and sustain the vitality of Pennsylvania's rural and small communities.

Information contained in this report does not necessarily reflect the views of individual board members or the Center for Rural Pennsylvania. For more information, contact the Center for Rural Pennsylvania, 625 Forster St., Room 902, Harrisburg, PA 17120, telephone (717) 787-9555, email: info@rural.palegislature.us, www.rural.palegislature.us.

Table of Contents

Executive Summary.....	1
Table of Contents.....	3
About this Project	4
Study Counties	4
Marcellus Shale Activity.....	4
Understanding the Experiences of Low income Residents in Shale Gas Communities.....	8
Data and Methods	9
Mixed and Uncertain Labor Market Opportunities in the New Shale Gas Economy	13
Employment of Local Residents versus Out-of-State Workers.....	16
Uncertainty of Gas Industry Work as a Local Employment Option	17
Gendered Structures of Opportunity and Risk	21
Sexual Harassment, Prostitution and Sex Work	23
Perception of Increased Prevalence of Drugs and Crime	25
Rising Costs, Housing Insecurity, Displacement and Homelessness.....	28
Priced Out and Displaced Residents	31
Homelessness in Shale Gas Communities.....	32
Service Provider Perspectives on Housing Insecurity in Shale Gas Communities	33
Low Income Residents Reflect on Public Policy: Taxation, Regulation and Social Supports	36
Conclusions	38
Report Authors.....	40
Penn State Project Team.....	40
Acknowledgements.....	40
References	41
Appendix A: Unconventional Wells Drilled by County and Year, 2005-2013	43
Appendix B. Marcellus Activity County Typology Definitions for Pennsylvania	44
Appendix C. Interview Protocol, Low Income Adults.....	45

About this Project

The Marcellus Shale Impacts Project chronicles the effects of shale-based energy development in Pennsylvania by focusing on the experiences of four counties with significant extraction and production activity – Bradford, Lycoming, Greene, and Washington counties. Wave 1 of the project was completed in 2013 and Wave 2 began in early 2014. While Wave 1 was focused predominantly on data collection and the use of descriptive statistics to present changes in various outcomes over time, Wave 2 focused on developing statistical models to describe relationships between Marcellus Shale development and a set of social and economic indicators, identifying change in social and economic outcomes that are associated with Marcellus Shale development, and identifying the characteristics of people and places associated with the levels and types of impact experienced. A particular focus of Wave 2 was to explore the heterogeneity in Marcellus Shale development impact on different population groups. The purpose of this research on low-income residents in Pennsylvania shale gas communities was to identify and describe the experiences of low-income residents, including the changes in opportunities and challenges that these residents perceive as affecting the well-being and life chances for themselves and their families within the communities in which they live.

Study Counties

This study focused on the same four counties examined in Wave 1 of the Marcellus Shale Impacts Study: Bradford, Lycoming, Greene, and Washington. These counties experienced among the highest levels of Marcellus Shale development in Pennsylvania over the past 8 years, and they have diverse populations, histories, economic bases, and geographic locations. These differences allow comparisons that facilitate understanding of the potential associations between Marcellus Shale development and various social, economic, and health outcomes. Regional comparisons are also made based on adjacency to the study counties. The northern tier counties include Bradford, Lycoming, Clinton, Columbia, Montour, Northumberland, Potter, Sullivan, Susquehanna, Tioga, Union, and Wyoming. The southwestern counties include Greene, Washington, Allegheny, Beaver, Fayette, and Westmoreland.

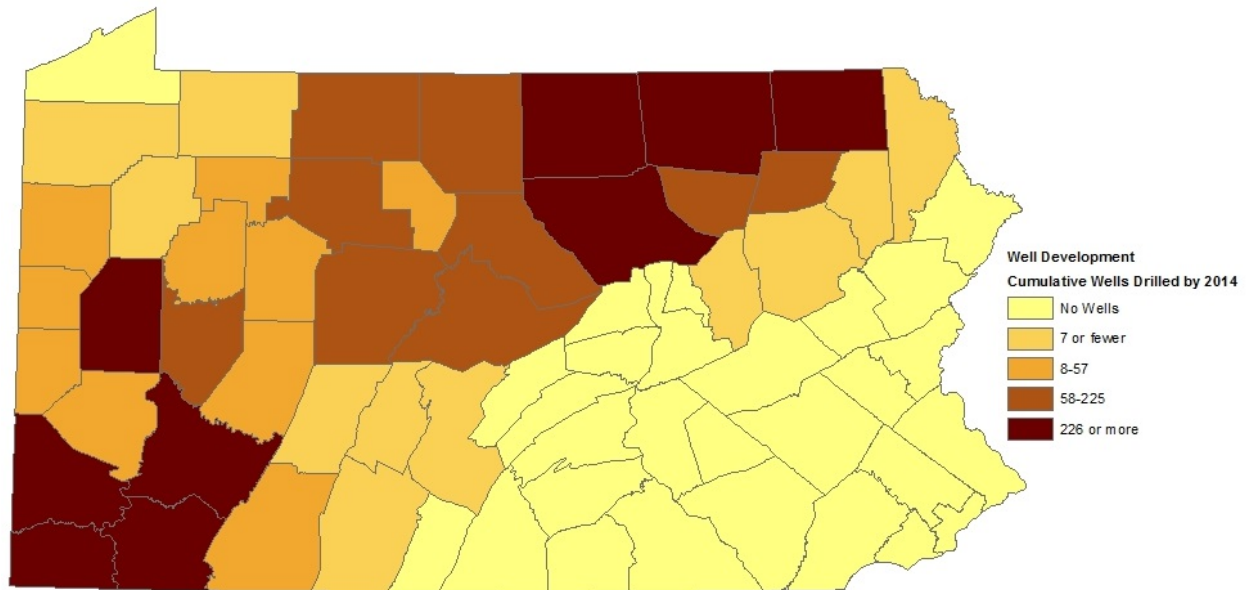
All four study counties are classified as rural by the Center for Rural Pennsylvania with population densities of less than 284 people per square mile in 2010. However, the U.S. Department of Agriculture's (USDA) Economic Research Service (ERS) and the U.S. Census Bureau classify Lycoming and Washington Counties as metropolitan counties. Lycoming County is in the Williamsport metropolitan area, and Washington County is part of the Pittsburgh metropolitan area. Bradford and Greene counties are classified by the USDA ERS as nonmetropolitan counties with small urban populations of less than 20,000 people. Both are adjacent to metropolitan areas.

Marcellus Shale Activity

Figure 1 presents the distribution of the cumulative number of wells drilled in each county in Pennsylvania by August of 2014. The cut points represent quintiles (intervals of 20 percent). Well development is concentrated in the northeast, northcentral, and southwestern portions of the state. In the northern tier, Bradford, Lycoming, Tioga, and Susquehanna counties have all experienced similar

high levels of development. This suggests that comparisons of outcomes among these counties will be particularly useful. Similarly, the most useful comparisons will be between the neighboring southwestern counties with the most well development, which include Greene, Washington, Fayette, and Westmoreland, although Greene and Washington counties have had substantially more wells drilled than Fayette and Westmoreland counties, as shown in Figure 1.

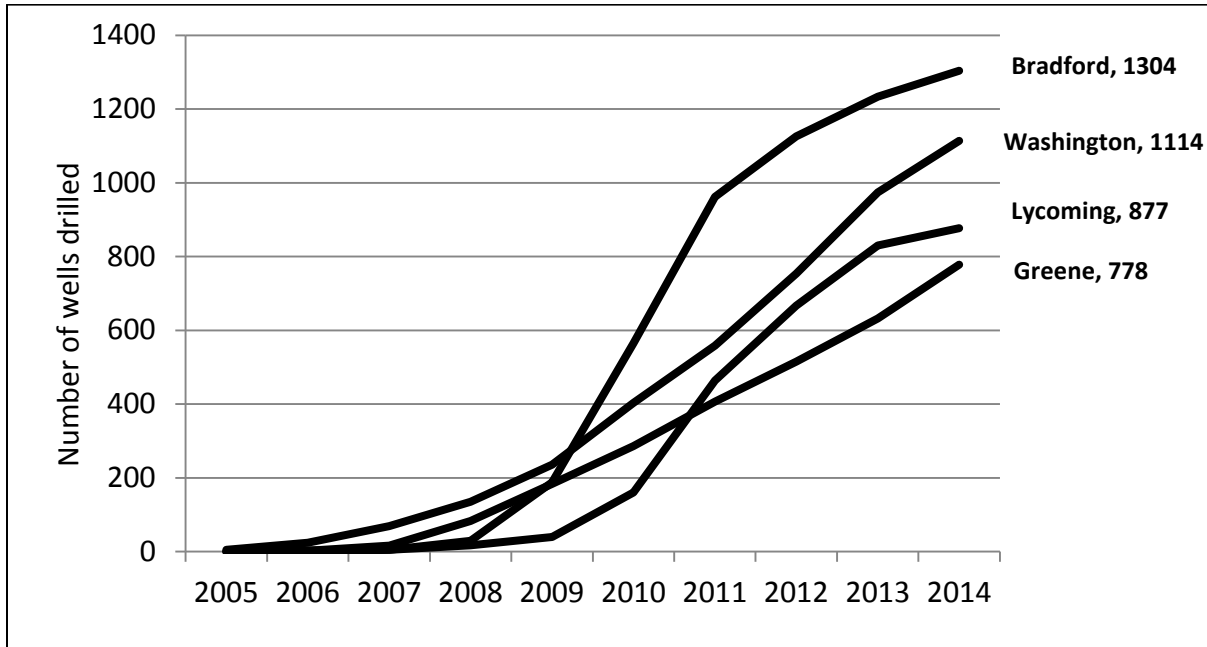
Figure 1. Cumulative Number of Unconventional Gas Wells Drilled, 2005-2014



Source: Pennsylvania Department of Environmental Protection, Office of Oil and Gas Management

Figure 2 shows the cumulative number of unconventional wells drilled in the four study counties since 2005. Although some wells that were drilled early in the period may no longer be in production, and some new wells have not yet been put into production, the lines reveal overall trends in the study counties. The increase in wells drilled since 2009 has been substantial in all four counties, with Bradford and Washington counties experiencing the most pronounced increases. The increase in Bradford County was particularly robust between 2009 and 2011 and then leveled off to a slower growth rate after 2011. Lycoming County experienced its steepest increase between 2010 and 2011, with steady but slightly lower growth rates after 2011. Development began earlier in the southwestern counties than in the northern tier counties, but growth in Washington and Greene counties has been relatively constant throughout the period, with no dramatic spikes like those seen in the northern tier counties. Finally, while the pace of drilling appears to be leveling off in Bradford, Washington, and Lycoming counties, Greene County is continuing to experience an upward trend in development.

Figure 2. Cumulative number of wells drilled in four study counties, 2005-2014*



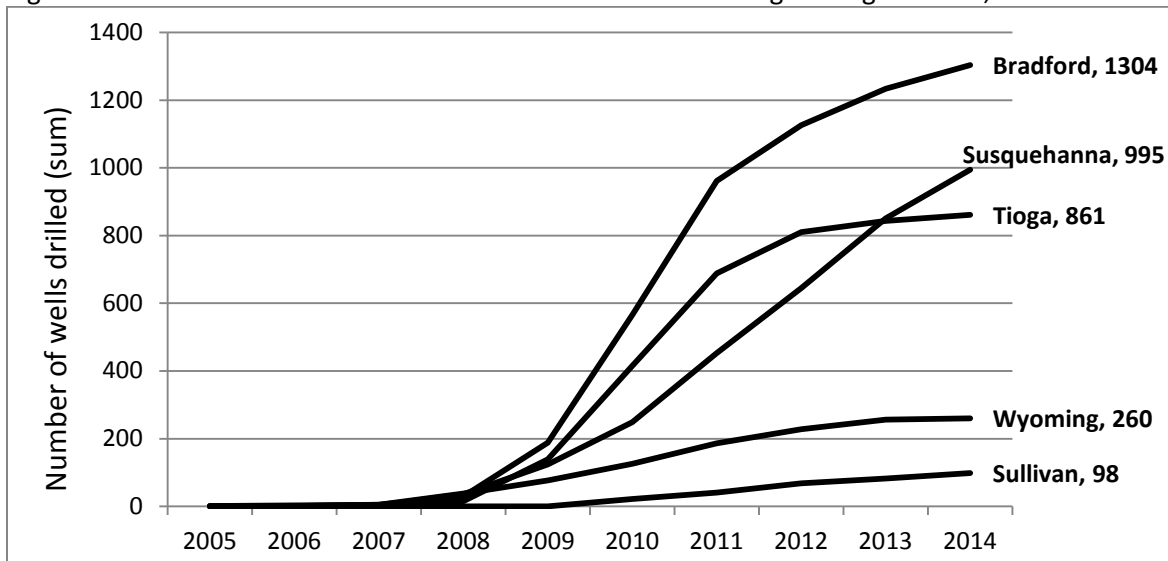
Source: PA Dept. of Environmental Protection, Office of Oil and Gas Management

*as of August 2014

The next group of figures compares the cumulative number of wells drilled in the four study counties with their neighboring counties. Neighboring counties are defined as those that touch the study county in any way. Although this research focused on the experiences of low-income residents across the four study counties, these counties do not exist in isolation. Given the spatial dependence of Marcellus Shale development (development is spatially clustered along the Marcellus Shale formation), communities, individuals and families may be affected not only by development within one's own county, but also by development in neighboring counties.

For visual ease, the researchers separated the figures for the northern tier study counties (Bradford and Lycoming) because of their large number of neighboring counties. Figure 3 displays the cumulative number of wells drilled between 2005 and 2014 in Bradford County and its neighboring counties (Sullivan, Susquehanna, Tioga, and Wyoming). As can be seen from the figure, at 1,304, Bradford County has substantially more wells drilled than any of its neighboring counties, but Susquehanna County has also experienced a rather large increase in drilling activity since 2008, and if current trends continue, it could converge with Bradford County in the coming years.

Figure 3. Cumulative number of wells drilled in Bradford and neighboring counties, 2005-2014

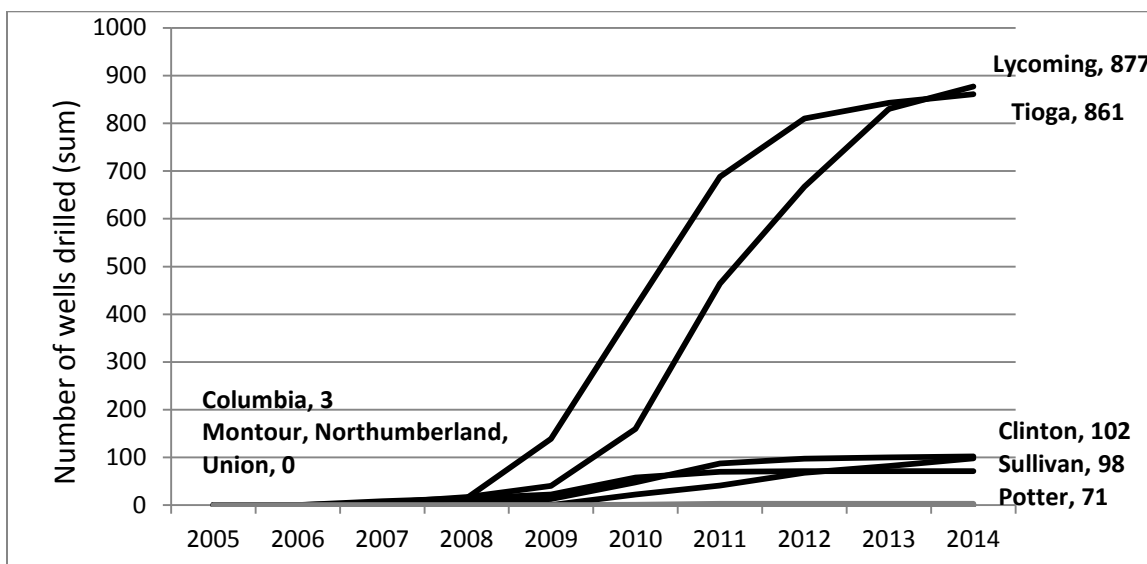


Source: PA Dept. of Environmental Protection, Office of Oil and Gas Management

*as of August 2014

Figure 4 displays the cumulative number of wells for Lycoming County and its neighbors (Clinton, Columbia, Montour, Northumberland, Potter, Sullivan, Tioga, and Union). No wells have been drilled in Montour, Northumberland, and Union, and only three wells have been drilled in Columbia County. Lycoming and Tioga have a similar cumulative number of wells drilled, and both appear to be leveling off in their growth rates. Clinton, Sullivan, and Potter all have similar numbers of wells, and growth rates appear stable.

Figure 4. Cumulative number of wells drilled in Lycoming and neighboring counties, 2005-2014

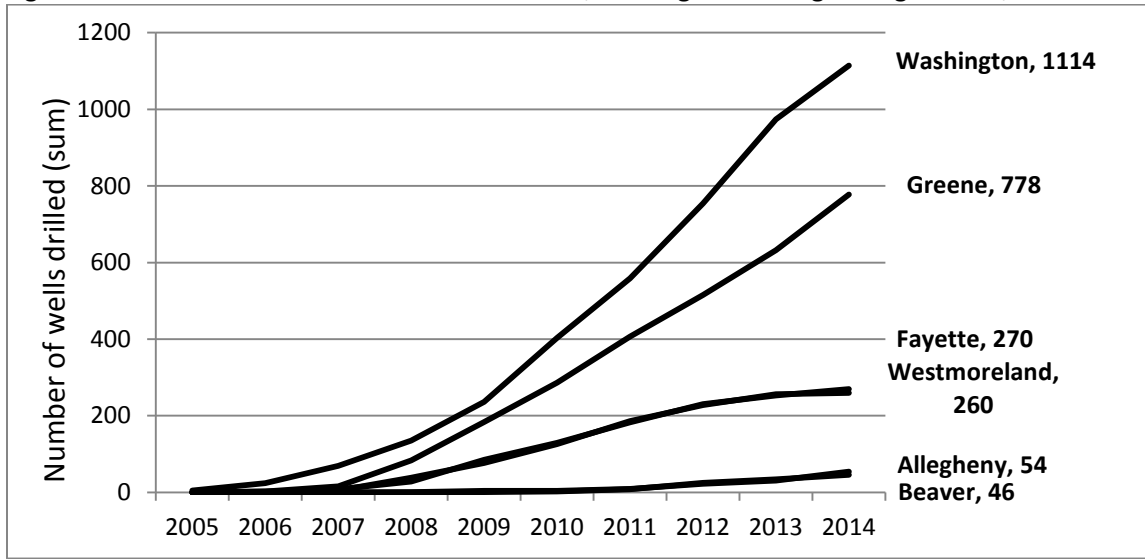


Source: PA Dept. of Environmental Protection, Office of Oil and Gas Management

*as of August 2014

Finally, Figure 5 displays the cumulative number of wells for the southwestern study counties (Greene and Washington) and their neighbors (Allegheny, Beaver, Fayette, and Westmoreland). Washington and Greene have substantially more wells than their neighbors, but while Washington is showing signs of slight reduction in the well growth rate, the growth rate for Greene continues to increase. Allegheny and Beaver both have low levels of development with low growth rates. Fayette and Westmoreland counties have 270 and 260 wells, respectively with low growth rates.

Figure 5. Cumulative number of wells drilled in Greene, Washington and neighboring counties, 2005-2014



Source: PA Dept. of Environmental Protection, Office of Oil and Gas Management
*as of August 2014

Understanding the Experiences of Low-Income Residents in Shale Gas Communities

Some observers of gas development within Pennsylvania’s Marcellus Shale region have identified the potential for natural gas development to provide new economic development and jobs to many areas of Pennsylvania that have long struggled with unemployment, underemployment, and economic stagnation. For example, a 2009 report released by Penn State University predicted that aggressive development of the Marcellus Shale gas reserve “would reshape the economic landscape of the state, transforming the commonwealth to a net natural gas exporter while creating hundreds of thousands of jobs and generating billions of dollars in additional output, income and tax revenues” (Considine et al., 2009, p. 32). However, other analyses have provided less optimistic predictions regarding the long-term economic development impacts of sudden natural resource development, such as the development of the Marcellus Shale (James and Aadland, 2011; Paredes, Komarek, and Loveridge, 2015).

In the debates over the social and economic impacts of Marcellus Shale gas development, relatively little attention has been paid to low-income residents and how shale gas development has affected their outcomes and well-being (see, however, Williamson and Kolb, 2011, who have previously documented the effects of shale gas development in Pennsylvania on housing markets, and, in particular, access for low-income and economically struggling residents). This research, however, focused on the experiences of residents within active shale gas communities who have, to varying degrees, continued to struggle

economically. This research finds, consistent with Williamson and Kolb (2011), that in many cases low-income residents have faced heightened economic insecurity as a direct consequence of rapid shale gas development. New economic insecurities have specifically been associated with increases in the costs of rent and housing as well as an inability to take advantage of new employment opportunities, or employment that pays an income commensurate with increased living and housing costs.

Data and Methods

In the spring and summer of 2014, meetings and conversations were held in all four study counties with service providers and administrators in the areas of public housing and social services. The purpose was to discuss and develop a recruitment strategy and interview protocol to complete interviews with low-income county residents. An interview protocol was developed that included questions about the respondent’s socio-demographic characteristics and household. This was followed by a series of open-ended questions regarding the respondent’s experiences living within areas experiencing marked shale gas development. The final set of questions focused on residential change extending over the 5-year period prior to the interview.

Table 1. 2014 Poverty Guidelines for the 48 Contiguous States and the District of Columbia

<u>Persons in Family/Household</u>	<u>Poverty Guideline</u>	<u>125% of Poverty Guideline</u>
1	\$11,670	\$14,587.50
2	\$15,730	\$19,662.50
3	\$19,790	\$24,737.50
4	\$23,850	\$29,812.50
5	\$27,910	\$34,887.50
6	\$31,970	\$39,962.50
7	\$36,030	\$45,037.50
8	\$40,090	\$50,112.50

Source: U.S. Department of Health and Human Services.

“Low income” was defined as having a household income at or below 125 percent of the poverty line (See Table 1) at the time of the interview, and/or participation in an income-qualified social assistance program (e.g. section 8 housing assistance, TANF) within the 5 years preceding the interview. The income threshold was set at 125 percent of the poverty line to include those residents who were perhaps not technically below the poverty line, but economically struggling nonetheless. This sampling criteria is consistent, for instance, with the federal school lunch program, which uses similar poverty thresholds to establish program eligibility. The researchers broadened their criteria by including those who were not necessarily earning incomes at or below 125 percent of the poverty line but who, over the preceding 5 years, had found themselves in a low-income status, reflecting previously established

research findings regarding the temporality and often cyclical nature of poverty status, particularly among people with unstable income sources (Brown and Schafft, 2011; Rank, 2004).

The criteria for inclusion in the study was further limited to adult respondents (age 18 or older) who maintained a current residence in one of the four study counties at the time of the interview, and who had lived in Pennsylvania for the majority of the 5-year period preceding the interview. However, in every case, participants had lived within or close to the study counties for the majority of the preceding 5 years. Most were native to the area, and all could speak knowledgeably and at length about their local communities based on personal experience and longevity of residence. In fact, of the 39 participants, 34 had spent the entire 5 years preceding the study within the study counties, and the remaining four had spent at least four of the preceding 5 years within the study counties.

The sampling criteria also excluded from inclusion any potential participants who were judged to have major ongoing and debilitating drug and/or mental health problems that might interfere with the respondent's ability to coherently reflect on their experiences. However, it was not necessary to turn away any potential participants for these reasons given that all of the participants interviewed were able to reflect thoughtfully and coherently on their experiences living within shale gas community contexts.

Two principal methods of recruitment of low-income respondents were used. First, beginning in September 2014, recruitment posters and postcards were distributed describing the study and how to contact the researchers via phone or email to inquire about participating in the study. Postcards and posters were distributed to social service and housing agencies, public libraries, thrift stores, trailer parks and other public locations. The research team also worked directly with staff at social service agencies, housing assistance agencies and food banks and food pantries to contact clients and encourage them to take part in the study. Participants were also recruited directly, with staff assistance, at food pantries during scheduled food distributions. Using these recruitment methods, interviews were conducted with 39 low-income respondents, including 10 interviews in Bradford County, 11 in Lycoming County, and nine interviews in both Greene and Washington counties.

The average age of low-income respondents was 44, although the youngest was 20 years old and the oldest was 70. The sample was ethnically homogenous (reflecting the lack of racial diversity across the study counties). Among all respondents, three were African American, one was Latino and the rest were white. Out of the 39 respondents, 21 were employed, although mostly in part-time jobs and other work that provided minimum wage or slightly above minimum wage salaries. Two respondents currently were working and earning salaries above the 125 percent poverty threshold, but had in the 5 years preceding the interview received income-qualified social services, and one had experienced homelessness. Several respondents were retired and others were unable to work due to disabilities. Still others were unemployed but actively looking for work. Given the average age of the respondents, many had adult children for whom they were no longer financially responsible. On average, respondents had between one and two dependent children. Nine respondents had one dependent child, five had two dependent children, and five had three dependent children. About one-third of the respondents were married.

Table 2. Selected Characteristics of Low Income Residents (>125 percent of Poverty Threshold), Bradford, Lycoming, Washington and Greene Counties, as Compared with Characteristics of Study Sample

	Bradford	Lycoming	Washington	Greene	Study Sample (Total)
<u>Gender</u>					
% Female	55.46	54.93	56.08	59.31	74.36
% Male	44.54	45.07	43.92	40.69	25.64
<u>Age Structure</u>					
% Adults Aged 18-64	80.22	81.62	80.21	77.21	92.31
% Adults Aged 65+	19.78	18.38	19.79	22.79	7.69
<u>Race</u>					
% White	96.35	83.92	86.86	97.70	89.74
<u>Marital Status</u>					
% Married	40.95	24.51	24.64	31.27	28.21
<u>Educational Attainment</u>					
% Less Than High School	24.79	23.09	23.09	29.13	10.26
% High School Dipl./GED	52.05	48.22	47.94	53.69	41.03
% Some College	15.71	21.77	20.54	12.78	23.07
% College	7.38	7.00	8.76	4.37	25.64
<u>Disability Status</u>					
% Disabled	23.47	21.54	27.10	32.46	15.38
<u>Employment Status</u>					
% Full Time Empl.	12.01	13.59	10.44	15.75	12.82
% Part Time Empl.	32.80	41.14	39.01	26.22	41.03
% Not working ¹	55.16	45.00	50.80	58.02	46.15

Note: County-level figures calculated from American Community Survey (ACS) data, 5-year estimates. Bradford, Lycoming, and Washington counties represent data estimates from 2009-2013, and Greene County estimates represent data estimates from 2008-2012. ¹ Includes retired and disabled.

Table 2 compares socio-demographic characteristics of all low-income residents in Bradford, Lycoming, Washington and Greene counties, comparing these characteristics to those of the study sample. In general, the characteristics of the study sample closely resemble the characteristics of the low-income population in the four-county area more broadly, although women are overrepresented in the study sample, and the participants in the study sample have slightly higher educational attainment than the larger low-income population in these counties. Six participants had Associate's degrees, two had Bachelor's degrees and two participants had completed Master's degrees. The study sample is also

somewhat younger and less proportionally disabled than the low income population in the four-county area.

Despite these differences, the data do not suggest any obvious ways in which the study sample differs from the larger low-income population in ways that would result in significant response bias. However, within the scope of this study it is not methodologically feasible to randomly sample the low-income populations in these counties, and therefore, while one may reasonably assume that the study sample constitutes a more or less representative sample, there is no way to completely ensure that this is the case. It is also important to note that while participants comment at length regarding the natural gas industry within their communities and their experiences living within active gas-development Pennsylvania counties, their comments relate to their own individual experiences and perceptions, and their own beliefs about the effect of the gas industry on their communities and their own well-being. That is, the results presented in this report should be interpreted as a synthesis of what low-income residents said about their experiences rather than as generalizations about the gas industry overall.

Most interviews lasted between one and two hours. Because of the focus on the residential history of the respondents, those respondents who had lived in a number of residences over the 5-year period naturally took longer to complete the interview, which explains much of the variation in interview time. Interviews took place at a variety of locations, mostly determined by the respondent's preference, and included public libraries, churches, food banks, emergency housing shelters, and private residences. One interview was conducted by phone when the respondents and the research team were unable to identify a mutually feasible time and location to conduct the interview. Otherwise, all interviews were conducted in person. All low-income respondents received \$50 as compensation for their participation in the study.

After each interview, field notes were written by the principal interviewer. All interviews were audio-recorded, and with only a few exceptions in cases in which respondents had relatively little to say about shale gas development, the interviews were transcribed verbatim. In the case of those interviews that were not transcribed, the field notes were checked against the audio recording and, where appropriate, selective transcriptions were completed.

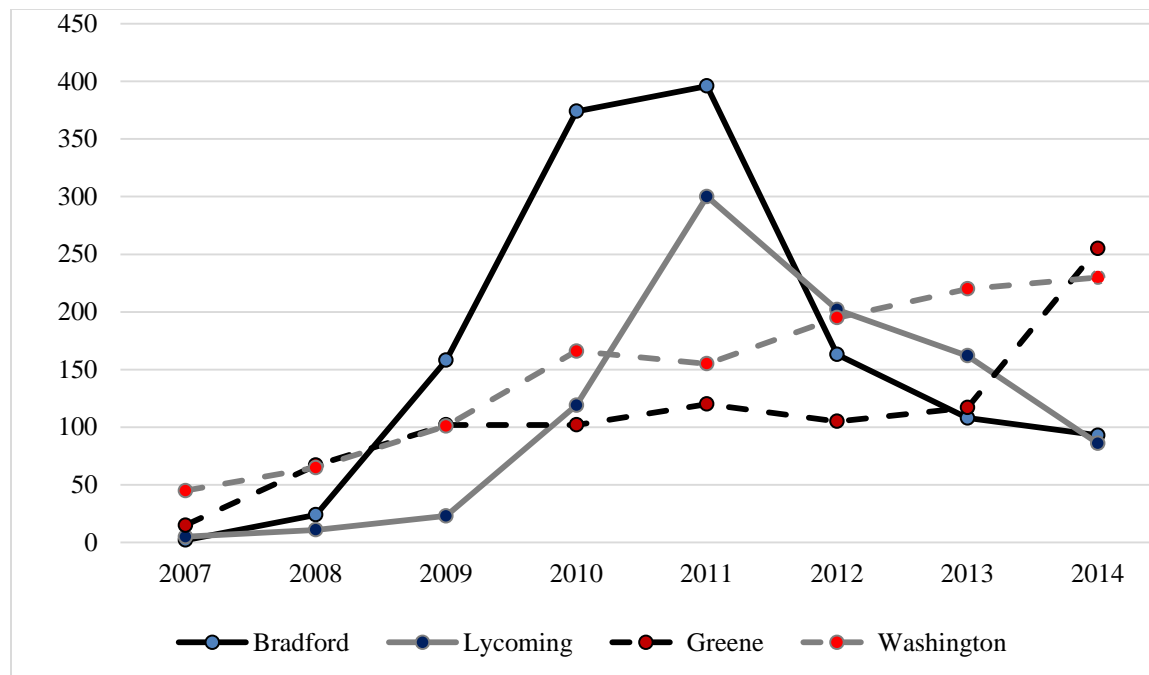
In addition to interviews with low-income residents, interviews and meetings were arranged with 13 service providers in all four counties. Field and interview notes were written following these meetings and audio-recorded interviews with six of the 13 service providers were recorded and subsequently transcribed. This report draws on all of these data.

Mixed and Uncertain Labor Market Opportunities in the New Shale Gas Economy

The trajectories of unconventional gas development in the northern part of the state have been markedly different than in the southwest. As Figure 6 shows, Greene and Washington counties in the southwest have experienced a relatively slow and steady increase in unconventional drilling activity between the beginning of 2007 and the end of 2014, although Greene County experienced a spike in drilling in 2014 nearly doubling its drilling activity. In 2013, 117 unconventional wells were drilled in

Greene County while in 2014 that figure increased to 255. In Bradford and Lycoming counties, however, development proceeded very rapidly between 2008 and 2011 after which drilling activity dropped off steeply. In 2008, fewer than 25 unconventional wells were drilled in either county, though by 2011, 300 unconventional wells were drilled in Lycoming County and nearly 400 in Bradford County. By 2014, however, neither county had more than 100 wells drilled during the calendar year. This slowdown in development was a result of a refocusing of drilling activity in the southwest where “wet gas,” including butane and propane, has proved more profitable as global methane prices dropped.

Figure 6. Unconventional gas wells by year, 2007-2014: Bradford, Lycoming, Greene and Washington Counties



Data source: Pennsylvania Department of Environmental Protection online reporting service

These trends were clearly reflected in the conversations with residents and local stakeholders in the four counties, with those in Lycoming and Bradford counties making repeated references to the contraction of the gas industry, the impact on employment and on local communities. Regarding the scaling back of gas industry development in the northern tier, a housing service staff person told us, “there certainly has been a scale back...(the gas industry) thought it was gonna be really well-producing and so—I know that there wasn’t always success in some of the wells that were found in Lycoming County. What they expected to get versus what they were getting wasn’t at the point of capacity; what they wanted.” A service provider from another northern tier agency shared that Marcellus Shale brought in gas jobs for a higher level of worker than people who actually needed jobs in the area. “It wasn’t the little guys working minimum wage that got those jobs,” she said. Instead, people who already had good jobs, like truckers with CDL licenses, were able to get even more money from the industry. But for the most part,

residents with minimum wage jobs did not get the benefits of jobs from Marcellus Shale. Those who did, she noted, were often fired shortly after getting hired, especially when the gas companies began scaling back operations.

A woman in her early 20s, employed part-time and living in Lycoming County, related,

Well, a lot of people, if you talk to people that are out of the area and brand new here, they're like, 'Oh, yeah, there's so many gas jobs. I'm gonna get a gas job.' In reality, there's not that many jobs left because my boyfriend actually worked for the gas company. They just cut his job. That was a huge shock to us when that happened...He went to college. He has two degrees, and got hired on as a rig hand. They told him that he was gonna be able to work up through the company to be able to do mud engineering. His company had shut down. They gave everybody severance packages except for him. They told him that he was gonna have this job to be a mud engineer in Watsontown. We just found out last week that they're cutting all the jobs, and because of the gas drop recently, that they're on a hiring freeze until June.

Respondents did not tend to make the same observations in southwestern Washington and Greene counties, although they nonetheless often raised concerns about what they saw as the inevitable withdrawal of the industry, even if it was not clear when or how that might occur. These concerns often had particular resonance among some residents in coal mining areas that had already experienced the effects of boom-bust economies. As a married and full-time employed (though homeless) man from Washington County put it, "You have generations of people that have lived in this area that lived here during the huge economic boom and then the downfall, economic boom...When I see an industry like this, personally, coming in into this particular area, what I see is history repeating itself."

Employment within the mining sector, a measure of shale gas extraction, has grown statewide and significantly increased within Lycoming, Bradford, Washington and Greene counties (Kelsey, Hardy, Glenna and Biddle, 2014). Many participants within the study noted the growth in employed gas workers. However, issues of credentials, the influx of outsiders, and fluctuating labor demand, left many with the belief that many (though not all) local Pennsylvanians were excluded from benefiting from many of these opportunities. Available positions hinged on credentials and experiences that many respondents did not have. A service provider from southwest Pennsylvania explained that she believed gas companies tended to target lower-skilled residents for work.

We have also the clients that are just on the cusp of possibly making it, but—example, not too long ago, we had a gentleman that literally quit high school with his girlfriend because he got a job at one of the wells here in Greene County. He was doing fine, doing great for six months because he had all this income, but he never really did that great at school. When he went one day to work, literally everything was just gone. They up and moved to a different state. He no longer had a job. We find that. We also find that in droves, people are getting laid off. We'll have a company that's up and running. You'll see all these trucks everywhere. Then all of a sudden, all these employees in that company sayin', "I can't pay my rent because I got laid off."

While some respondents noted expansion of employment opportunities within service sectors (e.g., hotels, convenience stores, restaurants), these positions were often not able to provide full-time work or wages that would keep employees out of poverty. A Northern Tier service provider said, “I couldn’t agree more with you in that there’re jobs but they’re not jobs assisting families. I think that’s frustrating to the families out there that are trying to make a go of it. I’m workin’. I’m workin’ a lot of hours. I’m workin’ hard. I’m cleanin’ hotel rooms and I still can’t make it. I still need help.”

Participants with direct previous experience within the gas industry and those that had also applied to work in the industry shared the importance of credentials and experience in acquiring gas jobs. As one unemployed female Lycoming County participant in her early 30s stated, “There was more opportunity for jobs with the gas company, but you had to be qualified to get them jobs.” Many participants were directly excluded or felt limited, as training and specialized experience was a necessary pre-requisite to access these jobs, experiences that most participants did not have or knew how to acquire. A service provider from the northern tier noted the prevalence of low-paid jobs:

There’re more restaurants that popped up than we know what to do with. More hotels that popped up than we actually need. They’re all minimum wage jobs. The people are employed. The high rents, you can’t blame that on the gas companies. If there was blame—I don’t even wanna use the word blame because they’re business people and they seized an opportunity to get high rents. We have so many high-end apartments.

Beliefs about the long-term prospects for these communities varied by region. In Greene and Washington counties, residents described changes including rising cost of living, increased drug use and crime, and expanding diversity. Yet residents also felt the gas companies had provided more jobs and greater economic development for the region. The Greene and Washington participants therefore reported mixed feelings about the long-term outlook. One resident, a man in his mid-30s and employed full-time, explained:

There's definitely been a positive influence by the financial gain of Greene County residents, financial gain of landowners, farm owners, which has also trickled down to increased business as far as the shopping goes, as far as restaurants, local businesses, retail—there's been jobs created to compensate for the new money and to compensate for the out-of-town workers that are in here doing work. That's always a good thing. Have there been a significant amount of negative consequences? Absolutely. I can't really differentiate which has been greater.

While the prospects of new employment opportunities initially excited residents across participating counties, this excitement was rather quickly deflated. A Washington County man said young “able-bodied” men were at an advantage to get a job in the industry, but that local people were given a sense of “false hope” about the number of employment opportunities. As a disabled Lycoming County woman in her early 40s explained, when the gas line was coming into the area, “they said...that everybody would be able to find a job; they’d employ anybody. That’s not true.” She reported that her husband, a welder by trade with pipefitting experience, was denied a position because he lacked a driver’s license.

They said cuz the gas line was coming in that everybody would be able to find a job, they'd employ anybody. That's not true. My husband knows a lot about a lot of things. Like I said, he's a welder, he's done some pipe fitting, anything. Because he didn't have a driver's license he was not able to work on the gas line which is ridiculous because people car pool all the time.

Residents in northern Bradford and Lycoming counties much more frequently tended to view the changes as damaging, and predicted negative long-term outcomes for their communities. They did not feel gas companies had provided economic benefits to most local residents. A Lycoming County woman, married in her late 30s and employed part-time, detailed these concerns. She stated:

We're gonna have all these hotels and buildings that we're not gonna have anybody coming to stay in. All these restaurants that aren't gonna have people—like the loads of people that they've had. Not only that, but the local businesses. All the businesses in the area that have been benefitting from the gas industry are gonna be really hurting from it. Because in five or six years when they're done, they're done. They don't need to come back here. I mean they're gonna be done. They're gonna be off doing exploration wherever they need to do it. We're gonna be left with probably decaying buildings, infrastructure.

More so than residents in Washington and Greene counties, the participants in Bradford and Lycoming counties felt the gas development had not yielded promised benefits. Instead, they predicted long-term decline of their communities as the gas companies leave the area. They also felt the negative changes in the communities were likely to last as the gas industry eventually pulled out.

Employment of Local Residents versus Out-of-State Workers

Most participants noted the frequency with which gas industry-related jobs seemed to be taken by workers from out of state. Of the 39 participants, this was mentioned by 24, from across all four counties. Of those 24, one-half expressed the opinion that out-of-state workers had been favored for this employment over Pennsylvania workers. These perspectives were expressed largely independently of the employment status of the participant (see Table 3).

A Lycoming County resident argued that while the industry has created jobs, they “with this job creation, they're just bringing people up from Texas for half of them. They're not even for people around here.” As one Washington County participant recalled,

I think a lot of people took it for granted that somebody was just gonna knock on their door and say, “Hey, come on. We're gonna go work at the gas well.” Honestly, I think that expectation was just devastating when they really realized they'd started seeing out-of-state people coming, starting the industry up, and didn't seem like they went away.

Table 3. Participant Employment Status by Mention of Out-of-State Gas Worker Presence and Impact on Gas Industry Employment for Local Residents

Participant Employment Status	Participants Mentioning Out-of-State Gas Worker Presence	Participants Stating Out-of-State Gas Workers Favored in Hiring	Total Sample
% Full Time Empl.	16.67	20.83	12.82
% Part Time Empl.	41.67	41.67	41.03
% Disabled	16.67	16.67	15.38
% Unemployed	25.00	20.83	46.15
Total N	24	12	39

Another Washington County man in his early 60s explained, “You see a lot of Louisiana, Texas license plates...There’s a lot of non-residents working for those companies.” A Lycoming County woman in her early 50s and a former industry employee expressed frustration at what she saw as the number of local people who needed employment versus the evidence of work done locally by non-Pennsylvanians. “There’s absolutely no reason why the unemployed men in this town can’t be doing this job 8 hours a day...there are enough people! You don’t have to bring [workers] from Texas.” Sometimes local residents find temporary industry employment only to lose the work to outsiders. A Lycoming County woman in her late 30s and employed part-time, described the shock she felt when her husband and a large group of local men were abruptly terminated and replaced with workers from southern states.

Then they started bringing in their own people, so they no longer needed the temporary people that were local. All the people that were local were let go. They had their own people to take care of the rest of it.

Uncertainty of Gas Industry Work as a Local and Family-Sustaining Employment Option

Even with the competition for employment with workers from outside the local area, participants described how the unpredictable nature of the industry created instability. Sixteen of the 39 respondents mentioned what they saw as the unstable and unpredictable nature of gas industry employment. Of those 16 participants, 11 were from Bradford and Lycoming counties, perhaps reflecting the varying levels of activity over time in the northern part of the state versus the southwest (see, e.g., Figure 6). In total, four participants out of the 39 had personal experience working for the gas industry, and 13 knew of relatives or close friends that had employment through gas-industry-related work. None of the four participants previously employed through the gas industry retained that job at the time of the interview, and of the participants who mentioned relatives or close friends that had worked with the gas industry, only five were still currently working in the gas industry. Of the total 17 participants with direct experience of gas industry employment or having close friends or relatives working for the gas industry, 10 noted the general instability of gas industry employment.

A participant in her late 20s from Bradford County, employed full-time, described the experiences of her children's father with gas industry employment and in particular the long hours and its effects on the family and children.

He didn't last very long. He worked for them. He went to Ohio a few times. It seems like the ones that actually live here get sent outta town. *[Laughter]* Then, we got people coming in. I never really understood that whole part, but it seems like if you live here and work for the gas company here, you tend to get sent everywhere. Then, we have so many people come in, so I don't know why they just don't send them wherever, and leave our people here so they're with their families. Then they gotta pay them to be away from their family.

And in Washington County, a participant in his late 50s, divorced and disabled, said:

My buddy worked with 'em. He started out with 'em. What happened, he got fired for some reason or somethin', but yeah, he started, he worked for 'em for about two months, three months. I don't think I'd ever work for 'em. Yeah, it's just probably too many hours to begin with. You're never around. You got a family. "Hi, honey. Good night. See ya later." Get up, kiss her in the mornin', "Bye, honey, see ya later." You spend time with your kids, your wife, or if doin' that because you're gone all the time. Then they might ship ya—you might be here today, they might ship ya somewhere else 100 mile down the road somewhere. I've seen 'em goin' into West Virginia, everywhere.

And in Lycoming County, a female participant in her early 50s and employed part-time had this exchange with the interviewer:

Interviewee: I knew people that worked for the gas companies. You can make good money with them if you work 120 hours a week or every couple weeks. They work them into the ground, and they think that it's okay cuz they're making all this money...*[Laughter]* I knew this guy that was away for three weeks at a time and home for a week and then away for three weeks at a time.

Interviewer: How did that end up working out for him?

Interviewee: Not very good.

Interviewer: What did he do?

Interviewee: He continued to do it, and then the company had shut down, and he lost his job altogether. I don't remember what the company was called, but it was stationed out in Watsontown.

These quotes help to illustrate how many low-income residents, despite their perceptions of the relative availability or unavailability of gas industry work, often had doubts about the extent to which this employment would ultimately provide long-term dependable employment, which would also be personally sustainable given various family commitments. Another Lycoming County woman in her late

30s and employed part-time had a female friend who worked as a dispatcher for a gas company. She left her job because she “felt like her kids didn’t even know her anymore” due to the long hours she worked. A third Lycoming County woman, in her early 50s, homeless and employed part-time, shared her story of working as a dispatcher for the industry. She worked 12-hour shifts in six-day stretches with three days off in between, alternating between night and day shifts. She said she would “throw money” at her daughter for whatever she wanted or needed so she would have time to sleep. She often took her son to school late because she could not keep her days straight. She expressed relief at being laid off from her job.

Fifteen participants (from across all four counties) described what they saw as the long hours and hard work of gas industry employment. Of those 15, seven either had direct experience working with the gas industry or knew someone who had (see Table 4).

Table 4. Participant Employment Status by Mention of Hard Work and Long Hours of Gas Industry Employment

Participant Employment Status	Participants Mentioning Hard Work and Long Hours	Total Sample
% Full Time Empl.	20.00	12.82
% Part Time Empl.	46.67	41.03
% Disabled	13.33	15.38
% Unemployed	20.00	46.15
Total N	15	39

A few participants however, had gained employment within the gas industry, or noted family members that had. Opportunities to benefit from gas extraction for these individuals, however, were affected by the migratory and uncertain nature of the gas industry. Participants described how locals who continued to work with gas companies were also often moved out-of-state or out of their local area. As a female participant in her early 40s from Greene County explained,

I have two brothers and a son who works with [the gas industry]. My son doesn’t stay here. They have him right now in Ohio. Isn’t there jobs here? It’s just disruptive—companies come in and then now my brother, who is from here, is in Tennessee.

For many participants then, these jobs were seen as not only disruptive to families, but they also confounded the expectations that people initially had of “local” job creation associated with gas industry work. Participants reported that the use of out-of-state workers and the transitory nature of industry minimized the opportunities for local residents to access the financial benefits of the gas industry within their respective counties. Those respondents who were able to find work within the industry described job insecurity that was connected to fluctuations in the pace of gas development and, consequently, labor demand. For those who did work for the industry or knew people who did, many noted the inconsistent labor demand and temporary nature of many of the jobs associated with

the gas industry. This was especially the case in Bradford and Lycoming counties. A fully-employed Bradford County woman in her late 20s told us,

I don't know too many people that have worked for them more than a year at a time. It seems like there's a time limit around here to work for a gas company or something. Or they just skip to another one. Which, that is fine if you're gonna keep working, but it seems like they go from this one to that one, or they just stop for a while. Then, they'll try it again and go back again. I don't know too many people that actually stayed for a long time.

Her perspective was echoed by an employed Lycoming participant in her early 40s who stated that after the initial rush of hiring,

...there was no job to be had, or they would hire and then they would lay off in a few months. You saw several people bouncing from one company to the next company to the next company and eventually losing their jobs altogether.

These experiences in general often left local residents with the conviction that most financial benefits of the gas industry for most local residents were inconsistent or simply inaccessible. This was despite the fact that participants in all four counties described the creation of new businesses connected to shale development. Another Lycoming woman in her late 30s explained,

It helps the hotel industry. It helps the food industry, because they do a lot of eating out and stuff like that. The local people, it doesn't—unless you, even when you do work in those industries, you're getting paid minimum wage. If you're a waitress you're getting below minimum wage. You're just not making anything off of them.

Many participants even struggled accessing these jobs, but they were the only place many saw as opportunities for work in their local community. When asked about the opportunities available in his county one Washington resident, disabled, unemployed and in his mid-50s, explained,

I don't see one opportunity right now. If you gotta look for a job, you're gonna find McDonald's, I mean there's a job if you can find a McDonald's or Burger King, you know. But if you got a good career in somethin', you can't even get hired because all these other people done come in took over. Now you gotta get into a \$7.00 an hour job at McDonald's and hope you can make it.

In Greene County a participant, married, employed full-time and in her mid-40s, said,

That is so wrong because people have tried and tried. This one guy my mom knew tried to get a job, and he was goin' to the church where she goes. It took him a while to get a job. I mean, I think you really gotta go to college or you're gonna be workin' at the fast food or a gas station because—what it is, because when I was working, I was workin' at Head Start in (town), but they're not there anymore. That was several years ago, 'cuz I had to stay at home and take this kinda medication to keep from losing (my daughter) when I was pregnant with her in the beginning, so I just—I mean, I've worked in Morgantown (WV) and Washington (PA), but I really

would like to get a job, but you're gonna spend your money, minimum wage, on gas. I think it's really hard because there's just—I just don't see where the jobs are. I don't see nothing here.

Participants also discussed that most of the jobs that were available in the counties were often part-time, with full-time positions not being accessible to the participants. Although participants saw job creation due to the growth of these industries, these jobs were often unable to provide the full-time work or wages that would sustain many local residents.

Gendered Structures of Opportunity and Risk

Previous work focused on the Marcellus Shale region and other places with similar development has suggested the ways in which the oil and gas industry is perceived to provide unequal opportunities to men and women (Filteau, 2014; Schafft and Biddle, 2015; Taylor and Carson, 2014). Because of this, the researchers asked participants across all four counties whether they believed there were equal employment opportunities in the gas industry for men and women. Across all four counties, respondents discussed the gendered nature of jobs in the gas industry, with women more likely to obtain service sector employment in hotels or fast food restaurants than in the gas industry itself. While respondents reported that employment opportunities for gas industry work are designed for men, they also said the majority of those positions go to non-locals imported from southern states. Participants tended to state that, for women, new opportunities were often in the form of service sector jobs and employment peripheral to the actual work of the gas industry—security, secretarial, and cleaning services.

In Greene County, most participants thought it was not even a possibility for a woman to get a job related to the industry outside of contracted services. A Greene County man who works for one of the fuel companies agreed. "It's a male industry." A Bradford County woman, who formerly worked as a location attendant for one of the companies explained, "It's very much a man's world." Another woman said the "discrimination" against women is "very unfair in today's market." One respondent said the work is too physically demanding for women, requiring more "brute strength" than the average female possesses. Even if a woman could physically do the job, she argued, she would have to "have tough skin" to work on a crew with dozens of men. A former supervisor for hotel housekeepers and currently unemployed, she argued that women working service sector jobs such as this work at least as hard as gas workers, but they only make minimum wage. With very limited opportunities for employment with the industry, most women are left with service sector jobs that accompany the influx of outside gas workers. A woman in Greene County in her late 30s and employed part-time said that while she thought there might be job opportunities in the gas industry for men, this was not the case for women. "I guess I'm stuck at Pizza Hut." Even in the service sector, however, it may be difficult for local women to obtain work. According to a Bradford County woman, many gas worker wives who moved to the area with their husbands take local service sector jobs, decreasing the supply of jobs for local women.

A part-time employed Lycoming County woman in her early 20s said while the gas industry might seem promising for young men, young women lack the same opportunities. "As far as I knew, the only opportunity for a woman in the gas industry was to be a 'Rig Maid,' which is where you go and clean up

the man camps.” The company contracts with various gas companies, and hires women to clean job sites and “man camps.” The company only hires women, according to one participant: she described when a man who had applied for a job with the company was told “it was a woman’s profession to clean the rigs.”

Across counties respondents discussed the gendered (and age-related) nature of employment opportunities with the gas industry, in various ways suggesting that the preferred worker is a young male willing to work long hours and travel for weeks at a time. When a part-time employed Greene County resident in her mid-40s was asked, “Do you think that there’re more opportunities for men than for women?”, she said, “I do. Yeah. If I tried to get a job there, they would be like, ‘Yeah, right. Hold a flag.’” She described her son’s employment within the gas industry and his enthusiasm about the wages he was earning. Her younger son was also excited at the prospect of following in his brother’s footsteps. At the same time, their sister has worked her way up to manager at a McDonalds, and their mother, who had described losing housing due to limited and expensive housing associated with gas industry development, juggles two jobs in an effort to make ends meet.

Residents across all four counties described their perceptions regarding the more limited job opportunities available for women within the gas industry and sometimes expressed doubts about the degree to which women were physically capable of much of the work. Respondents in Washington and Lycoming counties believe job opportunities associated with the gas industry exist for women, though these are more limited in scope and pay. A Washington County woman said her brother and nephews work for the gas industry. Even with those family connections, her daughter and niece were not granted interviews when they applied for positions. A Washington County woman in her early 50s with a high school diploma, employed part-time but homeless, was previously hired as a dispatcher with the water trucks for one of the gas companies, a job that paid \$12 an hour. Before she could start the job, she had to pay hundreds of dollars for special fire retardant boots, shirts, pants, and a raincoat. “You can’t afford the clothing, but you can’t afford not to have the job either, so you’re stuck between a rock and a hard spot.” She worked 12-hour days over seven-day time spans, but the work is seasonal. She only worked at the job for two months before she was laid off for the winter. Because she didn’t work long enough before getting laid off, she was ineligible for unemployment. “Basically, that is one of the jobs [women] are allowed to get...The job, they say, is too hard of work. A lot of the women aren’t strong enough to connect the pipes. They’re not strong enough to tighten and loosen the valves.”

Even though she was able to secure a job with the industry, she believed that the pay was not equivalent to that of the higher paying jobs available for men. Other Washington County respondents felt that women can get jobs with the industry, but these were limited to truck driving, secretarial, and security guard positions. These limited position opportunities were echoed across all counties. Bradford County housed a “man camp” for gas workers for several years; it is now closed. When it was open, the company who owned it employed women to work in food service at the camp, which provided another opportunity for industry-related work.

In Lycoming County, respondents reported that, in part, women were missing from the industry because, as primary caregivers, they were unable to sustain the extended time away from home. One

Lycoming County woman, unemployed and in her mid-20s, argued that while the industry favors men, she had seen women “do guard shacking”—security guard work. These women work long hours, comparable to that of the men in the field and can be away from their families for weeks at a time. “I don’t know a whole lot of women who will just up and leave their children and their family to do work like that.”

Sexual Harassment, Prostitution and Sex Work

Several women in Lycoming and Bradford counties described thwarting unwanted advances by gas workers in the workplace or in social spheres. This included one woman in her late 20s in Bradford County, and three Lycoming County participants, one in her early 20s, one in her late 30s and one in her early 40s. None of these participants had personal experience working directly with the gas industry, but all knew people who had. Further, one who had worked for years in the hotel industry had direct experience working with short- and long-term guests from the gas industry. A young Lycoming County woman said the gas workers she has encountered in public spaces were “very degrading toward women...I wasn’t really used to seeing that.” Describing going to a bar/restaurant to eat dinner with her grandparents, she said, “These guys came up, and were talking to me...They were like, ‘Oh, how old are you?’ I was like, ‘Oh, I’m 17.’ The guy yelled across the bar...‘She’s jailbait. Don’t talk to her.’ I had never known guys were like that.” Another Bradford County woman said if she goes into a bar, “they hit on you just like that.”

Another woman in Lycoming County described her experiences working in a local hotel that served gas workers. She used to work in a hotel with exterior corridors, which lacked security cameras outside the guestrooms. “I’ve had a guy, when I was cleaning a room, block the door so I couldn’t get out of the room trying to get me to do sexual acts to him.” She says it is often difficult to persuade management to take action against the gas workers because of the potential for lost revenue should the companies decide to patronize competing hotels in the area.

While most respondents described risk to women in terms of harassment, others reported the emergence of local prostitution to serve gas workers. A Lycoming County participant who worked as a hotel receptionist recounted the story of removing a prostitute from the hotel only to find her back the next day in another gas worker’s room. “You’d overhear the guys talking, ‘Hey, I had her in my room last night. You guys want her, too?’”

Another Lycoming County woman reported the common use of Craig’s List by local women to advertise sexual services to gas workers. She said the gas workers will “just pay it,” and the local prostitutes think, “It’s good money.” She has a friend whose father lost his job with one of the gas companies. She has a job, but the minimum wage is not enough to pay her family’s rent. Once she started prostituting at night, she made enough money to make her family’s rent payment in two days. In one two-day stint, she made \$6,000. Prostituting is how “she supports her family.”

Several women described being solicited for sex by gas workers. Talking about being approached at work, one woman said, “I’ve had men in the gas industry come up and solicit you... They would come up

and say, ‘Hey, I got \$100, what would you do with that? Would you come to my room later?’ Of course, you’re like, ‘No. No. No.’”

Respondents suggested gas workers were soliciting young women because they had money, time, and interest when they came off a shift and into town. A northern tier resident in her early 20s explained:

Prostitution has really gone up in our area. I know a lot of girls from when I was runnin’ around on the streets that ended up prostituting, and almost all of their clients were gas guys. There’re social media sites that you can put yourself out there on, like Craigslist even. Girls’ll pimp themselves out on Craigslist for a lot of money. The gas guys’ll just pay it. Because I mean \$100 for something is nothing for them. I mean you’re home for five minutes, and you haven’t been home for two months. You want some booty, that’s where you’re gonna go. It’s quick, and it’s \$100. That’s not even a day’s worth a work for them. It’s nothing. These girls just get into it because they’re like it’s gonna be good money.

Another female participant described gas workers soliciting drugs and prostitutes at a hotel:

I mean you see these guys, they’ll come in, they’ll be looking for—I’ve had people ask me for drugs, for cocaine, for heroin, for pot. They’ve asked me for prostitutes. I’ve had to personally kick a prostitute out of the [local hotel] ‘cause you knew that’s what she was doing and you can’t have that kinda stuff. These are direct impacts of the gas industry being in Williamsport.

This participant went on to explain police are rarely involved in cases of prostitution or other crimes in the local hotels. Attributing it to the need to maintain good relationships with the gas companies, the participant said:

I mean it’s like you have to go through so much ‘cause [the hotels] don’t want—they don’t want to lose the revenue. If you start complaining and making issues, the [gas] company’s gonna say, “Hey, there’s 10 other hotels in Williamsport that I can go to. I don’t need to go to yours. We’ll send them somewhere else.” I think that’s had a lot to do with why my superior was not reporting it right away, and taking care of it.

While prostitution and solicitation of women in the gas regions were viewed to be dangerous and problematic in the region, many respondents did not mention either issue. Furthermore, almost all references to sexual assault, harassment, and prostitution were limited to residents in the northern tier. It is therefore unclear how extensive these perceptions are for residents in Greene and Washington Counties.

Perception of Increased Prevalence of Drugs and Crime

Another serious concern raised by many interviewed for this study was the increased use and access to drugs in the region. Many residents felt drug use predated natural gas extraction, and this was a viewpoint held by most service providers as well. However, many also attributed the expansion of drugs at least in part to the influx of gas workers, even if indirectly.

One participant, in her late 30s and employed part-time, described the change:

I've lived here my whole life to see [my community] go from being this little, tiny town where we didn't have to worry about locking our doors. Now there's this huge problem... where the people coming up here selling drugs, but we have—there's a high demand—people don't realize there's a high demand for the drugs from the gas companies.

Respondents also reported different kinds of drugs were now accessible in the area, including heroin, cocaine and crack cocaine, bath salts, pills, crystal methadone, and ice, a type of methamphetamine. Participants felt these drugs were more dangerous, addictive, and destructive to individuals and the larger communities. A participant in her mid-30s and employed full-time, explained:

There's been a significant increase in opioid and heroin use since I'd say 2007, 2006... Some of the smaller, more recreational drugs like marijuana, alcohol, things to that extent, I think they've always been around, but I don't think that they have the severe life crippling impact on people and families as these harder drugs do... I've seen a lot of lost souls and ruined lives because of drugs and alcohol—because of the severe drugs. Alcohol has always been around, and it's always caused its fair share of issues, but I've never seen anything like this heroin or opioid influx.

Some felt the gas workers were among the primary drug users in the community. Several participants discussed gas companies' drug testing policies, which were viewed to insufficiently prevent drug use by employees. One northern tier participant described her own struggles with drug abuse, familiarity with the culture of drug use within the county, and her firsthand knowledge of people who worked in the gas industry. She said:

A lot of gas guys use coke because it's like you do a line, you're gonna be able to go out, and do everything that you need to do on the drill site, and feel awesome and that kinda thing. Before the gas boom had really started, you couldn't find cocaine anywhere here. Then after the gas boom started, it's here. Heroin's here and it wasn't a huge issue like it is now... I think that everything just happened all at once, and everything followed people here.

Other residents attributed increased drug use to broader problems in the community, including rising crime, violence, and prostitution. Some discussed personal experiences with drug addiction, and the challenges of trying to help loved ones recover. A northern tier service provider said:

We gotta remember as well, we've become transient now. We have workers who come from different areas, have different lifestyles. There's a lot of speculation that some of the drugs that have come through are a result of the workers coming from different areas who are maybe living a different lifestyle...I think the city's frightened too. We don't know what's happening to us. We have all these new people coming in. We have drugs coming in. We have crime we never had before. There's a shooting here every other day it seems like.

While secondary data remains inconclusive regarding the association, causal or otherwise, between shale gas development and crime rates (Brasier and Rhubart, 2014), there was a strong perception among many participants that there was an association. While some residents described crime generally, others noted specific criminal acts, including robberies and assault. A Greene County woman described what she perceived as an increase in robberies in the region:

Copper, you name it, (people) are stealin' it just because they see these guys around. Generators, too, it's a big thing around here, stealing all their generators. I see more of that going on because they think they can now... Home invasions are a lot more... burglaries, home invasions.

Other common types of crime discussed were assaults, and bar fights. These were usually connected to conflicts between gas workers and local residents. The same Greene County respondent mentioned above noted that:

I think the crime rate is even more because the (gas) guys go—they're gonna come back to the room, they're wanting to go out and have a little drink, and sometimes someone in the area here, especially at the little bars, there's a lot of fights and stuff goin' on.

A Bradford County retiree in her late 60s, said,

Fights started coming in, with the bars. In Towanda, you had gas driller, local at a bar, arguing. Came out the bar. Shots fired. We don't get calls like that up here. You would get something like that maybe in Elmira, Binghamton, but next thing you know, shots fired. They caught the kid: Arizona gas driller. Over a girl. Everyone who's been here long enough knows it's not just over a girl. It's over the fact of locals are mad, gas drillers don't care, there's going to be clashes.

Some participants attributed the rise in crime to local residents struggling with the economic situation in the Marcellus Shale communities. A disabled Washington County resident explained:

Somebody got robbed 'cause somebody broke into their house and took all this. I mean, it's not only because of drugs, too. I think it's because of the economy, too. They got to survive 'cause they're gonna take whatever they have to take to survive You see in the paper all this copper pipe and stuff comin', stolen, all this copper. Well, they're probably takin' it to sell it to survive 'cause they ain't got no other choice in the matter.

Table 5. Selected Characteristics of Participants Who Reported Perceived Increases in Drug Use and Crime as Compared with Characteristics of Study Sample

	Reported Increased Drug Use and Crime in Community	Study Sample (Total)
<u>Gender</u>		
% Female	66.67	74.36
% Male	33.33	25.64
<u>Age Structure</u>		
% Adults Aged 18-64	93.33	92.31
% Adults Aged 65+	0.07	7.69
<u>Race</u>		
% White	86.67	89.74
<u>Marital Status</u>		
% Married	26.67	28.21
<u>Educational Attainment</u>		
% Less Than High School	0.07	10.26
% High School Dipl./GED	26.67	41.03
% Some College	26.67	23.07
% College	0.40	25.64
<u>Disability Status</u>		
% Disabled	13.33	15.38
<u>Employment Status</u>		
% Full Time Empl.	26.67	12.82
% < Full Time Empl.	33.33	41.03
% Not working ¹	0.40	46.15
Total N =	15	39

Note: County-level figures calculated from American Community Survey (ACS) data, 5-year estimates. Bradford, Lycoming, and Washington counties represent data estimates from 2009-2013, and Greene County estimates represent data estimates from 2008-2012.

¹ Includes retired and disabled.

Regardless of the cause, there was a strong sense of rising crime and violence in all four counties. While residents attributed the change in crime to various causes, including drug use, rising cost of living, influx of gas workers, and tension between locals and gas workers, all agreed the crime had negatively and increasingly affected their communities over the last 5 years.

Table 5 compares selected characteristics of participants who reported perceived increases in drug use and crime as compared with the total study sample. Those reporting increases in drug use and crime do not appear to significantly differ from the study sample as a whole.

Rising Costs, Housing Insecurity, Displacement and Homelessness

While some respondents were residentially stable over the 5-year period preceding the interview, many had experienced significant residential instability and/or homelessness. Six participants were homeless at the time of the interview, and 12 reported being homeless in the 5 years preceding the interview. In total, 16 participants described current or former homelessness, with seven attributing that residential displacement to community change associated with the gas industry¹. Two additional participants who did not experience homelessness also reported gas industry residential displacement. However, this residential displacement did not result in homelessness for these respondents. Nearly all participants, whether having experienced homelessness or not, had described how rising housing costs had contributed to their own residential insecurity and/or the insecurity of other people they knew.

Residential displacement attributed to the gas industry occurred across the four-county sample. Of the nine participants describing residential displacement they associated with the gas industry, four described a general increase in housing insecurity as a consequence of unaffordable rent increases they associated with increased housing demand. Two described being forced to move when rental property was sold to a gas industry interest for worker housing. Two described being evicted or forced out of housing when rents were raised to unaffordable levels (also attributed to the gas industry pressure on housing markets), and one participant described being evicted or forced out specifically so the landlord could rent to gas industry workers.

Table 6 shows the selected characteristics of participants who were homeless at the time of the interview and/or had experienced homelessness in the five-year period prior to the interview, and/or described being residentially displaced as a consequence of the natural gas industry. The characteristics of these respondents are then compared against the study respondent sample as a whole.

¹ “Residential displacement” here refers to circumstances under which individuals are compelled to change residence even though the residential change was neither planned nor desired.

Table 6. Selected Characteristics of Homeless and Gas Displaced Participants as Compared with Characteristics of Study Sample

	Homeless at Time of Interview	Homeless in Five Years Preceding Interview	Gas Displaced	Study Sample (Total)
<u>Gender</u>				
% Female	83.33	83.33	66.67	74.36
% Male	16.67	16.66	33.33	25.64
<u>Age Structure</u>				
% Adults Aged 18-64	100	100	100	92.31
% Adults Aged 65+	-	-	-	7.69
<u>Race</u>				
% White	100	100	100	89.74
<u>Marital Status</u>				
% Married	33.33	25.00	33.33	28.21
<u>Educational Attainment</u>				
% Less Than High School	-	-	11.11	10.26
% High School Dipl./GED	50.00	16.66	22.00	41.03
% Some College	16.67	25.00	33.33	23.07
% College	33.33	41.67	33.33	25.64
<u>Disability Status</u>				
% Disabled	16.67	25.00	22.22	15.38
<u>Employment Status</u>				
% Full Time Empl.	16.67	-	22.22	12.82
% < Full Time Empl.	50.00	33.33	44.44	41.03
% Not working ¹	33.33	66.67	33.33	46.15
Total N =	6	12 ²	9	39

Note: County-level figures calculated from American Community Survey (ACS) data, 5-year estimates. Bradford, Lycoming, and Washington counties represent data estimates from 2009-2013, and Greene County estimates represent data estimates from 2008-2012. ¹ Includes retired and disabled. ² Includes two participants who were also homeless at the time of the interview, in addition to having experienced earlier, separate incidences of homelessness.

Nearly all respondents described how rising housing costs had contributed to their own residential instability and/or others whom they knew. Residents also discussed the rising costs of basic necessities in the region as an increasing burden. “The cost of living went up majorly,” one participant, a woman from Greene County in her late 30s said. “I mean, you can’t afford to do anything... you can’t afford to go buy groceries.”

Another Bradford County resident, a man in his early 40s, unemployed and disabled, similarly remarked on the rising cost of food.

That has been amazing. Before, you can get a, let's just say a pack of drumsticks for about \$5-\$6. Now, they're running almost \$14. Food is getting ridiculously high over here. Those are New York City prices. I could see New York City prices. This rural area, even the privately-owned meat markets and whatnot, their meat has gone up ridiculous. We're struggling with being able to pay the prices on some of this food. We are forced, every month, even with getting food stamps, to go to food pantries. We noticed even the food pantries are getting slim to none because so many people are resorting to them. They have bare pickings. We go without sometimes, just to make sure—we'll go to a food pantry every other month, so maybe we can be able to catch a good run from them, get a couple of bags of food, which can benefit us. Those are slim pickings, as well.

These costs were attributed generally to a trend of rising costs associated with gas development. As another participant from Washington County explained, "The more work [gas companies] bring or the more people, the prices of everything goes up... groceries are going up." In all four study counties, respondents felt the cost of living negatively impacted local livability.

However, as noted by almost all study participants, increasing rent prices have clearly represented one of the largest household impacts of gas extraction in each county among rental-housing-dependent low- and fixed-income individuals. The influx of well-paid gas workers and the demand they have created for housing have led, in many instances, to drastic rent increases by landlords. One Lycoming participant, in her early 40s and homeless, noted, "...everybody is trying to get more money. You know how the houses renting for \$1,200 to \$1,500. It's just crazy. Everybody has upped all their prices and everything because the gas line gets paid good money and they think everybody can afford it but low-income people can't." Although some participants in Bradford and Lycoming counties noted that demand had decreased, they described how their experience was that many landlords continued to seek rents far in excess of what had been previously charged.

A Washington County resident who had endured extended periods of housing insecurity stated,

Yeah, just because people—there's people out here looking for houses every day and then they're going to pay for a two-bedroom house \$1,200 a month. Come on, who can afford \$1,200 a month on an income of maybe \$2,000 a month? I mean, that'd take your whole check. You don't even have time to pay the bills and everything else. There goes your whole paycheck. Then they wonder why people come to the food banks and everything. What are we supposed to do?

This balance in some instances led many to struggle with debt, housing insecurity, and food insecurity. As one food pantry worker noted, "a lot of our pantry people are renting. They don't own their homes, they rent. Therefore it's hard for them to make it." Many participants also discussed that, due to rising rent prices, low-income families and individuals have been forced into smaller and potentially unhealthy living situations, and for many struggling with this balance, homelessness was a constant thought and concern.

Nearly all respondents described the effects of the shale gas industry on the cost and availability of housing and the difficulties balancing low wages with rising housing costs. Some of the low-income adults interviewed owned their own housing or lived with relatives who owned housing². While homeowners were shielded from rental price spikes, renters watched as local rent prices doubled, tripled or even quadrupled while housing assistance became increasingly difficult to access (see, e.g., Williamson and Kolb, 2011).

Priced Out and Displaced Residents

Eight respondents specifically described being residentially displaced as landlords gave preferential treatment to the gas industry and gas workers who were seen as being able to pay higher rents and prices. Many of these displaced participants described how landlords often used loopholes within lease agreements to evict or displace residents. Many respondents argued that this occurred because of the desire of landlords to rent to gas workers at a significantly higher rental price. A service provider from Greene County stated, “We just had a person yesterday that came in with three kids that—the husband actually works for one of the gas oil companies, but the rent was \$600 a month for that place. Well, the landlord is now—their lease is up. The landlord’s kicking them out because he can instead put three gas oilers there that can pay \$600 each a month.” A displaced resident, an unemployed Lycoming resident in her early 30s, shared a similar anecdote:

I lost my house in 2012, due to the landlord wanted to rehab the building. I paid \$550 for a four-bedroom. When I moved out, he was supposed to be rehabbing the building. When they [gas workers] moved in, the rent went up to \$750...I (was experiencing) domestic violence, and he used that and rehabbing the building to get me out of the house.

Others were forced to leave their homes after their residence was sold by the landlord to gas-related companies and industries. As a Greene County resident related, after her refusal to leave her apartment, the landlord “calls up and says, ‘Since you won’t get out I’m going to sell the place. I have a buyer from the pipeline company.’” As rent rates climbed, low-income tenants were unable to afford rising prices and were forced to leave their homes. As one Lycoming resident stated in reference to her landlord pricing her out of her home, “She had gotten an offer from a family to live there because it was a two-bedroom. They were with a gas company out of New Mexico. She put the price up. I couldn’t afford it on my own. I had to leave.” In this case, after this person lost her housing she became homeless.

Homelessness in Shale Gas Communities

While some respondents were residentially stable over the 5-year period preceding the interview, many had experienced significant residential instability and/or homelessness. Table 7 describes reported

² It should be noted that residential status with regard to homelessness was often not fixed. There were homeowners at the time of the interview who had previously been homeless, and homeless people at the time of the interview who had owned homes in the preceding 5 years. There were also people who had experienced homelessness more than 5 years prior. Some who lived with family had likewise been previously homeless or otherwise highly housing insecure before securing housing with family members.

residential displacement across counties and the intersection with participant experience with homelessness.

Table 7. Description of Reported Residential Displacement by Gas Industry by County Residence and Homelessness Status

County	Reported Residential Displacement	Homeless at Time of Interview?	Homeless at Some point in 5 Years Preceding Interview?
Bradford	Respondent described being evicted/forced out of rental so landlord could charge higher rents to gas workers.	No	No
Bradford	Respondent described housing insecurity because of unaffordable rent increases attributed to the effect of the gas industry on housing markets.	No	Yes
Lycoming	Respondent described being forced to move when rental property was sold to gas company for worker housing.	Yes	Yes
Lycoming	Respondent described being evicted/forced out of rental when landlord raised rents to unaffordable levels (attributed to the effect of the gas industry on housing markets).	No	No
Lycoming	Respondent described being evicted/forced out of rental when landlord raised rents to unaffordable levels (attributed to the effect of the gas industry on housing markets).	No	Yes
Washington	Respondent described housing insecurity because of unaffordable rent increases attributed to the effect of the gas industry on housing markets.	Yes	No
Washington	Respondent described housing insecurity because of unaffordable rent increases attributed to the effect of the gas industry on housing markets.	No	Yes
Washington	Respondent described housing insecurity because of unaffordable rent increases attributed to the effect of the gas industry on housing markets.	Yes	No
Greene	Respondent described being forced to move when rental property was sold to gas company for worker housing.	No	Yes

Rising rent prices and being priced or pushed out of housing led some participants into homelessness, and some have found it difficult or impossible to reverse these circumstances. Participants discussed how challenging it was to find an affordable apartment and get out of homelessness. Participants repeatedly told the researchers of spiraling economic and housing insecurity as a consequence of rapid gas development and the effects on housing costs and availability.

See, some of my friends have the same problems because of these companies coming in and raising everything and everything going up, rent and everything else, that's how a lot of other people are ending up homeless because they're not getting the income to pay for the stuff for the

increases. Therefore, they end up in the same predicament I was. They end up out on the street and owing money to everybody. (Washington County)

For six months my kids and I lived on the streets in Towanda cuz I could not find anywhere to live cuz I could not afford or these people are all looking for high money. It really hurt my—it had damage on my kids and myself. (Bradford County)

Yeah, which is what got us in the homeless cycle to start and then I couldn't find anything because the rents were sky high. Every time I went to look at a place, a lot of the landlords in this area prefer to rent to the gas company, I've been told by a few of them they only rent to the gas company because they can charge per head. (Lycoming County)

We had just been putting applications in for housing. It didn't look very good on trying to rent an apartment. We couldn't really afford one at the time, so housing (assistance) was our best option. It looked really glum when an office will tell you that there's a two- to four-year waiting list to get housing in Lycoming County. (Lycoming County)

Service Provider Perspectives on Housing Insecurity in Shale Gas Communities

These accounts from low-income participants were corroborated by service providers who were interviewed in each of the four counties. They described markedly increased homeless populations, demands on local shelters, and housing assistance that was unable to meet growing demands from local populations who had nowhere else to turn. The direct contact social and housing service staff members had with landlords, the homeless, low-income populations, and housing leaders provided them the ability to speak to current housing markets in these counties, as well as the impact of Marcellus Shale development on housing for low-income residents. Ultimately, these providers' responses mirrored those of the low-income participants, as they stated that housing became less accessible and affordable after the influx of Marcellus Shale workers. Discussed by all providers, rent prices became high due to the increased demand for housing caused by the in-migration of Marcellus Shale workers. As a northern tier homeless shelter coordinator said:

A lot of the companies that came in here to do the Marcellus Shale brought a lot of people. In bringing a lot of people that's how the housing got affected. They brought all these people and there wasn't anywhere to put them, so they started taking up the housing that our residents would have taken. When the landlords got the wind like, "Hey, these guys make a lot of money, they just need a place," and it kind of became a supply and demand issue. All the rents went up.

This was echoed by a service provider from Greene County:

Because the rents went from anywhere, generally speaking to find a nice place in Waynesburg, an apartment or something for \$500, pretty quickly it went to \$750 and then \$1,000 wasn't out of the question. A lot of the gas and oil workers were coming in and buying some of the older houses in certain areas. When I was working in economic

development my concern was that when the gas and oil industry kind of comes to a bust, those folks are probably going to walk away and those houses are gonna be left abandoned. Municipalities would then have to deal with those issues. Again, that takes me back to the fact that I don't believe that the municipal government was prepared to handle this. They didn't have any ordinances in place about—well, maybe enforcement in place about maintaining properties or what happens with a situation where someone abandons it. You don't want to live in a community that has a bunch of abandoned properties because then you have another whole group of issues come out of that.

In these comments, this person also expressed concern about not only the pressure on housing markets from the initial expansion of gas development, but how municipalities might reasonably respond to alleviate the shorter term housing pressures while at the same time not being left with a surplus of unwanted housing later after much of the development activity had subsided.

Service providers also commented extensively on the actions of landlords in shaping and limiting the local housing market. These providers explained that many landlords' decisions regarding leases and rent prices were often made in an attempt to take advantage of the growing demand and increased resources created in the community from the influx of Marcellus Shale workers. Although linked, the impacts on the housing markets were often seen as landlord driven. A northern tier service provider working in the area of public housing in the area explained:

Can you blame it all on the Marcellus Shale? No. You have to look at the whole picture. They're in here. They're bringin' jobs to the community. They're doin' whatever—people like the gas company or they don't. Nobody told landlords they had to triple their rents. They're doin' it on their own...If there was a blame—I don't even wanna use the word blame because they're (landlords) business people and they seized an opportunity to get high rents.

Providers described that landlord decisions regarding rental rates and leasing often were disadvantageous to low-income populations, whose limited capital kept them from accessing or staying in the changing and costly housing market. As another northern tier service provider noted:

The changes to the rental environment, as far as cost, going from rents that were on average \$400, \$500 a month, sometimes utilities included, sometimes not, that were affordable to them at that point based off of their incomes to doubling or tripling where they certainly couldn't afford that.

The advantages of increased rental prices were also cause for some local landlords to end the low-rent leases of low-income and local residents, and bring in gas workers willing to pay a higher rate. Through this process, service providers described how many low-income individuals were left out, or displaced from, an already high-priced housing market:

(Our client) had been in an apartment for 6 years, same apartment, and her lease was up and the landlord said, "You're done." That was it, and sure enough that landlord had re-rented that apartment for almost twice as much to a gas guy. This young lady who had spent 6 years

in the same place making due now didn't have—not only she didn't have a place to go when it happened, but she didn't have the savings base that she needed, first, last, security deposit, that kind of thing. She ended up here (homeless shelter) for almost six months until we could get that base back and get her out.

In the northern tier, providers described how state cutbacks had affected their operations. In some cases, providers involved in public housing support described being at risk of losing the number of housing vouchers provided to the Housing Authority, despite no decline in need. They attributed this loss to voucher underuse because these vouchers had to fall within fair market rent – the calculated market value rental price for a given area. The challenge for areas facing sudden price shocks in rental housing markets, service providers explained, is that fair market rent prices are based on data from several years prior. As a result, the Section 8 vouchers were initially too low for the Marcellus Shale Development Region's rental market. Even when a Housing Authority was granted an exception and was able to raise the vouchers to cover 125 percent of the fair market value of rents in the area, the office's overall budget for vouchers remained the same, meaning fewer families could receive vouchers. As a Housing Authority staff person explained:

In both counties, we are helping less families than we used to. We're spending more money than they're giving us. That is definitely a negative that is affecting us—and they had shut down the housing list for a while. They weren't taking any new applications because they had over 600 families on the list. They had anticipated it being 3 or 4 years before they could get through that list. Now they've opened it back up, but there's still a huge 2 year wait to get in there, so I don't even know why they're taking names again because there's still this huge, long wait.

Providers from both Lycoming County and Bradford counties, however, highlighted recent changes in these housing market structures, due to a decrease in demand, changing landlord practices, and an increase in the supply of housing. Providers discussed that local landlords had recently begun to level or reduce rents, in part because of issues arising from gas tenants, and this had provided opportunities for some low-to-mid income residents to gain housing.

We have seen some rent stabilization where landlords have recognized maybe it's not as helpful to get \$1,200 because when they move out, then your property is destroyed. Then you have to put more money into it versus what you were receiving for income. We have seen some stabilization where clients who are low-income or moderate-income have now be able to afford safe, permanent housing in the community as far as rentals go.

Service providers discussed that housing availability has also increased, in Lycoming County specifically, in part due to the development of new housing infrastructure in the wake of gas development, and a decrease in housing demand as gas workers have left the area. This increased supply and decreased demand have not lead to comparable reductions in rental prices, however, as landlords have continued to keep rental prices fairly high. These high rents continue to exclude many low-income residents from accessing affordable and long-term housing, even though housing is available. As one provider noted:

Like I said, some of those were apartments, large apartment complexes that, right now, rent isn't affordable for low-, no-, or moderate-income families. When you do have some regression or change in the population where people who were here temporarily for the industry are leaving for other drilling here and further west, I don't know that those units are gonna be filled. Unless those landlords really take a look at the cost of their apartments, you're gonna have empty units sitting.

Some providers from the northern tier also discussed how some landlords have begun to work with local housing agencies, and that these partnerships have created opportunities for low-income residents to find affordable housing. These providers expressed concern that high rent prices would become the new norm, but most believed a new equilibrium between these structures and local needs would occur.

Low Income Residents Reflect on Public Policy: Taxation, Regulation and Social Supports

Many, though not all of the participants were asked what they felt lawmakers ought to know about their experiences and how public policy might best respond to the changes that low-income adults had experienced. Participants' suggestions tended to focus on three main topics: taxes, regulations, and additional supports for low-income residents.

Most of those interviewed suggested that not only would individual tax breaks be helpful, but that wealthier residents should pay their fair share, especially given the struggles facing low-income individuals and households. "How about lowering taxes?" one asked, expressing the belief that tax breaks did not benefit those in need but rather the wealthiest segments of society. This respondent, a Lycoming County woman in her early 40s and employed full-time, continued, "Instead of normal people, smaller people benefiting, it's always focused towards the one group that doesn't need it quite as much." When asked about public policy for Marcellus communities, a Bradford County woman in her early 50s and employed part-time talked about what she saw as the disconnect between the significant money and resources associated with an industry extracting gas from local areas, and the failure of this economic activity to benefit those most in need. She stated:

I'd say they'd better do something really quickly because they're raking a lot of money out of us and we're not getting anything in return. If anything I see food stamps being cut. We see homeless shelters shutting down because they don't have the money. Food pantries are having a very hard time. I can't tell you the amount of people in this county that use food pantries. That's unnecessary, that's sad. They need to help their constituents instead of making it harder on them. There needs to be more mental health funding. There needs to be a better mental health system here.

In terms of taxation, however, most recommendations were made in regard to the gas companies themselves. Many in the northern tier felt that this window of opportunity for taxing gas companies may have been missed, however. One participant, a woman in her late 30s and employed part-time, said, "We don't get some kind of reasonable fee or tax on them now, in 5 or 6 years, it's not gonna matter.

They're not gonna be here to tax. We're gonna be left with all this stuff that we built just for them." Another participant, a retired homeowner in his 70s echoed this viewpoint. He stated "I think they should've taxed 'em right off. Right off the bat, they should've taxed 'em. It's not gonna hurt the gas companies, if they tax. It's gonna hurt whoever they sell the gas to."

The overall economic future for communities was another major concern in policy recommendations. Residents felt that the region was suffering adverse economic effects from the decline in natural gas extraction. One resident, a Lycoming woman in her late 30s, employed part-time and previously homeless, reflected on the boom-bust cycle of gas development:

I mean yeah, it might be great to have the gas companies here now, but what happens when they leave? Who's going to be left if everyone keeps moving away to find jobs, to find affordable housing? Who are you going to have left? What's going to happen to your tax base? They've got to stop and think about what they're doing to the local economy. They might be a nice boost for a while but they leave, they're sunk. Some companies are going under because they can't find help... What happens when the big companies all leave? Your mom and pops are gone.

Others also recommended more regulations for the gas companies and for the changing region as a means to provide greater economic stability. Residents in both regions felt greater oversight and regulations would help limit some of the negative physical and environmental effects of gas companies. This participant continued:

[Gas companies] need to be safer about it. Because there's—in reality, there's not very many companies that really follow everything that you need to do on a drill pad to a T, and that there's a lot more contamination going on. People that try to cover things up so that they don't lose their job. Everybody else gets screwed over. The community doesn't have what it needs to have, and we don't have the resources that we need to have to be able to deal with this kind of stuff. I think that [the policy makers] need to look more into the lower down people instead of the higher ups and all the money benefits because it's not really benefiting everybody.

Other policy recommendations addressed specific economic and social challenges associated with the natural gas development. Residents recommended increasing access to affordable housing, which was in particularly short supply in the northern tier. One, a previously homeless Lycoming County resident, said:

They've got to do something to help the families that are from the area; something to help us get affordable places to live, to help us find decent jobs. Something that isn't part time. It's hard to raise a family and pay rent and everything on part-time work; it's next to impossible, especially if you're a single parent. You're sunk.

Other major recommendations included providing more social services to address the rising cost of living, and developing more jobs for residents in the region. One felt there should be "more, different jobs available for people that aren't fully qualified" to work in natural gas extraction.

Some residents questioned the value of allowing the gas development in the region at all. One said, “If we could go back 5 years and change this, I don't think that they should have let them come up at all ‘cause all they've done is make it hard on everybody here.” This sentiment was repeated by other respondents in the northern tier.

As a final recommendation, a Washington County participant offered specific advice to policymakers for future gas development projects.

First and foremost, I would say take serious consideration into looking at any adverse effects—health, physical, otherwise—that it would have on us. Then I would certainly say before announcing any type of industry like this again, don't give false hope to your local people of jobs.

Residents believe regulations and taxation could help address some of the economic inequalities encountered in the Marcellus Shale region. They also feel more needs to be done to ensure affordable housing, jobs for residents, and cost of living support is accessible to all members of the communities. Most of all, residents want policymakers to consider the positive *and* negative outcomes of shale gas development for individuals, families and communities, taking these outcomes into account in public policy and lawmaking so that risks to individuals and communities are minimized, and economic and community benefits are maximized. Although participants offered a variety of policy recommendations for the Pennsylvania legislature, these recommendations consistently reflected the underlying hardships encountered by participants in the study.

Conclusions

Advocates of the shale gas industry in Pennsylvania have argued strongly for the economic benefits and job creation potential of developing the Marcellus Shale. While undoubtedly economic development and job creation have occurred, evidence suggests that opportunities are not evenly distributed as some Pennsylvania residents are able to generate new forms of income through leasing revenues and higher paid jobs through the industry, while others, perhaps paradoxically, have faced new hardships and insecurities precisely as a consequence of rapid economic development.

From the perspectives of the research participants in this study, there are clear “winners” and “losers” with regard to Pennsylvania’s shale gas development. The winners include landowners who can generate new leasing revenue and who are not dependent on rental housing, as well as those who are able to increase revenues on rental properties. Other winners are those who, by virtue of age, gender, training and qualifications, are able to compete for high-paid gas industry jobs. The “losers,” on the other hand, include low- and fixed-income residents, renters, and those who, similarly by virtue of age, gender and/or lack of credentials, are less able or unable to access higher paid employment opportunities. These residents often experience a kind of “double jeopardy” because of rising costs, particularly housing, which are increasingly unaffordable, creating circumstances of prolonged and sometimes extreme insecurity. However, even for residents who are able to take on jobs in the new gas economy, many have found industry work not always family-friendly, not guaranteed to remain local,

and uncertain, in general, in terms of security and longevity. This has particularly been the experiences of respondents in Bradford and Lycoming counties, areas where the gas industry has recently experienced some pronounced contractions after several years of sustained and rapid growth.

In the pronouncements of the economic benefits of Marcellus Shale boomtown development, public policy makers should pay attention to how rapid economic growth can create uneven labor market opportunities in which some benefit while others may in fact experience new and unexpected hardships. This vulnerability could be lessened by ensuring that social services and housing agencies have the necessary resources and flexibility to rapidly adapt to changing client needs and demographics. These vulnerable segments of the population are too easily forgotten amidst assumptions of more generalized economic benefits from shale gas development.

Report Authors

This report was written by: Kai A. Schafft, Erin McHenry-Sorber, Daniella Hall, and Ian Burfoot-Rochford with assistance provided by the Penn State Project Team.

Penn State Project Team

Kathryn J. Brasier, Associate Professor of Rural Sociology

Lisa A. Davis, Director of the Pennsylvania Office of Rural Health and Outreach Associate Professor of Health Policy and Administration

Leland Glenna, Associate Professor of Rural Sociology

Timothy W. Kelsey, Professor of Agricultural Economics and Co-Director of Penn State's Center for Economic and Community Development

Diane K. McLaughlin, Professor of Rural Sociology and Demography

Kai A. Schafft, Associate Professor of Education and Director of Penn State Center on Rural Education and Communities

Acknowledgements

This research was sponsored by a grant from the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly. The Center for Rural Pennsylvania is a bipartisan, bicameral legislative agency that serves as a resource for rural policy within the Pennsylvania General Assembly. It was created in 1987 under Act 16, the Rural Revitalization Act, to promote and sustain the vitality of Pennsylvania's rural and small communities. Information contained in this report does not necessarily reflect the views of individual board members of the Center for Rural Pennsylvania. For more information, contact the Center for Rural Pennsylvania, 625 Forster St., Room 902, Harrisburg, PA 17120, telephone (717) 787-9555, email: info@rural.palegislature.us, www.rural.palegislature.us.

The project team gratefully acknowledges support from the following: the Department of Agricultural Economics, Sociology and Education in the College of Agricultural Sciences at Penn State; the Pennsylvania Office of Rural Health; the Department of Education Policy Studies in the College of

Education at Penn State; The Pennsylvania State University Children, Youth, & Families Consortium; and the Penn State Institutes for Energy and the Environment. We also thank Penn State's Survey Research Center for their assistance with the focus groups. Several individuals contributed to the project through background research, data collection and analysis, including Matthew Filteau, Mark Leach, Kylie Davis, Kirsten Hardy, Catharine Biddle, and Kaitlyn Chajkowski. Much of this report was completed while the lead author was a research fellow at the Institute for Advanced Studies, Central European University, Budapest.

We gratefully acknowledge the members of our advisory committees who provided us with important insights at key points in the project and gave us access to data sets. We owe a deep debt of gratitude to the many low income and economically struggling community members who shared their experiences and thoughts with us. It is our sincere hope that this report helps to shine a light on the challenges that they and many others like them face on a daily basis. We also acknowledge our appreciation for the many community members and other local stakeholders who provided valuable assistance in making this work possible, including Shawn Horton, Kelley Cevette, Mae Ling Kranz, and many others who are not named here.

References

- Axinn, W., and Pierce, L.D. (2006). *Mixed method data collection strategies*. New York: Cambridge University Press.
- Brasier, K., and Rhubarb, D. (2014). *Effects of Marcellus Shale Development on the criminal justice system*. Harrisburg, PA: Center for Rural Pennsylvania.
- Brown, D.L., and Schafft, K.A. (2011). *Rural People and Communities in the Twenty-first Century: Resilience and Transformation*. Cambridge: Polity Press.
- Considine, T.J., R. Watson, R. Entler, and Sparks, J. (2009) *An Emerging Giant: Prospects and Economic Impacts of Developing the Marcellus Shale Natural Gas Play*. The Pennsylvania State University, Dept. of Energy and Mineral Engineering, August 5.
- Dell, B.P., Lockshin, N., and Gruber, S. (2008). "Bernstein E&Ps: Where Is the Core of the Marcellus?" Report published by Sanford C. Bernstein & Co., LLC, a subsidiary of AllianceBernstein L.P. New York, NY.
- DEP Office of Oil and Gas Management: Wells Drilled by County. Pennsylvania Department of Environmental Protection. Retrieved from <http://www.depreportingservices.state.pa.us/>.
- Filteau, M. (2014). Who are these guys? Constructing the oilfield's new dominant masculinity. *Men and Masculinities*, 17(4), 396-416.
- James, A., and Aadland, D. (2011). The curse of natural resources: An empirical investigation of U.S. counties. *Resource and Energy Economics*, 33, 440-453.
- McLaughlin, D.K., Martin, M.A., Gunsallus, A.L., Brasier, K., and Davis, K.D. (2012). "Does Marcellus Shale Natural Gas Extraction Contribute to Increasing Inequality Among Pennsylvania's Families

- and Communities?” Paper presented at the Annual Meeting of the Rural Sociological Society, Chicago, Il., August.
- Paredes, D., Komarek, T., and Loveridge, S. (2015). Income and employment effects of shale gas extraction windfalls: Evidence from the Marcellus region. *Energy Economics*, 47, 112-120.
- Prins, E. S., and Schafft, K. S. (2009). Individual and structural attributions for poverty and persistence in family literacy programs: The resurgence of the culture of poverty. *Teachers College Record*, 111(9), 2280-2310.
- Rank, M. R. (2004). *One nation underprivileged: Why American poverty affects us all*. Oxford: Oxford University Press.
- Social Explorer Tables: Census 2000 (SE), Social Explorer; U.S. Census Bureau. Retrieved from <http://www.socialexplorer.com/>
- Schafft, K. A. (2005). The incidence and impacts of student transiency in upstate New York’s rural school districts. *The Journal of Research in Rural Education*, 20(15), 1-13.
- Schafft, K.A., and Biddle, C. (2015). Opportunity, ambivalence, and youth perspectives on community change in Pennsylvania’s Marcellus Shale region. *Human Organization*, 74(1), 74-85.
- Schafft, K. A., and Prins, E.S. (2009) Poverty, residential mobility and persistence across urban and rural family literacy programs in Pennsylvania. *Adult Basic Education and Literacy Journal*, 3, 3-12.
- Taylor, A. J., and Carson, D. B. (2014). It’s raining men in Darwin: Gendered effects from the construction of major oil and gas projects. *Journal of Rural and Community Development*, 9(1), 24-40.
- Williamson, J. and Kolb, B. (2011). *Marcellus natural gas development’s effect on housing in Pennsylvania*. Williamsport, PA: Lycoming College Center for the Study of Community and the Economy.
- Wrightstone, G. (2008). *Marcellus Shale Geologic Controls on Production*. Texas Keystone Incorporated. Retrieved from http://www.papgrocks.org/wrightstone_p.pdf.

Appendix A: Unconventional Wells Drilled by County and Year, 2005-2013

county name	2005	2006	2007	2008	2009	2010	2011	2012	2013*	Total, county
Bradford⁺	1	2	2	24	158	373	396	164	66	1186
Washington⁺	5	19	45	66	101	166	155	195	120	872
Tioga	0	1	0	15	124	273	272	122	13	820
Lycoming⁺	0	0	5	12	23	119	301	202	89	751
Susquehanna	0	1	2	33	88	125	205	191	102	747
Greene⁺	0	2	14	67	101	103	121	105	54	567
Westmoreland	1	0	4	33	39	49	59	42	22	249
Fayette	0	2	6	20	57	44	54	43	12	238
Butler	0	3	12	11	10	35	35	69	44	219
Armstrong	0	3	2	7	19	36	35	44	26	172
Clearfield	0	0	1	6	24	39	58	19	2	149
Wyoming	0	0	0	0	2	24	71	15	25	137
Clinton	0	0	0	4	9	35	39	10	1	98
Sullivan	0	0	0	0	0	22	19	27	5	73
Potter	0	0	8	6	8	36	11	1	0	70
Elk	1	1	6	8	6	16	22	1	3	64
McKean	0	2	1	5	7	22	19	5	3	64
Centre	0	0	1	4	7	41	8	2	0	63
Indiana	0	0	0	5	6	7	21	2	0	41
Jefferson	0	0	0	3	3	7	15	9	0	37
Allegheny	0	0	0	1	3	0	5	13	8	30
Lawrence	0	0	0	0	0	0	2	16	8	26
Beaver	0	0	0	0	1	1	5	17	2	26
Somerset	0	0	1	0	7	4	7	5	1	25
Clarion	0	0	3	1	3	3	10	4	0	24
Forest	0	0	0	0	5	1	0	12	4	22
Cameron	0	0	0	3	2	3	7	0	0	15
Mercer	0	0	0	0	0	0	0	5	3	8
Cambria	0	0	0	0	2	1	3	1	0	7
Blair	0	0	0	0	0	4	2	0	0	6
Venango	0	0	0	0	0	0	2	3	0	5
Warren	0	0	2	0	0	0	1	1	1	5
Wayne	0	0	0	1	0	4	0	0	0	5
Columbia	0	0	0	0	0	1	2	0	0	3
Crawford	0	0	0	0	0	0	0	3	0	3
Lackawanna	0	0	0	0	1	0	1	0	0	2
Luzerne	0	0	0	0	0	2	0	0	0	2
Bedford	0	0	0	0	0	1	0	0	0	1
Huntingdon	0	0	0	0	0	1	0	0	0	1
Total, by year	8	36	115	335	816	1598	1963	1348	614	6833

Source: Pennsylvania Department of Environmental Protection, Office of Oil and Gas Management.

*Data through June 30, 2013 (accessed July 4, 2013). ⁺Study counties.

Appendix B. Marcellus Activity County Typology Definitions for Pennsylvania^a

Category	Geological Definition	Activity Level	Counties
Core Counties with High Drilling Activity^b (N=7)	More than 50% of the land area is in the core Marcellus formation	Annual average 64 or more Marcellus wells 2005 to 2010	Bradford, Fayette, Greene, Lycoming, Susquehanna, Tioga, Washington
Core Counties with Low Drilling Activity (N=12)	More than 50% of the land area is in the core Marcellus formation	Annual average less than 64 Marcellus wells 2005 to 2010	Armstrong, Cambria, Cameron ^c , Clearfield, Clinton, Elk, Indiana, Jefferson, Potter ^c , Somerset, Sullivan ^c , Wyoming
Counties in the Marcellus 2nd Tier (N=19)	1%-50% land area is in the core <u>and</u> 25% or more land area is in the less viable areas (2 nd tier or gray areas in Figure 2)	Not applicable	Bedford, Blair, Butler, Carbon, Centre, Clarion, Columbia, Crawford, Forest ^c , Lawrence, McKean, Mercer, Monroe, Montour ^c , Pike, Schuylkill, Venango, Warren, Wayne
Urban Counties in the Marcellus Shale-- Core or 2nd Tier (N=6)	Marcellus Core or 2 nd Tier <u>and</u> identified as urban by the Center for Rural Pennsylvania	Not applicable	Allegheny, Beaver, Erie, Lackawanna, Luzerne, Westmoreland
Counties with No Marcellus Shale (N=23)	25% or less viable Marcellus land area or no Marcellus land area	Not applicable	Adams, Berks, Bucks, Chester, Cumberland, Dauphin, Delaware, Franklin, Fulton ^c , Huntingdon, Juniata, Lancaster, Lebanon, Lehigh, Mifflin, Montgomery, Northampton, Northumberland, Perry, Philadelphia, Snyder, Union, York
^a See McLaughlin, et al. 2012. ^b Note this category includes all four study counties. ^c These counties are excluded from those analyses that use American Community Survey (ACS) three-year estimates, as their populations are too small to be estimated.			

*For more on maps, see the Penn State University Marcellus Center for Outreach and Research (<http://marcellus.psu.edu>) and Dell, Lockshin, and Guber (2008).

Appendix C. Interview Protocol, Low Income Adults

The interview protocol for low-income adults used in this study is a semi-structured interview protocol incorporating a retrospective narrative to gather information about the housing history (and experiences with housing insecurity) of interviewed participants, as well as participant perspectives on community change and how local change, which may or may not have been related to shale gas development, from the perspectives of interviewees, affected their housing and employment status, as well as overall quality of life. This survey instrument borrows from techniques used in anthropological demography (Axinn and Pierce, 2006), and has been used before in various versions by the lead researcher to research experiences of housing insecurity over time (Prins and Schafft, 2009; Schafft, 2006; Schafft and Prins, 2009). Although iterations of this instrument had been successfully used previously, before conducting interviews we shared the interview protocol with service providers in Lycoming, Bradford and Greene counties, specifically administrators within housing authorities, temporary housing facilities, human services, food banks, and food pantries. We did not receive any recommendations regarding possible changes or alterations to the protocol. Once we began to conduct interviews some respondents began to talk about political decision-making that had led to shale gas development in Pennsylvania. We then added an extra question at the end of the interview (Q71): If there was any advice you could give to a Pennsylvania legislator regarding the effects of Marcellus Shale development on people and communities in Pennsylvania, what would it be? Given that this question was added after beginning interviewing, approximately three quarters of interviewees were asked this question.

INTERVIEW PROTOCOL FOR LOW INCOME RESIDENTS

Interview #:	Interviewer:
Date:	County:
Location:	Time: _____ to _____

To the Respondent: Thank you for talking with us. My name is XXXXXXXX, I am from Penn State University. We appreciate your helping us to understand how Marcellus Shale gas development has affected Pennsylvania families. We are interested in hearing your thoughts about Marcellus Shale development and how Marcellus Shale gas development may have affected your life and your family. We are especially interested in whether you have experienced changes in where you live and why any changes might have occurred.

What you say will be completely confidential. What you say will be added to what other people here and in other communities have told us about their experiences. We won't identify any people or places in any of the reports we write from this study.

I'd like to start by asking for some basic information about you and your family.

I. Respondent/Household Information

(1) AGE: _____	(2) GENDER: 1. M 2. F								
(3) MARITAL STATUS:	1. ___ NOW MARRIED 2. ___ WIDOWED 3. ___ DIVORCED 4. ___ SEPARATED 5. ___ NEVER MARRIED 6. ___ OTHER (what?) cohabiting								
How many children do you have or are you legal guardian for?	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%; padding: 5px;">4) FIRST NAME</th> <th style="width: 25%; padding: 5px;">5) AGE</th> <th style="width: 25%; padding: 5px;">6) GENDER</th> <th style="width: 25%; padding: 5px;">7) RELATION TO RESPONDENT</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">1.</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </tbody> </table>	4) FIRST NAME	5) AGE	6) GENDER	7) RELATION TO RESPONDENT	1.			
4) FIRST NAME	5) AGE	6) GENDER	7) RELATION TO RESPONDENT						
1.									

(11) What is your approximate household income per month?	
Do you or any other member of your household currently receive help from any social assistance programs? If yes, what? (read prompt list)	12. Food Stamps or SNAP
	13. WIC Program
	14. Head Start/Even Start
	15. Childcare Assistance
	16. Housing Assistance (including section 8)
	17. Energy/Fuel Assistance
	18. Transportation Assistance
	19. Medicaid
	20. TANF (Temporary Assistance for Needy Families)
	21. SSI (Supplemental Security Income)
	22. Other (what?)

Now I'd like to ask you about your experiences with Marcellus Shale development and how it may have affected you and/or your family and your community.

II. MARCELUS SHALE AND LOCAL CHANGE:

- Tell me a little bit about [x] county. How long have you lived here? What is it like as a place to live? What is it like to raise a family here?
- What changes, if any, have you all seen in your county related to the Marcellus Shale development happening around here in the last 5 years? (in the local economy, the availability of housing, cost of living, physical infrastructure)
- Have these changes been mostly positive or negative? Why?
- How permanent/long-lasting do you think these changes will be? Why?

- Who in your county is most affected? How? Which people locally are doing well from natural gas development? Who is struggling? What problems do struggling families have?
- How have the changes over the past few years affected your family?
 - Daily activities or routines
 - Recreational activities
 - Relationships with other family members
 - Relationships with neighbors
- How are you and your family responding to the changes you mentioned? What are your main concerns?
- Have any of your family or friends moved away from this area in the past few years? Why did they move away?

How have your feelings about your county changed because of Marcellus Shale development?

- Have your future plans changed in relation to the natural gas development that is happening here? How?
- Have any of the changes we discussed earlier affected your desire to live here in the future? Why/why not?

III. MARCELUS SHALE GAS OPPORTUNITIES

- I've heard some people say, "Anybody around here who wants to get a job can get a job". What do you think about that?
- Do the same opportunities exist for both men and women?
- How do you think the natural gas development will change this community in 5 years? 10 years? 20 years?
- Do you think this will create job opportunities for your children?
- How do you feel about your children staying in or leaving this area when they are adults?

Now I'd like to talk with you about where you and your family have lived in the last 5 years and how your family has made decisions about where to live. **NOTE:** Use **Residential History Calendar** and record employment history and child school attendance as well.

IV. RESIDENTIAL HISTORY				
In the last 5 years, in addition to your current home, where have you lived? Let's start with your current home. (note: list residences back through Jan 2009, per life history calendar)	44) <u>Location (township)</u>	45) <u>Moved in (mm/yy)</u>	46) <u>Moved out (mm/yy)</u>	
	1.			
	2.			
	3.			
	4.			
	5.			
	6.			
	7.			
	8.			
	9.			
	10.			
	11.			
	12.			
	13.			
	14.			
	15.			

Complete section separately for each previous residence.

VI. PREVIOUS RESIDENCE INFORMATION (begin from FIRST residence listed prev. page)

Location:	
Date moved IN:	Date moved OUT:

(58) Why did you move out of your previous residence prior to THIS residence?	
--	--

(59) Why did you move into <i>this</i> residence?	
--	--

(60) When you moved into this home, did your children change schools because of the move?	
--	--

(61) What best describes this home?	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td style="width:10%;">1. __</td><td>A MOBILE HOME</td></tr> <tr><td>2. __</td><td>1-FAMILY HOUSE, DETACHED FROM ANY OTHER HOUSE</td></tr> <tr><td>3. __</td><td>1-FAMILY HOUSE, ATTACHED TO ONE OR MORE HOUSES</td></tr> <tr><td>4. __</td><td>A BUILDING WITH 2 APARTMENTS</td></tr> <tr><td>5. __</td><td>A BUILDING WITH 3-4 APARTMENTS</td></tr> <tr><td>6. __</td><td>A BUILDING WITH 5-10 APARTMENTS</td></tr> <tr><td>7. __</td><td>A BUILDING WITH MORE THAN 10 APARTMENTS</td></tr> <tr><td>8. Other</td><td>(e.g., travel trailer, tent, moved into someone else's home, couch surfing, family split up)</td></tr> </table>	1. __	A MOBILE HOME	2. __	1-FAMILY HOUSE, DETACHED FROM ANY OTHER HOUSE	3. __	1-FAMILY HOUSE, ATTACHED TO ONE OR MORE HOUSES	4. __	A BUILDING WITH 2 APARTMENTS	5. __	A BUILDING WITH 3-4 APARTMENTS	6. __	A BUILDING WITH 5-10 APARTMENTS	7. __	A BUILDING WITH MORE THAN 10 APARTMENTS	8. Other	(e.g., travel trailer, tent, moved into someone else's home, couch surfing, family split up)
1. __	A MOBILE HOME																
2. __	1-FAMILY HOUSE, DETACHED FROM ANY OTHER HOUSE																
3. __	1-FAMILY HOUSE, ATTACHED TO ONE OR MORE HOUSES																
4. __	A BUILDING WITH 2 APARTMENTS																
5. __	A BUILDING WITH 3-4 APARTMENTS																
6. __	A BUILDING WITH 5-10 APARTMENTS																
7. __	A BUILDING WITH MORE THAN 10 APARTMENTS																
8. Other	(e.g., travel trailer, tent, moved into someone else's home, couch surfing, family split up)																

(62) Was this home....	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td style="width:10%;">1. __</td><td>Owned by you or someone in the household with a mortgage or loan?</td></tr> <tr><td>2. __</td><td>Owned by you or someone in the household free and clear?</td></tr> </table>	1. __	Owned by you or someone in the household with a mortgage or loan?	2. __	Owned by you or someone in the household free and clear?
1. __	Owned by you or someone in the household with a mortgage or loan?				
2. __	Owned by you or someone in the household free and clear?				

	3. __	Rented for cash rent? IF YES, HOW MUCH? _____
	4. __	Occupied without payment of cash rent?
(63) Thinking about your previous home, how would you describe it in terms of the physical conditions, the cost, the local area and so forth?		
(64) Did you have children going to school locally? (Who and what school district?)		

(65) What were the names of everyone living in your household when you moved in to this residence?	(66) Relation to you?	(67) Gender	(68) When you moved out, were all the same people living in this household?	
1.			1. YES	2. NO
2.			1. YES	2. NO
3.			1. YES	2. NO
4.			1. YES	2. NO
5.			1. YES	2. NO
6.			1. YES	2. NO
7.			1. YES	2. NO
8.			1. YES	2. NO
9.			1. YES	2. NO
10.			1. YES	2. NO

I'd like you to tell me some things about where you live now.

V. CURRENT RESIDENCE INFORMATION																	
(47) Why did you move out of your previous home?																	
(48) Why did you move to your current home?																	
(49) What best describes your current home?	<table border="1"> <tr><td>1.</td><td>A MOBILE HOME</td></tr> <tr><td>2.</td><td>1-FAMILY HOUSE, DETACHED FROM ANY OTHER HOUSE</td></tr> <tr><td>3.</td><td>1-FAMILY HOUSE, ATTACHED TO ONE OR MORE HOUSES</td></tr> <tr><td>4.</td><td>A BUILDING WITH 2 APARTMENTS</td></tr> <tr><td>5.</td><td>A BUILDING WITH 3-4 APARTMENTS</td></tr> <tr><td>6.</td><td>A BUILDING WITH 5-10 APARTMENTS</td></tr> <tr><td>7.</td><td>A BUILDING WITH MORE THAN 10 APARTMENTS</td></tr> <tr><td>8.</td><td>OTHER e.g., travel trailer or other structure/tent/car/ couch surfing</td></tr> </table>	1.	A MOBILE HOME	2.	1-FAMILY HOUSE, DETACHED FROM ANY OTHER HOUSE	3.	1-FAMILY HOUSE, ATTACHED TO ONE OR MORE HOUSES	4.	A BUILDING WITH 2 APARTMENTS	5.	A BUILDING WITH 3-4 APARTMENTS	6.	A BUILDING WITH 5-10 APARTMENTS	7.	A BUILDING WITH MORE THAN 10 APARTMENTS	8.	OTHER e.g., travel trailer or other structure/tent/car/ couch surfing
1.	A MOBILE HOME																
2.	1-FAMILY HOUSE, DETACHED FROM ANY OTHER HOUSE																
3.	1-FAMILY HOUSE, ATTACHED TO ONE OR MORE HOUSES																
4.	A BUILDING WITH 2 APARTMENTS																
5.	A BUILDING WITH 3-4 APARTMENTS																
6.	A BUILDING WITH 5-10 APARTMENTS																
7.	A BUILDING WITH MORE THAN 10 APARTMENTS																
8.	OTHER e.g., travel trailer or other structure/tent/car/ couch surfing																
(50) Is your home....	1. __ Owned by you or someone in the household with a mortgage or loan? 2. __ Owned by you or someone in the household free and clear? 3. __ Rented for cash rent? 4. __ Occupied without payment of cash rent? 5. __ Other (what? E.g., HUD \$) _____																
<u>IF RENTED</u>																	
(50a) How much is the rent per month?																	
(50b) Does the rent include utilities?	1. __ YES 2. __ NO																

(50d) Does your landlord live locally?	1. __YES	2. __ NO
(50e) Have you been happy with your landlord?	1. __YES	2. __ NO
IF NO , (50f) why not?		
(51) Thinking about your current home, how would you describe it in terms of the physical conditions, the cost, the local area/neighborhood and so forth?		
(52) Do you have children going to school locally? (Who and what school district?)		

(53) What are the names of everyone currently living in your household? (show the card filled in earlier with names in questions 4.1 to 4.8)	(54) Relation to you?	(55) Gender	(56) Age	(57) When you first moved to your current home , were all the same people living in your household?	
1.				1. YES	2. NO
2.				1. YES	2. NO
3.				1. YES	2. NO
4.				1. YES	2. NO
5.				1. YES	2. NO
6.				1. YES	2. NO
7.				1. YES	2. NO
8.				1. YES	2. NO
9.				1. YES	2. NO
10.				1. YES	2. NO

WRAP UP/LOOKING FORWARD:

(69) In a year from now, do you expect you will be living in the same house/apartment as now? (probe: why/why not?) What about three years from now?

(70) If there was any advice you could give to a Pennsylvania legislator regarding the effects of Marcellus Shale development on people and communities in Pennsylvania, what would it be?

(71) Is there anything we haven't talked about relating to the Marcellus Shale development and families that you want to talk about or you think I should know?

- End Interview -

The Center for Rural Pennsylvania Board of Directors

Chairman

Senator Gene Yaw

Vice Chairman

Representative Garth D. Everett

Treasurer

Representative Sid Michaels Kavulich

Secretary

Dr. Nancy Falvo
Clarion University

Dr. Livingston Alexander
University of Pittsburgh

Stephen M. Brame
Governor's Representative

Dr. Michael A. Driscoll
Indiana University

Dr. Stephan J. Goetz
Northeast Regional Center for Rural Development

Dr. Timothy Kelsey
Pennsylvania State University



The Center for Rural Pennsylvania
625 Forster St., Room 902
Harrisburg, PA 17120
Phone: (717) 787-9555
www.rural.palegislature.us
1P0317