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**POTENTIAL ECONOMIC BENEFITS AND COSTS FOR STATE AND LOCAL MUNICIPALITIES**

In all counties studied in the shale natural gas area, there has been a significant increase in the population. In Denton, Texas, population increased 66%, growing from 317,850 in 1995 to 528,950 in 2004. In Sublette County, Wyoming, population increased 34% between 2000 and 2007. In Faulkner County, Arkansas, population grew 40% between 1990 and 2006. With such rapid increases in population, communities need to understand, plan, and adjust for similar benefits and costs of a boom/bust economy.

**BENEFITS**

New Businesses: New local businesses may be created or existing businesses expanded to meet the needs of the natural gas companies and their employees. Increased employment has been reported in maintenance and repair, construction, hospitality, retail trade, and legal service businesses in Texas, Wyoming, and Arkansas.

Personal income: Median income grew in all three states studied. As further evidence of increasing wealth, the Perryman Group in Texas noted dividend income, as reported on income tax returns, also increased.

Owner Occupied Housing: Owner occupied housing expanded in all three shale areas. This provides an increasing tax base*.* In Pennsylvania, new structures increase property tax receipts. Older structures, once purchased, are reassessed to current property values.

Charitable Giving: Using case study methodology, Murray and Ooms (2008) found charitable giving increased in the specific charities studied in natural gas producing areas. In addition to cases in which the natural gas industry provided large grants or “gala” events, there were, in general, significant gains in the charitable donations.

Water: With many companies buying the water needed for drilling and fracing directly from municipal water companies, local revenue sources expand.

Leasing Public Land: Lease bonuses and royalties provide increased revenue for local governments that own land on which producing wells are located. However, such income is short term and will disappear when wells cease to operate. For this reason, Rodgers et al. (2008) strongly recommended that these funds not be used to fund on-going budgetary expenses, but to be targeted to improve infrastructure and the long term needs associated with population and business growth.

Tax Revenues: Based on industry-provided data, Considine et al. (2009) projected the “present value of additional Pennsylvania state and local taxes earned from the Marcellus development between now and 2020 is almost $12 billion” (p. iv). During 2008, the Marcellus Shale natural gas industry in Pennsylvania contributed $2.3 billion to the economy. This included $238 million in taxes to the Commonwealth and local municipalities. The largest component of tax revenue increase came from the employees‟ federal, state, and local income tax returns. Taxes generated from indirect business taxes, such as excise taxes, property taxes and sales taxes, contributed significantly to the overall revenue sources. The Pennsylvania Budget and Policy Center (PBPC) refuted Considine et al.‟s numbers and determined the $238 million paid in taxes to be “overstated” by more than $100 million (2009, October 1). The PBPC noted that 31% of Considine et al.‟s tax figure is for property taxes that are not assessed on natural gas reserves or drilling equipment. Such commodities are not deemed to be “property” in Pennsylvania. Another 30% of Considine et al.‟s tax figure comes from sales tax paid by drilling companies. PBPC notes that such figures are questionable because, even if machinery used by drillers were purchased in Pennsylvania, much would be exempt from sales tax due to the manufacturing exemption.

**COSTS TO MUNICIPALITIES**

Non-violent Crime: As the number of wells increased, non-violent crime increased modestly. This can necessitate the need for more law enforcement in both rural and urban counties. Costs for additional police personnel are proportionately greater, in terms of budgetary impact, in small towns than in urban areas. (Kelsey, 2009; Murray & Ooms, 2008b; Ecosystem Research Group, 2008).

Poverty Levels: The number of people living below the poverty line has increased in more populated areas (as opposed to the sparsely populated Sublette County, Wyoming). This places a larger financial burden on social services (Murray & Ooms, 2008b; Kelsey, 2009; Rodger et al., 2009). As the need for service industry workers increases, the number of working poor in an area also increases. In Pennsylvania, the Department of Public Welfare supplements family income of the working poor with food stamps, Medicaid, cash assistance, and daycare.

Emergency Responders: In all cases, as the number of wells increased, the number of emergency runs directly increased. This requires more emergency vehicles and crews. In rural areas, new emergency vehicles with high clearance are often required to access the back roads. Pennsylvania Emergency Management Agency (PEMA) plans require modifications to deal with natural gas well emergencies and with the toxic substances that are used in or result from drilling and fracing (Kelsey, 2009; Murray & Ooms, 2008b; Rodgers et al., 2008). Municipalities that operate their own fire and ambulance services see a direct increase in costs. In areas where private services and volunteer fire departments operate, costs accrue to those services that are, in turn, passed on to local citizens and service users.

Roads: To access drill sites, particularly in rural counties, more roads are needed. Existing roads are not capable of sustaining the heavy pounding of drilling industry trucks*.* Road bonding amounts are low ($12,500 per mile) and inadequate to repair/replace existing roadways at current prices (Kelsey, 2009; Rodgers et al., 2008).

Health Care Services: An increase in population expands the need for health care. Small rural medical centers in Wyoming have reported the demands for medical care exceed their ability to provide services both in terms of personnel and finances (Ecosystem Research Group, 2008).

Housing Infrastructure: An increased demand for more housing is a direct result of population growth. If there is inadequate housing, the influx of workers cannot find a place to live within a community and contribute to its tax base. On the other hand, the need for development phase workers will decrease significantly in the short term (10+) years. Some communities need to weigh the value of temporary housing to protect the value of long term resident housing. The building of “Man Camps” has been proposed in some areas to house transient workers (Long, 2009). Kelsey noted that if new homes are built in response to an influx of workers, the municipalities may have a glut of housing after the drilling phase is over in ten to twelve years (Webinar presented in Indiana County, October 14, 2009). Demand for drinking water, sewage treatment, and waste management will increase and require appropriate governmental response and funding

Impact on Other Businesses: With the onset of higher salaries and availability of overtime, employees of local businesses may leave for higher paying jobs. To attract replacement employees, wages must rise with a concomitant rise in costs. In areas that rely on tourists attracted to the “wilds” of Pennsylvania, hotel rooms can be clogged with transient workers. Disruption of sites that attract tourists and hunters in such an area can also occur (Kelsey, 2009). Kelsey (2009) further pointed out that little new revenue is coming into the coffers of local municipalities. Why? Natural gas is not subject to local taxes; earned income tax is paid where people live; and transient workers (drilling and fracing crews) move with the rigs so they tend to live in more central areas with larger populations. For example, State College and Bloomsburg may benefit from additional taxes while the expenses are passed on to towns where the actual drilling is occurring. To further confound matters, the Pennsylvania Oil and Gas Act prohibits local municipalities from regulating drilling activity. Thus municipalities cannot control or reduce their costs by passing them on to drilling sites. However, two recent court cases may have provided some leeway in this area. Based on an analysis of financial data, areas with less population are affected more proportionally by these increased costs (Murray and Ooms, 2008).

Clean and Green Act: Clean and Green (P.L. 973 of 1974) is a program that provides preferential tax assessment for eligible farm and forest lands. Land is assessed as it is currently used, e.g., as farmland, not as it could potentially be used, e.g., as a housing development. The law does not state whether leasing land for natural gas drilling makes the land ineligible for Clean and Green. County commissioners will need to consider how they will treat such land. Decisions in this matter impact all of the players from the industry and surface owners to neighboring residents and gas rights owners.

 Social Conflict: An influx of new people into well-established communities can create a “social cost.” Older residents may like the town the way it was and resist change. Rig crews may enjoy a style of life that may be in conflict with traditionally accepted norms. When new costs to the community are funded by existing revenue sources, people who have not benefited from the natural gas boom may resent paying the price of higher taxes.

To determine how locally elected leaders viewed the costs to their community, an informal survey was conducted. Officials in Washington, Susquehanna, Butler, Armstrong, Wyoming, Fayette, and Indiana Counties were asked about costs they were experiencing. Generally, officials really did not know what the costs were to their communities. Perhaps more accurately, there was no tracking of such costs to their communities. In Indiana County, a commissioner described how it is impossible to learn even where the Marcellus Shale natural gas drilling is going to be. In Wyoming County, officials reported that courthouse staff is being overwhelmed with the processing of deeds and leases. In Susquehanna, Butler, and Armstrong Counties, officials reported wear and tear on roads. Roads were bonded, and, in some cases, the drilling companies have repaired the roads. Lack of information by local officials is not surprising given the early stage of the industry activity in these areas.