

# THE IMPACTS OF THE MARCELLUS SHALE INDUSTRY ON HOUSING IN LYCOMING COUNTY



August 27, 2012

**TABLE OF CONTENTS**

1 – Introduction ..... 1  
     The Personal Side of the Housing Crisis ..... 1  
     The Back Story ..... 2  
     Study Methodology ..... 3  
     Key Findings ..... 4  
     Key Recommendations ..... 5  
     Applicability of This Study ..... 6  
 2 – Study Methodology ..... 6  
 3 – Limitations of the Study ..... 8  
 4 – Drivers of Housing Impacts ..... 8  
     4.1 – Flood-Induced Housing Shortage ..... 8  
     4.2 – Community Development Expansion ..... 8  
     4.3 – Growth of the Marcellus Shale Industry ..... 9  
         4.3.1 – Confirmation of Employee Estimates ..... 11  
     4.4 – Changes in Employment and Commuting Characteristics ..... 12  
     4.5 – The Natural Gas Industry Dampens the Effects of Recessionary Economy ..... 20  
 5 – Impacts to the County’s Housing Market ..... 24  
     5.1 – Changes in Population ..... 24  
     5.2 – Housing Unit Supply ..... 28  
     5.3 – Hotel Rooms, Rates, and Occupancy ..... 30  
         5.3.1 – Summary of Lycoming College Survey of Gas Industry Hotel Guests ..... 35  
     5.4 – Rental Rates and Availability ..... 36  
     5.5 – Home Sales Volume and Prices ..... 40  
     5.6 – Student Housing ..... 42  
     5.7 – Housing Affordability ..... 43  
     5.8 – Subsidized Housing ..... 44  
     5.9 – Housing Demand ..... 47  
     5.10 – Utilization of Other Shelter Options ..... 49  
 6 – Experiences from Other States Experiencing Growth in Natural Gas Well Drilling ..... 51  
 7 – Projections and What-If Scenarios ..... 52  
 8 – Key Findings ..... 56  
 9 – Recommendations ..... 58  
 10- Early Implementation Steps ..... 60  
 11 – Electronic Tool for Modeling “What-If” Scenarios ..... 61  
 Appendix 1 – Summary of Interviewees and Focus Group Participants ..... 62  
 Appendix 2 – Fair Market Rental Rate Methodology ..... 63  
 Appendix 3 – A Comparative Analysis of the Employment Estimates ..... 66  
 Appendix 4 – Lycoming College CSCE Survey of Hotel Guests



## 1 – Introduction

---

### The Personal Side of the Housing Crisis

- An elderly couple, who had resided in their home for some 20 years, had not made any updates to their dwelling. As their health diminished, it became increasingly difficult for the couple to handle the everyday tasks associated with managing their aging home, and the cost of unexpected repairs taxed their savings. Utility cost increases became a financial burden. When they learned of the Mill Race Commons facility (Montoursville), they quickly applied to the SEDA COG Housing Development Corporation but waited for approximately one year. Since moving into Mill Race Commons, the burdens they endured in maintaining their older home are relieved. While the burden for this couple was relieved, 100 other applicants are still waiting for help.
- A single mother who rents a house knows that her landlord wants her out. She has already received warnings about the kids leaving toys in the yard and that this violates her rental agreement. Now her water heater does not work. In fact it has not worked in months, but she is afraid to complain because she is afraid she will be evicted. If she gets evicted from her rental house, she hopes she can find a small apartment for herself and her kids that she can afford.
- An older woman's husband has recently died. As a result, her income has been reduced and she can no longer afford the maintenance on her older home. Getting to the stores and doctor appointments becomes a problem. She still drives, but no longer wishes to do so because of the dramatically increased truck traffic on rural roads due to drilling activity. She had always planned to rent a small apartment in town one day, but now she can't afford the rent. Senior housing is not an option because it's already full. So, she's left in a house she cannot afford in which she does not want to live.
- An elderly woman with health issues has always paid her monthly rent for her substandard rental, but now she has gotten behind. The landlord quickly evicts her because the house can be re-rented at a higher rate to a family. All social services can do is appeal to the landlord for a bit more time as they try to find her someplace to live.

Unfortunately, these situations are not isolated events. More than ever before, Lycoming County residents are dealing with housing problems that can be overwhelming. Where do you go when you lose your home? You first move in with friends. When they ask you to leave, you move in with relatives. After that, you try shelters. If you cannot find a place in a shelter, you are then living in your car. This situation--usually associated with large cities—is now the reality in some small municipalities in Lycoming County.

The housing challenge can be equally problematic for those who are moving into our County. A family arrives in the County to work in the gas industry. They work hard, long hours and would like to buy a nice home. Unfortunately, many of the family homes in the County are occupied by elderly residents and are not available for sale. They must now rent an apartment at a high rent that would have easily covered a mortgage payment.



## The Back Story

It is crucial to first understand the housing situation that existed prior to the arrival of this industry. In 2006, the adopted County Comprehensive Plan identified the Housing Stock and Diversity as a major concern, especially with regard to the *increasing elderly population needing affordable choices to go with a changing lifestyle*. It is *also important to younger families with limited budgets*. As stated in the Plan, the fundamental issues facing the County before the gas industry arrived (see inset box right) appear to be equally true today—but more pronounced.

In 2000, the median monthly rent across Lycoming County was only \$449, which constituted about 15.8% of the typical renter's income. Those rates are long gone. But, what these statistics convey is that housing costs in the County may have been relatively affordable over 10 years ago, but that is no longer the case.

Another important dimension of Lycoming County's housing profile is the abundance of antiquated and aging homes—about 55% were built before 1959. In many cases these houses are in growing need of energy upgrades, weatherization improvements, and kitchen modernization, etc. Thus, the annual maintenance burden attendant with these aging properties can be daunting. Without a robust home building industry adding new dwellings to the inventory, it is clear that the average age of the County's housing stock will continue to increase.

Prior to the arrival of gas drillers, there appeared to be a very limited supply of “starter homes” for young professionals and new families alike in Lycoming County. The phenomenon known as “brain drain” and the associated exodus of college graduates may have dampened the demand for starter homes. While there appeared to be homes available in the \$300,000 and higher bracket, the supply of homes in the \$140,000 to \$240,000 range has been and continues to be rather narrow.

Decent rental properties for low- to moderate-income working families have also been in chronically short supply. Many of these families had no choice but to accept dwellings that were plagued with maintenance problems and absentee landlords. The need for good “affordable” housing was a nagging problem in 2005, and it still is today.

There has also been a growing demand for independent senior living units, as evidenced by the length of the waiting list for housing developments such as the SEDA COG-constructed units in Indian Park, Montoursville. As the County's population ages and the ranks of older adults swell, the need and demand for these types of living arrangements will continue to grow.

*Younger families will need to look elsewhere to find affordable housing to meet their needs.*

*A growing elderly population will have difficulty maintaining an aging housing stock that is better suited to larger and/or higher-income families.*

*More individuals and families may need community housing assistance to meet their needs.*

Finally, Lycoming County has not experienced the type of “spec developments” as may be seen in the more urban areas of the Commonwealth. Local homebuilders appear to embrace a more conservative, *build-to-suit-on-the-seller’s-property* business approach. Banking (and lending) restrictions regarding capital have certainly made spec development even more unlikely. In short, there does not appear to be an inventory of housing developments currently available or a desire by builders to risk their capital by rapidly constructing to meet this unexpected demand for new homes.

The introduction of the natural gas industry’s housing needs did not alter the fundamental housing challenges faced in Lycoming County, but instead simply made them more severe and readily apparent. Gas industry employees moving into the County place additional pressure on the housing market, and the increased demand for housing without a comparable increase in supply drives up prices and reduces housing options. Those facing challenges finding appropriate and affordable housing prior to the presence of the natural gas industry, including seniors, low- to moderate-income working families, and young professionals and their families, now experience the changes more severely.

As the introduction suggests, the housing market is interconnected. Pressure in one segment of the housing market creates pressure elsewhere. As will be discussed more fully later in this report, the most direct housing pressure created by the introduction of the natural gas industry’s housing needs is in rental housing. The pressure on rental housing and the resulting increases in rents affect low- to moderate-income renters by pushing them into lower-quality housing or out of the housing market entirely. Rental housing pressure affects older adults because those who might choose to downsize by selling their homes and moving into senior housing face added pressure from seniors who can no longer afford rising rents. Rental housing pressure affects young professionals and their families because high rents force them into housing that does not meet their needs and potentially delays saving to purchase a new home.

The good news is that where pressure in one segment of the housing market creates pressure elsewhere, relief on housing pressure is also interconnected across housing segments. The recommendations that follow from this study, even when targeted to one segment of the housing market, will create relief from the pressures experienced by each of these groups.

Finally, a number of the recommendations that follow focus on the housing needs that existed prior to the arrival of the gas industry and were heightened upon its arrival. A focus on these existing housing needs impacted by the gas industry, rather than a focus on the creation of housing specifically to meet the gas industry’s needs, allows for variations in the industry’s activity and the resulting housing needs due to market and other forces.

## Study Methodology

Throughout 2010 and 2011, a number of studies have been conducted regarding the impacts of the Marcellus Shale industry in Pennsylvania. While some of these reports have contained valuable statistical data regarding the various aspects of the natural gas well activity, most of the research related to housing has been more qualitative than quantitative. Moreover, these studies were structured to provide regional or statewide assessments and none were conducted at the county level. Sponsored by the Pennsylvania Housing Finance Agency (PHFA), one of the most significant reports was the six-county, Marcellus region qualitative study performed by Lycoming College’s Center for the Study of Community



and Economy. The full report can be viewed at <http://www.lycoming.edu/politicalScience/pdfs/CSEMarcellusHousingFinalReport.pdf>.

In anticipation of the Pennsylvania Legislature's passage of Act 13 (Oil & Gas Act of 2012), the Lycoming County Commissioners initiated a study (the Lycoming County Study) that is intended to assess specific impacts of Marcellus Shale gas development in four broad areas as first outlined in the Governor's Marcellus Shale Advisory Commission report released in July 2011. The four areas include (1) housing; (2) water and sewer infrastructure; (3) transportation infrastructure; and (4) emergency, health, and social services. As one of the administrators of Act 13 funding, the Pennsylvania Housing Finance Agency requires a local housing plan as a prerequisite to their consideration of funding applications. This housing analysis brings measure to Lycoming County's housing situation and concludes with a plan for addressing its most critical housing needs.

As previously stated, the Lycoming County Study examines and analyzes housing as it relates specifically to the residents, businesses, and housing communities of this County. During this study, 18 interviews were conducted and a focus group meeting was convened. Multiple data sources were culled for relevant statistical information. Results gathered were synthesized by a team including representatives of the Lycoming County Planning and Community Development Department, STEP, Inc. (STEP), SEDA COG, Williamsport Community Development Department, Delta Development Group, Inc., Lycoming College's Center for the Study of Community and Economy, and others.

*The PRIMARY GOAL of the housing study is to evaluate the impact of Marcellus Shale gas development on the housing profile of Lycoming County in an objective, statistically based, quantitative manner; to present the key findings; and to offer recommendations to guide future policy, planning, and funding decisions.*

## Key Findings

The results of this study quantified five primary housing issues in Lycoming County that should be considered in determining the optimal use of revenue received by the County through Marcellus Shale Local Impact Fees (see Section 8.0 for an expanded discussion).

1. The supply of housing options in Lycoming County has not been sufficient to meet the demand of the Marcellus Shale industry. Furthermore, the rural nature of the County inherently means that there are fewer existing housing units to absorb the increased demand for housing created by the Marcellus Shale industry compared to counties with more extensive urban and suburban amenities.
2. The age and condition of the current housing stock is not attractive to new residents moving into the area with the Marcellus Shale industry. These potential new residents are looking for newer housing that is move-in ready and does not require any upgrades or repairs.



3. The limited supply of housing and the increased demand due to the growth in the Marcellus Shale industry have resulted in rental rates that have made housing unaffordable for over 58% of the County's households, especially households with low to moderate incomes.
4. The increase in rental rates has meant a decrease in the number of housing units available for subsidized renters, which has significantly increased the number of applicants on waiting lists for subsidized units and has unfortunately forced housing agencies to return or forego much-needed funding from the U.S. Department of Housing and Urban Development (HUD).
5. With the enactment of Act 13, Pennsylvania has provided some funding mechanisms for addressing low- to moderate-income affordable housing needs; but there are needs for state support at all economic levels in the housing market.

### Key Recommendations

While the current market can support additional housing units, care should be taken not to overbuild, which could be equally negative should the Marcellus Shale industry unexpectedly scale back or leave the region. To mitigate the current housing issues related to the growth in the Marcellus Shale industry, the County could utilize a portion of its Marcellus Shale Local Impact Fee revenues to leverage Pennsylvania Housing Affordability and Rehabilitation Enhancement Fund (PHARE) funding through PHFA in order to accomplish the following:

1. Provide competitive grants to owners of existing rental housing and/or underutilized commercial properties to add new rental units in the housing market.
2. Provide incentives for developers of new housing developments for mid-priced homes with requirements for inclusionary housing.
3. Provide incentives for home ownership, perhaps in partnership with local banks.
4. Designate portions of Community Development Block Grant (CDBG) funds to augment income-qualified home buyer programs funded through the Marcellus Shale Local Impact Fee.
5. Fully explore PHFA-funded programs enhanced by Act 13 funding (into the PHARE account especially) to meet the housing needs of low- to moderate-income, disabled, and elderly residents.
6. Provide competitive grants to existing affordable housing programs to be used to mitigate the impacts of the Marcellus Shale industry on affordable housing.
7. Advocate funding support at the state and federal levels for the existing affordable housing programs referenced in #6 above.
8. Work with municipal partners within Lycoming County to ensure that efforts to address Marcellus-related housing impacts work to also address pre-existing housing needs specific to each community.
9. Explore public-private partnerships to increase the supply of mixed-income rental and owner-occupied housing.
10. Develop affordable independent living apartments for seniors within the Williamsport metropolitan area. These housing initiatives are needed more today than ever to assist over 100 applicants who are currently on affordable senior housing waiting lists.



## Applicability of This Study

This study was designed to assess the housing impacts within Lycoming County and may not adequately reflect the issues facing other counties in the shale play for a number of reasons. While Lycoming County has a sizeable number of drilled wells (471 by December 31, 2011), what distinguishes the County is the number of well field support companies that have established depots or regional distribution centers in or near the County seat of Williamsport. The presence of an excellent network of interstate highways, first-class rail freight service, a regional airport, and a growing number of major flag hotels has prompted over 80 companies to establish field headquarters in the area. Companies establishing bases of operation in Lycoming County range from gas producers to drilling, fracking, and other service companies, as well as other support operations, including engineering and legal firms.

## 2 – Study Methodology

As previously noted, many prior studies have focused on the qualitative aspects of the impacts of the Marcellus Shale industry on housing. These studies have painted a vivid picture of the breadth of the housing issues in Lycoming County and provide a foundational backdrop for this housing analysis. Building on these studies, the primary objectives of this analysis are cited below:

1. Identify, quantify, and measure the impacts being experienced in Lycoming County as a result of the growth in the Marcellus Shale gas development industry
2. Identify and quantify the primary drivers of the of the impacts and establish linkages to the identified impacts
3. Based on measured benchmarks, develop a tool that will allow County officials to project future impacts based on reasonable assumptions
4. Provide County officials with the quantitative research necessary for identifying and prioritizing the County's most critical housing needs
5. Outline a plan for meeting the County's most critical housing needs

The first step in conducting the housing impact analysis was to examine previous significant plans and studies that directly relate to housing throughout the County, including the following:

- Lycoming County Comprehensive Plan
- *Impact on Housing in Appalachian Pennsylvania as a Result of Marcellus Shale*, conducted in 2011 by the Institute for Public Policy and Economic Development
- *Pennsylvania Marcellus Shale Workforce Needs Assessment*, conducted in 2011 by the Marcellus Shale Education and Training Center
- *Marcellus Natural Gas Development's Effect on Housing in Pennsylvania*, conducted in 2011 by Lycoming College's Center for the Study of Community and the Economy (CSCE)

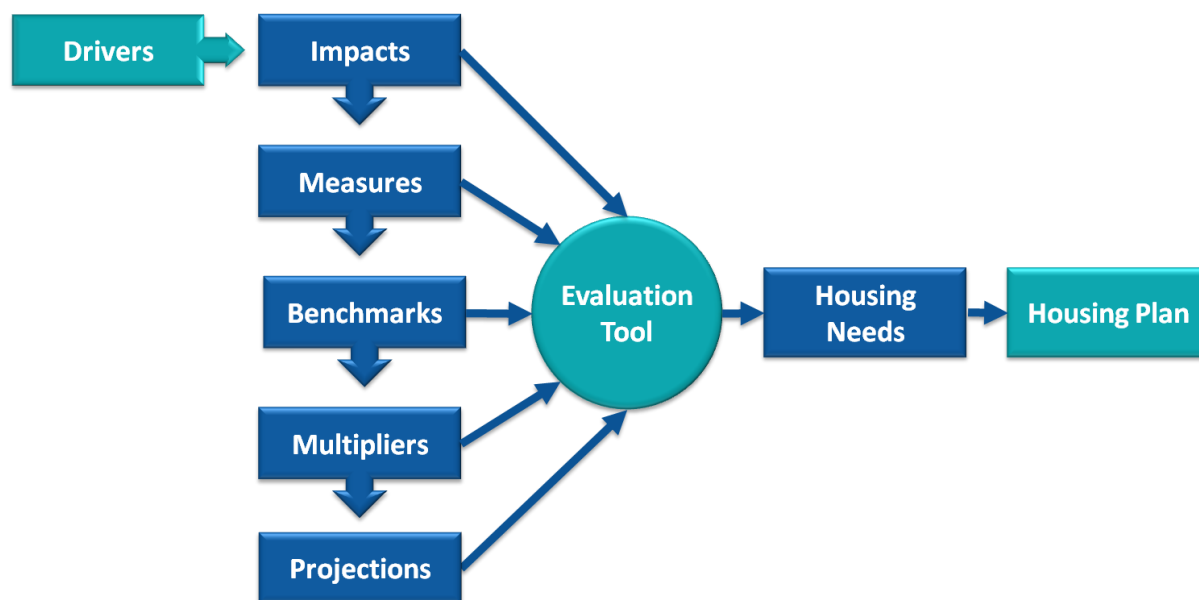
The analysis also included personal interviews with 14 leaders in Lycoming County in the natural gas industry, the development community, and housing providers (see Appendix 1). A focus group meeting was also conducted to reach an additional 44 community and industry members representing the natural gas industry, the real estate and property management industries, community-based organizations, the education community, and municipal officials (see Appendix 1). These interviews and





focus groups were designed to (1) identify sources of defensible statistical data to support the analysis, such as trends in rental rates, housing sales, and housing supply; and (2) to hear first-hand descriptions of their experiences with various aspects of housing in Lycoming County resulting from the growth in the Marcellus Shale industry. In addition to the interviews and focus groups, Lycoming College's CSCE conducted intercept interviews with gas industry workers (the CSCE Study) who were staying in hotels in Lycoming County, to gather information regarding the tenure of their stays in Lycoming County, the location of their permanent residence, and their housing preferences. Finally, the findings of the Lycoming County housing analysis were compared, where possible, to previous experience in other states such as Colorado and Wyoming that have been in the natural gas development business for some time.

**Figure 1 - Assessment Protocol**



Using the methodology outlined in Figure 1 above, the analysis was structured to answer the following questions:

1. What are the drivers causing impacts to housing in Lycoming County, how are they measured, and what are the key baseline benchmark measures?
2. What are the impacts of the Marcellus Shale industry on housing in Lycoming County, how are they measured, and what are the key baseline benchmarks?
3. What portion of the impacts to housing can be attributed to the Marcellus Shale industry?
4. What are the measurable relationships between drivers and impacts and what multipliers can be used to project future impacts?
5. What are the most critical housing needs in Lycoming County?
6. How can County officials most effectively provide for the housing needs of Lycoming County residents?

### 3 – Limitations of the Study

The implementation of the Marcellus Shale Local Impact Fee is likely to provide millions of dollars in additional revenue to Lycoming County each year to mitigate the impacts of the industry to the County. To ensure that these funds are allocated in areas that are experiencing the greatest impacts, County officials need to be able to estimate the impacts to date and to project future impacts. Two limitations are frequently noted related to the quantification of the impacts of the Marcellus Shale industry. The first is the lack of defensible data to support estimates and projections, and the second is the uncertainty of industry activity in the future. While these limitations are valid and should qualify the estimates or projections that result from this study, they should not prevent the development of educated assumptions that can be used to inform decision making. Since there is no single source of data available to quantify the impacts of Marcellus Shale gas development on housing in Lycoming County, this analysis uses data from a number of sources to develop key **assumptions** that can be used to estimate previous impacts and project potential future impacts.

### 4 – Drivers of Housing Impacts

Lycoming County’s Comprehensive Plan, adopted in 2006, noted that “current housing choices, particularly in terms of type and price, do not meet the changing needs of younger workers, the elderly and more non-traditional family households.” As suggested by the vignettes presented in the introduction to this study, the supply of quality housing in Lycoming County still falls short of consumer demand, and the issue has been intensified in recent years by a number of events that for purposes of this study will be called “drivers.” These drivers represent local events that have impacted, to varying degrees, the equilibrium of housing supply and demand in the County.

#### ***Drivers of Housing Impacts***

1. *Flood-Induced Housing Shortage*
2. *Community Development Expansion*
3. *Growth of the Marcellus Shale Industry*
4. *Changes in Employment and Commuting Characteristics*

#### **4.1 – Flood-Induced Housing Shortage**

In the aftermath of floods attributed to Tropical Storm Lee in September 2011, over 110 housing structures in Lycoming County were destroyed or declared uninhabitable.

#### **4.2 – Community Development Expansion**

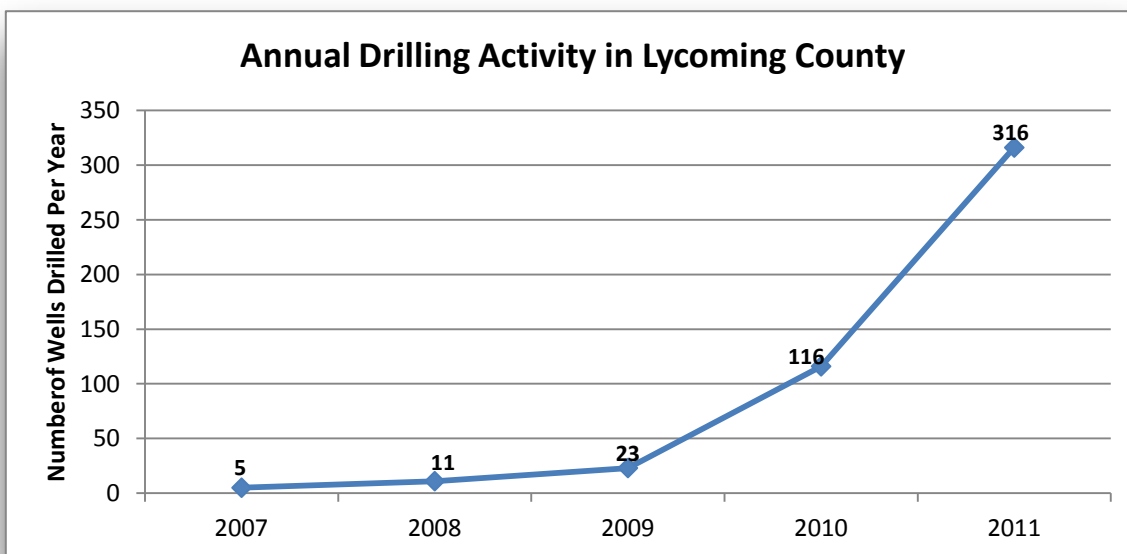
A number of housing units have been demolished in recent years to facilitate community development expansion. City officials estimate that over 400 units have been demolished in Williamsport alone. To support the revitalization of the Susquehanna Health campus, over 100 residential units were successfully relocated from the defined institutional zone. These demolitions and relocations dampened the supply of available homes as the Marcellus Shale workers began to arrive in large numbers.

### 4.3 – Growth of the Marcellus Shale Industry

Although flood damages and hospital expansion clearly had an effect on the County’s housing supply, the primary factor that is driving the demand for housing in Lycoming County is the arrival and expansion of companies that actually perform natural gas industry activities. Consider, for example, that a mobile home park in Piatt Township has been sold to a company that plans to reuse the property for a water withdrawal facility to be used by the natural gas industry. This will mean the loss of an additional 37 housing units. Because many of these residents have very low incomes, their options for moving are extremely limited. This is exactly the type of situation that Act 13 affordable housing funding is designed to address.

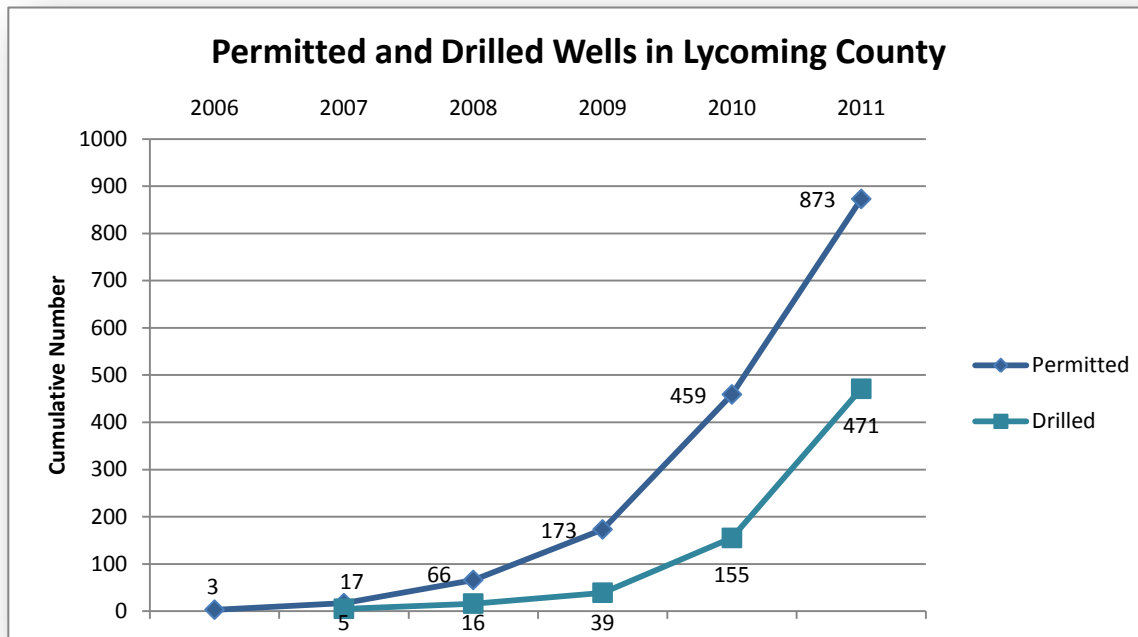
While corporate activities and production activities create jobs, the number of jobs required for these activities is minimal compared to the number required during the pre-production phase. A recent study conducted by the Marcellus Shale Education and Training Center (MSETC) estimates that .39 employees are required for each well after drilling is completed and the well is in production. Conversely, pre-production activities such as leasing, permitting, site preparation, drilling, hydraulic fracturing (fracking), pipelines, construction of compression stations, and support activities are estimated to require between 9.46 and 12.9 employees per well, depending upon operating efficiencies associated with the drilling of multiple wells at a single well pad. If we assume that the mid-point of this range (11.18) is the most likely employment scenario, this means that an estimated 3,533 employees were physically working in Lycoming County during 2011 either in the natural gas industry or its support activities (see Table 1 below).

**Figure 2 - Drilling Trends by Year in Lycoming County**



Source: Pennsylvania Department of Environmental Protection (PA DEP), Office of Oil and Gas Management, Oil and Gas Reports - Spud Date up to December 31, 2011

Figure 3 – Cumulative Drilling and Permitting Activity in Lycoming County



Source: PA DEP, Office of Oil and Gas Management, Oil and Gas Reports, February 2012, and Lycoming County Planning and Community Development.

Table 1 – Estimated Full-Time Employees (FTEs) Required to Support Drilling Activities in Lycoming County

Year	Number of Wells Drilled in Lycoming County	Estimated FTEs Required at 9.46 Employees/Well <sup>(1)</sup>	Estimated FTEs Required at 12.9 Employees/Well <sup>(1)</sup>	Assuming Mid-Point Range (11.18) as Most Likely Scenario
2007	5	47	65	56
2008	11	104	142	123
2009	23	218	297	257
2010	116	1,097	1,496	1,297
2011	316	2,989	<b>4,076</b>	3,533

<sup>(1)</sup> Source: Pennsylvania Marcellus Shale Workforce Needs Assessment, Marcellus Shale Education and Training Center (MSETC), Summer 2011; PA DEP (Permits and Drilling); and Lycoming County Planning and Community Development



#### 4.3.1 – Confirmation of Employee Estimates

To further validate the MSETC estimates presented in Table 1 above, we modeled the portion of Lycoming County’s reported 840 mining industry employment that could reasonably be attributed to the Marcellus Shale drilling activity using the IMPLAN model<sup>1</sup> to estimate the total number of employees required to support the increased business activity, and the estimated percentage of those employees who were employed by companies based in Lycoming County. As shown in Table 4, between 122 and 129 people were employed in the County’s mining industry each year between 2005 and 2009. By 2010, that number sharply increased to 840. Using the baseline employment in this industry prior to the onset of Marcellus Shale drilling activity, we assumed that 711 of these 840 employees were engaged in the Marcellus Shale industry. We modeled this increase in employment in two ways: (1) constrained by the businesses located in Lycoming County in 2010 that could provide the required workforce, and (2) with no geographic constraints on the availability of companies that could provide the required workforce. As shown in Table 2 below, the non-constrained **IMPLAN model** estimated that **3,741** direct and indirect employees would be required to support the Marcellus Shale activity in Lycoming County, with an estimated 824 employed by companies that are physically located in Lycoming County, and who pay taxes and report employment in the County. This number correlates closely with the upper end of the range of estimated FTEs required per well as presented in Table 1. These estimates suggest a significant mining-related workforce employed by companies physically located outside of Lycoming County that may require the support of local lodging of one type or another while working in the County.

**Table 2 – Estimated “Ripple” Effect of Natural Gas Industry Employment**

Impact Type	Required Employment – Constrained by Lycoming County Business Mix	Required Employment – Not Constrained	Estimated Employment from Outside Lycoming County
Direct Employment	711	711	-
Indirect Effect (Business-to-Business Activity)	113	3,030	2,917
Total	824	<b>3,741</b>	2,917

Source: IMPLAN and consultant calculations

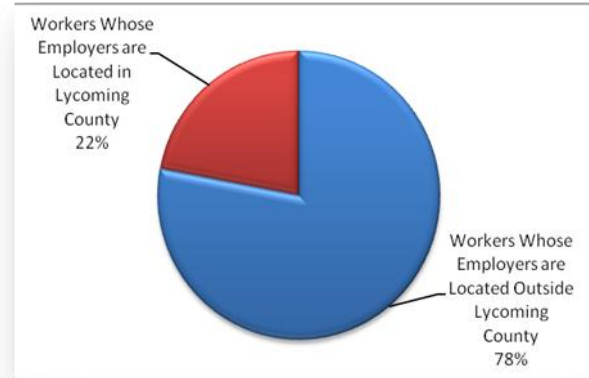
A comparative analysis of employment estimates from three sources and approaches is provided as a supplement to the above discussion in Appendix 3.

<sup>1</sup> IMPLAN is a nationally recognized input/output model developed by the Minnesota IMPLAN Group, Inc. (MIG) and is widely used by academic institutions, government agencies, and private-sector economists to estimate the economic and fiscal impacts of changes in local economies.



Table 2 above suggests that 22% of the workforce required to support natural gas drilling in Lycoming County work for companies that are physically located in the County and the remaining 78% work for companies that are physically located outside the County. Just as it is assumed that workers from companies physically located outside of Lycoming County are working in the County, it can also be assumed that some workers who are physically working at or in support of well sites outside of Lycoming County may seek some type of housing or lodging within the County. Table 3 presents the drilling activity in the counties surrounding Lycoming County.

**Figure 4- Probable Employer Location for Gas Industry Related Workers**



**Table 3 – Drilling Activity in Counties Surrounding Lycoming County**

Number of Wells Drilled							
County	2006	2007	2008	2009	2010	2011	Total
Bradford	2		25	151	417	429	<b>1,024</b>
Centre	1	1	4	7	39	9	<b>61</b>
Clinton			4	9	34	39	<b>86</b>
Columbia					1	2	<b>3</b>
Potter	1	9	7	8	34	17	<b>76</b>
Sullivan					23	19	<b>42</b>
Tioga	1		14	120	281	283	<b>699</b>
<b>Total</b>	<b>5</b>	<b>10</b>	<b>54</b>	<b>295</b>	<b>829</b>	<b>798</b>	<b>1,991</b>

Source: PA DEP, Office of Oil and Gas Management, Oil and Gas Reports, Spud Data, February 2012

If each of the 798 wells drilled in surrounding counties that required 11.2 workers to support drilling activity, it is estimated that approximately 8,938 total workers were involved in this drilling activity during 2011. Of the gas industry workers who were interviewed as part of the CSCE survey, 14% indicated that they were actually working at well sites outside Lycoming County. While it is understood that this statistic may not be representative of all gas industry workers staying in Lycoming County hotels, and that it would likely vary with the nature of drilling activities, it demonstrates that housing demand in Lycoming County is not solely driven by drilling activity within the County.

#### 4.4 – Changes in Employment and Commuting Characteristics

The robust level of well drilling activity throughout Lycoming County has had an upward and positive impact on employment, which in turn has been the primary driver of housing demand. Unfortunately,



this is one of the most difficult drivers to quantify. While production-phase employment is likely to represent permanent workers who either already live in Lycoming County or have relocated to the area, pre-production employment is more complex. Since pre-production employees are linked more directly to well sites, the physical location of their workplace moves with drilling activity. Since drilling activity does not necessarily recognize county boundaries, a drilling or well service crew may not be exclusively working in Lycoming County. To further complicate the quantification process, there is no single data source available to accurately estimate the total number of employees whose physical workplace is in Lycoming County.

Employment statistics from standardized, nationally recognized data sources as shown in Table 4 and Figure 5 vividly indicate that employment in Lycoming County's mining, quarrying, and oil and gas industry sector more than tripled between 2009 and 2010. Impressive as this 840 jobs figure may be, it is even more significant to examine the other core jobs and ancillary jobs related to the natural gas development activities around the County. Appendix 3 provides an expanded comparative analysis of the job creation impact attributed to the natural gas development industry. We considered three different approaches, but arrived at largely the same conclusion: In 2011 Marcellus Shale activities generated directly or indirectly between 3,500 and 4,200 jobs. This study concedes that the exact number of gas related workers could exceed 4,200 but would defer to others to further refine our estimates. Moving forward, we highlight three factors that must be considered in any estimate of job creation:

1. Because of the specialized nature of many of the skills required for pre-production activities, companies located outside Lycoming County are often contracted to perform these activities. Workers from these companies are NOT necessarily included in the employment statistics for Lycoming County. Rather, they are normally captured in the county and state data where their companies are based. The key point is that the County's standardized industry statistics may not include the hundreds of workers whose employers are physically located outside Lycoming County (see Figure 4).
2. Dynamic data - There has been a significant uptick in employment associated with well-field service companies over the past 24-30 months, such as the arrival and/or expansion of Halliburton, Sooner Pipe, Weatherford, Clean Harbors, and GE Oil to name a few. Since the 2010 data statistics were collected, there have been several hundred new jobs added at each of these firms.
3. There are several local mining-related companies whose employment figures have increased measurably in response to the increases in natural gas drilling activity, but depending on the industry sector classification of the companies, these increases may not be counted in the traditional mining sector statistics (e.g., Allison Crane).

**Bottom Line:** The rapid infusion of 3,500-to-4,200 new jobs underscores why Lycoming County was declared in late September 2011 as the 7th fastest growing economy in the nation. The challenge, however, is to make sure that we are prepared to support the housing needs of these workers and resolve any untoward housing impacts that may be experienced by our residents.

Industry representatives interviewed estimated that around 65% of their employees live in or within close proximity of Lycoming County. This suggests that 35% of the gas industry-related workers in the



County in 2011 (or 1,237 employees) potentially needed some type of housing while working here. While workforce commuting statistics are not yet available for Lycoming County for 2010 and 2011, statistics for 2005, 2007, and 2009, as presented in Figure 8 and in Table 6, clearly demonstrate that an increasing portion of Lycoming County's workforce commutes into the County to work. In fact, in 2009, nearly 8,000 workers (17.6% of the County's workforce) commuted into the County to work from a distance greater than 50 miles, compared to 7,400 (15.9%) in 2007 and 5,850 (12.9%) in 2005. As the natural gas industry expands its operations in the County, the number of transient workers in the County will likely continue to increase, placing additional demand on the local hotel and housing market.

As presented in Table 4 below, with the explosive growth (551%) in the mining sector (including natural gas drilling) between 2008 and 2010, one should expect to see the related increases in the accommodations and food services sector (8.1%), management of companies and enterprises sector (41.11%), and professional, scientific, and technical services sector (6.84%) during the same time period. Collectively, these activities help to offset the six-year decline in manufacturing jobs. This welcomed growth in the mining sector between 2008 and 2010 also likely slowed the rate of decline in the manufacturing sector and influenced an increase in employment in that sector between 2009 and 2010.





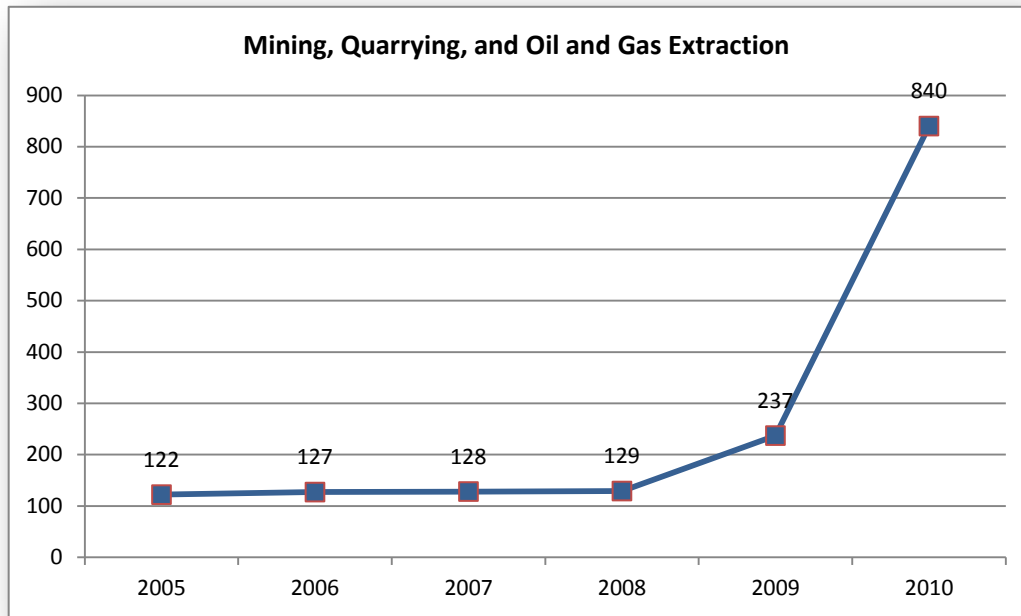
**Table 4 – Employment Trends in Lycoming County (4th Quarter)** ■ = Industry Sectors with Highest Growth Rates

Industry	2005	2006	2007	2008	2009	2010	Change 2008 - 2010	% Change 2005 - 2008	% Change 2008 - 2010
Agriculture, Forestry, Fishing and Hunting	210	184	198	166	150	151	(15)	(20.95%)	(9.04%)
Mining, Quarrying, and Oil and Gas Extraction	122	127	128	129	237	840	711	5.74%	551.16%
Utilities	97	97	131	93	136	67	(26)	(4.12%)	(27.96%)
Construction	1,934	2,127	2,162	2,032	1,860	2,028	(4)	5.07%	(.2%)
Manufacturing	12,396	11,116	10,520	10,048	9,102	9,362	(686)	(18.94%)	(6.83%)
Wholesale Trade	1,948	2,006	2,881	2,742	2,311	2,794	52	40.76%	1.9%
Retail Trade	6,412	6,322	6,221	6,193	5,750	5,189	(1,004)	(3.42%)	(16.21%)
Transportation and Warehousing	1,500	1,314	1,404	1,424	1,404	1,372	(52)	(5.07%)	(3.65%)
Information	788	672	555	555	504	385	(170)	(29.57%)	(30.63%)
Finance and Insurance	1,174	1,315	1,222	1,340	1,312	1,310	(30)	14.14%	(2.24%)
Real Estate and Rental and Leasing	415	426	453	464	453	466	2	11.81%	.43%
Professional, Scientific, and Technical Services	1,642	1,796	1,781	1,842	1,867	1,968	126	12.18%	6.84%
Management of Companies and Enterprises	274	114	313	287	372	405	118	4.74%	41.11%
Administrative and Support and Waste Management and Remediation Services	2,108	2,492	2,599	2,373	2,223	2,462	89	12.57%	3.75%
Educational Services	3,700	4,705	4,914	4,849	4,570	4,882	33	31.05%	.68%
Health Care and Social Assistance	7,626	7,851	7,906	8,194	7,790	7,899	(295)	7.45%	(3.6%)
Arts, Entertainment, and Recreation	364	303	317	348	321	297	(51)	(4.4%)	(14.66%)
Accommodation and Food Services	3,435	3,560	3,533	3,557	3,574	3,845	288	3.55%	8.1%
Other Services (except Public Administration)	1,802	1,718	1,726	1,804	1,817	1,786	(18)	.11%	(1.%)
Public Administration	2,020	1,986	1,802	1,824	1,823	1,827	3	(9.7%)	.16%
Total	49,967	50,231	50,766	50,264	47,576	49,335	(929)	.59%	(1.85%)

Source: Local Employment Dynamics, December 2011



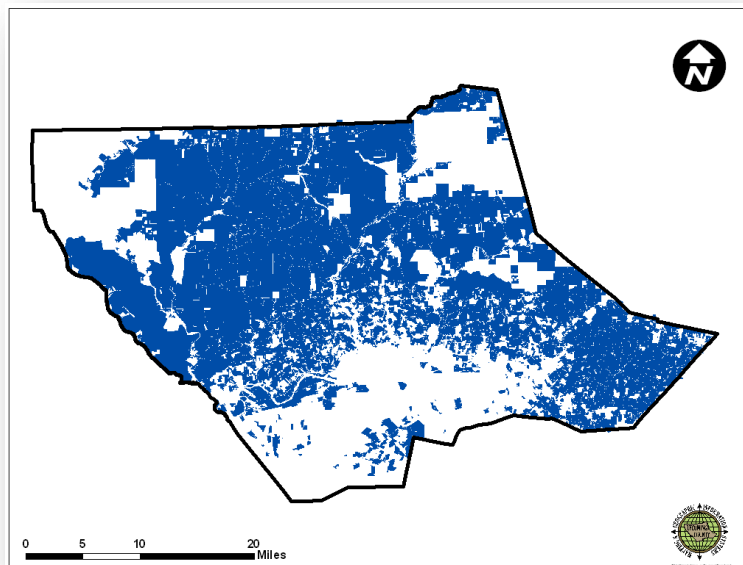
**Figure 5 - Employment Trends in Lycoming County's Mining Sector**



Source: *Local Employment Dynamics, December 2011*

As natural gas companies began leasing gas and oil rights to Lycoming County land between 2005 and 2008, the drilling activity moved aggressively forward in 2009 and 2010. As of March 2012, gas and oil rights for about 362,000 acres of land in Lycoming County have been privately leased, making up just under half of the County's land area. Taken together, the private lands and state lands under lease in Lycoming County constitute about 60% of land under lease for gas exploration (see Figure 6). Leases for approximately half of the private acres (180,917) were expired by the end of 2011, with 260 wells drilled on those properties. Approximately 95% of the leases on the remaining 181,166 acres will expire within the next four years (see Table 5 and Figure 7). The County has seen some decrease in drilling activity in recent months as drillers have moved some drill rigs to areas to the west.

**Figure 6 – Oil and Gas Leases in Lycoming County (Private and State Lands)**



Industry representatives have indicated that there will be peaks and valleys in drilling activity due to things such as prices, market demand, and energy policy; however, they also indicate that they are committed to drilling in this area of the state.

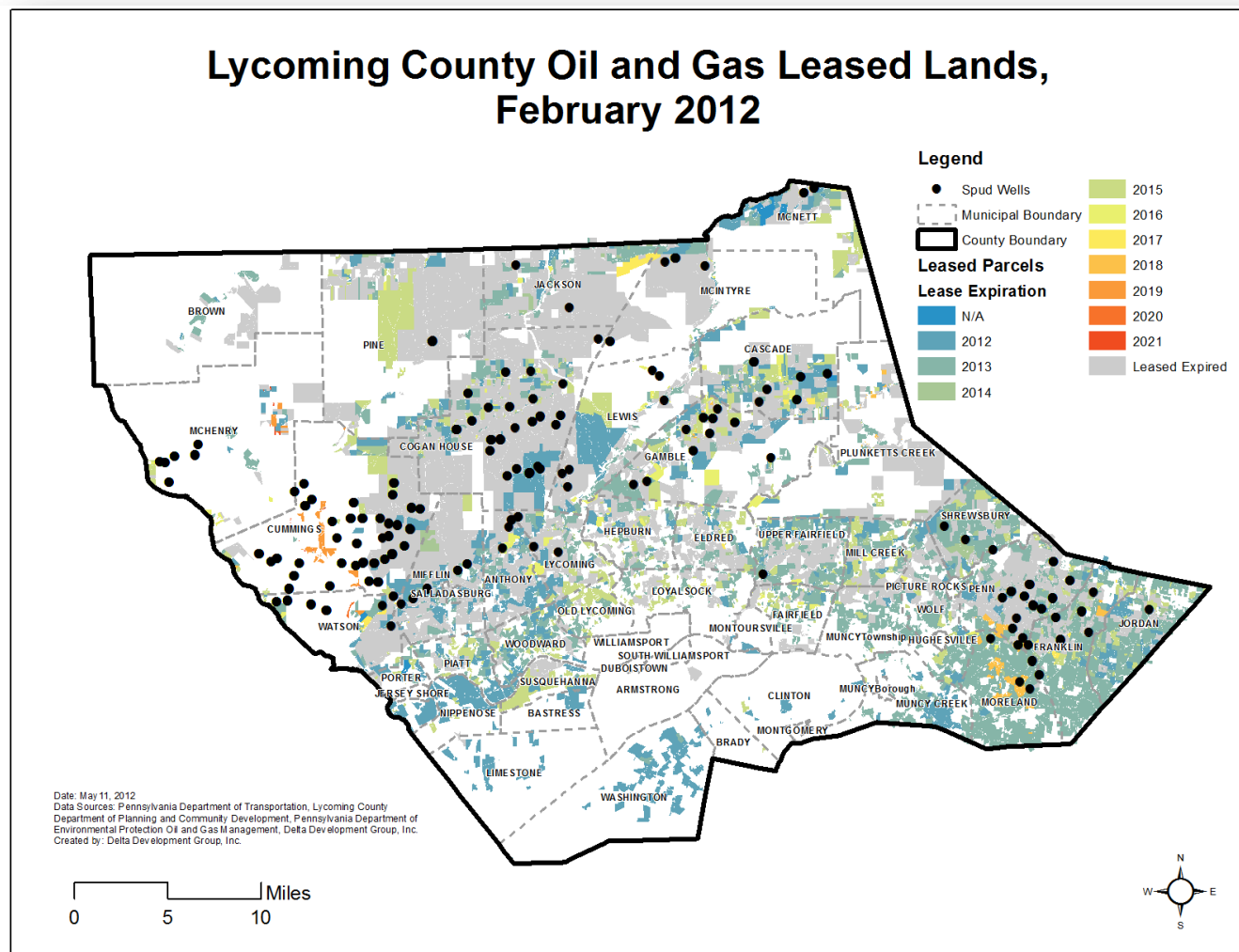
**Table 5 – Lycoming County Natural Gas Leasing Activity on Private Lands**

Lease Expiration Year	Number of Parcels	Number of Acres	Number of Wells Drilled on Parcels
2012	1048	54,002.71	21
2013	3045	81,355.86	21
2014	298	4,602.97	1
2015	1301	31,043.81	5
2016	277	4,569.58	1
2017	55	1,168.36	TBD
2018	111	2,144.92	1
2019	75	1,109.85	TBD
2020	14	90.11	TBD
2021	33	65.08	TBD
Unknown	16	1,013.13	TBD
<b>Total</b>	<b>6,273</b>	<b>181,166.38</b>	<b>50</b>

Source: Lycoming County Parcel Data and PA DEP Spud Data



Figure 7 – Lycoming County Natural Gas Lease Expiration Status for Private Lands – February 2012



Source: Lycoming County Parcel Data and PA DEP Spud Data

As shown in Table 6 and Figure 8 below, between 2005 and 2009, the number of Lycoming County workers commuting distances greater than 50 miles rose by 37%. Given the increasing number of workers in the mining sector (which includes natural gas drilling) who arrived in 2010, it can be estimated that the rate of increase was even greater in 2010. This estimate is consistent with the overall County pattern as shown in Table 6, and supports the previously noted assumption that approximately 65% of natural gas industry employees live in or in close proximity to Lycoming County.



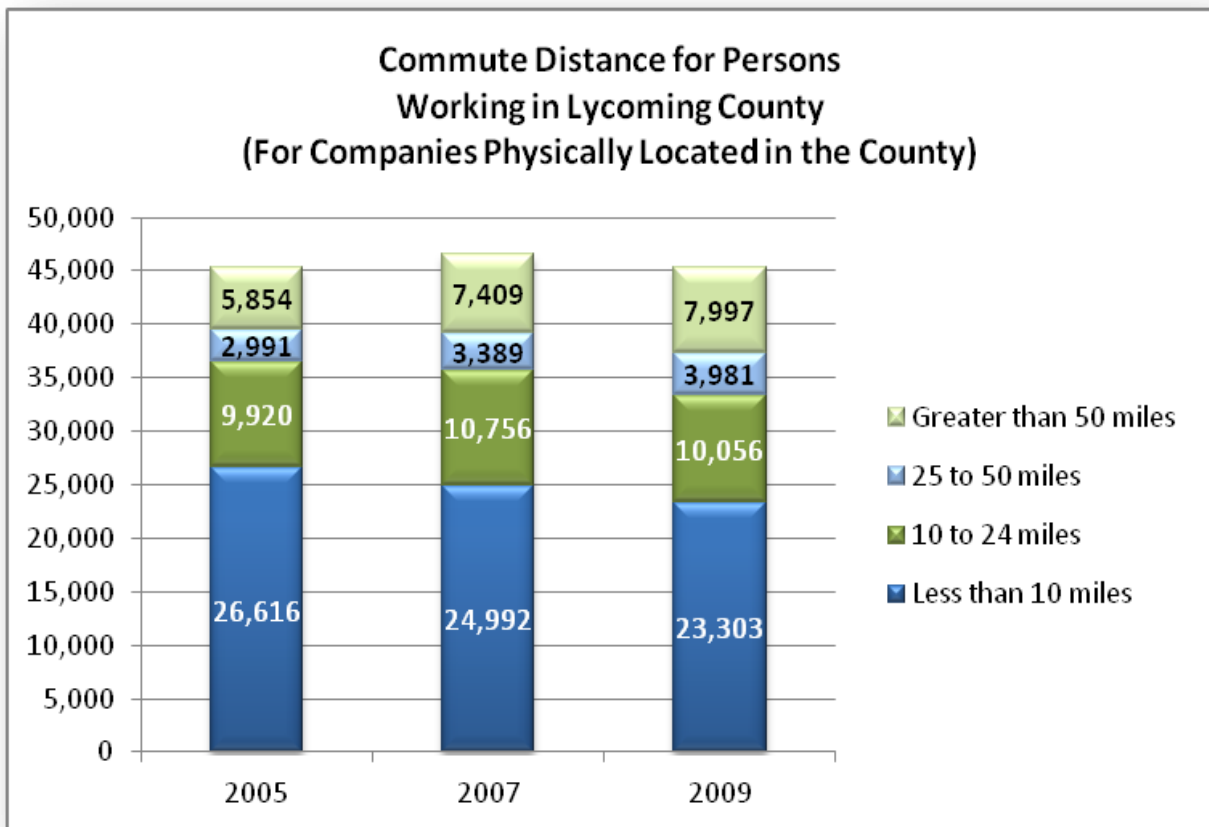
**Table 6 – Where Lycoming County Workers Live**

	2005		2007		2009	
	Count	Share	Count	Share	Count	Share
Lycoming County, PA	33,313	73.4%	32,009	68.8%	29,624	65.3%
Clinton County, PA	2,028	4.5%	1,969	4.2%	2,513	5.5%
Northumberland County, PA	1,289	2.8%	1,843	4.0%	1,868	4.1%
Luzerne County, PA	754	1.7%	788	1.7%	856	1.9%
Union County, PA	445	1.0%	746	1.6%	724	1.6%
Tioga County, PA	514	1.1%	539	1.2%	510	1.1%
Centre County, PA	412	0.9%	445	1.0%	458	1.0%
Bradford County, PA	347	0.8%	340	0.7%	433	1.0%
Montour County, PA	415	0.9%	382	0.8%	423	0.9%
Dauphin County, PA	325	0.7%	393	0.8%	403	0.9%
Columbia County, PA	363	0.8%	408	0.9%	398	0.9%
Lancaster County, PA	387	0.9%	473	1.0%	390	0.9%
Berks County, PA	267	0.6%	354	0.8%	363	0.8%
Snyder County, PA	174	0.4%	264	0.6%	352	0.8%
Cumberland County, PA	163	0.4%	352	0.8%	351	0.8%
York County, PA	329	0.7%	300	0.6%	334	0.7%
Lackawanna County, PA	323	0.7%	322	0.7%	309	0.7%
Allegheny County, PA	76	0.2%	143	0.3%	267	0.6%
Montgomery County, PA	133	0.3%	203	0.4%	262	0.6%
Schuylkill County, PA	272	0.6%	281	0.6%	257	0.6%
All Other Locations	2,232	4.9%	2,914	6.3%	3,182	7.0%

Source: *Local Employment Dynamics (LED), January 2012*



Figure 8 - Commute Distance for Lycoming County Workers



Source: Local Employment Dynamics (LED), January 2012

#### 4.5 - The Natural Gas Industry Dampens the Effects of Recessionary Economy

As shown in Table 7, while Lycoming County experienced a net loss of 632 jobs between 2005 and 2010, had employment in the County changed at the overall rate of the general statewide economy, the County would have lost 1,929 jobs during that time period. This means that around 1,297 jobs of the County’s employment base in 2010 were created or retained due to local factors – most likely due to the Marcellus Shale industry and the growth of the wholesale trade industry.



**Table 7 – Employment Changes in Lycoming County Due to General Economic Factors**

Industry	2005	2010	Actual Employment Change 2005 - 2010	Total Expected Change Based on General Economic Factors	Change Attributed to Local Factors
Agriculture, Forestry, Fishing and Hunting	210	151	(59)	(6)	(53)
Mining	122	840	718	45	673
Utilities	97	67	(30)	(15)	(15)
Construction	1,934	2,028	94	(288)	382
Manufacturing	12,396	9,362	(3,034)	(2,260)	(774)
Wholesale Trade	1,948	2,794	846	(107)	953
Retail Trade	6,412	5,189	(1,223)	(428)	(795)
Transportation and Warehousing	1,500	1,372	(128)	31	(159)
Information	788	385	(403)	(33)	(370)
Finance and Insurance	1,174	1,310	136	(18)	154
Real Estate and Rental and Leasing	415	466	51	(54)	105
Professional, Scientific, and Technical Services	1,642	1,968	326	136	190
Management of Companies and Enterprises	274	405	131	102	29
Administration & Support, Waste Management and Remediation	2,108	2,462	354	17	337
Educational Services	3,700	4,882	1,182	301	881
Health Care and Social Assistance	7,626	7,899	273	868	(595)
Arts, Entertainment, and Recreation	364	297	(67)	16	(83)
Accommodation and Food Services	3,435	3,845	410	36	374
Other Services (excluding Public Administration)	1,802	1,786	(16)	(55)	39
Public Administration	2,020	1,827	(193)	(217)	24
<b>Total</b>	<b>49,967</b>	<b>49,335</b>	<b>(632)</b>	<b>(1,929)</b>	<b>1,297</b>

Source: Local Employment Dynamics (LED), January 2012



The general economic downturn since 2008 has influenced unemployment rates throughout the United States, and Lycoming County is no exception, ranging from 5.1% in April 2008 to 10.7% in January 2010. As demonstrated in Table 8 and in Figures 9 and 10, while the County's unemployment rate is slightly lower than the U.S. rate, the County's chronic unemployment has impacted, and will likely continue to impact, the ability of County residents to purchase or rent housing, and will be considered in the final impact calculations and projections.

**Table 8 – Unemployment Trends in Lycoming County Compared to Pennsylvania and the U.S.**

Year	U.S.	Pennsylvania	Lycoming County
<b>2001 – 2010 – Annual (%)</b>			
2001	4.7	4.8	5.3
2002	5.8	5.6	6.2
2003	6.0	5.7	6.0
2004	5.5	5.4	6.1
2005	5.1	5.0	5.4
2006	4.6	4.5	5.2
2007	4.6	4.3	4.9
2008	5.8	5.3	5.9
2009	9.3	8.0	8.8
2010	9.6	8.7	9.0
<b>2011 – Monthly (%)</b>			
Jan	9.8	8.3	8.6
Feb	9.5	8.0	8.5
Mar	9.2	7.8	8.0
Apr	8.7	7.5	7.2
May	8.7	7.4	7.6
Jun	9.3	7.6	8.0
Jul	9.3	7.8	8.2
Aug	9.1	8.2	8.5
Sep	8.8	8.3	7.6
Oct	8.5	8.1	7.2
Nov	8.2	7.9	7.4
Dec	8.3	7.6 <sup>(1)</sup>	7.2 <sup>(1)</sup>

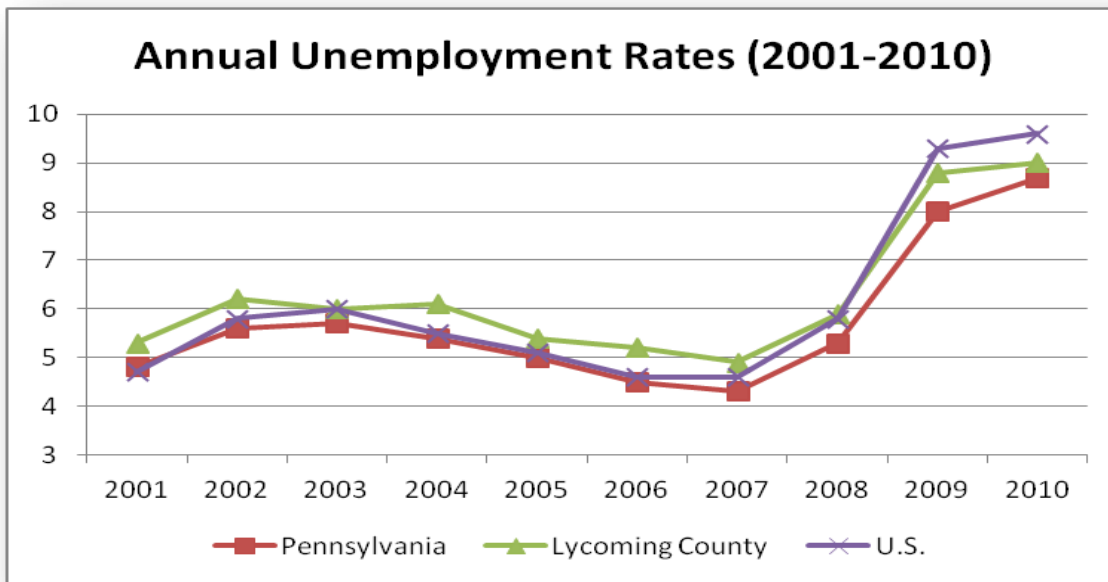
Source: U.S. Department of Labor, Bureau of Labor Statistics, January 2012

<sup>(1)</sup> Preliminary



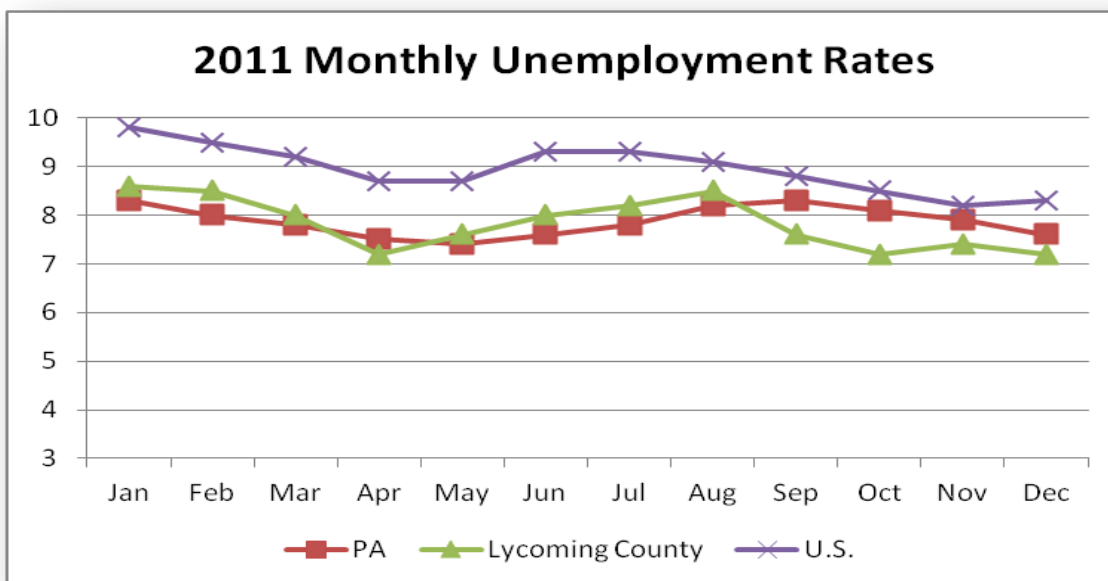


Figure 9 - Annual Unemployment Rates (2001 – 2010)



Source: U.S. Department of Labor, Bureau of Labor Statistics, January 2012

Figure 10 – Monthly Unemployment Rates During 2011



Source: U.S. Department of Labor, Bureau of Labor Statistics, January 2012



## 5 – Impacts to the County’s Housing Market

Over the past four years, as drilling activity and its induced employment have increased, a number of changes have been observed in the housing market in Lycoming County. In addition, significant changes have been observed in the hotel market, which is currently housing many of the temporary or transient workers associated with Marcellus Shale activity. The following analysis examines the housing market environment within Lycoming County as specifically related to the changes most frequently observed in our interviews, focus groups, and in previous studies.

### 5.1 – Changes in Population

Other areas of the United States impacted by natural gas development – such as Texas, Colorado, Wyoming, North Dakota, and Alabama – have long reported rapid population increase as one of the largest local effects experienced from natural gas development. Changes in local population, especially when occurring over a relatively short period of time and in non-metropolitan areas, can in turn affect the cost and availability of housing in the local area. Much of this impact will depend on the amount of drilling activity and the size of the existing population: small communities in Wyoming or North Dakota, for example, have reported dramatic and unstable population surges from natural gas development, while the Dallas-Fort Worth metro area in Texas was much more moderately effected by nearby gas development. The changes in population in Lycoming County have been and will likely continue to be somewhere between these extremes, and to a large degree will be effected by changes in the amount of drilling activity.

#### ***Most Frequently Observed Changes in Lycoming County’s Housing Market***

- *Changes in Population*
- *Housing Unit Supply*
- *Hotel Rooms, Rates, and Occupancy*
- *Rental Rates and Availability*
- *Home Sales Volume and Prices*
- *Student Housing Supply*
- *Housing Affordability*
- *Housing Demand*
- *Utilization of Other Shelter Options*

Official sources of population figures and housing data, such as Census estimates, building permits, real estate transactions, employment statistics, etc, are often not able to capture the rapidly changing worker population and associated effects on housing development, and much of the evidence both in Lycoming County and from other areas is preliminary and/or qualitative.

Despite the growing extent of the natural gas drilling operations occurring in Lycoming County, as of the April 2010 Census count, Lycoming County as a whole reportedly lost 3.3% of its population as portrayed in Table 9 below; yet 10 of its municipalities reported growth, with the largest growth reported in Wolf Township (200), followed closely by Loyalsock Township (150) and Fairfield Township (133). All nine boroughs in the County and the City of Williamsport lost some of their population.

While the County’s official (Census) population trended downward through much of the first decade of the 2000s, there was a notable uptick in the visible population for the past 24 months as drilling



employees arrived in large numbers. The resulting pressure on the available housing stock has created unexpected problems as noted throughout this study.

**Table 9 – Lycoming County Population Trends**

Geographic Area	Census: April 1, 2000	Census: April 1, 2010	Change: 2000 to 2010	
	Number	Number	Number	Percent
<b>Pennsylvania</b>	<b>12,281,054</b>	<b>12,702,379</b>	<b>421,325</b>	<b>3.4%</b>
<b>Lycoming County</b>	<b>120,044</b>	<b>116,111</b>	<b>-3,933</b>	<b>-3.3%</b>
Wolf Township	2,707	2,907	200	7.4%
Penn Township	900	960	60	6.7%
Mill Creek Township	572	604	32	5.6%
Brady Township	494	521	27	5.5%
Fairfield Township	2,659	2,792	133	5.0%
Muncy Township	1,059	1,089	30	2.8%
Franklin Township	915	933	18	2.0%
Loyalsock Township	10,876	11,026	150	1.4%
Susquehanna Township	993	1,000	7	0.7%
Washington Township	1,613	1,619	6	0.4%
Muncy Creek Township	3,487	3,474	-13	-0.4%
South Williamsport Borough	6,412	6,379	-33	-0.5%
Cascade Township	419	413	-6	-1.4%
McHenry Township	145	143	-2	-1.4%
Jordan Township	878	863	-15	-1.7%
Upper Fairfield Township	1,854	1,823	-31	-1.7%
Cogan House Township	974	955	-19	-2.0%
Porter Township	1,633	1,601	-32	-2.0%
Picture Rocks Borough	693	678	-15	-2.2%
Watson Township	550	537	-13	-2.4%
Eldred Township	2,178	2,122	-56	-2.6%
Hepburn Township	2,836	2,762	-74	-2.6%
Jersey Shore Borough	4,482	4,361	-121	-2.7%
Nippenose Township	729	709	-20	-2.7%

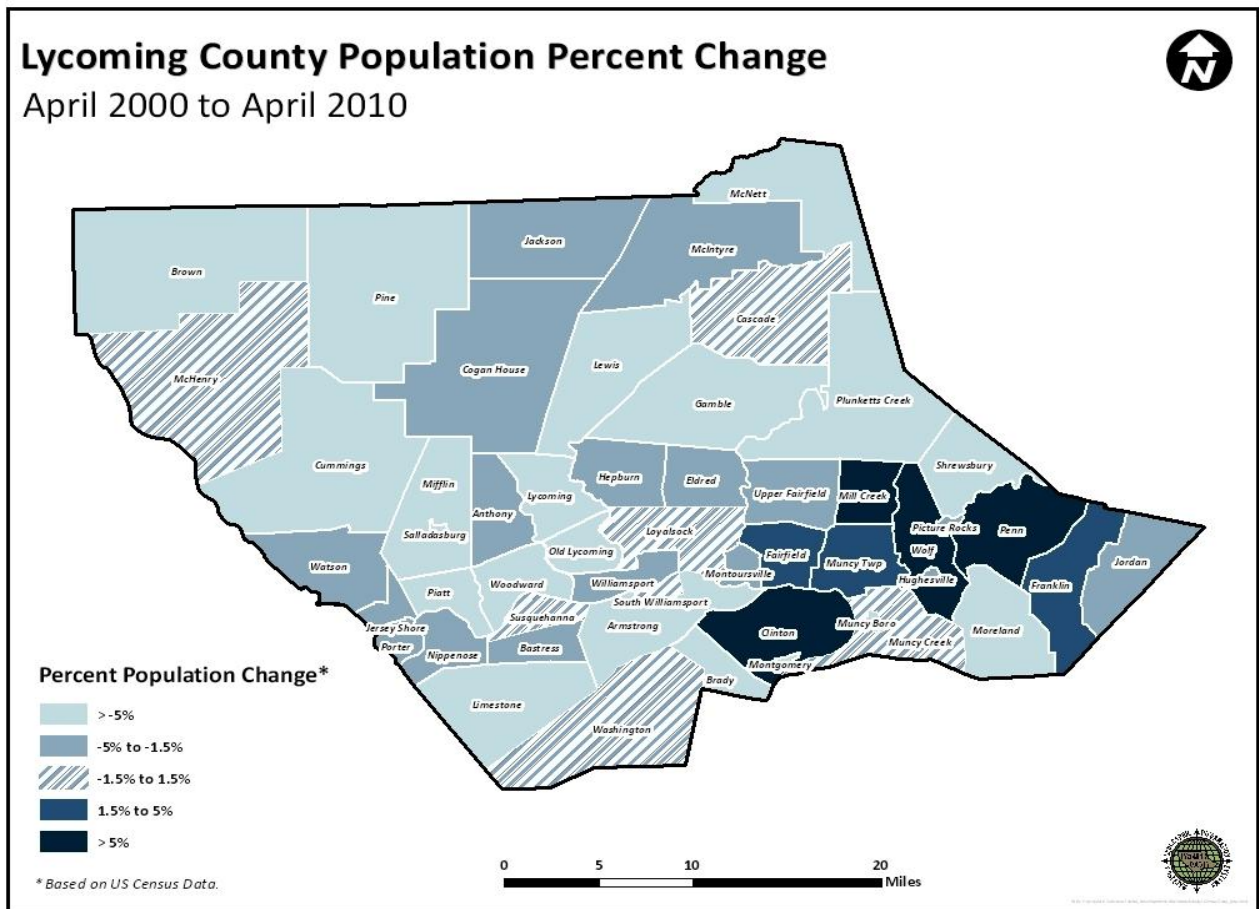


Geographic Area	Census: April 1, 2000	Census: April 1, 2010	Change: 2000 to 2010	
	Number	Number	Number	Percent
Montoursville Borough	4,777	4,615	-162	-3.4%
McIntyre Township	539	520	-19	-3.5%
Hughesville Borough	2,220	2,128	-92	-4.1%
Anthony Township	904	865	-39	-4.3%
Jackson Township	414	396	-18	-4.3%
Williamsport City	30,706	29,381	-1,325	-4.3%
Bastress Township	574	546	-28	-4.9%
Armstrong Township	717	681	-36	-5.0%
Limestone Township	2,136	2,019	-117	-5.5%
Shrewsbury Township	433	409	-24	-5.5%
Duboistown Borough	1,280	1,205	-75	-5.9%
Clinton Township	3,947	3,708	-239	-6.1%
Piatt Township	1,259	1,180	-79	-6.3%
Mifflin Township	1,145	1,070	-75	-6.6%
Montgomery Borough	1,695	1,579	-116	-6.8%
Muncy Borough	2,663	2,477	-186	-7.0%
Lycoming Township	1,606	1,478	-128	-8.0%
Woodward Township	2,397	2,200	-197	-8.2%
Salladasburg Borough	260	238	-22	-8.5%
Moreland Township	1,036	943	-93	-9.0%
Old Lycoming Township	5,508	4,938	-570	-10.3%
Pine Township	329	294	-35	-10.6%
Plunketts Creek Township	771	684	-87	-11.3%
Gamble Township	854	756	-98	-11.5%
Lewis Township	1,139	987	-152	-13.3%
Brown Township	111	96	-15	-13.5%
McNett Township	211	174	-37	-17.5%
Cummings Township	355	273	-82	-23.1%

Source: Penn State Data Center, December 2011



Figure 11 – Lycoming County Population Change – 2000 - 2010



The accuracy of the 2010 Census numbers may be questioned, but an objective critique of the count should consider the following:

- According to the U.S. Census Bureau, Lycoming County reported a net increase of only 36 housing units between 2000 and 2010. Without an increase in housing units, especially housing units that are attractive to the new workers, it is not surprising that population statistics do not reflect the growth in the natural gas industry.
- As presented on page 34, an estimated 323 workers in the natural gas industry in Lycoming County are staying in hotels rather than in the County's existing housing supply and are therefore not counted in the 2010 Census statistics.
- Persons displaced by flooding or persons unable to find affordable housing are staying with relatives or friends, and there are indications that the persons staying with friends and family "temporarily" are not being counted in population data despite the fact that they have become long-term members of the household.

- Information from interviews revealed that persons from outside the County or state who have been staying in Lycoming County on a long-term basis working with the gas companies still are not identifying themselves as County residents. In some cases these persons have been here as long as two years. Their allegiance to their home of record keeps them from being counted as part of the local population.

## 5.2 – Housing Unit Supply

Previous studies and the results of our interviews provided four primary observations regarding the housing market in Lycoming County:

- There is an increased demand for market-rate housing.
- There is an increased demand for subsidized housing.
- There has been an increase in rental units versus owner-occupied housing units.
- There is an overall shortage of housing units to meet the current demand.



The limited supply of housing units in Lycoming County is a key driver of housing costs. According to the U.S. Census Bureau, in 2010 there were 52,500 housing units in the County, 89% of which were occupied, 5.7% were vacant, and 5.3% were for seasonal/recreational use. Of the occupied units, 31.9% were rental units and 68.1% were owner occupied.

**Table 10 – Supply of Housing Units in Lycoming County**

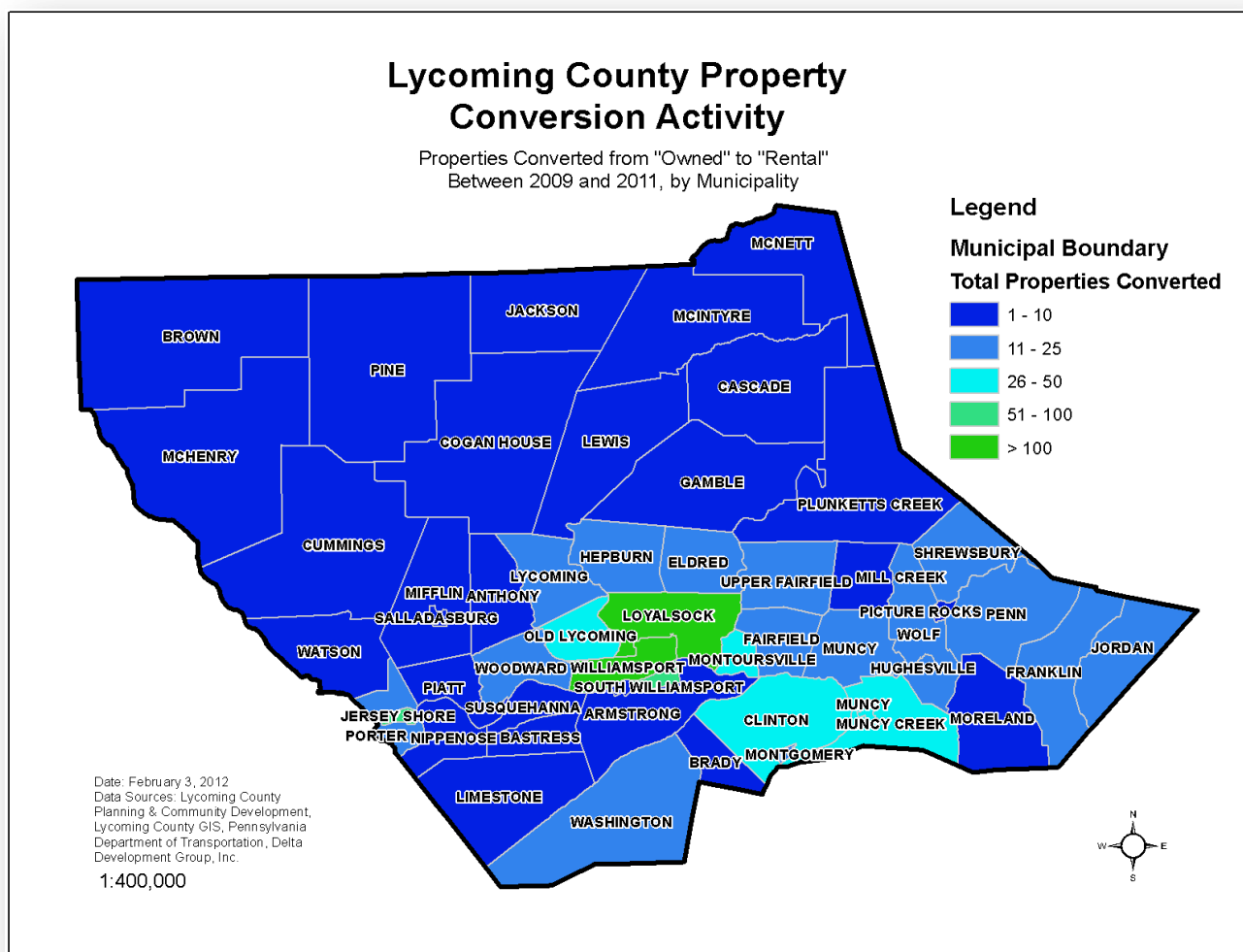
	2000		2010	
	Units	Percentage	Units	Percentage
Total Housing Units	52,464	100.0%	52,500	100.0%
Occupied Units	47,003	89.6%	46,700	89.0%
Owner Occupied	32,636	69.4%	31,821	68.1%
Renter Occupied	14,367	30.6%	14,879	31.9%
Vacant (excluding seasonal recreational)	2,939	5.6%	2,797	5.3%
Seasonal/Recreational	2,522	4.8%	3,003	5.7%

Source: U.S. Census Bureau

Based on information obtained from the Lycoming County parcel database, only 169 residential units were added to the supply between 2010 and 2011. In addition, it is estimated that 328 properties that were assumed to be owner occupied in 2009 were converted to rental properties in 2011 (see Figure 12 for a map illustrating locations for conversions to rental units). Information obtained through the interview process documented as many as 260 residential properties demolished during 2010 and 2011,

including 110 properties that were lost during the September 2011 flood. An additional 229 properties suffered major damage, with residents temporarily displaced. The net effect of these gains, conversions, and losses is that the quantity of housing stock may have decreased between 2010 and 2011, thus generating a greater impact due to the law of “supply and demand.”

**Figure 12 – Lycoming County Properties Assumed Converted from Owner Occupied to Rental**



### 5.3 – Hotel Rooms, Rates, and Occupancy

The majority of major hotel chains in the United States report operating statistics on either a weekly or monthly basis to Smith Travel Research (STR), a nationally recognized provider of hotel statistics.

Twelve hotels in Lycoming County participate in the STR program, representing all of the County’s hotels with over 15 rooms. In November 2011, there were 1,230 hotel rooms in these 12 hotels, as detailed in Table 11. In addition, as presented in Table 12, five more hotels are in the “pipeline” in Lycoming County, which will add 377 rooms to the County’s hotel room count. The Liberty Lodge in Loyalsock, which opened 48 rooms in November 2011, was not included in STR’s room counts. If Liberty Lodge is considered, Lycoming County entered 2012 with 1,278 hotel rooms.



**Table 11 – Existing Hotels in Lycoming County** <sup>(1)</sup>

Name	Municipality	Rooms	Date Opened
Fairfield Inn & Suites	Williamsport	83	Aug-2005
The Genetti Hotel & Suites	Williamsport	202	Jun-1922
TownePlace Suites	Williamsport	81	Jul-2011
Hampton Inn	Williamsport	110	Jun-1998
Holiday Inn	Williamsport	102	Jun-1983
Holiday Inn Express & Suites	Williamsport	96	Sep-2009
Williamsport Inn (formerly Quality Inn and/or Days Inn)	South Williamsport	117	Jun-1984
Candlewood Suites	Loyalsock	122	Oct-2005
Best Western Williamsport Inn	Loyalsock	116	Aug-1965
Comfort Inn & Suites	Loyalsock	58	Apr-2009
Econo Lodge	Loyalsock	100	Feb-1988
Super 8	Loyalsock	43	Jun-1988

Source: Smith Travel Research (STR)

(1) STR Participants



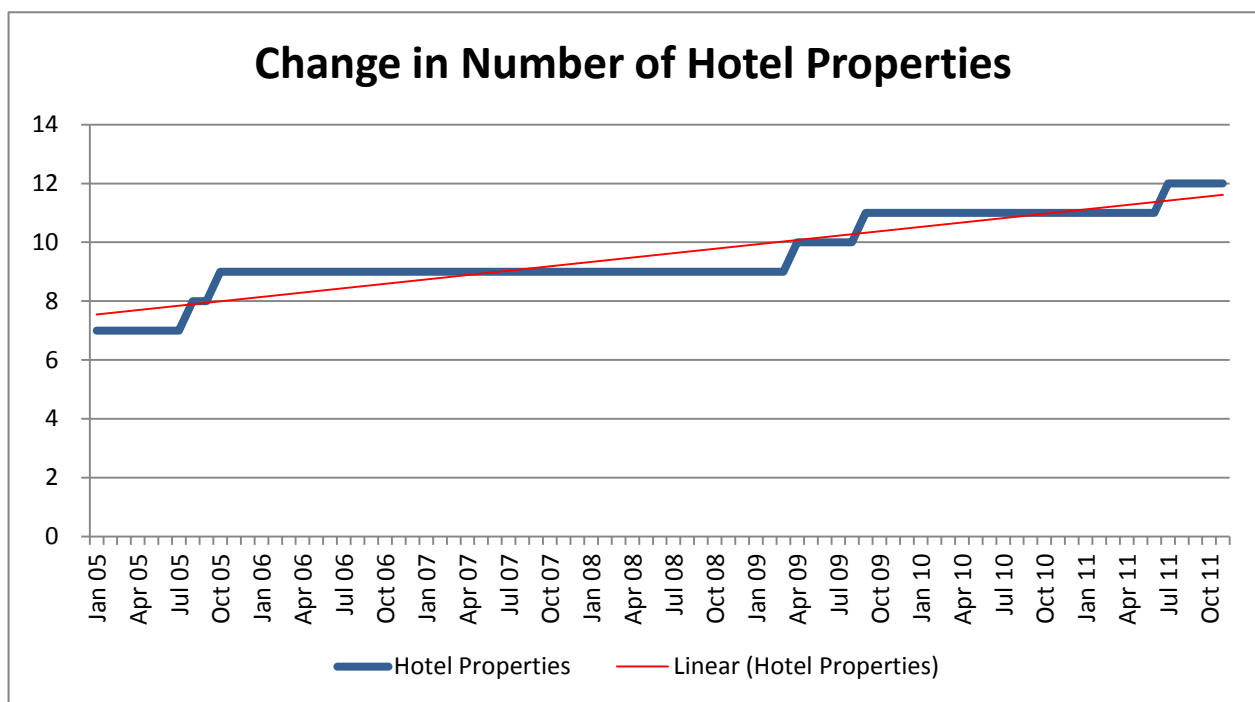
**Table 12 – Lycoming County Hotel “Pipeline”**

Name	Municipality	Rooms	Status	Date Opened
Liberty Lodge	Loyalsock	48	Opened	Nov-2011
Marriot (Residence) Inn	Williamsport	81	Planned	
Chartwell Hotel	Williamsport	55	Planned	
Hilton Inn	Loyalsock	102	Planned	
Hampton Inn	Loyalsock	91	Planned	

Source: Lycoming County Planning and Community Development

Figures 13 and 14 present the historic changes in the number of hotel properties and hotel rooms in Lycoming County. When the four planned properties shown in Table 12 above are constructed and opened, the number of hotel properties will increase from the current 13 properties with 1,278 rooms (at the beginning of 2012) to 17 properties with 1,607 rooms.

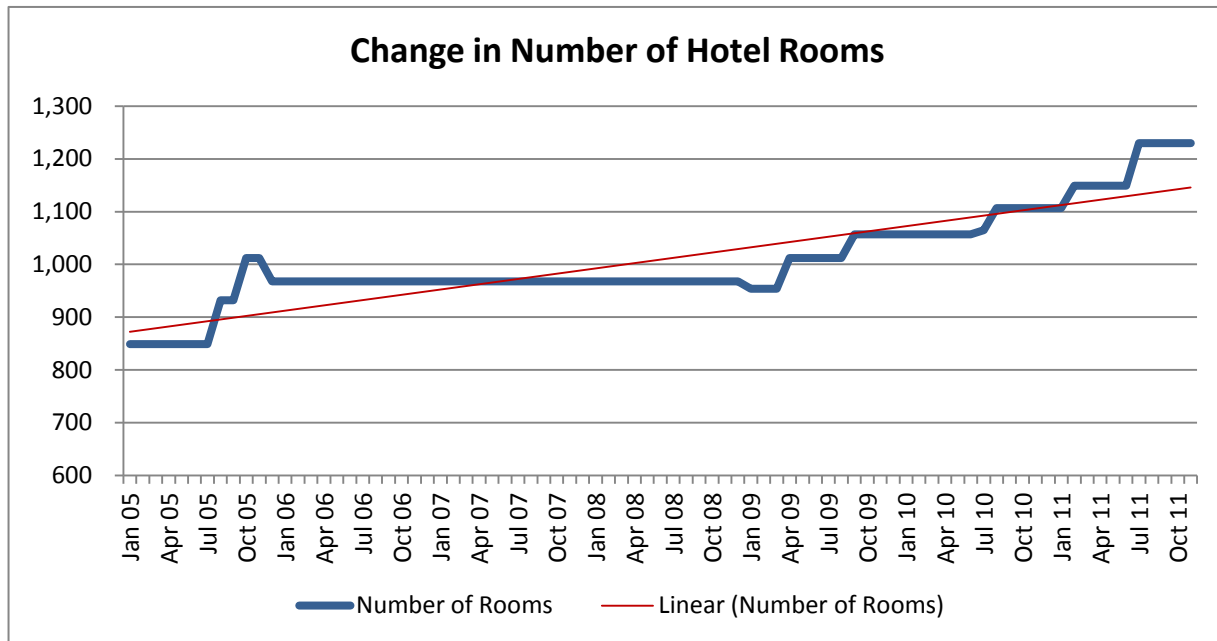
**Figure 13 – Lycoming County Hotel Properties**



Source: Smith Travel Research (STR), December 2011; Lycoming County Planning and Community Development



Figure 14 – Lycoming County Hotel Room Supply

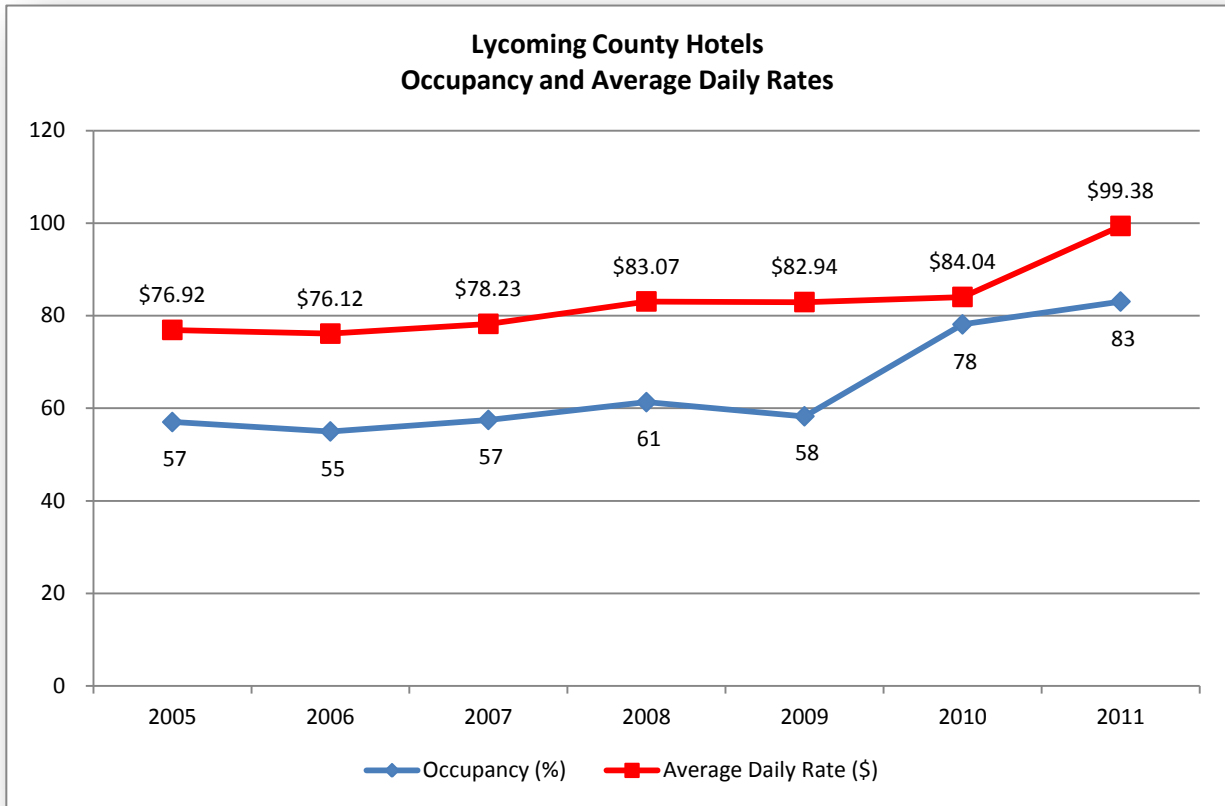


Source: Smith Travel Research (STR), December 2011; Lycoming County Planning and Community Development

As shown in Figure 16, demand for hotel rooms in the County increased by 310 rooms between 2009 and 2011, and hotel room rates increased accordingly from an average of \$82/night to an average of \$99/night (see Figure 15). Occupancy rates also increased from an average of 58% in 2009 to an average of 83% in 2011. To put this in perspective, the average statewide occupancy in 2011 was 61.9%. These occupancy statistics are the average for the year; however, monthly averages in Lycoming County reached as high as 92% in 2011. With occupancy rates at this level, it is likely that there were days when many hotels were at 100% occupancy.

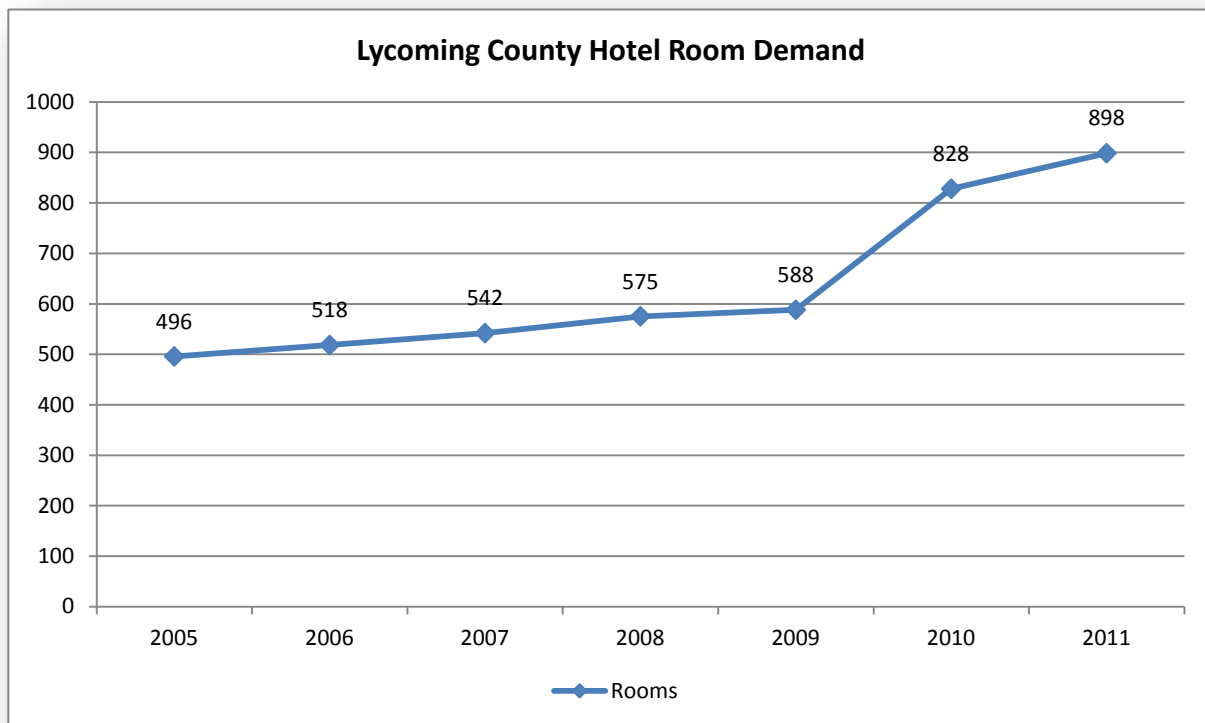


Figure 15 – Lycoming County Average Annual Hotel Occupancy and Rates



Source: Smith Travel Research (STR), December 2011



**Figure 16 – Lycoming County Hotel Room Demand**

Source: Smith Travel Research (STR), December 2011

Since 2004, the growth in the number of hotels (85.7% increase), the number of rooms (50.5% increase), the increase in occupancy rates, and the increase in room demand all respond to the rapid spike in business travelers/guests and correlate closely with the growth of gas industry workers visiting Lycoming County.

As presented on page 14, the number of gas workers in 2011 potentially needing some type of housing was 1,237. As presented in Figure 16, there was a demand for 898 hotel rooms in 2011, up from 575 in 2008, for an increased demand of 323 rooms. Assuming that the demand in 2011 from other types of visitors (regular business travelers, tourists, Little League World Series guests, etc.) remained consistent with prior years, we can also assume that the additional 323 rooms were likely occupied by gas industry workers. This suggests that the remainder of potential demand from gas industry workers (823) was fulfilled by other forms of local housing.

Comparing the potential housing demand from gas industry workers (1,237) to the demand for hotel rooms during 2011 (898), we assume that a maximum of .78 hotel rooms were in demand for every natural gas industry employee requiring some type of lodging in Lycoming County each year. If we also assume that no additional rental housing is added to the County's housing stock, we can use this demand factor (0.78) in estimating/projecting future market scenarios.

A comparison of hotel room rates to occupancy percentages revealed that prior to the rapid spike in demand in 2010, the correlation of room rates to occupancy rate remained consistent at around \$1.36 per percent of rooms occupied. As the occupancy rates increased in 2011 the room rate per percent of rooms occupied decreased to around \$1.20. Based on this trend, we will assume that future hotel room rates will continue to correlate at similar rates to occupancy rates, and we will assume a rate of \$1.36 per percent of rooms occupied up to 70%, and \$1.20 per percent of rooms occupied for occupancy rates greater than 70%.

### 5.3.1 – Summary of Lycoming College Survey of Gas Industry Hotel Guests

Since the emergence of the Marcellus Shale industry in Lycoming County, little has been understood about the future housing needs of those gas industry workers staying in hotels. As part of this study, Lycoming College’s CSCE conducted a survey of gas industry workers who were staying in hotels in Lycoming County to gather information regarding the tenure of their stays in Lycoming County, the location of their permanent residence, their housing preferences, and their perceptions of housing in Lycoming County. Following is a summary of the survey findings. The full report of the survey findings is included in Appendix 3.

The number of hotel rooms in Lycoming County has grown considerably since the natural gas industry’s arrival, and the occupancy rates in the County’s hotels well exceed industry standards. However, the question emerged as to what share of those currently residing in hotels would eventually be seeking more permanent housing arrangements in the rental or owner-occupied markets in the region.

An exploratory, qualitative interview research study was designed to learn more about the housing needs of hotel guests working in the natural gas industry. A representative subset of local hotels was selected on the basis of geographic representativeness, price point, and willingness of the hoteliers to participate. Interviews with gas employees staying as guests at the Candlewood Suites, Econo Lodge, Hampton Inn, Holiday Inn, Genetti Hotel and Suites, and TownPlace Suites were conducted by trained Lycoming College students. The interview questions covered each person’s job title, residence, location of employer, length and location of work in the area, and housing preference. During March and April 2012, 115 hotel guests working in the natural gas industry were interviewed.

Little had previously been known of gas industry workers who stayed at local hotels other than they drove white pickup trucks and worked in the gas industry. One of the most interesting findings is that the largest percentage, 27.4%, of gas workers staying in area hotels is from Pennsylvania. Community belief had been that the workers were from the traditional energy states of Texas, Oklahoma, and Louisiana. While Texas does come in second at 8.8%, the workers come from 23 other states and two foreign countries. The most frequent home state of the companies for which the interviewees worked was Texas, with 41.1%. However, Pennsylvania companies were also represented at 11.6%. So it may be that Pennsylvanians working for Pennsylvania-based companies are staying in local hotels. This is very different from the perception that a majority of gas industry employees live in Texas.

Another surprising finding was that this pattern of hotel living can go on for an extended period of time. The average number of days stayed in hotels was 98, with a number of interviewees having stayed at a hotel for two years or longer. Hotel living is not a temporary situation for many gas workers.



Of the gas workers interviewed, 77% indicated that they preferred staying in a hotel over other living arrangements, 18% indicated that they would prefer to rent, and 4% indicated that they would prefer to buy a home in the area. Many of these workers stay in hotels because their employees booked and paid for the rooms. These workers also preferred to stay in hotels because of the convenience of cleaning and meal service. Even if this was not the case, most gas workers felt that because their company might change their work location, it was too risky to rent. Others who did wish to rent were dissuaded by the high rental prices and lease requirements.

The research results have planning implications for Lycoming County. It may be that hotels will remain the residential choice for many gas industry companies and their workers. There may be an ongoing place in the market for hotels specifically geared toward gas employees and their needs. There might also be an opportunity for housing that is geared toward gas workers by supplying cleaning and meal services. Such a residential facility could even contract directly with companies to ensure a steady flow of guests. While a large share of the current hotel guests indicated that hotels will continue to meet their needs, about one in five indicated that they plan to find a more permanent housing arrangement at some point. As such, they reflect a share of the future housing impact in Lycoming County.

The housing needs of those staying in these same hotel rooms a year ago or a year from now may be different. As such, the authors emphasize that this serves as exploratory research with conclusions suggesting what the housing impacts of current hotel guests may be. It does not provide the definitive statement on the housing needs of all Marcellus industry hotel guests across time or in other geographic contexts.

That said, the results of this exploratory research do yield several interesting implications for planning to meet housing needs in Lycoming County. It may be that hotels will remain the residence choice for many gas industry companies and their workers. There may be an ongoing place in the market for hotels specifically geared toward gas employees and their needs. There might also be an opportunity for housing that is geared toward gas workers by supplying cleaning and meal services. Such a residential facility could even contract directly with companies to ensure a steady flow of guests.

While a large share of the current hotel guests indicated that hotels will continue to meet their needs, about one in five indicated that they plan to find a more permanent housing arrangement at some point. While the proportion of hotel guests who will seek permanent housing will likely vary considerably, plans for development of new or rehabilitated housing in the County should recognize that not all transient gas workers will remain so and take into consideration the broad range of reasons they have not yet sought or found permanent housing in the County.

#### **5.4 – Rental Rates and Availability**

In Lycoming County, there is no single source that can be cited as the recognized source for tracking rental housing or lease activity. For purposes of this study, statistical housing lease data was gathered from three primary sources:

1. HUD's Fair Market Rental Rates
2. Listings from Craig's List for the 4th quarter of 2011
3. Listings from the West Branch Valley Association of Realtors



Table 13 presents the Fair Market Rental (FMR) rates as annually calculated and issued by HUD. A discussion of how FMR rates are calculated is included in Appendix 2. These rates represent the amount of money a given property would command if it were open for leasing. These rates form a benchmark that enables us to gauge the prevailing rates for leases in Lycoming County. Annual FMR rates between 2005 and 2007 reflect annual increases of 4% to 6%, but the rate of increase began to decline in 2008 and was down to a 1% increase between 2010 and 2011. The rate, which increased by over 15% between 2011 and 2012, is a significant, measurable form of assistance to local families; however, it still lags behind actual rental rates in Lycoming County.



**Table 13 – Lycoming County Fair Market Rental Rates - HUD**

Year	Efficiency	One-Bedroom	Two-Bedroom	Three-Bedroom	Four-Bedroom
2012	\$526	\$604	\$728	\$956	\$983
2011	\$456	\$524	\$631	\$829	\$852
2010	\$450	\$516	\$622	\$817	\$840
2009	\$436	\$500	\$603	\$792	\$814
2008	\$424	\$487	\$587	\$771	\$792
2007	\$400	\$459	\$553	\$726	\$747
2006	\$380	\$437	\$526	\$691	\$710
2005	\$365	\$419	\$505	\$663	\$682

Source: U.S. Department of Housing and Urban Development (HUD), December 2011

Based on the research and qualitative information gathered through the interview process, the most widely utilized advertising media for rental units in Lycoming County is Craig's List. Because only two to three months of listings are available on Craig's List, it is not possible to use the site for estimating trends; however, it includes a significant number of listings in areas throughout Lycoming County that can be used to provide a reasonable benchmark for current rental rates. The rental rates depicted in Table 14 represent around 95 individual units.

A one-bedroom unit has an FMR rate of \$604. As depicted in Table 14, the prevailing average rental rate in December 2011 was \$832 on Craig's List. The Craig's List rate is 38% higher than the FMR rate. This situation forces existing long-term renters who are only capable of meeting FMR rates to make undesired housing changes at a time when the number of available, unoccupied rental units is decreasing.

**Table 14 - Lycoming County Rental Rates - Craig's List (4th Quarter 2011)**

Location	1-Bedroom	2-Bedroom	3-Bedroom	4-Bedroom	5-Bedroom	Average
Cogan Station	\$895	\$1,200				\$1,048
Duboistown		\$850				\$850
East Williamsport		\$1,800				\$1,800
Hughesville	\$800		\$1,150			\$1,063
Jersey Shore		\$675	\$1,023			\$991
Loyalsock		\$1,048	\$1,250			\$1,169
Montoursville		\$1,150	\$1,823			\$1,374
Muncy		\$738		\$2,500		\$1,325
Newberry		\$700	\$1,039			\$996
North Montoursville		\$1,025				\$1,025
South Williamsport	\$808	\$915	\$1,000			\$906
Trout Run		\$792	\$1,500			\$969
Williamsport	\$826	\$909	\$1,008	\$1,570	\$4,000	\$1,001
<b>Average</b>	\$832	\$985	\$1,166	\$2,023	\$4,000	\$1,125
<b>Median</b>	\$817	\$915	\$1,039	\$2,000	\$4,000	\$1,036
<b>Maximum</b>	\$895	\$1,800	\$1,823	\$2,500	\$4,000	\$1,800
<b>Minimum</b>	\$800	\$675	\$700	\$1,570	\$4,000	\$850

Source: *Craig's List, December 2011*

Prior to 2010, few if any rental properties were listed through real estate agents and were not tracked on the Multiple Listing Service (MLS); however, as lease rates began to increase, it became more attractive for landlords to consider utilizing real estate agents to list rental housing. In fact, qualitative information obtained through the focus group meeting suggests that five years ago the rental market was handled primarily by newspapers, Craig's List, and word-of-mouth. Today, area realtors are a prime player in the rental market. For purposes of impact calculations and projections, the median rate (\$1,039) for 3-bedroom units on Craig's List will be used for advertised rental units. As depicted in Table 15, 63 units were listed for lease in 2011, with 37 of those units actually leased at a median rate of \$1,095. The 2011 lease rates reflect an 8.8% decrease from the median rate in 2010. While information was not available regarding the size of the units leased, the median lease rate in 2011 closely relates to the median Craig's List lease rate for a 3-bedroom unit in 2011 (\$1,039).





**Table 15 – Lycoming County Lease Rates – Lycoming County MLS**

Year	New Listings			Units Leased				
	Number	Median Lease Rate	Minimum Lease Rate	Maximum Lease Rate	Number	Median Lease Rate	Minimum Lease Rate	Maximum Lease Rate
2010	47	\$1,200	\$650	\$2,100	18	\$1,200	\$425	\$1,750
2011	63	\$1,395	\$700	\$1,775	37	\$1,095	\$750	\$1,750
Percent Change 2010 - 2011	34.0%	16.3%	7.7%	-15.5%	105.6%	-8.8%	76.5%	0.0%

Source: West Branch Valley Association of Realtors, January 2012

It is evident from Table 15 that both the number of new leases and the number of executed leases increased significantly between 2010 and 2011. Considering the units that were actually leased, several observations can be made:

- Median and maximum lease rates have held steady from 2010 to 2011.
- Minimum lease rates have shown a significant increase of nearly 77%.
- The impact of these minimum lease rates is more severe on residents of the County with low to moderate incomes.

The majority of participants in the individual interviews and focus groups felt that all of the lease rates shown in Tables 14 and 15 are low compared to their experiences. It was generally agreed among participants that a significant number of housing units never make it to a “list,” but are instead leased through word-of-mouth at higher rates than those listed on Craig’s List or with a realtor.

**Table 16 – Lease Rate Estimates by Focus Groups**

	Low Estimate	High Estimate
1-Bedroom	\$750	\$1,500
2-Bedroom	\$1,000	\$2,000
3-Bedroom	\$1,500	\$3,000
4-Bedroom	\$3,000	\$4,500

Focus group participants suggested that more realistic lease rates are as shown in Table 16; however, there is no way to confirm these estimates, or to know how widespread these rates are without further in-depth study.

With the exception of the HUD FMR data, historical data for rental rates was not available; however, information obtained through the interview process indicated that prior to 2009, the HUD FMR rates for Lycoming County were generally consistent with the actual rental rates being experienced in the County. Table 17 below shows that HUD’s FMRs consistently increased between 4% and 6%, but slowed by 2011, to a low of 1.5%, likely due to the downturn in the general economy. Between 2011 and 2012, the rate of increase jumped to over 15%, which is likely reflective of the impacts of the increased demand associated with the growth in the Marcellus Shale industry.



**Table 17 – Change in HUD FMR Rates in Lycoming County**

Time Period	Change in Rental Rates			
	1-Bedroom	2-Bedroom	3-Bedroom	4-Bedroom
2005 to 2006	4.3%	4.2%	4.2%	4.1%
2006 to 2007	5.0%	5.1%	5.1%	5.2%
2007 to 2008	6.1%	6.1%	6.2%	6.0%
2008 to 2009	2.7%	2.7%	2.7%	2.8%
2009 to 2010	3.2%	3.2%	3.2%	3.2%
2010 to 2011	1.6%	1.4%	1.5%	1.4%
2011 to 2012	15.3%	15.4%	15.3%	15.4%

Source: U.S. Department of Housing and Urban Development (HUD), December 2011; Craig's List, December 2011; Individual Interviews; and Consultant Calculations

As previously noted, HUD's FMRs for 2012 are significantly lower than the rates reflected on Craig's List near the end of 2011. Craig's List rental rates were 35% higher for one-bedroom units, 26% higher for two-bedroom units, 9% higher for three-bedroom units, and nearly double the FMR rate for four-bedroom units. These differences suggest that four-bedroom rental units may be in highest demand, followed by one- and two-bedroom units.

### 5.5 – Home Sales Volume and Prices

Data reflecting monthly and yearly trends in home sales volume and median pricing was obtained for this study from the West Branch Valley Association of Realtors. Figures 17 and 18 on the following page suggest the following:

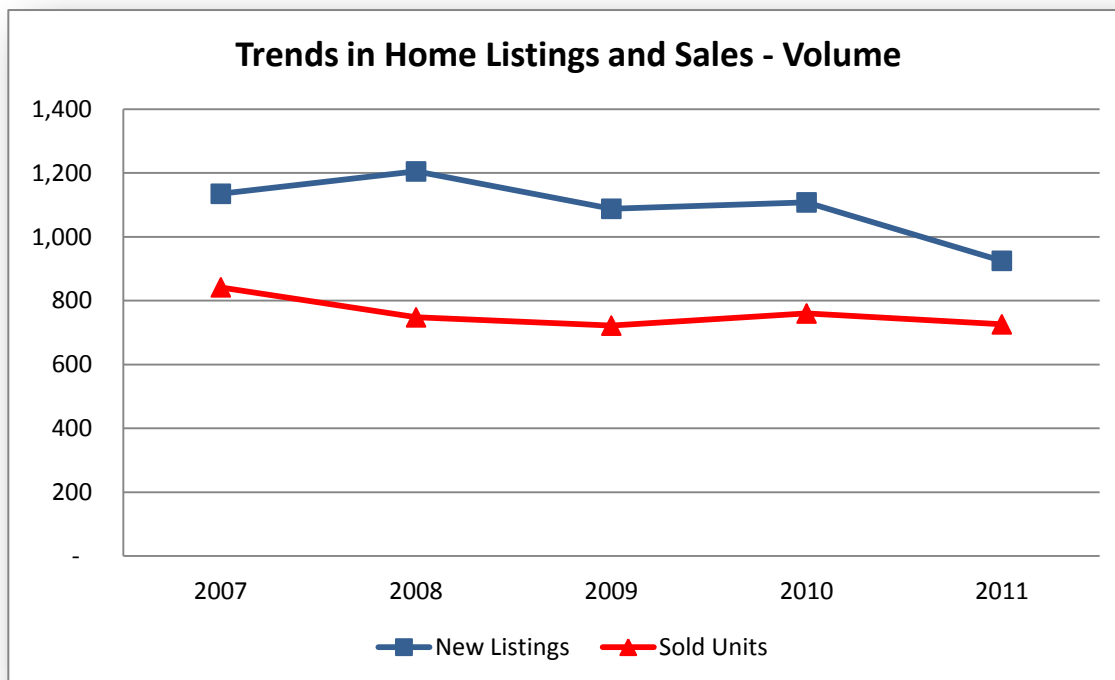
- The demand for owner-occupied housing decreased from 842 units to 748 units between 2007 and 2008, likely due to overall economic factors, and continued to decline in 2009 to 722 units.
- Despite the significant increase in Marcellus Shale drilling activity in 2010, demand for owner-occupied housing remained relatively flat, with a slight increase in demand in 2010 to 760 units.
- While the number of new listings peaked in 2008 at 1,205, by 2011 new listings fell to a five-year low of 925, reflective of the demand demonstrated by home sales.
- The median list price of homes declined with the decrease in demand between 2007 and 2009 from \$119,000 to \$114,950; but the list prices increased with demand in 2010 to \$125,700.



- While demand remained relatively flat between 2008 and 2011, list prices and sales prices took a significant jump in 2010 (9.4%), and sales prices increased proportionately (10%); however, a 7% increase in list prices in 2011 was met with a slight decrease in both sale prices and demand.
- Half of the housing units listed in 2011 (462) were listed at prices below \$134,500 and sold for less than \$121,000.

In 2011, the gap between supply (925 listings) and demand (726 sold) was the smallest in five years. This may account for the increase in the listing (or asking) price of \$134,500 (median). The median sale price of \$121,000 may reflect that either (1) buyers are still being cautious or (2) the housing options on the market are not reflective of consumer preferences.

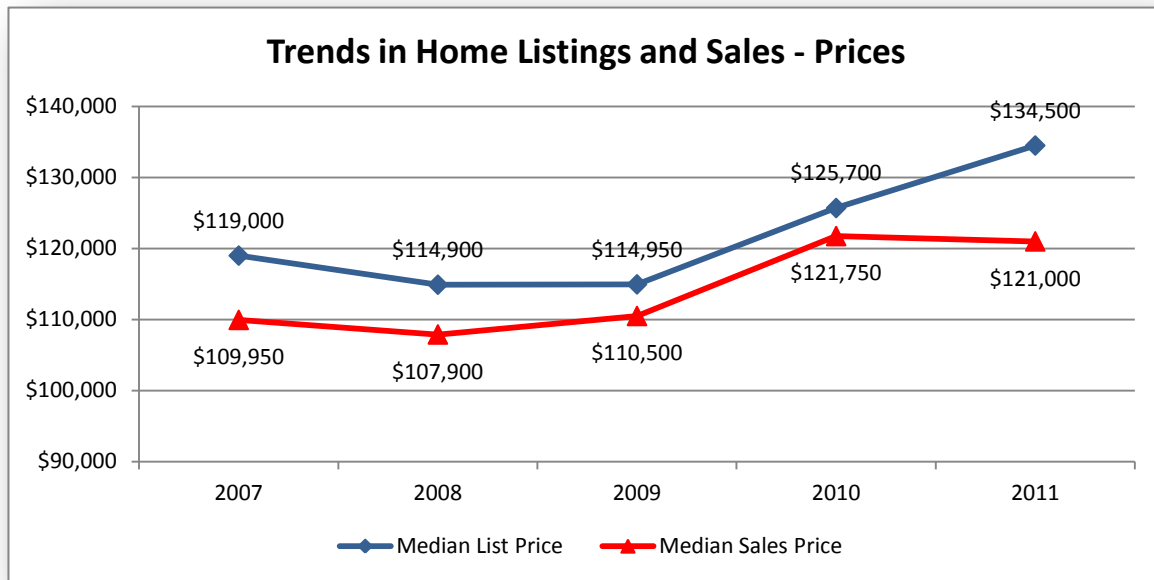
**Figure 17 – Trends in Lycoming County’s Home Sales**



Source: West Branch Association of Realtors, January 2012



**Figure 18 – Trends in Lycoming County’s Median Home Prices**



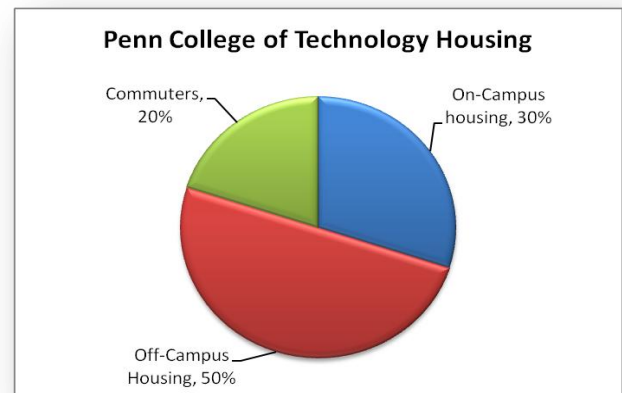
Source: West Branch Association of Realtors, January 2012

### 5.6 – Student Housing

Lycoming College requires all non-local students to reside in on-campus dormitories, thus they are insulated from the effects of housing shortages and increased housing costs. Penn College of Technology (PCT), however, provides on-campus housing for approximately 30% of its enrolled students (1,710 beds). An additional 50% maintain housing off-campus while the remaining 20% commute from outside the City of Williamsport. PCT’s off-campus housing program has three property requirements:

- All units must meet the minimum requirements of the Williamsport Bureau of Codes, which follows standards established by the International Code Council (ICC). The code inspection encompasses but is not limited to building soundness, and electrical and safety conditions. Properties on the list have been inspected within the last year.
- Units must be available for rent exclusively by students at PCT.
- Units must be within the PCT police department’s active patrol zone.

**Figure 19 – PCT Student Housing**



According to PCT administration, there has been a decline in the number of landlords/properties participating in the off-campus housing program. In the fall of 2009, there were 111 landlords and 472 properties on PCT's off-campus housing list; in the fall of 2010, that number decreased to 47 landlords and 311 properties; in the fall of 2011, the number had decreased to 31 landlords and 210 properties.

Fortunately, the decline in off-campus housing has not yet impacted the school or student body due to the fact that (1) there was a surplus of properties in the past, (2) there has been about a 6% decrease in student population over the last few years, and (3) the college has opened an additional new residence hall.

### 5.7 – Housing Affordability

The rising rental rates for housing in some areas of Lycoming County mean that an increasing number of County residents may not be able to afford to lease a home in the County, which, in turn, increases the number of households that may need to seek subsidized housing.

Table 18 shows the estimated lease rates that are deemed affordable for Lycoming County households based on household income. These “affordability estimates” allow for a conservative allocation of 25% of a renter's monthly income for their housing needs. Thus, a person with a \$35,000 income could conservatively afford a monthly lease rate of up to \$729. If, however, that same person were able and willing to commit up to 33% of their income for their housing needs, they may be able to handle a monthly lease rate of up to \$971. Since 40% of the County's households have annual incomes below \$35,000, it is helpful to understand the maximum size of dwelling that these households can afford to lease.

As presented in Table 14, the “average” rental rate in Lycoming County for a 2-bedroom dwelling is \$985 per month, while the rate for a 3-bedroom dwelling averages around \$1,166 per month. These figures suggest that households with incomes under \$35,000 could not afford to rent the average 3-bedroom dwelling and would need to “stretch” themselves to lease the average 2-bedroom dwelling. The data tends to confirm what is heard anecdotally—that the increase in rental rates is having the most pronounced impact on those households in the lower income brackets. While the rental rates around Lycoming County do not appear to be anywhere near as staggering as those found in some Northern Tier communities, we still recognize that our lower income households face these economic hurdles and have the fewest options available to them.

Qualitative information obtained through the focus group meeting and individual interviews suggests that some low- to moderate-income housing units have been bought by gas companies for use by their employees, further limiting the number of affordable units available for rent.



**Table 18 – Housing Affordability in Lycoming County - 2011**

Households by Annual Income	% of Total	Households	Affordable Lease Rate (Based on 25% of Monthly Income)		
			Median	Low	High
< \$15,000	13%	6,002	156	\$313	\$-
\$15,000 - \$24,999	14%	6,617	417	\$313	\$521
\$25,000 - \$34,999	13%	6,002	625	\$521	\$729
\$35,000 - \$49,999	18%	8,696	885	\$729	\$1,042
\$50,000 - \$74,999	24%	11,485	1,302	\$1,042	\$1,562
\$75,000 - \$99,999	10%	4,679	1,823	\$1,563	\$2,083
\$100,000 - \$149,999	6%	2,647	2,604	\$2,083	\$3,125
\$150,000 - \$199,999	1%	567	3,646	\$3,125	\$4,167
\$200,000 +	1%	520	2,083	\$4,167	\$-

Source: ESRI Business Analyst and Consultant Calculations

## 5.8 – Subsidized Housing

The Lycoming County Housing Authority (the Authority) manages the federally subsidized housing assistance programs for residents within Lycoming County. As of 2011, the Authority's portfolio included 681 residential rental units, 7 homeownership units, and approximately 675 Section 8 Vouchers. The Authority absorbed the Williamsport Housing Authority in 2006, thus acquiring an additional 173 units to be incorporated to their approximately 600 existing units. In 2007, 100 of the absorbed units in the former Kennedy King Complex had to be demolished due to substandard conditions. Today, the rental units managed by the Authority include both units with income-based, non-fixed rental rates as well as fixed-rate, FMR or modified FMR rates. The Authority's Section 8 vouchers provide federally funded rental assistance to qualified households. These vouchers compensate landlords and assist renters based upon household income and FMR rates established by HUD. The table below provides a history of rental and voucher data provided by the Authority dating back to 2006.



**Table 19 – Lycoming County Trends in Subsidized Housing Units**

Year	Units	Waiting List	Average # of Vouchers	Vouchers Issued	Vouchers Expired
2006	781	638	N/A	N/A	N/A
2007	681	794	525	58	4%
2008	681	575	527	116	9%
2009	681	744	522	0 <sup>(1)</sup>	0% <sup>(1)</sup>
2010	681	1,413	509	115	20%
2011	681	989	555	56	33%

Source: Lycoming County Housing Authority

<sup>(1)</sup> Budget restrictions in 2009 led to a freeze in voucher issuance- No vouchers issued

The Authority maintains waiting lists for applicants seeking to utilize housing assistance services for both the voucher and public housing programs. The waiting list portrayed in



Table 19 is a cumulative list containing the number of applicants for both public housing and voucher programs. The current Section 8 voucher list contains 231 applicants and has been frozen for a year and a half.

Between 2006 and 2009, the total number of applicants on the Authority's waiting list fluctuated  $\pm 200$  applicants each year. The waiting list from 2009 and 2010 rose significantly, however, increasing by 669 applicants. This is more than triple the increase in any of the previous years, dating back to 2006. The waiting list for 2011 then dropped significantly when compared to 2010, but was still 245 applicants greater than the 744 recorded in 2009. With the most significant increase in unemployment occurring between 2008 and 2009 (see Table 8), it is likely that the effects of the economic downturn are represented in the increase in applicants on the waiting list between 2008 and 2009. With a minimal increase in unemployment between 2009 and 2010, the sharp increase in applicants on the waiting list in 2010 was likely due to the effects of the growth in the Marcellus Shale industry.

The most significant factor contributing to the increase in the number of applicants on the waiting list is the increased rental costs, which have made it difficult for applicants in the voucher program to identify and obtain housing that meets FMR rate criteria in a timely manner. This created a delay in persons getting off the waiting list since they are not moving into voucher-qualified housing units. The Authority recorded several instances over the past year in which landlords have evicted Section 8 tenants in order to rent their units at higher rates. The Authority does have the flexibility to provide rent compensation at 110% of the payment standard. This does help address some of the issues related to increased rental costs that exceed the current FMR rate standards. As of 2006, the Authority has been at 100% of the payment standard for units in Williamsport. This has forced the Authority to have to use more funds per unit, which in turn means that the Authority can serve a smaller number of applicants overall. This has also contributed to an increase in the waiting list, since fewer applicants of the Section 8 voucher program are being served.

Another negative impact of the increasing rental rates is that those rates may have also pushed persons previously renting properties at FMR rates to seek affordable units provided through the Authority, thus compounding the problem the Authority is facing. As

rental rates increase in the community, persons who were previously capable of renting properties unassisted may have to either seek assistance or try to acquire more affordable units from the Authority. This would increase the number of persons on the waiting lists as new applicants enter the system.

Another contributing factor to access to affordable housing stems from the issues surrounding HUD's prioritizations of persons requiring housing services. Households meeting income criteria that place them in the lowest income tiers are prioritized on waiting lists and are given preference for more immediate access to housing. These typically include disabled, elderly, and single-parent households. Many of these



*Lynn Street Manor in Newberry*



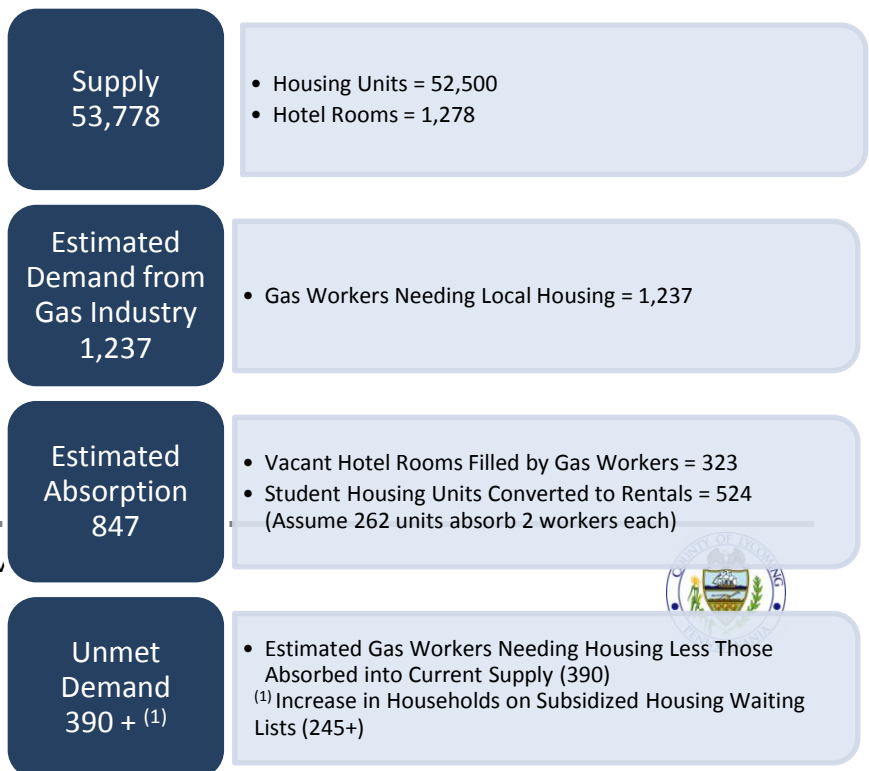
households often rely on fixed incomes and therefore get tied into the system for extended periods of time. This often contributes to very low turnover rates in public housing assistance systems. In short, the limited supply of affordable housing is compounded by the lack of movement of families once in public housing. The prioritization of those with exceptional needs pushes working families, who may only need temporary or minimal assistance, further down the list. Their needs may not be served and therefore their housing situation, whether it requires temporary assistance or not, remains unresolved. These families may be able to get themselves financially stabilized and eventually independent of the public assistance system but they are not provided efficient access to HUD services.

The Authority and nonprofits receiving HUD funds for programs have encountered difficulty with programs based on HUD-defined FMR rates. Programs designed to help lower-income residents locate affordable housing have often been unable to locate housing that meets FMR criteria. The Authority’s personnel have noted that there appears to be a significant discrepancy between FMR rates and actual, real-world rental rates. As a result, clients utilizing these programs have either not been able to locate housing that meets FMR criteria or have not been able to find housing in reasonable time, which has caused them to withdraw from the programs. This has caused HUD to recapture unexpended funds or reduce funding amounts to agencies that have had difficulties in fully utilizing program funds.

Similar issues have arisen in regard to HUD-funded programs designed to assist the homeless or to prevent homelessness. Current HUD definitions for homeless do not include populations who do not rent or own a residence, but instead are temporarily staying with friends or families. These individuals are not identified as “out on the street” and are not housed in shelters; yet, they are in need of assistance to obtain permanent shelter. Agency personnel have described an increase in this population of individuals, but since these persons are not identified by HUD as homeless, the necessary programs cannot serve these populations. This has also prevented an increase in homeless assistance program funds to agencies trying to serve this homeless population, despite the fact that there is a reportedly significant increase in this population. The scale-down of funding at the federal level has a compounding effect on state funding for programs that similarly benefit the homeless populations.

### 5.9 – Housing Demand

No single source of data or information can be used to understand the impact of the Marcellus Shale industry on Lycoming County. The research and conclusions presented in the previous pages were derived from a number of different sources, and even though we have gathered a significant amount of valuable statistical data, there are still unknown factors, and a number of assumptions were made regarding those factors. Although several



recent events have influenced changes in the supply and demand for housing in Lycoming County, the explosive growth of the Marcellus Shale industry has been the primary driver of these changes, bringing over 3,500 new workers to the County, over 1,200 of whom likely need some form of local housing. To understand the unmet demand for housing in 2011, we estimated the supply of housing units, the number of those workers who have been absorbed as residents into the current supply, and the increased demand for subsidized housing.

**Estimated Supply** - Our research found that in 2010, there were 52,500 housing units and 1,278 hotel rooms available in Lycoming County. The supply of housing units likely reflects the impact of floods and housing demolition referenced earlier in the study.

**Estimated Demand from Gas Industry** – Considering the drilling activity in Lycoming County in 2011 and the number of workers typically required to support drilling of a single well, our research found that an estimated 3,533 natural gas workers were involved in drilling activity in the County in 2011. We also heard from industry representatives that around 65% of their workers live in the local area, which means that 35% of the 3,533 workers (or 1,237) likely needed some type of local housing during 2011.

**Estimated Absorption** – Many of the 1,237 workers who were estimated to have needed some type of local housing in 2011 were likely absorbed into the existing housing stock in some way. Prior to the emergence of the natural gas industry in the County, local hotel occupancy rates averaged between 76% and 83%, which means that around 323 rooms were not occupied. Assuming that the number of other types of visitors remained consistent after the sharp increases in demand from gas workers, these unoccupied rooms could house 323 of the 1,237 workers. In addition, since 2009, 262 housing units formerly used for student housing were converted to market rate rentals to meet the demands of the natural gas industry. While we do not know how many workers each of those units would house, it is likely that each unit houses more than one person. If we assume that each unit houses two workers, these units could have absorbed as many as 524 gas workers.

**Estimated Unmet Demand** – Using the estimated demand for housing by gas workers (1,237) and the estimated portion of the demand that was potentially absorbed within the existing housing supply (847), we can assume that there may be an unmet demand from gas industry workers for as many as 390 housing units in Lycoming County. In addition, there is also increased demand for subsidized housing. In 2009, there were 744 households on the waiting list for subsidized housing in Lycoming County. Although the waiting list peaked in 2010 at 1,413, by 2011, there were 989 households on the waiting list – an increase of 245 households from the 2009 level. Information about the households represented on the waiting list was not available, so we do not know whether these households are currently living in existing housing stock and unable to afford increased rental costs, or if they are living with friends or relatives while waiting for housing. In addition, there is no way to know what happened to the households that dropped off the waiting list between 2010 and 2011. To the extent that households on the waiting list are not currently occupying housing units in Lycoming County as a householder, they can be included in the unmet demand estimate.

The demand for subsidized housing is primarily for affordable rental units, and has been driven by the increased rental rates in the County, coupled with an economic downturn that drove the County's unemployment rate to a high of 10.7% in January 2010 – more than double the 5.1% in April 2008.



Given that 77% of gas industry employees interviewed in the CSCE survey said they prefer living in a hotel than in a rental unit, the addition of new hotel rooms will likely attract some of the gas industry workers who have taken housing in the County's existing supply to move out of the housing units and into hotel rooms, thus relieving some of the housing shortage.

While the natural gas industry is still in its infancy in Lycoming County, our research indicated that housing sales in Lycoming County have remained relatively flat over the past five years. In addition, only 3.7% of the natural gas industry workers surveyed in the CSCE survey said they would prefer to buy a home rather than live in a hotel. The study team also found that Marcellus Shale industry workers who are looking to relocate to the County are interested in mid-priced homes that are move-in ready and require no repairs or upgrades. This suggests that households making permanent moves to the area may be opting to live in rental housing, and also may be among those taking advantage of the unadvertised rentals frequently referenced in interviews and focus groups. While there is no easy way to survey these households, they may represent pent up demand for owner-occupied housing that is unmet because the County's existing housing supply does not meet their housing needs and preference. This lack of certainty in the for-sale market and the peaks and valleys experienced in drilling activity may be influencing developers' reluctance to investment in significant new housing developments.

Information obtained through multiple interviews and the focus group meeting suggested that there are few, if any, mid-priced homes available for sale in Lycoming County. Mid-priced homes were defined through interviews and the focus group meeting as homes priced between \$169,000 and \$249,000. For both rental housing and for-sale housing markets, focus group participants identified the quality of housing and the quality of schools as key considerations in relocating to the area. The information presented in Figures 17 and 18 support these findings. Half of the housing units listed in 2011 (462) were listed at prices below \$134,500 and sold for less than \$121,000. In addition, the U.S. Census Bureau estimates that nearly 77% of Lycoming County's housing stock in 2010 was over 30 years old. The decrease in home sales and the increased gap between list prices and sale prices suggest that factors such as the age, condition, size, style, and location of the County's available housing stock do not meet the criteria that Marcellus Shale industry workers are looking for. Qualitative information obtained through individual interviews suggests that the housing markets in other states may also influence the for-sale market in Lycoming County, as potential buyers are having trouble selling their current homes in areas such as Texas and Oklahoma.

The demand estimates and market observations above are based on the best available statistical data coupled with a number of subjective assumptions. Users of this information should consider that the suggestion of unmet housing demand in Lycoming County is an estimate only and variables should be considered in using the information. Although the estimates were derived through sound methodologies, defensible data, and reasonable estimates, they may vary from actual market demand.

### 5.10 – Utilization of Other Shelter Options

Qualitative information obtained through individual interviews suggested that changes are also taking place in nontraditional housing options in Lycoming County. While data to support these trends are difficult to obtain, it is important to note that campgrounds and RV parks in the County are experiencing increased utilization. In addition, some well service companies are providing "man camps" for on-site



well service personnel. To the extent that these trends increase significantly, they could impact demand for rental housing in the County.



## 6 – Experiences from Other States Experiencing Growth in Natural Gas Well Drilling

The types of housing required in other states by members of the natural gas workforce can vary dramatically, depending on the types of workers and length of residence in the community. In many cases, workers require short-term housing arrangements such as hotel rooms, apartment rentals, or dormitory-style housing. Many of these workers are accustomed to working for short periods of time at oil and natural gas development sites across the globe. As the local industry develops, however, permanent offices are constructed and some workers may decide to permanently relocate to the area, increasing demand on single-family homes. Thus, the cost of housing increases most profoundly for short-term rental situations, which in some areas have doubled in price over a period of a couple of years. On the contrary, home sale prices or prices for other types of housing may rise, albeit more slowly, due to demand for the creation of these rental properties.

Hotel occupancy and room rates are often directly influenced by the short-term housing demand. This can produce benefits for hotel operators, but can also negatively affect tourists or other types of hotel use. In towns in Wyoming and Colorado, new hotel construction by larger-chain hotels was among the first housing developments (beyond industry-furnished housing) to be constructed, and new hotels and motels have been built in other parts of northern Pennsylvania to meet natural gas industry demand.

In many cases, an influx of population and housing demand can occur quickly, while the construction of new housing stock may take several years to unfold, especially in areas where housing construction has historically been temperate and existing contractors and developers are unlikely to have the capacity to quickly “scale up” to meet a sudden demand. It is not unusual for it to take several years before a housing developer can propose, plan, gain approval for, and construct a new housing development. Thus, in many areas there has been a significant lag time between housing demand and the construction of significant housing stock. In some cases, pre-manufactured and mobile home developments are often pursued as the most expedient option.

In response to this rapid and unplanned demand, local homeowners and entrepreneurs often consider renting out spare rooms or guest houses to workers, renting out space to park an RV, or relocating to



other areas and renting out their own property. There is qualitative evidence that this is occurring in Lycoming County, although empirical data is difficult to obtain.

Other areas of the United States have experienced steep declines or fluctuations in population once the majority the pre-production phase of natural gas drilling subsides. This “boom and bust” often occurs unexpectedly, and most times is not associated with the depletion of the resource, but is instead due to much larger economic or technological factors. Herein lies a danger of excess housing construction to meet the current demands of the natural gas workforce. Other areas of the United States have experienced depressed housing prices and an oversupply of housing stock (especially hotel rooms and short-term rentals) after natural gas drilling subsides. Since permanent housing development in Lycoming County has thus far been slow to meet the demand, over-building is not likely to be a concern in the short term. In the longer term, it is prudent to plan for alternative uses for proposed housing developments in the event that natural gas drilling subsides.

## 7 – Projections and What-If Scenarios

Throughout this report several benchmarks and assumptions have been presented regarding the various drivers of demand for housing in Lycoming County, all of which have impacted the County’s housing market in some way. We also made assumptions regarding the dependence of various housing indicators on variables such as drilling activity, or housing and hotel room supply. But what happens in the housing market if these variables change? What happens if new hotel rooms or housing units are added to the supply, or if drilling activity increases or decreases? Table 20 projects the impacts to the housing market for a three-year period (2012 to 2014) if (1) the drilling activity increases consistent with past trends, (2) hotel rooms in the pipeline are completed on schedule, and (3) no new housing is built in the County.

Table 21 presents three “What if?” scenarios for 2012: (1) What if drilling remains constant (the same quantity as in 2011) at 316 new wells in Lycoming County in 2012 and the housing supply increase is limited to hotel rooms in the pipeline? (2) What if drilling increases to 366 new wells and the supply increase is limited to hotel rooms in the pipeline? (3) What if drilling decreases to 266 new wells and the supply increases by hotels in the pipeline and 300 new housing units are built in the County? As with estimates of demand, these calculations use a combination of defensible data combined with a number of subjective assumptions and should be used accordingly.

The following assumptions were made during the course of the study and were used as appropriate in the projection calculations.

- Annual drilling activity in Lycoming County is as follows: 11 wells in 2008, 23 wells in 2009, 116 wells in 2010, and 316 wells in 2011.
- 711 of the 840 employees in Lycoming County’s mining industry in 2010 are assumed to be associated with the Marcellus Shale industry (this represents the estimated increase in industry employment after the beginning of Marcellus Shale drilling activity).



- An estimated 11.2 employees are assumed to be required to support drilling activity for each well drilled (represents the midpoint of the range of pre-production employees required per well as estimated by MSETC).
- An estimated 3,533 total employees are assumed to be required to support drilling activities in Lycoming County in 2011 (this represents the average of the range of 2011 employees estimated in Table 1).
- An estimated 35% of the total Lycoming County employment that is related to the Marcellus Shale industry is assumed to live over 50 miles away and will potentially need some type of local housing while working in the County.
- Future hotel room rates are assumed to vary depending on occupancy rates. Future rates are estimated at \$1.36 for each 1% of rooms occupied up to 70%, and \$1.20 for each 1% of rooms occupied for occupancy rates greater than 70%.
- The demand for hotel rooms is assumed to be .78 rooms for every natural gas industry employee requiring some type of lodging in Lycoming County each year.
- The median rent for an advertised three-bedroom housing unit in Lycoming County in 2011 is assumed to be \$1,039.
- The average rent for an unadvertised three-bedroom housing unit in Lycoming County in 2011 is assumed to be \$2,250.
- There are 13 hotels in Lycoming County as of January 1, 2012, with a total of 1,278 rooms.
- One new hotel will be opened in 2012, adding 81 more rooms.
- Three additional hotels will be opened in 2012, adding 248 more rooms.



**Table 20 – Projections – 2012 – 2014**

	2011 Benchmark	2012 (Projected)	2013 (Projected)	2014 (Projected)
Wells Drilled (Growth Follows Recent Trends)	316	326	346	366
Total Pre-production Employees Required Per Well	3,533	3,645	3,868	4,092
Total Lycoming County Mining Industry Employment	840	803	852	901
Total Pre-production Employees Requiring Local Lodging/Housing	1,237	1,276	1,354	1,432
Hotel Room Supply	1,278	1,359	1,607	1,607
Estimated Hotel Room Demand	898	999	1,060	1,122
Occupancy	83%	74%	66%	70%
Daily Rate	\$99	\$86	\$83	\$90
Estimated Hotel Rooms Filled by Gas Workers	323	424	485	547
Housing Unit Supply	52,500	52,500	52,500	52,500
Estimated Housing Unit Demand	914	852	869	886
Change in Demand from Previous Year		(62)	(45)	(28)
Estimated Total Supply (Hotels and Housing Units)	53,778	53,859	54,107	54,107
Estimated Total Demand (Hotels and Housing Units)	1,237	1,276	1,354	1,432
Estimated Demand Absorbed in Existing Supply	847	948	1,009	1,071
Estimated Unmet Housing Demand	390	328	345	362
Median Rental Rates - Advertised Units --1-Bedroom	\$817	\$795	\$801	\$807
Median Rental Rates - Advertised Units --2-Bedroom	\$915	\$894	\$900	\$905
Median Rental Rates - Advertised Units --3-Bedroom	\$1,039	\$1,022	\$1,027	\$1,031
Median Rental Rates - Advertised Units --4-Bedroom	\$2,000	\$1,920	\$1,942	\$1,964





**Table 21 –What-If Scenarios for 2012** (  = Changes in Assumptions)

	2011 Benchmark	What-If Scenario 1	What-If Scenario 2	What-If Scenario 3
Wells Drilled	316	316	366	266
Total Pre-production Employees Required Per Well	3,533	3,533	4,092	2,974
Total Lycoming County Mining Industry Employment	840	778	901	655
Total Pre-production Employees Requiring Lodging/Housing	1,237	1,237	1,432	1,041
Hotel Room Supply	1,278	1,359	1,359	1,359
Estimated Hotel Room Demand	898	968	1,122	815
Occupancy	83%	71%	83%	60%
Daily Rate	\$99	\$86	\$83	\$90
Estimated Hotel Rooms Filled by Gas Workers	323	393	547	240
Housing Unit Supply	52,500	52,500	52,500	52,800
Estimated Housing Unit Demand	914	843	886	801
Change in Demand		(70)	(28)	(113)
Estimated Total Supply (Hotels and Housing Units)	53,778	53,859	53,859	54,159
Estimated Total Demand (Hotels and Housing Units)	1,237	1,237	1,432	1,041
Estimated Demand Absorbed in Existing Supply	847	917	1,071	764
Estimated Unmet Housing Demand	390	319	362	277
Median Rental Rates - Advertised Units				
1-Bedroom	\$817	\$793	\$807	\$778
2-Bedroom	\$915	\$891	\$905	\$876
3-Bedroom	\$1,039	\$1,020	\$1,031	\$1,008
4-Bedroom	\$2,000	\$1,909	\$1,964	\$1,853



## 8 – Key Findings

The results of this study quantified four primary housing issues in Lycoming County that should be considered in determining the optimal use of revenue received by the County through Marcellus Shale Local Impact Fees:

1. The supply of housing options in Lycoming County has not been sufficient to meet the demand of the Marcellus Shale industry. Furthermore, the rural nature of the County inherently means that there are fewer existing housing units to absorb the increased demand for housing created by the Marcellus Shale industry compared to counties with more extensive urban and suburban amenities.
2. The age and condition of the current housing stock is not attractive to new residents moving into the area with the Marcellus Shale industry. These potential new residents are looking for newer housing that is move-in ready and does not require any upgrades or repairs.
  - a. Information obtained through multiple interviews and the focus group meeting suggested that there are few, if any, mid-priced homes available for sale in Lycoming County.
  - b. Mid-priced homes were defined through interviews and the focus group meeting as homes priced between \$169,000 and \$249,000.
  - c. For both rental housing and for-sale housing markets, focus group participants identified the quality of housing and the quality of schools as key considerations in relocating to the area.
  - d. The U.S. Census Bureau estimates that nearly 77% of Lycoming County's housing stock in 2010 was over 30 years old.
  - e. Half of the housing units listed for sale in Lycoming County in 2011 (462) were listed at prices below \$134,500 and sold for less than \$121,000.
  - f. The actual decrease in home sales and the increased gap between list prices and sale prices over the past four to five years suggest that factors such as the age, condition, size, style, and location of the County's available housing stock do not meet the criteria that Marcellus Shale industry workers are looking for.
  - g. Qualitative information obtained through individual interviews suggests that the housing markets in other states may also influence the for-sale market in Lycoming County, as potential buyers are having trouble selling their current homes in areas such as Texas and Oklahoma and hence do not have the financial liquidity needed to enter Pennsylvania's home buyers market.
  - h. In general, home builders have not demonstrated a willingness (so far) to build in anticipation of the pent-up demand.
  - i. Banking regulations have made the capital market much more difficult to access for those home builders who do want to develop.



3. The limited supply of housing and the increased demand due to the growth in the Marcellus Shale industry have resulted in rental rates that have made housing unaffordable for over 58% of the County's households, especially households with low to moderate incomes.
  - a. The market segment feeling the most acute pressure is the rental market. The limited supply of housing and the rapidly increased demand have resulted in rental rates that have made housing unaffordable for over 58% of the County's households, especially households with low to moderate incomes.
  - b. The median rent for an advertised three-bedroom housing unit in Lycoming County in 2011 was \$1,039, and the median rent for an unadvertised three-bedroom housing unit was \$2,250. Comparatively, HUD's FMR rate for Lycoming County in 2011 was \$829 for a three-bedroom housing unit.
  - c. Between 2009 and 2011, rental rates increased by 31.2% for a three-bedroom unit to 145.6% for a four-bedroom unit.
  - d. Assuming that rental rates are reflective of supply and demand, the rates of increase suggest that four-bedroom rental units are in the highest demand, followed by one- and two-bedroom units, respectively.
  - e. Demand for hotel rooms in the County increased by 310 rooms between 2009 and 2011, and hotel room rates increased accordingly from an average of \$82/night to an average of \$99/night. Occupancy rates also increased from an average of 58% in 2009 to an average of 83% in 2011. There are currently 13 hotel properties in the County, with 1,278 rooms. Four new properties in the "pipeline" will increase room count to 1,607.
  - f. The state with the largest share of gas industry hotel guests is Pennsylvania—not Texas.
  - g. Many hotel guests have expressed a preference for hotel living instead of rental housing or apartments.
4. The increase in rental rates has meant a decrease in the number of housing units available for subsidized renters, which has significantly increased the number of applicants on waiting lists for subsidized units and has unfortunately forced housing agencies to return or forego much-needed funding from HUD.
  - a. Between 2006 and 2009, the total number of applicants on the Authority's waiting list fluctuated  $\pm 200$  applicants each year.
  - b. The waiting list increased significantly from 2009 to 2010, from 744 to 1,413, more than triple the increase in any of the previous years, dating back to 2006.
  - c. The waiting list for 2011 dropped significantly when compared to 2010, but was still 245 applicants greater than the 744 recorded in 2009.
  - d. The lack of affordable rental units has resulted in the expiration of a significant number of available Section 8 vouchers in Lycoming County. In 2010, 20% of the County's Section 8 vouchers expired and 33% expired during 2011 – compared to 4% in 2008.
5. With the enactment of Act 13, Pennsylvania has provided some funding mechanisms for addressing low- to moderate-income affordable housing needs; but there are needs for state support at all economic levels in the housing market.



## 9 – Recommendations

These housing issues will continue to impact County residents in the foreseeable future unless (1) additional housing units are added to increase the supply, (2) additional hotel rooms are added to the supply, or (3) the demand for housing decreases. While drilling activity may fluctuate at times, it is not expected that the activity will decrease to a point that will significantly decrease demand in the near future. Rental rates are driven by the market and if the demand continues to exist, rental rates will likely remain high. While the current market can support additional housing units, care should be taken not to overbuild, which could be equally negative should the Marcellus Shale industry unexpectedly scale back or leave the region. To mitigate the current housing issues related to the growth in the Marcellus Shale industry, the County could utilize Marcellus Shale Local Impact Fee revenues to do the following:

1. Provide competitive grants to owners of existing rental housing and/or underutilized commercial properties to add new rental units in the housing market.
2. Provide incentives for developers of new housing developments for mid-priced homes with requirements for inclusionary housing.
3. Provide incentives for home ownership, perhaps in partnership with local banks.
4. Designate portions of CDBG funds to augment income-qualified home buyer programs funded through the Marcellus Shale Local Impact Fee.
5. Fully explore PHFA-funded programs enhanced by Act 13 funding (into the PHARE account especially) to meet the housing needs of low- to moderate-income, disabled, and elderly residents.
6. Provide competitive grants to existing and proposed affordable housing programs to be used to mitigate the impacts of the Marcellus Shale industry on affordable housing, to include programs such as the following:
  - a. STEP Outreach Services: Utility Program and Supportive Services
  - b. STEP Housing Counseling: Pre-purchase, Financial Management, Home Ownership, Foreclosure Prevention
  - c. STEP: Keystone Renovate and Repair Loan Program
  - d. STEP Housing and Building Initiatives: Lycoming County Homes in Need Program
  - e. STEP Weatherization Assistance Program
  - f. STEP YouthBuild Program
  - g. Consumer Credit Counseling of NE PA Housing Counseling Program
  - h. Consumer Credit Counseling of NE PA Budget Counseling Program
  - i. Consumer Credit Counseling of NE PA Debt Management Counseling Program
  - j. Consumer Credit Counseling of NE PA Bankruptcy Assistance Program
  - k. SEDA COG-managed “owner-occupied housing rehabilitation programs”
7. Advocate for funding support at the state and federal levels for the affordable housing programs described in #6 above.
8. Work with municipal partners in Lycoming County to ensure that efforts to address Marcellus-related housing impacts also work to address pre-existing housing needs specific to each community.



9. Explore public-private partnerships to increase the supply of mixed-income rental and owner-occupied housing.
10. Develop affordable, independent apartments for seniors within the Williamsport metropolitan area. These housing initiatives are needed more today than ever to assist the over 100 applicants currently on affordable senior housing waiting lists.

By implementing the above recommendations, the County can help to increase the housing supply and the quality of the County's housing stock while ensuring sustainability. By establishing eligibility criteria, residency requirements, and occupancy guidelines along with these incentives, the County can focus on development and renovation in designated areas, and maximize the benefit of the impact fees to local residents.



## 10- Early Implementation Steps

### *Brownfield Redevelopment*

The former Brodart manufacturing and warehouse facility employed approximately 100 people over much of the past nine decades, as part of its operation to provide furnishings, supplies, and services primarily to libraries. Currently, the 3.4-acre, two-parcel site is vacant and available for redevelopment, with the landowner and municipal officials eager to engage in a development partnership. While the Brodart Company still owns the site, there is interest from Habitat for Humanity to create a small number of low- to moderate-income, owner-occupied homes in partnership with a market rate builder to construct a mixed-income residential neighborhood. It is noteworthy that the entire Brodart site is well outside the 100-year regulatory floodplain.



Source: PA DEP

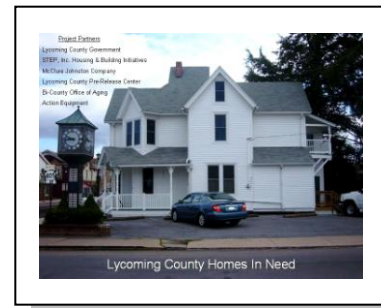
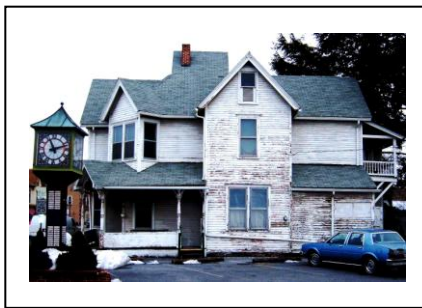
The site was identified in Lycoming County's 2007 Brownfield Inventory, and both Phase I and Phase II environmental site assessments (ESAs) have been conducted using funds provided through the U.S. Environmental Protection Agency (EPA) and PA DEP. These assessments have revealed that environmental contamination exists on the site and will need to be remediated to attain the required Statewide Health Standards for residential use. Of particular concern is exposure to environmentally contaminated soil, soil vapor, and groundwater. In 2012, the County received an Industrial Sites Reuse Program (ISRP) grant from the Pennsylvania Department of Community and Economic Development (DCED) for the purpose of completing Act 2 site characterization activities and preparing a cleanup plan. The site characterization work has been completed and a remedial investigation report has been produced. The City of Williamsport is prepared to move forward with a DCED-funded ISRP grant to remediate the environmental issues on the site, demolish the building, and set the stage for the future development of a combination of market rate housing and Habitat for Humanity homes.

### *Affordable Senior Housing*

SEDA COG Housing Development Corporation is actively exploring the feasibility of developing affordable independent living apartments for seniors within the Williamsport metropolitan area. The design and construction of these units is anticipated to build upon the design features utilized in the local Indian Park units in Montoursville.

### *Homes In Need*

A County-sponsored, STEP-executed program known as Homes In Need provides funding for dwelling revitalization for low- to moderate-income homeowners throughout Lycoming County. These County funds are combined with the state and federal monies (obtained by STEP) in order to provide a comprehensive set of solutions for each dwelling in the program. The Homes In Need program directly addresses the issue that homes around the County are aging and the cost of maintenance is too high for many. Given the rapidly increasing rates for rental properties, a large number of elderly may be forced or resigned to remain in their old, energy-inefficient, and quasi-inaccessible dwellings. Over 130 homes have been revitalized over the past six years, but the waiting list is lengthy. This is exactly the population that Homes In Need is well suited to address.



**A major Homes In Need project undertaken in the Borough of Hughesville**

What makes the Homes In Need program so effective is that each project undertaken by STEP is carefully planned to ensure that the project elements and funding sources are uniquely tailored to those specific circumstances. What makes Homes In Need so necessary is that hundreds of County residents—especially the elderly, the disabled, and those in the low- to moderate-income economic bracket—need a program that can help them remain in their dwellings.

## **11 – Electronic Tool for Modeling “What-If” Scenarios**

The projections presented above assume that the supply of housing units in Lycoming County will remain the same and that the hotel rooms in the pipeline are completed over the next two years. However, changes in the supply of housing or hotel rooms or changes in the level of drilling activity will have an impact on rental rates, housing sale prices, hotel rates, housing affordability, and the need for subsidized housing. Along with this report, a tool for estimating the impacts of “what-if” scenarios was developed to aid in decision making. The tool allows users to enter three variables for any year to see how these changes are likely impact dependent factors. The variables include the following:

1. What if the number of wells drilled increases or decreases to...?
2. What if the number of housing units increases or decreases to...?
3. What if the number of hotel rooms increases or decreases to...?

(Note: The electronic tool is included as the final deliverable in the project schedule.)

## Appendix 1 – Summary of Interviewees and Focus Group Participants

The following individuals participated in individual interviews and/or the focus group:

Rachelle Abbott, STEP, Inc.  
 Bill Bennett, Loyalsock Township  
 Dan Berninger, Muncy Bank  
 Mike Bolsar, Liberty Group  
 Walter Braddock, Cummings Township  
 Gabe Campana, City of Williamsport  
 William DeWire, Wolf Township  
 John Dorin, Montoursville Borough  
 Dave Eakin, Clinton Township  
 Jason Fink, Industrial Properties Corporation  
 Mike Fisher, SEDA-COG Housing Corp.  
 Tom Flynn, Flynn Group  
 Becky Fought, Regional Main Street  
 Dan Gill, Weatherford Corp.  
 Irv Gleason, Range Resources  
 John Grado, City of Williamsport  
 William Hodrick, Prudential Hodrick Realty  
 Dennis Holt, Montoursville Borough Council  
 Barbara Hoover, Lycoming Housing Authority  
 Bonita Kolb, Lycoming College  
 Keith Kuzio, Larson Design Group  
 Alisa Lutz, Lycoming Housing Authority  
 John Lynch, Montgomery Borough  
 Ted Lyons, Lycoming Neighborhood  
 Development Corp.  
 Mark Meloy, Liberty Group  
 Richard Miller, Montgomery Water and Sewer  
 Authority  
 Eric Moore, West Branch Regional Authority  
 Dolores Moyer, Hughesville Borough Water  
 Authority  
 Walter Nicholson, Williamsport Municipal  
 Water Authority (WMWA) / Williamsport  
 Sanitary Authority (WSA)  
 Andrew Onufrak, Montgomery Borough  
 Rosann Pelleschi, formerly of the Lycoming  
 County United Way

Quay Schappell, Terra-Aqua Resource  
 Management  
 MeryLin Severson, Lycoming Housing Authority  
 Ron Smith, Montoursville Borough Water Works  
 Elliot Strickland, Pennsylvania College of  
 Technology  
 Dave Thompson, Williamsport Sun-Gazette  
 Christine Weigle, Lycoming County Water and  
 Sewer Authority  
 Paul Wentzler, Muncy Township  
 Kim Wheeler, PA Department of Community  
 and Economic Development  
 Jonathan Williamson, Lycoming College  
 Rane Wilson, Anadarko Petroleum Corporation  
 Mary Wolf, Anadarko Petroleum Corporation  
 John Yingling, Lycoming County Public Safety  
 Tami Yonkin, Precision Drilling  
 Mary Zeitler, West Branch Valley Association of  
 Realtors  
 Mike Zeller, Jersey Shore Area Joint Water  
 Authority  
**Lycoming County Commissioners**  
 Tony Mussare  
 Jeff Wheeland  
**Lycoming Planning and Community  
 Development**  
 Kurt Hausammann  
 Bill Kelly  
 Mark Murawski  
 Cliff Kanz  
 Megan Lehman  
 Bob Bauder  
**Delta Development Group, Inc.**  
 Darren Asper  
 Debbie Tollett  
 Alicia Titus  
 Kelly Rossiter  
 Ashley Miller





## Appendix 2 – Fair Market Rental Rate Methodology

### Final FY 2006 FMR Area Geography and 2000 Census Base Rent

In establishing final FY 2006 FMR areas, HUD examines the new metropolitan areas to see if and how they differ from FY 2005 FMR areas. If a new metropolitan area differs from the old FMR area(s) covering the same geography, HUD checks the 2000 Census 40th Percentile Base Rents for each part of the new metropolitan area that was previously in a different old FMR area against the 2000 Census 40th Percentile Base Rent for the entire new area. On these pages, the parts of the new metropolitan areas that were previously in different old FMR areas are referred to as "Evaluated Metro FMR Areas."

If any of the Evaluated Metro FMR Areas in a new metropolitan area have 2000 Census 40th Percentile Base Rents that differ from the 2000 Census 40th Percentile Base Rent of the entire area by at least 5%, HUD establishes them as separate "HUD Metro FMR Areas" within the new metropolitan area and assigns them their own 2000 Census Base Rent.

Any Evaluated Metro FMR Area with a 2000 Census 40th Percentile Base Rent that *does not* differ from the entire metropolitan area 2000 Census 40th Percentile Base Rent by at least 5% gets the 2000 Census Base Rent for the entire metropolitan area. If there is more than one such Evaluated Metro FMR Area in a metropolitan area, all Evaluated Metro FMR Areas assigned the metropolitan area 2000 Census Base Rent are treated as a single FMR area. Unless such "recombined" areas constitute the entire new metropolitan area, they are also renamed as "HUD Metro FMR Areas" because such FMR areas are not the same geography as the official Office of Management and Budget (OMB) metropolitan area definitions.

For example, suppose a new metropolitan area consists of an old FMR area, half of another old FMR area, and a formerly nonmetropolitan county. HUD would evaluate the 2000 Census 40th Percentile Base Rents for each of the three parts (Evaluated Metro FMR Areas) that comprise the new area against the 2000 Census Base 40th Percentile Rent for the entire new area.

If none of the three evaluated areas has a 2000 Census 40th Percentile Base Rent that differs from the entire new metropolitan area 2000 Census 40th Percentile Base Rent by at least 5%, then the new metropolitan area is undivided and serves as a final FY 2006 FMR area in its entirety.

Suppose the Evaluated Metro FMR Area consisting of half of an old FMR area has a 2000 Census 40th Percentile Base Rent that differs from the entire metropolitan area's 2000 Census 40th Percentile Base Rent by more than 5%. Then HUD establishes two "HUD Metro FMR Areas": one consisting of the half of the old FMR area and assigned its own 2000 Census Base Rent, and the other consisting of the combination of the other old FMR area and the formerly nonmetropolitan county.



## Final FY 2009 FMRs

HUD continues its use of ACS data in FY 2009, by building upon the FY 2008 Final FMRs ([Lycoming County FY 2008 FMR Documentation system](#)). As in FY 2008, HUD uses 2006 ACS data in four different ways according to how many two-bedroom standard quality and recent mover sample cases are available in the FMR area or its Core-Based Statistical Area (CBSA). In most cases, Final FY 2009 FMRs are based on changes in rents measured by differences in American Community Survey (ACS) data collected in 2005 and 2006 and updated Consumer Price Index (CPI) rent and utility inflation indexes. Depending on the size of the ACS survey sample, state or local ACS data is used to update a June 2005-calculated gross rent from the Final FY 2008 FMRs ([Lycoming County FY 2008 FMR Documentation system](#)) to June 2006. In some cases, as described below, the 2006 ACS survey result is used instead of a 2005 to 2006 updated value. The ACS updated 2006 rent is then adjusted with CPI inflation factors that measure changes from mid-2006 through year-end 2007 and 1.25 years of trending to arrive at Final FY 2009 FMRs. Random Digit Dialing (RDD) survey results are applied where available and appropriate.

There are fewer than 200 standard quality 2005 and 2006 ACS cases for Williamsport, PA Metropolitan Statistical Area (MSA). Therefore, the 2005-2006 update factor is based on the change in standard quality two-bedroom rents between the 2005 and 2006 ACS at the state level. The update factor for Williamsport, PA MSA is [1.0365](#), which is calculated as the ratio of the 2006 Pennsylvania ACS standard quality median rent to the 2005 ACS median standard quality rent for Pennsylvania.

HUD updates the 2006 intermediate rent (as of June 2006) with the appropriate CPI change (local or regional) to establish rents as of December 2007. HUD then applies additional trending or results of RDD surveys to update rents to April 2009, the midpoint of FY 2009.

## Fair Market Rent Calculation Methodology - New for FY 2012

FMRs for metropolitan areas and nonmetropolitan FMR areas are developed as follows:

1. 2005-2009 five-year ACS estimates of two-bedroom adjusted standard quality rents calculated for each FMR area are used as the new basis for FY 2012.
2. In areas where the 2009 five-year ACS estimates are smaller than the reported margin of error, the state nonmetropolitan estimate of two-bedroom adjusted standard quality rent is used.
3. HUD calculates a recent-mover adjustment factor by comparing a 2009 one-year adjusted recent-mover two-bedroom rent to the five-year adjusted standard quality rent for the same area in the following manner:
  - A. In areas where there are at least 100 observations included in the 2009 one-year ACS estimate of two-bedroom recent-mover rents, a statistical comparison is made between the five-year two-bedroom adjusted standard quality rent and the one-year two-bedroom recent-mover rent available from the ACS.
    - If the one-year data are statistically different than the five-year data, HUD calculates a recent-mover adjustment factor between the five-year data and the one-year data and applies this to the five-year data. This recent-mover adjustment factor is floored at 1.0.



- If the one-year data are not statistically different than the five-year data, HUD applies a recent-mover adjustment factor of one to the five-year data.
- B. In areas where there are less than 100 observations of a 2009 one-year ACS estimate of two-bedroom recent-mover rent, a statistical comparison is made between the five-year two-bedroom adjusted standard quality rent and the one-year two-bedroom recent-mover rent for the smallest geographic area containing the FMR area with at least 100 available observations of the 2009 one-year ACS estimate of two-bedroom recent-mover rent. For metropolitan areas, the order of geographies examined is Entire Metropolitan Area (for Metropolitan Sub-areas), State Metropolitan Portion, Entire State, and Entire U.S.; for nonmetropolitan areas, the order of geographies examined is State Nonmetropolitan Portion, Entire State, and Entire U.S.
  - If the one-year data are statistically different than the five-year data, HUD calculates a recent-mover adjustment factor between the five-year data and the one-year data and applies this to the five-year data.
  - If the one-year data are not statistically different than the five-year data, HUD applies a recent-mover adjustment factor of one to the five-year data.
- 4. Rents are calculated as of December 2010 using one-half of the relevant (regional or local) 2008-2009 CPI change and all of the relevant (regional or local) 2009-2010 CPI change.
- 5. All estimates are then trended from December 2010 to April 2012 (15 months) with a trending factor of 3% per year.
- 6. An RDD survey has been completed for this area, so the ACS-based rent is compared to the results of the RDD survey. If the results are statistically different, the RDD result is used.

FY 2012 FMRs are then compared to a state minimum rent, and any area whose preliminary FMR falls below this value is raised to the level of the state minimum.



## Appendix 3 – A Comparative Analysis of the Employment Estimates

### Approach #1

A recent study conducted by the Marcellus shale Education and Training Center (MSETC) estimates pre-production activities such as leasing, permitting, site preparation, drilling, hydraulic fracturing (fracking), pipelines, construction of compression stations, and support activities are estimated to require between 9.46 and 12.9 employees per well, depending upon operating efficiencies associated with the drilling of multiple wells at a single well pad. If we assume that the mid-point of this range (11.18) as the most likely employment scenario, this means that an estimated **3,533** employees were physically working in Lycoming County during 2011 either in the natural gas industry or its support activities.

### Estimated Full-Time Employees (FTEs) Required to Support Drilling Activities in Lycoming County

Year	Number of Wells Drilled in Lycoming County	Estimated FTEs Required at 9.46 Employees/Well <sup>(1)</sup>	Estimated FTEs Required at 12.9 Employees/Well <sup>(1)</sup>	Assuming Mid-Point Range (11.18) as Most Likely Scenario
2007	5	47	65	56
2008	11	104	142	123
2009	23	218	297	257
2010	116	1,097	1,496	1,297
2011	316	2,989	4,076	<b>3,533</b>

<sup>(1)</sup> Source: Pennsylvania Marcellus Shale Workforce Needs Assessment, Marcellus Shale Education and Training Center (MSETC), Summer 2011; PA DEP (Permits and Drilling); and Lycoming County Planning and Community Development

### Approach #2

We used the IMPLAN<sup>2</sup> model to estimate the total number of employees required to support the increased business activity in NAICS sector 21 (Mining, Quarrying, and Oil and Gas Extraction). Within Lycoming County, between 2008 and 2011 this sector increased from 129 to 840 jobs or an increase of 711 positions. To put this in better context, we considered recent data reported by the Pennsylvania Department of Labor & Industry in their *Marcellus Shale Fast Facts*. Across all of the state's workforce investment areas, this NAICS sector rose from 7,308 to 19,865 reflecting an increase of 12,567 positions. This would suggest that Lycoming County was responsible for approximately 6% of this statewide increase.

<sup>2</sup> IMPLAN is a nationally recognized input/output model developed by Minnesota IMPLAN Group, Inc. (MIG) and is widely used by academic institutions, government agencies, and private sector economists to estimate the economic and fiscal impacts of changes in local economies.



Using the 711 positions identified in Lycoming County with the Mining, Quarrying, and Oil and Gas Extraction NAICS code, we modeled the “total” employment impact in two ways: (1) constrained by the businesses located in Lycoming County in 2010 that could provide the required workforce; and (2) with no geographic constraints on the availability of companies that could provide the required workforce. As shown below, the non-constrained IMPLAN model estimated there to be **3,741** direct and indirect employees.

### Estimated “Ripple” Effect of Natural Gas Industry Employment

Impact Type	Required Employment – Constrained by Lycoming County Business Mix	Required Employment – Not Constrained	Estimated Employment from Outside Lycoming County
Direct Employment	711	711	-
Indirect Effect (Business-to-Business Activity)	113	3,030	2,917
Total	824	<b>3,741</b>	2,917

### Approach #3

We examined the *Workforce Investment Area Marcellus Shale Related Industries Data* in the previously mentioned *Marcellus Shale Fast Facts* with a focus on the Central region, which includes nine counties, including Lycoming. The Fast Facts database defines two major categories for Marcellus Shale gas activity: core industries (6 sectors) and ancillary industries (30 sectors).

We also considered that the PA DEP’s Oil & Gas Management web site identifies that these nine counties hosted 616 spud wells as of December 2011. Per DEP, Lycoming County is the host for 75% of these wells. Bearing this in mind, we revisited the Fast Facts database.

Fast Facts reports approximately 2,304 core industry jobs as of December 2011 within the Central region. Assuming a direct relationship between the number of wells and the number of core jobs in a county, it would not be unreasonable to conclude that Lycoming County is credited with 1,728 of those jobs (75% x 2,304).

Next, we considered the 11,446 Central region jobs defined as “ancillary”. Although there are nine counties in the Central region, it would not be unreasonable to expect to find that at least 25% of these ancillary jobs are located in Lycoming County because of its proximity to the drilling operations. This suggests that about 2,861 jobs (25% x 11,446) could be found within Lycoming County boundaries. Taken together, the core jobs and ancillary jobs associated with Lycoming County are estimated to be approximately **4,589** (1,728 + 2,861).

But perhaps the best indicator is to measure the increase in employment in both the core and ancillary industries in Lycoming County between the ramp-up for Marcellus exploration in 2008 and where the County stood at the end of 2011. From that perspective, the growth in these categories is a very strong indicator of Marcellus Shale induced job increases. That total is 2,188 (Core) + 1,986 (Ancillary) for a total of **4,174**.



# THE IMPACT OF MARCELLUS SHALE IN LYCOMING COUNTY, PENNSYLVANIA THE IMPACT ON HOUSING

**Jonathan Williamson, Ph.D.**

Director, CSCE

Chair, Department of Political Science

*Williams@lycoming.edu*

**Bonita Kolb, Ph.D.**

Co-Director, CSCE

Associate Professor of Business

*Kolb@lycoming.edu*

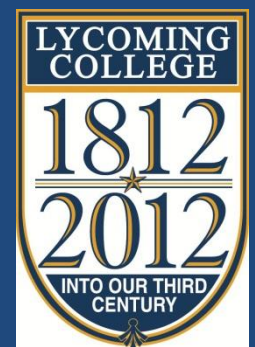
**Center for the Study of Community and the Economy  
(CSCE)**

Lycoming College

Williamsport, PA 17701



*A project for Delta  
Development Group,  
Inc. and the County  
of Lycoming by The  
Center for the Study  
of Community and  
the Economy (CSCE)  
at Lycoming College*



# Table of Contents

Executive Summary.....	1
Introduction .....	2
Methodology.....	2
Hotel Guests' Backgrounds .....	5
Hotel Guests' Work in Area.....	7
Housing Preferences of Hotel Guests .....	9
Conclusion.....	12
Research Team.....	14
Appendix A: Interview Questions .....	15

# ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

---

## Executive Summary

---

An emerging conclusion from the Lycoming County Housing Study was that little was understood about the future housing needs of those gas industry workers staying in hotels. The number of hotel rooms in Lycoming County has grown considerably since the natural gas industry's arrival and the occupancy rates in the County's hotels well exceed industry standards. However the question emerged as to what share of those currently residing in hotels would eventually be seeking more permanent housing arrangements in the rental or owner-occupied markets in the region.

An exploratory, qualitative interview research study was designed to learn more about the housing needs of hotel guests working in the natural gas industry. A representative subset of local hotels was selected on the basis of geographic representativeness, price point, and willingness of the hoteliers to participate. Interviews with gas employees staying as guests at the Candlewood Suites, Econo Lodge, Hampton Inn, Holiday Inn, Genetti Hotel and Suites and TownPlace Suites were conducted by trained Lycoming College students. The interview questions covered job title, residence, location of employer, length and location of work in the area, and housing preference. During March and April 2012, 115 hotel guests working in the natural gas industry were interviewed.

Little had previously been known of gas industry workers who stayed at local hotels other than they drove white pickup trucks and worked in the gas industry. One of the most interesting findings is that the largest percentage, 27.4 percent, of gas workers staying in area hotels is from Pennsylvania. Community belief had been that the workers were from the traditional energy states of Texas, Oklahoma and Louisiana. While Texas does come in second at 8.8 percent, the workers come from 23 other states and two foreign countries. It was found that the most frequent home state of the companies for which the interviewees worked was Texas, with 41.1 percent. However Pennsylvania companies were represented second with 11.6 percent. So it may be that Pennsylvanians working for Pennsylvania based companies are staying in local hotels. This is very different from the perception of the gas drillers hailing exclusively from Texas.

Another surprising finding was that this pattern of hotel living can go on for an extended period of time. The average number of days stayed in hotels was 98 with a number of interviewees having stayed at a hotel for two years or longer. Hotel living is not a temporary situation for many gas workers.

Many workers stay in hotels because their employees booked and paid for the rooms. These workers also preferred to stay in hotels because of the convenience of cleaning and meal service. Even if this was not the case most gas workers felt that because their company might change their work location, it was too risky to rent. Others who did wish to rent were discouraged by the high rental prices and lease requirements.

The research results have planning implications for Lycoming County. It may be that hotels will remain the residence choice for many gas industry companies and their workers. There may be an ongoing place in the market for hotels specifically geared toward gas employees and their needs. There might also be an opportunity for housing that is geared toward gas workers by supplying cleaning and meal service. Such a residential facility could even contract directly with companies to ensure a steady flow of guests. While a large share of the current hotel guests indicate hotels will continue to meet their needs,



## **ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA**

---

about one in five indicate that they plan to find a more permanent housing arrangement at some point. As such, they reflect a share of the future housing impact in Lycoming County.

### **Introduction**

---

In anticipation (and subsequent adoption as Act 13 – the Oil & Gas Act of 2012) of state legislation implementing impact fees on the unconventional gas wells in Pennsylvania, the County of Lycoming engaged Delta Development Group, Inc. (Delta) to conduct a series of impact studies to systematically measure the Marcellus gas-related impacts in the County across four areas: housing, water and sewer infrastructure, transportation infrastructure and emergency, health and social services. To provide a theoretical framework for the investigation of housing impacts in the County, Delta utilized research conducted by Lycoming College’s Center for the Study of Community and the Economy (CSCE) for the Pennsylvania Housing Finance Agency (PHFA). CSCE’s qualitative research was based on interviews of a broad range of housing stakeholders in six of the Marcellus-region counties in the Commonwealth. Delta’s study is designed to quantify the housing impacts specific to Lycoming County.

In discussions between Delta and CSCE, it was determined that little was understood about the future housing needs of gas industry workers staying in hotels. The number of hotel rooms in Lycoming County has grown considerably since the natural gas industry’s arrival and the occupancy rates in the County’s hotels well exceed industry standards. The question emerged as to what share of those currently residing in hotels would eventually be seeking more permanent housing arrangements in the rental or owner-occupied markets in the region.

Given the high rental prices in the area and the shortage of available rental housing, is there a backlog of gas industry employees staying in hotels that might otherwise prefer to be in rental housing? Given the national housing crisis, are there hotel guests that would prefer to move to the area permanently, but cannot sell their homes elsewhere and are therefore occupying hotels rooms longer that they might otherwise choose? In each of these cases, if hotel guests have future intentions to find permanent housing arrangements in the County, the housing impacts being quantified in Delta’s study would be larger than if hotel guests intend to satisfy their housing needs in the area in hotels over the long haul.

CSCE agreed to conduct an exploratory study of the future housing needs of natural gas industry employees in Lycoming County hotels, using Lycoming College students as interviewers, as a means to answer these questions.

### **Methodology**

---

Hotel guests working in the natural gas industry were the target population for the study. To reach the targeted population, the twelve hotels in Lycoming County participating in the industry-standard STR Global reports on hotel occupancy were identified (See Table 1). A representative subset of these hotels was selected on the basis of geographic representativeness, price point, and willingness of the hoteliers to participate. Interviews with guests from the Candlewood Suites, Econo Lodge, Hampton Inn, Holiday

## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

Inn, Genetti Hotel and Suites and TownPlace Suites were conducted. Collectively, these hotels account for 58 percent of the hotel rooms represented in the STR Global reports.

Hoteliers were first sent a letter by the Lycoming County Commissioners asking for their participation. They were then contacted by CSCE representatives to explain the details of how the research would be conducted. All but one hotel contacted by CSCE willingly agreed to participate in the study. The remaining hotelier was reluctant to participate, citing guest privacy, and that hotel was replaced with another for conducting interviews. In discussing the research with hoteliers it was learned that companies will switch between hotels based on the deal they can negotiate. There is no reason to believe the results presented in this report are affected by the specific hotels where interviews occur.

An interview script was written in consultation with Delta Development and Lycoming County Commissioners. Senior-level Lycoming College students majoring in business and political science were trained to conduct the interview

research. CSCE’s principal investigators, along with the interviewers, worked with hotel employees to determine the best times and locations to interact with Marcellus-industry guests. The goal was to conduct interviews when Marcellus industry guests were coming or going from their work-sites. Each of the hotels received six visits from a team of two student interviewers from Lycoming College. Peak times for interviews varied from hotel to hotel, with generally the best times being late afternoon or evening when workers returned from their jobs. Secondary times were used for some visits to ensure any smaller groups of Marcellus-industry workers working alternate schedules would have the opportunity to participate. In some

**Table 1: Hotels in Lycoming County**

Hotel	Municipality	Rooms
Best Western Williamsport Inn	Loyalsock	116
Candlewood Suites	Loyalsock	122
Comfort Inn & Suites	Loyalsock	58
Econo Lodge	Loyalsock	100
Fairfield Inn & Suites	Williamsport	83
Hampton Inn	Williamsport	110
Holiday Inn	Williamsport	102
Holiday Inn Express & Suites	Williamsport	96
Super 8	Loyalsock	43
The Genetti Hotel & Suites	Williamsport	202
TownePlace Suites	Williamsport	81
Williamsport Inn	South Williamsport	117
Total Rooms		1,230

hotels, the best locations to conduct interviews were identified as the lobbies; in other hotels, hotel employees suggested speaking with guests in the restaurant area. Some hotels have weekly ‘socials’ for their gas employee guests and these proved successful in finding willing interviewees.

In total, during March and April 2012 students interviewed 115 hotel guests working in the natural gas industry. Each interview lasted four or five minutes although some went on much longer if the participant was in a talkative mood. The interviews were designed to be done quickly as not to impede on gas workers limited free time and to not interfere with hotel business. However as this was exploratory research, the interviewers were trained to be receptive to any information offered.

Interviewees were asked eight questions which are listed in Appendix A of this report. The questions

## **ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA**

---

covered job title, residence, location of employer, length and location of work in the area and housing preference. Interviewees were not asked their names or the name of their employer so as not to make the interview feel intrusive. Gas employees can be hesitant to provide this information because of the strong reaction some individuals have to the drilling issue.

Interviewers reported good willingness to participate in the interviews, leading to confidence that the results are reflective of the population of those staying in the hotels at the time the research was conducted. Many were happy to talk about their work as they do not have much interaction with the public while on the job site. While the participants for the interviews were screened for employment in the gas industry, no other demographic factors such as age, gender or income were considered relevant to the research findings. As this study was conducted using a qualitative interviewing method, it would be inappropriate to use tests of statistical significance designed for quantitative research.

Those interviewed represented a wide range of job functions within the natural gas industry. At least thirty different segments of the pre-drilling, drilling and post-drilling phases of natural gas development were reflected by those interviewed. Some of the positions included:

- Abstractor
- Driller
- Environmental Health
- Fracking Equipment Operator
- Land Agent
- Odorization Installer
- Pipeline Inspector
- Project Manager
- Sandblaster
- Snubber
- Water Sampling
- Well Head Installer
- Control Systems Engineer
- Drilling Engineer
- Erosion Control
- Helicopter pilot
- Mechanic
- Pipeline Construction Foreman
- Pipeline Router
- Sales
- Seismic Testing
- Surveying
- Water Transfer Driver

Interviews were conducted with front-line employees as well as field management. As is seen in the list above it appears that those interviewed are reflective of a wide swath of those currently working in the industry and staying in hotels. On the other hand, it should be noted, there were several concentrations of interviewees representing particular companies and particular phases of natural gas development. While the total group of interviewees reflect current hotel activity, it is likely that the pattern of workers staying in hotels could change considerably over time. In other words, as different stages of gas development predominate in the area, different groups of workers with correspondingly different sets of long-term housing needs could be staying in the hotels at any given point in time.

### **Hotel Guests' Backgrounds**

---

Primarily asked as background information, those interviewed were asked the location of their permanent residence. From the perspective of the research question driving this study—what are the

## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

future housing needs of hotel guests—one would expect that if a large share of the Marcellus workforce staying in hotels was from outside Pennsylvania, more of these would be seeking permanent housing because of the inconvenience of travel. If hotel guests were from nearby locations, it would be expected that they would prefer to stay in hotels and commute home on their days off. Table 2 presents the results on permanent residence.

**Table 2: Where do you live?**

State or Nation of Origin	Frequency	Percentage
Pennsylvania	31	27.4%
Texas	10	8.8
New York	9	8.0
Canada	8	7.1
Louisiana	7	6.2
Arkansas	7	6.2
Colorado	5	4.4
Oklahoma	3	2.7
West Virginia	3	2.7
Florida	3	2.7
Virginia	3	2.7
Ohio	2	1.8
Michigan	2	1.8
Kansas	2	1.8
Indiana	2	1.8
North Carolina	2	1.8
Alabama	2	1.8
New Jersey	2	1.8
Wyoming	1	0.9
Massachusetts	1	0.9
Minnesota	1	0.9
Nevada	1	0.9
California	1	0.9
Georgia	1	0.9
Kentucky	1	0.9
Tennessee	1	0.9
India	1	0.9
Utah	1	0.9
<b>Total</b>	<b>113</b>	<b>100</b>

It has been the general feeling in the community that most of the workers staying in hotels are from the traditional energy producing areas. It was thought the employers needed them to come to the area because no locals had the skills necessary for the work. What is most striking is the many states and nations represented in the workforce. In total, 26 states, Canada and India were represented among

## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

---

interviewees. This is probably because of the wide range of skills needed in the energy exploration and production industry.

What was surprising was the high share traveling to Lycoming County from a permanent residence somewhere else in Pennsylvania. The stereotype of gas workers staying in hotels all having a southern drawl is not accurate. Areas of historically high concentrations of natural gas company activity—Texas, Oklahoma and Louisiana specifically—only amount for 18 percent of the total. This leaves the question of why the workers who are already living in Pennsylvania don’t rent or buy in the community so they would not have to stay in hotels.

**Table 3: Where is your employer based?**

State or Nation	Frequency	Percentage
Texas	46	41.1%
Pennsylvania	13	11.6
New York	11	9.8
Massachusetts	11	9.8
New Jersey	6	5.4
West Virginia	3	2.7
Canada	3	2.7
France	3	2.7
Colorado	3	2.7
Louisiana	2	1.8
North Carolina	2	1.8
Alabama	2	1.8
Oklahoma	1	0.9
Wyoming	1	0.9
Minnesota	1	0.9
Nevada	1	0.9
California	1	0.9
Michigan	1	0.9
The Netherlands	1	0.9
<b>Total</b>	<b>112</b>	<b>100</b>

In terms of the employers’ base of operation reported in Table 3, there was nearly as many locales represented as with the residential data. Here there is more concentration in the traditional homes of gas drilling activity. Texas, Louisiana and Oklahoma represent 44 percent of the respondents’ companies’ base of operations. However, in total, workers from companies located in 16 states, Canada, France and The Netherlands were represented in the interviews. This again demonstrates the wide range of companies that are involved in the energy industry. It is also due to companies in the industry being involved in mergers and acquisitions with other companies both in the US and other countries.

## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

---

### Hotel Guests' Work in Area

---

From the perspective of housing impacts, the study needed to understand where hotel guests were working when staying at an area hotel. If hotel guests were staying in Lycoming County, but working elsewhere, it could be assumed that if they were to move to the area, many would likely choose a permanent residence outside the county so as to be closer to their work site. However, as indicated in Table 4 among those interviewed, two-thirds indicated working in Lycoming County, with another 12 percent working across the Northern Tier, including Lycoming County and 8 percent indicated working "all over" including in Lycoming County. For those groups, a move to the area is likely to result in a move to the County. Only 14 percent reported primarily working outside the County.

**Table 4: Where in the Williamsport area are you currently working?**

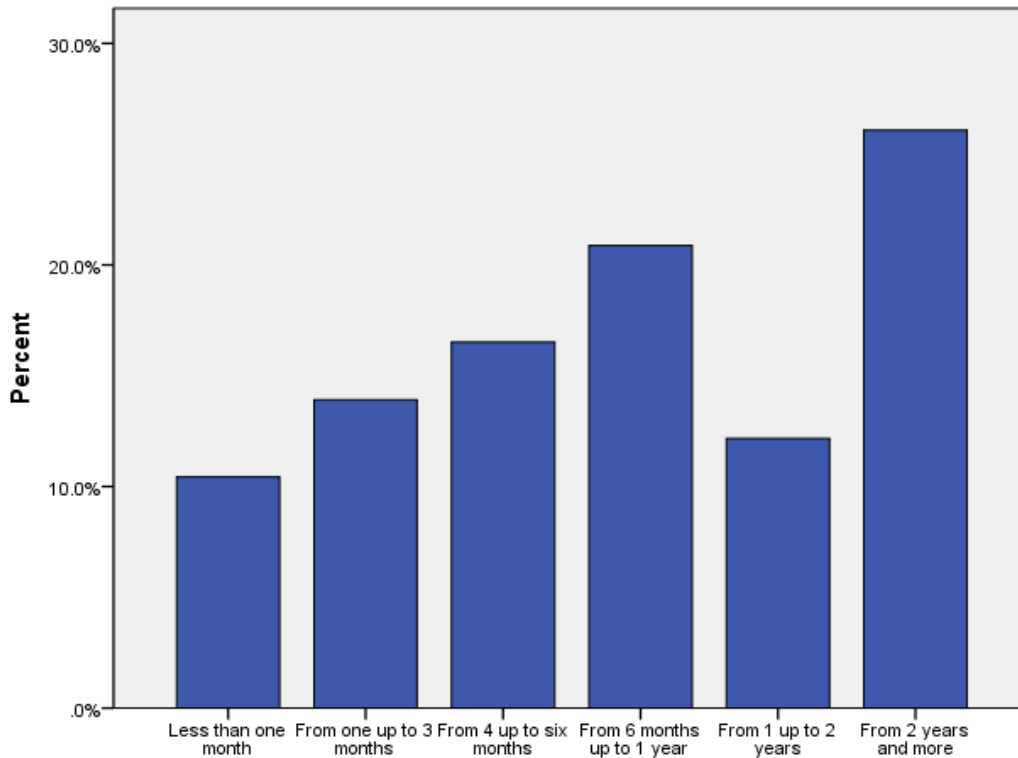
Primary Location	Frequency	Percentage
Lycoming County	75	66.4%
Northern Tier Generally	13	11.5
"All Over"	9	8.0
Tioga County	5	4.4
Clinton County	3	2.7
Wyoming County	3	2.7
Bradford County	3	2.7
Clearfield County	1	0.9
"2 Hours Away"	1	0.9
<b>Total</b>	<b>113</b>	<b>100</b>

A significant share of the Marcellus workforce staying in the hotels has been doing so, off and on for quite some time. As indicated in Figure 1, over a third has been coming to the area and staying in hotels for over a year with over a quarter for more than two years. For these long term hotel users, it is unlikely that changing circumstances in their personal lives or in the local housing market will lead them to move out of the hotels into a more traditional housing situation. Those likely to seek to rent or own a home in the area in the future are more than likely to come from the group of hotel guests newer to the area.

Respondents were asked how many times they stayed in area hotels and for how long over that time period. The data in Figure 2 presents a conservative estimate of the number of nights each interviewee has stayed in a hotel in the area over the last year. While such recalled estimates can be inaccurate, conservative estimates based on their responses should be reflective of their hotel residency patterns. At a minimum the numbers shown should not over-estimate their number of room nights the respondents stay in hotels.

## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

Figure 1: How long have you been working in the Williamsport area?



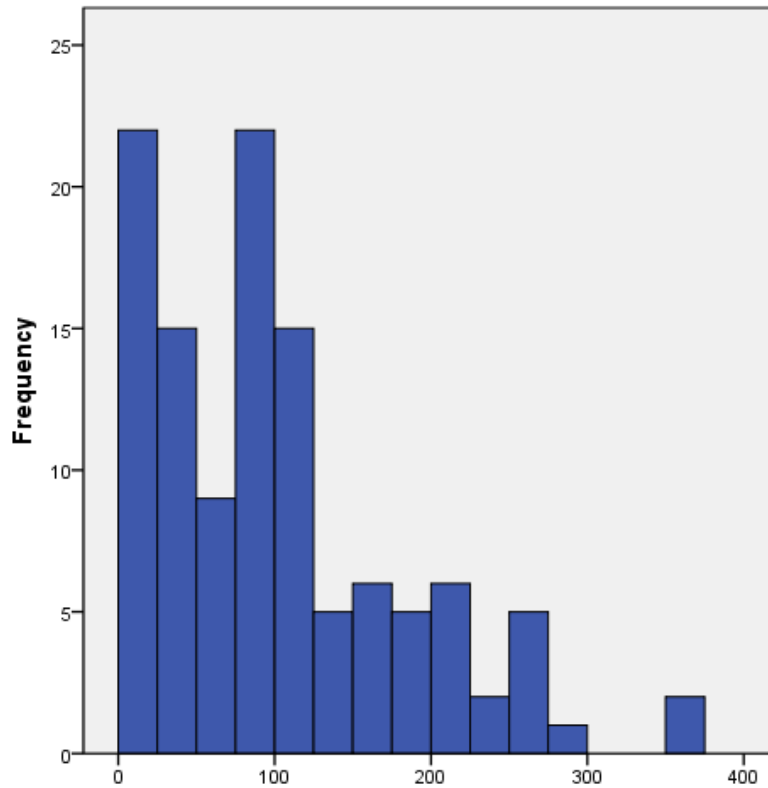
Altogether, the 115 respondents interviewed reported a total of over 11,000 nights stayed in hotels. In the last year there was an average of about 98 nights stayed in area hotels. However what is significant is the large percentage of employees who have stayed in hotels for two years or more. It could be assumed that they are doing so because no other housing is available. Or it could be that for the respondents with high numbers of nights stayed in area hotels, hotel living is a lifestyle rather than a temporary situation.

For both long term hotels guests and for those with relatively fewer hotel nights, a significant share reported a two-week-on, one-week-off work schedule or something similar but with a different time frame. These employees generally report returning home to family on their off weeks. Gas workers with specialized skills who are not directly involved in the day to day operation of the rig may work a regular work week and return home on weekends. Once again, this brings up the issue if hotel living appears to be part of their work/home culture. Among those with the fewest hotel nights, some are new to their jobs, with some more likely to move permanently to the area and many who will not. Alternatively, some in this group are simply occasional visitors to the area for their jobs.

## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

---

Figure 2: Estimated Number of Days in the Last Year in Williamsport-Area Hotels



### Housing Preferences of Hotel Guests

---

The primary research question for this study is: what are the future housing needs of those currently residing in area hotels? The interviews found evidence of two groups currently staying in the hotels; those who prefer to do so and those who are potential renters or buyers. Looking to Table 5, just over 18 percent of gas employees indicated they would prefer to rent and fewer than 4 percent indicated they would prefer to buy. For a substantial majority of those staying in hotels, hotels do and will meet their local housing needs over the long haul. Over three-fourths of those interviewed indicated they prefer to stay in hotels.



## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

---

**Table 5: Do you prefer staying in hotel or some other living arrangement in the area?**

Preference	Frequency	Percentage
Hotel	84	77.1%
Rent	20	18.3
Buy	4	3.7
RV	1	0.9
<b>Total</b>	<b>109</b>	<b>100</b>

When asked why they preferred hotels, those interviewed indicated a wide variety of reasons as shown in Table 6. The reasons can be divided into three groups. Most frequently cited were reasons associated with the hotel guest's job. In many cases the company paid for their workers' rooms. In addition, some interviewees indicated their stays in the area would be relatively short. Others were not locating permanently to the area and were therefore reluctant to relinquish their homes located elsewhere. Finally, some indicated their job required them to move from location to location frequently, therefore hotels met their needs.

The second set of reasons was associated with personal preference. A number of those interviewed indicated that staying in hotels was convenient and easier than finding a rental property for the limited time they would be staying in the area. A few cited they appreciated the privacy afforded them staying in a hotel without the roommates they would need to share a rented apartment or house. Two interviewees, both women, cited safety as a factor. One interviewee indicated that with kids at home, hotels were the best solution because they did not currently intend to relocate. Another gas employee stated that hotels were more affordable than finding a property to rent, likely a commentary on both high rental prices and their employer subsidizing their hotel stay.

Finally, a number of those interviewed pointed out the services and amenities provided by the hotel that they would not have available as a tenant or property owner, including cleaning and meal services. Some stated that the hotels made them feel welcome and appreciated events such as the weekly socials that provided free food and beer.

**ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED  
HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA**

---

**Table 7: Why do you prefer hotels when staying in Williamsport area?**

<b>Reason</b>	<b>Mentions</b>
Company Pays	19
Hotels are convenient/easier	16
Short stays in area	12
Not permanently relocating/ home is far away	10
Moves around a lot	7
Hotel services/amenities	6
Living arrangements up to employer	5
Hotels clean	3
Privacy / No roommates	3
Safety	2
Kids at home	1
Meals Provided	1
Affordable	1

Table 8 reports the responses of those interviewees who would prefer rental or owner-occupied housing to staying in hotels and who were asked why they did not pursue these other, more preferred, housing options. For potential renters, the most common response was the high cost of rentals, which have doubled and tripled in price in the area in recent years. The lack of availability was also reported and is likely connected to the concern about high rents. Separately, several of those interviewed indicated specific needs not being met in the current rental market. Two respondents specifically mentioned that they would need short term or month-to-month leases to be able to rent rather stay in a hotel. Another pair of respondents indicated the need for a furnished rental, and one lamented that they could not pay landlords with credit cards. Two respondents indicated concerns with the landlords themselves, indicating a lack of trust in landlords and the feeling that landlords provided poor service to their tenants. As there were only four interviewees that stated they were interested in buying, less is known about this small group. One respondent indicated owning a home elsewhere prevented them from renting or buying in the area.

## ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA

---

**Table 8: Why not rent or buy rather stay in hotel?**

(Asked of those who prefer non-hotel living)

Reason	Mentions
High price of rentals	5
Availability	3
Need short term lease	2
Need furnished rental	2
Own home in other area	1
Landlord doesn't take credit card	1
Can't trust landlords	1
Landlords provide poor service	1

## Conclusion

---

As of April 20, 2012, the price of natural gas had fallen under \$2 per thousand cubic feet from approximately \$4 a year ago and spiking at \$13 in 2008. Simple application of the law of supply and demand suggests when prices are low, less gas will be produced. Specifically, some natural gas producers have announced plans to reduce (but not eliminate) their planned level of drilling activity in dry gas regions of the Marcellus Shale. Hoteliers anecdotally report that their occupancy in 2012 has dropped 5-10 percentage points compared to 2011 number, though still well above industry standards.

While the pace of natural gas activity in Lycoming County appears to continue to remain relatively strong (to provide just one measure of activity, the number of drilling rigs working in the county has not dropped and Lycoming County currently has more active rigs than any other county in the Commonwealth), any declines in activity being felt in the region provide a good reminder about the cyclical nature of the natural gas industry. The level and type of activity seen in any particular area can vary considerably. Obviously, there are the market forces that shape activity. The strategic reaction of gas companies and their many service companies to changing gas prices will affect the pace of production over the short and long term. The effects of variations in natural gas felt in a given area depend on the quantity and quality of gas in that area. Of course lower prices will spur more use of natural gas which will raise prices and again spur more development. Energy is a cyclical industry. The subsequent effect of these changes on housing needs to be better understood.

More to the point here, the cyclical effects of natural gas development on an area are a result of the specialized and decentralized activities required to bring natural gas to market. From leasing to exploration, drilling, hydrofracking and pipeline and compressor station construction, each stage of natural gas development requires its own set of skills, its own workforce, and experiences a varying level of activity visible in the impacted community. The mix of housing needs between transient and permanent will also vary considerably. As a community experiences different phases of the industry the mix of people and their impact on local hotels and other more traditional forms of housing will vary.

## **ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA**

---

In the case of this study, those staying in Lycoming County hotels in March and April 2012 reflect a particular set of future housing needs. As valuable as learning their perspective via this study may be to policy and decision makers, it is important to note that the housing needs of those staying in these same hotel rooms a year ago or a year from now may be different. As such, the authors wish to emphasize that this serves as exploratory research whose conclusions suggest what the housing impacts of current hotel guests may be. It does not provide the definitive statement on the housing needs of all Marcellus industry hotel guests across time or in other geographic contexts.

That said, the results of this exploratory research do yield several interesting implications for planning to meet housing needs in Lycoming County. It may be that hotels will remain the residence choice for many gas industry companies and their workers. There may be an ongoing place in the market for hotels specifically geared toward gas employees and their needs. There might also be an opportunity for housing that is geared toward gas workers by supplying cleaning and meal service. Such a residential facility could even contract directly with companies to ensure a steady flow of guests.

While a large share of the current hotel guests indicate hotels will continue to meet their needs, about one in five indicate that they plan to find a more permanent housing arrangement at some point. While the proportion of hotel guests who will seek permanent housing will likely vary considerably, plans for development of new or rehabilitated housing in the County housing should recognize not all transient gas workers will remain so and the broad range of reasons they have not yet sought or found permanent housing in the County.

## **ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA**

---

### **Research Team**

---

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

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

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

The research team was led by the following individuals:

**Jonathan Williamson, Ph.D.**

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

**Bonita M. Kolb, Ph.D.**

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

**ASSESSING THE HOUSING NEEDS OF MARCELLUS RELATED  
HOTEL GUESTS IN LYCOMING COUNTY, PENNSYLVANIA**

---

**Appendix A: Interview Questions**

---

1. *Do you work in the natural gas industry? What do you do?*
2. *Where is your permanent residence?*
3. *Where is your employer based?*
4. *Where in the Williamsport area are you currently working*
5. *How long have you been working in the Williamsport Area?*
6. *How many times have you stayed in a Williamsport-area hotel and what is the average length of your stays?*
7. *Is your current first choice for residing in the area a hotel, or would you prefer a different living arrangement such as renting or buying a property?*
8. *If you prefer to not live at the hotel, why do you not do so?*