

Impacts of Marcellus Shale – House Transportation Funding Hearing

Scott Christie, P.E., Deputy Secretary for Highway Administration

June 10, 2010

Good afternoon. My name is Scott Christie, and I am the PennDOT Deputy Secretary for Highway Administration. Thank you for the opportunity to highlight some of the key issues that have developed on our roadway infrastructure as a result of the Marcellus Shale Industry.

PennDOT owns and maintains approximately 25,000 bridges and 40,000 miles of roads; with secondary roads comprising over half of that mileage. The major routes in Pennsylvania are designed to accommodate a high volume of heavy trucks. However, Marcellus shale drilling is having a significant impact on the Commonwealth's roadway system; especially the secondary roads. Most of the drilling is taking place in rural areas with access via low-volume secondary roads. Most of these roadways do not have sufficient strength to withstand the large amount of trucks and other vehicles that are a part of Marcellus shale drilling. Gas well drilling requires transporting significantly overweight and oversized equipment and materials, including hundreds of water-filled tanker trucks for hydraulic fracturing (fracking), stone trucks for site development and pipe trucks for drilling and pipeline construction. The damage caused by this additional truck traffic rapidly deteriorates from minor surface damage to completely undermining the roadway base. Additionally, we have also found the sudden increase in heavy truck traffic has caused deterioration of several of our weaker bridge structures resulting in additional postings.

PennDOT's intent is to have no deterioration of existing road and bridge conditions because of heavy truck traffic and to recover all costs associated with the damage being caused. To protect the roadways from heavy vehicle damage, more secondary roads are being posted. Currently there are 7,956 miles of roadway that are posted and have an associated excess maintenance agreement; 6,245 miles with non-Marcellus Shale Drilling companies and 1,711 miles with Marcellus companies. An additional 1,940 miles are planned to be posted, which could lead to future maintenance agreements. Please note that whenever there is an excess maintenance agreement there is an associated bond. << I will provide information regarding the process of bonding roads separately.>> For the current 1,711 miles of roadway that have an excess maintenance agreement with Marcellus companies, it is estimated that 50 percent require minor repairs, 20 percent require major base repair and 10 percent require full reconstruction. The total roadway repair estimate for the current 1,711 miles of bonded roads is \$125 million. Assuming the same proportion of roadway repairs for the "planned to be posted roadways", an additional \$140 million will be required for roadway repairs.

Posting and bonding offers protection to PennDOT's secondary roads, but the main traffic routes are still left vulnerable to the increased heavy vehicle traffic. It was reported that traffic on U.S. 6 in Bradford County near Burlington saw a six (6) fold

increase in truck traffic over a three (3) year period. With this increase in truck volume the roadway is prematurely deteriorating and the life cycle of the pavement is being shortened. Posting main traffic routes is not a desired option as these roadways serve as major travel arteries across the Commonwealth. Repairs and cost recovery for these repairs also must be addressed.

PennDOT is working with the Marcellus Shale Industry to develop local work plans that focus on current road repair needs, as well as pre-emptive work to prepare the roadways for future use and winter conditions. The winter months are a vulnerable time due to freeze/thaw cycles and the limited availability of materials to complete repairs. The industry has been informed that if their roadway improvements are not in place by the winter, they will not be able to haul on the posted roadway from November 1 to April 30 or until the improvements are in place. In addition, they were informed that PennDOT will also not permit deterioration of roads below current conditions and will disallow hauling if a road is damaged.

Safety issues such as improper traffic control in the work zone, loose gravel/pavement, shoulder drop-offs and dust are also monitored as part of the regular review of the roadway conditions. If a safety issue is noted, it is the industry's responsibility to address the problem promptly; if the issue is not addressed, the Department will revoke their permit. In conjunction with the roadway deterioration, PennDOT is also concerned with the condition of the bridges and safety issues along the state routes. In an effort to avoid a potential bridge failure, PennDOT staff is completing additional visual inspections of the bridge structures to note any major deterioration.

Additional staffing has already been reallocated to work with the Marcellus Shale Industry and complete roadway posting, pre-bonding surveys, and ongoing roadway conditions surveys. Even more staffing is needed to effectively handle the required permitting and enhanced tracking and reporting needed to match the Marcellus Shale Industry growth while also ensuring roadway safety and service.

The Marcellus Shale Industry is bringing a substantial economic benefit to the Commonwealth, however; this benefit is not without cost to our roadways. As stated previously, PennDOT's intent is to have no deterioration of existing road and bridge conditions because of heavy truck traffic and to recover all associated costs. To address these impacts, staff has been reassigned and requested to handle the additional tasks. Information technology systems are being updated and developed to accommodate the tracking, data collection and data sharing required. To recover the costs associated with the needed upgrades, a cost recovery analysis is being completed to identify items and fees that can be charged to the industry. Increased permit fees, revisions to the excess maintenance agreement, increased bond amounts and industry credits are all being reviewed. It is imperative that PennDOT recoup our costs as transportation needs are already underfunded and we cannot absorb additional funding burdens.

This situation also highlights that both state and local governments need additional resources to address the problems that have accompanied the arrival of drilling companies to Pennsylvania.

Governor Rendell has proposed a severance tax to ensure the industry pays its fair share and helps support the programs and services the commonwealth, counties and municipalities must provide to accommodate their presence.

Under the Governor's plan, Pennsylvania would take in approximately \$1.8 billion over the next five years, with \$180 million of that total being shared directly with local governments in areas where drilling activity is taking place. Local governments could then use those funds to repair roads and other infrastructure, bolster local law enforcement efforts, or provide programs to help those in need.

Thank you for this opportunity to share with you the impacts of the Marcellus Shale Industry on our highway system.

Protecting Our Roads – House Transportation Committee

Scott Christie, P.E., Deputy Secretary for Highway Administration

June 10, 2010

Good afternoon. My name is Scott Christie, and I am the Deputy Secretary for Highway Administration. Thank you for allowing me the time to explain PennDOT's approach to posting roads and how bonding plays a role in this process.

It does bear repeating that PennDOT's policy is to guard against abnormal deterioration of roads and bridges that might be caused by heavy truck traffic associated with the Marcellus Shale drilling activity. PennDOT intends to recover any cost associated with repairs as well as costs related to managing and monitoring the heavy truck traffic. As I mentioned previously, we are aggressively posting many miles of state roads to protect against damage.

Let me begin by stating that a posted roadway is any state or locally owned highway that has a weight restriction. The first step to enact a weight restriction is to complete an engineering and traffic study and to examine the existing roadway conditions, including the pavement structure, to determine if a roadway should be posted. Once PennDOT determines a weight restriction is justified, signs are erected to inform drivers of the specific weight limits for the roadway. If a hauler wants to utilize a posted roadway, they must apply for a heavy hauling permit. To obtain the permit they must enter into an excess maintenance agreement. This agreement specifies that any damage occurring on the road must be repaired immediately (by the company) and requires that the company obtain a bond. PennDOT continuously monitor conditions of the roadway to ensure repairs are timely and properly completed.

A bond is required to insure that if a company does cause damage and does not complete proper repairs, PennDOT has the ability to utilize the bond security to make the repairs ourselves. Depending on the type of hauling permit, one of the three types of bond permits is selected.

- Type 1 Permit: Authorizes use of a particular posted highway or portion thereof by an over-posted-weight vehicle (i.e., one truck and one travel route).
- Type 2 Permit: Authorizes use of a particular posted highway or portion thereof by any number of over-posted-weight vehicles being driven to or from a common destination (i.e. multiple trucks and one travel route).
- For both Type 1 and Type 2 permits the bond security amount is \$6,000/mile unpaved, \$12,500/mile paved and \$50,000/mile for roads knowingly maintained at a lower condition.
- Most bonding permits related to the Marcellus Shale Industry are Type 2.
- Type 3 Permit: Authorizes use of a number of specified posted highways or portions thereof (within a specific County or municipality) by an over-posted-weight vehicle (i.e. one truck and multiple travel routes). Bond security amount is \$10,000 County/municipality wide.

As part of the excess maintenance agreement and bonding process, an on-site inspection is completed to document the existing conditions of the roadway. An excess maintenance agreement ensures that the user completes any maintenance in excess of normal routine maintenance. If the user does not complete the excess road work, then their heavy hauling permit will be revoked. Bonding of the roadway provides two general benefits. First it is an incentive to the user to fulfill their maintenance agreement as utilization of the bond has an impact on a driller's operations as they will have difficulty finding an agency to bond them in the future. Difficulty of obtaining future bonding is a significant deterrent to the driller; in fact, to date PennDOT records indicate that only one bond has ever been utilized. Second it is a financial security to the owner that if the user defaults on the maintenance agreement then there is funding to repair the road.

Historically, \$12,500/mile for paved roadways was a sufficient amount for the typical repairs for the type of heavy hauling seen within the Commonwealth. However, with today's heavy hauling seen within the Marcellus Shale Industry, the security is estimated to cover only 10 to 20% of the repair cost. To assure that a bond requirement is still serving its purpose of being an incentive to the user to fulfill their maintenance agreement and is a financial security to the owner, PennDOT is studying the appropriate bond security amounts.

Increasing the bonding amount does offer increased protection to the road owner to make roadway repairs if the user fails to make the repairs since there would be sufficient funding to cover those costs. However, please note that a bonding increase will not offer a direct method to recoup the costs expended for the additional staff and resources that PennDOT or any locals are incurring as result of the Marcellus Shale Industry activities. Also, increasing the bond amount without a tiered approach will affect all industries, not just Marcellus shale, and will introduce increased cost to all heavy haulers including those operating a smaller size business.

PennDOT will continue to study the appropriate measures to protect our roads and bridges and examine ways to best recover our costs. I thank you for your time.