

# MARCELLUS EDUCATION FACT SHEET



## Natural Gas Drilling Effects on Municipal Governments Throughout Pennsylvania's Marcellus Shale Region, 2010

**A**s the natural gas industry continues to spread throughout the Marcellus shale, little is documented about how the drilling activities are affecting local governments. Understanding how natural gas drilling activities affect municipal revenues, services, and expenditures will help communities plan for and better utilize their resources. The gas industry can also have an impact on a local government's ability to retain and hire qualified employees, especially if municipal service demands are increasing. As part of a larger study focusing on the economic impacts of Marcellus shale development, municipalities in 12 Pennsylvania counties were surveyed in fall 2010. The survey results provide insights into what occurred across the Commonwealth's Marcellus shale region during 2010 and what other municipalities could potentially experience as drilling activity expands across the state.

### Methods

A survey was sent to all the townships, boroughs, and cities in Bradford, Clinton, Fayette, Greene, Lycoming, Somerset, Sullivan, Susquehanna, Tioga, Washington, Westmoreland, and Wyoming Counties, which totaled 494 jurisdictions. The survey went to the chair of the township supervisors

or borough or city council president in each municipality during fall 2010, and a follow-up postcard and subsequent mailings were sent to nonresponders. Responses were received from 293 of these municipal governments, for an overall response rate of 59 percent.

### Marcellus Shale Development

Of the survey responses, 131 (about 45 percent) reported that Marcellus development activity is occurring within their municipalities. Such activity included drilling, as well as pipeline construction, major truck traffic, pipe yards or other staging areas, and worker camps. Natural gas wells have been drilled in 97 (about 74 percent) of the responding municipalities that reported gas activity, with 7 (about 6 percent) reporting more than 25 wells in their municipality alone. Pipeline construction was reported in a little less than half of the municipalities (44 percent), while 3 percent reported they didn't know. As gas wells begin producing natural gas, we can expect pipeline construction to increase. Some municipalities may experience pipeline construction without having any actual wells drilled.

### Changes in Municipal Revenue

Of these municipalities directly experiencing development activities, about 75 percent said that Marcellus

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lus shale development had not affected their tax or nontax revenue. About 18 percent said that revenues had increased, and one reported revenues had decreased due to Marcellus development. The level of drilling activity was not closely related to whether a municipality reported higher revenues. Of the 23 municipalities reporting higher revenues, only 5 said their earned income tax collections had increased, 5 reported higher real property tax collections, and 3 reported that the local services tax had increased. An additional 5 reported higher permit fee collections.

The number of municipalities reporting higher earned income and local services tax collections seems unusually low since higher employment in these townships to drill the wells should increase the number of workers and residents owing these taxes. The low responses may be occurring for several reasons, including how taxes are paid when employees work in multiple municipalities, that not all municipalities levy these taxes, or problems with withholding and submitting the taxes.

State law specifies that taxpayers working in multiple municipalities only pay these two taxes in one municipality, rather than in each municipality where they work. Earned income tax is paid to the Pennsylvania municipality where the taxpayer lives, regardless of where they work—unless they work in Philadelphia or live in a jurisdiction that does not levy the tax (in which case it is paid to the jurisdiction where they primarily work)—and the local services tax is also paid to their primary place of occupation. Because natural gas development work moves frequently from site to site, without regard for municipal boundaries, many company employees typically work in many different municipalities each year. Only one will receive their earned income tax and municipal services tax payments.

The local tax impacts clearly require more study to clarify what is occurring and why. Regardless of the cause, the low numbers of municipal officials reporting higher tax

revenues indicate that the majority of municipalities where drilling is occurring believe they are not receiving more tax revenues as a result of the activity.

### **Changes to Municipal Services and Expenditures**

Taxes and revenues are only one half of the potential financial impact on local governments. Equally important are the impacts on local services and on local government expenditures. About 67 percent of the 131 municipalities experiencing Marcellus activity said the services they provide have not changed.

About 28 percent reported that their services have increased due to natural gas development activity, and 4 percent (5 municipalities) said their services have decreased overall due to Marcellus. All the municipalities that had to increase services identified roads as being affected, and 13 (10 percent of all the 131 municipalities) said building and code enforcement had increased. Four percent said police service needs had increased, as did 2 percent that cited fire and emergency services. The latter relatively low percentage likely reflects that few municipalities themselves directly provide fire and emergency services and instead rely upon volunteers, so they either may be unaware of such change or consider such changes as not affecting their local government.

Of the municipalities saying the need for municipal services have decreased, four said that municipal road services had decreased, and one said the need for vegetation control had decreased. The road service responses likely reflect that gas companies are repairing and rebuilding roads in affected communities, and so the need for the municipality itself to do such repairs in these four jurisdictions has decreased. There are service-need differences between the municipalities based on the amount of drilling activity, but these differences were not significant.

About 71 percent of the municipalities with Marcellus activity said that their local government's total expenditures had not been affected by the gas development.

Twenty-six percent said expenditures had increased overall, and one reported that expenditures had decreased. Three of the municipalities (2 percent) did not know how gas development had affected their expenditures. Most of the respondents reporting higher expenditures cited greater road maintenance costs and, indeed, this was 22 percent of all the municipalities with Marcellus activity. Higher spending on clerical services (8 percent of all municipalities), permitting and code enforcement, legal services (both 3 percent), and police (2 percent) were also mentioned by respondents. There was little clear pattern in expenditures by the level of drilling activity.

The number of responses clearly has an influence on the accuracy of impacts by drilling level. But the lack of clear patterns across revenues, services, and expenditures likely also occurs because drilling is only one of multiple activities related to Marcellus that can affect municipal budgets. Prior to a well being drilled, significant work must be done conducting seismic and other studies, obtaining permits, building access roads and well pads, and creating staging areas for companies and workers. These often occur in neighboring municipalities, rather than directly where the drilling is taking place. In addition, traffic and pipelines (and pipeline construction) by necessity cross municipal boundaries.

### **Changes in Municipal Workforce**

In addition to financial and service changes, the natural gas industry has the potential to affect a municipality's ability to retain and hire experienced, qualified employees. About 73 percent of the responding municipalities employ at least 6 full-time employees, and 80 percent have at least 6 part-time employees. About 17 percent reported having no full-time employees, while 9 percent reported having no part-time employees. Many municipal employees have the skills needed by the gas industry, so there is the possibility of them being hired away due to Marcellus activity.

This possibility does not seem to be occurring. About 90 percent of the municipalities said they have not lost employees to the natural gas industry or Marcellus-shale-related activity in the past two years. Similarly, only 4 percent of the municipalities said that natural gas drilling activities have affected their ability to find and hire qualified employees. Of the municipalities whose hiring efforts have been affected, about half said that the employees are “much more difficult to find,” and one-third said employees are “somewhat more difficult” to find. No municipalities indicated that employees were “much easier to find.”

### Overall Changes and Impacts

Survey respondents were asked how Marcellus shale development activities have affected a variety of aspects of their governments and communities. The municipal governments with Marcellus-related activity reported some major changes. About 25 percent said that their populations had increased, and more than half said road maintenance had increased (Table 1). About 89 percent said tourism had not changed, and only 4 percent said tourism had declined. School enrollments increased in 19 percent of the municipalities, as has crime in 15 percent of the jurisdictions. Property values were reported to have increased in 38 percent of the municipalities, and declined in only 7 percent. About one-third of the municipalities said community conflict had increased due to Marcellus shale development. The majority of municipalities indicated no change in many of the areas listed.

Similarly large numbers of local officials reported changes in local economic conditions (Table 2). About half said employment had increased, but only 28 percent said unemployment rates had decreased. The disparity between these two numbers is likely related to the amount of in-migration of new workers; there are more jobs due to Marcellus shale, yet the in-migration of workers means there are more workers competing for

those new jobs, reducing the impact on unemployment rates. Some also noted that Marcellus shale development had increased residential construction (7 percent), hotel construction (9 percent), and other commercial construction (21 percent).

The local officials also noted changes in the local environment due to Marcellus shale development (Table 3). Almost half of the officials (48 percent) said that water use and disposal had increased in their municipality. About 18 percent said

water quality had decreased, and 12 percent said air quality had decreased. Twenty percent said storm water runoff had increased, likely due to the amount of land disturbance associated with well pad, access road, and pipeline construction.

When asked to describe other impacts Marcellus shale development has had on their local governments, municipal officials reported resident complaints (including traffic and water quality concerns), as well as the additional time required

**Table 1. Impact of Marcellus shale development on municipalities and communities as reported by municipal governments experiencing Marcellus shale activity.**

Area	Percent selecting response (Number selecting response)		
	Increased	Decreased	No Change
Population	25% (31)	2% (2)	73% (91)
Road maintenance	58% (73)	2% (2)	40% (50)
Road construction	24% (29)	1% (1)	75% (90)
Tourism	7% (8)	4% (5)	89% (109)
School enrollment	19% (23)	2% (1)	79% (96)
Property values	38% (47)	7% (9)	55% (68)
Crime	17% (19)	0 (0)	83% (94)
Use of emergency services (fire, ambulance, etc.)	23% (28)	0 (0)	77% (94)
Community conflict	31% (37)	0 (0)	69% (82)

**Table 2. Impact of Marcellus shale development on local economies as reported by municipal governments experiencing Marcellus shale activity.**

Area	Percent Selecting Response (Number Selecting Response)		
	Increased	Decreased	No Change
Unemployment	1% (1)	28% (34)	71% (87)
Employment	52% (64)	0 (0)	48% (59)
Residential construction	7% (8)	1% (1)	93% (113)
Hotel construction	9% (11)	1% (1)	90% (111)
Other commercial construction	21% (26)	0 (0)	79% (96)
Manufacturing	7% (9)	0 (0)	93% (112)
Workforce migration into municipality	50% (63)	0 (0)	50% (62)

by the municipal staff. When asked how the development is affecting their municipalities overall, about one-third of the officials (32 percent) where gas activity is occurring indicated that the impacts are positive, while 26 percent said the impacts were negative. The remainder said the impacts either were unclear (20 percent) or that there were none so far (22 percent). The responses indicate that the impacts of Marcellus development on municipal governments are mixed and vary depending on local circumstances.

### Implications

The responses from municipal government officials across the Marcellus shale region of Pennsylvania indicate that they believe natural gas development is having major impacts on their communities. The officials are observing major employment increases in their communities due to Marcellus shale. At the same time, many are also experiencing growing demands for public services and higher costs. This includes road maintenance and construction and use of emergency services. In addition, many noted increasing social or environmental issues, including more community conflict, water use and disposal, and storm water runoff.

It is important to keep in mind that the survey responses reflect local government officials' perceptions of what is occurring. These perceptions likely are more accurate for some issues, such as local government spending and revenues, with which they deal directly. Their perceptions of other issues where they lack direct experience or expertise, such as worker in-migration, manufacturing, tourism, and air and water quality, may be less accurate.

A larger number of officials said their costs are increasing than said that their revenues are increasing as a result of Marcellus activity, which suggests that development of Marcellus shale is creating fiscal concerns in some municipalities as they try to respond to higher service needs. The relatively low proportion of officials observing increases in earned income tax and local service tax revenues is surprising, given the amount of new employment activity occurring, and indicates that additional investigation is needed to determine why these do not seem responsive to Marcellus activity. The lack of clear patterns when we compared changes in revenues, services, and expenditures by the level of drilling activity shows that many municipal governments are being affected regardless of whether wells are actually being drilled within their jurisdictions.

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**Table 3. Impact of Marcellus shale development on the environment as reported by municipal governments experiencing Marcellus shale activity.**

<i>Area</i>	<i>Percent selecting response (Number selecting response)</i>		
	<i>Increased</i>	<i>Decreased</i>	<i>No Change</i>
Water use/disposal	48% (58)	0 (0)	52% (64)
Water quality	2% (2)	18% (22)	80% (96)
Air quality	2% (2)	12% (15)	86% (105)
Storm water runoff	20% (25)	2% (2)	78% (97)
Other environmental issues	13% (10)	0 (0)	88% (70)

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

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