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**Department of Environmental Protection**  
on  
**“Pennsylvania’s Chesapeake Bay Tributary Strategy”**  
**Before a Joint Meeting of the**  
**Senate Environmental Resources & Energy Committee**  
**and the**  
**Senate Agriculture and Rural Affairs Committee**  
**September 20, 2005**

## **INTRODUCTION**

Governor Tom Ridge signed the Chesapeake 2000 Agreement committing Pennsylvania to help remove the Chesapeake Bay from the federal Clean Water Act’s list of impaired waters by 2010. Governor Ridge took on this voluntary commitment in order to avoid mandatory action by the U.S. Environmental Protection Agency (EPA). EPA was sued by a coalition of environmental groups and other organizations to clean up the Bay, and a court order directed the federal agency to take action to restore the Chesapeake. Mandatory directives from EPA will come to Pennsylvania and other Bay states in 2010 if sufficient measures are not in place by then to restore water quality in the Bay and its tributaries.

Our partners to this commitment include all the jurisdictions in the Chesapeake Bay watershed, including Delaware, Maryland, New York, Virginia, West Virginia and the District of Columbia. EPA and the Chesapeake Bay Commission also are key partners.

More than half of our Commonwealth is within the Chesapeake Bay Watershed, with the Susquehanna River, the Bay’s largest tributary, providing roughly half of the total freshwater flow. The Potomac River, with a sizeable portion of its watershed within our border, adds another 20 percent. The work that we do to help the Bay also immediately helps Pennsylvania by cleaning our streams, enhancing the health of our families and preserving the rural character and farming economy of our beautiful state.

Pennsylvania is working aggressively to meet numerous commitments in the Chesapeake 2000 Agreement. We are the first among the states to meet the goal to preserve permanently from development 20 percent of the land area in our Bay watershed. More than 3 million acres have been set aside. Pennsylvania was the first state to achieve a net gain of wetland resources. Over the past two decades over 6,000 acres have been gained. Pennsylvania has reached more than two-thirds of its watershed management plan goal. River Conservation Plans covering over 6.5 million acres have been developed. With significant Growing Greener investments, Pennsylvania also is working to meet riparian forest buffer and wetland restoration goals. In the Chesapeake Bay watershed, more than 1,335 miles of riparian forest buffers have been established and 1,770 acres of wetlands restored.

With these accomplishments in hand, Pennsylvania is now ready for the next phase of this effort to improve water quality throughout our Commonwealth for a cleaner environment and enhanced public health.

## **CLEANING UP PA RIVERS AND STREAMS**

Pennsylvania is working with communities, watershed groups, farmers and businesses to develop new tools and put practical solutions on the ground to improve the quality of our waterways. It is imperative that we work aggressively to clean up what is one of our Commonwealth’s greatest natural resources. It is true that the work we do at home ultimately serves to help the Bay. But our efforts are about making sure

the water in Pennsylvania is safe to drink, healthy enough to sustain aquatic life and abundant in supply to sustain our economy. Too many nutrients --- nitrogen, phosphorus and sediments --- in our Pennsylvania waters (and downstream in the Bay) are interfering with our ability to achieve these environmental and public health goals.

There are streams within Pennsylvania's portion of the bay basin where the nitrate levels in the surface water do not meet drinking water standards. For example, in Octoraro Creek the nitrate levels exceed drinking water standards 50 percent of the time. This exceedance impacts two potable water supplies in the Octoraro watershed. The Chester Water Authority has intakes on the Susquehanna River and a reservoir in the Octoraro Creek watershed. They must currently combine water from the Susquehanna River in order to meet the drinking water standard for nitrate of 10 milligrams per liter (mg/l). Pennsylvania American Water Co. has been unable to use the Coatesville plant in the Octoraro Creek watershed for the past three years due to the high nitrate levels.

Excessive levels of nitrate in drinking water can cause serious illness and sometimes death. The serious illness in infants, often called "blue baby syndrome," is due to the conversion of nitrate to nitrite by the body, which can interfere with the oxygen-carrying capacity of a child's blood.

Much of the groundwater in central Pennsylvania has nitrate levels nearing 10mg/l. Septic systems and residential development in some areas are curtailed because installation would threaten drinking water wells. I recently received a letter from Senator Noah Wenger regarding nitrate levels in groundwater in West Fallowfield Township, Chester County, where they have been documented to exceed 5 mg/l, and regarding what the effects might be on future development.

Aside from obligations to help restore the Chesapeake Bay, Pennsylvania also has requirements under the federal Clean Water Act to make sure the 83,161 miles of rivers and streams feeding six major watersheds in our Commonwealth are healthy, clean and safe. We are blessed with more miles of running water than most other states. However, it is a resource that historically has been taken for granted by industry and the public. The Rendell administration has taken an active role in protecting our supply of fresh water while balancing the needs of business, community, agriculture and recreational users.

Locally, Pennsylvania streams in the Chesapeake Bay drainage area suffer various water quality problems that prevent them from being fishable, swimmable and drinkable. Those "impairments" include the following:

- miles of stream impaired by siltation: 3,257
- miles of stream impaired by agricultural activities: 2,904
- miles of stream impaired by acid mine drainage (AMD): 2,116
- miles of stream impaired by nutrients: 1,262
- miles of stream impaired by urban runoff: 544
- miles of stream impaired by habitat modification: 80

Nutrient reduction will improve the quality of Pennsylvania's surface waters. There are currently 53 out of the 190 (28 percent) identified significant point source discharges as part of the state's Chesapeake Bay Tributary Strategy that are located on streams that are either impaired, or tributary to a stream that is impaired, by nutrients. These nutrient impairments are a combination of excessive algal growth or dissolved oxygen depletion.

While requiring nutrient reduction at significant point source dischargers will ultimately help restore the Bay, it also provides environmental and Public health benefits to Pennsylvania. For example, 39 of the 190 significant wastewater dischargers (21 percent) are upstream of a potable water supply intake.

The additional nutrient removal at these facilities will also result in greater protection of these sources of drinking water. Since surface water supplies do not normally contain high levels of nitrates, water treatment plants are not usually equipped to remove this contaminant that poses an acute health risk to consumers. Reducing total nitrogen output from the discharges will reduce the available nitrates that are present at the water supply intake, thereby increasing the protection of public from blue-baby syndrome.

Improved wastewater treatment also provides another important barrier for protection to downstream public water system users. The better the quality of source water, the less likely breakthrough of contaminants in the drinking water treatment system.

Technologies that produce an effluent with lower levels of nutrients generally provide added benefits to downstream water suppliers. For example, simply adding automated oxygen controls to an activated sludge treatment system to produce a total nitrogen (TN) concentration of about 8 mg/L will reduce the level of important drinking water contaminants such as disinfectant byproduct precursors. Going even further --- for example, by adding a membrane biological reactor instead may reduce the effluent TN to about 3 mg/L --- can also reduce the concentration of Giardia and Cryptosporidium cysts in the raw drinking water source.

Sewage system upgrades are essential to reducing nutrient pollution. They also are essential for our Commonwealth to grow. Water is a strategically important resource that can provide a competitive advantage in helping Pennsylvania attract and retain businesses and jobs. But without the infrastructure improvements necessary to attract businesses or enable existing businesses to expand, our state economy suffers.

Conservation practices that reduce nutrients also can be beneficial to a farmer's bottom line. Using manure nutrients to grow crops reduces the need to purchase commercial fertilizer while keeping these nutrients out of streams. Restricting cattle access to streams can protect herd health and safety by limiting contact with and consumption of water the animals pollute and by keeping animals off of stream banks that can become steep and unstable. Fencing and stream crossings that limit livestock access to streams may help to reduce the risk of leg injuries and reduce contact with water-borne bacteria that may cause reduced weight gain, black leg, mastitis and other ailments.

There are many variables in farm economics. However, it can be said that the cost of veterinarian bills, lost production and replacements from sick and downed animals can be reduced by restricting animal access to streams. Farmers have reported that their savings in veterinary bills more than pay for the costs of the fencing and upland watering. The cost of nitrogen fertilizer for an average crop farm is about \$2,000 and rising while the nitrogen in manure is free. While it is true that there are costs associated with proper storage and application of manure, these costs are liabilities of the operation whether or not the farmer purchased commercial fertilizer.

Additionally, under the federal Conservation Reserve Enhancement Program, Pennsylvania farmers will receive \$175 million federal dollars for rental payments and other incentives to install and maintain 140,000 acres of conservation practices that reduce nutrients, improve water quality and enhance wildlife habitat.

## **HISTORY**

In April 2003, EPA assigned nutrient and sediment reduction budgets to the Bay states. These budgets commit the six Bay watershed states and the District of Columbia to reduce nutrient pollution by more than twice as much as was accomplished since coordinated Bay restoration efforts began nearly 20 years ago. The new Bay-wide annual nutrient loading standards are 175 million pounds of nitrogen, 12.8 million pounds of phosphorus and 4.15 million tons for sediment. These new goals were developed through a collaborative process consisting of three major steps.

The first step required the development of new EPA Water Quality Criteria for the Chesapeake Bay. These new criteria involve refined designated uses for each section of the Bay aimed at matching the water quality standards with the plants and animals in those different areas. After EPA published the new water quality criteria in April 2003, the tidal water states (Maryland, Virginia, Delaware) began their process to adopt new conforming state standards. Maryland's became effective Aug. 29, 2005.

Step two involved the development of nutrient and sediment allocations that would meet the new criteria. The Chesapeake Bay Watershed and Water Quality models, along with monitoring data, were used to help determine how many pounds of nitrogen, phosphorus and sediment could be delivered to the Bay without violating the new criteria. These models are computer representations that simulate the real world, computing how many pounds of nutrients are eliminated by the dozens of management actions proven to reduce different amounts of pollutant loads, such as sewage treatment technology, riparian buffers, advanced no-till farming and manure management techniques, and urban stormwater controls. These management scenarios were run through the models to determine how to achieve Bay-wide attainment of the water quality criteria and establish the Bay-wide goals for nutrients and sediment.

In step three, these models were used to allocate cap loads to the nine major tributary basins in the Chesapeake watershed, and then to 20 state-specific sub-basins. Cap loads are the maximum amounts of pollutants allowed to flow into a water body and still ensure achievement of the water quality standards. Each state bears a proportional burden for achieving and maintaining the assigned cap based on their pollutant loadings and effects on different tributaries.

For Pennsylvania, yearly nitrogen, phosphorus and sediment discharges to the Bay must be reduced to no more than 71.9 million pounds, 2.46 million pounds and 0.995 million tons, respectively. Once Pennsylvania reaches these levels, the nutrient and sediment loads must not increase above them in order to sustain the improved water quality within the Chesapeake Bay.

Since the development of Pennsylvania's first Chesapeake Bay Tributary Strategy in 1988, we have made significant progress to build the programs necessary to implement best management practices to reduce our nutrient and sediment loads. As of 2002, it is estimated that sufficient practices have been implemented to reduce nitrogen loads to the Bay by 10.9 million pounds per year, phosphorus loads by 0.86 million pounds per year and sediment by 0.13 million tons per year. To meet new water quality standards established by the Chesapeake 2000 Agreement, Pennsylvania will need to reduce nitrogen by an additional 37.3 million pounds per year, phosphorus by an additional 1.13 million pounds per year and sediment by an additional 116,000 tons per year.

Clearly, our efforts must accelerate to achieve these goals. This will not happen overnight, but rather will take the long-term commitment of the federal, state and local governments and citizens across the watershed. Our key tools for getting there in Pennsylvania are the newly legislated ACRE initiative, reduced discharge loads for significant wastewater treatment plants and a variety of financial tools, including but not limited to Growing Greener, PennWorks, Pennvest and the Conservation Reserve Enhancement Program.

It is important to note at this juncture that Pennsylvania's tributary strategy is *not* a catalog of actions that will be mandated. It is rather a menu of measures that, if taken, generate appreciable nutrient or sediment reductions. We want Pennsylvania to get credit for every pound reduced from every good land-use practice or industrial pollution prevention innovation.

Much has been made of the \$8.2 billion price tag assigned to the state's tributary strategy by an EPA consultant. It is wrongly assumed that the components of the tributary strategy are mandatory and therefore that the Chesapeake Bay compliance will cost our Commonwealth that fixed amount. That is wholly inaccurate. The mandatory measures we are instituting specifically to meet Chesapeake Bay requirements are those just identified, namely ACRE program and the new nutrients limits in National Pollution Discharge Elimination System (NPDES) permits. We estimate the mean cost of the latter set of actions to be approximately \$195 million.

Other actions that may be taken voluntarily or pursuant to other requirements unrelated to the Bay, e.g. stormwater management measures, will have ancillary benefits for the Chesapeake, but they are not mandated as part of Pennsylvania's Bay plan.

Analysis of the nutrient sources within Pennsylvania's portion of the Chesapeake Bay Watershed indicates that about 86 percent of nitrogen loads originate from nonpoint sources and about 14 percent are discharged from point sources. Similarly, about 78 percent of the phosphorus originates from nonpoint sources and about 22 percent are discharges from point sources.

## **POINT SOURCE STRATEGY**

Full implementation of the point source control program will achieve an estimated reduction of 5.4 million pounds of nitrogen and 250,000 pounds of phosphorus per year. To achieve the nutrient reduction goals, a specific "cap load" will be allocated from the overall point source load to each permitted point source discharger in Pennsylvania's portion of the Chesapeake Bay. Maintaining the "cap load" for new sources will be accomplished by requiring additional treatment and land application of effluent, recycle and reuse, allowing offset credits for replacement of existing sources, or the purchasing of offset credits elsewhere through a trading program. Trading is an important opportunity to cost-effectively achieve and maintain our aggregate cap and individual caps.

Under criteria established by the Chesapeake Bay Program, 95 percent of the nutrient loads from point sources must be captured through monitoring of significant facilities. In Pennsylvania, a significant sewage discharge is any discharge at or above 0.4 million gallons per day (mgd). Non-significant sewage discharges are those with design flows less than 0.4 mgd, but greater than 2,000 gallons per day. Discharges of industrial waste are considered to be significant if they discharge at least 75 pounds per day of total nitrogen (TN), or 25 pounds per day of total phosphorus (TP).

For the significant sewage discharges, annual mass load limits will be established for TN and TP based upon the projected 2010 base flow and performance levels of 8 mg/l and 1 mg/l, respectively. Nutrient limits for the mixed bag of other significant industrial discharges will be allocated on an individual basis, dependent upon the existing waste stream and the best treatment technologies. The aggregate load from all industrial discharges will be held to no more than existing, measured loading.

For non-significant sewage discharges, annual cap load limits will be established for total TN and TP based upon design flow and existing TN and TP performance levels. Monitoring of nutrient loads discharged from these non-significant facilities is critical to documenting the existing performance levels. Therefore, the non-significant sewage discharges will be required to monitor their effluent for TN and TP for a minimum two-year period.

It is important to note that no “reserve” TN or TP loads are available for new facilities or new land development tributary to existing facilities. These new loads must be offset by land application of effluent, recycle and reuse, allowing offsets for replacement of existing sources, or the purchasing of offsets from other sources, point or non-point, with available credits. An example of offsets would be retiring of existing septic systems through connection to a community sewerage system. Planning efforts for new or increased sewage discharges will have to address these issues.

Note that Pennsylvania’s Susquehanna and Potomac tributary strategies do not impose new restrictions on septic systems. Instead, connecting those systems to a sewage treatment plant is an option a point source can continue to earn nutrient reduction credits.

Several wastewater treatment facilities in the bay basin have cost-effectively achieved measurable nutrient reductions by proper planning and operational changes. For example, Towanda Borough reduced their TN load and it resulted in a cost savings for the plant. After attending a Department/ Bay Commission sponsored seminar, the operator applied operational changes which employed some of the unused capacity in the existing plant to produce better treatment. TN in the effluent was reduced by approximately 50 percent. The operations change resulted in a cost savings from a reduction in electrical use.

Another example of a plant that saved money and reduced their TN load is Wyoming Valley. Over a period of approximately seven years, this secondary treatment plant has refined the control of its system to produce consistently higher quality effluent than required. Savings have been realized in reduced electrical and chemical costs.

A number of plants have included nutrient reduction technology when upgrading their plants which is generally more cost-effective than adding the technology separately. For example, Sunbury recently completed an upgrade to address various issues including CSOs, capacity, and aging infrastructure. In the process they included nutrient reduction. The overall cost of the project was approximately \$22.6 million. The nutrient reduction represented around \$2.2 million of this cost.

Eastern Snyder County Regional Sewer Authority included nutrient reduction technology as part of a general upgrade that is currently being completed. According to the manufacturer, the facility will be capable of producing TN concentration at design flow of 3 mg/l. According to the Growing Greener application they submitted to the Department, the cost difference between this project and a system to perform at 8mg/l was \$300,000.

## **NONPOINT SOURCE STRATEGY**

Nonpoint sources of pollution account for 86 percent of the nitrogen loading, 78 percent of the phosphorus loading and all of the sediment loading flowing into the Chesapeake Bay from Pennsylvania. Within the Chesapeake Bay watershed in Pennsylvania, 3257 miles of stream are polluted by excess siltation and 1262 miles of stream are polluted by an over abundance of nutrients. Agricultural activities are responsible for the impairment of 2904 miles of stream while urban runoff impairs 544 miles of waterways in the bay basin. Clearly, nonpoint sources are dominant contributors to the problem in front of us, and they must be an equally dominant part of the solution.

Working together, the Department and the agricultural community have taken some bold steps to improve the rural environment. On August 25, the Independent Regulatory Review Commission approved revisions to Department regulations addressing manure management at all farming operations as final rulemaking. It is anticipated that they will be published and become effective this fall. The regulations

expand the number of farms that must comply with specific environmental regulations to 5210 operations, including all Concentrated Animal Feeding Operations (CAFOs), all Concentrated Animal Operations (CAOs), and all importers of manure from CAFOs and CAOs. The amendments enable the Department to maintain delegation of the NPDES CAFO program while broadening its coverage from 170 to approximately 360 farms, and adding new requirements. The final rule also specifies that erosion and sediment control plans for plowing and tilling, required under another Department regulation, must be submitted with all CAFO permit applications. Further revisions strengthen existing requirements for pollution control and prevention at agricultural operations that are not subject to NPDES permit requirements. Those revisions include provisions that authorize DEP to establish “appropriate vegetative buffers and setbacks...to protect and maintain water quality”. These regulatory revisions are further supported by the ACRE legislation signed into law last July.

In addition, extensive revisions to the Nutrient Management regulations, including new requirements addressing phosphorus and nitrogen application, significantly increasing the regulation of exported manure, and increasing the number of regulated farms by over 600 percent will be considered by the State Conservation Committee on Oct. 21, 2005.

Buffering our streams with trees and other perennial vegetation has a variety of environmental benefits. Pennsylvania’s Conservation Reserve Enhancement Program (CREP) is the largest in the country and 200,000 acres have been allocated for best management practice implementation in the Chesapeake Bay basin. The Pennsylvania CREP has recently been revised to focus on edge of stream practices such as riparian forest buffers, natural vegetation buffers and wetlands. In 2005, the Chesapeake Bay Foundation was awarded \$1 million in Growing Greener funds to assist in the delivery of CREP to critical watersheds throughout the Susquehanna basin.

To protect Pennsylvania’s millions of dollars worth of investment in fencing livestock out of streams, planting riparian buffers, and installing livestock crossings for future generations, we are developing a conservation easement program designed to protect riparian buffers in perpetuity. Outreach resources are being developed and will be integrated into the outreach efforts for the Pennsylvania CREP. Pilot programs are funded for at least two watersheds in the Susquehanna Basin, the Juniata River and Yellow Breeches Creek.

It is vitally important to direct funding opportunities toward efficient solutions to priority problems. Consistent with that approach, 38 county conservation districts in the Susquehanna and Potomac watersheds have developed County Implementation Plans that emphasize water quality results through application of best management practices that are consistent with the Tributary Strategy. The plans are used to direct federal funds to support the most efficient management practices in priority watersheds.

Total Maximum Daily Loads (TMDLs) are quantitative pollutant reduction goals and must be established for all impaired watersheds. To date 388 TMDLs covering 1057 miles of stream have been developed in the Chesapeake Bay Basin. The TMDLs are a roadmap for cleaning up our local waters as well as for restoring the Chesapeake Bay. Future TMDLs in the Susquehanna and Potomac watersheds will be prioritized by a strategic approach focused toward meeting the tributary strategy goals.

Current estimates show that urban best management practices account for 9 percent of the anticipated nitrogen reductions outlined in Pennsylvania’s tributary strategy yet make up 68.5 percent of the overall implementation cost. These numbers need some explanation. Some urban stormwater BMPs are extremely expensive when compared to other practices because they require reconstruction in populated and developed areas. Many of these BMPs will be installed to meet federal stormwater requirements, and would occur even in the absence of the Chesapeake Bay Tributary Strategy.

Federal regulations required 242 municipalities in Pennsylvania's Chesapeake Bay basin to obtain NPDES permits for their stormwater discharges. The permits obligate those municipalities to reduce the discharge of pollutants to the "maximum extent possible" by implementing a series of six minimum control measures. The six measures range from public outreach and education to passing ordinances addressing post-construction discharges from both new and re-development. It is estimated that the individual cost of complying with these permits over a five-year period is \$70,000. DEP also has integrated post construction stormwater planning into NPDES stormwater construction permitting to ensure water quality standards are met after construction has been completed. This approach will reduce pollutant loading to streams, recharge groundwater tables, enhance stream base flows during droughts, and reduce the threat of flooding and stream bank erosion during storm events.

Under the Pennsylvania Stormwater Management Act (Act 167), counties prepare watershed stormwater management plans and municipalities implement the plans through ordinances and regulations. More effective management of stormwater runoff from developed areas will provide opportunities for nutrient reductions to the Chesapeake Bay. By integrating Act 167 stormwater management planning into federal permitting programs, nutrient reductions will be achieved through watershed-based implementation of stormwater management BMPs. Currently 18 stormwater management plans covering 80 municipalities in the Susquehanna and Potomac watersheds include a water quality protection component, and another 10 such plans encompassing 135 municipalities are in progress.

To further enhance stormwater management in Pennsylvania, the Department, in conjunction with an oversight committee, is developing a Stormwater Management Best Management Practice Manual that will provide specific guidance on the applicability and design of a wide variety of BMPs. The draft "Manual" will be available for public review and comment by the end of the year.

Clean renewable energy and a cleaner Pennsylvania and Chesapeake Bay go hand in hand. Pennsylvania's Energy Harvest Grant Program provides financing for clean and renewable energy projects that are proven to improve air quality, protect watersheds, and preserve land. Manure digesters and solar pumps related to rotational grazing systems add a promising dimension to farming and, at the same time; result in air and water quality improvements.

Pennsylvania also has recently adopted an Alternative Energy Portfolio standard. With the passage of this portfolio by the Governor, the standard ensures that in 15 years, 18 percent of all energy generated in the Commonwealth will come from clean, efficient, and renewable resources, including manure and other biomass sources of energy. Promoting the development of cleaner energy sources will also help reduce the atmospheric deposition of nitrogen that ends up in the Chesapeake Bay.

The strategy to clean up the Susquehanna and Potomac basins and the Chesapeake Bay would not be complete without addressing air sources of nitrogen. Consistent with the federal Clean Air Act, reductions in nitrogen oxide emissions will translate into a reduction of nitrogen loading to the bay by about 3.7 million pounds per year. Key components of the strategy include the use of reasonably available technology, enhanced standards for light duty vehicles, and reducing non-utility sources.

As noted at the outset of this testimony, financial tools are available to help implement the measures discussed above. There are a large number of potential funding sources available to local citizens as well as state and local governments. For example, the Small Watersheds Grant Program, administered by the National Fish and Wildlife Foundation, provides grants to local organizations to protect and improve watersheds in the Chesapeake Bay basin. In 2004, twenty-eight projects received funding totaling over \$741,000. The Commonwealth's Growing Greener funding initiative is the largest single investment of state funds to address critical environmental concerns ever made. It has provided organizations with the resources to address watershed protection, acid mine drainage remediation, stream improvements, dam

removal, and flood protection. In 2004 approximately \$13.52 million was directed to projects in the Chesapeake Bay basin. The federal funds allocated to Pennsylvania through EPA's Section 319 grant address non-point source pollution through planning and implementation. In 2004, \$2,525,758.00 was granted to projects in the Pennsylvania portion of the Chesapeake Bay basin. These and a variety of other funding sources have brought over \$75,000,000 into the bay basin in 2004 to correct nonpoint sources of pollution.

## **TRADING**

I would like to address the final major subject area of my testimony here today, by providing you an update on how Pennsylvania has been leading the way in developing a nutrient trading program. This effort is a top priority of the Rendell administration because it enables Pennsylvania to take giant steps in nutrient reduction in the most cost-effective way.

Harnessing market forces is an effective way to achieve environmental regulatory goals at less expense than traditional command and control regulations. Market-based programs such as trading provide incentives for entities to create credits by going beyond statutory, regulatory or voluntary obligations and goals. These programs provide a structure where environmental improvement credits can be traded to other to help them more cost effectively meet their obligations or goals.

I will focus first on a model project and then expand to the broader concepts of program development. One of our project partners, the Pennsylvania Environmental Council, recently concluded the first-ever successful nutrient trade. Pfizer Inc. provided \$80,000 to Lititz Borough to fund the reshaping of a portion of the Santo Domingo Creek, a tributary of the Conestoga River that runs through the New Street Park. LandStudies Inc. performed the restoration, which returned this section of creek to its historic elevation and removed historic legacy sediments that built up in and around the stream. Jones-Day Law Firm provided, pro bono, a contract defining that credits resulting from the activity would be traded to the borough.

This project is an excellent example of how partners can work together to generate nutrient reductions, agree upon credit ownership, and drastically reduce costs. The dividends of this work has come national recognition. In fact, one of our original partners, the Pennsylvania Environmental Council, recently received a \$939,734 grant from the Natural Resources Conservation Service (NRCS) to launch a "reverse auction," an innovative, market-based program for delivery of Best Management Practices (BMPs) funding.

The Rendell administration has been investing in a unique partnership between Wall Street and Pennsylvania farm and conservation groups to build the trading program. That investment is paying dividends. **Attached to this testimony are trading policy documents as well as the specific guidelines that relate to nutrient trading in the Bay.**

## **CONCLUSION**

Pennsylvania doesn't share a single mile of Bay waterfront, but we are proudly and actively engaged in helping to save the Bay since work that we do to help the Bay also immediately helps our Commonwealth and benefits our residents and environment. Clean streams enhance the health of our families and preserve the natural character that makes our state so attractive.

Our tributary strategy shows how we will meet the challenges to come and build on the gains we already have made to provide cleaner water resources at home and ultimately deliver cleaner water downstream.

By further reducing nutrients and sediments that flow into our local streams, we are doing our part to hasten restoration efforts and ensure greater benefits to the entire region that enjoys the Chesapeake Bay.

I thank you for your attention. Mr. Chairman and members of the Subcommittee, I'd be happy to answer any questions you have at this time.

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