

# MARCELLUS EDUCATION FACT SHEET



## Impacts of Marcellus Shale Development on Municipal Governments in Susquehanna and Washington Counties, 2010

**P**ennsylvania is in the beginning of a major natural resource boom due to its newfound wealth from the Marcellus shale natural gas formations underlying two-thirds of the state. The development of this natural gas resource is creating significant economic opportunities, but it is also bringing major challenges, such as much greater truck and other traffic on local and state roads, changing population, rising demand for public services, and protection of water, forests, and wildlife.

The impact of Marcellus shale development on Pennsylvania's municipal governments is of particular concern to some. Townships, boroughs, and cities are responsible for providing important public services that affect the local economy, environment, health and safety of residents, and local quality of life. This includes physical infrastructure, such as roads, and coordination among competing land uses via planning tools such as comprehensive plans, zoning regulations, and subdivision ordinances. Providing such services requires money, which local governments typically receive through local taxes, permits and other fees, and intergovernmental transfers from the state government.

It is clear from anecdotal stories that Marcellus shale development is affecting Pennsylvania local gov-

ernments, but so far there has been little comprehensive analysis of the impacts. This fact sheet provides insights from a study on municipal governments in Susquehanna and Washington Counties—two Pennsylvania counties that have been experiencing significant Marcellus shale gas development. The study focused on how gas development is affecting the demand for municipal government services and the tax and other revenues those governments are receiving to help pay for those services.

Susquehanna and Washington Counties were selected for a number of reasons, including (1) their already extensive shale activity; (2) their divergent geographical, cultural, and historical involvement in resource extraction; and (3) population and development pressures. Susquehanna County, in northeast Pennsylvania, saw major gas development early in Pennsylvania's Marcellus play, with 174 wells drilled as of 2010. However, the county did not have a history of gas development prior to this. Therefore, most landowners (i.e., surface rights owners) in Susquehanna County own their mineral rights. Conversely, Washington County, located south of Pittsburgh in southwest Pennsylvania, has had a history of mineral extraction from coal and conventional natural gas and is also currently experiencing extensive Marcellus activity. Penn-

sylvania's first Marcellus shale gas well was completed in Washington County in 2004. An additional 305 wells have been drilled as of 2010. With this legacy of mineral extraction in Washington County, there is a higher incidence of severed mineral rights, with surface rights owners receiving little if any financial benefit from development. In addition, Washington County has five times the population and double the mean annual township budget compared to that of Susquehanna County. Both counties have had a relatively longer experience with Marcellus shale development than most other Pennsylvania counties, so a study of these counties should provide good insights about how the development of the shale is affecting municipal governments.

### **Methods**

To examine the fiscal impacts on local governments, we used official local government audit data from townships in Susquehanna and Washington Counties on natural gas activity as collected by the Pennsylvania Department of Economic and Community Development and well-drilling information as reported by the Pennsylvania Department of Environmental Protection. This included 15 (out of 40) municipalities in Susquehanna County and 26 (out of 66) municipalities in Washington County. We statistically analyzed audit data on revenues and expenditures for each year from 2001 to 2009 for each of the municipalities in the two counties in an attempt to identify trends related to drilling activity. We followed up the analysis with several focus group interviews with municipal officials in both counties, sharing our findings to make sure we were interpreting the information correctly. This included seven township officials in Susquehanna County and ten township officials in Washington County. We also interviewed staff at two natural gas companies active in those counties to get their perspectives on how natural gas development is affecting Pennsylvania municipal governments.

### **Impacts on Municipalities**

Unexpectedly, the statistical analysis of the audit information showed no clear relationships between Marcellus shale activity and municipal expenditures and revenues. There were no significant differences in spending or revenue collection before or after Marcellus activity in those townships. We tried several methods of analysis, including simple bivariate correlation analysis and regression analysis, with the same insignificant results. In some townships, revenues or costs increased as gas activity increased, while in other townships they decreased as gas activity increased. Much of the trend had more to do with the poor economy and less revenue from other sources, such as the liquid fuels tax. In other words, gas development activity did not appear to have a consistent and measurable impact on local government costs and revenues in these two counties.

We shared this information with municipal officials during the focus groups and asked them to help us understand these findings. They identified a range of impacts their local governments were experiencing as a result of Marcellus shale development, but they stated that so far most have either been nonmonetary or they have internally shifted resources to cover them, thus confirming our analysis that the impacts do not appear in the municipal budget information. Quite a few townships with significant gas development have not "spent a nickel" on gas-related issues. These impacts are described below.

### **Services**

#### **Road Maintenance**

Road impacts were by far the main issue municipal officials raised with us in the interviews. Gas development creates significant increases in truck and other traffic, and wear and tear on roads is often very visible. For many of Pennsylvania's smallest townships, road maintenance and repair historically accounts for the largest share of their spending, so they are particularly aware of things that affect roads.

All the township officials noted that the gas companies have been

proactive in repairing and upgrading roads, and they had been doing so at the company's expense. They generally were very satisfied with the quality of the repairs and upgrades, and noted that company policies are to leave the roads in equal or better condition than before the gas development began. In one township, more than one-third of their roads had been repaired. A few officials said that some roads had been repaired in haste and were already seeing soft spots and ice damage that will require additional repair.

Most townships we talked with in Washington County had done road engineering studies to allow posting weight limits on the road, while in Susquehanna County only one township had done so. Such studies are done at the local government's expense. Some of the townships said that the better-quality roads installed by the companies require additional township costs for maintenance, repair, and snow plowing, particularly when those new roads are wider than the prior roadway. The officials reported major differences between companies on how they dealt with roads, with some companies being proactive and discussing road issues ahead of time with the township, while other companies were more reactive or even difficult to contact and less communicative.

#### **Police**

As is typical of most Pennsylvania townships, the majority of the townships interviewed rely on the Pennsylvania State Police for law enforcement. This saves them money, but it means that the response time when there are incidents can be longer than if they had their own police force. One township supervisor said this is a significant problem for them because they are not able to effectively enforce their road ordinances; by the time the state police arrive, the offender is long gone. The supervisor estimated that half of the violations in their township are not caught. When violators have been identified (typically through ID numbers on vehicles), the officials said that the companies often responded by punishing (or even firing)

offending drivers. One township said that they are still trying to recoup repair costs for a bridge damaged by a subcontractor and that the companies are arguing about who should be responsible for paying.

### ***Time Spent by Local Officials and Personnel***

The main cost reported by township officials was the extra time required of them to deal with gas-related issues. These included a greater need for supervisors to meet with people having questions or concerns about what was occurring in their neighborhoods, communicating and coordinating with gas companies, posting and bonding of roads, policing gas activities, and dealing with other gas-related administrative issues. A few township officials estimated that they spend up to a quarter of their workday on these issues. In most cases, there is no additional compensation (or cost) for spending time on these activities; instead, it means the supervisors have less time to spend on other important local government functions. These opportunity costs do not appear in budgets or audit reports but do affect the operation of the local government. One township with a small police force of two officers said the police officers spend almost all their time dealing with truck and other gas-related traffic, and they help out other adjacent townships. The township does receive a share of the fines, which helps cover the costs.

Several of the townships, but mainly those in Washington County, have hired additional staff partly as a result of Marcellus shale activity. One township added a police officer to their local police force and a zoning enforcement officer. Another township hired a building inspector whose duties include checking well and compressor permits. They said that permit fees are not enough to compensate for the cost of hiring additional staff.

### ***Planning, Permits, and Zoning***

There were distinct differences between the townships in the two counties with respect to planning, permits, and zoning. The town-

ships in Washington County generally talked about using a variety of standard permits to help regulate gas activities, including driveways, road crossings, bunkhouse construction, and other construction. Posting roads for weight limits was the norm in Washington County, but this was almost nonexistent in Susquehanna County. The officials in Washington County said that there was a need for some standardization across the municipal governments in how they regulate road use and repairs, and they suggested that the county create a model road agreement ordinance that the local governments could adopt.

Zoning ordinances were also common in Washington County, but as one township supervisor in Susquehanna County put it, "'Zoning' is a fighting word around here." Several years prior to the onset of Marcellus shale development, many of the Susquehanna County townships attempted to develop zoning ordinances, but they were not implemented due to public resistance. The leasing and royalty dollars involved with Marcellus shale would make revisiting the need for zoning even more difficult, so the supervisors there said they had no plans to reconsider zoning.

### ***Communication with the Companies***

During the interviews, the supervisors frequently returned to the importance of communication and good working relationships with the natural gas companies. Generally, they reported that communication from the companies could be much better, particularly in relation to planned locations of well pads, pipelines, and road access needs. The officials noted that they often learn of these shortly before (or even after) the activities occur—leaving them not enough time to proactively prepare for the impacts. They said that the quality and timeliness of communication varies among the companies, with some being extremely good at communicating and others doing poorly.

The officials said the companies typically delegate an employee to serve as the local liaison and point of contact with supervisors

so township officials know who to call when there are issues. But they said turnover in these positions is high in some companies, making it very difficult for the officials to maintain consistent communication. In addition, they also said the large amount of work done by subcontractors can make it difficult for them to identify who is actually doing work within their township.

## **Revenues**

### ***Tax Revenues***

The officials typically said that they have experienced little increase in local tax revenues because of the Marcellus shale gas development activity. Most townships rely on the Earned Income Tax, which is a tax on residents' wages and salaries. Leasing and royalty income are exempt from the tax. The officials reported little if any increase in Earned Income Tax collections, and the Susquehanna County officials reported that their tax collection agency told them that they were not receiving any remittances from the gas companies for workers in the county. In contrast, a few Washington County townships reported receiving significant new Earned Income Tax revenues resulting from natural gas work. This difference may be occurring because some townships in Washington County are home to permanent gas development facilities, including corporate offices and a gas processing plant, while most of the townships in Susquehanna County are only experiencing gas well and pipeline construction.

Townships receive a share of the Realty Transfer Tax, but few townships reported changes in real property tax collections. The officials said that few people are selling property because they do not know the value of potential royalties. If sales occur, it is mainly the sale of surface rights. One township has a residential development subdivision put on hold due to gas activity, and the developer wanted to wait to see what happened with royalties. Other officials reported that lately they have not seen a new home built in their township. Because assessed values only change when a reassess-

ment occurs (or when individual properties are improved), such increases in market values have no impact on real property tax collections. The slow real estate market similarly has affected realty transfer tax collections, which tax the value of property sales.

### ***Industry-in-Kind Contributions***

The township officials made frequent mention of in-kind contributions that the gas companies are making to their communities. The most significant contributions they discussed are road upgrades and repairs, but they also noted that companies are making charitable contributions to local nonprofit activities, such as fairs, parks, and volunteer fire departments. Several townships reported that gas companies had provided street lights, signs, and expanded utilities in their jurisdiction.

### ***Leasing and Royalty Income***

A few township officials reported that their township had leased land for Marcellus shale development that typically involved a municipal park. Most reported that they were using the leasing dollars to upgrade their recreational facilities, so they are using the dollars as an investment in their community (rather than to reduce local taxes for a few years). Typically, they said that the lease did not allow surface disturbance, so the park would not be physically affected by the drilling.

### ***Implications***

The analysis of township budget information from 2001 to 2009 and the interviews with local officials in Susquehanna and Washington Counties indicate that so far Marcellus shale development in Pennsylvania has not had major fiscal impacts on municipal governments. The officials noted that gas development is having significant impacts on their roads, but so far the costs of repair and upgrade are being paid by the gas companies, not by local residents. Gas development is affecting how much time they spend on local government functions, particularly those related to communicating with residents and companies, but in most cases this has not translated into higher out-of-pocket costs.

At the same time, the analysis and the interviews suggest that municipal governments are not experiencing major increases in revenue to help pay for any such impacts from natural gas development.

It is likely that the impacts of Marcellus shale development on local governments will change as the play continues. This analysis focused on data through 2009—still relatively early in the development of the play. In addition, as the scale of development increases, it is very possible that local governments will need to start providing new services that they currently do not support. In addition to potentially higher costs related to planning and management, this could include road and bridge maintenance, local police and code enforcement, and environmental impacts. Looking at existing revenues and expenditures does not help forecast such future needs and changes.

It was clear that officials would like consistency in terms of how gas companies operate across municipalities. This includes not only improved communication but more systematic and proactive planning. Township supervisors felt they had little say in decisions that ultimately affect the quality of life in their communities. Industry representatives we spoke to agreed that more needs to be done in communicating with township officials.

Development of Marcellus shale clearly is affecting municipal governments in Pennsylvania. The budget analysis and focus groups suggest that the experience so far varies across municipalities, particularly depending on the companies working in that jurisdiction, the services the local government provides, and the ordinances they are using. These impacts likely will change over time, so it is important to keep monitoring what is occurring.

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Visit [naturalgas.psu.edu](http://naturalgas.psu.edu).

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