

**Testimony of
John Hines, Deputy Secretary for Water Management
Department of Environmental Protection (DEP)
Before the House and Senate
Agriculture and Rural Affairs Committees
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Chairpersons Brubaker, O'Pake, Hanna, and Maher and members of the committees, thank you for the opportunity to appear before you to discuss the importance of agriculture's role in Pennsylvania's efforts to comply with the U.S. Environmental Protection Agency's (EPA's) expectations for the Chesapeake Bay Total Maximum Daily Load (TMDL). Pennsylvania is committed to protecting and enhancing our streams and watersheds. The efforts within the Commonwealth will in turn help to further restore the Chesapeake Bay by 2025.

Over the years, progress has been made to reduce nitrogen and phosphorus pollution, also known as nutrient reduction, within the Pennsylvania watershed. According to EPA's current watershed model, Pennsylvania has achieved 49 percent of the total nitrogen reductions needed and 48 percent of the total phosphorus reductions needed. This is real progress, but more needs to be done. Another 29.5 million pounds of nitrogen and 1.2 million pounds of phosphorus must be reduced by 2025.

Agriculture has played a major role in achieving Pennsylvania's nutrient reductions. According to EPA's model, agriculture land uses contribute 56 percent of Pennsylvania's nitrogen loadings to the Bay, yet account for 80 percent of the nitrogen reductions. Agriculture Best Management Practices (BMPs) are among the most cost effective tools to restore water quality. EPA's most recent calculations show Pennsylvania farmers can proudly lay claim to 41% of the total nitrogen reductions made by agriculture in the multi-state watershed. This leadership derives from the Commonwealth's set of agricultural stewardship firsts, including:

- The first mandatory farm nutrient management plans;
- The first nutrient management program to regulate nitrogen and phosphorus;
- The first EPA-approved regulatory program for concentrated animal feeding operations;
- The first Bay state to permanently preserve 20% (more than 3 million acres) of land in the watershed.
- The first Bay state to meet its goal to plant 3,736 miles of forest buffers by the year 2010. The state has planted a total of 3,894 miles of forest buffers along waterways since 2002; and
- Pennsylvania is home to the largest Conservation Resource Enhancement Program (CREP) in the entire nation. DEP's CREP program delivers more than \$50 million in state and federal assistance and targets key edge-of-stream BMPs to maximize water quality.

To meet the 2025 goal, our approach is based on three core elements; milestone implementation and tracking; supporting the implementation of advanced technologies and nutrient trading; and enhancing common sense compliance efforts. These elements will form the foundation for the development of Pennsylvania's Chesapeake Watershed Implementation Plan as required by the EPA. Pennsylvania's plan will be designed to meet load allocations established by EPA's Chesapeake Bay TMDL, scheduled for publication in December 2010.

To guide the development of the plan, DEP is engaging stakeholders in a process similar to that undertaken in 2006 to refine our Chesapeake Bay Tributary Strategy. A Watershed Implementation Plan Management Team has been convened, and is supported by three workgroups focused on wastewater, agriculture and development. Stakeholders include representatives from wastewater treatment facilities, agriculture, land development, municipal officials, environmental and conservation groups, and the legislature.

Milestone Implementation and Tracking

The first key element of our strategy for reaching Pennsylvania's nutrient reduction goals is the development of challenging, but attainable 2-year milestones. To reach those milestones, it is essential to count all BMPs that are implemented within Pennsylvania's Chesapeake Bay watershed, even those that are privately funded. While virtually all reported BMPs are associated with a federal or state grant program, there is not yet a mechanism for reporting privately funded BMPs. Implementation of privately funded BMPs potentially represent a significant source of uncounted practices, particularly for agriculture.

To address this, DEP has funded BMP tracking pilot projects with Lancaster and Bradford County Conservations Districts. Methods to increase BMP tracking include on-the-job farm visits; targeted farm visits; distributing questionnaires at agriculture events; phone surveys; and aerial surveys. Pilot projects results will be transferable to the other conservation districts.

DEP and the State Conservation Commission are also working with U. S. Dept. of Agriculture's National Agricultural Statistics Service (NASS) to better account for cover crops and no-tillage farming. Efforts are focused on adding additional questions to NASS' county estimates yearly questionnaire.

And finally, DEP has developed a non-point source BMP repository to store all the nonpoint source BMP information that will be collected.

New Technology and Nutrient Trading

The second key element of our strategy for reaching Pennsylvania's nutrient reduction goals involves the implementation of new technologies to be supported through the sale of environmental credits and energy products. DEP has been promoting the establishment of enhanced regional digesters that digest manure, produce electricity and substantially reduce nutrients. Some digesters will not substantially change the nutrient content of manure, which is why the department has begun looking more closely at the versions with enhanced technology.

An example of a regional digester that effectively reduces the discharge of nutrients into the watershed is the Cove Area Regional Digester (CARD) that is planned for the Blair/Bedford County area. CARD is the first of its kind. This regional methane digester services two counties covering 10-12 square miles, While its principal purpose is to process manure and remove nitrogen and phosphorous compounds it also has the ability to create renewable energy. Moreover, the water CARD discharges back into the watershed is nearly potable. It is estimated that if 42 enhanced digesters were built in 40 counties, about 27 million pounds of the nitrogen load could be removed. This process will have the added benefit of producing carbon-free renewable energy.

Another example is Energy Works' Energy and Nutrient Recovery Facility scheduled to be constructed in Adams County. Energy Works will receive and process egg layer manure within a fully enclosed building. Recovered energy would then be converted to electricity, with surplus

beyond facility needs sold to the grid. Water quality benefits would be derived by capturing and converting compounds of nitrogen and recycling the product in feed products.

DEP continues to work with stakeholders to enhance our own Nutrient Trading program. With the assistance of DEP's partners, we have built a model program that has generated interest across the country. To help facilitate the nutrient trading market, we are working with PENNVEST to create a Bank and Exchange that would buy and sell nutrient reduction credits. DEP has also adopted regulations (Chapter 96), to codify existing policy and provide clear and certain standards for the program. To date, eight nutrient trading contracts have been signed. In December 2009, the Harrisburg Authority announced it would pursue nutrient trading as part its compliance plan. The authority's NPDES permit calls for it to begin purchasing nutrient credits in 2011. By purchasing credits, it will save \$28 million over the next 20 years, which, in turn, will save ratepayers an estimated \$48 per year on sewer service charges.

Compliance

Pennsylvania's plan will include sensible compliance initiatives for agriculture, stormwater and wastewater treatment plants. Today, I will focus on our Chesapeake Bay Agricultural Water Quality Initiative that is composed of four elements:

- *Expand technical assistance and outreach:* The objective is to bring farmers into baseline regulatory compliance through efforts to better inform farmers of their regulatory obligations and the ramifications of noncompliance.
- *Continue Existing Regulatory Programs:* This piece continues the identification, permitting and inspections of Concentrated Animal Feeding Operations (CAFOs) and the inspection of Concentrated Animal Operations (CAOs) and the necessary follow-up to ensure compliance. DEP and county conservations districts will continue to respond to complaints, spills and accidents, as appropriate.
- *Evaluate and modify regulatory or administrative tools as needed:* DEP will continue to look for ways to fill agricultural compliance gaps if needed. Two key examples of this are the revisions to our Chapter 102 Erosion and Sedimentation Control regulations and revisions to the Manure Management Manual.
- *Targeted Watershed Approach to achieve agricultural compliance:* This component consists of identification of small manageable sized watersheds that are impaired by agriculture. The approach will utilize a farm assessment protocol to identify the current status of operations, as well as gaps in compliance with regulatory requirements and other water quality degrading conditions. DEP and other partners such as EPA, the State Conservation Commission and the County Conservation Districts will evaluate these assessments and implement the most appropriate course of action to achieve compliance in a timely manner. Financial assistance as well as compliance and technical assistance resources will be prioritized by DEP and partner agencies to achieve compliance.

Conclusion

DEP's commitment and investments are paying off. With funding assistance from DEP, the Susquehanna River Basin Commission monitors nutrient and sediment loads at sites within the Susquehanna River basin. Flow adjusted trend analysis of the data collected between 1985 and 2008 indicate significant decreases in nutrients and sediment. Here are two examples:

- **Susquehanna River at Marietta:** This station includes 95 percent of the Susquehanna River Basin. Nitrogen is down an average of 28 percent, phosphorous is down an average of 23 percent, and sediment is down an average of 40 percent.

- Conestoga River: Nitrogen is down an average of 20 percent, phosphorus is down an average of 50 percent, and sediment is down an average of 70 percent.

These results demonstrate the commonwealth's commitment to restore Pennsylvania's waters and, consequently, the Chesapeake Bay.