

THE IMPACT OF HORIZONTAL SHALE WELL DEVELOPMENT ON HOUSING:

Five-County Region Briefing Report

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Prepared by The Voinovich School of Leadership and Public Affairs



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Introduction

In July 2012, the Ohio Housing Finance Agency (OHFA) engaged the Voinovich School of Leadership and Public Affairs in research to investigate the impact of horizontal shale well drilling (HSW) on housing in Ohio. One component of the research plan, reported here, was to compile information on existing impacts in communities likely to experience continued shale development. Through the research project, it was determined the most meaningful level at which to investigate impact was at the county level. With OHFA's approval, five counties were selected. These five counties are intentionally contiguous, allowing for a regional impact analysis as well as county-specific examination.

This document contains county-level impact briefings for five contiguous counties and a summary of suggested strategies for meeting emerging housing demand in the five-county region. Each county briefing also includes data on select Census Designated Places (CDPs) that were identified early in the research process as possible focus areas for shale development.

The regional summary and county briefings incorporate information from the following sources:¹

- Publicly available horizontal shale well (HSW) location and status data
- Focus groups and key informant interviews conducted by the research team
- An internet-based environmental scan conducted by the research team
- Publicly available demographic, housing, and employment data

Opinions vary widely on the trajectory of shale development in the five counties, and on its current and future impact on housing and homelessness. This report, therefore, attempts to balance information obtained from all sources. Based on this report, OHFA intends to select three counties for a more in-depth investigation of the long-term impacts of HSW development on housing and homelessness.

How the Counties Were Selected

The Voinovich School implemented a multi-pronged approach to best examine available data and anecdotal evidence regarding current and future impacts of shale development. In October 2012, the Voinovich School ranked all 259 CDPs in the 21 counties of Ohio with HSWs. They were ranked based on the following three criteria: 1.) number of vacant rental units, 2.) number of undrilled HSW permits located within a 10 mile radius and 3.) road density² within a 10-mile radius of the CDP. The top-ranked CDPs were then mapped to show their proximity to each other in order to select counties with existing and potential shale development that are clustered geographically. This data, along with initial information obtained through qualitative sources, was discussed with the project sponsor, OHFA, and with their participation, the five counties and associated CDPs were selected. Population size, geographic proximity, and existing amount of shale development (as evident at the start of the research process) were considered when selecting the counties.

¹ See appendix for detailed information on data sources.

² Road density was calculated based on the miles of interstate, US Routes and Ohio State Routes within a 10 mile radius of the CDP.

Selected Counties and CDPs: Location, population, and horizontal shale well development activity



County Selection Criteria

- **Carroll:** small population, much HSW development
- **Columbiana:** large population, early HSW development
- **Jefferson:** medium population, early HSW development
- **Stark:** large population, preliminary HSW development
- **Tuscarawas:** medium population, preliminary HSW development

Selected Census Designated Places

County	Census Designated Places
Carroll	Carrollton Village
Columbiana	Lisbon Village Salem City
Jefferson	Steubenville City
Stark	Canton City Alliance City
Tuscarawas	New Philadelphia City

Regional Summary

"It's not just affecting Carroll County, it's affected Stark and Columbiana, and Harrison and other counties around. They're not just focusing on Carroll County anymore. They're expanding."

--HARCARTUS Community Action case worker

Input was received from over 20 housing experts active throughout the region of Ohio currently impacted by shale development. These included Metropolitan Housing Authorities and Community Action Agency directors as well as housing developers and other housing industry representatives.

When asked about the availability of affordable housing prior to shale development, regional representatives were about equally split, with some suggesting that available housing was previously able to meet community needs, and others stating that there has been an inadequate supply of quality affordable housing units for many years. Similarly, some reported that shale development has not yet had an impact on local housing (in Jefferson, Tuscarawas, and Columbiana, specifically) while others say changes in the housing market have already occurred (in Carroll). In general, regional representatives suggest that shale development workers are living in whatever accommodations they are able to find, including hotels, single-family homes, recreational vehicles, campers and trailers.

Among those reporting that the housing market in their county has changed, the most frequently mentioned changes were decreased availability of rental property, doubling or tripling of rental costs, increased displacement or eviction of current tenants, and decreased interest in participating in the Section 8 program among local property owners. Several people made comments similar to this statement from a local MHA director, *"We have seen a decline in the availability of rental units for our program because we just can't compete with the prices that these landlords are getting from the oil and gas industry workers."* As a result, regional representatives report that low-income families are moving in with family and friends, leaving the area if they have the resources to do so, or moving into substandard housing described as: *"houses that don't have electrical covers. They've got holes you can see the outside world, water leaking in, mold, all kinds of health issues."* Another regional representative succinctly described it as: *"housing that I would not even put my dog in."* When asked if they knew of efforts currently underway to address these housing concerns, several people talked about a new hotel in Columbiana County and possible hotel development in other counties.

When asked about the barriers to addressing the need for additional housing in the region, social service directors and housing developers agreed that the primary obstacles are uncertainty, lack of funding, and regulatory issues. Multiple people referenced how the lack of clear information stymies efforts to develop an effective response, with housing developers making statements such as, *"I think the problem is it's a new business area, a specific part of lodging and apartments, and you do it within the backdrop of the worst financial climate in my lifetime in the U.S. So it's pretty challenging to figure out exactly what to do and when to do it."* This uncertainty seems to primarily be the result of a lack of clear information regarding the shale development industry's future plans. As stated during one interview, *"Secrecy and where people are going are part of the proprietary nature of oil and gas companies, and I think they're going to always be reluctant to give people their plans. Which means it's going to be tough*

to do this in an organized way when people are trying to be confidential about where they're going." When asked how long they anticipate shale development will be affecting the region, regional representatives offered estimates ranging from only a few years to more than thirty, and no one seemed entirely clear about how their county was likely to be impacted, in either the short- or long-term. As one MHA director summarized, *"There is no committing to anything. You don't know where they are from day to day, let alone month to month."*

This lack of certainty contributes to the lack of funding since, as an interviewed developer described the situation, *"I can tell you right now, you're just not going to have developers that are going to come in and start building...The banking industry doesn't support it and there's just too much risk right now."* This lack of investment dollars is further exacerbated by repeated cuts to government funding programs designed to support housing and homelessness efforts. Those mentioned by regional representatives included cuts to funding for shelters, Section 8, construction or rehab of subsidized housing units, sewer/water projects and state support for local governments. Particular concerns were raised regarding the fair market rate (FMR) that HUD allocates to pay for Section 8 housing vouchers. As one MHA director described, *"HUD has lowered the FMR on one bedroom units, the second year in a row. Now, usually landlords would say, 'Okay, I will come down in the rent.' They are not saying that anymore because they just can't. It is so low they can't work with it, not with everything else going up."* Another commented, *"HUD is now going to allow the fair market rent to increase up to 35 percent higher... if you're hit by the fracking, but we're not quite sure how that will work because there's nothing there saying they're going to give us more money."*

Finally, although both social service providers and housing developers identified regulatory issues as a barrier, their specific areas of concern varied. MHA and social service representatives primarily focused on delays and difficulties dealing with government agencies that manage funding for housing and homelessness projects, making statements such as, *"The USDA should change their rules about lending money"* or *"HUD regulations are what needs to be changed."* Specific concerns focused primarily on program requirements that are difficult to accommodate in a rural setting, such as proximity of development to key amenities, and the amount of time and effort necessary for approval on even a small project. Complaints were most frequently directed at HUD, with isolated participants raising similar concerns regarding OHFA and USDA.

Unsurprisingly, housing developers and industry representatives focused primarily on regulations related to building or installing housing. Although respondents expressed some differences of opinion, specific areas of concern included increased costs due to EPA requirements for water and sewer systems as well as delays and roadblocks caused by a system of multiple installation inspections and local zoning requirements related to manufactured housing and mobile homes. One developer also complained that, if an existing mobile home park wants to expand onto available land, *"you're looking at a six-month process to get through the state and all the paperwork... and it shouldn't take that long. It's not business friendly."* As another developer stated, *"Ohio is known as fairly rigorous and that can be good, of course, in terms of having high standards, but it can also slow down the process. If workers need housing now, it can mean that the housing isn't going to be there for a year instead of six months or three months."*

Finally, when asked about what should be done to address the emerging housing shortage in this region, a variety of suggestions were offered. In terms of housing development, regional representatives suggested:

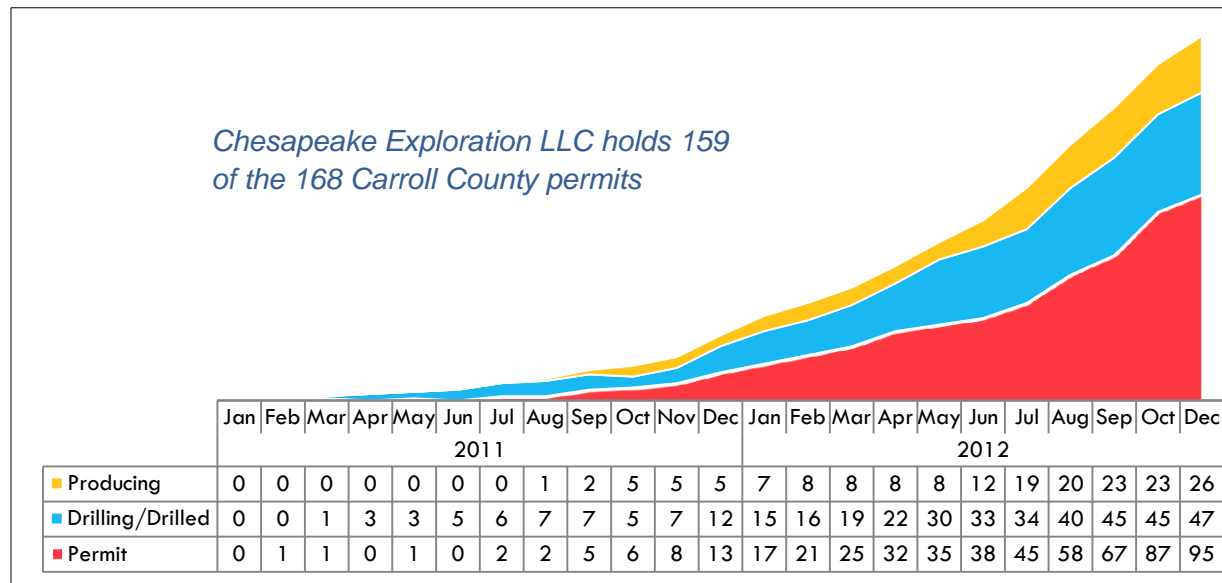
- Rehab of abandoned homes: Seen as a strategy that would reduce neighborhood blight in many of the areas with significant unoccupied residences and take advantage of existing sewer and water infrastructure, but which would require increased funding for rehabilitation projects as well as potential changes to local zoning codes in some communities.
- Subsidized housing units for low-income, elderly or disabled residents: Identified as the best method to ensure continued housing access for low-income residents, but would require ensuring that tax credit dollars and other funding sources are targeted to the region of the state impacted by shale development.
- Small (50-unit or fewer) apartment complexes: Proposed as a method for directly meeting the needs of shale development workers, these developments would primarily consist of efficiency units with kitchenettes and could potentially be converted into senior housing after the need for shale development housing has abated. This suggestion would benefit from more specific information about geographic trends in shale development as well as a more business-friendly regulatory environment for developers.
- Manufactured housing or mobile homes: Viewed as a cost-effective strategy for providing high-quality housing of the type reportedly preferred by residents of this area (single family homes as opposed to multi-unit developments). Housing industry experts vary widely in their assessment of the efficiency of Ohio's three-step inspection process, but generally agree that installation of these units would be facilitated by increased community awareness of recent improvements to this type of housing as well as improved access to and expansion of water and sewer infrastructure for manufactured housing and mobile home parks.
- Temporary housing: Recognized by some regional representatives as the best option for preventing over-building of units likely to sit empty when shale development activity abates. Regional representatives, however, always included the stipulation that the housing could not be an "eye-sore" and would need to be accompanied by a commitment to either repurpose or fully remove when no longer necessary.

Regardless of the specific development strategy pursued, regional representatives suggested that steps could be taken to help make the effort more successful, including improved water and wastewater infrastructure, regional planning that would involve working with the shale industry to better understand anticipated development trends, working with the state to "fast-track" agreed-upon development efforts, and dedicating a portion of the severance tax dollars or other funding to achieving these goals.

Carroll County

Carroll County has already experienced a significant amount of shale development. Permits for HSW were first issued in February 2011. By the end of 2012, over one-third (168) of Ohio's 482 shale well permits were in Carroll County. Drilling had taken place at 47 of those sites and there were 26 producing wells. While estimates vary, most key informants were of the opinion that Carroll County is still in the early stages of development and that shale related activity is likely to increase for at least the next couple of years and perhaps for several decades to come. As several regional representatives said of the matter, "We all figure we are just in the early stages" and "It's almost like gambling.... We don't know."

Horizontal shale well development status in Carroll County

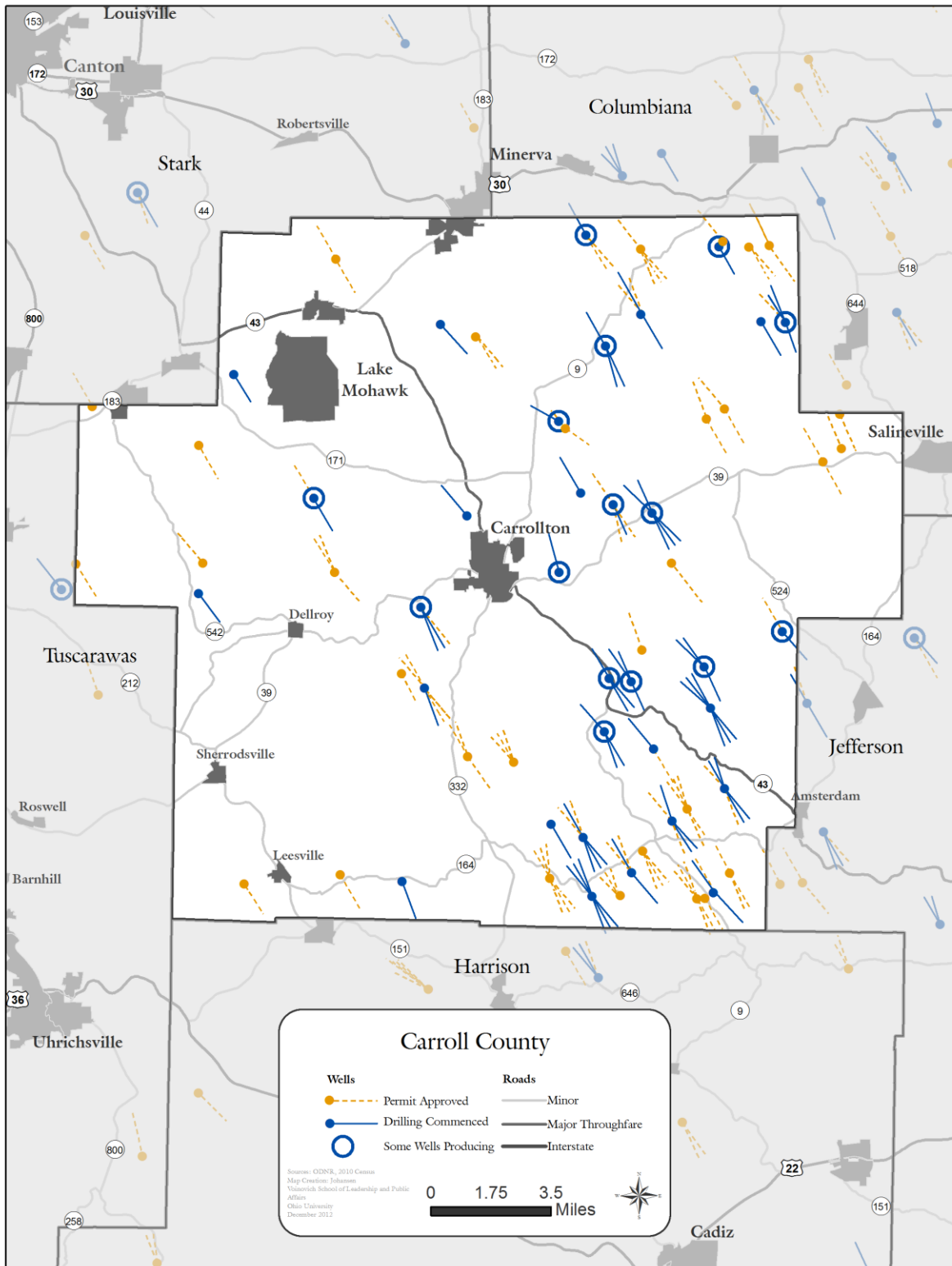


Source: Ohio Department of Natural Resources RBDMS database and Marcellus Shale and Utica Shale Spreadsheets

HSW permit, drilling and producing locations are primarily located in the central and northern portions of the county (see map on following page). As of September 2012, at least eight companies that support HSW drilling had opened facilities in the county, according to Glenn Enslin, Carroll County Economic Development Director³. In addition, a Carroll County focus group participant reported that, "Chesapeake Energy informed us [recently] their intent by next spring is to double the rig count in this county."

³ http://www.timesreporter.com/newsnow/x1851399311/Carroll-County-is-Utica-shale-capital-of-Ohio?zc_p=0

Carroll County horizontal well development permit and drilling locations



Housing

Prior to shale development, Carroll County reportedly had excess housing stock, although not as much as some of the neighboring counties. Two affordable housing complexes are located within the county, providing what most service providers describe as an inadequate number of units based on local need. There is some disagreement about whether the community would benefit most from additional affordable housing in general or units designed for the elderly or disabled. For many years, Carroll County has not had a homeless shelter, MHA office or dedicated Section 8 vouchers.

Shale industry workers residing in Carroll County are reportedly living in a range of accommodations, most often hotels, recreational vehicles and rented single family homes. As a result, community members state that access to rental housing as well as houses or land for purchase has decreased markedly. Rental prices, in particular, are reported to have gone up, although there is some disagreement about the extent of these increases. Many people report prices have doubled or even tripled, but a few suggest this primarily reflects increased costs associated with catering to the specific needs of shale development workers, such as the desire for short-term rentals or the inclusion of furnishings, cleaning services and utility costs in the cost of rent.

Many service providers report that long-term, low-income renters have been forced to move as a result of increased demand for rental housing in Carroll County. Evidence suggests that these residents either move in with family or friends, find lower-quality rental units that they can still afford, or move out of the county. In general, community members suggest that some action should be taken to increase housing availability, which could include developing additional units or improving housing services (such as establishing a Carroll County MHA office and voucher program, ideally with a more realistic fair market rate). However, no efforts to address this issue appear to have gone beyond the planning stages. The idea that seemed to have progressed farthest – a plan to develop new rental housing for shale workers – was repeatedly described as having been blocked by community leaders. Other identified barriers to development included the high level of uncertainty about shale development's trajectory, lack of adequate land, lack of water and wastewater infrastructure, concerns about the risks of overbuilding, and an overall lack of funding for development efforts. Several individuals suggested that Carroll County could benefit from additional information and assistance to develop an effective response plan.

Demographic and Housing Information

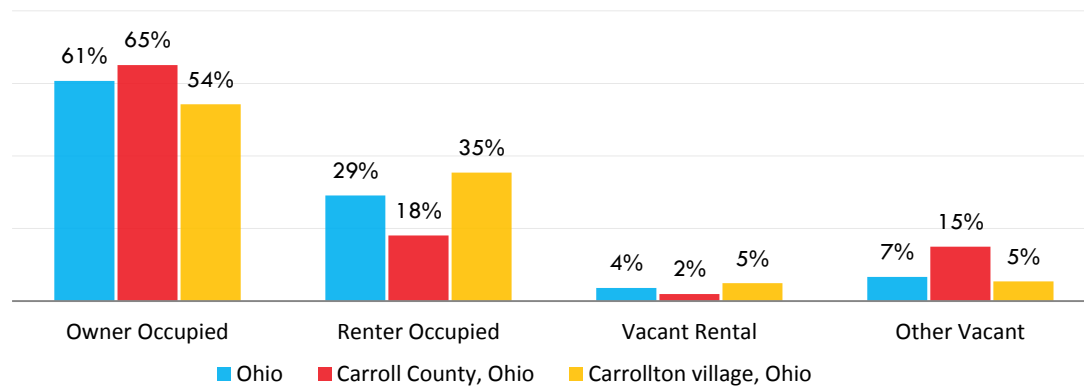
This section provides an overview of housing conditions, income and unemployment for households in Carroll County prior to shale development.

	Population	Households	Housing Units	Occupied Units		Vacant Units	
				Owner	Renter	Vacant Rental	Other
Carrollton Village, Ohio	3,241	1,347	1,502	815	532	74	81
Carroll County, Ohio	28,836	11,385*	13,698	8,910	2,475	262	2,051

Source: U.S. Census Bureau, 2010 Census of Population

*Corrected October 2013

Housing by type of occupancy



Source: U.S. Census Bureau, 2010 Census of Population

- Carroll County has the smallest population of the five counties profiled in this report.
- Prior to shale development, sparsely populated Carroll County had very little rented property with only 262 vacant rental units.
- Compared to Ohio (61%), a larger share of all housing is owner occupied (65%).
- “Other Vacant” housing includes vacant for sale, vacant not occupied, vacant sold not occupied, seasonal use, and migratory housing.

Housing costs

Area	Median Gross Monthly Rent	Median Gross Rent as a Percent of Household Income
Carroll County, Ohio	\$578	28.1%
Ohio	\$697	30.1%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

Carroll County household income by gross rent as a percentage of household income

	Less than \$10,000		\$10,000 to \$19,999		\$20,000 to \$34,999		\$35,000 to \$49,999		\$50,000 or more	
Less than 35 percent	30	9.7%	132	27.3%	307	50.0%	509	93.2%	193	76.9%
35 percent or more	260	84.4%	254	52.5%	159	25.9%	2	0.4%	0	0.0%
Not computed	18	5.8%	98	20.2%	148	24.1%	35	6.4%	58	23.1%
Total	308	100.0%	484	100.0%	614	100%	546	100.0%	251	100.0%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

- Prior to shale development, median gross rent in Carroll County was over \$100 less per month on average than in Ohio.
- Over half of households with incomes of less than \$20,000 applied 35 percent or more of their income toward the cost of housing.

Income, poverty and unemployment

	Median Household Income*	Poverty Rate**	October 2012 Unemployment Rate***	2011 Unemployment Rate***
Carroll County, Ohio	\$ 43,323	17.4%	6.5%	9.8%
Ohio	\$ 48,071	15.8%	6.3%	8.6%

Source: *U.S. Census Bureau; 2011 American Community Survey 5-year estimates

** U.S. Census Bureau; 2011 American Community Survey 3-year estimates

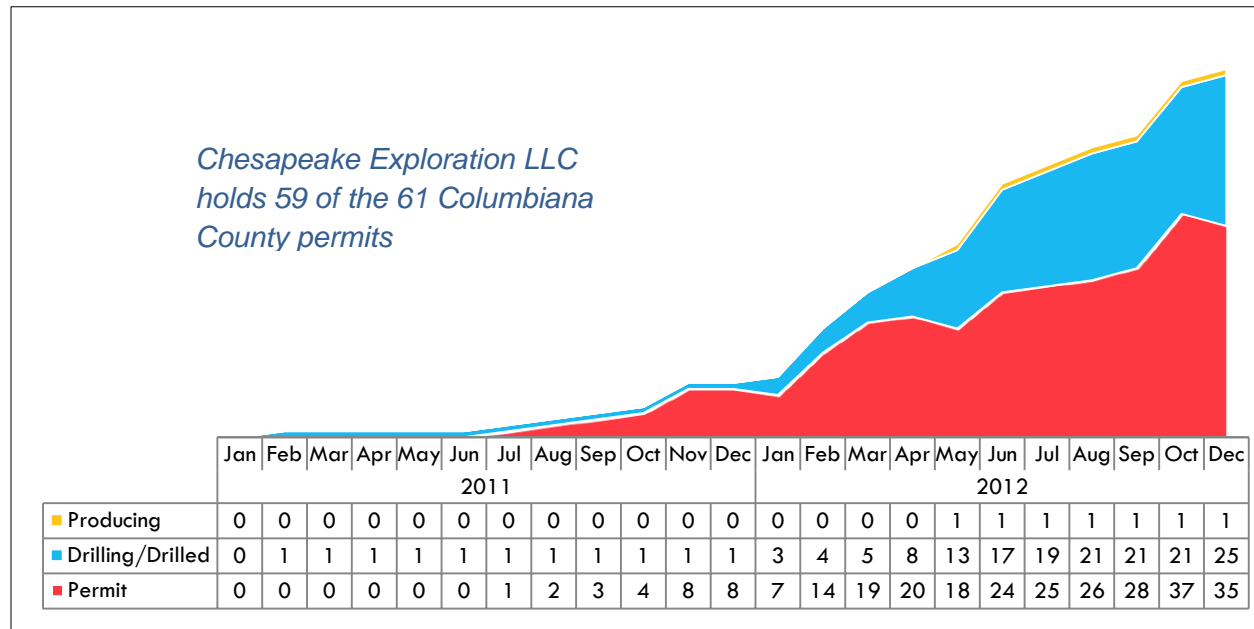
*** Ohio Labor Market Information; Ohio Department of Job and Family Services

- Based on the most current information available, Carroll County's median household income is almost \$5,000 less than the Ohio average amount.
- Carroll County's poverty rate for the period of 2009 – 2011 was almost two percentage points higher than Ohio's rate.
- Since 2011, the unemployment rate in Carroll County has fallen and in October 2012 was just slightly higher than the Ohio rate. Many factors, possibly including shale development, have likely contributed to the decrease.

Columbiana County

Columbiana County is in the early stages of shale development. Permits for horizontal shale well development in the county began being issued in 2009, but the majority of drilling activity did not commence until January 2012. By the end of 2012, a total of 61 HSW permits had been approved for the county, drilling had taken place at 25 permit sites, and there was one producing well. Key informants estimate that additional well development increase toward the end of 2013 into early 2014. As one Columbiana County representative predicted, *“I think it’s going to happen; it’s just on a slower track than a lot of folks anticipated even six months ago.”*

Horizontal shale well development status in Columbiana County

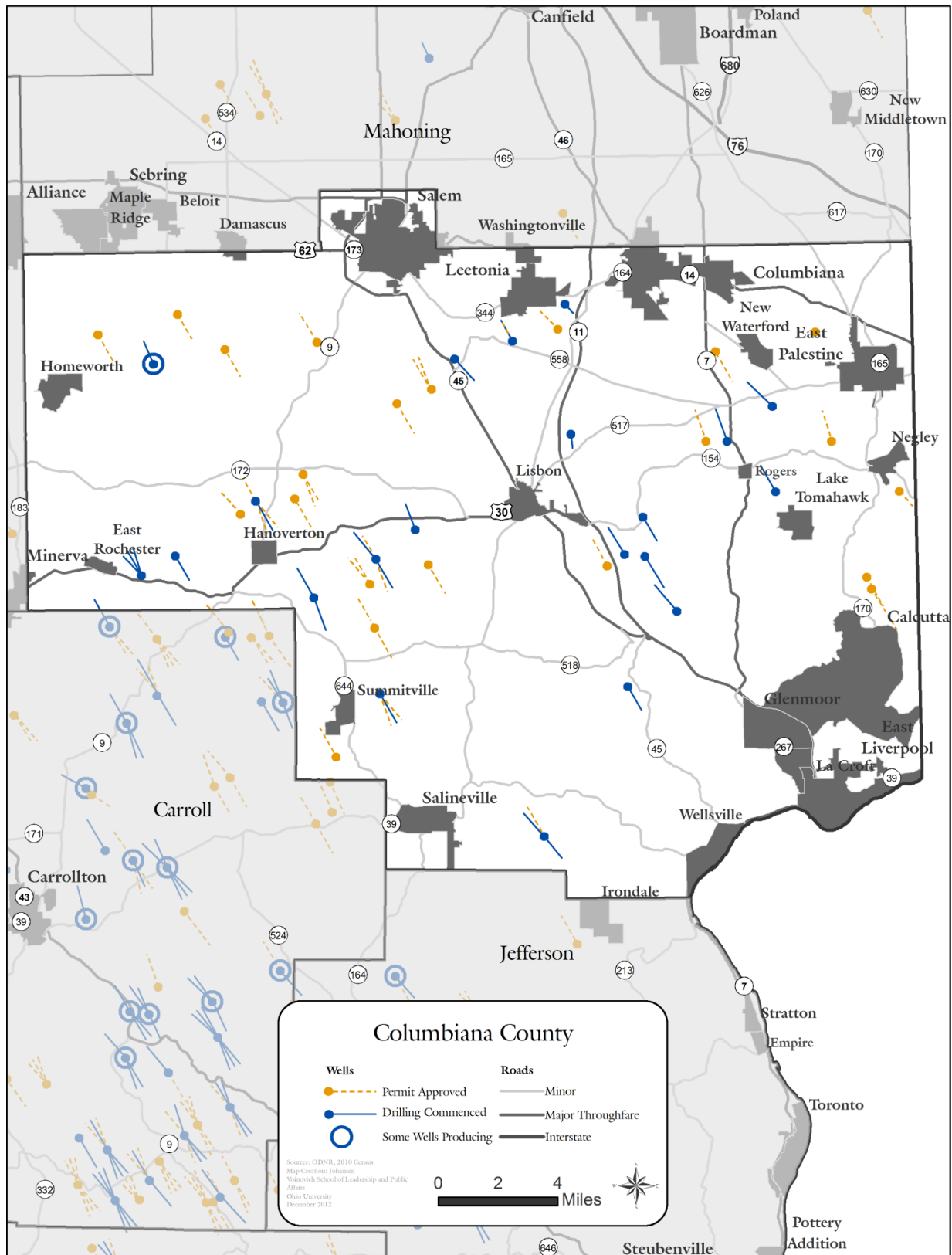


Source: Ohio Department of Natural Resources RBDMS database and Marcellus Shale and Utica Shale Spreadsheets

HSW permit, drilling and producing locations are primarily in the central and northern portions of the county (see map on following page). In addition to the renewal of well development activity that is expected in late 2013 or early 2014, the county is anticipating a significant economic boom due to the development of several shale-related industries. M3 Midstream LLC, Chesapeake Exploration LLC, and EV Energy Partners are investing \$900 million to develop a natural gas processing operation in Columbiana and Harrison counties. Arrowhead Utica Pipelines plan to spend over \$20 million to build a gas-transfer facility in the county⁴ and several new distribution facilities are under construction. Furthermore, a plant that converts ethane to ethylene, known as a “cracker plant,” is slated for construction in Manacka, Pennsylvania, only 15 miles from the Columbiana County border. It is estimated the plant will employ between 10,000 and 20,000 people full-time. These and other development activities in the region are likely to lead to a large influx of both temporary and permanent workers in the coming years.

⁴ <http://www.reviewonline.com/page/content.detail/id/559267/Riverfront-completed-with-stimulus-funds.html?nav=5008> September 1, 2012

Columbiana County horizontal well development permit and drilling locations



Housing

Housing has been a challenge in Columbiana County for a long time according to a Columbiana County Department of Job and Family Services (DJFS) spokesperson. The county does not have a lot of available housing and a portion of what is available is of poor quality. The local Housing Authority reported that rents are slowly rising. The DJFS holds that this has affected low-income workers the most. The bulk of their other clients have fairly stable housing but recently they have had *“a lot of folks who have basically doubled up; living in with relatives or friends.”* Their clientele are taking advantage of the prevention, retention and contingency program, provided through Temporary Assistance for Needy Families (TANF) funding, to help with their initial month’s rent and security deposit. A DJFS administrator stated: *“We are seeing an increase in what the landlords are charging, and we are attributing that to the fact that the market is a little richer than it was before the shale people came.”*

The lack of affordable housing has resulted in shale development workers staying in local hotels or motels. This includes the largest facility in the county, a hotel on the outskirts of Lisbon, the county seat, which is located on the edge of the only four lane highway in the county. A DJFS employee observed that, *“You can see trucks there [hotel in Lisbon] every single evening.”* The employee added, *“They have even opened a restaurant next door because they needed a place for these guys to be able to eat.”*

The local Continuum of Care, a consortium of social service agencies, serves as the hub for local housing efforts. A DJFS administrator observed that, *“One of the problems is there are not a lot of funds to address this particular issue.”* Local agencies utilize what little funding they have to address area housing and homelessness issues. It was reported that the local Community Action Agency has a Rental Assistance Program and operates the county’s homeless shelter. In addition, a local mental health provider has some housing assistance funds. Other services are provided through Housing and Urban Development (HUD) and the Section 8 Housing Choice Voucher Program.

On a positive note, it was reported that home sales in Columbiana County have increased,⁵ likely due to the National Association of Home Builders naming the Youngstown Metropolitan Area, in bordering Mahoning County, the most affordable market in which to buy a home in the United States.

When asked how long changes in the housing market will last, a DJFS representative commented, *“I think we’ve probably seen the tip of the iceberg right now. If we start to see a lot of these wells that have been drilled go into production in early 2014, then I think we’re going to see the housing market really transformed here.”*

⁵ <http://www.vindy.com/news/2012/aug/30/home-sales-stay-strong-in-valley/> August 30, 2012

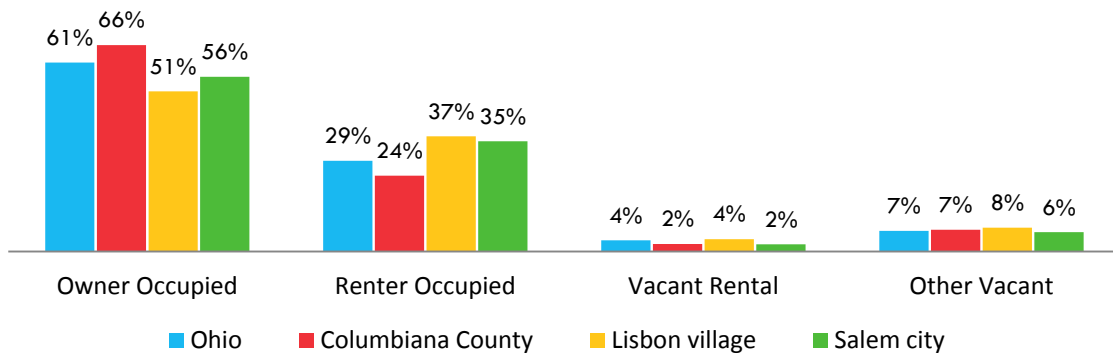
Demographic and Housing Information

This section provides an overview of housing conditions, income and unemployment for households in Columbiana County prior to shale development.

Area	Population	Households	Housing Units	Occupied Units		Vacant Units	
				Owner	Renter	Vacant Rental	Other
Lisbon Village	2,821	1,138	1,287	662	476	51	98
Salem City	12,303	5,272	5,763	3,233	2,039	133	358
Columbiana County	107,841	42,683	47,088	31,213	11,470	1,118	3,287

Source: U.S. Census Bureau, 2010 Census of Population

Housing by type of occupancy



Source: U.S. Census Bureau, 2010 Census of Population

- Columbiana County is the second most populous of the five counties profiled in this report.
- There was less renter occupied housing in Columbiana County compared to Ohio.
- Salem City has more than twice as many available rental housing units than Lisbon Village.
- “Other Vacant” housing includes vacant for sale, vacant not occupied, vacant sold not occupied, seasonal use, and migratory housing.

Housing Costs

Area	Median Gross Monthly Rent	Median Gross Rent as a Percent of Household Income
Columbiana County	\$575	28.5%
Ohio	\$697	30.1%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

Columbiana County household income by gross rent as a percentage of household income

	Less than \$10,000		\$10,000 to \$19,999		\$20,000 to \$34,999		\$35,000 to \$49,999		\$50,000 or more	
Less than 35 percent	166	7.9%	897	32.0%	1,822	68.8%	1,370	85.8%	1,397	85.6%
35 percent or more	1,519	72.0%	1,479	52.8%	545	20.6%	27	1.7%	0	0.0%
Not computed	424	20.1%	426	15.2%	282	10.6%	200	12.5%	235	14.4%
Total	2,109	100.0%	2,802	100.0%	2,649	100.0%	1,597	100%	1,632	100.0%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

- Prior to shale development, median gross rent in Columbiana County was \$120 less per month than Ohio's average.
- Over half of households with incomes less than \$20,000 paid 35% or more of their income for rent.

Income, poverty and unemployment

Area	Median Household Income*	Poverty Rate**	October 2012 Unemployment Rate***	2011 Unemployment Rate***
Columbiana County	\$41,003	17.1%	7.0%	10.2%
Ohio	\$48,071	15.8%	6.3%	8.6%

Source: *U.S. Census Bureau; 2011 American Community Survey 5-year estimates

** U.S. Census Bureau; 2011 American Community Survey 3-year estimates

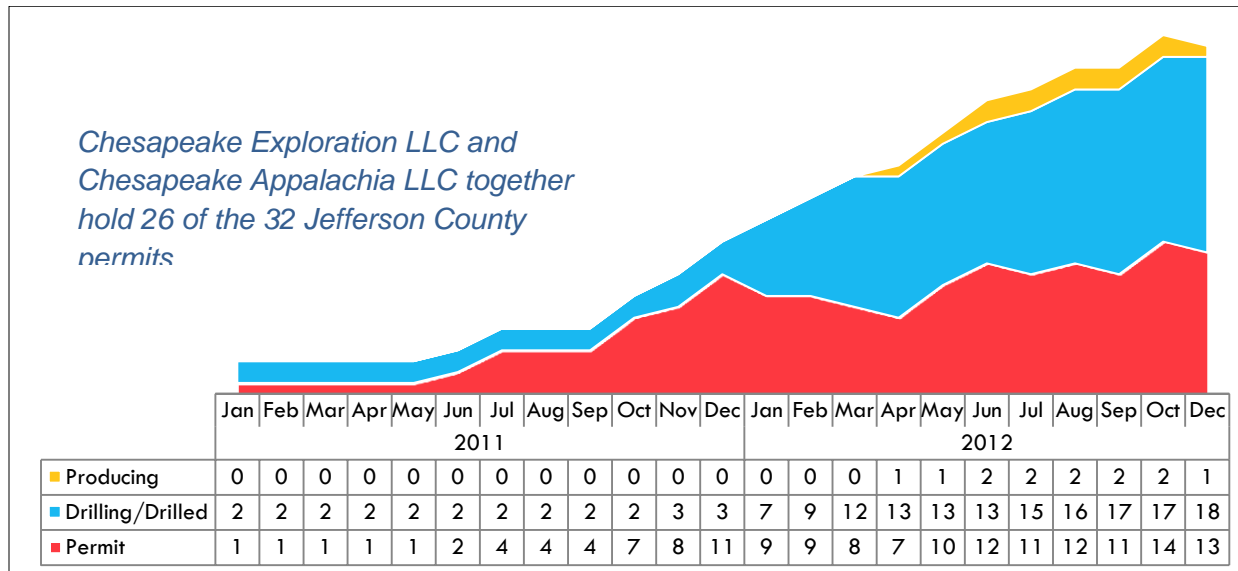
*** Ohio Labor Market Information; Ohio Department of Job and Family Services

- Based on the most current information available, Columbiana County's median household income is \$7,000 less than the Ohio average.
- Columbiana County's poverty rate for the period of 2009-2011 was 1.3 percentage points higher than the Ohio rate.
- Since 2011, the unemployment rate in Columbiana County has fallen, but remains somewhat higher than the Ohio rate. Many factors, possibly including shale development, contributed to this decrease.

Jefferson County

Jefferson County is in the early stages of shale development. Permits for horizontal shale well development in the county were first issued in 2009, but most drilling activity commenced in January 2012. By the end of 2012, 32 HSW permits had been approved for the county, drilling had taken place at 18 permit sites, and there was one producing well.⁶ According to the Jefferson County Metropolitan Housing Authority, Jefferson County is in the “early, early stages” of shale development. Although individuals have received payments for mineral rights, little other activity has occurred.

Horizontal shale well development status in Jefferson County



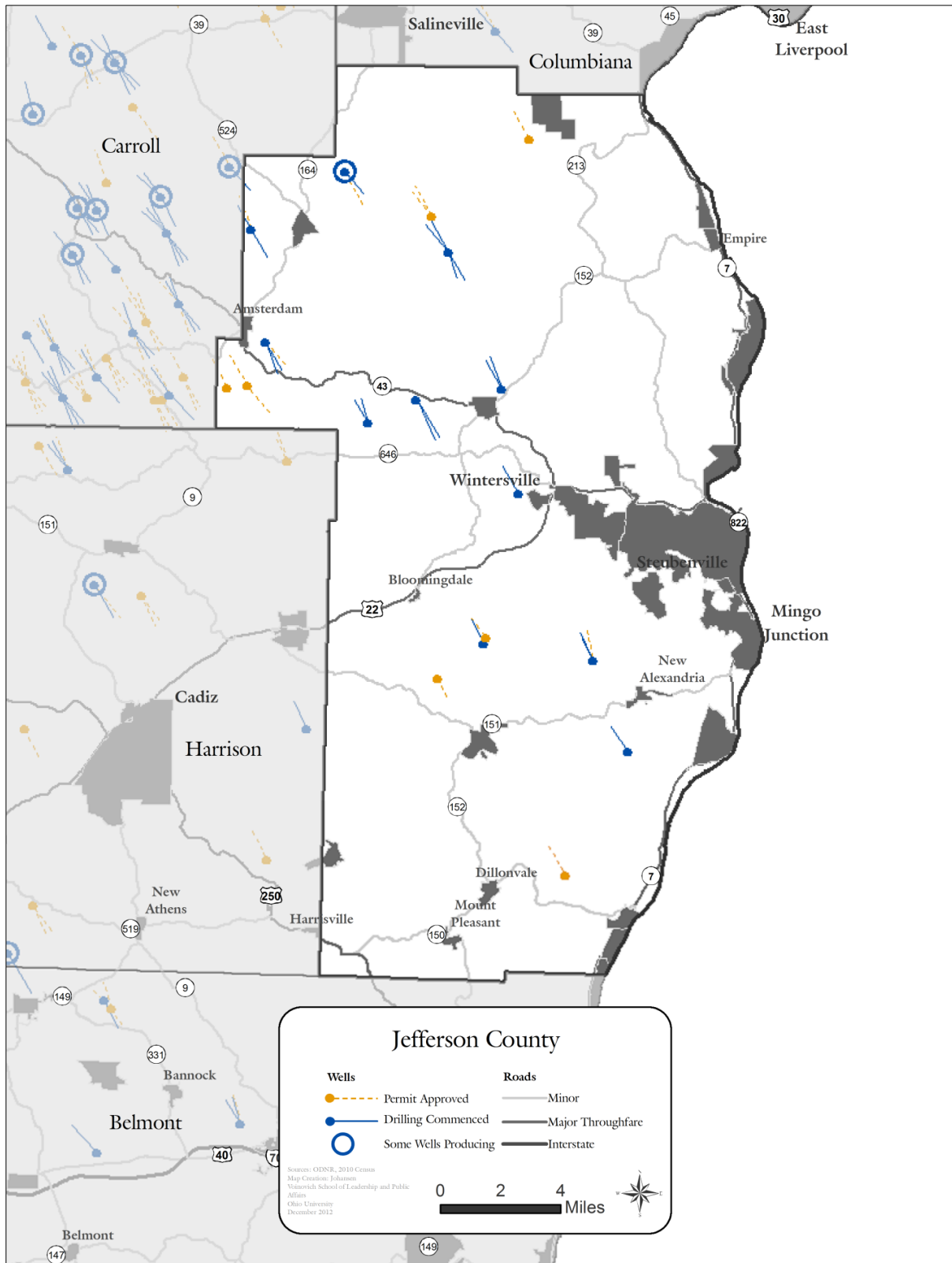
Source: Ohio Department of Natural Resources RBDMS database and Marcellus Shale and Utica Shale Spreadsheets

HSW permit, drilling and producing locations are primarily in the northwest and southern portions of the county (see map on following page). In addition to drilling activity, over the past year, Jefferson County attracted over a dozen new operational support businesses working in the shale development industry. These businesses are projected to provide over 500 jobs to Jefferson County.⁷

⁶ Due to a discrepancy between the well permit information in the two Ohio Department of Natural Resources data sources, there is one less producing well in December than in previous months. See Appendix for description of well permit data sources.

⁷ <http://www.eidohio.org/tag/jefferson-county/>

Jefferson County shale well development permit and development locations



Housing

In addition to demand from shale development in the county, Jefferson County is reportedly becoming a regional source of housing for temporary HSW drill employees and long-term personnel connected to operational support businesses. Progress Alliance, an economic development partnership in the area, note three types of shale workers seeking housing in Jefferson County:

- Permanent employees: Management and other experts- individuals residing for more than three years, who are buying homes and bringing their families.
- Temporary employees: Management and individuals with high-level technical skills-these employees are expected to be in the area for about three years and will bring their families. They receive a per diem until they locate permanent housing (per diem is time limited).
- Short term employees: Drillers and other workers associated with the drilling activity- these employees receive a per diem and share housing with other workers. These houses are rented directly by the companies.

Progress Alliance is currently working to address the housing needs of each type of shale employee. To successfully meet housing needs, Progress Alliance is working with at least three companies- Express Energy, Mark West Energy Partners, and Hess Corporation- to assist workers in finding available homes and apartments in Jefferson County.

Progress Alliance has placed workers in over 100 homes to date. Most placements are primarily in single-family homes. Progress Alliance considers this an important role as it allows Steubenville and surrounding areas to capitalize on the revenue these workers provide to landlords and area businesses while attempting to maintain an available and affordable rental market for residents.

Most focus group participants and key informants agreed that there is not a lack of available housing in Jefferson County, especially in Steubenville. According to Progress Alliance, the ample housing stock available for rent in Steubenville is attributed to a significant reduction in population, due to the loss of manufacturing jobs.

It is reported by several informants that a considerable number of shale development employees working in Jefferson and surrounding counties are now living in Steubenville. A developer participating in a focus group in Carroll County commented on the lack of housing in the immediate area, citing the migration of shale workers to Jefferson County for housing: *"I've heard directly from companies that they are going as far as Steubenville and Canton, because they don't have the housing here [Carroll County]."*

Progress Alliance is looking for additional properties in Jefferson County to recommend to shale-related workers who are currently commuting into Ohio from Pennsylvania. With the amenities and available housing available in the area, Jefferson County representatives are hoping they will be able to attract interested shale workers desiring to relocate to Ohio.

Jefferson County MHA held that there are always a number of residents lacking permanent housing but contended that this is not necessarily because there is a shortage of housing. *“The people who have vouchers are able to find units. We haven’t had an issue in the last few months with people finding units,”* reported a representative from Jefferson County MHA. The only effect Jefferson County MHA has seen since the shale development started is an increase in the number of voucher clients coming from Carroll County in search for housing. Jefferson County DJFS maintains that there has not been a decrease in the availability of housing for low-income or homeless individuals; housing is still available in Jefferson County.

Although rental prices do not appear to be rising, Progress Alliance and Jefferson County DJFS have expressed concerns over the possibility of private landlords raising rents in order to capitalize on the shale development boom. Both organizations expressed concern about the impact that higher rent prices would have on existing local renters. Concern exists for those just above the qualifying income for Section 8 housing. It was reported that these individuals may be greatly impacted if landlords elect to raise rents when leases come up for renewal.

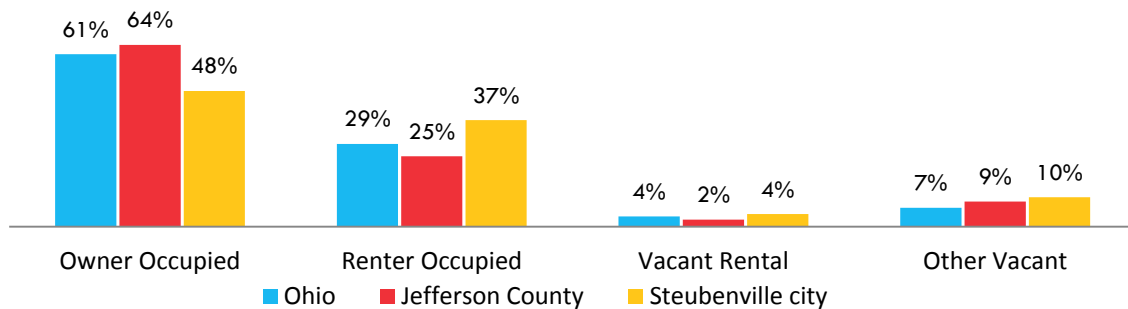
Demographic and Housing Information

This section provides an overview of housing conditions, income and unemployment for households in Jefferson County prior to shale development.

Area	Population	Households	Housing Units	Occupied Units		Vacant Units	
				Owner	Renter	Vacant Rental	Other
Steubenville City	18,659	7,548	8,857	4,227	3,321	393	916
Jefferson County	69,709	29,109	32,826	20,979	8,130	816	2,901

Source: U.S. Census Bureau, 2010 Census of Population

Housing by type of occupancy



Source: U.S. Census Bureau, 2010 Census of Population

- With just under 70,000 inhabitants, Jefferson County has the second smallest population of the five profiled counties.
- In 2010, over one quarter of all housing units in Jefferson County were located in Steubenville City.
- In Steubenville City, a much larger proportion of housing is renter occupied than the state average.
- In 2010, there was little vacant rental property in Steubenville City and the county.
- The percentage of “other vacant” housing in both Steubenville and Jefferson County is higher than the state average.
- “Other Vacant” housing includes vacant for sale, vacant not occupied, vacant sold not occupied, seasonal use, and migratory housing.

Housing costs

Area	Median Gross Monthly Rent	Median Gross Rent as a Percent of Household Income
Jefferson County	\$559	30.6%
Ohio	\$697	30.1%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

Jefferson County household income by gross rent as a percentage of household income

	Less than \$10,000		\$10,000 to \$19,999		\$20,000 to \$34,999		\$35,000 to \$49,999		\$50,000 or more	
Less than 35 percent	234	11.9%	561	28.1%	1,183	74.5%	742	76.3%	936	84.3%
35 percent or more	1,322	67.4%	1,151	57.7%	206	13.0%	66	6.8%	0	0.0%
Not computed	406	20.7%	283	14.2%	199	12.5%	164	16.9%	174	15.7%
Total	1,962	100.0%	1,995	100.0%	1,588	100%	972	100.0%	1,110	100.0%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

- Prior to shale development, the median gross rent in Jefferson County was approximately \$150 less per month than the Ohio average.
- Over half of all households with incomes less than \$20,000 applied 35 percent or more of their income to pay for housing.

Income, poverty and unemployment

	Median Household Income*	Poverty Rate**	October 2012 Unemployment Rate***	2011 Unemployment Rate***
Jefferson County	\$39,453	16.6%	9.6%	11.2%
Ohio	\$ 48,071	15.8%	6.3%	8.6%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

** U.S. Census Bureau; 2011 American Community Survey 3-year estimates

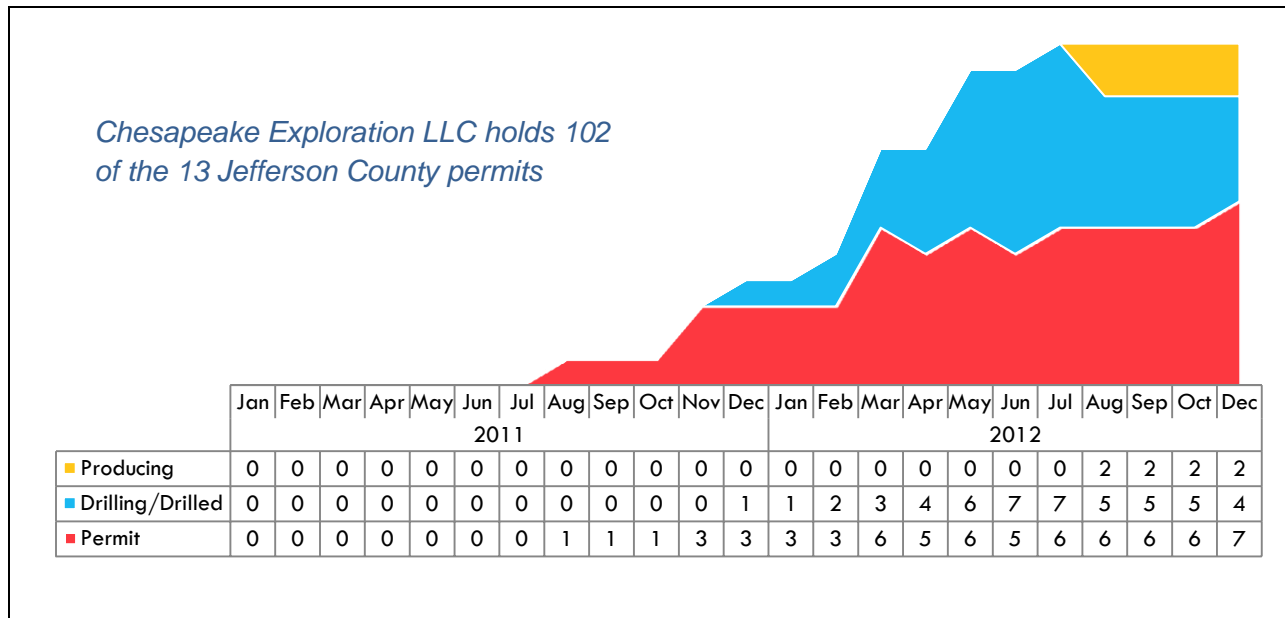
*** Ohio Labor Market Information; Ohio Department of Job and Family Services

- Based on the most current information available, Jefferson County's median household income is almost \$9,000 less than the Ohio average.
- Jefferson County's poverty rate for the period of 2009 – 2011 was slightly higher than the state.
- Since 2011, the unemployment rate in Jefferson County has fallen, but in October 2012, it remained substantially higher than the Ohio rate.

Stark County

Stark County is in the very early stages of shale development, currently seeing only startup initiatives. Permits for horizontal shale well development in the county were first issued in August 2011, with the first drilling activity taking place the following December. By the end of 2012, a total of 13 permits had been approved for the county with 2 in production.

Horizontal shale well development status in Stark County



Source: Ohio Department of Natural Resources RBDMS database and Marcellus Shale and Utica Shale Spreadsheets.

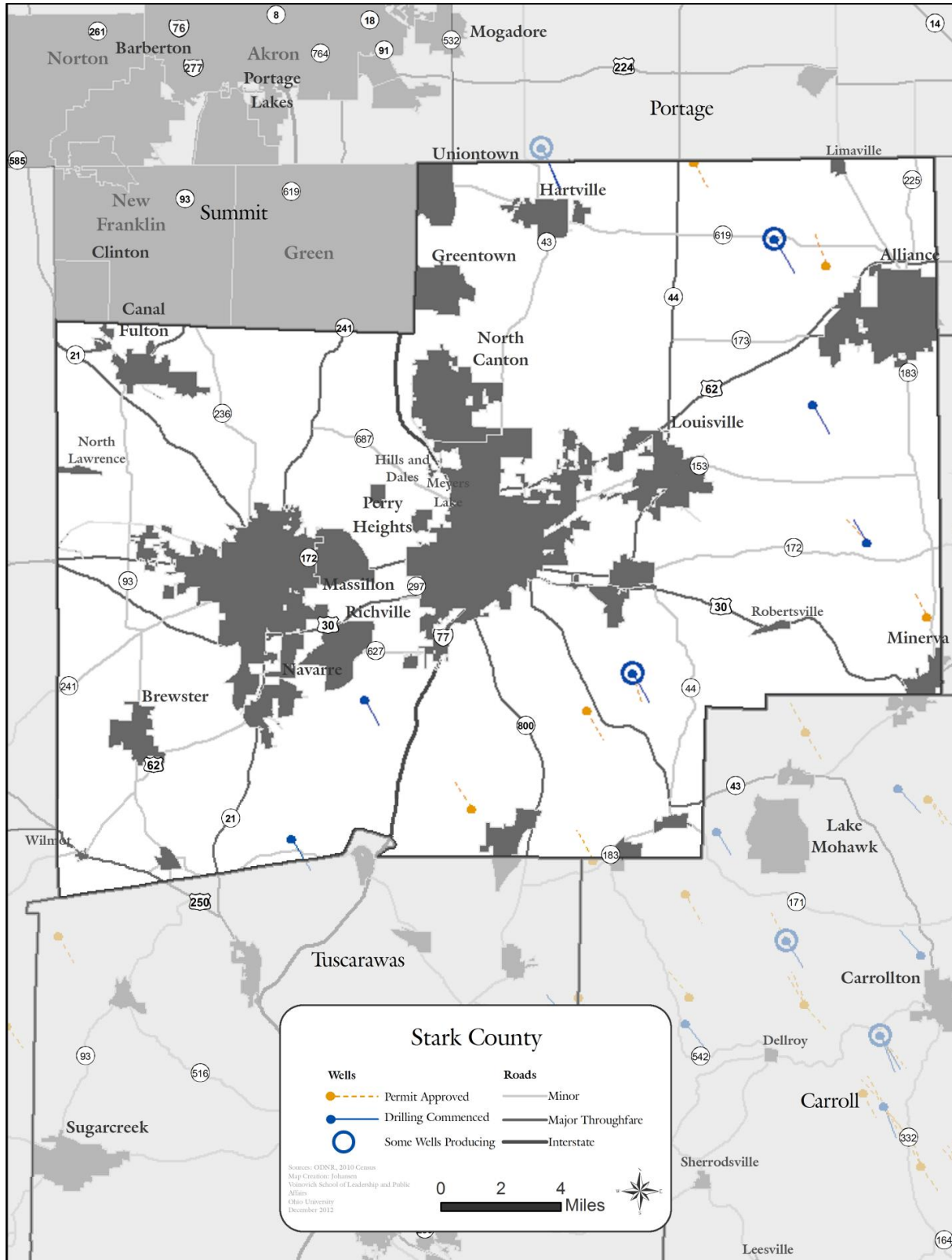
HSW permit, drilling and producing locations are primarily in the eastern side of the county (see map on following page). Regarding the limited shale well development in the county, one focus group participant noted, *“There’s not a ton of wells that fall in Canton, but [Canton] offers maybe the largest city in this ring of the Utica. So they see that as opportunity to offer that [Canton serve] as the business hub side of it more than the actual well work. And they are saying 20-30 years and trying to prepare for such.”*

In August 2012, Baker Hughes Oilfield Operations of Texas purchased land in the city of Massillon in Stark County and received state credits to build a \$64 million operational support facility that reportedly would create 700 jobs. Plans for this facility are stalled, possibly due to a decrease in gas prices⁸.

Because Canton is a regional hub, the city and its metropolitan area may draw downstream businesses in the shale industry. Canton may potentially also experience an influx of residents in neighboring counties who are unable to find housing locally.

⁸ <http://www.ohio.com/business/utica/baker-hughes-buys-massillon-land-for-utica-shale-facility-1.330020>

Stark County horizontal shale well development permit and drilling locations



Housing

In Stark County so far, there has been limited observed change in housing and homelessness. This is likely due, in part, to the larger city of Canton, which has more available housing that can accommodate new workers in the area. As shale development progresses in the state, the housing availability in Canton may attract shale workers from neighboring counties who are willing to commute to their worksites. The city of Alliance, located on the eastern edge of Stark County may also experience a similar increase of shale workers due to its proximity to permitted and active drill sites in Stark and Columbiana counties. Because of its population size, available workforce, and existing infrastructure, Canton may also become home to a number of operational support businesses whose employees and families will likely relocate to the area. As shale development continues, communities located in Stark County may see an influx of individuals moving from smaller, neighboring counties experiencing housing shortages.

Realtors in Stark County have reported a large increase in the number of out-of-state families looking for homes in the area.⁹ Although there has been little change in the housing market, advocates for homeless and low-income families have expressed concerns over how shale workers will affect an already limited subsidized housing market. A DJFS spokesperson commented, *“Stark County, like many other counties in Ohio, is lacking enough housing starts for low-income as well as the homeless population.”* The local legal aid office has already observed a decrease in the amount of available subsidized housing and attributes this to landlords being able to rent apartments for much higher amounts. A local realtor noted in an on-line article in June, 2012 that in Stark County, the average rent for a three-bedroom unit is nearly double what it was a year ago.¹⁰

⁹ <http://www.ideastream.org/news/feature/47415>

¹⁰ <http://www.ideastream.org/news/feature/47415>

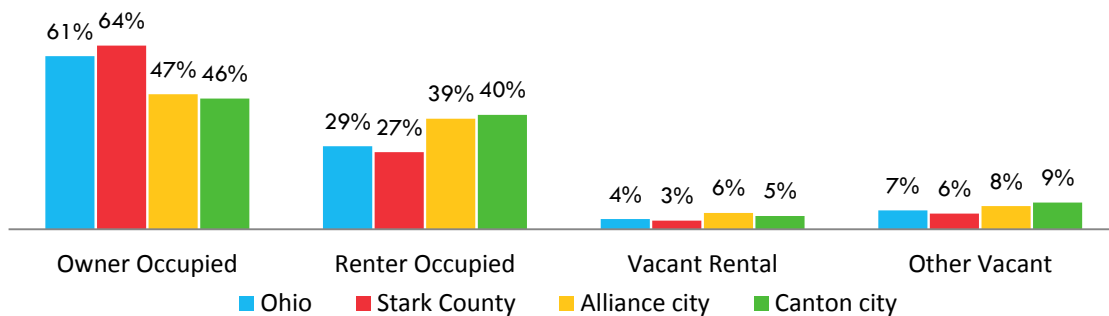
Demographic and Housing Information

This section provides an overview of housing conditions, income and unemployment for households in Stark County prior to shale development.

Area	Population	Households	Housing Units	Occupied Units		Vacant Units	
				Owner	Renter	Vacant Rental	Other
Alliance City, Ohio	22,322	8,631	10,022	4,745	3,886	575	816
Canton City, Ohio	73,007	29,705	34,571	15,837	13,868	1,618	3,248
Stark County, Ohio	375,586	151,089	165,215	106,365	44,724	4,993	9,133

Source: U.S. Census Bureau, 2010 Census of Population

Housing by type of occupancy



Source: U.S. Census Bureau, 2010 Census of Population

- Stark County is the most populous of all the profiled counties.
- There is proportionately less owner occupied and more renter occupied and vacant rental properties in Alliance and Canton Cities than in the county or the state.
- “Other Vacant” housing includes vacant for sale, vacant not occupied, vacant sold not occupied, seasonal use, and migratory housing.

Housing costs

Area	Median Gross Monthly Rent	Median Gross Rent as a Percent of Household Income
Stark County, Ohio	\$642	29.6%
Ohio	\$697	30.1%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

Stark County household income by gross rent as a percentage of household income

	Less than \$10,000		\$10,000 to \$19,999		\$20,000 to \$34,999		\$35,000 to \$49,999		\$50,000 or more	
Less than 35 percent	1,310	16.5%	2,652	26.1%	7,267	65.4%	6,335	91.5%	7,157	91.7%
35 percent or more	5,501	69.1%	7,061	69.5%	3,491	31.4%	370	5.3%	76	1.0%
Not computed	1,148	14.4%	449	4.4%	351	3.2%	216	3.1%	576	7.4%
Total	7,959	100.0%	10,162	100.0%	11,109	100.0%	6,921	100.0%	7,809	100.0%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

- Prior to shale development, the median gross rent in Stark County was \$55 less per month than the state average for Ohio.
- Almost 70% of the households whose income was less than \$20,000 allot 35% or more of their income towards rent.

Income, poverty and unemployment

	Median Household Income*	Poverty Rate**	October 2012 Unemployment Rate***	2011 Unemployment Rate***
Stark County, Ohio	\$45,347	15.2%	6.2%	9.2%
Ohio	\$48,071	15.8%	6.3%	8.6%

Source: *U.S. Census Bureau; 2011 American Community Survey 5-year estimates

** U.S. Census Bureau; 2011 American Community Survey 3-year estimates

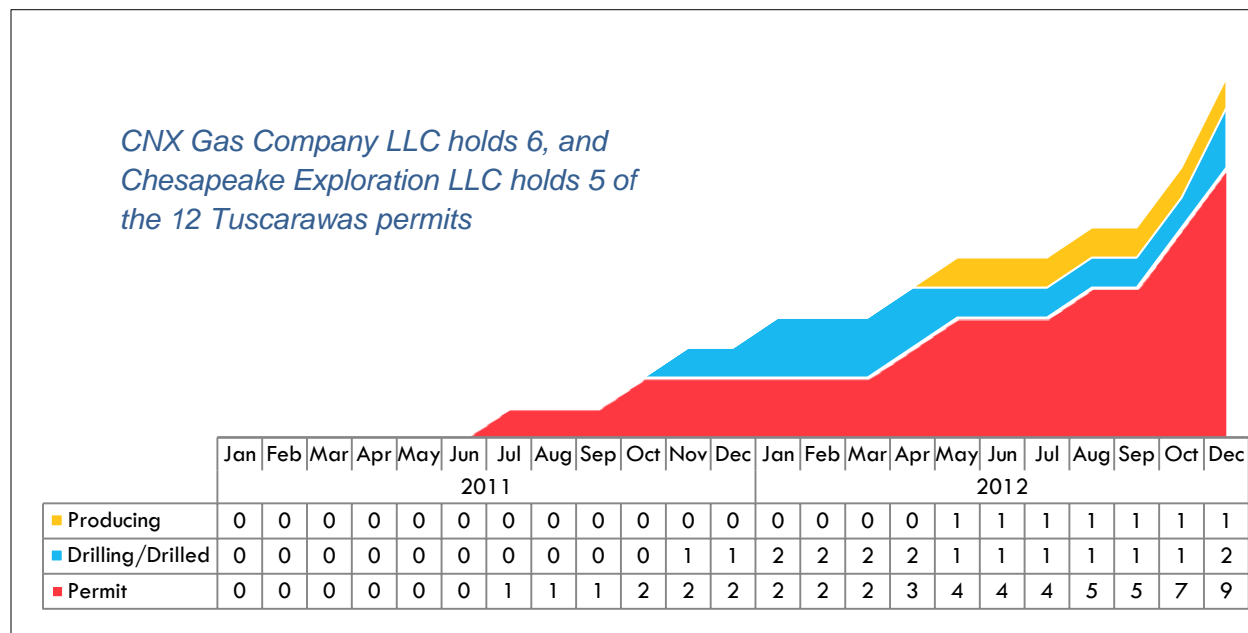
*** Ohio Labor Market Information; Ohio Department of Job and Family Services

- Based on the most current information available, Stark County's median household income is \$2,700 less than the Ohio average.
- For the period of 2009 - 2011, Stark County's poverty rate was slightly less than that of the state of Ohio.
- The unemployment rate in Stark County has changed from being higher than the state of Ohio in 2011 to less than the state average in October 2012. This could potentially be due in part to shale development.

Tuscarawas County

Tuscarawas County is in the very early stages of shale development. The first permit for horizontal shale well development was issued in July 2011, with drilling first taking place in November of that year. As of the end of 2012, Tuscarawas County had 12 shale permits and one producing well.

Horizontal shale well permits by status in Tuscarawas County



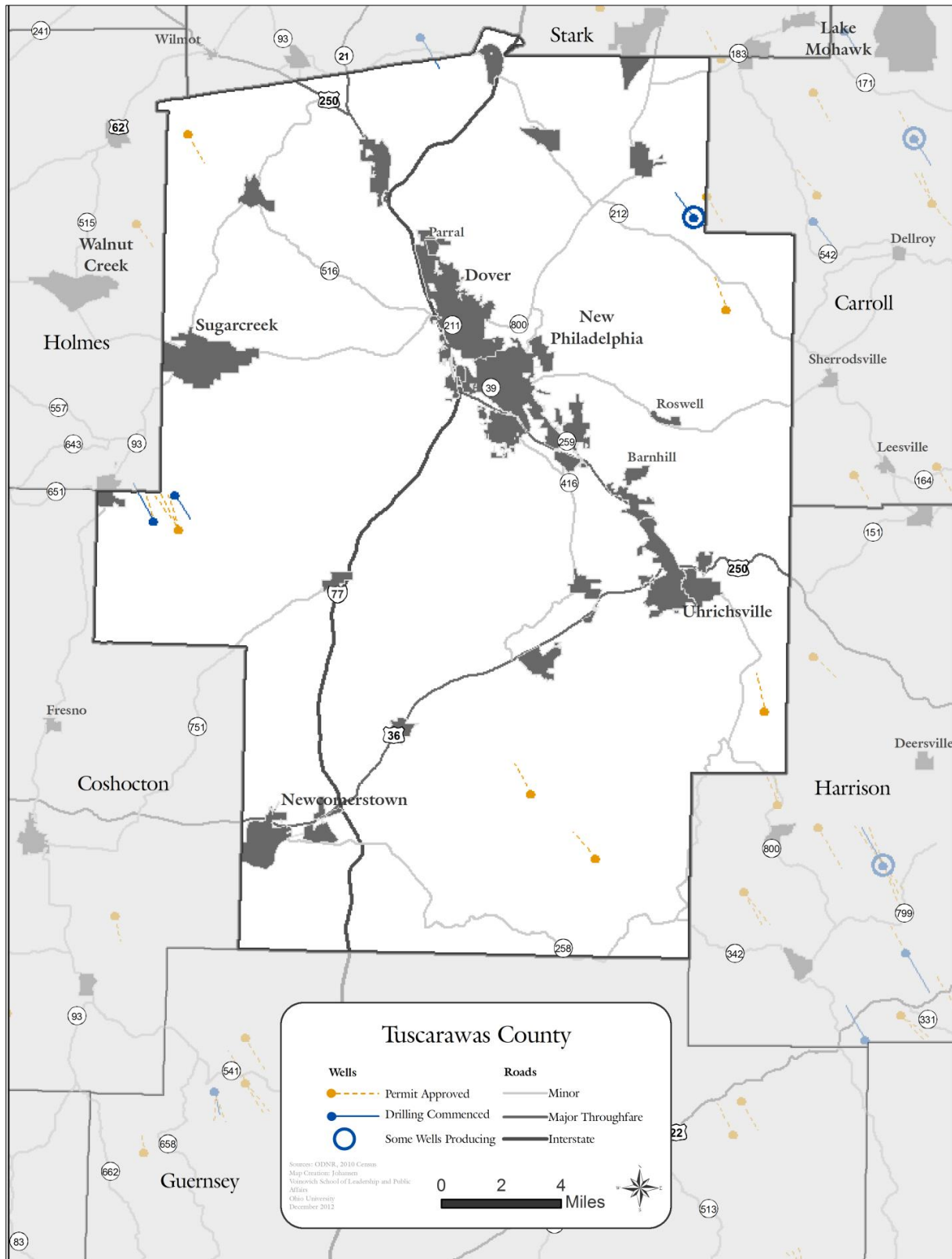
Source: Ohio Department of Natural Resources RBDMS database and Marcellus Shale and Utica Shale Spreadsheets.

HSW permit, drilling and producing locations are primarily located at the edges of Tuscarawas County (see map on following page). With Interstate 77 running through it, Tuscarawas County also serves as a major transportation hub for shale development operational service companies. Schlumberger Limited, a major oil field service provider, is opening a new facility in Strasburg Village, which will host over 250 jobs.¹¹ This announcement is hailed as the county’s biggest employment opportunity in over ten years. Schlumberger officials informed *The Times-Reporter*, a local newspaper, that two thirds of the new jobs will be filled by local applicants. When asked what led to selecting Strasburg Village’s selection, Duncan Newlands, Schlumberger’s Northeast operations manager said, “*Considerations included access to railroad service, Interstate 77 and the site’s proximity to Canton, Dover and New Philadelphia.*” Strasberg Mayor John Bitikofer believes Schlumberger will be a boost for the Tuscarawas Valley region as workers buy fuel, groceries, supplies and rent or buy homes.¹²

¹¹ <http://www.timesreporter.com/newsnow/x1260493202/Schlumberger-s-impact-will-be-huge-in-Strasburg> (May 5, 2012)

¹² http://www.timesreporter.com/communities/x1134101151/Schlumberger-in-Strasburg-could-be-oil-gas-magnet?zc_p=0 February 19, 2012

Tuscarawas County horizontal shale well development permit and drilling locations



Housing

The anticipated shale activity has the potential to impact the local housing market in Tuscarawas County. Housing officials have begun to notice some effects on housing availability and costs, but observations indicate disagreement over the source and extent of the problem. Low-income housing advocates expressed the opinion that there is decreased availability and that some landlords are doubling the rent prices on lease renewals, while representatives from the local Housing Authority state that units are still available, and there has been little to no increase in rent prices. Housing Authority representatives have observed an increased demand for houses or duplexes over readily available apartment units that are HUD-approved.

Through focus groups and interviews, it was reported that service providers outside of the county “routinely” refer individuals to Tuscarawas County because of its comprehensive housing assistance infrastructure. As shale development activity continues to progress, Tuscarawas County may experience an increase of residents moving into the county from the surrounding area. In addition, the transportation infrastructure and available workforce of the county will likely continue to be attractive to the shale industry’s operational support businesses.

Several representatives of Tuscarawas County do anticipate future changes to the amount of available and affordable housing in the county. Tuscarawas County DJFS is concerned about the community impact of having a significant population of workers move into the area and what the long-term implications might be. *“We need to be smart in knowing how to mediate the changes that will be coming about,”* said an administration from DJFS before continuing: *“There will most likely be a need to make sure [additional] housing is available if we start getting a higher influx of people needing housing.”*

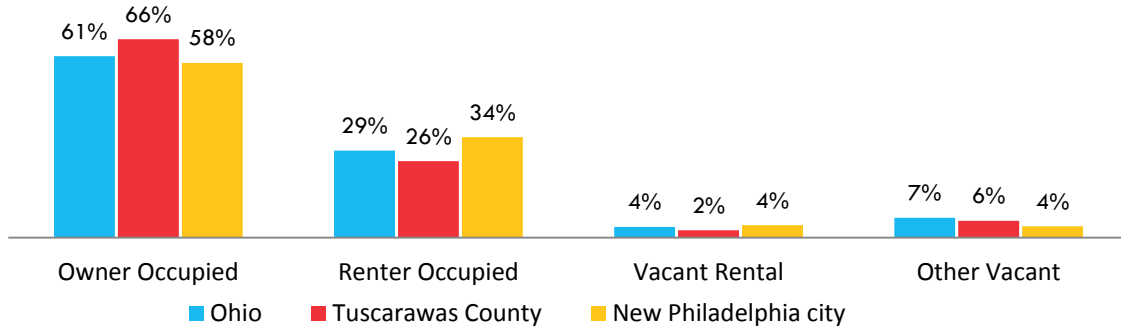
Demographic and Housing Information

This section provides an overview of housing conditions, income and unemployment for households in Tuscarawas County prior to shale development.

Area	Population	Households	Housing Units	Occupied Units		Vacant Units	
				Owner	Renter	Vacant Rental	Other
New Philadelphia City, Ohio	17,288	7,282	7,909	4,623	2,659	330	297
Tuscarawas County, Ohio	92,582	36,965	40,206	26,688	10,277	979	2,262

Source: Source: U.S. Census Bureau, 2010 Census of Population

Housing by type of occupancy



Source: US Census Bureau, 2010 Census of Population

- Tuscarawas is the third most populous of the counties profiled in this report.
- There is slightly less renter occupied housing in Tuscarawas County compared to Ohio, but the percentage of renter occupied housing is higher in New Philadelphia City.
- “Other Vacant” housing includes vacant for sale, vacant not occupied, vacant sold not occupied, seasonal use, and migratory housing.

Housing costs

Area	Median Gross Monthly Rent	Median Gross Rent as a Percent of Household Income
Tuscarawas County, Ohio	\$600	28.6%
Ohio	\$697	30.1%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

Tuscarawas County household income by gross rent as a percentage of household income

	Less than \$10,000		\$10,000 to \$19,999		\$20,000 to \$34,999		\$35,000 to \$49,999		\$50,000 or more	
Less than 35 percent	196	12.2%	627	26.5%	1,696	69.5%	1,387	91.3%	1,379	88.6%
35 percent or more	1,154	71.9%	1,578	66.7%	593	24.3%	0	0.0%	0	0.0%
Not computed	254	15.8%	162	6.8%	153	6.3%	133	8.8%	178	11.4%
Total	1,604	100.0%	2,367	100.0%	2,442	100.0%	1,520	100.0%	1,557	100.0%

Source: U.S. Census Bureau; 2011 American Community Survey 5-year estimates

- Prior to shale development, the median gross rent in Tuscarawas County was almost \$100 less per month than the average in the state of Ohio.
- In Tuscarawas County, almost 70% of the people who had incomes of less than \$20,000 spent 35% or more of their income on rent.

Income, poverty and unemployment

	Median Household Income*	Poverty Rate**	October 2012 Unemployment Rate***	2011 Unemployment Rate***
Tuscarawas County, Ohio	\$42,846	14.6%	5.7%	8.8%
Ohio	\$48,071	15.8%	6.3%	8.6%

Source: *U.S. Census Bureau; 2011 American Community Survey 5-year estimates

** U.S. Census Bureau; 2011 American Community Survey 3-year estimates

*** Ohio Labor Market Information; Ohio Department of Job and Family Services

- Based on the most current information available, Tuscarawas County's median household income is almost \$5,000 less than Ohio's average.
- Tuscarawas County's poverty rate for the period of 2009-2011 was 1.2 percentage points lower than the Ohio rate.
- The unemployment rate in Tuscarawas County has changed from being slightly greater than Ohio's in 2011, to less than the state's average in October 2012.

Appendix: Data sources

Well permit and drilling information: Ohio Department of Resources Division of Gas Management Resources (ODNR) website. ODNR has two publicly available sources of information on oil and natural gas well permits. RBDMS is a comprehensive list of all well permits in the state. Permits listed on the Marcellus Shale and Utica/Point Pleasant Shale spreadsheets¹³ were matched to the RBDMS database¹⁴ which tracks all permitted wells for oil and gas in the State of Ohio, and which include drilling start dates and production start dates, that are not available on the spreadsheets. These data were used to map the location and status of all shale well permit sites effective December 1, 2012 and to prepare the longitudinal shale activity graph for each county.

Focus groups and structured interviews: Conducted between November 14, 2012 and December 13, 2012 with key informants representing local government, housing, social services, and economic development. Attempts were made to contact shale development businesses to collect information regarding employee housing needs and the trajectory of industry growth in Ohio. Those attempts were unsuccessful.

Environmental scan: Review of local media reports, government sources and research documents accessible from the World Wide Web.

Demographic and related information: U.S. Census Bureau 2010; U.S. Census of Population, 2009 to 2011 American Community Survey & 2007 to 2011 American Community Survey, Ohio Department of Job and Family Services Ohio Labor Market Information.

¹³ <http://www.ohiodnr.com/oil/shale/tabid/23174/Default.aspx>

¹⁴ <http://www.ohiodnr.com/mineral/database/tabid/17730/Default.aspx>