

**HEARING TO REVIEW THE CHESAPEAKE BAY
TMDL, AGRICULTURAL CONSERVATION
PRACTICES, AND THEIR IMPLICATIONS ON
NATIONAL WATERSHEDS**

HEARING
BEFORE THE
SUBCOMMITTEE ON CONSERVATION, ENERGY,
AND FORESTRY
OF THE
COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES
ONE HUNDRED TWELFTH CONGRESS
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WEDNESDAY, MARCH 16, 2011

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON CONSERVATION, ENERGY, AND FORESTRY,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. Glenn Thompson [Chairman of the Subcommittee] presiding.

Members present: Representatives Thompson, Goodlatte, Stutzman, Huelskamp, Hultgren, Ribble, Holden, Schrader, Owens, and Peterson (*ex officio*).

Staff present: Patricia Barr, Brent Blevins, Tamara Hinton, John Konya, Josh Maxwell, Debbie Smith, Nona Darrell, Nathan Fretz, Liz Friedlander, Robert L. Larew, Anne Simmons, and Jamie Mitchell.

**OPENING STATEMENT OF HON. GLENN THOMPSON, A
REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA**

The CHAIRMAN. Well, good morning everyone. This hearing of the Subcommittee on Conservation, Energy, and Forestry to review the Chesapeake Bay TMDL, agricultural and conservation practices, and their implications will come to order. Good morning again. I want to welcome everyone to the first hearing of the Conservation, Energy, and Forestry Subcommittee. This Subcommittee will hold hearings on many important topics over the next 2 years and I believe this topic ranks among the most important. There are two purposes for our hearing today. First of all, we will review the development and implementation of the Chesapeake Bay TMDL by EPA. And our second purpose is to consider the role farmers play in ensuring a healthy Bay.

Let me say up front I know everyone in this room is concerned about the health and the well-being of the Chesapeake Bay. Now we all recognize that it is a treasure that is important to the vitality of millions of people. Everyone, including the agricultural community, must play a part in ensuring its health. That being said, I am alarmed at the lack of transparency by EPA in the development of its model for the TMDL. This TMDL is unprecedented in terms of its scope and impact on the lives of every day citizens and

is based on a model that has been questioned by everyone from industry stakeholders to colleges.

Now I am concerned about the lack of a thorough cost-benefit analysis having been performed by EPA, and further, I am concerned that states are being burdened with a non-permanent, resident-funded mandate at a time when states are struggling to balance their budgets. The Federal Government and states have, to date, spent billions of dollars on the health of the Bay. The 2008 Farm Bill included language in short that farmers in the watershed would have access to the resources necessary to improve the health of the Bay. The TMDL will have a devastating economic impact on my constituents. I am very concerned about the burden that this action by EPA will place on farmers and citizens in my district and throughout the watershed.

For example the Commonwealth of Virginia has estimated that the cost to implement the current plan approved by EPA would cost almost \$5,000 per taxpayer. Maryland has estimated this plan will cost \$10 billion over 10 years. The health of the Chesapeake Bay is a tremendously important issue for farmers and taxpayers in Pennsylvania, the citizens of Washington, and the other five states in the watershed, but even if you aren't one of the 17 million people living in the Chesapeake Bay watershed, or your district is thousands of miles away, this process is important to you. The model and the process used to develop the Bay TMDL will be replicated by EPA on watersheds across the country. So, although this may seem a world away, you may see this again in the future.

We certainly see just this past week in my hours both at home in the district and here in Washington just purely by happenstance, different agencies coming in that are involved in the watershed, the Bay as well. The Army Corps of Engineers are meeting with county commissioners to talk about their past use of Community Development Block Grant monies specifically to assist municipalities that impact the watershed issues.

And most recently—actually very recently this came out today, where we have the Federal court decision that was released today from the Fifth District Court I believe. U.S. Court of Appeals in the Fifth District in New Orleans essentially said that the EPA exceeded its statutory authority in requiring concentrated animal feeding operation, CAFOs, that propose or might discharge to apply for CWA permits. And the fact is that a unanimous decision by that court that the EPA cannot require livestock operations to obtain Clean Water Act permits unless, and until, they have a discharge into the waterways of the United States.

So I am looking forward to the panel that we have today. I want to—really want to thank all the witnesses for coming to testify this morning. Our first panel of witnesses will discuss the development and the implementation of the TMDL. Our second panel will discuss success stories of farmers engaging in voluntary conservation practices and how that has made a significant improvement in the Bay. This panel will also share concerns about the impacts of implementation of the TMDLs on the agricultural community.

Now we will hear stories of farmers who have acted in a responsible manner as good stewards, and I am proud of the fact that farmers are taking real, on the ground daily steps to improve the

water quality in the Chesapeake Bay region and across the country. And I want to be sure that the agricultural community receives the credit it deserves for engaging in voluntary practices to reduce nutrient and sediment runoff.

And I want to extend a warm welcome to Carl Shaffer, the President of Pennsylvania Farm Bureau and I am certainly happy that Carl drove down here this morning to share his thoughts and concerns of my constituents and offer a Pennsylvania perspective on this important policy matter.

[The prepared statement of Mr. Thompson follows:]

PREPARED STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS
FROM PENNSYLVANIA

Good morning. I want to welcome everyone to the first hearing of the Conservation, Energy, and Forestry Subcommittee.

This Subcommittee will hold hearings on many important topics over the next 2 years, and I believe this topic ranks among the most important.

There are two purposes for our hearing today. First of all, we want to review the development and implementation of the Chesapeake Bay TMDL by EPA.

Second, we want to consider the role of farmers in ensuring a healthy Bay.

Let me say up front, I know everyone in this room is concerned about the health and well-being of the Chesapeake Bay. We all recognize that it is a treasure that is important to the vitality of millions of people. Everyone, including the agricultural community, must play a part in ensuring its health.

That being said, I am alarmed at the lack of transparency by EPA in the development of its model for the TMDL. I am concerned about the lack of a thorough cost-benefit analysis having been performed by EPA.

Further, I am concerned that states are being burdened with an unfunded mandate at a time when states are struggling to balance their budgets.

The Federal Government has spent hundreds of millions of dollars on the health of the Bay. The 2008 Farm Bill included language that ensured that farmers in the watershed would have access to the resources necessary to improve the health of the Bay.

I am very concerned about the burden that this action by EPA will place on farmers and citizens throughout the watershed. The TMDL regulations will have a devastating economic impact on my constituents.

For example, the Commonwealth of Virginia has estimated that the cost to implement the current plan approved by EPA would cost almost \$5,000 per taxpayer. Maryland has estimated this plan will cost \$10 billion over 10 years.

The health of the Chesapeake Bay is a tremendously important issue for farmers and taxpayers in Pennsylvania, the citizens of Washington, and the other five states in the watershed.

But even if you aren't one of the 17 million people living in the Chesapeake Bay watershed, or your district is thousands of miles away, this process is important to you. The model and the process used to develop the Bay TMDL will be replicated on watersheds across the country.

I want to thank our panels of witnesses for coming to testify this morning.

Our first panel of witnesses will discuss the development of the TMDL. Our second panel will discuss success stories of farmers engaging in voluntary conservation practices, and how that has made a significant improvement in the Bay. This panel will also share concerns about the impacts of implementation of the TMDL on the agriculture community.

We will hear the stories of farmers who have acted in a responsible manner. I am proud of the fact that farmers are taking real, on-the-ground, daily steps to improve water quality in the Chesapeake Bay region and across the country. I want to be sure that the agriculture community receives the credit it deserves for engaging in voluntary practices that reduce nutrient and sediment runoff.

I want to extend a warm welcome to Carl Shaffer, the President of the Pennsylvania Farm Bureau. I am happy he drove down here this morning to share the thoughts and concerns of my constituents and offer a Pennsylvania perspective on this process.

I now yield to the gentleman from Pennsylvania, Mr. Holden for his opening statement.

The CHAIRMAN. And now I am very pleased to yield to my colleague and gentleman from Pennsylvania, Mr. Holden for his opening statement.

**OPENING STATEMENT OF HON. TIM HOLDEN, A
REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA**

Mr. HOLDEN. Thank you, Mr. Chairman, and thank you for having this hearing today. Today's hearing focuses on a very important topic for farmers and ranchers in the Chesapeake Bay watershed, as well as those across the country concerned with increased regulation.

The Chesapeake Bay is the nation's largest and most diverse estuary. It is home to more than 3,600 species of plants and animals, and is a significant migration and wintering habitat in the Atlantic Flyway. The health of this body of water, and those contained in the Chesapeake Bay watershed including the Susquehanna River that runs through my Congressional district, deserve our full attention.

Farming has always been an important part of the Chesapeake Bay's landscape comprising almost $\frac{1}{4}$ of the watershed. Agriculture can play a significant role in the protection of this ecosystem. Efforts to improve Bay water quality however should not impede the livelihood of our family farmers.

This Subcommittee has worked for a long time to make sure Chesapeake Bay farmers, who already face some of the most stringent environmental regulations in the United States, are put on the same level playing field as those in other regions of the country. We have made great progress towards regional equity for increased funding for dairy, specialty crops, and conservation including the \$438 million Chesapeake Bay Watershed Program to help reduce nutrients and sediment which can flow from farm and forestland into the Chesapeake Bay.

The ink was barely dry on these new provisions to assist producers when EPA announced plans for new regulations and increased penalties through the Chesapeake Bay TMDL. My concern is that once again we are placing Bay farmers at a financial and competitive disadvantage in doing so without knowing or having all of the information EPA used to develop the TMDL load allocations.

Despite the lack of information about the data used to develop the load reduction allocation, and despite glaring discrepancies between data collected by various government agencies, EPA has published a final TMDL and is pushing states to begin work on Phase II watershed implementation plans which will set nutrient sediment goals to more local levels.

It is important that we allow farmers and ranchers, who have always been the best advocates for resource conservation, to continue their efforts to further elevate their environmental stewardship across the Chesapeake Bay watershed before adding increased regulations and threatening harmful penalties. Agricultural practices can be some of the most cost effective at improving water quality in the region and the agricultural community and USDA stand ready to improve water quality and wildlife habitat.

I remain committed to working with NRCS and FSA, as well as EPA, to ensure that Chesapeake Bay conservation programs are

implemented as efficiently as possible while minimizing burdens on producers in the states. I look forward to hearing the testimony from our witnesses today. Mr. Chairman, thank you.

[The prepared statement of Mr. Holden follows:]

PREPARED STATEMENT OF HON. TIM HOLDEN, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

Thank you, Chairman Thompson. I would also like to thank our witnesses and guests for coming today. Today's hearing focuses on a very important topic for farmers and ranchers in the Chesapeake Bay watershed, as well as those across the country concerned with increased regulation.

The Chesapeake Bay is the nation's largest and most diverse estuary. It is home to more than 3,600 species of plants and animals, and is a significant migration and wintering habitat in the Atlantic Flyway. The health of this body of water and those contained in the Chesapeake Bay watershed, including the Susquehanna River that runs through my Congressional district, deserve our full attention.

Farming has always been an important part of the Chesapeake's landscape. Comprising almost ¼ of the watershed, agriculture can play a significant role in the protection of this ecosystem. Efforts to improve Bay water quality however should not impede the livelihood of our family farmers.

This Subcommittee has worked for a long time to make sure Chesapeake Bay farmers, who already face some of the most stringent environmental regulations in the United States, are put on the same level of playing field as those in other regions. We have made great progress toward regional equity with increased funding for dairy, specialty crops and conservation including the \$438 million Chesapeake Bay Watershed Program to help reduce nutrients and sediment which can flow from farm and forestland into the Chesapeake Bay.

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Agricultural practices can be some of the most cost-effective at improving water quality in the region and the agriculture community and USDA stand ready to improve water quality and wildlife habitat.

I remain committed to working with NRCS and FSA, as well as EPA, to ensure that Chesapeake Bay conservation programs are implemented as efficiently as possible, while minimizing burdens on producers and the states. I look forward to hearing from our witnesses today.

The CHAIRMAN. Thank you. We are also joined in the Subcommittee by the Ranking Member, Mr. Peterson, of the full Committee. The chair would request that all other Members submit their opening statements for the record so that the witnesses may begin their testimony and ensure that there is ample time for questions. I would like to welcome our first panel of witnesses to the table. We have Mr. David White who is Chief the Natural Resources Conservation Services, United States Department of Agriculture in Washington. Welcome, Chief White. We have Mr. Bob Perciasepe, Deputy Administrator, United States Environmental Protection Agency based here in Washington. And Mr. Doug Domenech, Secretary of Natural Resources, Commonwealth of Virginia, Richmond, Virginia. Thank you, gentlemen, for joining us and Mr. White, please begin when you are ready.

**STATEMENT OF DAVE WHITE, CHIEF, NATURAL RESOURCES
CONSERVATION SERVICE, U.S. DEPARTMENT OF
AGRICULTURE, WASHINGTON, D.C.**

Mr. WHITE. Greetings, Mr. Chairman, Mr. Holden, Mr. Goodlatte, Members of the Subcommittee, Mr. Peterson, it is fun to be here. I wish you guys would have me up here more often because there is so much cool stuff going on with conservation that I would really love to share with you.

I have thought a lot about this oral statement and you have 12 pages of thoroughly vetted and approved testimony and I will talk about a couple of things. Also in your packet we put an actual survey copy that farmers filled out for the Chesapeake Bay CEAP that we released yesterday. And then I have some before and after photos if you want to check them out from various conservation practices going on around the Bay area.

You know, when I think of the Bay I am happy and sad. In 2002, I was loaned to Senator Luger and helped with the conservation title of the 2002 Farm Bill. In 2008, I was loaned to Mr. Harkin and helped with the 2008 Farm Bill conservation title and many of the more senior staff sitting behind you were there too, and I have a lot of respect and admiration for them. I kind of know a little bit about what went into crafting the 2008 Farm Bill. And I kind of know how some of the Members of this Committee and Subcommittee fought for conservation dollars and fought to create the Chesapeake Bay conservation program, and fought to get funding for the Bay. So it grieves me when I see accounts that some of these Members went above and beyond to get conservation funding are now being characterized as somehow being against the Bay.

When I was a kid I used to read *Superman* comic books. In *Superman*, although I am more of a Marvel kind of guy, but in *Superman* they had created this bizarro world where everything you thought was right, was opposite. And when I read some of the statements that were made about some of the Members of this Subcommittee it is—I think that is where I have to say it kind of grieves me to see that because I know where your hearts are.

On the positive side the testimony speaks to how we are working; how we are implementing the Chesapeake Bay Program that you created; how we are using the Conservation Innovation Grants to explore new technology; how we created four of the new cooperative conservation partnership initiatives; how we are working with EPA and the states to try to flesh out the concept of certainty where if a farmer is doing some good stuff for our water it removes the fear of regulation.

We are also taking some new approaches in a little discussion about the Strategic Watershed Action Teams. So, I would like to announce today that we are finalizing the four teams in the Bay. There is going to be one in West Virginia, one in Delmarva which does part of Delaware and part of Virginia. There is one in the Shenandoah Valley. There is one in the Piedmont of Pennsylvania. There is about \$3 million Federal funds. It is coming with about \$850,000 matching funds, and the partners in these are the State Departments of Agriculture and Conservation Districts.

I would also like to discuss, and you probably know yesterday we released the *Conservation Effects Assessment Project for the Chesa-*

peake Bay. It is based on 700 farmer surveys, several world class—three world class models that are impeccable, statistical framework provided by the National Resources Inventory. Some of the results are astounding. This report focuses on crop land. Ninety-six percent of the crop land has some conservation on it.

We have reduced—and I am going to make sure I read this so I don't mess it up—edge of field losses by 55 percent sediment, nitrogen surface run-off by 42 percent, phosphorus by 40 percent and this is edge of the field estimates on crop land. And it also shows that we need to do more. About 20 percent of the crop land still needs a high level of treatment, but Members of the Subcommittee we can do this.

The funding that you put into the 2008 Farm Bill, started to hit in 2009 so we have 3 years really: 2009, 2010, and the current year we are in. If you look at those three fiscal years we will have about \$¼ billion for conservation in the Chesapeake Bay and we are getting results with that funding.

The CEAP report, it says a lot of good stuff but it is just a snapshot in time. It covers 2003 to 2006 and we are going to be updating it this fall with some more data points. So I asked staff to go back and look in our PROTRACTS database. What have we done in 2006, 2007, 2008, 2009, and Fiscal Year 2010? And I am going to share that with you now.

This is kind of rough; needs a little bit more work, but in the last five fiscal years, I want you to buckle your seatbelts. From the CEAP baseline in 2006 according to our data and this is just EQIP and the farm bill programs. It doesn't include anything that was done at state or voluntarily. Sediment has been reduced by another 20 percent, nitrogen by another 17 percent, and phosphorus by another 15 percent. I think we can deal with this issue because of the support that you have provided, because of our tremendous partners, our dedicated employees, because of the commitment of farmers who also put in their own money to this and their willingness to do their share. I think in a very real sense we are turning the conservation challenges into conservation gold for the Bay. Thank you, Mr. Chairman.

[The prepared statement of Mr. White follows:]

PREPARED STATEMENT OF DAVE WHITE, CHIEF, NATURAL RESOURCES CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.

Good morning, Chairman Thompson, Ranking Member Holden, and other Members of the Subcommittee. I am pleased that you have given me the opportunity to describe the impressive actions USDA and its customers are taking to improve water quality in the Chesapeake Bay and its tributaries. At USDA, our efforts are carried out with the understanding that how landowners manage their lands will help determine the fate of the Chesapeake Bay.

USDA's National Resources Inventory shows that in the Chesapeake Bay watershed, developed land increased by 67 percent between 1982 and 2007. While a majority of rural lands lost to development during this period came from forest land, 30 percent came from cropland. USDA's Conservation Effects Assessment Project shows that per-acre nutrient and sediment loadings are significantly higher from developed lands (point and nonpoint sources included) than from cultivated cropland.

USDA and other Federal agencies believe that a thriving and sustainable agricultural sector is critical to restoring the Chesapeake. Agricultural land makes up nearly 30 percent of the area of the Chesapeake Bay watershed. The 2007 Census of Agriculture reported that the 84,000 farms in the Chesapeake Bay watershed, about four percent of the total number of farms in the United States, had sales of

nearly \$10 billion. Investments in private lands conservation are good for farmers and ranchers—reduced input costs directly help the bottom line, while improved soil and water quality help maintain and even enhance long-term productivity while minimizing regulatory pressures. These same investments in conservation work for all Americans—a well-managed farm limits its nutrient and sediment runoff, produces food and fiber, helps sustain rural community economies, and contributes to the food security of our nation.

On May 12, 2009, President Obama's Executive Order 13508, Chesapeake Bay Protection and Restoration, recognized the Chesapeake Bay as a national treasure and called on Federal agencies to work cooperatively to protect and restore the Chesapeake Bay watershed. The Executive Order also called for a comprehensive approach to Chesapeake Bay restoration, including goals for restoring water quality, habitat, living resources, and lands. This is consistent with the Administration's recently announced plan to conserve and preserve America's Great Outdoors. The America's Great Outdoors report announced by the President last month gave particular emphasis to protecting working lands through partnerships and incentives. The Administration's approach to conserving the Chesapeake Bay is an excellent example of what is called for in the report. USDA, in collaboration with the Environmental Protection Agency (EPA) and other Federal agencies, is targeting high-priority watersheds with high-impact practices and using the latest science to inform decision making.

Implementing the Chesapeake Bay Watershed Initiative

At USDA, we understand that the American people and the Federal Government are facing challenging economic and budgetary conditions. We are fortunate that the 2008 Farm Bill provided funding for USDA to work with producers in the Chesapeake Bay watershed. Since we began implementation of the Chesapeake Bay Watershed Initiative (CBWI) in 2009, USDA has worked to balance the program's objectives of (1) improving water quality and quantity, and (2) restoring, enhancing, and preserving soil, air, and related resources within the Chesapeake Bay watershed. CBWI authority, which was provided by Members of this Subcommittee, offers USDA an opportunity to leverage information and technology to help restore the Chesapeake Bay.

The additional funding provided by CBWI, over and above our base farm bill programs, has allowed NRCS to try some new approaches to better target and leverage our funding. In collaboration with EPA, the U.S. Geological Survey (USGS), the Fish and Wildlife Service (FWS), state governments, State Technical Committees, and conservation districts, NRCS used the best available science to identify watersheds with the highest nitrogen, phosphorus and sediment delivery to the Bay and its tributaries. NRCS continues to work with these partners, through a process of adaptive management, to use the latest scientific information to inform our program delivery. For example, USGS will provide updated information in 2011 on areas delivering high sediment loads to the Bay to help prioritize conservation actions.

NRCS, in partnership with the states, will complete an evaluation of the Chesapeake Bay priority watersheds and identify any revisions to the priority list by October 2012, and every 2 years thereafter until 2025. The Strategy for implementing the Executive Order on Chesapeake Bay, published in May 2010, identifies the goal of working with producers to apply new conservation practices on 4 million acres of agricultural working lands in priority watersheds by 2025. While this goal is ambitious, NRCS believes that by focusing resources on priority watersheds and within those watersheds on priority lands, accelerating partnerships, and fully accounting for conservation practices, we can achieve a dramatic reduction of nitrogen, phosphorus and sediment.

A snapshot of CBWI implementation during Fiscal Year 2010 shows that Chesapeake Bay watershed producers expressed strong interest in conservation. NRCS obligated more than \$33 million in CBWI financial assistance. NRCS entered into 953 contracts with producers to help apply conservation treatment on more than 156,000 acres across the watershed. For example, NRCS worked with Pennsylvania producers to implement more than 60 square miles of new conservation tillage practices on cropland. That's an area equivalent to the size of Pittsburgh, Pennsylvania. Forested riparian buffers were planted on the equivalent of 714 football fields to help keep soil from entering adjacent streams.

For Fiscal Year 2011, the farm bill authorized \$72 million for CBWI. Pending outcome of the Congressional budget negotiations, this funding, combined with our other mandatory and discretionary accounts, would represent a high-water mark for USDA funding in the Chesapeake Bay watershed. We have a real opportunity to show that a voluntary, site-specific approach to conservation can work in the Chesapeake region, coupled with efforts underway across the Federal family.

Leveraging Funding

CBWI is just one of many USDA activities in the Bay watershed. Consistent with the Executive Order on Chesapeake Bay Protection and Restoration, USDA is committed to leveraging funding in its watershed restoration activities. We are fulfilling this commitment in a number of ways:

The **Conservation Innovation Grants (CIG)** program funds the development of new conservation approaches and technologies. Recipients must fund at least 50 percent of the cost of each project. In September 2010, NRCS joined EPA at an event in Maryland to announce the latest recipients of CIG awards in the Chesapeake Bay watershed. NRCS provided \$2.8 million in CIG grants, while EPA provided \$2.7 million for its Nutrient and Sediment Reduction grant program. USDA and EPA work together in administering these grant programs to reduce duplication and to ensure that funding is going to the most meritorious projects: 2010 CIG projects funded by NRCS are listed below.

- Chester River Association was granted \$300,000 to demonstrate new approaches to reducing nitrogen loads from cropland in the Upper Chester River watershed of Maryland's Eastern Shore by engaging 20 producers.
- University of Maryland Eastern Shore was granted just under \$1 million to implement and demonstrate the effectiveness of gypsum curtains for reducing soluble phosphorus on farms in Somerset County, Maryland and to develop a practice standard for installation of gypsum curtains.
- World Resources Institute was granted \$600,000 to build an online multi-state platform for water quality trading that builds on existing state trading platforms and will include a registry; marketplace; interactive map; calculation tool to estimate on-farm nitrogen, phosphorous and sediment losses as well as carbon sequestration rates; and a farm profit calculator to help farmers and aggregators understand potential cost and benefits associated with generating credits in the water quality trading market.
- Manure Energy Research Corp. was granted \$400,000 to demonstrate the installation and operation of two commercial poultry litter pyrolyzation units, one in the Shenandoah Valley and one in the Delmarva, Peninsula.

The **Cooperative Conservation Partnership Initiative (CCPI)** is an initiative that enables NRCS and partners to assist producers in implementing conservation practices on agricultural and nonindustrial private forest lands. NRCS leverages financial and technical assistance with partners' resources to install soil erosion practices, manage grazing lands, improve forestlands, establish cover crops, reduce on-farm energy usage and undertake other conservation measures. CCPI is open to federally recognized Tribes, state and local units of government, producer associations, farmer cooperatives, institutions of higher education and nongovernmental organizations that work with producers. Nationwide, 26 projects in 14 states were approved for CCPI in Fiscal Year 2010. Four of these 14 projects were part of the Chesapeake Bay Watershed Initiative (CBWI-CCPI) and were funded at more than \$1.3 million.

In Fiscal Year 2011, NRCS will build on the **showcase watershed projects** identified and initiated in 2010: Conewago Creek, PA; Upper Chester River, MD; and Smith Creek, VA. The objective of the Showcase Watershed Projects is to focus financial and technical assistance on a small scale in an effort to demonstrate results through enhanced partnerships and targeted water quality monitoring. A key component of these work plans is an outreach strategy that reaches all or nearly all of the agriculture producers in each watershed and provides an inventory of conservation needs. An annual work plan is currently being developed for each of these showcase watersheds. As a part of that process, NRCS is working with other Federal, state, and non-governmental partners to identify additional resources to invest in the showcase watersheds. Another critical component of the showcase watershed is development and implementation of a water quality monitoring strategy to measure impacts of our activities. Pending appropriations, USGS will provide guidance to develop monitoring strategies, as well as equipment and staff time to assist in the implementation.

USDA also supports voluntary Chesapeake Bay restoration efforts under the Farm Service Agency's **Conservation Reserve Program (CRP)**. Under CRP's Conservation Reserve Enhancement Program, FSA has also negotiated Federal-state partnership agreements with all Chesapeake Bay area states, which provide targeted assistance to address water quality, soil erosion, and wildlife issues.

Within the Chesapeake Bay Basin, there are about 302,000 acres enrolled in the CRP of which about 107,000 acres are devoted to buffers. CRP is a voluntary program that helps agricultural producers use environmentally-sensitive land for conservation benefits. Producers enrolled in CRP plant long-term, resource-conserving

covers to control soil erosion, improve water and air quality and develop wildlife habitat. In return, FSA provides participants with rental payments and cost-share assistance. Contract duration is between 10 and 15 years.

New Approaches to Conservation Delivery

USDA recognized the President's Executive Order on the Chesapeake Bay to be in part a call for new approaches and new ideas to Bay watershed restoration. Below are several examples of how USDA is exploring new ways to engage producers and help them have a positive impact on Chesapeake Bay water quality.

Strategic Watershed Action Teams

In Fiscal Year 2011, NRCS will deploy Strategic Watershed Action Teams (SWATs) to work intensively on several landscape conservation initiatives, including the Chesapeake Bay. Developing and strategically deploying teams with needed expertise will improve the environmental cost effectiveness of NRCS technical and financial assistance programs by focusing on priority resource concerns within concentrated areas.

The goal in deploying SWATs is to accelerate conservation adoption within a focus area. A concentrated number of additional technical specialists delivering technical assistance within landscape initiatives will increase the number and extent of conservation practices installed through financial assistance programs and private landowner investment. Improved outreach and follow-up will also accelerate the adoption of conservation practices, which in turn will produce faster natural resource improvement.

In the Chesapeake Bay watershed, SWAT members will work with producers in target locations to accelerate conservation implementation to improve water quality and simultaneously help achieve the ambitious CBWI goal of implementing new conservation practices on 4 million acres in priority watersheds by 2025. SWATs will not only help achieve USDA goals, but will also support State Watershed Implementation Plan (WIP) goals for best management practice (BMP) implementation, as determined through the EPA total maximum daily load (TMDL) process. Below is a brief outline of how the SWAT approach will work:

- Four teams will accelerate conservation activities through outreach, conservation planning, practice implementation, and follow-up in priority watersheds. Specific needs include development of comprehensive nutrient management plans, design and installation of nutrient management practices, design and installation of livestock-related practices, and establishment of riparian buffers.
- NRCS will provide overall coordination and technical direction. Local partners will supervise the teams, which will work closely with NRCS staff to address Executive Order Strategy goals and EPA TMDL allocations.
- Teams will be located in the Delmarva area (covering Delaware and Maryland), Piedmont area (Pennsylvania), Shenandoah Valley (Virginia), and West Virginia.

NRCS will invest \$3 million in mandatory farm bill funding for the SWAT teams and local partners will contribute matching funds.

Certainty

For a number of months, senior officials from USDA and EPA have been working with Chesapeake Bay states to discuss a framework to provide certainty to farmers who implement practices that protect water quality in the Chesapeake Bay watershed. Certainty programs that states develop consistent with the framework could serve as a tool for engaging producers in conservation activities while providing some certainty to producers who have concerns about how they might be impacted by the TMDL.

Nutrient Management Pilot

In Fiscal Year 2011, NRCS is targeting producers who have not adopted nutrient management techniques with a new Nutrient Management Pilot effort in Maryland and Pennsylvania. NRCS will provide funding to producers to work with certified Technical Service Providers (TSPs) to develop nutrient management plans and implement water quality and monitoring practices on crop acreage in select watersheds in the Chesapeake Bay watershed in Pennsylvania and Maryland. Participating producers will establish test strips to demonstrate net income results from nutrient management, and obtain additional management guidance from their TSP. NRCS will develop ranking criteria that provide preference to late-adopting applicants in high priority locations. NRCS will use the results from the pilot efforts in Maryland and Pennsylvania to inform future iterations of the program.

Environmental Markets

The Executive Order Strategy on Restoring the Chesapeake Bay identified environmental markets as an emerging innovative tool for facilitating restoration of the Chesapeake Bay and its watershed. While still in their infancy, environmental markets show promise for encouraging innovation and investment in conservation, improving accountability, reducing costs of restoration, and expanding economic opportunities for landowners.

As directed by the Strategy, USDA has formed and is leading an interagency Environmental Markets Team to coordinate among Federal agencies and with stakeholders in the development and implementation of offsetting and trading provisions for the Bay TMDL as well as facilitating work on other market-based approaches in habitat, wetland, stream and shoreline restoration, marine markets and other applications. We look forward to developing guidance and products that can assist Chesapeake Bay states as they look to develop markets or build on those already in place.

State-of-the-Art Science

In June 2010, Secretary Vilsack rolled out the first Conservation Effects Assessment Project (CEAP) cropland report, covering the Upper Mississippi River watershed. CEAP is a multi-agency effort to quantify the environmental effects of conservation practices and develop the science base for managing the agricultural landscape for environmental quality. In simple terms, CEAP provides both an assessment of the impacts of conservation on the landscape and a path forward on how to improve implementation of USDA conservation programs and policies.

Just this week, NRCS released the second CEAP cropland report, this one focused on the Chesapeake Bay. The report quantifies the effects of conservation practices commonly used on cultivated cropland in the Chesapeake Bay watershed, evaluates the need for additional cropland conservation treatment in the region, and estimates the potential gains that could be attained with additional treatment.

The CEAP cropland reports are based on a unique methodology—first, farmer surveys are used to obtain data on actual farming activities and conservation practices. In the case of the Chesapeake Bay watershed, the surveys were conducted from 2003 through 2006. The survey information is correlated with soils information on National Resources Inventory survey sites and statistically expanded to represent all cropland in the watershed. The farming and conservation activities and soils information are fed into a plant growth assessment model and then eventually into a watershed model to simulate downstream outcomes of producers' activities. This methodology allows USDA to evaluate the cumulative effect of conservation practices in terms of the following:

- reductions in losses of sediment, nutrients, and pesticides from fields;
- enhancement of soil quality through increases in soil organic carbon; and
- reductions in instream delivery of sediment, nutrients, and pesticides to the watershed's rivers and streams, and to the Bay itself.

The assessment includes all conservation practices undertaken in the basin. It is not restricted to only those practices associated with Federal conservation programs; the assessment also includes the conservation efforts supported by the states, non-governmental organizations, and independent actions of individual landowners and farm operators.

The Chesapeake Bay CEAP cropland report included the following major findings:

1. Agricultural conservation practices deliver benefits for the Bay.

In the Chesapeake Bay watershed, most cropland acres have either structural and management practices in place to control erosion. Nearly half the cropland acres are protected by one or more structural practices, such as terraces. Reduced tillage is used in some form on 88 percent of the cropland. Adoption of conservation practices has reduced edge-of-field sediment loss by 55 percent, surface nitrogen losses by 42 percent, and subsurface nitrogen losses by 31 percent, and phosphorus losses by 41 percent, compared to a situation where no practices were applied.

2. Inherent soil vulnerabilities in the Chesapeake Bay watershed create a complex environment for agriculture.

Inherent vulnerability factors such as soils prone to leaching or runoff and high precipitation levels amplify potential for nutrients and sediment to move from farm fields. At least 44 percent of the cropped acres in the watershed are highly erodible land. By comparison, only 18 percent of the cropped acres in the Upper Mississippi River Basin are highly erodible.

3. Nitrogen loss in subsurface flow is the most critical conservation concern.

More can be done to reduce nitrogen losses through complete and consistent nutrient management (proper rate, form, timing, *and* method of application). About 65 percent of cropped acres need some additional nutrient management to address losses of nitrogen through subsurface pathways.

4. Suites of conservation practices are needed to manage complex loss pathways.

A system of conservation practices that includes soil erosion control and consistent nutrient management is required to address soil erosion and loss of nitrogen through leaching via the numerous potential loss pathways.

5. Targeting the most critical acres delivers the largest benefits.

Targeting the most critical acres delivers significantly more benefit. Treating the cropped acres with high need for treatment can have twice the impact of treating the acres with low or moderate need for treatment. In some areas, the conservation benefits are even greater.

Significant progress in conservation adoption has been made since the last phase of the CEAP farmer survey was completed in 2006, particularly with respect to cover crop use. Since 2006, implementation of cover crops in the watershed has increased significantly, particularly where state programs have supported the use of cover crops. When used properly, cover crops protect the soil from erosion during the winter months, take up nutrients remaining in the soil, and release plant-available nutrients slowly over the subsequent cropping period, thereby reducing nutrient leaching and runoff during the non-growing season.

The CEAP results also reaffirm the importance of maintaining working lands in the Bay watershed. That is, working lands develop less sediment and nutrients, on average, than developed lands. So while NRCS, states, farmers and other land-owners work to reduce run-off into the Bay, we must also ensure that agriculture and forestry are maintained as economically viable land uses.

Beyond establishing a baseline of conservation programs and highlighting continued areas for improvement for the agricultural sector, CEAP has the potential to be a key tool supporting our programs and policies moving forward. We are incorporating CEAP findings into agency standards, program approaches and delivery, and policies.

The findings confirm that targeting the most vulnerable and least protected landscapes is the most effective and efficient path to conservation progress. At the same time, we will be on guard to maintain gains made in other areas. USDA is also working to incorporate soil vulnerability information into more of our targeting efforts. The CEAP findings also confirm the wisdom of using systems of practices, instead of individual practices, in our planning methodology. And we have turned some of our best technical minds toward addressing the persistent problem of nitrogen loss through subsurface pathways.

CEAP and the Chesapeake Bay Program Watershed Model

USDA developed the CEAP model in response to a directive, included in the 2002 Farm Bill manager's report, to evaluate the impact of conservation practices on the landscape. CEAP was developed to estimate, at a large basin scale, the effectiveness of conservation activities across the nation to help inform USDA conservation policies and programs.

The Chesapeake Bay Program Partnership's Watershed Model (CBP Model) is part of a suite of models designed to account for all nutrient and sediment loading sources to the Chesapeake Bay in the context of the Bay TMDL and focuses specifically on describing how actions on the land from all sources affect nutrient and sediment loadings to the Bay and the associated Bay water quality.

While the CBP Model and CEAP have both been extensively peer-reviewed and represent state-of-the-art modeling approaches, they were developed for different purposes.

Even though the models serve different purposes, there are advantages to be gained from improving and coordinating the input data used by the two models, and USDA and EPA will continue to work together to that end. Most importantly, both models show that the agricultural sector has done much to reduce nutrient and sediment loadings in the Bay watershed, and also that there is more to do.

Summary

There is a sense among the agricultural community that these are uncertain times for farmers in the Bay watershed. The Chesapeake Bay TMDL and state

WIPs have introduced a new dynamic to Bay restoration. At USDA, we are taking advantage of the good fortune that the CBWI has bestowed upon us to provide Bay watershed producers with historic levels of technical and financial assistance. Our CEAP effort will help us target those dollars to the places and the practices that have the greatest impact on nutrient and sediment loadings. With assistance from key partners in the Bay watershed, we have developed new approaches, such as SWATs, that we believe will engage additional producers to accelerate conservation adoption on private lands. In addition, USDA is actively working with EPA and the states to explore a framework for engaging producers in conservation activities while providing certainty to producers who have concerns about how they might be impacted by the TMDL. With our resources, the resources of our partners, and the resources of producers themselves all leveraged toward improving water quality in the Bay watershed, USDA sees the agricultural community as part of the solution, not just part of the problem.

I appreciate the invitation to be here today and I am happy to answer any questions.

**CONSERVATION EFFECTS ASSESSMENT
PROJECT
2005**

**NATURAL RESOURCE CONSERVATION SERVICE
SUPPLEMENT**

VERSION 1

VERSION	CEAP ID	TRACT	SUBTRACT	T-TYPE	TABLE	LINE
1		01	01	0	000	00

NAME: _____

ADDRESS: _____

Enumerator Note: Collect the following information at the County NRCS Office for completed surveys.

Please provide the following information for the conservation plan on file.

FSA COUNTY (FIPS)	TRACT NUMBER	LAND UNIT NUMBER (FSA Field Number)
0933	0934	0935

Please indicate all contract numbers associated with the conservation plan that are eligible for federal conservation program money.

Contract Number(s)*	0936
	0937
	0938
	0939
	0940
	0941

*Please include all contract numbers associated with CSP, EQIP, WHIP, & AMA, regardless of year.

- 1a. Does the selected field with the NRI point have a conservation plan?
 [If YES, enter 1 and continue.] YES=1
 [If NO, enter 3 and conclude interview.]

- 1b. Is the conservation plan for the current operator? YES=1

- 1c. Is the conservation plan for the current land owner? YES=1

VERSION NUMBER
0800
1
0801
0802
0894

NRCS SUPPLEMENT--SELECTED FIELD

2. What program(s) is associated with the plan(s) in the selected field and what is the most recent year the conservation plan(s) was approved?

[Mark all that apply.]

	YES = 1	MOST RECENT YEAR APPROVED
Conservation Security Program	0892	0893
NRCS Conservation Technical Assistance (CTA)	0803	0823
Environmental Quality Incentives Program (EQIP)	0804	0824
Klamath Basin Water Conservation Program	0805	0825
Ground and Surface Water Conservation Program	0806	0826
Wetlands Reserve Program (WRP)	0807	0827
Wildlife Habitat Incentives Program (WHIP)	0808	0828
Public Law 566 (P.L. 566)	0809	0829
EPA Program (such as 319 Program)	0810	0830
Great Lakes Basin Program for Soil Erosion and Sediment Control	0811	0831
Conservation Reserve Program (CRP)	0812	0832
Agricultural Conservation Program (ACP)	0813	0833
Highly Erodible Land Conservation Compliance (HELCC)	0814	0834
Great Plains Conservation Program (GPCP)	0815	0835
Farmland Preservation Program	0816	0836
State Cost Share Programs	0817	0837
Other Federal Program (identify)..... OFFICE USE	0818	0838
Other Federal Program (identify)..... OFFICE USE	0819	0839
State or County Program (identify)..... OFFICE USE	0820	0840
State or County Program (identify)..... OFFICE USE	0821	0841
Non-governmental Program (identify)..... OFFICE USE	0822	0842

NRCS SUPPLEMENT--SELECTED FIELD

3. What resource concerns related to this field does the conservation plan address? *[Mark all that apply.]*

CODE		YES = 1
1	Soil erosion caused by wind	0843
2	Soil erosion caused by rainfall and runoff	0844
3	Animal waste management	0845
4	Water quality protection (leaching and runoff of nutrients and pesticides)	0846
41	a. Leaching and runoff of nutrients	0847
42	b. Leaching and runoff of pesticides	0848
43	c. Other water quality concerns	0849
5	Water conservation	0850
6	Wildlife habitat enhancement	0851
7	Soil quality, including salinity concerns	0852
8	Air quality	0853
9	Drainage	0854
10	Forage for livestock	0855
11	Hayland management	0856
12	Other (Identify: _____) OFFICE USE	0857
13	Don't know	0858

Enumerator Note: If *more than 1* concern was reported in Item 3, then ask Item 4. Else, go to Item 5.

	CODE
4. Which is the PRINCIPLE resource concern the conservation plan addresses for this field? <i>[Enter only one code (1 through 12) from Item 3 above.]</i>	0859
5. Does any part of this field meet criteria for a wetland? YES=1	0860
6. Is any part of this field "Highly Erodible Land" (HEL)? YES=1	0861

NRCS SUPPLEMENT--SELECTED FIELD

MANAGEMENT PRACTICES

Annual Practice	NRCS CODE	UNIT	NASS KEY CODE
Conservation Crop Rotation	328	Acre	328
Residue Management, Direct Seed	777	Acre	777
Residue Management, Mulch Till	329B	Acre	3292
Residue Management, No-till & Strip Till	329A	Acre	3291
Residue Management, Ridge Till	329C	Acre	3293
Residue Management, Seasonal	344	Acre	344
Cover Crop	340	Acre	340
Irrigation Water Management	449	Acre	449
Drainage Water Management	554	Acre	554
Forage Harvest Management	511	Acre	511
Soil Salinity Management-Nonirrigated	571	Acre	571
Deep Tillage	324	Acre	324
Row Arrangement	557	Acre	557
Surface Roughening	609	Acre	609
Pest Management	595	Acre	595
Nutrient Management	590	Acre	590

7. Please list the annual management practices in the plan that apply to this field.

[Select practice from above and mark all that apply.]

Practice	NRCS Practice Code	Practice Used Each Year (YES=1, Don't Know=2, NO=3)			Was practice applied to meet the mitigation requirements of the Pest Management Standard (Code 595)? (YES=1)
		2005	2004	2003	
	0862	0868	0874	0880	0886
	0863	0869	0875	0881	0887
	0864	0870	0876	0882	0888
	0865	0871	0877	0883	0889
	0866	0872	0878	0884	0890
	0867	0873	0879	0885	0891

NRCS SUPPLEMENT--SELECTED FIELD

PEST MANAGEMENT PRACTICES

- a. If pest management (practice code 595) was included in the annual management practices listed above, then please answer the following:

☐ If YES, then continue. ☐ If NO, then go to Item b.

	YES=1
(1) Was the only purpose of the pest management component of the conservation plan to enhance quantity and quality of commodities?	2022
If YES, then go to Item 7b.	
(2) Did the pest management component of the conservation plan include management techniques and/or conservation practices to mitigate the environmental risks of pest management?	2023
(3) Did the pest management component of the conservation plan include lower risk pest management alternatives?	2024
(4) Did the pest management component of the conservation plan include high intensity Integrated Pest Management (IPM) that focuses on pest prevention and avoidance to minimize the use of pesticides and other pest suppression techniques?	2025

NUTRIENT MANAGEMENT PRACTICES

- b. If nutrient management (practice code 590) was included in the annual management practices listed above, then please answer the following:

☐ If YES, then continue. ☐ If NO, then go to Item 8.

	YES=1
(1) Were application rates reduced as part of the plan?	2026
(2) Was the timing of application adjusted to reduce overall N or P loss?	2027
(3) Was the method of application changed to reduce overall N or P loss?	2028
(4) Was the form of nitrogen changed to reduce overall N or P loss?	2029

8. Does the operator have a Comprehensive Nutrient Management Plan (CNMP) on file?

[Only applies to livestock operations.]

☐ YES - [Enter 1.]

☐ NO - [Enter 3.]

CODE
2030

NRCS SUPPLEMENT--SELECTED FIELD

9. Please list the conservation structural practices in the plan that apply to this field.

[Select practice from conservation practices list below and mark all that apply.]

1 Practice	2 NRCS Practice Code	3 Units used to represent practice in the plan <small>1 = linear feet 2 = acres 3 = number</small>	4 Quantity of practice installed in field	5 Most recent year practice was installed or applied	6 Was practice applied to meet the mitigation requirements of the Pest Management Standard (Code 595)? YES = 1
	0942	0952	0962	0972	0982
			•	_____	
	0943	0953	0963	0973	0983
			•	_____	
	0944	0954	0964	0974	0984
			•	_____	
	0945	0955	0965	0975	0985
			•	_____	
	0946	0956	0966	0976	0986
			•	_____	
	0947	0957	0967	0977	0987
			•	_____	
	0948	0958	0968	0978	0988
			•	_____	
	0949	0959	0969	0979	0989
			•	_____	
	0950	0960	0970	0980	0990
			•	_____	
	0951	0961	0971	0981	0991
			•	_____	

NRCS SUPPLEMENT--SELECTED FIELD

STRUCTURAL CONSERVATION PRACTICES, ALPHABETIC ORDER
 NRCS Supplement, Item 9, Column 2

Structural Practice Name	NRCS Practice Code	Units	NASS Key Code
Access Road	560	Feet	560
Alley Cropping	311	Acre	311
Animal Trails & Walkways	575	Feet	575
Anionic Polyacrylamide (PAM) Erosion Control	450	Acre	450
Bedding	310	Acre	310
Brush Management	314	Acre	314
Channel Vegetation	322	Acre	322
Clearing & Snagging	326	Feet	326
Closure of Waste Impoundments	360	Number	360
Commercial Fishponds	397	Acre	397
Composting Facility	317	Number	317
Conservation Cover	327	Acre	327
Constructed Wetland	656	Acre	656
Contour Buffer Strips	332	Acre	332
Contour Farming	330	Acre	330
Contour Orchard and Other Fruit Area	331	Acre	331
Contour Stripcropping	585	Acre	585
Critical Area Planting	342	Acre	342
Cross Wind Ridges	589A	Acre	5891
Cross Wind Stripcropping	589B	Acre	5892
Cross Wind Trap Strips	589C	Acre	5893
Dam, Diversion	348	Number	348
Dam, Floodwater Retarding	402	Number	402
Dam, Multiple Purpose	349	Number	349
Dike	356	Feet	356
Diversion	362	Feet	362
Dry Hydrant	432	Number	432
Early Successional Habitat Development/Management	647	Acre	647
Fence	382	Feet	382
Field Border	386	Feet	386
Filter Strip	393	Acre	393
Fire Control	451	Number	451
Firebreak	394	Feet	394
Fish Passage	396	Number	396
Fish Raceway or Tank	398	Feet	398
Fishpond Management	399	Number	399
Floodwater Diversion	400	Feet	400
Floodway	404	Feet	404
Forest Site Preparation	490	Acre	490
Forest Stand Improvement	666	Acre	666
Forest Trails & Landings	655	Acre	655
Grade Stabilization Structure	410	Number	410
Grassed Waterway	412	Acre	412

NRCS SUPPLEMENT--SELECTED FIELD

Structural Practice Name	NRCS Practice Code	Units	NASS Key Codes
Grazing Land Mechanical Treatment	548	Acre	548
Heavy Use Area Protection	561	Acre	561
Hedgerow Planting	422	Feet	422
Herbaceous Wind Barriers	603	Feet	603
Highwall Treatment	456	Feet	456
Hillside Ditch	423	Feet	423
Irrigation Canal or Lateral	320	Feet	320
Irrigation Field Ditch	388	Feet	388
Irrigation Land Leveling	464	Acre	464
Irrigation Pit	552A	Number	5521
Irrigation Storage Reservoir	436	Number	436
Irrigation System, Low Energy Precision Application	202I	Acre	2029
Irrigation System, Microirrigation	441	Number	441
Irrigation, Sprinkler	442	Number	442
Irrigation System, Surface & Subsurface	443	Number	443
Irrigation System, Tailwater Recovery	447	Number	447
Irrigation Water Conveyance, Asbestos-Cement	430BB	Feet	43002
Irrigation Water Conveyance, Corrugated Metal Irrigation Water Conveyance	430II	Feet	43009
Irrigation Water Conveyance, Corrugated Ribbed or Profile Wall Thermoplastic Pipe	430JJ	Feet	43010
Irrigation Water Conveyance, Flexible Membrane	428B	Feet	4282
Irrigation Water Conveyance, Galvanized Steel	428C	Feet	4283
Irrigation Water Conveyance, High-pressure, Underground, Plastic	430DD	Feet	43004
Irrigation Water Conveyance, Low-pressure, Underground, Plastic	430EE	Feet	43005
Irrigation Water Conveyance, Nonreinforced Concrete, Ditch & Canal	428A	Feet	4281
Irrigation Water Conveyance, Nonreinforced Concrete, Pipeline	430CC	Feet	43003
Irrigation Water Conveyance, On-Ground Aluminum Pipeline	430KK	Feet	43011
Irrigation Water Conveyance, Reinforced Plastic Mortar	430GG	Feet	43007
Irrigation Water Conveyance, Rigid Gated Pipeline	430HH	Feet	43008
Irrigation Water Conveyance, Steel	430FF	Feet	43006
Land Clearing	460	Acre	460
Land Reclamation, Shaft and Adit Closing	452	Number	452
Land Reconstruction, Abandoned Mined Land	543	Acre	543
Land Reconstruction, Currently Mined Land	544	Acre	544
Land Smoothing	466	Acre	466
Landslide Treatment	453	Number	453
Manure Transfer	634	Number	634
Mine Shaft and Adit Closing	457	Number	457
Lined Waterway or Outlet	468	Feet	468
Mole Drain	482	Feet	482
Mulching	484	Acre	484
Obstruction Removal	500	Acre	500
Open Channel	582	Feet	582
Pasture & Hayland Planting	512	Acre	512

NRCS SUPPLEMENT--SELECTED FIELD

Structural Practice Name	NRCS Practice Code	Units	NASS Key Codes
Pipeline	516	Feet	516
Pipeline, Aluminum Tubing	430AA	Feet	43001
Pond	378	Number	378
Pond Sealing or Lining, Bentonite Sealant	521C	Number	5213
Pond Sealing or Lining, Cationic Emulsion-Waterborne Sealant	521D	Number	5214
Pond Sealing or Lining, Flexible Membrane	521A	Number	5211
Pond Sealing or Lining, Soil Dispersant	521B	Number	5212
Pond Sealing or Lining, Asphalt-Sealed Fabric Liner	521E	Number	5215
Precision Land Forming	462	Acre	462
Prescribed Burning	338	Acre	338
Prescribed Grazing	528A	Acre	5281
Pumped Well Drain	532	Number	532
Pumping Plant for Water Control	533	Number	533
Range Planting	550	Acre	550
Recreation Area Improvement	562	Acre	562
Recreation Land Grading & Shaping	566	Acre	566
Recreation Trail & Walkway	568	Feet	568
Regulating Reservoir	552B	Number	5522
Restoration & Management of Declining Habitats	643	Acre	643
Riparian Forest Buffer	391	Acre	391
Riparian Herbaceous Cover	390	Acre	390
Rock Barrier	555	Feet	555
Roof Runoff Structure	558	Number	558
Runoff Management System	570	Number	570
Sediment Basin	350	Number	350
Shallow Water Management for Wildlife	646	Acre	646
Spoil Spreading	572	Feet	572
Spring Development	574	Number	574
Stream Channel Stabilization	584	Feet	584
Stream Habitat Improvement and Management	395	Acre	395
Streambank & Shoreline Protection	580	Feet	580
Stripcropping, Field	586	Acre	586
Structure for Water Control	587	Number	587
Subsidence Treatment	454	Acre	454
Subsurface Drain	606	Feet	606
Surface Drainage, Field Ditch	607	Feet	607
Surface Drainage, Main or Lateral	608	Feet	608
Surface Roughening	609	Acre	609
Terrace	600	Feet	600
Toxic Discharge Control	455	Number	455
Toxic Salt Reduction	610	Acre	610
Tree/Shrub Establishment	612	Acre	612
Tree/Shrub Pruning	660	Acre	660
Underground Outlet	620	Feet	620
Upland Wildlife Habitat Management	645	Acre	645
Use Exclusion	472	Acre	472
Vegetative Barrier	601	Feet	601

NRCS SUPPLEMENT--SELECTED FIELD

Structural Practice Name	NRCS Practice Code	Units	NASS Key Codes
Vertical Drain	630	Number	630
Waste Management System	312	Number	312
Waste Storage Facility	313	Number	313
Waste Treatment Lagoon	359	Number	359
Waste Utilization	633	Acre	633
Water & Sediment Control Basin	638	Number	638
Water Harvesting Catchment	636	Number	636
Water Well	642	Number	642
Watering Facility	614	Number	614
Waterspreading	640	Acre	640
Well Decommissioning	351	Number	351
Wetland Creation	658	Acre	658
Wetland Enhancement	659	Acre	659
Wetland Restoration	657	Acre	657
Wetland Wildlife Habitat Management	644	Acre	644
Wildlife Watering Facility	648	Number	648
Windbreak/Shelterbreak Establishment	380	Feet	380
Windbreak/Shelterbreak Renovation	650	Feet	650

NRCS SUPPLEMENT--SELECTED FIELD

CODING FOR FEDERAL, STATE, COUNTY OR OTHER CONSERVATION PROGRAMS		
ITEM 2 OFFICE USE	ITEM CODES: BOXES 818 & 819 ONLY	OTHER FEDERAL PROGRAMS
	2	CRP or CREP
	3	Agricultural Conservation Program (ACP)
	4	Highly Erodible Land Conservation Compliance
	5	Great Plains Conservation Program (GPCP)
	6	Habitat Conservation Plan (HCP)
	7	Agricultural Market Transition Act (AMTA)
	8	Water Quality Incentive Program (WQIP)
	9	Food Security Act
	10	Emergency Watershed Protection Program (EWP)
	11	Emergency Conservation Program (ECP)
	12	Water Bank Act
	13	Farmland Preservation Program
	14	LTA (LTC) Long Term Agreement, (Long Term Contract)
	15	Emergency Conservation Program (ECP)
	16	Hydrologic Unit Area (HUA) Project
	17	Grassland Reserve Program (GRP)
	18	Resource Conservation and Development Program (RCD)
	20	Colorado River Salinity Control Program (CRCS)
ITEM 2 OFFICE USE	ITEM CODES: 820 & 821 BOXES ONLY	STATE OR COUNTY PROGRAMS
	2	State Cost Share
	3	TX: SB 503 Water Quality Plan
	4	Water Pollution Control Fund (WPCLF)
	5	UT: Ag Resource Development Loan Program (ARDL)
	6	WI: Targeted Runoff Management (TRM)
	7	Farmland Preservation Program
	8	WI: Land and Water Conservation Program
	9	KS: Conservation Easement
	10	WI: Priority Watershed Projects
	11	MO: State Cost Share, DWP-1

NRCS SUPPLEMENT--SELECTED FIELD

	12	VT: Best Management Practices (VT-BMT)
	13	NE: Lower Elkhorn Natural Resources District (LENRD)
	14	OH: Pollution Abatement Program
	15	KS: Irrigation Initiative Allocation
	16	WI: Nonpoint Pollution Source Program
	17	NE: Central Platte Natural Resources District (CPNRD)
	18	MN: Reinvest in Minnesota Reserve (RIM)
	19	NE: Upper big blue Natural Resources District (UBBNRD)
	20	CA: Conservatory Compliance
	21	VA: Chesapeake Bay Conservation
	22	PA: Clean and Green
	23	PA: ACT 6 - Nutrient Management Program
	24	OR: Confined Animal Feeding Operation (CAFO)
	25	NY: Graze
	26	NY: NYS Environmental Protection Fund
ITEM 2 OFFICE USE	ITEM CODES: 822 Box ONLY	OTHER RESOURCE CONCERNS
	2	Windbreak for Energy Efficiency
	3	Government Program Requirements
	4	Poor Drainage
	5	Nutrient Management
	6	Air Quality
	7	Woodland Management
	8	Hay Land Management
	9	Soil Quality
	10	Reduce Pests
ITEM 2 OFFICE USE	ITEM CODES: 822 Box ONLY	NON GOVERNMENT PROGRAM
	2	PA: Partners for Wildlife

NRCS SUPPLEMENT--SELECTED FIELD

Administrative Use

Sequence No./CEAP POID: _____	
NRCS Contact: _____	Date: _____
Enumerator: _____	Date: _____

**Chesapeake Bay Watershed Conservation Projects: Before-and-After
Delaware**



Before: The above photo shows an abandoned poultry house. Over time, buildings like this can build up excess nutrients in the soil under the floor. Water can then flow over and through the soil and into the Chesapeake Bay.



After: Through our efforts in the Chesapeake Bay, NRCS worked with the landowner to demolish the house, grind up the wood, and remove the soil and apply it to cropland where it was needed for fertilizer. Clean soil was placed on the site and it was reseeded with native grasses. These actions benefit water quality in the Bay.

Pennsylvania

Before: A severe storm eroded streambanks along this creek, sending sediment down the waterway that flows into the Chesapeake Bay.



After: Today, a designed rock reinforcement bank has been used to stabilize the streambank. This rock structure keeps streambanks in place and sediment out of the creek, and also works to reinforce the foundations of nearby buildings.

Maryland

Before: At this site, 300 dairy cattle were eroding the streambank and causing nutrients to enter the stream.



After: Working with NRCS, the owners installed stream crossings to allow cattle safe passage, built 2½ miles of fence to keep cattle out of the stream, and planted conservation buffers along the stream. These actions will reinforce the streambanks and prevent sediment and nutrients from entering the stream.

Virginia

Before: Working with NRCS, a landowner installed fencing and a conservation buffer to exclude his cattle from a stream whose waters feed tributaries of the Chesapeake Bay.



After: Two months later, vegetation has returned to the streambanks, reducing the amount of sediment deposited in the water, while conservation buffers filter out nutrients that could impair water quality in the stream and other Bay tributaries.

New York

Eroding streambanks along this creek were causing problems for water quality and fish habitat. This image shows conservation practices installed to address those problems. Control structures direct the flow of the water toward the middle of the stream, preventing streambank erosion. Near the structures, rock reinforces the banks, and also works to prevent erosion. Plantings along the creek sides prevent sediment from entering the water and provide shade for brook trout. Partners in this project include NRCS, the U.S. Fish & Wildlife Service, New York State, 35 landowners, the local conservation district, and local volunteers.

West Virginia

Manure storage facilities like this one allow West Virginia farmers in the Chesapeake Bay watershed to collect poultry litter needed as fertilizer for crop production. Collecting litter in storage facilities prevents nutrients from entering waterways that flow into the Bay.

The CHAIRMAN. Thank you. Deputy Director—Deputy Administrator, please go ahead.

**STATEMENT OF BOB PERCIASEPE, DEPUTY ADMINISTRATOR,
U.S. ENVIRONMENTAL PROTECTION AGENCY, WASHINGTON,
D.C.**

Mr. PERCIASEPE. Good morning, Chairman Thompson, Ranking Member Holden, and Members of the Subcommittee. Thank you for the opportunity to talk to you today about the Chesapeake Bay watershed and the important role the agricultural community plays in protecting water quality throughout the region. I have been connected to the Bay personally for much of my professional life as Secretary of the Environment for the State of Maryland, as head of the Water Program at EPA, and involved with the early Chesapeake Bay Agreements in the 1980's, and now as Deputy administrator at EPA. And I know how important these waters are to the people in the region and how important the work that the agricultural community does to the long term success and the Chief just outlined many of those achievements.

The Chesapeake Bay and the rivers that feed into it form a very unique ecosystem. In addition to being the largest estuary in North America, the watershed encompasses 64,000 square miles, six states, the District of Columbia, and over 1,000 local governing bodies. As everyone on the Committee knows the Bay is also a major economic engine for the region valued at over \$1 trillion.

The collaborative efforts that EPA and the states have been engaged in over the last 2 years is nothing new. Our work together speaks to a long and rich history of partnership that goes back more than 25 years and has led to the development of the Chesapeake Bay TMDL. And the agricultural community has made significant progress in reducing nutrient and sediment loads to the Chesapeake Bay through these conservation practices such as nutrient management, conservation tillage, and livestock exclusion from streams. These practices are good for farms and they are good for the Bay.

Let me take a moment to describe a TMDL, or Total Maximum Daily Load. It is simply a scientific determination of the total amount of pollution that a water body can handle and still meet water quality standards. The states took this threshold and figured out ways to reduce the loadings ranging from agricultural management and conservation practices to technology investments in wastewater treatment plants.

The Chesapeake Bay TMDL is based on significant interstate collaboration. Once the analysis of the data was complete to establish the limit on pollution in the Bay, the states then developed Watershed Implementation Plans based on their knowledge of local needs and priorities to achieve the goals. Let me be clear about those watershed plans because we have heard a lot of misinformation about how they were developed. There was a great deal of interaction with the states completing the Watershed Implementation Plans as they sought to address all the sources of pollution that impact the Bay—urban, rural, and suburban and to ensure that the expectations for cleanup were shared among all the different sectors.

When it came to forming the plans for the agriculture sector, the states focused on full implementation of their existing programs and ramping up of voluntary conservation programs. Let me also be clear as the Administrator has stated repeatedly: We believe maintaining the viability of agriculture is essential to the ecosystem of the Chesapeake Bay. Conservation-based farming is a preferred land use in the region and we are committed to strong partnerships and collaboration with states, and local governments, urban, rural, private sector, and the agricultural community to achieve those objectives.

Mr. Chairman, I know that there are also stories and narratives out there about EPA's actions with respect to the Bay. The truth is EPA has worked collaboratively with the states over the past several decades culminating in this basin wide diet combined with workable state level plans which will reduce pollution and increase economic stability in the region. It is neither our intention nor our belief that this will in any way endanger the agricultural heritage of this region.

As Governor McDonnell from Virginia stated so well this past December, "We are pleased that EPA accepted the Virginia Watershed Implementation Plan as part of the Chesapeake Bay TMDL. Our plan reflects recommendations made by the public and Virginia stakeholders and groups and proposes specific actions in appropriate timeframes to achieve significant cost effective reductions in pollution to the Bay. We feel it is a stringent but workable plan that demonstrates Virginia's commitment to cleaning up the Chesapeake Bay while providing for a continued economic growth in the Commonwealth. After much discussion with EPA the approved plan balances important environmental protection concerns with the need to protect jobs in agriculture and farming."

In conclusion, EPA's job is to ensure water quality in the Bay and to protect the ecosystem and the industries that rely on it. We have worked with our partners in the states, the Federal Government, and the Congress to develop a plan that does just that. I am happy to take any questions you have and thank you very much for inviting me today.

[The prepared statement of Mr. Perciasepe follows:]

PREPARED STATEMENT OF BOB PERCIASEPE, DEPUTY ADMINISTRATOR, U.S.
ENVIRONMENTAL PROTECTION AGENCY, WASHINGTON, D.C.

Good morning, Chairman Thompson, Ranking Member Holden, and Members of the Subcommittee. Thank you for the opportunity to talk to you today about the Chesapeake Bay Total Maximum Daily Load (TMDL) and the important role that the agricultural community plays in protecting water quality throughout the Chesapeake Bay watershed.

I share the sentiments provided by Administrator Jackson in her testimony before the full Committee last week. Administrator Jackson and I recognize the invaluable contributions farmers make to our economy, the critical work that farmers are doing to protect our soil, air, and water resources, and the challenging economic difficulties the agriculture community faces.

Today, I will provide you with an overview of the health of the Chesapeake Bay and describe the Total Maximum Daily Load (TMDL) for the Bay watershed, issued by EPA on December 29, 2010 to protect and restore the Bay highlighting the collaboration and science which informed its development. I will also discuss the innovative agricultural practices which the states included in their restoration plans for the Bay and its tributaries. And finally, I will provide an update on the implementa-

tion of the Strategy in response to the President's Executive Order on the Chesapeake Bay.

The Chesapeake Bay Watershed

The Chesapeake Bay watershed encompasses 64,000 square miles, parts of six states and the District of Columbia. Nearly 17 million people live in the watershed. Runoff from the Bay's enormous watershed flows into an estuary with a surface area of 4,500 square miles resulting in a land-to water ration of 14:1—the largest ratio of any major estuary in the world. That large ratio is one of the key factors in explaining why the drainage area has such a significant influence on the water quality in the Bay. The actions we take on the land have a significant impact on the health of our rivers, streams, and the Bay.

The Chesapeake Bay is the largest estuary in North America and is ecologically, economically and culturally critical to the region and the country. It is home to more than 3,600 species of fish, plants and animals. For more than 300 years, the Bay and its tributaries have sustained the region's economy and defined its traditions and culture. The economic value of the Bay is estimated at more than \$1 trillion¹ and two of the five largest Atlantic ports (Baltimore and Norfolk) are located in the Bay.

Approximately 84,000 farms are located in the Chesapeake Bay watershed and form a vital part of the watershed's economy and way of life.² EPA believes that maintaining the viability of agriculture is essential to sustaining ecosystems in the Bay. Environmentally sound farming is a preferred land use in the Region and EPA is committed to working together with the United States Department of Agriculture (USDA) and the Bay states to help farmers produce abundant and affordable foods while managing nutrients and soils in a manner that helps to protect and restore the Bay's water quality and the values and benefits that derive from clean water and a healthy, vibrant ecosystem.

The Health of the Bay

Each year, the Chesapeake Bay Program issues a health and restoration assessment of the Chesapeake Bay and watershed, known as the "Bay Barometer." The 2009 Bay Barometer affirmed that "despite the impressive restoration work done by the array of partners, the health of the Bay and watershed remains severely degraded." The data included in the report are sobering. Virtually all of the 13 measures which comprise Bay health showed conditions that fall short of restoration goals.³

Despite some significant progress in reducing pollution level over the past several decades, the Bay and many of its tributaries remain in poor health, failing to meet water quality standards. Populations of key species such as oysters are extremely low, and habitats such as underwater grass beds and wetlands are degraded.⁴ The problems facing this unique watershed stem from human activity that has transformed the natural landscape, the impacts of which have accelerated due to rapid growth and development. The physical and scientific challenges facing the Bay are wide ranging: population growth, increased development, warmer temperatures, increased nutrients, loss of underwater grasses, and large dead zones devoid of oxygen.

The main sources of nutrient and sediment pollution to the Chesapeake Bay and its tributaries are urban and suburban discharges and runoff, agriculture, wastewater, and atmospheric deposition. The agricultural sector has done much to reduce nutrient and sediment loadings in the Bay watershed. Both nitrogen and phosphorus loadings from agriculture have declined since 1985; however, significant additional reductions from agriculture and all sectors are needed to meet water quality standards.

Efforts to restore the Chesapeake Bay and its watershed have been underway for over 25 years. The Chesapeake Bay was the nation's first estuary targeted by Congress for restoration and protection. In the late 1970s, Congress funded a 5 year study, to analyze the rapid loss of aquatic life in the Bay.⁵ The report identified excessive nutrients (excess nitrogen and phosphorus pollution) as a main source of the Bay's degradation. The publication of these initial research findings in the early

¹*Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay*, A Report to the Chesapeake Bay Executive Council, Chesapeake Bay Blue Ribbon Finance Panel, October 27, 2004.

²2007 Census of Agriculture reported 83,775 farms in the Chesapeake Bay region.

³http://www.chesapeakebay.net/content/publications/cbp_50513.pdf.

⁴*Ibid.*

⁵<http://www.chesapeakebay.net/historyofcbp.aspx?menuitem=14904>.

1980s led to the creation of the Chesapeake Bay Program (CBP) as the means to help restore this exceptionally valuable waterbody.

Since it was established, the CBP has had a long history of partnership, science and action to protect and restore the Bay watershed. The CBP brings together the intellectual and financial resources of various state, Federal, academic and local watershed organizations to build and adopt policies that support a unified plan for Chesapeake Bay watershed restoration.

Over the past 3 decades, CBP partners have signed several Agreements and directives that unite them in efforts to reduce pollutant loadings into the Bay and restore its living resources. In 2000, the partners signed Chesapeake 2000 (C2K).⁶ This comprehensive, ecosystem-based approach set the course for the Bay's restoration and protection for the next decade and beyond. When the partners signed C2K, they recognized that they would be required to develop a TMDL if the actions identified in the Agreement were not successful in achieving water quality standards in the mainstem and tidal portions of the Bay.⁷ While the partners made some important progress to reduce nutrient pollution from agriculture and wastewater treatment plants, it was not enough. In October 2007, when it became apparent that water quality standards would not be met, the Chesapeake Bay Program's Principals' Staff Committee (PSC), a group of state secretary-level representatives, requested that EPA establish the multi-state TMDL.⁸

Additional commitments also led to the decision to develop a TMDL for the Chesapeake watershed including a number of consent decrees and Memoranda of Understanding.⁹ In addition, the Bay TMDL was included as a keystone commitment in the strategy developed by 11 Federal agencies, including USDA, to restore and protect the Chesapeake Bay and its watershed—as directed in President Obama's Executive Order 13508, issued on May 12, 2009.¹⁰

TMDL Development

On December 29, 2010, EPA issued the final Chesapeake Bay TMDL establishing the maximum amount of pollution the estuary can receive and still meet water quality standards. Specifically, the Bay TMDL identifies the reductions of nitrogen, phosphorus and sediment from point¹¹ and nonpoint sources¹² in Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia necessary to meet the Bay's water quality standards. It is by far the most comprehensive roadmap to water quality restoration for the Chesapeake Bay.

The Clean Water Act requires states, including the District of Columbia, to establish lists of impaired waters that fail to meet water quality standards and to establish TMDLs for listed water bodies. A TMDL specifies the maximum amount of a pollutant that a water body can receive and still meet applicable water quality standards. Typically, it includes waste load allocations for point sources and load allocations for nonpoint sources and natural background. The 9th Circuit Court described TMDLs as “primarily informational tools” that “serve as a link in an implementation chain that includes federally regulated point source controls, state or local plans for point and nonpoint source pollutant reduction, and assessment of the impact of such measures on water quality, all to the end of attaining water quality goals for the nation's waters.”¹³ EPA and the Bay states have extensive experience in developing TMDLs and there are currently more than 12,000 TMDLs established within EPA Region III (Mid-Atlantic) alone.

The establishment of the Chesapeake Bay TMDL began in earnest when, on September 11, 2008, EPA sent official letters to the states detailing a plan for the TMDL, including: criteria for establishing nitrogen, phosphorus and sediment allocations; schedules for establishing the TMDL and pollution reduction plans; EPA's expectations and evaluation criteria for state plans to meet the TMDL pollution lim-

⁶ <http://archive.chesapeakebay.net/info/c2k.cfm>.

⁷ Chesapeake 2000 Agreement page 5: http://www.chesapeakebay.net/content/publications/cbp_12081.pdf.

⁸ See PSC meeting minutes for October 1, 2007: http://archive.chesapeakebay.net/pubs/calendar/PSC_10-01-07_Minutes_1_9029.pdf.

⁹ For a detailed description of EPA's legal authority to issue the Bay TMDL including commitments made, see the Final Chesapeake TMDL section 1.4.2 on page 1–16 as well as Appendix W Part 1 starting on page 264 at: <http://epa.gov/chesapeakebaytmdl/>.

¹⁰ The Executive Order and Strategy are available at: <http://executiveorder.chesapeakebay.net>.

¹¹ Point sources are discrete sources such as wastewater treatment plants and industrial facilities that are regulated under the Clean Water Act.

¹² Nonpoint sources are diffuse sources such as runoff from land and atmospheric deposition not regulated under the Clean Water Act. Most agriculture is defined as a nonpoint source. The exception is Concentrated Animal Feeding Operations which are included in the definition of point source in Section 502(14) of the Clean Water Act.

¹³ *Prosolino v. Nastro*, 291 F.3d 1123, 1129 (9th Cir. 2002).

its; EPA's expectations for demonstrating reasonable assurance for controlling nonpoint source pollution; and contingency actions that EPA could take to ensure progress.¹⁴

Watershed Implementation Plans

Integral to the Bay TMDL are the state's Watershed Implementation Plans (WIPs) or road maps for how and when the seven Bay states, in partnership with Federal and local governments, will achieve and maintain pollutant allocations (reductions) under the TMDL. EPA worked closely with the states to ensure that each WIP achieved the basin-state pollution allocations and provided reasonable assurance that nonpoint source reductions will be achieved and maintained. The states were in the lead for developing the WIPs and a significant amount of flexibility was afforded to the states. WIPs must include enough detail to create a high degree of accountability for reducing water pollution, including assurance that point source permits will be issued consistent with the TMDL pollution allocations.

EPA released a draft Chesapeake Bay TMDL on September 24, 2010 and began a 45 day public comment period that concluded on November 8, 2010. After issuing the draft TMDL, EPA continued to work closely with each state holding weekly discussions to assist them in revising and strengthening their plans.

In developing the TMDL, our plan was always to have allocations based on states' strategies (*i.e.*, WIPs) and to provide the states with flexibility to let them lead the way in determining how to reduce pollution and from what sectors. The final TMDL is a product of close EPA-state collaboration and is largely based on the allocations and actions included in each of the state's final Phase I WIPs.

Outreach

Throughout the 2 year development of the final TMDL, EPA conducted an extensive outreach campaign throughout the watershed. Outreach to the agriculture community was particularly focused and occurred throughout the region. EPA staff met with representatives of the American Farm Bureau Federation (national and state level), agribusiness organizations, as well as state agricultural agencies and conservation districts.

In 2011, EPA will work with the Bay states on Phase II WIP development. Phase II WIPs will include additional detail to facilitate implementation of nutrient and sediment controls at the local level. The Phase I and Phase II WIPs will inform the 2 year milestones established by the TMDL.

Economic Benefits and Financial Assistance

The implementation of the TMDL is designed to be as flexible as possible. EPA allowed and encouraged states to develop a Watershed Implementation Plan that meets the TMDL allocations in the best way for any given state.

It is important to recognize that there are economic benefits to improving local and Bay water quality and that the agricultural practices that states are committing to implement can be very good for the producer's bottom line. For example, many farmers implement continuous no-till systems without seeking Federal or state cost-share funding because it reduces fuel and labor costs from not having to till cropland, and long-term, it can improve soil quality. Also, excluding livestock from streams is another example of a conservation practice that is economically beneficial to the dairy farmer from the standpoint of reducing the costs associated with waterborne illnesses, mastitis, and foot rot.

An economic analysis conducted by the University of Virginia this year found that implementation of the agricultural practices to reduce runoff pollution called for in Virginia's Chesapeake Bay "tributary strategy," such as livestock stream exclusion, buffers, and cover crops, would generate significant economic benefits. For example, the report found that every public dollar spent on implementing the practices will produce \$1.56 in new economic activity. Further, the practices would generate nearly 12,000 new jobs over the course of the cleanup effort.¹⁵

The Fiscal Year 2012 President's Budget includes \$25.3 million for programmatic and implementation grants to states and \$10.0 million for innovative and small watershed grants available to states, local governments, and other organizations. All told, about \$40 million of the \$67 million request, or about 60 percent, will be available to state and local entities. These grants can be used to help producers imple-

¹⁴ Chesapeake Bay TMDL letters to states are available at: <http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/ResourceLibrary.html#keydocs>.

¹⁵ *Economic Impacts of Implementing Agricultural Best Management Practices to Achieve Goals outline in Virginia's Tributary Strategy*, Center for Economic and Policy Studies, Weldon Cooper Center for Public Service, University of Virginia, February 23, 2010.

ment key conservation practices that are not only good for the Bay, but also for producers' economic bottom-line.

Chesapeake Bay Program Watershed Model

The Chesapeake Bay Program (CBP) Watershed Model (hereinafter CBP Model) was integral to developing the Bay TMDL. The CBP Model, a product of the Bay Partnership (not EPA), is actually a suite of models developed specifically for the scale of the Chesapeake Bay watershed and its 92 major waterbody segments. The CBP Model is a critical tool that will help inform the allocation of pollution reductions among states and sources of pollution, and help decision makers make informed management decisions.

The CBP Model is well established and an effective means for assessing environmental impacts over larger landscapes and watersheds. As a sophisticated analytical tool, the CBP Model helps advance our ability to understand the effectiveness of actions on the land in reducing nutrient and sediment loads to the Chesapeake Bay watershed.

The suite of models used for the TMDL are among the most sophisticated, studied and respected in the world, and represent the cutting edge of estuary restoration science.¹⁶ The models provide a comprehensive view of the Chesapeake ecosystem, from the depths of the Bay to the upper reaches of the watershed, and from the development occurring on land to the air over the region. The CBP Model has gone through numerous peer reviews by modeling experts and has been widely endorsed as a useful TMDL model—most recently by the Chesapeake Research Consortium (CRC), the CBP Scientific and Technical Advisory Committee, the Virginia Institute of Marine Science, the University of Maryland and others.¹⁷ In a November 8, 2010 memorandum, the CRC stated, “the substantial majority of knowledgeable environmental scientists in the region agree with the premise that the modeling framework used to develop the Draft TMDL represents the best current incorporation of available science with which to set and allocate maximum loads within the watershed.”¹⁸

Over the past 20 years, the CBP Model has improved significantly in precision, scope, complexity and accuracy. For example, the current CBP Model is calibrated to monitoring stations in the region, with the number of linked stations expanded from 20 in the previous version to nearly 300 in the current version. The segments in the model have grown from 94 to 2,157, providing information at the watershed, county and conservation district level. The types of land uses that can feed into the model were increased from 9 to 25. By working with partners and stakeholders, the CBP continues to improve the quality of the data for land use, agricultural practices, precipitation, wastewater, urban and suburban runoff and air pollution.

The CBP Model suites have been developed and utilized through collaboration with Federal, state, academic and private partners. This includes extensive input from agricultural agencies and organizations including state agricultural agencies, and agricultural organizations on the CBP Agriculture Workgroup. Use and development of the models is fully transparent and open. All decisions and refinements to the model are made at public meetings of the Chesapeake Bay Program. The CBP Model suites undergo extensive independent scientific peer-review by a wide spectrum of Federal, state and academic scientists, as well as modeling experts. Bay watershed states use the CBP Model to determine the appropriate mix of nutrient and sediment reduction practices that will achieve their allocations from a suite of management practices such as wastewater treatment plant upgrades, urban stormwater controls, and implementation of various agricultural conservation practices.

Crediting the Agricultural Community in the Model

EPA recognizes the agriculture community has done much to reduce pollution in the watershed over the last few decades. Since 1985, much of the reduction has been achieved through implementation of nutrient management and conservation practices, and changes in land use. Continued implementation of conservation practices and development of new conservation strategies are crucial to restoration of the Chesapeake Bay.

While agricultural lands make up about 22% of the total watershed area, current model estimates show that agricultural lands are responsible for about 45% of the total N loadings, 44% of the total P loadings and 65% of the total sediment loadings entering the tidal Chesapeake Bay.¹⁹

¹⁶ http://www.chesapeakebay.net/committee_msc_projects.aspx?menuitem=16525#peer.

¹⁷ *Ibid.*

¹⁸ <http://cbf.typepad.com/files/scientistletter-2.pdf>.

¹⁹ 2009 data from CBP Watershed Model Phase 5.3.0.

The CBP Model currently credits more than 40 agricultural practices. These include such practices as: enhanced nutrient management, continuous no-till, conservation tillage, livestock exclusion from streams, cover crops, forest buffers, poultry phytase, and more. I applaud these and the many other efforts currently being implemented by the agricultural community.

As states work to further reduce nutrients and sediment from agricultural operations, they have committed to implement new and innovative technologies for achieving the load reduction goals. EPA continues to work with the states to add these additional “new” practices for credit in the Model. Two examples of these are more advanced nutrient management technologies and technologies for using excess manure nutrients for uses such as energy production.

EPA and USDA Models

Both USDA and EPA use models to help describe the effectiveness of actions on the land and to inform decision making.

While the Chesapeake Bay Program Partnership’s Bay Watershed Model (CBP Model) and USDA’s Conservation Effects Assessment Project (CEAP) have both been extensively peer-reviewed and represent state-of-the-art modeling approaches, they were developed for different purposes.

CEAP was built to give an estimate, at a large basin scale, of the effectiveness of conservation activities on the landscape and their impact on nutrient loads to the Chesapeake Bay.

The CBP Model was designed to account for all nutrient and sediment loading sources to the Chesapeake Bay in the context of the Bay TMDL and focus specifically on describing how actions on the land from all sources affect nutrient loadings to the Bay and the associated Bay water quality.

Although these and other technical differences exist in the models, they both show that the agricultural sector has done much to reduce nutrient and sediment loadings in the Bay watershed, and also that there is more to do.

Now that the CEAP report is completed, USDA and EPA will work together to further understand and coordinate the different approaches used in the two modeling efforts and to continue improving the data available for use by both models.

Executive Order

USDA and EPA have a long history of collaborating on the Chesapeake Bay restoration to ensure both a healthy Bay and viable agriculture in the Chesapeake Bay watershed.

Both agencies agree that maintaining the viability of agriculture is an essential component to sustaining ecosystems in the Bay. Both acknowledge the enormous contribution that farmers are making to improve Bay water quality. And, both are committed to strong partnerships and collaboration with states and local governments, urban, suburban and rural communities, and the private sector to achieve environmental objectives for the Bay.

For example, senior officials from USDA and EPA met with the state agricultural and environmental secretaries several months ago to discuss a framework to provide certainty to farmers who implement practices that protect water quality in the Chesapeake Bay. Following that meeting, in December 2010, USDA Deputy Secretary Kathleen Merrigan and I sent letters to each of the State Agriculture and Environmental Secretaries asking them to confirm their interest in pursuing a certainty program. It is our hope that we have developed a constructive framework that states can use in providing to producers incentives and recognition that accelerate the adoption of conservation practices and advance the objectives of the state Watershed Implementation Plans. We are continuing to follow up with interested states to advance this concept.

USDA and EPA have committed to look for opportunities to leverage and better align our collective Federal resources to support the states in implementing the commitments outlined in their TMDL Watershed Implementation Plans. One example of funding coordination is the 2010 effort to align our agencies’ innovation grants programs to support key priorities for addressing some of the biggest water quality challenges facing agriculture. This resulted in \$5.5 million being targeted towards innovative agricultural projects in the Bay watershed last year. Let me describe two examples:

Reducing Ammonia Emissions and Runoff from Broiler Litter

EPA is spending \$700,000 to fund demonstrations of technologies to reduce ammonia emissions and runoff from poultry litter such as (1) ammonia scrubbers which are attached to exhaust fans on poultry houses, (2) addition of alum to poultry litter inside poultry houses, and (3) using a litter incorporator to make litter applications. The project team, including personnel from Virginia Tech, Virginia Cooperative Ex-

tension, Virginia Department of Conservation and Recreation, USDA/NRCS, Soil and Water Conservation Districts, the University of Maryland—Eastern Shore and USDA/ARS, will work with local growers to demonstrate the effects of these technologies on ammonia losses to the atmosphere, phosphorus runoff and crop growth on two farms in the Shenandoah Valley and two farms on the Eastern Shore of Virginia.

Conewago Creek Watershed in Pennsylvania

As part of the Executive Order described below, EPA is aligning its resources with the USDA farm bill funding in priority watersheds to accelerate cost-effective nutrient and sediment reductions from agricultural areas. EPA has provided \$800,000 in the USDA's "showcase watershed" to support a diverse partnership of Federal, state and local government agencies, academics, watershed groups, farmers and businesses in comprehensively restoring the Conewago Creek watershed. The collaborative partnership has set goals that include:

- 100% of agricultural producers have current and implemented nutrient management plans;
- 100% of homeowners have identified and implemented on-site opportunities for improving stormwater retention and infiltration, septic system management, water conservation, riparian buffers, and protection of private drinking water systems;
- riparian forest buffers are established for all non-buffered areas of the stream; and
- the TMDL for phosphorus and sediment is met.

The partnership will monitor early signals of changes in stream quality, and has committed to transfer this process to other watersheds.

Continued EPA/USDA collaboration will be critical to continue to refine modeling tools, improve agricultural conservation tracking and verification, and accelerate agricultural nutrient and sediment reductions necessary to meet the Bay TMDL.

Implementing the *Strategy for Protecting and Restoring the Chesapeake Bay Watershed*, is another area of strong collaboration between USDA and EPA. On May 12, 2009, President Obama issued Executive Order 13508 on Chesapeake Bay Protection and Restoration. The *Strategy* developed in response to the Executive Order ushered in a new era of shared Federal leadership, action and accountability. This comprehensive and highly coordinated ecosystem-based strategy deepens the Federal commitment to improve our results in protecting and restoring the Chesapeake Bay and its watershed.

The strategy includes a number of actions and initiatives related to farming and agriculture. For example, EPA will collaborate with USDA, other Federal agencies, state governments and conservation districts to identify watersheds with the highest nitrogen, phosphorus and sediment delivery to the Bay and its tributaries. In addition, EPA and USDA committed to develop and implement mechanisms for tracking and reporting voluntary, noncost-share practices installed on agricultural lands. And, EPA will coordinate funding opportunities with USDA to accelerate nitrogen, phosphorus and sediment reductions in priority watersheds and tackle key agriculture challenges. To increase accountability, the agencies will establish milestones every 2 years to ensure progress toward measurable environmental goals.

In order to provide additional transparency and accountability to the work identified in the *Strategy* and specifically, the Bay TMDL, EPA has developed a system to track and verify progress in meeting cleanup commitments. At this early stage, the Chesapeake Bay TMDL Tracking and Accounting System (BayTAS) displays geographically the 2009 baseline levels of nitrogen, phosphorus and sediment pollution and the allocations of pollutant reductions called for in the final Bay TMDL—specifically, allocations by state, by water body segment and by source sector.²⁰ State specific data reflecting progress, measured against the 2009 figures, will be added to the system on an ongoing basis, starting in 2011.

A tenet of the Executive Order is Federal leadership, action and accountability. In developing the *Strategy*, EPA stated its belief that "maintaining the viability of agriculture is an essential component to sustaining ecosystems in the Bay. A goal of the *Strategy* is to work with producers to apply new conservation practices on 4 million acres of agricultural working lands in high priority watersheds by 2025 to improve water quality in the Chesapeake Bay and its tributaries. Environmentally sound farming is a preferred land use in the region and we are committed to strong partnerships and collaboration with states and local governments, urban,

²⁰ <http://stat.chesapeakebay.net/BayTAS>.

suburban and rural communities, and the private sector to achieve environmental objectives for the Bay.”²¹

Closing

In closing, I commend the conservation practices developed and implemented by the agriculture community. The efforts have improved the health of local streams, rivers and the Bay. Federal agencies and the states are relying on the efforts of the agricultural industry in both the restoration efforts identified in the Executive Order strategy and in the implementation of the states’ restoration plans which are the basis for the Bay TMDL.

I appreciate the opportunity to meet with you today, I look forward to continuing our work with you and I am pleased to answer any questions you might have.

The CHAIRMAN. All right, thank you for your testimony. Mr. Secretary, welcome to the panel.

STATEMENT OF DOUGLAS W. DOMENECH, SECRETARY OF NATURAL RESOURCES, COMMONWEALTH OF VIRGINIA, RICHMOND, VA

Mr. DOMENECH. Thank you. Good morning, Mr. Chairman, and Members of the Subcommittee. On behalf of Virginia Governor Robert F. McDonnell, thank you for inviting me to discuss the Commonwealth’s Chesapeake Bay Watershed Implementation Plan and EPA’s TMDL. My written testimony has been submitted for the record. I am Doug Domenech, Secretary of Natural Resources for the Commonwealth of Virginia. In my Secretariat I oversee six state agencies, several of which have responsibilities to manage and protect the Chesapeake Bay.

Mr. Chairman, as you said, the Chesapeake Bay is a national treasure and an ecological wonder and we are committed to ensuring a clean and vibrant Bay for future generations to cherish. We strongly believe a clean Bay is good for the economic well-being of the state. That is why its restoration is one the Governor’s top environmental goals.

I applaud the dedicated men and women at the EPA who work hard every day to improve the state of the Bay. I also congratulate Administrator Jackson for selecting Jeff Corbin, a Virginian to serve as the new Senior Advisor to the Administrator for the Chesapeake Bay or as the state’s like to call him, the Bay Czar.

Virginia has been engaged in various Bay cleanup efforts for 30 years. During that time we have made significant progress in reducing pollutants to the Bay through voluntary measures with agriculture, forestry, wastewater treatment, and stormwater management even while Virginia’s population has increased by two million people. Virginia submitted our Phase I WIP to EPA on November 29, 2010, and EPA accepted our plan and included it in their TMDL with minor modifications, absent backstops threatened by EPA last September, in response to our draft plan.

However, as we have stated to EPA directly, Virginia continues to have concerns with several aspects of the program. Number one, we question the legality and compressed timing of some of the EPA actions on the states. There are three reasons EPA asserts that they have to develop the Bay TMDL by December 31, 2010.

²¹ *The Next Generation of Tools and Actions to Restore Water Quality in the Chesapeake Bay: A Revised Report Fulfilling Section 202a of Executive Order 13508*, November 24, 2009, U.S. Environmental Protection Agency.

First, they say it was pursuant to the requirements of the Consent Decree in the 1999 case *American Canoe Association v. EPA*. Second, because of President Obama's May 2009 Chesapeake Bay Protection and Restoration Executive Order, and third, because of the EPA's out of court settlement agreement with the Chesapeake Bay Foundation. Virginia was not a party to those court cases and the President's Executive Order does not apply to states, and the Consent Decree established a deadline of May 1, 2011, for the EPA to establish TMDLs, not December 2010.

Second, EPA's Bay model is problematic. Virginia is concerned with the nearly absolute reliance on management by computer model. The Chesapeake Bay model may be a useful tool in predicting outcomes on a watershed-wide basis, however, it continues to contain fundamental flaws that call its credibility into question. We are especially concerned that the level of precision EPA assigns to the model is far beyond what the model is capable of. This will be a larger problem as we develop the more locally based Phase II WIPs. Another concern is the apparent discrepancies in agricultural land uses between EPA's model and the USDA NRCS figures which is 1.4 million acre difference in ag acres. EPA has acknowledged several of these technical flaws and has been working to resolve those for nearly a year. Finally, Virginia is generally concerned that EPA is the only place that houses the model. It is hard to know when you are speeding if the only people with the speedometer are the police.

Third, we are concerned about the cost and flexibility of the program. It is important to emphasize that this plan has been developed during the worst economy in generations. Virginians have already invested billions of dollars in Chesapeake Bay water quality improvement to date. We estimate that full implementation of this plan will likely cost more than \$7 billion between now and 2025. The cost and pace of this mandate on state—on the state localities, private industries, farmers, and homeowners in Virginia will be significant. The estimated cost for agriculture alone to comply with the WIP will be more than \$1 billion. While Governor McDonnell included \$36.4 million in our Water Quality Improvement Fund in his budget, this—in this economy we cannot guarantee additional funding will be provided by our General Assembly for this purpose over the next 15 years.

Therefore, it is our position that the success of the WIP will be largely subject to the provision of sufficient Federal funding to assist in covering these massive costs. While we have developed an approved plan, Virginia has told EPA that we reserve the right to adjust the plan as needed as EPA Administrator Lisa Jackson said last week, WIPs are state plans. Flexibility is the key to success.

This water bottle holds approximately 1 pound of nitrogen. The cost to remove this much nitrogen can be \$6 or it can be \$6,000 depending if it is removed in a wastewater system or with an urban stormwater retrofit. That is why we are studying the expansion of our existing nutrient credit exchange to allow additional source sectors to participate in a market-based program.

In conclusion, I would add that our General Assembly is taking this responsibility seriously and in their last session completed significant advances in the management of fertilizers, banning phos-

phorous in most homeowner fertilizer products. In addition, with the support of our agricultural interests, they passed bills regarding the development of resource management plans on farms. Our work does not end with the submission of our WIP. We will continue to work with EPA, stakeholders, and the public to ensure that our implementation improves water quality in a manner that is sensible, fair, and cost effective as this process unfolds over the next 15 years.

Thank you for this opportunity to speak today.

[The prepared statement of Mr. Domenech follows:]

PREPARED STATEMENT OF DOUGLAS W. DOMENECH, SECRETARY OF NATURAL
RESOURCES, COMMONWEALTH OF VIRGINIA, RICHMOND, VA

Good morning, Mr. Chairman and Members of the Committee. I am Doug Domenech, Secretary of Natural Resources for the Commonwealth of Virginia. In my Secretariat, I oversee six state agencies; the Department of Environmental Quality, the Department of Conservation and Recreation, the Virginia Marine Resources Commission, the Department of Historic Resources, the Virginia Museum of Natural History, and the Department of Game and Inland Fisheries most of which have some responsibility to manage and protect the Chesapeake Bay's natural and historic resources.

Thank you for inviting me to discuss the Commonwealth of Virginia's Chesapeake Bay Watershed Implementation Plan (WIP) and the U.S. Environmental Protection Agency's (EPA) Total Maximum Daily Load (TMDL). On behalf of Virginia Governor Robert F. McDonnell, we have worked diligently with stakeholders and constituents to develop Virginia's Phase I Watershed Implementation Plan.

The Chesapeake Bay is a national treasure and an ecological wonder. As Virginians, we are committed to ensuring a clean and vibrant Chesapeake Bay for future generations to cherish. We strongly believe a clean Bay is good for the economic well being of the state.

I applaud the dedicated men and women at the EPA who work hard every day to improve the state of the Bay, and who provide advice and counsel to the states on how we can work together toward our common interest.

Virginia has been engaged in Bay cleanup efforts for 30 years. The Chesapeake Bay partnership began with a study by the Maryland and Virginia Legislative Advisory Commission which was the impetus for the Chesapeake Bay Commission (CBC) in 1980. The commission was formed to assist legislators in evaluating and responding to mutual Bay concerns and intergovernmental cooperation. Pennsylvania joined the Commission in 1985.

The first Chesapeake Bay Agreement was signed by the jurisdictions of Virginia, Pennsylvania, Maryland, the District of Columbia and the EPA and CBC in 1983. The partners agreed to meet biannually, establish an implementation plan, and a liaison office in Annapolis. In 1987 the partners agreed to develop, adopt, and begin implementation of a basin wide strategy to equitably reduce nutrients by 40% by the year 2000. In signing the Chesapeake Bay 2000 Agreement, the partners committed to meet water quality standards in the Bay by 2010. In 2003 the partners agreed to new allocations that were the basis for the tributary strategies as the best way to restore the Bay and those strategies were developed and released in 2005.

The Chesapeake Bay Program has been an effective multi-jurisdictional effort to reduce pollution loads into the Chesapeake Bay. Since the initial Agreement was signed, the partners have evaluated progress in the program and adjusted its goals to advance the restoration of the Bay. In Virginia, we have been successful in reducing nitrogen loads to the Bay by about 20 million pounds per year from 1985 through 2009 and an additional 10 million pounds per year from 2002 through 2009. Similarly Virginia reduced phosphorus loads by 4 million pounds per year from 1985 through 2009 even while the population has increased by two million people.

Virginia submitted our Phase I WIP to EPA on November 29, 2010 and EPA accepted our plan and included it in their TMDL with minor modifications. We crafted a comprehensive and effective plan that allows us to achieve EPA's pollution reduction goals absent "backstops" threatened by EPA last September in response to our draft plan.

However, as we have stated to EPA directly, Virginia continues to have concerns about the process, legality, allocations, and compressed timing in the development of this plan.

Legality

EPA asserts that it had to develop the Bay TMDL by December 31, 2010 pursuant to the requirements of the Consent Decree entered in the 1999 case *American Canoe Association et al. v. the United States EPA*, 54 F. Supp. 2d 621 (E.D. Va. 1999), President Obama's May 2009 Chesapeake Bay Protection and Restoration Executive Order, and the EPA's out-of-court "settlement agreement" with the Chesapeake Bay Foundation. I note that Virginia was not a party to those court cases, and the Consent Decree established a deadline of May 1, 2011 for the EPA to establish TMDLs—not December 2010. This concern regarding the rush to completion is shared by many local governments, industries and others as evidenced by the public comment EPA received last fall.

The Model

Virginia must also state our significant concerns with the nearly absolute reliance on management by computer model. As it's been said, "All models are wrong, but some are useful" (George Box). The Chesapeake Bay Model may be a useful tool in predicting outcomes on a watershed-wide basis, however, while the model has seen years of development it continues to contain fundamental flaws—such as under estimating the amount of impervious surface—that call its credibility into question. We are especially concerned that the level of precision EPA assigns to the model is far beyond what the model is capable of. This will be a larger problem as we develop the more locally based Phase II WIPs. In Virginia, our approach will be to make sure programs and practices are effective in the real world, not just the model world constructed by EPA.

These concerns about the model have also been validated by apparent gross discrepancies between the loading calculations provided by EPA's Bay Model and that of the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). The difference between the EPA and NRCS assessments of actual agricultural land uses in the Bay watershed amounts to approximately 1.4 million acres. To put that in perspective, the two Federal agencies disagree on the amount of ag land that's a land mass the size of the State of Delaware. EPA cannot credibly demand compliance with a TMDL derived from a model that differs so dramatically with that of its sister agency. A sister agency, I might add, that is actually charged by law with keeping an accurate Census of agricultural uses in the Bay watershed and across the country.

Finally, Virginia is generally concerned that EPA is the only place that houses the model. It is hard to know you are speeding if the only people with a speedometer are the police.

Timing, Cost and Flexibility

It is important to emphasize that this plan is being developed during the worst economy in generations. Virginians have already invested billions of dollars in Chesapeake Bay water quality improvement to date. As EPA's numbers demonstrate, significant reductions have taken place in Virginia since the advent of the Chesapeake Bay program despite a significant increase in population.

We estimate that full implementation of this plan will likely cost more than \$7 billion in new dollars between now and 2025. The cost and pace of this mandate on the state, localities, private industries, farmers, and homeowners in Virginia will be significant.

Even in these tight times, Governor McDonnell included \$36.4 million new dollars in our Water Quality Improvement Fund in his 2011 budget amendments which has now been adopted by the General Assembly. In this economy, we cannot guarantee additional funding will be provided by our General Assembly for this purpose over the next 15 years. It is our position that the success of the WIP will be largely subject to the provision of sufficient Federal funding to assist in covering these massive costs.

While we have developed an approved plan, Virginia has told EPA that we reserve the right to adjust this plan based on new information such as additional voluntary best management practices currently implemented but not accounted for in the EPA model, adverse economic impacts on business, funding availability from Federal sources in particular, and improved scientific methodologies. As EPA Administrator Lisa Jackson said last week, WIPs are state plans.

Virginia is moving forward with the implementation of this plan with a clear focus on flexibility and cost effectiveness. A venti (20 oz.) size latte holds approximately one pound of nitrogen. The cost to remove that much nitrogen can be \$6.00 or it can be \$6,000 depending if it is removed in a wastewater system or an urban stormwater retrofit. The removal of nitrogen and phosphorus in different sectors can

vary that much, therefore it is imperative that our plan provides options for localities to meet their reduction goals.

Nutrient Trading

In our recently concluded General Assembly session a resolution was adopted, as was proposed in our WIP, calling for a study of the expansion of our existing nutrient credit exchange to allow additional source sectors to participate in a market-based program. Virginia's nutrient credit exchange program has already allowed for reductions in the wastewater sector to be accomplished in an orderly and cost-effective manner. We believe that expanding that program will afford the same approach to other sectors, particularly urban stormwater and septic.

The James River

I would also call your attention to our proposed approach for the James River watershed. Due to its proximity to the mouth of the Bay and the Atlantic Ocean, the James has less impact on the water quality of the mainstem than any other river. The James also is unique because of the numeric chlorophyll standards that were adopted in 2005 with the concurrence of EPA. We believe that because sufficient new information is available for the James River, we should take the time necessary to review the James River numeric chlorophyll standards to ensure that they reflect the best science and regulatory approaches. Therefore, we have included a detailed plan to accomplish this review and amend standards if necessary prior to the scheduled revision of the TMDL in 2017. We will also consider developing a local chlorophyll-based TMDL for the James River. Our plan demonstrates that we will meet the 2017 target loads prescribed by EPA in all basins, including the James.

General Assembly Action

Our General Assembly recently completed significant advances in the management of fertilizers used in urban areas through the passage of legislation that will ban phosphorus in most homeowner fertilizer products.

Legislation was passed that prohibits the sale, distribution and use of lawn maintenance fertilizers containing phosphorus after December 31, 2013. Additionally, the sale of deicing agents containing urea, nitrogen or phosphorus, will be unlawful after December 31, 2013. The legislation requires golf courses to implement nutrient management plans by July 1, 2017. The Commonwealth is developing a cost-share program to assist in implementation of the required nutrient management plans.

Legislation was also passed regarding resource management plans. This legislation affects both regulated agricultural landowners and voluntary participants. Components of a resource management plan, depending on the type of farm and crops, may include nutrient management plan, forest or grass buffer, soil conservation plan, cover crops, and a system that prevents livestock access to streams. Each individual farm will be assessed to determine the appropriate components and to determine which agricultural best management practices are currently being implemented. Cost share funding is available through the Virginia Agricultural Best Management Practices Cost-Share Program to assist with the implementation and maintenance of the resource management plan.

Resource management plans, if components are fully implemented and maintained, will deem the agricultural landowners or operators as meeting the requirements of the Chesapeake Bay TMDL.

To meet the requirements of EPA's TMDL, Virginia's WIP relies on 95% of all agricultural lands implementing one or more of the following best management practices: nutrient management plans, soil conservation crops, cover crops, forest buffers and livestock exclusion from streams. The estimated cost for agriculture alone to comply with the WIP is more than \$1 billion. These costs will be borne by the agricultural landowner and the state, with the landowner paying for approximately 30 percent of the cost of implementation. The Commonwealth is working in cooperation with the agricultural industry and farmers to increase the reporting of both voluntary and cost-share best management practices.

In the urban sector, estimated costs to meet the urban retrofits requirement is \$3 billion. The vast majority of this cost will be borne by local governments and private developers. It is anticipated that Virginia will adopt new stormwater management regulations, which will meet the requirements of the WIP, in early fall of this year. The regulations will ensure that there is no increase in nutrient loadings for new development and ensure that redevelopment improves the current nutrient loadings.

We designed Virginia's WIP to allow the flexibility to implement the most cost-effective practices in each watershed using the programs that are already in place, programs that will be expanded and new programs that we will propose. The plan

emphasizes actions with appropriate timeframes in each sector to achieve significant cost-effective reductions in pollution loads to the Bay.

Our work does not end with the submission of our Watershed Implementation Plan. We will continue to work with EPA, stakeholders, and the public to ensure that our implementation improves water quality in a manner that is sensible, fair and cost effective as this process unfolds over the next 15 years.

Thank you for the opportunity to speak with you today.

DOUGLAS W. DOMENECH,
Secretary of Natural Resources.

The CHAIRMAN. Thank you, Mr. Secretary. Thanks to the panel for your testimony. The chair would like to remind Members that they will be recognized for questioning in the order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in the order of arrival and I appreciate Members understanding. I will begin with my own questioning for 5 minutes.

And once again thank you for the panel for being here. Deputy Administrator, I appreciate you being here. I really very much appreciated Administrator Jackson coming before the full Committee just last week. And you here today it has been a chance to talk about a very, very important issue.

One of the things I had asked Ms. Jackson about and wanted to get a follow up and then a confirmation. I had requested to see if the EPA has longitudinal studies over the past 30 years since we began to invest in a very important initiative in cleaning up the Chesapeake Bay. And I had requested that whatever longitudinal study may be out there by the EPA in terms of showing the trajectory of the health of the Bay over time. Is that something that you were able to bring with you today?

Mr. PERCIASEPE. Mr. Chairman, I don't have it with me today. The most up-to-date one will be out in about a month in April and I would like it if I can get you last year's summary. It is called the *Bay Barometer* and it is something that all the states and the Federal agencies all work on together and they track 13 important parameters in the Bay. And there is no doubt that many of them have improved over the last 20 years and some have stayed static and some have gotten a little worse as you might expect from the state of affairs. But the most recent one based on 2010 information will be available by April. I think what we would make available to the Committee and of course this is available on the web, but we will make it available to the Committee, the 2009 version and then make sure that you have 2010 version.

[The information referred to is located on p. 151]

The CHAIRMAN. I appreciate that. Is this the same—2009 is the same date I looked at. I believe it showed improvement in at least eight indicators. And just a confirmation, I had asked about it seems that the EPA routinely does cost-benefit analysis when it comes to regulations although I was surprised. And I just want to affirm the information that Ms. Jackson shared that there was no cost-benefit analysis done with the TMDL regulations.

Mr. PERCIASEPE. Well, first I have to make sure that we are clear on the record here that a TMDL itself is really just an allocation of the pollution reduction that would be required to meet a certain water quality standards, standards that are set by the states. The actual practices and reductions from different sources come from

the state implementation plans and as the Secretary pointed out from Virginia as a State Representative here they are in the process of doing the more detailed implementation plans this year. There are actually discussions about the timing on all that under-way with the states right now.

Maryland and Virginia have done some good cost estimates and you heard some of them here from Doug. I would expect that when we have these more detailed plans we will be able to look a little more specifically. And we will make sure we get the states to work with us on that. On the other side of the coin, remember there are a cost and benefits side here. On the other side of the coin there has been blue ribbon panels that looked—that have gotten together under the auspices of the Bay partnership and the executive council and the principle staffs committee which are made up of the state Representatives and the Federal agencies to look at the economic value of the Bay and you know from fishing, from commercial fishing, from sport fishing, commercial activities there—

The CHAIRMAN. If I can, because I want to try to limit myself—

Mr. PERCIASEPE. Yes. Okay. I'm sorry.

The CHAIRMAN.—the same as other Members. And I appreciate there are—and I know there are a lot—

Mr. PERCIASEPE. So we have those two sides going.

The CHAIRMAN.—of folks looking at it, but the fact is the TMDLs, this is something that is EPA driven. I guess we can argue about what constitutes a regulation and what doesn't. We tend to argue about words in Washington sometimes, but the bottom line the EPA has not done a cost-benefit analysis. This would—a question to all the panelists. A number of my House colleagues and I requested an extension of the comment period for the TMDLs but were denied. Do you believe that a 45 day public comment period for a topic of this complexity and magnitude was sufficient to get the type of input that we needed to have? And I will—let me start with Chief White and—

Mr. PERCIASEPE. Sorry about that. Go ahead.

Mr. WHITE. No, you go ahead. No, please.

Mr. PERCIASEPE. No, no, no. I am fiddling with the buttons.

Mr. WHITE. I recall that last fall but really, it is out of my lane to even comment on that, Mr. Chairman.

The CHAIRMAN. Okay.

Mr. DOMENECH. Well, I would just say from the state's standpoint there was a lot of discussion about the compressed timing. Some of that involved again problems with the model in terms of producing for us the numbers that we needed to develop our draft plans and that is what compressed the timing which started off as a 90 day public comment period was presented to us as a 30 day comment period. And we negotiated with EPA to make it 45. So there was pressure on the states to comply in a quick time.

The CHAIRMAN. All right, thank you. I now recognize the gentleman, the Ranking Member from Pennsylvania for 5 minutes.

Mr. HOLDEN. Thank you, Mr. Chairman. Is it Mr. Perciasepe? Is that correct?

Mr. PERCIASEPE. Perciasepe.

Mr. HOLDEN. As you probably or you heard in our opening statements from the Chairman and from myself, with what was said

last week with Administrator Jackson, and things that Mr. Goodlatte and I have said over the last year and a half, this Committee is very frustrated. As Chief White has said in his testimony we really tried in the last farm bill to do something for conservation in the Chesapeake Bay watershed and we did. And Chief White has done an excellent job administering that and we have made a lot of progress.

But despite that, the ink wasn't even dry on the farm bill as I mentioned in my opening statement and our producers were faced with this Executive Order and further regulation. And even more frustrating there was no consultation with me, no consultation with anyone on this Committee that I know of and we are faced with this. And I don't think I can repeat that enough as I tell you what I hear when I am in Pennsylvania talking to my producers. But I have a few specific questions for you, sir.

In your written testimony you mentioned nonpoint sources as typically included for a TMDL calculation. However, it was my understanding that nonpoint sources were not regulated under the Clean Water Act. Can you elaborate how and exactly under what authority EPA is moving forward with implementation and enforcement over nonpoint sources?

Mr. PERCIASEPE. EPA would not be doing enforcement or regulation of nonpoint sources that are not covered under the Clean Water Act. That would be the responsibility of the states if they include them in their state plans. However, when we do a TMDL which is a plan to look at all the sources so you know how much each one has to do, it allocates what the resulting pollution loads might be from all those different sources. So therefore, the state would have the information to make those choices but EPA would not be regulating nonpoint source pollution. That is not covered under the Clean Water Act.

Mr. HOLDEN. Well, let me see if I understand you. So you are saying the state would gather information or regulate it and then you would implement it?

Mr. PERCIASEPE. Sir, on nonpoint sources, to the extent that a state says in their plan that an individual watershed will get some reduction from nonpoint sources; therefore, it wouldn't have to go to the other sources. That would be the requirement of the state to provide the assurance under the Clean Air Act—I mean, under the Clean Water Act that that would occur. So we would not, EPA would not implement those nonpoint source practices.

Mr. HOLDEN. Would anyone like to comment on the study released by the Agricultural Nutrient Policy Council about discrepancies in the information and the differences between USDA and EPA on pollutant load estimates and about conservation practices model, the framework and results and what is being done to reconcile the differences?

Mr. WHITE. Is this the LimnoTech Study?

Mr. HOLDEN. It is a study by the Agricultural Nutrient Policy Council.

Mr. WHITE. Okay. All right. I am aware of it. I ask our techies, do we have any issue with it and they said not really. I can't talk about the EPA view, but my understanding is that the EPA's going to ask for an independent assessment. I think prudence would dic-

tate we wait until that independent review occurs before we make any statements.

Mr. PERCIASEPE. And I would concur that it would be EPA's view that that work would require an independent review. We are going to ask the Bay Scientific and Technical Advisory Committee a panel of scientists to take a look at it.

Mr. HOLDEN. Okay. Chief White, as I mentioned you have done a wonderful job implementing this program and in your testimony you mentioned NRCS has entered into 953 contracts to help producers apply conservation treatment on more than 156,000 acres. The Executive Order identifies a goal of conservation practices of 4 million acres by 2025. Given budget and staffing constraints, how is NRCS preparing to help states meet these goals set by EPA?

Mr. WHITE. Okay. Well, you, this Committee—Congress gave us certain priorities within the Chesapeake Bay Program, the identified watersheds. So we are focusing our efforts right there and we are working with our state partners, local partners to further identify where we target those funds to do the most good. I think 156,000 acres is a lot. Four million is a lot more, but we have an expanded time frame to do that. I think we could do it, Mr. Holden. I think that if we pull together working with our partners, the states, the farmers, I think this is doable, sir.

Mr. HOLDEN. From 156,000 to 4 million acres in that time period?

Mr. WHITE. I am not afraid.

Mr. HOLDEN. I yield back, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. Now I recognize full Committee Ranking Member, Mr. Peterson.

Mr. PETERSON. Thank you, Mr. Chairman. Mr.—

Mr. PERCIASEPE. I would be okay if the Committee called me Bob.

Mr. PETERSON. Well, Bob, I don't know if we want to get that intimate, but anyway, my constituents will wonder what happened to me. The fellow here from Virginia said that they weren't part of this settlement. Were the farmers part of this settlement? Were they talked to when you settled with these groups that sued you?

Mr. PERCIASEPE. I apologize. I didn't hear the last part.

Mr. PETERSON. The groups that sued you, and you settled this apparently the states weren't part of that deal. Were the farmers talked to? Were they part of it or did you just talk to the environmental groups that sued you?

Mr. PERCIASEPE. Well, the original settlement that the Secretary referred to occurred in 1999.

Mr. PETERSON. No, but this is the—you know I am concerned. I have been looking into this deal where people sue you and then you end up settling and you—and it looks like you don't include anybody else. It almost looks like to me like you are asking people to do this and then you settle it so you can do a regulation.

You know, and I have bent into a pretzel to help these guys get this money for the Chesapeake Bay in the last farm bill. This was not easy and I am not happy with what is going on because you have created—these people have created a hornet's nest out here. And I don't think, you know, the way I feel, we put this money in there, you know these other folks that have some kind of ideolog-

ical viewpoint that things aren't moving fast enough. You know what they are going to do is get a backlash which they have gotten and they will probably end up doing more harm than good out of this whole process.

Chief White said we have made a lot of progress with what we are doing with these program—voluntary programs which is how you have to work with agriculture. EPA puts out these requirements and you know you don't bring any money to fix it. You know, we put the money in. If they don't like what we are doing maybe we will take our money back and the EPA can go find the money in the Bay Foundation or whoever these other people are to fix this.

I have a problem at home. It is not so much the water quality problem but it is a flooding problem. We haven't been able to do anything for 20 years because we have been stopped by outside environmental groups that don't even live there, have no idea what is going on, don't bring any money to the table, or any solutions. All they do is bring problems and we don't get anything done. You know it almost looks like what is going on here in the Bay. You know it—I—so I am frustrated with this whole process that is going on in the EPA where you guys are settling things and then doing regulations. I just don't think that is the right way to do things.

Mr. PERCIASEPE. Whatever approach that generates a schedule for EPA to do a regulation, we cannot do anything through a regulatory process that is not authorized under the Clean Water Act in the case of the Chesapeake Bay. And in fact we have not done, other than working with the states to do these Total Maximum Daily Load pollution diet targets, any specific regulation that has gone through the normal notice and comment period that you would do resulting from this TMDL process.

However, in addition to whatever the courts had said or whatever settlements might have been made in the courts, the actual Bay partnership of the states and EPA, and I think it is important for the Members of the Committee to understand this. Back in 2000, that group, what is called the Principle Staff Committee which is those cabinet level people from the Federal and state agencies along with the executive council set a schedule themselves in addition to whatever the courts may have done that we would do this.

Mr. PETERSON. No, I understand and we have a similar kind of process, and it depends on who these people are at the table and whether they are bringing ideology and all this other stuff. I have been through all of that. But one other question I have: are there limitations that you are putting on people, individuals, stopping them from fertilizing their lawns, and stopping development and so forth so there is an equivalency going on? Because in a lot of cases we see that people want to pick on the farmers because they are a minority and you know there are—a lot of people have an ideology. They don't like—they don't like farming or they don't like what they do, but is there an equivalency going on here? Where, like in my part of the world we have some of these issues on lakes and so forth and it is caused by—probably more by people fertilizing their lawns than it is by farmers, but the farmers get

blamed and nobody wants to take on these rich lakeshore people because they have a lot of political power. Is that going on? Is equivalency going on here?

Mr. PERCIASEPE. Yes, sir. We—at the EPA level we are setting that overall target and then working with the states to make sure that all the different sources in those watersheds do the share that is required to meet those overall targets. And that includes runoff from urban and suburban land through stormwater management practices. Every state's plan includes those stormwater practices as does the District of Columbia's.

I want to add, there is another important source of pollution of nitrogen pollution in the Chesapeake Bay, and that is atmospheric deposition that comes out of the atmosphere. And even that is included in the modeling work to make sure that what is going to be reduced there from air pollution controls that the states are working on and EPA is working on, even on a region bigger than the Chesapeake Bay is taken into account in the model reduction targets that are put down to the state level. So I want to assure you that all of the sources from power plants in faraway places like Kentucky perhaps as well as—

Mr. PETERSON. As well as—

Mr. PERCIASEPE.—the suburban lawns.

Mr. PETERSON. Thank you, Mr. Chairman. I apologize for taking extra time.

The CHAIRMAN. I thank the gentleman. Mr. Goodlatte?

Mr. GOODLATTE. Well, thank you, Mr. Chairman. Thank you for holding this hearing. I along with Mr. Holden, the Ranking Member have grave concerns about what has taken place here. Mr.—is it Perciasepe or how do you pronounce your name? Let us get it out there.

Mr. PERCIASEPE. I really would be willing to accept Bob, but this is if you put an h after the c, Perciasepe.

Mr. GOODLATTE. Perciasepe?

Mr. PERCIASEPE. Perciasepe, you got it.

Mr. GOODLATTE. I have a name that people struggle with, too. They think it is related to coffee and it is not, but I thank you for being here and taking our questions. The concern I have, and Secretary Domenech has expressed concerns even after they submitted a plan that you agreed to, they are very concerned about the legality of the pressures that you have brought to bear on these states and have not removed from the table the possibility that the Virginia Attorney General might bring suit against you. The problem is all of these folks don't think you are obeying the law. And that, I think, is the number one concern.

We have an Executive order that we think exceeds the authority of the Clean Water Act and we had an effort here in the Congress by Senator Cardin and Congressman Cummings from Maryland to codify that Executive Order, put it into law to answer this question, and it went absolutely nowhere. Why? Because there is no cost-benefit analysis. You have this model that you says takes into account all these different things, but if I asked you how much it would cost to implement any one of these particular things, you can't answer that question and that is the main concern we have.

And you say well, these are, this is just a TMDL and the states go ahead and they implement the watershed plan, but in order for the State of West Virginia to get into compliance you required them to have $\frac{3}{4}$ of their small animal feeding operations, small farms in West Virginia to be treated like CAFOs, something that I think exceeds your authority. And yet if I asked you right now how much it will cost $\frac{3}{4}$ of those operations in the states of West Virginia to comply with this requirement that you imposed upon the State of West Virginia in order to accept their plan you couldn't tell me how much it cost. Could you?

Mr. PERCIASEPE. Not at this time until we get the more detailed plan from—

Mr. GOODLATTE. And yet the Environmental Protection Agency went ahead and rejected every single plan from every single state, threatened them with actions of usurping the states powers and proceeding if they didn't modify those plans. And lo and behold every one of them went ahead and modified the plans, and then you went ahead and accepted them. But you can't tell me how much additional cost it has, how much additional cost it has to farmers, communities—I am not interested in putting cities who also are covered by this against farmers. You know I have a city in my district that estimates this will cost—a city of 75,000 people, it will cost them \$150 million or more to comply with this. And there are cities like that all across this six state region.

There are homebuilders. There are manufacturing businesses. There are other concerns that will increase costs of all kinds of things for the taxpayers, for people attempting to create jobs, to have jobs in this region, and you can't tell us how much all of this is going to cost.

And here is the even greater concern, Mr. White outlined tremendous progress that has been made over the past 25 years and continued progress over the last 5 years, 15 to 20 percent more reduction in sediment, in phosphorous, in nitrogen. Over the last 5 years we are making steady progress, but somebody has got it into their head that the system that has worked all these years voluntary, incentivized, incentivized by funding that Congressman Holden and I worked with the Chairman—the last Chairman of this Committee to get substantial sums of money. We are not going to be able to sustain that because of the dire straits that the Federal budget is in over the next 15 years, and yet you can't tell us what it is going to cost. Here is the clincher though. You also can't tell us what difference it will make in improving the Bay. Everyone here wants to improve the Chesapeake Bay, but we want to know how much this is going to cost in jobs and we want to know what we are going to get in exchange for it. And you can't answer that question.

Mr. PERCIASEPE. Well, can you—if you would please, sir, I would try to answer that right now. We can tell what we are going to get from the progress that has been made we can see what the results are from many of the practices that have already been talked about by Chief White and others. And we do know from robust modeling, not only EPA's but USDA's and others that at the levels of reduction we are talking about across the Bay watershed that the Chesa-

peake Bay's water quality will improve to the level that the states would like to see it improved at. We can absolutely know that.

Mr. GOODLATTE. There is no question about it. And the Bay's improving now and there is no question that if we spent enormous sums of money on all the things that you would like to see cities and farmers and others do, it would improve more. But you can't tell us what the economic benefit of that would be in terms of increased oyster production. What it will be in terms of increased recreational values, other uses of the Bay. All of which are important and all of which are great treasures, but all of this has been done without telling us here in the Congress, without telling farmers, without telling the people that live in these six states what it is going to cost and how much you will get in return in benefit for that if we were to go ahead and do what the EPA thinks we all should do.

Mr. PERCIASEPE. Mr. Chairman, may I just make one last point—

The CHAIRMAN. Sure, quickly.

Mr. PERCIASEPE.—if it pleases the chair. There have been blue ribbon panels on finance that have looked at the overall costs of that baseline work that is going on in the Chesapeake Bay. That is sewage treatment plants, stormwater management, agricultural practices, and the estimates that were made range from \$2 to \$3 billion a year annual cost. These estimates are out there and we will have better ability to make finer estimates when we have the more detailed plans after the Phase II of this water implementation plan.

On the other side is an oyster industry that is already lost. On the other side are a sports fishery that is several billion dollars a year of economic benefit to the region. Those are the things that are on the other side of that balance and I don't disagree that we need to lay those out in a clear form.

The CHAIRMAN. Thank you. The chair now recognizes the gentleman from New York, Mr. Owens.

Mr. OWENS. Thank you, Mr. Chairman. I am not going—I am going to accept your invitation and ask Bob if he would reply to my question.

Mr. PERCIASEPE. Yes, sir.

Mr. OWENS. During Phase II of the WIP development, New York State must demonstrate that it is working with local jurisdictions and I am quoting from your—from the EPA's November 4, 2009, letter "to further divide nonpoint source allocations among smaller geographic areas, or facilities, or sources where appropriate." Because New York's portion of the watershed is relatively small and homogeneous with a symbiotic agricultural conservation network of resources already in place, this finer scale strategy is in our view counterproductive for New York agricultural conservation. I would like to hear your response to that.

Mr. PERCIASEPE. It is—did you say the finer scale was counterproductive?

Mr. OWENS. Correct.

Mr. PERCIASEPE. Well, we—in the case of New York we have basically created a load target at the Susquehanna River as it enters Pennsylvania. And what we are trying to do with the State of New

York and the Department of Environmental Conservation is work on how they will distribute the work that has to be done in that basin. I think we are—we will be open to their approach that they would want to take, but you are going to have to get down to some granular level to be able to allocate how they go about doing the work.

Keep in mind that the—the load that—the amount of nitrogen or phosphorus, let's just use those two that are coming from the New York State part of the drainage area in the western part of the state is made up of discharges from sewage treatment plants, runoff from urban area, agricultural runoff, and deposition on the land from pollution that is coming from other parts of the country. So the air pollution, all of that together we look at how much the air pollution rules are going to reduce the deposition. The state looks at what might happen when it—when they make adjustments at the sewage treatment plant, and then what their stormwater program would be, and then what their agricultural conservation programs would be. We think all of those together are going to be needed to make an equitable distribution and we certainly would be open to how the state would distribute that. But they are going to have to get down to some fine level to be able to do a good technical job of it.

Mr. OWENS. Thank you. I also want to go back to a statement that you made in response to an earlier question regarding the fact that other industries have—are adversely impacted by the level of pollution in the Chesapeake Bay. And my question really goes to when you do this analysis are you in fact distributing that information to the public and to Congress in terms of laying out here is the process we went through? We are balancing for instance the oyster industry, the sport fishing industry, and other industries that are impacted, or is this something that is kept internal and not necessarily distributed?

Mr. PERCIASEPE. I believe we are doing a very good job of that. I think that the Chesapeake Bay Program that has been in existence in its modern form since the 1980's has a good 20 almost 25 years now of experience and information flow and technical information as well as high level planning information.

I think it is really important to note that no one thing will solve all the problems of the Chesapeake Bay. Doing pollution reduction is an important lynchpin to that or I will use the Chairman's term, a keystone to that. And we won't get there without that pollution reduction. However, we also have to look at how we manage crabs, how we manage rock fish, what we can do to get shad back up into New York by working with the utilities in Pennsylvania to deal with the dams there. Habitat as well as fisheries management, as well as pollution all of those are together in the Chesapeake Bay Agreements between the states. And I know today we are talking about the pollution part, but they do all have to work together.

Mr. OWENS. Thank you and I yield back.

The CHAIRMAN. The gentleman yields back. I now recognize the gentleman from Kansas, Mr. Huelskamp, for 5 minutes.

Mr. HUELSKAMP. Thank you, Mr. Chairman. In my part of the state we don't usually have water problems. But, I find this issue I have dealt with at the state level is a reference. TMDL is some-

thing that impacts many states as well. I had a question for the EPA. Under the Clean Water Act who has primary authority over implementation of TMDLs?

Mr. PERCIASEPE. TMDLs are a part of a multiple step process. States have the authority and the responsibility under the Clean Water Act to set the water quality standards. That is number one. You have to know what is the water quality standard. Then the states are responsible to do surveys. Are there any waters in their state that are not achieving those water quality standards? And those are the waters that are required under the Clean Water Act to have a Total Maximum Daily Load plan done, a pollution diet as we have called it to what pollution reduction would be needed to bring those waters into the state identified standards.

In the case of interstate waters it is not an unknown phenomenon for states to ask EPA to provide technical assistance and analysis on how you would do that on an interstate level. But if it is inside the state it would be those requirements. In the Chesapeake Bay situation there are watersheds that are completely, obviously, inside states where they have done some work already on those, and then there are the interstate impacts that we have been talking about.

I might add in final note on your question is there have been many tens of thousands of TMDLs done around the United States by states and there are probably dozens where there has been an EPA multi-state involvement.

Mr. HUELSKAMP. Is the state required to submit its plan to the EPA?

Mr. PERCIASEPE. Yes, sir.

Mr. HUELSKAMP. I find that interesting. I thought the correct answer was no. And so if it is submitted to EPA is it approved by the EPA?

Mr. PERCIASEPE. The TMDLs are—and maybe I should double check on this, but I know—I believe the TMDLs that the states do to meet the water quality standards are looked at by the EPA.

Mr. HUELSKAMP. Are they approved by the EPA rather than reviewed?

Mr. PERCIASEPE. I would like to double check that. If you have an uncertainty about it, it makes me want to make sure I am giving you the exact right answer.

Mr. HUELSKAMP. That goes to the question of regulation and the authority of the EPA that the Administrator had indicated that I had some questions about. If the state or region does not prepare a TMDL implementation plan does the EPA have the authority to impose one on the states or the region?

Mr. PERCIASEPE. If a state doesn't implement its water quality program as delegated under the Clean Water Act there are provisions in the Clean Water Act for EPA to carry out some of those activities whether it be setting the standards or doing some of the permitting for some of the sources. But I want to be clear that EPA does not have the authority even in those instances to do any kind of pollution control on nonpoint sources that are not regulated under the Clean Water Act. And in many respects a way to have a more equitable distribution and more cost effective distribution of how the water quality standards are met by a state is to be able

to not only have those sources that might be federally regulated but are delegated to the states, but also other sources in the state that the state may have the ability to work with to achieve those balances of pollution reductions.

Mr. HUELSKAMP. And last, a question for the gentleman from Virginia given his responses. Your thoughts as a state and who has the authority and who implements and submits those?

Mr. DOMENECH. Well, I would say to answer that I am also not an expert in exactly who has the authority, but it feels like EPA has that authority. I think the difference is as the Deputy Administrator said, Virginia has many, many TMDLs for different water—state waters depending on what the pollution source is. The Chesapeake Bay being a multi-jurisdictional body of water from their perspective of course felt—they felt like they had to set that TMDL because multiple states were involved. And at least that is how we have approached it.

Mr. HUELSKAMP. All right, thank you, Mr. Chairman. I yield back my time.

The CHAIRMAN. I thank the gentleman, and I now yield to the gentleman from Wisconsin, Mr. Ribble, for 5 minutes.

Mr. RIBBLE. Thank you, Mr. Chairman. Good morning, panel it is good to have you here today. I am sure that given the tenor sometimes in the room it is not always the most fun place to be if you are member of the EPA, but I appreciate you coming here anyway. Thanks. In your testimony, Bob, you mentioned that this whole thing started in 1970 with an Act of Congress and they commissioned a study and then over the course of the last 4 decades EPA along with the states have been working on this. How much money have the taxpayers spent on this project?

Mr. PERCIASEPE. On the studies?

Mr. RIBBLE. None of the studies, but from 1970 to today what—how much investment have the U.S. taxpayer put into this thing?

Mr. PERCIASEPE. In the Chesapeake Bay?

Mr. RIBBLE. Yes. Yes, what is a number. Can you get that for me?

Mr. PERCIASEPE. I don't—I can get that number for you. I can get that estimate but it would include things like the studies—

Mr. RIBBLE. Sure.

Mr. PERCIASEPE.—for instance which would probably not be a large sum. But it also includes all the investment that the U.S. taxpayers have made since the 1970s on building water and waste—and particularly in this case wastewater sewage treatment plant infrastructure. You know as—in 1972 when the Clean Water Act was first enacted it was \$5 billion a year and then for several years that was a 75 percent Federal grant which the states would match with 20 percent and the locals would come up with ten percent or 15 and 20. Fifteen and ten—and so that went on for a number of years. And if you can run the numbers back with inflation \$5 billion a year in 1972 is probably close to over \$10—easily over \$10 billion a year if we were doing it today. Those were big investments that the Congress authorized back in—and appropriated back in the early 1970's to jumpstart getting all of the sewage treatment plants in the United States up to a better level. And I would imagine and we could find this out that virtually every sewage treat-

ment plant in the watershed of the Chesapeake Bay has utilized those kinds of funds. So that would probably be where the largest investment of Federal funds were.

Second, or may almost equal will be this significant investment that has been made in conservation work on agriculture through conservation programs through the farm bill that the Congress has authorized. It is a \$622,000—622,000 acre or square mile—I am sorry. Square—I will get this right—62,000 square mile watershed with a lot of agriculture. About 20, I think, Chief, 20 to 25 percent of that watershed is agricultural working land, and I think a significant contribution is made by the conservation work on those lands through the farm bill. So those probably would be the two biggest public investments.

Mr. RIBBLE. It is fair to say that the taxpayers spent a lot of money? Tens of billions, maybe hundreds of billions of dollars so far?

Mr. PERCIASEPE. I am not sure about hundreds of billions, but certainly on a national level, on water quality there has been significant funds spent.

Mr. RIBBLE. Based on your history and understanding of the improvements in the Bay, how are we doing?

Mr. PERCIASEPE. Well, since that time the population of the Bay went up quite a bit. It was probably around—I am going to say around 11 million people living in the Bay maybe at that time and there are almost 20 million living in the Bay now. So given the fact that we have had that kind of population increase and given the fact that that results in more runoff from suburban areas and urban areas and more sewage treatment, and those investments in a sewage treatment plant, water quality has gotten better in the Bay and it has not gotten worse. But we know what we need to do to get it over the hump to getting it to a level that the states have identified that they would like.

And I want to be really clear on this. The states asked EPA—sorry to go back to this. The states asked EPA to work on this interstate TMDL through the Chesapeake Bay Program that we are all partners in. But I would think that there has definitely been improvement in the water quality over that time period even in the fact of that growth in population.

Mr. RIBBLE. Yes, but the change in population though would be—are you mainly concerned—we are talking about farm runoff. Change of growth of an urbanized area should improve it, it would seem to me. Not water flowing off from hard surfaces, less phosphorus, less nutrients to be picked up. You would think that actually more population might actually, along with improved water treatment, would actually be better for the watershed.

Mr. PERCIASEPE. I think it has improved. The Chesapeake Bay has improved but there are and there are studies and the Chief may have information on this. There are studies that on an acre by acre basis. Maybe not on the whole total volume, but on an acre by acre basis there is definitely significant impacts of nutrients from urban development as it—and in many cases there could be more than you might get from agriculture—particularly agriculture that is being conducted with the full suite of conservation practices that most farmers are in the desire to have on their land now.

Mr. RIBBLE. Okay. Thank you. Mr. Chairman, I am out of time. I will submit any follow-up for question directly to the EPA. Thank you.

The CHAIRMAN. Very good. Thank you. I now recognize the gentleman from Indiana, Mr. Stutzman, for 5 minutes.

Mr. STUTZMAN. Thank you, Mr. Chairman, and thank you, gentlemen for being here. I would like to start off first of all with the—last week the EPA Administrator, Ms. Jackson, testified before this Committee. In her testimony the Administrator said that the Bay plan was developed in consultation with the agricultural community. What role has the ag community played in developing the process?

Mr. PERCIASEPE. Well, there have been numerous—over 20 years of interaction with the agricultural community. There is significant input to the Bay program from all the agricultural colleges in the region and that has expanded recently. There are members of the agricultural community on a number of the advisory committees that go to the Bay program, so there has been significant involvement back and forth on—with the agricultural community over the years. And I can provide for the record a much more detailed accounting of that if you would like.

[The information referred to is located on p. 158]

Mr. STUTZMAN. Yes, if you could do that because I hear this a lot back in Indiana, and I am sure it is very relevant in the situation here. You know, that farmers and those in agriculture continue to be very frustrated and downright just fearful of what your agency has done, what is continually coming out of Washington, and how are you and the USDA relating and working together on this particular issue?

Mr. PERCIASEPE. USDA is a charter member of the Bay Program through the principal staff committees and the other programs we have. And we rely on a lot of their data to do some of the work that is done. We now have some new information and new improved information that we will be starting to work through. I think it is really exciting to me that with the work that Chief White and others have shown is that there is a capacity for additional conservation work, and a desire clearly in the agricultural community for it. And even at the larger scale when we start to look at what our different analyses show which it is kind of confirming.

You know if you are an accountant, sometimes you like to add the rows in all the different directions to make sure they add up. But when we start looking at a model that runs in one way and then a model that runs in the other way and at the bottom of the column it is—the numbers start to look pretty similar, I find that as very confirming in my—from my perspective. So I think that we have work to do.

I mean clearly on the implementation side one of the primary drivers for helping farmers achieve their own on farm conservation objectives and also be participants in the overall Bay Program, for many, many years now there has been the conservation programs of the USDA. And so they are intimately involved. The effectiveness of the practices that get applied on the land and how they are resulting in pollution reduction—you talked—the Chief earlier

talked about, and it is in the written testimony, about how we are now getting more information on the effectiveness of the different practices. All that feeds into our—we have a 20 year knowledge base that we use that is intimately involved with information we also get from agriculture.

Mr. STUTZMAN. But in going back to my original question, how do you feel that you are seeking enough input from the agricultural community? I know you have mentioned you are going to get me the groups that you have been working with, but is this a top down dialogue or is it a bottom up dialogue where you are hearing from the groups that are out in the field that are living this practically day by day and having to feel the effects of the realities of what is coming down from your agency and other agencies. I mean, are we—are you communicating well enough with the agricultural community?

Mr. PERCIASEPE. You know it would never be proper for a person in my position to say we could never communicate enough. And I mean and so I am—I mean that we are communicating enough. I shouldn't—I am sorry I said that wrong. There is always room for more communication and I personally would be committed to doing anything possible to personally increase that level of communication working with USDA or with our state partners.

I mentioned earlier in my testimony that I used to be the Secretary of Environment for the State of Maryland and in that job I worked very closely with, obviously, the state department of agriculture. And we worked together on a whole host of issues on agriculture in Maryland and including dealing with chicken carcasses when there were big kill-offs or die-offs from heat problems, all kinds of problems. We put our sleeves up and we solved those problems in a way that was appropriate for the farmers in Maryland and the producers.

So I would personally be interested in anything I could do to increase that communication, but I would say it would not be ever proper to say that there can't be more.

Mr. STUTZMAN. Well, I can tell you this and Mr. Chairman, I will wrap this up. I just saw a polling done in a current agricultural magazine that asked farmers what keeps them awake at night. It is more than taxes, more than machinery costs, more than commodity prices. It is government regulation and I think that communication is crucial and key. And also the practices that you are implementing is detrimental to our current agricultural practices. So, I would encourage not only better dialogue, but also a more realistic approach to ag.

Mr. PERCIASEPE. Well, I am anxious to do that and as my colleague here from Virginia is pointing out, both the states and EPA did help hold stakeholder hearings throughout the watershed on all these TMDL issues. I want to point out that it is in all of our interests, EPA's, the states, USDA's, and the producers, and the agricultural community, that we are able to sit down and talk about the facts. Because the more that we can talk about what is really happening and what the implications really are and how things will unfold and what the flexibilities are—the Deputy Secretary of Agriculture and myself signed a letter that we sent to all the states providing a framework that they would provide more certainty for

the agricultural community. We are anxious to continue those kinds of processes, but it is—the more we can all sit down and talk the more we will be talking on a foundation of a common set of knowledge, and I think that that is vitally important. And I appreciate this hearing because I think it will help.

Mr. STUTZMAN. Thank you.

The CHAIRMAN. The chair recognizes Mr. Hultgren for any questions you might have? Okay. No more for this panel? Very good. The chair will—before we adjourn we will recognize Mr. Goodlatte for some follow-up questions.

Mr. GOODLATTE. Thank you, Mr. Chairman. Secretary Domenech, first of all welcome. We are glad to have our Secretary of Natural Resources here.

Mr. DOMENECH. Thank you.

Mr. GOODLATTE. In November of 2009, the EPA sent a letter to the watershed states, including Virginia, requiring them to draft Watershed Implementation Plans or WIP's and if plans were not developed, the letter stated the EPA would take "appropriate independent actions or consequences." Is that not correct?

Mr. DOMENECH. That is correct.

Mr. GOODLATTE. And after Virginia submitted their draft WIP to the EPA, the EPA rejected it. Is that correct?

Mr. DOMENECH. That is correct.

Mr. GOODLATTE. Would you say that the Agency compelled the Commonwealth of Virginia through the "use of independent actions or consequences" to alter your WIP or through threats to do that? Would you have stuck with the first WIP that you submitted if you hadn't received those threats?

Mr. DOMENECH. We would have stuck with that initial one. That is correct. I probably wouldn't use the word threats, but consequences.

Mr. GOODLATTE. But let me turn to Bob Perciasepe.

Mr. PERCIASEPE. Perciasepe.

Mr. GOODLATTE. Perciasepe. I am getting there. In November of 2009 the EPA wrote to Secretary Domenech's predecessor, Secretary Bryant and in a enclosure to that you said if any of the six watershed states, or the District of Columbia, do not develop Watershed Implementation Plans, identify 2 year milestone commitments, and/or fulfill those commitments consistent with EPA's expectations, EPA will take appropriate independent action or consequences to ensure that the necessary water quality restoration and protection activities are carried out.

And then I have here a list of eight actions that the EPA told the states that they would take including expanding permitting requirements which we have heard about, increasing oversight of the state issuance of the permits, requiring additional pollution reduction from federally regulated sources, increasing Federal enforcement and compliance, prohibiting new or expanded pollution discharges, conditioning or redirecting EPA grants, revising water quality standards to better protect local and downstream waters, discounting nutrient and sediment reduction progress, and so on and so forth.

Now, can you tell me what section of the Clean Water Act—we all agree and Secretary Domenech agrees you get to set the TMDL.

Can you tell us what gives you the authority to threaten the states if they don't submit an action or WIP that meets your satisfaction? What authority under the law do you have to do that?

Mr. PERCIASEPE. Well, let me be clear. States have the primary responsibility. I think—I believe as I read the governor's comments on his plan, I believe that the governor believes that he is proud of the plan that the state has produced.

Mr. GOODLATTE. That is not the question.

Mr. PERCIASEPE. Well, and I—you know the chance of—

Mr. GOODLATTE. The question is what authority do you have—

Mr. PERCIASEPE. What Title III of the Clean Water Act requires the states to implement programs that will meet the water quality standards that they set. If they don't have a program that meets the water quality standards that they set—they have probably two outcomes. They can do—they can change their water quality standards and in this case they are not doing that. Or in the case where they fail to act the EPA can act on certain permits that we have the authority to do. We cannot do nonpoint sources, but we can look at permits if they are not designed to meet the water quality standards that the state set. We very rarely do this, but it is in Title III of the Clean Water Act.

Mr. GOODLATTE. And your contention is that the Clean Water Act gives you authority to supersede the decision of the states regarding to the—regarding the Water Implementation Plan? That is obviously the subject of at least one lawsuit. You have had your ears pinned back on several others in the Ninth Circuit and now in the Fifth Circuit. You have been told you don't have those authorities. Is it really your contention in spite of growing legal decisions that the EPA has this authority? And if it has the authority why is it that we have legislation to codify it, to codify the President's Executive order? We wouldn't need it. If it is already in the law you wouldn't need that would you?

Mr. PERCIASEPE. I don't have any comment on any legislation, but I can tell you that there is a series of constructions in the original Clean Water Act of 1972 that once we delegate the authorities to the states that they are required to set the standards and put the plans in place to meet those standards. And the EPA if those are not sufficient does have the authority in the Clean Water Act to backstop that. We do not want to do that. I want to be clear. We do not want to do that.

[The information referred to is located on p. 174]

Our objective is to work with the states cooperatively to get the work done. We think that the plans that have been submitted are excellent and will meet our objectives that we have jointly set for each—ourselves and that is what we are going to pursue.

Mr. GOODLATTE. Thank you, Mr. Chairman.

The CHAIRMAN. I now recognize the gentleman from Illinois for 5 minutes.

Mr. HULTGREN. Thank you, Mr. Chairman, and thank you all very much. I just have a quick question and for this panel and focus it to Mr. Perciasepe and also Mr. White. There have been significant concerns with the assumptions made by the Chesapeake Bay model EPA is using to determine allocations for the Bay TMDL. There are even inconsistencies within the Administration

on nutrient load estimates. Given the difference between EPA's Bay model and USDA's Conservation Effects Assessment Project Study, why has EPA continued to move forward with the accelerated TMDL for the Chesapeake Bay? And shouldn't the Administration just take a time out and until the load nutrient level allocations have been reconciled?

Mr. WHITE. Thank you, sir. You mentioned discrepancies between the CEAP and the Bay model. Sometimes I am not the most politically correct and I made a statement out at a Cattleman's Association Meeting where I said—I think I said that everything in the Bay model isn't 100 percent correct or accurate and then I referenced the conservation tillage information that we had in our CEAP study are showing 88 percent of the cropland is conservation tillage and the Bay model had 50. And I actually met with Mr. Perciasepe and the Deputy Secretary of Agriculture after that and EPA said they will take that data. We recognize that and they said they will take it. And we actually agreed that over the next 30 days the techies on both sides are going to sit down and say okay, what in this can you take and what is in the longer term?

I think we are going to be working together to that end to try and reconcile them. There are some real differences. Like we are only—our data's only good at the four digit HUC (Hydrologic Unit Code). The statistical reliability falls apart if you go below that. So there are some differences in definition and what we did it for. But I will defer to you for the TMDL.

Mr. PERCIASEPE. Okay. I will just add a little bit and I appreciate the Chief's and the NRCS's willingness to help us look at some of that conservation tillage data. But the Chesapeake Bay watershed model that is used as part of the TMDL is part of a complex set of models. There is the model that looks at the water quality in the Bay proper, the actual Chesapeake Bay, the largest estuary in the North American Continent. And it—or at least in the United States, I should be clear. And that model is based on whatever input comes into it, will determine what goes on there. But we also have air models to look at the deposition on nitrogen on the land and then we put that through a watershed model and then figure out the changes in the land use and how that will affect the loads that go into the main model. So it is that—it is that multiple step kind of process.

The watershed model that EPA is using along with those others is in its fifth generation. It has 20 years of experience and data. One of the differences that the Chief and the NRCS are working on is to increase the survey information that they have to increase the veracity of the model that they have as well. They are—I think your current version is based on 700 surveys of actual producers and we want to see that grow a little bit with them as well. Ours is based on 20 years of looking at data across the whole watershed.

They are really two different models, but the thing as I mentioned earlier and I think is really confirming to me is that at the bottom they are very, very close. So if we can get improved data on what practices are actually in place and improved data on the effectiveness of those practices, my goodness we want that information so that adjustments may be made. What needs to go into the main part of the Bay is not going to change much. What we need

to do to change to improve the water quality in the main part of the Chesapeake Bay won't change because of this, but how we allocate the responsibilities could change over the 15 year period for sure and will likely change over the 15 year period as we implement different practices. I think we have an ongoing discussion and we have a commitment to each other to make sure that we share this stuff for the betterment of both of our efforts.

Mr. WHITE. Again, I should tell you that that 700 points that he is talking about we are going to double that this year. We have already contracted with National Agricultural Statistics Service to go back and look at those 700 which we think is rock solid. And in your packet there is a question in the survey that an enumerator sits down with the farmer on and we are going to add another 700 or 800. We may have data in some cases that go to the eight digit HUC level and it is going to be rock solid. And we are going to have it about this time next year and we are going to——

Mr. PERCIASEPE. We will proceed.

Mr. HULTGREN. Okay. Well, again, that is all good. My concern is were we still continuing with the acceleration here when there is still some admitted discrepancies and desire to bring that together. To me it makes sense maybe to slow that project down a little bit.

Mr. PERCIASEPE. The only thing that again I think is important to note that also the work that has been done by NRCS shows that there is almost 80 percent of the cropland, for instance, still has the capacity to have additional conservation practices. So I think we know there is a great amount of work to be done and these adjustments are only going to continue to refine our work.

Mr. HULTGREN. Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. All right, I thank the gentleman. I thank the panel. Gentlemen, thank you for your time, your experience. It is very much appreciated and we will look forward to continuing to work with you. I would like to welcome our second panel of witnesses to the table.

Mr. Carl Shaffer, President of the Pennsylvania Farm Bureau from Mifflin Township, Pennsylvania; Ms. Lynne Hoot, Executive Director, Maryland Association of Soil Conservation Districts, Maryland Grain Producers Association, Edgewater, Maryland; Mr. Tom Hebert, Senior Advisor, Agricultural Nutrient Policy Council from Washington, D.C.; and Mr. Hobe Bauhan, President of the Virginia Poultry Federation, Harrisonburg, Virginia. So as we get in place and we will begin our—begin the testimony.

All right, once again I would like to thank our—everyone on the second panel for joining us. In front of you can see there are various lights, buttons for the microphone. We just ask that as you present your testimony whether you read it or summarize it we will try to keep things within the 5 minute range, and we looking forward to hearing the testimony from everyone. We will start out with Mr. Carl Shaffer and so, Mr. Shaffer, begin when you are ready.

**STATEMENT OF CARL T. SHAFFER, PRESIDENT,
PENNSYLVANIA FARM BUREAU; MEMBER, BOARD OF
DIRECTORS, AMERICAN FARM BUREAU FEDERATION,
MIFFLIN TOWNSHIP, PA**

Mr. SHAFFER. Thank you, Chairman Thompson. And I want to thank Ranking Member Holden, and Mr. Goodlatte, and the rest of the Committee for convening this hearing and inviting me to testify.

As you said, my name is Carl Shaffer. I am President of the Pennsylvania Farm Bureau. I am also on the Board of Directors of the American Farm Bureau Federation. I personally am a full-time farmer. I farm just under 2,000 acres in Columbia County. I raise green beans for processing, corn, and wheat for cash sales. All the land I farm lays within the Chesapeake Bay watershed. Also I am in very close proximity to the Susquehanna River. You know, over the years one of the biggest concerns facing farmers was Mother Nature. We were worried about too much rain, not enough rain, too hot, too cold, things like that. Now recently EPA and regulatory uncertainty really haunts farmers in Pennsylvania the most. Farmers have never felt so challenged and threatened by the onslaught of Federal environmental regulations and guidance as they do today.

It is really impossible to go to any meeting where there are farmers gathered and not hear about their fear of the Chesapeake Bay regulations. You know recently, as it was stated before, the finalized regulation of the Total Maximum Daily Load was put out, and our concern is that that will actually displace farmers from the Bay watershed. EPA's own numbers state that 20 percent of the cropland needs to be converted to grasses or trees to be able to meet the water quality goals. EPA is basically saying either farm somewhere else or get another job.

Last week there was a high ranking EPA official testifying in front of the Agriculture Committee and what she said was that facts were very important to the Agency. Well, we really consider facts really important in this problem, but facts really do matter. But EPA doesn't take them into consideration. Under the Bay model as it was stated, EPA's assumption is that 50 percent of the land is being tilled as it was basically in the 1800's. Was put to a moldboard plow, all the residue was plowed under and the land was wide open for erosion. Actually, USDA and NRCS data shows that 96 percent of the cropland is managed with conservation practices such as no-till or strip cropping.

Another fact is EPA said they want to work with farmers. I have some personal experience how we worked on our Water Implementation Plan in Pennsylvania. Our Department of Environmental Protection reached out to us in agriculture to try to work on this plan. During that process, we—about two farms in Pennsylvania. One, Congressman Thompson, is in your district by the way and that is Harpster's Dairy farm, one of the largest dairy farms in the Commonwealth. It is a highly concentrated animal operation. A lot of manure being produced, a lot of manure being spread as fertilizer on that farm.

Right down through dead center the middle of that farm is a also one of the highest quality cold water fisheries in the world as des-

ignated by the State Department of Environmental Protection as one of the best trout streams you can find. Now you don't have to ask me. There is an ex-President by the name of Jimmy Carter that goes there every year to fish there and he is an expert on that and he really thinks it is good.

The other farm I just want to talk about in one second is my farm. I am a third generation farmer. I have been on the farm 61 years, my entire life. I have grown up there. As a child going down to the bank of the Susquehanna River I can remember that vision very vividly. The rocks along the shore bank were fluorescent orange. There would be dead things laying all over—stuff floating in it. You wouldn't even want to boat in that river let alone fish it or swim in it. You know today it is one of the best small mouth bass fishing tributaries in the world.

Back then I can remember my father was farming and I was a young child. I can remember he had a dairy herd. On hot days the cattle out in the pasture would stand in the middle of the creek to keep cool. Now, he didn't know any better that that was bad for the environment. He sure wasn't a bad man. He just wasn't educated enough to know better. Incidentally, a couple hundred yards downstream was one of our favorite swimming holes, so I guess we didn't know much better either at that time.

But my father used a moldboard plow quite frequently on the farm. As I said he really didn't know better at that time. So that is over my lifetime. Today, I use no-till practices on a large part of the farming operation. I use cover crops to help save and hold the soil in place, contour strips. Other livestock farmers in Pennsylvania today are using stream bank fencing to keep the cows out of the stream. Today, we have probably the largest percentage of no-till done in our state as any state in the United States. Over 57 percent is no-till and there is up to 80 percent of conservation tillage.

So all I can say is my best recommendation is what has worked. What we have seen over my short lifetime has really worked and made an improvement. I think it is key to enhance the progress we have been making by pursuing Best Management Practices. I think the key is to keep funding land-grant universities like Penn State University that develops the technology to help us stay economically valuable and protect the environment together, and pursue with the help of extension services delivering that technology to the farm. I think that is going to be the secret to clean up the Bay and still produce food at a very safe and affordable manner.

I just want to really thank you for the opportunity to testify here today. The comments I gave are just the tip of the iceberg. If you would take the time, read my written comments, they are more elaborate on some of the things I said. Thank you very much, Mr. Chairman.

[The prepared statement of Mr. Shaffer follows:]

PREPARED STATEMENT OF CARL T. SHAFFER, PRESIDENT, PENNSYLVANIA FARM BUREAU; MEMBER, BOARD OF DIRECTORS, AMERICAN FARM BUREAU FEDERATION, MIFFLIN TOWNSHIP, PA

Mr. Chairman, my name is Carl Shaffer, and I have the privilege of serving on the Board of Directors of the American Farm Bureau Federation and as President of the Pennsylvania Farm Bureau. I own and operate a farm in Columbia County,

Pennsylvania where I raise green beans for processing, corn and wheat. All the land I farm is in the Chesapeake Bay watershed, and most of the land is within sight of the Susquehanna River. I appreciate this opportunity to appear before you today and to provide testimony on behalf of farm and rural families that belong to Farm Bureau, the nation's largest general farm organization.

Let me begin by saying that farmers have never felt more challenged and more anxious about the future of their operations than they do today. This is because of the continuous onslaught of regulations, guidance and other requirements being issued by the Environmental Protection Agency (EPA). Some say EPA simply wants to control how individuals farm. EPA claims that is not the case. But whether or not this is EPA's intent, it clearly will be the result. The outcome of EPA's requirements will be to drive production costs so high that many farms face a heightened risk of going out of business. And although EPA promulgates regulations in the name of "environmental protection," we assert that very little real environmental gain will result.

Nowhere is the impact of EPA activity more obvious than in the Chesapeake Bay watershed (the Bay), where the recently finalized EPA-issued Chesapeake Bay Total Maximum Daily Load (TMDL) could push hundreds of thousands of acres of productive farmland out of cropland. EPA itself projects that roughly 20 percent of cropped land in the watershed (about 600,000 acres) will have to be removed from production and be converted to grassland or forest in order to achieve the required loading reductions.

EPA's focus on agriculture and its over-reaching restrictions are particularly troublesome because agriculture has worked successfully with the U.S. Department of Agriculture (USDA) to reduce our environmental impact on the Bay. Use of crop inputs is declining. No-till farming has reduced soil erosion and resulted in more carbon being stored in the soil. Milk today is produced from far fewer cows. Nitrogen use efficiency has consistently improved. Farmers are proud that their environmental footprint is dramatically smaller today than it was 50 years ago, and we are committed to continuing this progress.

In the Chesapeake Bay watershed, agricultural practice improvements to reduce nutrients are well documented. USDA's National Resource Conservation Service (NRCS) is in the process of completing its October 2010 draft report on the progress made by agriculture in conservation and natural resource improvements from 2003–2006.¹ In its draft report, NRCS reports that farmers were actively implementing erosion control practices on about 96 percent of the cropland acres in production in the watershed. These practices included various forms of erosion control involving no-till or minimum tillage, and structural and vegetation management practices like contour farming, grass waterways and filter strips. As a result of these and other nutrient management practices, the NRCS draft report found that sediment contributions from cultivated cropland to the Bay's rivers and streams are reduced by 64 percent, nitrogen by 36 percent and phosphorus by 43 percent. The report also found that these practices are responsible for reducing total loads of sediment, nitrogen and phosphorus from all sources by 14 percent, 15 percent and 15 percent.

Ignoring the substantial effort and progress of recent years, EPA moved forward with an aggressive and unnecessarily inflexible new plan to regulate farming practices in the Chesapeake Bay watershed. In the last 2 years, EPA has set in motion a significant number of new regulations that will fundamentally alter the face of agriculture, not just in the Bay, but nationwide. These new regulations will determine how farmers raise crops and livestock and will increase the likelihood of expensive lawsuits filed by activist organizations.

Policies already in place, or those being contemplated by EPA, will greatly expand Federal control over crop farmers and extend the scope of existing regulations to livestock producers, regardless of size or footprint. Some examples of how EPA is exerting its authority over livestock farms include:

- In 2010, EPA released a document, "Coming Together for Clean Water," that proposed new, more stringent regulations for livestock producers. In the document, EPA indicated that it will propose regulations to make it easier to designate small- or medium-sized livestock operations as Concentrated Animal Feeding Operations (CAFOs) regardless of whether a farm is actually discharging anything into water. This is in conflict with a 2005 ruling by the 2nd Circuit Court of Appeals which said that EPA could only regulate actual discharges, not potential discharges or CAFOs that do not discharge. It is a fact

¹Natural Resource Conservation Service, *Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region* (October 2010) ("NRCS 2010") (available at <http://www.regulations.gov/#!documentDetail;D=EPA-R03-OW-2010-0736-0482.2>).

that complying with EPA regulations increases costs which we believe will force small- and medium-sized operations to get much bigger or go out of business just as many have done over the last 20 years.

- In addition to new aggressive regulations, EPA has entered into a number of settlement agreements with environmental plaintiffs that all but explicitly commit EPA to finalize additional regulations. One recent settlement agreement resulted in a guidance document that is being used to require permits for dust and feathers blown out of poultry house ventilation fans, regardless of the quantity. Another will allow EPA to collect and post on the Internet personal information about livestock operations, regardless of size. We believe it is wrong for EPA to be able to post livestock producers' personal information, and we question how the action will help improve the environment.
- EPA is also proposing regulations that will limit the use of manure nutrients and another to limit a farmer's ability to sell manure nutrient to crop farmers to use *in lieu of* petroleum-based fertilizers.
- Last, EPA has a multi-year enforcement strategy that targets livestock operations within the Chesapeake Bay watershed, regardless of their size or whether they contribute to the Bay's pollution.

Farm Bureau believes that EPA is intentionally working to circumvent Congress's deliberate decision to leave regulation of nonpoint sources to the states. We offer these examples:

- For years, EPA has been narrowing the scope of the agricultural stormwater exemption. As part of the EPA-mandated Watershed Implementation Plans for each Bay state, EPA virtually eliminated the exemption by requiring that the states regulate farmers through enforcement controls.
- EPA has entered into settlement agreements with environmental plaintiffs in which EPA agreed to take regulatory actions that have enormous impact on agriculture. For example, EPA agreed to issue (and has now issued) numeric nutrient criteria in Florida that are unrealistic and unattainable. In another settlement agreement, EPA agreed to issue (and now has issued) a TMDL in the Chesapeake Bay watershed, threatening severe "backstop measures" to prohibit new and expanding Clean Water Act permits unless states force nutrient reductions from other permittees and sources, such as farmers.

While many of these regulatory changes are nationwide, one of the most extreme examples of EPA over-reaching its authority is in the Chesapeake Bay watershed. Farm Bureau believes so strongly that EPA has over-reached its statutory authority that the American Farm Bureau Federation has initiated a lawsuit against EPA. The outcome of this case will not only impact farming in the Bay watershed but across the nation, because EPA acknowledges that its strategy in the Bay is a template for other major watersheds across the nation, the Mississippi River watershed in particular.

Let me emphasize that our litigation is **not** about whether or not to clean up the Chesapeake Bay. Farmers in the Bay watershed have been working diligently for years, if not decades, with local and state governments and other organizations, including the Chesapeake Bay Foundation, to improve farming practices in order to clean up the Bay. Everyone wants a clean and healthy Bay and farmers want to continue to be part of the solution to improve water quality in the Chesapeake Bay region and across the country. AFBF's lawsuit is about a *specific plan* for achieving clean water and EPA's legal authority to develop and implement that *specific plan*. EPA is imposing an incredibly complex and detailed prescription—what EPA calls a "pollution diet"—for a 64,000 square mile watershed. While we support the goal of clean water, we believe that goal has to be achieved within the confines of the law and should consider impacts on the economy.

Farm Bureau has three basic objections to EPA's actions:

First, Farm Bureau believes EPA's "pollution diet" unlawfully micromanages states, as well as the farmers, homeowners and businesses within the region. EPA's plan imposes specific pollutant "allocations" on activities such as farming and home-building, sometimes down to the level of individual operations. The Federal Clean Water Act does not authorize such binding allocations. Instead, the Clean Water Act requires that states decide how to improve water quality, including allocations of loading among sources, and to take into account economic and social impacts on local businesses and communities. EPA claims to be working in "partnership" with the states, but by including its own "allocations" in the TMDL, it is exercising control by unlawfully limiting the states' flexibility to change and adapt their plans.

Second, EPA relied on wrong assumptions and on a scientific model that *EPA itself* admits was flawed. EPA failed to meet a basic level of scientific validity that the public expects and that the law requires.

Third, EPA failed to give the public a meaningful opportunity to review EPA's assumed facts. Law requires agencies to disclose their methodologies so that the public can review it and comment on its accuracy. EPA failed to provide critical information about how it determined pollution "allocations" and allowed the public only 45 days to digest and respond to incomplete, highly technical information. Because EPA did not allow meaningful public participation, the "diet" it produced is unlawful.

Last, EPA's TMDL wrongly establishes binding allocations and timelines *regardless of cost*. Clean Water Act and EPA regulations specifically allow states to consider economic consequences and to modify water quality goals when necessary to avoid substantial economic and social disruption. EPA asserts that the TMDL will restore jobs and help the Bay economy, but it has not provided any data to support these claims. The Bay states, however, estimate that implementation will cost billions of dollars (*e.g.*, \$7 billion for Virginia, \$3 billion to \$6 billion for New York). Farm Bureau believes the TMDL threatens the economic health of businesses, individuals and communities throughout the Chesapeake Bay watershed.

AFBF's suit seeks to restore the states' authority to decide how to achieve clean water and to consider economic and social harm in making those decisions. AFBF also seeks to affirm basic requirements for sound science and transparency with the public. AFBF's lawsuit does not seek to benefit agriculture at the expense of others in the watershed. The implementation of TMDLs typically involves the allocation of pollutant loading among sources. AFBF is not seeking any particular re-allocation of responsibilities or to shift clean-up burdens onto other sectors. The case is about whether the Federal Government or states set the allocations, who sets the timeline, and the basic requirement for valid science and public participation. While we all support the goal of clean water, Farm Bureau strongly believes that the manner in which EPA has determined and prescribed this "pollution diet" for the Chesapeake Bay watershed is unlawful and ignores the economic and social costs to the Bay community.

Farmers and ranchers across the nation, including those in the Chesapeake Bay watershed, want to continue to produce food and fiber and to do so in a way that has diminishing impacts on the environment. We are deeply concerned that the over-reacting environmental regulations issued by EPA for the Chesapeake Bay watershed threaten our businesses and circumvent the intent of Congress. We believe EPA should be held accountable to the laws that prescribe how it regulates production agriculture and that it should rely on sound science in its proceedings. The economic impact of how EPA is allowed to proceed in the Chesapeake Bay watershed is significant, and the repercussions will have a national impact on agriculture.

Mr. Chairman, I commend you for convening this hearing and for all your hard work on behalf of agriculture across the country. I will be pleased to respond to questions.

The CHAIRMAN. Thank you, Mr. Shaffer. I assure you we will. Ms. Hoot, thank you for joining us today. Go ahead and proceed.

**STATEMENT OF LYNNE C. HOOT, EXECUTIVE DIRECTOR,
MARYLAND ASSOCIATION OF SOIL CONSERVATION
DISTRICTS AND MARYLAND GRAIN PRODUCERS
ASSOCIATION, EDGEWATER, MD**

Ms. HOOT. Thank you for inviting me. Chairman Thompson, Ranking Member Holden, Members of the Committee, my name is Lynne Hoot and I am Executive Director the Maryland Association of Soil Conservation Districts and the Maryland Grain Producers Association. My task here today is a pleasant one, to discuss what Maryland farmers have done to support the cleanup of the Chesapeake Bay.

Over the past 25 years, Maryland agriculture has made tremendous progress. As of 2007, with Federal and state support, Maryland farmers have reduced nitrogen loads to the Bay by 62 percent, phosphorus by 73 percent, and sediment by 59 percent. We now have fellow farmers across the Bay watershed working towards the

same common goal. In fact, agriculture has consistently outpaced all but sewage treatment plants in reducing nutrient loads.

In 2010 alone, Maryland farmers matched \$17 million in public cost-share funds with roughly \$5 million of their own funds to install 2,300 conservation projects. Ninety-nine point nine percent of Maryland farmers are in compliance with Maryland's Water Quality Improvement Act of 1998 that requires farmers to utilize nutrient management plans. And this fall, Maryland farmers broke all records and installed close to 400,000 acres of cover crops. This practice alone will reduce nitrogen by 2.4 million pounds.

Across the Bay watershed, Bay—Best Management Practices are installed on—that are installed on farms using Federal and state cost-share funds are documented in the Bay model. Excluded from the Bay model are BMP's that farmers have installed on their own at their own cost as a result of their strong stewardship ethic. It is imperative to our farmers that the EPA includes this information and provides credit in the Bay model to all farm BMP's not just those funded with public cost-share, and that they also provide nutrient and sediment reduction values for these BMP's.

We recognize that those BMP's that do not meet NRCS standards will have lower nutrient reductions, but they must be counted. Without a true counting in the Bay model of what has already been done there cannot be an accurate determination of what more can or needs to be done.

We believe that the agricultural BMP's in—identified in Maryland's Phase I Watershed Implementation Plan are reasonable, but only if we are provided—the farmers and the conservation agencies are provided with adequate technical and financial resources. But we are worried that current government funding will be reduced. What happens then? We have concerns that with EPA's indication that if implementation lags they will expand NPDES and CAFO requirements to smaller animal operations and that they will try to regulate other agricultural operations. This will create inequities between Chesapeake Bay farmers and farmers in other states and impact our competitiveness in national and international markets.

As we enter Phase II, Maryland must develop the 58 Watershed Implementation Plans by December 31, 2011, and yet EPA has not been provided the necessary allocation information to the states and say they won't have that until July. This timetable is unrealistic. In the meantime, Maryland's conservation districts are establishing agricultural working groups to get feedback and develop consensus among farmers on reasonable approaches to reach the Bay goals.

We believe this process is impacting the willingness of the next generation to continue farming. As they look at the new regulations, development pressure, and the bombardment of negative rhetoric in the press, many are deciding against a future in agriculture. This is a major concern as farmland provides local food security and offers the best and most cost effective means of protecting Bay water quality.

Conservation practices like no-till have both cost and benefits to the farmer, but many such as stream buffers, diversions, and grass waterways take land out of production and add implementation and maintenance costs as well as reducing productive land. While

farmers are committed conservation stewards, expanded efforts will require Federal cost-share programs and technical assistance.

We commend you for your past support and encourage you to continue to support allocations for conservation funding in the Chesapeake Bay as part of the next farm bill. The country is watching us. We want to prove that agriculture can do what is necessary as long as it is reasonable, science based, and we are provided with adequate technical and financial assistance. Thank you.

[The prepared statement of Ms. Hoot follows:]

PREPARED STATEMENT OF LYNNE C. HOOT, EXECUTIVE DIRECTOR, MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS AND MARYLAND GRAIN PRODUCERS ASSOCIATION, EDGEWATER, MD

Mr. Chairman, Members of the Committee, my name is Lynne Hoot and I serve as the Executive Director for the Maryland Association of Soil Conservation Districts and the Maryland Grain Producers Association. My task here today is a pleasant one—to discuss what Maryland farmers have done to support the cleanup of the Chesapeake Bay.

My time working on this issue goes back to the early 1980's when I was working for the Maryland Department of Agriculture and the first EPA report on the Chesapeake Bay, commissioned by U.S. Senator Mac Mathias, was released. Under the leadership of Governor Harry Hughes and Secretary of Agriculture Wayne A. Cawley, the Maryland agricultural community came to the table accepted they were part of the problem and would be part of the solution. Farmers have been at the table since that time with the same mantra and their efforts are evident in the landscape.

If we wind forward 25 years, I am proud to announce the progress agriculture has made and is verified in the latest Chesapeake Bay model run. With state and Federal support, as of 2007, Maryland farmers had reduced nitrogen loads by 62%, phosphorus loads by 73% and sediment loads to the Bay by 59%. We know our fellow farmers across the Bay watershed have been working towards the same common goal. In fact, the agriculture industry has consistently outpaced most other sectors in reducing nutrient loads.

In 2010 alone, Maryland farmers matched \$17 millions in Maryland Agricultural Cost-Share Program (MACS) funds and \$14 million in Federal (EQIP & CBWI) cost-share funds with roughly \$5 million of their own money to install 2,300 conservation projects on their farms to prevent 1.2 million pounds of nitrogen, 41,000 pounds of phosphorus and 17,000 tons of sediment from entering the Bay. This fall, Maryland farmers broke all records and installed roughly 400,000 acres of cover crops to protect water quality. This practice alone will achieve 2.4 million pounds of nitrogen reduction, but as with many practices, it is an annual practice, and farmers must maintain a significant level of performance every year.

Maryland passed the Water Quality Improvement Act in 1998, requiring farms with over \$2,500 gross income or more than eight animal units to develop and implement a nutrient management plan. Although the first deadline for nutrient management planning was 2001, livestock and poultry producers had until July 2005 to prepare for nutrient applications based on soil phosphorus levels. In 2010, more than 99.9% of farmers had nutrient management plans for 1.3 million acres and 97.2% filed an Annual Implementation Report (AIR?) documenting use of nutrients and compliance with the law. Maryland Department of Agriculture conducts field audits of 8–10% of regulated farm operations annually.

Best management practices (BMPs) installed on farms are currently documented when they are implemented using Federal and state cost-share funds. The information we do not have at present relates to the water quality benefits of BMPs that farmers across the Bay region have installed on their own, at their own cost, as a result of their strong stewardship ethic. Not all of these practices meet Natural Resource Conservation Service (NRCS) standards and specification and therefore they do not have an established nutrient reduction value for purposes of EPA Model accounting. For example—a 10' buffer along one of the many farm ditches on Maryland's Eastern Shore or an electric fence keeping animals out of a Western Maryland stream will both improve water quality; but as neither meets NRCS standards and specifications, they have not been assigned a nutrient and/or sediment reduction value. Why does this matter? EPA does not recognize BMPs that do not meet NRCS standards and specifications—in fact at this point, they do not recognize any

BMPs that were installed without Federal or state assistance because currently we have no mechanism by which to collect this important contribution to Bay water quality.

In 2009, the Maryland Department of Agriculture developed *Conservation Tracker*, a geo-referenced database system to record the location of BMPs installed on Maryland farms and to calculate the nutrient reduction credits. District staff across the state scoured every soil conservation and water quality plan (SCWQP) in their offices and entered the data into *Conservation Tracker* on all the BMPs that have been installed with public support and are still functional. The system has the capacity to track farm data on all BMPs regardless of their funding source and whether or not they meet NRCS standards and specifications. Maryland is piloting a method to track this information with funding from an NRCS Conservation Innovation Grant and is working with the National Association of Conservation Districts (NACD), who is actively engaged across all six-Bay states, to determine a method to collect this data so it meets EPA requirements of accountability and verification.

It is imperative to our farmers that EPA accepts this information and provides credit in the Bay model for all farm BMPs, not just those funded with public cost-share and that they provide nutrient and sediment reduction values for these BMPs. We recognize that BMPs that do not meet NRCS standards will have lower nutrient reductions—but they must be counted. Without a true accounting in the Bay model of what has already been achieved—there cannot be an accurate determination of what more can, or needs to, be done.

Maryland's Phase I Watershed Implementation Plan (WIP) has been approved by EPA to meet the Total Daily Maximum Load (TMDL) allocations. We believe that the agricultural BMPs identified in Maryland's Phase I WIP and the 2 year milestones are reasonable if, and only if, farmers and conservation agencies are provided with adequate technical and financial resources. We are concerned that the current economic decline and its impact on Federal and state budgets will reduce the necessary level of support. What happens then? We have concerns with EPA's indication that they will expand NPDES/CAFO requirements to smaller poultry and livestock producers if implementation lags and that they will try to regulate other agricultural operations. This creates inequities between Chesapeake Bay farmers and farmers in other states and impacts their competitiveness in national and international markets.

As we enter Phase II, Maryland must develop 58 WIPs, for every county and for all Bay sub-watersheds in each county. Yet EPA has not provided allocation information for these plans to be developed and has indicated that this information will not be available until July. Allowing less than 6 months to develop Phase II WIPs is unrealistic. In the meantime, Maryland's soil conservation districts are establishing agricultural working groups to get feedback and develop consensus among farmers that any proposed WIP II agricultural BMPs are reasonable.

We believe this process is impacting the willingness of the next generation to continue farming. The average age of farmers is 58; as the next generation looks at the new regulations facing their parents, the development pressure on farmland, and are bombarded by the negative rhetoric in the press, many are deciding against a future in agriculture. This is a major concern as farmland provides local food security and offers the best and most cost effective means for protecting Bay water quality.

To ensure the viability of agricultural enterprises in the Bay region, Maryland grain farmers have spent \$2.9 million, of the \$12.5 million Checkoff funds collected since 1991, to fund research on projects to explore management, new products and technologies that support agricultural production and water quality. The funds are collected through the Maryland Grain Checkoff program from farmer contributions of half of one percent ($\frac{1}{2}\%$) of their net income from grain. The Checkoff funded research has enhanced the states cover crop program, reduced fall fertilizer use on small grains, assessed the value of slow release fertilizers, and evaluated the use of new equipment like vertical tillage to incorporate poultry litter in no-till cropping systems and GPS with variable rate nitrogen applicator equipment, such as the GreenSeeker™ to apply crop nutrients at different levels throughout each field. This farmer funded research shows our commitment to clean water and will help the state reach the goals set out in the WIP.

Conservation practices like no-till have costs and benefits for the farmer. Maryland boasts having over 80% no-till cultivation, which is one the highest adoption rates of any state in the country. Other conservation measures such as stream buffers, diversions and grassed waterways take land out of production and add implementation and maintenance costs as well as reducing income producing land. While farmers are committed conservation stewards, expansion and continuation of these efforts will require Federal cost-share programs and technical assistance.

We commend you for your past support and encourage you to continue to support the allocation of conservation funding for the Chesapeake Bay as well as conservation programs and operating funds to support technical staff as part of the next farm bill. The country is watching us; we want to prove that agriculture can do what is necessary as long as it is reasonable, science-based and we are provided with adequate technical and financial assistance. Thank you.

The CHAIRMAN. Thank you, ma'am. Mr. Hebert.

**STATEMENT OF TOM HEBERT, SENIOR ADVISOR,
AGRICULTURAL NUTRIENT POLICY COUNCIL, WASHINGTON,
D.C.**

Mr. HEBERT. Chairman Thompson, Ranking Member Holden, Members of the Committee, my name is Tom Hebert and I am a Senior Advisor to the Agricultural Nutrient Policy Council. I am very pleased to be here today testifying before you.

Started just last year, the Council includes more than 30 participants from the agricultural and forestry sectors at work here in D.C. and across the country brought together to work specifically on agriculture, nutrients, and water quality issues. The Council has worked on many national issues over its short history, but we have worked also a great deal on the Chesapeake Bay TMDL because of agriculture's concerns with the accuracy and transparency of EPA's efforts, as well as the speed of the process. Furthermore, the Council believes that the USDA analysis for the Bay under the Conservation Effects Assessment Program, the CEAP that we have heard so much about this morning merits significant inclusion in EPA's work as they move forward.

The Council retained a nationally recognized firm, LimnoTech, to prepare a report comparing the draft USDA Bay CEAP that was issued last October to EPA's draft TMDL when it was open during the comment period last fall. We did that to draw attention to the positive role that the CEAP could play in the TMDL itself, and to investigate agriculture's serious concerns with the TMDL.

You have heard a great deal this morning already from Chief White, from other members of this panel about the great conservation achievements that the CEAP reports on. I am not going to repeat those numbers. But, it is important to note that it is clear that USDA has documented the really tremendously strong foundation of conservation practices that farmers have built over the last several decades and are in place today to support them moving forward on improving the health of the Bay. The CEAP shows also that more can be accomplished. We all know that and farmers are ready to do that and we know that as well. But there is a tremendously solid foundation in place today on farms across the Bay region and EPA should be taking all of that foundation into account.

Turning to the TMDL and the LimnoTech report, we are very concerned that EPA has in fact failed to take this foundation properly into account. For example, we looked at the loads coming from ag lands and being delivered to the Bay as reported in the CEAP. We compared the same loads being delivered to the Bay in the Bay TMDL and we found some really startling things. In terms of the baseline conditions, before the TMDL would be implemented we found that EPA sediment baseline loads delivered to the Bay were almost three times that estimated by NRCS in the CEAP. The difference between 930,000 tons, and 2.6 million tons between EPA

and USDA: three times more in EPA's baseline. That may in part be because as you have heard, EPA assumes that only 50 percent of the acres in the Bay are under conservation tillage. The rest are under plow while the CEAP shows that almost 100 percent either have conservation tillage in some form or structural practices in place to control erosion.

Also we are concerned that EPA may not be accounting well for the sediments that are reaching the Bay through stream bank erosion and other so called legacy sediments and has instead assigned them to agriculture and other nonpoint sources. I—EPA's nitrogen estimates are about 25 percent lower than USDA's perhaps due to the fact that USDA has one million more cropland acres under cultivation in their model than EPA, and total of about 3 million more crop, pasture, and hay acres in agricultural practices in the Bay than EPA.

Deputy Administrator Perciasepe made a statement that despite these differences, at the bottom of the Bay the two models are very, very close. We disagree respectfully so. These are big, big differences and when you put them into the TMDL itself you come up with some startling findings. In the case of sediment and phosphorus, USDA's baseline loads are already lower than the EPA allocations even without any further treatments. In the case of nitrogen, the CEAP makes it very clear that nitrogen loads can be reduced in absolute terms as much as the EPA requires although the loads don't get below the EPA allocation level itself. What do you make of that?

We are not sure. It is maybe due to the fact that as Mr. Shaffer referenced, EPA removes about 630,000 acres out of agricultural crop production in the Bay region over the TMDL period. Maybe they had to do that in order to reach this water quality standard number that Mr. Perciasepe spoke about. USDA does not do that in their model. The problem is is that we just don't understand. We don't think EPA understands this either. Looking at the number differences ranging from 25 percent for nitrogen, almost 300 percent for sediments, the accuracy of the TMDL has to be examined further and EPA and USDA should recognize and reconcile this and work on these numbers together.

EPA did not follow our report's recommendation that they not finish the TMDL before this reconciliation has taken place. It still needs to be done in our opinion, although we are not sure exactly how these changes can get reflected at this point in the now final TMDL which is law. Our strong caution though is against anyone thinking that the numbers in the TMDL can be fixed somehow 5 years down the road, that somehow they can come back together, fix this, and in 5 years down the road we will fix the TMDL. Everyone in the Bay, not just farmers, everyone is going to start spending money today to meet these requirements. No one can afford to find out in 5 years that the dollars have gone to the wrong issues or in the wrong places, or to work on the wrong solutions and that we have to go back to the drawing board in any way.

This will not help restore the health of the Bay. It will not help anybody in the watershed. So thank you for the chance to present this information to the Committee. The Council hopes that this re-

port and our further efforts will help you and everyone else get this TMDL right.

[The prepared statement of Mr. Hebert follows:]

PREPARED STATEMENT OF TOM HEBERT, SENIOR ADVISOR, AGRICULTURAL NUTRIENT POLICY COUNCIL, WASHINGTON, D.C.

Chairman Thompson, Ranking Member Holden, and Members of this Committee, my name is Tom Hebert and I am here today as Senior Advisor to the Agricultural Nutrient Policy Council—the ANPC. The ANPC has worked on multiple issues in the 6 short months that it has been in existence and among these are the topics of this hearing—the Chesapeake Bay and the U.S. Environmental Protection Agency’s (EPA) Total Maximum Daily Load (TMDL) for the Bay and its tidal tributaries. Thank you for this opportunity to share some of the ANPC’s work on this topic. We hope you find this testimony helpful to your deliberations concerning policies involving agriculture, nutrient and sediment loss and the health of the Chesapeake Bay.

The ANPC is a new organization, started this past September by five agricultural organizations. It has grown to include more than 30 participants from the agricultural and forestry sectors that share the goal of sound Federal policy involving nutrients and environmental quality. The purpose of the ANPC is to support participants’ efforts to achieve that goal by drawing on and applying their expertise in the relevant areas of science, technology, law and policy, and coordinating those efforts with outside experts on these matters. These are tough, highly complicated issues, particularly when considered through the lens of the Clean Water Act. The ANPC works to help its participants make sense of all that is happening by charting a path forward that is informed, thoughtful, and reasoned.

While the ANPC will speak to the meaning, substance and implications of technical, legal or policy matters, the council does not serve as the policy voice for its participants. That remains the participants’ role as individual organizations or in their collective efforts as expressed through *ad hoc* coalitions that they might form around specific issues. But in the case of agriculture, forestry, nutrients, and water quality, it is fair to say that ANPC participants are absolutely supportive of protecting and improving water quality. The ANPC members share this view with respect to waters across the country, and relative to today’s hearing, the Chesapeake Bay and the waters of the basin.

The fact that these organizations and all of agriculture embrace this objective can be too often lost in the rancor of debate. Perhaps that is because these groups are also unabashed supporters of farmers and ranchers as business people, and there are often no easy answers able to address the multiple challenges facing agriculture. America’s farmers and ranchers are committed to doing their part to reduce the loss of nutrient and sediment from their land to help improve the health of the Bay, though they cannot pursue this to the exclusion of the other integral objectives for their operations. The ANPC is proud to be part of and contributing their efforts.

The ANPC’s Examination of Agriculture’s Loadings to the Chesapeake Bay

The ANPC has spent considerable time examining agriculture’s contributions of nutrients and sediments to the Chesapeake Bay, its tributaries and to the waters of the entire watershed. This is of course a critical issue for water quality in the Bay and in the context of the Chesapeake Bay TMDL (Bay TMDL) rulemaking and the associated state watershed implementation plans (WIPs). Many in the agricultural community have been deeply concerned that the process and speed with which EPA was moving to conclude the TMDL rulemaking was going to encumber sound and accurate supporting analysis.

These were not just hypothetical concerns. They stemmed directly from things we learned in public meetings with EPA staff about how agriculture was being addressed in the Chesapeake Bay Model (Bay Model) and its associated “Scenario Builder.” Scenario Builder is the model EPA developed for sectors like agriculture for use in the Bay Model. Critically important data about the historical levels of conservation practices were, from agriculture’s perspective, seriously incomplete. Assumptions regarding crop yields, nutrient and manure use levels, and how loads not assigned to point sources were to be distributed led to enormous concerns.

EPA was attempting to bring considerable sophistication and expertise to the challenge of modeling the hydrology and all of the relevant activities in the entire Bay region. The Bay Model represents the product of many years of work by qualified people. However, the model is unprecedented in its scope and complexity; it is not a single TMDL, rather a combination of 92 distinct TMDLs for different segments of the Bay. Still, the task given to the model was and remains enormously

complex and largely untested in the scope of the landscape and the level of detail it purported to represent. Agriculture expressed our serious concerns with the speed of the process and the possible inaccuracy of its estimates regarding agriculture's contributions to the Bay.

Concerns about the accuracy of EPA's estimates for agriculture's baseline contributions of nutrients and sediments to the Bay translate directly into concerns about the accuracy of the reductions in loads EPA would expect of farmers and ranchers under the Bay TMDL. While they have and will be committed to reducing nutrient and sediments losses, in the case of this particular TMDL it becomes nearly impossible for farmers and ranchers to embrace the assigned reductions if they are not considered accurate. It is bad enough to be worried that you are being relegated to failure before the process even begins. Adding to these worries is the knowledge that the load reductions and practices required to achieve them are expensive, and perhaps in many instances prohibitively so. And yet the Bay TMDL development process lacks economic analysis of the costs of what these practices will entail for agriculture or any other sector.

As if those concerns are not enough, EPA has sought to ensure that states would adopt "enforceable or otherwise binding" measures on row crop agriculture to achieve the assigned load reductions, a considerable break from the past and the Clean Water Act provisions that provide exemptions for discharges associated with agricultural stormwater—so-called agricultural nonpoint source discharges. Mandating practices of unknown cost and efficacy could spell disaster for many farmers and ranchers in the Chesapeake Bay, yet the very prospect confronts them in this case.

The USDA–NRCS Conservation Effects Assessment Program Report for the Bay

The ANPC welcomed the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) release this past October of its draft analysis of agriculture in the Bay.¹ We hoped and still hope that it might be able to better quantify agriculture's contributions and additional efforts needed and ultimately used in conjunction with the Bay Model in the development of load reduction expectations for agriculture. This draft report is one of 12 assessments that USDA–NRCS is conducting of basins nationwide under the Conservation Effects Assessment Program (CEAP). The Bay CEAP was the second of these assessments and was issued for public comment this fall while the proposed Bay TMDL rulemaking was out for public comment.

Because it is an estimate, the Bay CEAP will not be perfect. The estimates are based on data and observations collected from 2003 to 2006 and the conditions it represents are already dated. We have reason to expect that it underestimates farmers' use of improved and advanced nitrogen management techniques and practices, and therefore over-estimates the baseline loss of nitrogen from agriculture. As is the case with the Bay Model and the Bay TMDL, it lacks estimates of the practice costs that it suggests producers could adopt to lower their loadings, and it lacks estimates of the economic effects of practice adoption. As such, we also have questions about whether the additional conservation measures proposed for use on Bay cropland are practical and achievable.

Despite these shortcomings, the Bay CEAP (as well as the other 11 CEAP analyses that USDA–NRCS is conducting) has many strengths. It is based on a thoroughly peer reviewed statistical and modeling process of the National Resources Inventory (NRI), one that has been in use for several decades and with which agriculture has considerable familiarity. It combines the NRI findings in the Bay with detailed survey results of farmers and farm operations in the region, allowing CEAP to be based on a statistically valid sample of farmland and farming practices in use in the Bay. The CEAP is therefore grounded in the actual conservation practices, crops and crop rotations, soil types, and other land features that directly shape how many nutrients and how much sediment leaves farm fields and makes its way into waterways that ultimately reach the Bay. For these reasons we welcomed the draft Bay CEAP results as a solid contribution to the Federal effort to set goals and objectives for load reductions in the Chesapeake Bay.

Before I review the findings of the analysis the ANPC commissioned to compare some of the key results of the Bay CEAP to those in the Bay TMDL derived from the Bay Model, I would like to share a few of the findings from the Bay CEAP itself. The picture it conveys as to what farmers have achieved in the Chesapeake Bay is quite remarkable. It is a testament to the work farmers in the Bay are doing to re-

¹*Draft Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region*, USDA–NRCS, October 2010.

duce nutrient and sediment loads, and the success of the partnership of Federal, state and local officials that constitutes today's conservation delivery system.

I would like to draw to your attention the following draft CEAP findings relative to agriculture's baseline (2003–2006) conservation conditions for cropland in the Bay region:

- About 88 percent of the crop acres in the Bay region are using conservation tillage, in the form of no-till or mulch till.
- 63 percent of the highly erodible cropland has structural measures for controlling water erosion, constituting 46 percent of all crop acres.
- 96 percent of the crop acres have some residue, tillage management, and/or structural practices in use.

Most crop acres have some nitrogen or phosphorus management, with significant percentages having the appropriate rate, timing or method of application in use—but most of these acres lack the consistent use of all these tools simultaneously.²

The CEAP model shows that as a result of these and other conservation practices for cropped acres in the region, the amount of nutrient and sediment loss from these acres has been reduced significantly from what would be the case if farmers were not using these practices. For example, these practices have resulted in:

- Reduction in sediment loss from fields by 62 percent;
- Reduction in total nitrogen loss from fields by 30 percent and reduced nitrogen lost with surface runoff by 42 percent; and
- Reduction in total phosphorus loss from fields by 43 percent.³

Clearly, more can be accomplished by farmers and ranchers in the Bay region. More practices can be adopted, or those in use today can be consistently applied simultaneously. The Bay CEAP estimates what could be possible were such practices adopted on all the acres that could benefit from their use. While these estimates are not accompanied by any cost and economic analysis to indicate how truly feasible they are, they are indicative of the further contributions that agriculture could be making to water quality in the Bay. Through the adoption of further sediment controls and nutrient management practices on some $\frac{2}{3}$ of the acres in the region, USDA estimates that the total sediment and nutrient loads actually delivered to the Chesapeake Bay from all sources could be reduced (relative to baseline conditions) as follows:

- Sediment by 7 percent;
- Nitrogen by 16 percent; and
- Phosphorus by 17 percent.

Of course, these are the draft estimates from the October version of the report. We understand that NRCS will be issuing in the near future their final Bay CEAP report. As such, the numbers above are subject to change.

A Comparison of the Draft Bay CEAP Results to those from the Draft Bay TMDL

Agriculture generally has a significant degree of comfort with the NRCS' NRI, as it has been used to report on the conservation efforts of farmers for decades. Its coupling with farmer survey results and models to make the CEAP analysis possible is a newer effort and agriculture is just now becoming familiar with its use. Nonetheless, agriculture is given a high degree of confidence in the CEAP analysis by the fact that its foundation is the NRI's statistically valid field level observations of the actual conservation and nutrient management practices, soils and conditions in place. Its statistical validity yields confidence because it is representing what is in fact happening on the ground.

It is this physical grounding in actual, observed practices that lead the ANPC to want to compare the CEAP loading estimates to those from the Bay TMDL. The hope was that the CEAP results would allow agriculture to assess the accuracy of the Bay TMDL baseline conditions and the load allocations. The CEAP is not the only other sound source of data and information that could help Federal policy makers assemble an accurate understanding of what is happening on the ground in the Bay region. State and local agencies also have good data that could be used in the effort. The CEAP information, though, is critical to reaching this goal.

² See pages 8 and 9 of the draft CEAP report.

³ See page 11 of the draft CEAP report.

In an effort to highlight the importance of using the CEAP data to inform Federal decision making, the ANPC commissioned a study from LimnoTech, one of the nation's leading environmental science, engineering and modeling firms. The report, *Comparison of Draft Load Estimates for Cultivated Cropland in the Chesapeake Bay Watershed*, was completed on December 8, 2010, and a copy of the report was provided with this testimony.⁴

LimnoTech analyzed the available documentation (both of which were draft) and compared the two efforts, looking in particular at:

- Land use and total acreage of the Bay watershed;
- Hydrology;
- Assumptions about conservation practices;
- Model frameworks; and
- Model results.

These models were constructed, designed and used for very specific yet different purposes. Different modeling techniques are used and the data sources vary. That said, it is reasonable to expect that two models prepared by two Federal agencies, estimating loads from agriculture delivered to the Bay over roughly the same period, could very well come up with comparable results—or at least the differences in their results could be explained in a straightforward way.

LimnoTech did not find comparable estimates of the loads delivered to the Bay, nor were they able to discern how to reconcile these differences. This finding, and several others, led LimnoTech to conclude that EPA should not finalize the Bay TMDL until it had reconciled these differences in the estimates. I will not detail here the differences that LimnoTech found and the questions and concerns that were raised. A comparison of the actual estimates of baseline loads to the Bay from agriculture should be sufficient to demonstrate why these concerns arose.⁵

Figure 1 below, which is drawn directly from the LimnoTech report, graphically compares the EPA (Bay TMDL) and USDA (Bay CEAP) estimates of the baseline delivered loads to the Chesapeake Bay from agriculture as well as all other sources. Looking at the largest difference (on a percentage basis) in estimated loadings from agriculture, those for sediments, EPA's estimate is almost three times the size of the USDA estimate. The Bay TMDL baseline assigns about 65 percent of all sediments reaching the Bay to agricultural sources, while USDA assigns only 14 percent of the total. These are enormous differences and give many in agriculture cause for serious concerns.

⁴The comparison of the USDA and EPA draft estimates can also be found on the ANPC website at http://www.nutrientpolicy.org/ANPC_News.html.

⁵These are the results of the analysis of two draft documents—the proposed TMDL rule-making, and the draft Bay CEAP report. These numbers will certainly change once the final Bay CEAP findings are compared to the final Bay TMDL.

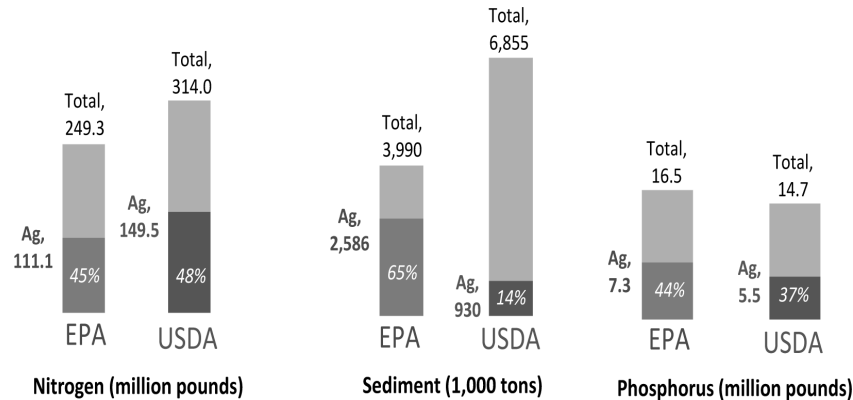


Figure 1—Differences in estimates of baseline delivered loads to the Chesapeake Bay from agriculture and all sources.

Turning to the estimates for nitrogen with the next lower differences, USDA's agricultural load estimates are about 25 percent higher than EPA's estimates. Although the differences between EPA's and USDA's estimates of phosphorus loads are smaller, it is still very large. USDA's loads are 25 percent lower than EPA's estimates, amounting to some 1.8 million pounds per year. This is a sizable amount, given that EPA is holding states accountable for every single estimated pound that must be reduced.⁶

Absent full access to EPA and CEAP model inputs, LimnoTech was unable to fully explain these differences in baseline estimates, although there are some good, educated guesses that could be made. First, there are significant differences in the amount of land designated as agricultural. USDA's estimate for the amount of crop and pasture land in the Bay region is more than 3 million acres greater than EPA.

Second, the draft Bay TMDL assumed only 50 percent of the crop acres in the Bay region were farmed under conservation tillage, while the draft Bay CEAP used the NRI estimate of 88 percent, with another eight percent or so that had structural erosion control measures. Having more acres under conventional tillage would certainly translate into estimates of greater sediment loss under the Bay TMDL baseline than you would from the Bay CEAP. Yet important as this is, it seems unlikely it would explain almost a three-fold difference in sediment loads.

The ANPC has no explanation at this point for the 25 percent difference in the nitrogen baseline load estimates for agriculture. We understand that this difference was far smaller for EPA's 2005 estimate of nitrogen loads compared to Bay CEAP's—not an explanation. It just raises further questions. In the case of phosphorus, sizable differences in sediment load estimates would certainly lead to differences in phosphorus load estimates. This is because most phosphorus is lost due to erosion, where the phosphorus bonds tightly with a soil particle and goes wherever that particle goes. What to make of the varying magnitude in percent differences between the sediment estimates and those for phosphorus is still unclear.

Figure 2 below is a graphical representation of LimnoTech's assessment of the comparability of the two baseline agricultural load estimates and the possible load reductions estimated by the Bay CEAP. Four estimates are depicted for loads of nitrogen, sediment and phosphorus. The first of the estimates is EPA's baseline number. The next is the USDA baseline number. These are the same values depicted for agriculture in Figure 1. The next two bars depict the USDA (Bay CEAP) estimates of the loads that would result if additional acres were to receive more intensive conservation treatments (an additional 2 million acres and an additional 3.5 million). The horizontal redline that accompanies the estimates for nitrogen, sediment and phosphorus depicts the allowable level of loads for each pollutant EPA assigned to agriculture in the draft TMDL.

Figure 2 indicates that as more acres receive intensive treatment, the estimated loadings of sediments and phosphorus are below the TMDL allocation. Interestingly, USDA's baseline loads of sediment and phosphorus start out below the TMDL allo-

⁶For example, 14 hours before the WIPs were due, EPA reported to Virginia that they needed to find an additional one million pounds of nitrogen.

cation. The pattern is different in the case of nitrogen, where USDA's baseline load is greater than that for EPA's, and the intensively treated acre scenarios do not yield loads below the TMDL allocation. Perhaps this is due to the fact that EPA's TMDL scenarios assume that approximately 600,000 acres leave crop production, about 20 percent of the crop acres in the region. USDA has no comparable acres change. We simply do not know the reason for these differences.

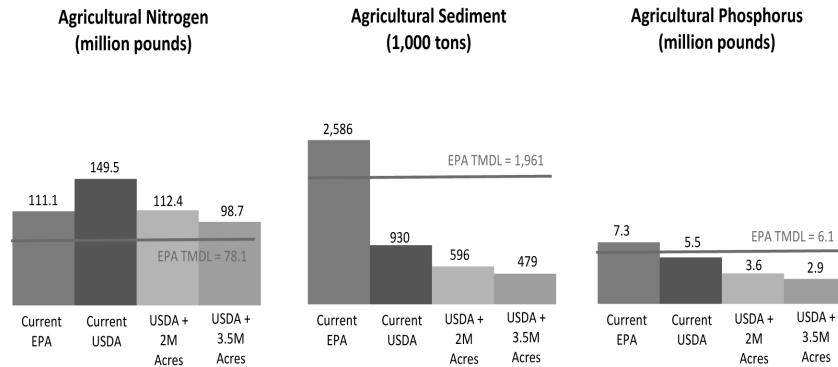


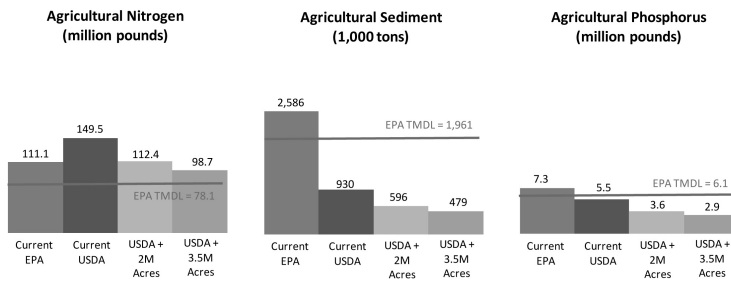
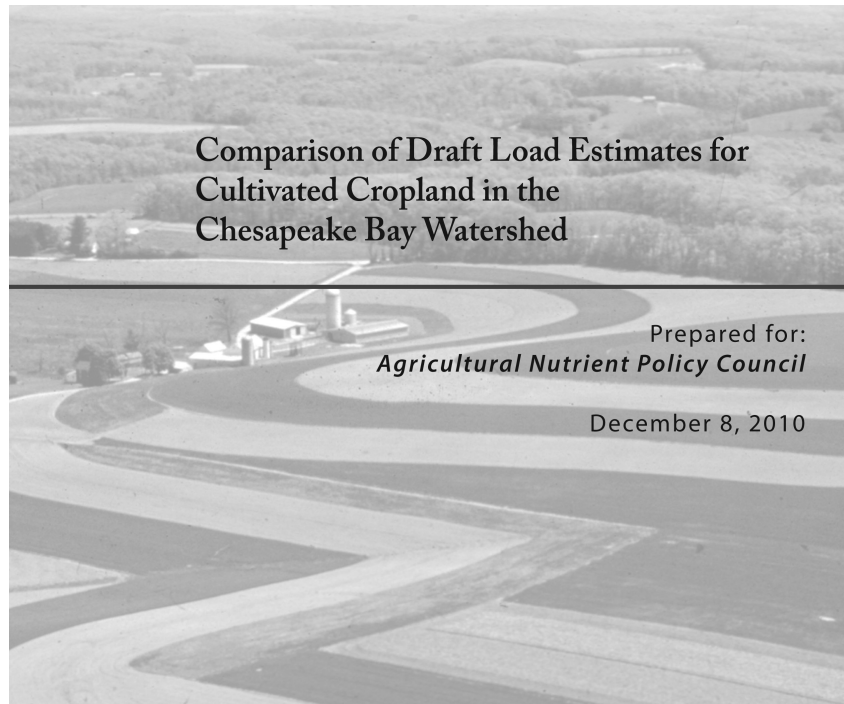
Figure 2—USDA estimates of delivered loads under baseline and two treatment scenarios, compared to EPA's Draft TMDL baseline loads and TMDL load allocations.

Conclusion

Taken at face value, it appears that in terms of sediment and phosphorus, agriculture has already met its TMDL obligations. And in the case of nitrogen it might appear that somehow EPA's nitrogen load under the TMDL is unachievable for agriculture. Such conclusions, while feasible, are probably premature to draw at this point.

The most reasonable conclusions to draw from the differences depicted in *Figures 1* and *2*, along with the several others LimnoTech investigated, is that something important and seriously confounding is creating these differences. USDA and EPA should work together to find out what this is and reconcile their work. If possible, they should include agriculture and other stakeholders fully in that process, and as appropriate find ways to incorporate other useful datasets and sources of information that can improve the outcomes. The goal would be two-fold. First, to understand how the two models operate, reconcile their differences in a way that makes sense, and arrive at sound TMDL load reductions. The second would be for these reductions to be accepted by agriculture and the general public as accurate, fair, trustworthy and capable of making a lasting contribution to improving the health of the Chesapeake Bay.

Thank you.



**Comparison of Draft Load Estimates for Cultivated Cropland
in the Chesapeake Bay Watershed**

December 8, 2010

LimnoTech

LimnoTech's clients face the most challenging and costly water issues in the nation today. We help them make decisions about their water problems based on sound science and practical economic realities. They trust our ingenuity, expertise, objectivity, and passion for sustainable clean water.

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Summary

The Chesapeake Bay Program represents one of our country's best efforts to use scientific tools to help determine management actions that are needed to restore a treasured national resource. As stated in Boesch, et al. (2010) "[b]oth the Draft TMDL and the component models that underpin it incorporate extensive monitoring data, research outcomes and alternate modeling approaches." In particular, the Watershed Model provides considerable value in understanding how nitrogen, sediment, and phosphorus loads from different sources are delivered to the Bay. It also provides a useful tool to help make decisions about prioritizing actions to control those loads.

The Watershed Model was originally developed when the Chesapeake Bay Program was a voluntary partnership between the states, the District of Columbia, and the Environmental Protection Agency (EPA). Now that the model is being applied in a regulatory environment, every pound of pollutant that exceeds the allocations in the total maximum daily load (TMDL) will result in mandated requirements on cities, businesses, industries, and private citizens to install and operate new technologies, without regard to economic feasibility of implementation. It is therefore critical that the precision and accuracy of the models be defined. This report provides a comparison of the results of the EPA Watershed Model with a recently released, draft estimate of loads within the Bay watershed by the United States Department of Agriculture (USDA). The report calls for a "timeout" on the TMDL. This timeout is needed to make sure that EPA does not somehow push the use of the model beyond its original design.

USDA's draft report, *Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region* (NRCS, 2010), presents very different estimates of pollutant loads to the Chesapeake Bay. The Agricultural Nutrient Policy Council (ANPC) asked LimnoTech to provide an objective comparison of the

pollutant load estimates in the USDA report and EPA's draft TMDL. The ANPC wanted to know if the differences in the two estimates are substantial enough to call into question the estimates in the draft TMDL, particularly for cultivated cropland.

LimnoTech found that there are substantial differences between the USDA and EPA pollutant load estimates. We believe there is justification for EPA to not finalize the TMDL and, instead, EPA should work with USDA to reconcile the differences in the estimates. Specifically, the two federal agencies need to reconcile differences in:

- ◆ Land use and total acreage of the Bay watershed;
- ◆ Hydrology;
- ◆ Assumptions about conservation practices;
- ◆ Model frameworks; and
- ◆ Model results.

EPA and watershed jurisdictions based the allocations in the draft TMDL and the state watershed implementation plans on EPA's Chesapeake Bay Watershed Model. The differences between USDA's and EPA's pollutant load estimates call into question the legitimacy of these allocations and must be reconciled before the draft TMDL is finalized.

New or revised permits for discharges in the Chesapeake Bay Watershed must be consistent with the wasteload allocations of the TMDL once it is issued, notwithstanding cost or the feasibility of controls, so the TMDL will have immediate regulatory consequences. States and the regulated community also must begin taking action to meet all wasteload and load reductions immediately upon issuance of the final Chesapeake Bay TMDL because EPA has said it will take actions, such as objecting to permits or withholding federal funding, if immediate progress (evaluated based on two-year milestones) is not made.

If EPA's assumptions about pollutant loads are wrong then states and the regulated community will misdirect their resources. In addition, public support for the Chesapeake Bay TMDL may be eroded and public confidence in EPA may be severely undermined, particularly if it is determined that EPA was aware that its pollutant load estimates may not be representative of the actual conditions in the Chesapeake Bay watershed. USDA and EPA therefore need to make sure they agree that the pollutant load estimates used to determine the allocations in the draft TMDL and state watershed implementation plans are reasonable.

In reconciling these differences, it would be appropriate to seek input from the six states, the District of Columbia, agricultural scientists from across the nation, and affected stakeholders. USDA and EPA will need to compare the statistical and scientific accuracy of estimates at multiple scales (watershed, State, County, and city/township) because EPA's Chesapeake Bay Watershed Model is being used by EPA and states to specify TMDL load reductions across these multiple scales.

Ensuring that EPA's Watershed Model is correct is important to all stakeholders in the Chesapeake Bay Watershed. Achieving a healthy bay will require an enormous investment of resources. As EPA seeks to hold everyone accountable for achieving the pollutant load reductions called for in the TMDL, it is important to municipalities, industry, agriculture, forestry, and the general public that these investments are properly directed and will actually result in restoration of the Chesapeake Bay.

Our six key concerns are discussed below.

Key Concern 1**EPA Should Not Finalize The TMDL Until USDA and EPA Reconcile Differences in the Estimates**

By December 31, 2010, EPA intends to finalize a TMDL for nitrogen, sediment, and phosphorus loads to the Chesapeake Bay. In cases where a water body, such as the Chesapeake Bay, is considered to be impaired (not meeting water quality standards), the Clean Water Act requires states to identify the water body on an impaired waters list – the federal 303(d) list. States (or EPA) are then required to develop a TMDL – or “pollution diet” – to determine the amount of pollution the water body can handle and still be considered healthy. A TMDL is a calculation, which identifies the level of pollutants deemed necessary to meet water quality standards, with seasonal variations and a margin of safety.¹ Point sources receive wasteload allocations and load allocations are assigned to nonpoint sources and natural background loads.² The TMDL is the sum of the wasteload and load allocations.

The Bay TMDL is the most complex TMDL undertaken to date. It covers parts of six states and all of the District of Columbia – around 64,000 square miles. For this TMDL (unlike others that have been completed), EPA made a policy decision that states will need to demonstrate, every two years, that they are making progress towards achieving TMDL-mandated load reductions, with all controls in place by 2025. EPA also has made a policy decision that States will need to show that they have achieved 60 percent of the mandated load reductions by 2017.

1 The draft Bay TMDL includes an implicit margin of safety for nutrients (meaning that the uncertainty in the models is used) and a variable, explicit margin of safety for sediment (meaning that EPA reduces the allowable sediment load because of uncertainty in the model estimates).

2 The term point source is defined in the Clean Water Act as any discernible, confined and discrete conveyance. The definition specifically includes concentrated animal feeding operations and specifically excludes agricultural stormwater discharges and return flows from irrigated agriculture. The term nonpoint source is not defined but is treated by courts and EPA as a source of pollutants that does not meet the definition of point source. Nonpoint source pollutants generally are carried to water in diffuse runoff from the land surface.



The Chesapeake Bay TMDL covers parts of six states and the District of Columbia.

Watershed map courtesy of the Chesapeake Bay Program

Generally, TMDLs are developed by states for individual water bodies (i.e., lakes, streams, or rivers). A TMDL can include specific wasteload allocations for large individual permitted sources, broad wasteload allocations for smaller permitted sources and categories of sources covered under general permits, and broad load allocations for categories of nonpoint sources. In the case of the Chesapeake Bay TMDL, EPA has instead developed a draft TMDL for three pollutants in 92 separate water bodies in six states and the District of Columbia that includes very specific individual wasteload allocations for very small sources.

EPA used a computer model (the Watershed Model) to develop the Bay TMDL. The computer model calculates

how much nitrogen, sediment, and phosphorus is expected to reach the Bay and its tidal tributaries. Another computer model, called the “Scenario Builder”, is used to estimate the loads generated by agriculture (and other sources) and then those loads are input into the Watershed Model to simulate sediment and nutrient transport throughout the Bay watershed. These tools are then used to estimate how effective agriculture (and other sources) can be in reducing pollutant loads at their source. EPA feeds different scenarios from “Scenario Builder” to the Watershed Model and makes predictions regarding whether water quality standards can be achieved under those scenarios. These predictions are the basis for the allocations in both EPA’s draft TMDL and the state watershed implementation plans. It is important to note that while the Watershed Model has been tested and reviewed prior to the draft TMDL being issued, the Scenario Builder has not. It is also not clear whether the assumptions in these models are well understood or whether the models are accurate at geographic scales used in the TMDL.

The TMDL will impose a federal mandate on States, cities, farmers and private industries to reduce pollutant loadings. As proposed by EPA, the TMDL includes allocations to sources that would require them to reduce their loads with single-pound precision (individually or collectively) based on the model calculations. This is the case even though it is not clear that the Chesapeake Bay Watershed Model is accurate at that scale.³ It is very important from a scientific standpoint that USDA and EPA not only agree on basic model assumptions but also provide credible scientific justification for estimates of how much pollution is actually reaching the Bay. As of December 1, 2010, EPA modelers question the validity of their model and are still compiling a list of recently identi-

fied data gaps and long-standing problems with the Bay models.⁴

As noted above, the TMDL will have immediate regulatory consequences upon issuance. However, if the assumptions in the EPA models are wrong then EPA’s entire regulatory framework will be wrong as well, misallocating resources and undermining public confidence.

3 As noted in Boesch, et al. (2010), the models “are not designed to assess the loads or effects on water quality for a given year, nor should they be trusted to precisely determine the reduction in loading to the Bay of a specific management practice in a specific part of the watershed.”

4 During a December 1, 2010 Chesapeake Bay Watershed Technical Workgroup call, issues about the Watershed Model calculations were still being discussed (see www.chesapeakebay.net/committee_tribstratworkgroup_meetings.aspx?menuitem.aspx?menuitem=16745).

Key Concern 2

Differences in Land Use are Substantial

In EPA's Watershed Model⁵, there are 41.1 million acres, excluding water surface areas in the Chesapeake Bay and tidal tributaries. As shown in Figure 1, this is 1.39 million acres (2,171 square miles⁶) less than USDA's estimate. This 3.4% difference is significant when EPA considers the TMDL to be accurate to a single pound. For cropland, the differences are even more significant. EPA estimates 3.33 million acres (1.68 plus 1.65 million acres) are used for crops. USDA estimates that 4.38 million acres are in such use, a difference of 1.05 million acres, or approximately 32 percent.

There are also substantial differences in estimates of total agricultural land (the sum of pasture/hay, cropland under conservation tillage, and cropland under conventional tillage). USDA estimates that there are 12.12 million acres attributed to agriculture; EPA estimates there are 9.0 million acres. USDA therefore estimates there are 3.12 million acres (5,194 square miles) more agricultural land in the watershed than EPA.

With respect to cropland and tillage practices, EPA estimates that 50 percent of cropped acres are farmed using conservation tillage (no-till) and 50 percent are farmed using conventional tillage. USDA estimates that 88 percent of cropland is farmed using conservation tillage (no-till or mulch till); five (5) percent is between conservation tillage and conventional tillage; and seven (7) percent is in conventional tillage.

These differences in assumptions about total acres, land use, and conservation tillage versus conventional are significant when predicting different loading estimates.

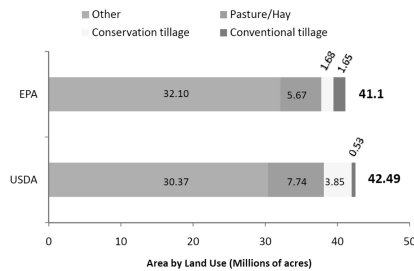


Figure 1. Comparison of Land Uses in the EPA and USDA Model Frameworks.

⁵ LimnoTech used EPA's 2009 progress scenario for comparison purposes (see Appendix A).

⁶ The State of Delaware is 1,954 square miles (land mass only).

Key Concern 3

Differences in Hydrology and Their Implications Need to be Investigated

The EPA and USDA models differ in that they operate at very different time scales (hourly versus daily), have been run for different time periods, and do not use the same rainfall conditions (hourly versus daily, different rainfall data processing). The models also have different representations of the watershed land areas, which leads to differences in hydrology and transport of pollutants.

Both models simulate the full hydrologic cycle on the land surface accounting for rainfall, surface runoff, subsurface flow, groundwater losses/transport, evaporation and transpiration from soil and plants (crops, grasses, trees, etc.). They do, however, represent these processes with different equations and assumptions. Identifying and understanding these differences is critical to interpreting differences in hydrology and pollutant loads.

The EPA model simulates hydrology on an hourly basis and is therefore able to simulate effects of intense, short-duration rainfall events. The USDA model simulates hydrology based on daily rainfall and does not capture the effects of intense, short-duration rainfall events.

The USDA model simulates hydrology for a 47-year period (1960 to 2006); the reported load estimates therefore represent long-term average rainfall conditions. EPA simulated a 10-year period (1991 to 2000) which is within the range of USDA model time period. The EPA estimates may, or may not, be representative of "average" rainfall conditions. Differences in the loading estimates between the models may in part reflect differences in rainfall.

Both models use a technique (called spatial processing) to estimate precipitation across the watershed. This technique allows the modelers to use sparse precipitation data to better represent rainfall conditions over smaller parcels of land. It is not clear if the techniques and the rainfall data that were used by EPA and USDA are significantly different.

According to EPA's draft TMDL, the Watershed Model divides the Chesapeake Bay into approximately 1,000 segments/sub-basins with an average size of 64 square miles (U.S. EPA, 2010a). The USDA models (APEX and HUMUS/SWAT or SWAT) simulate hydrology at the field-scale (APEX) for cultivated cropland and at the 8-digit HUC watershed scale, comprised of hydrologic response units (HRUs). These HRUs are homogenous combinations of land use, soil, and management practices for all other land uses (SWAT), which defines the spatial resolution of the USDA models applied to the Chesapeake Bay watershed. As discussed previously and in Appendix A, LimnoTech found differences between EPA's and USDA's interpretation of watershed areas.

<http://photogallery.nrcs.usda.gov>



Key Concern 4**USDA and EPA Model Assumptions
Regarding Cropland Differ Dramatically**

The USDA's approach to estimating the effect of tillage on loads from agricultural cropland appears to be more directly related to agricultural practices than what is represented in EPA's models.

According to USDA, "[m]ost of the cropped acres (96 percent) in the Chesapeake Bay region have some kind of water erosion control practice—either reduced tillage or structural practices or both" (NRCS, 2010, at 35). The USDA estimates account for conventional tillage (high till), mulch tillage (moderate till), and no-till practices. USDA estimates that seven (7) percent of cropped acres are under conventional tillage, five (5) percent of cropped acres have a level of tillage between conservation tillage and conventional tillage, and 88 percent of cropped acres are under conservation tillage (mulch till or no-till) practices.

EPA assumes two types of tillage practices, a high till practice equated to conventional tillage (moldboard plowing) and a low till practice equated to conservation tillage (no-till). Based on an evaluation of EPA model data, EPA estimates that 50 percent of cropped acres are under conventional tillage and 50 percent are under conservation practices.

In general, the cultivated cropland conservation practices incorporated in USDA's model framework are documented and statistically valid in sufficient detail to allow a general understanding of practices accounted for in the modeling, the assumptions made regarding specific conservation practices, and the level of implementation. A similar level of detail and documentation is not, however, available for the EPA model framework. It is therefore not possible to make an accurate assessment of the differences in the level of implementation as well as any assumptions made regarding cultivated cropland conservation practices between the EPA and USDA modeling efforts. Without further documentation of the EPA model framework, it is

not possible to evaluate the validity of EPA assumptions or conclusions.

The EPA "2009 Progress Scenario" includes the best management practices tracked and reported by the watershed jurisdictions through 2009. In contrast, the USDA "Baseline Scenario" includes conservation practices reported in the National Resources Inventory (a statistical approach) – Conservation Enhancement Assessment Program (NRI-CEAP) Cropland Survey (2003-2006), National Resource Conservation Services (NRCS) field offices, USDA Farm Service Agency (FSA), and the 2003 NRI.

USDA uses the data collected from the NRI sample points about the conservation and nutrient management practices in use to estimate statistically the use of those practices across the cropland in the Bay region. USDA then estimates the loading effects of those practices through the use of the field-scale APEX model. In comparison, EPA assumes that conservation practices are applied at the county-level scale in Scenario Builder and in the Watershed Model.

USDA and EPA dealt with animal feeding operations (AFOs) and confined animal feeding operations (CAFOs) differently. EPA attempts to model loads from the CAFO production areas, where animals are housed and manure stored, while USDA does not. Both EPA and USDA appear to model manure application on cropland on a nitrogen basis. USDA estimates that 38 percent of cropped acres have manure applied. It is not possible to determine from the available EPA documentation how much of the cropland in the EPA model receives manure.

Key Concern 5

Major Differences in the Model Frameworks and Their Implications Need to be Understood

LimnoTech compared published model results for the EPA Phase 5.3 Chesapeake Bay Watershed Model (U.S. EPA, 2010b and Appendix A) and the draft report *Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Watershed* (NRCS, 2010). Because EPA was still in the process of updating documentation associated with the draft TMDL during this review, we extracted and processed information (particularly the 2009 Progress Scenario) believed to be comparable with the draft TMDL and the draft USDA report.⁷ These observations are based on the available documentation.

The models developed for the draft TMDL and the USDA report were developed for different, yet not contradictory, purposes. Table 1 summarizes the model frameworks used in the EPA and USDA assessments.

The USDA model provides a representation of actual agricultural practices and conservation practices for cultivated cropland in the watershed when compared to EPA's assumptions and modeling efforts. This is based on the following observations:

- ◆ USDA used an agricultural field-scale model, which was designed to represent actual agricultural practices. EPA used Scenario Builder and the Watershed

Model, which is an application of HSPF (Hydrologic Simulation Program Fortran). Scenario Builder is not a complete agricultural model and it has significant limitations. It was not designed to be a full crop growth model; the finest scale of resolution is at the county level, each year is modeled independently, etc. HSPF does not have the capability to represent and simulate complex agricultural practices (e.g., tillage operations, double cropping, etc.). Instead, Scenario Builder is used to represent farm scale operations, but as mentioned above, it has significant limitations and has not been peer reviewed.

- ◆ USDA appears to be using more detailed data -NRI-CEAP Cropland Survey (2003-2006), NRCS field offices, USDA Farm Service Agency (FSA), and the 2003 NRI. EPA used five year Agricultural Census data, literature sources, Chesapeake Bay Program, Agricultural Nutrient and Sediment Workgroup input, etc.
- ◆ The USDA model framework seems to more accurately represent real world, Chesapeake Bay watershed agricultural operations and management practices (e.g., crop rotations, varying levels of tillage (no-till, mulch till, conventional till), actual nutrient management practices, etc.) based on the USDA and EPA documentation that is currently available.

⁷ The USDA report also is being refined. For example, the draft report does not incorporate the increase in the use of cover crops since 2006. The next iteration of the report will incorporate that information, which will likely reduce the estimates of pollutant loadings from cropland.



Perhaps the most significant difference is that the USDA model framework accounts for year-to-year variations in agricultural land practices at the field-scale. The Chesapeake Bay Program models do not appear to account for rotations in cropland and different management practices. As discussed above, it appears that the Chesapeake Bay Program has recognized that additional refinements to the EPA model framework are needed to properly represent pollutant reductions associated with various controls, for sources including agriculture, particularly at a local scale (see December 1, 2010 conference call of the Chesapeake Bay Program's Watershed Technical Workgroup).

Table 1. Model Frameworks for the Chesapeake Bay TMDL and the USDA

	EPA	USDA
Model Framework	Scenario Builder, Watershed Model (WSM) Phase 5.3 (HSPF)	APEX, HUMUS/SWAT
Model Application Objective	Quantify sediment and nutrient source loads from agriculture and other sources (e.g., urban/suburban runoff) in the Chesapeake Bay TMDL and allocate loads to attain water quality standards	Quantify the effect of commonly used conservation practices on cultivated cropland in the Chesapeake Bay Region
Model Scale/Resolution	Approximately 1,000 segments/subbasin with an average segment/subbasin size of 40,960 acres (64 square miles)	Field-scale to 8 digit hydrologic unit code (HUC) watersheds
Simulation Period	10 year simulation period, based on 1991 to 2000 climate/hydrology, and varying land practices	47 year simulation period, based on 1960-2006 climate/hydrology, and 2003-2006 land practices
Agricultural Land Practices	Agricultural land practices are represented on a county scale in the Scenario Builder tool. Agricultural land practices are independent of the previous and subsequent years. There is no capability in the model framework to account for year to year variation in agricultural practices at the field-scale	Agricultural land practices for cultivated crops are represented in detail using a field-scale model, which accounts for farming operations used to grow crops. The farming operations include planting time, tillage before and after planting, application of commercial fertilizer, application of manure, irrigation, and harvest time. The model framework is able to account for year to year variation in agricultural land practices at the field-scale, which includes crop rotations and more complex practices such as perennial hay in rotations, replanting, cover crops, etc.
AFO/CAFOs	AFO/CAFO sources are directly accounted for in the modeling	Manure from AFO/CAFOs are accounted for in cropland

References: Brosch, 2010; U.S. EPA, 2010a; U.S. EPA, 2008.

Key Concern 6**The Model Results are Substantially Different and Raise Significant Concerns That Should be Investigated and Resolved Before the TMDL is Finalized**

Because of the differences in land use and acreage, hydrology, conservation assumptions and model frameworks, there is substantial uncertainty about comparisons between EPA and USDA's estimates. There are also substantial differences in the assumptions about load reductions that can be attained. The differences are significant enough that USDA and EPA need to thoughtfully investigate and resolve the implications of these differences before the TMDL is finalized.

(a) **Differences in Assumptions Regarding Land in Agricultural Use and Pollutant Load per Acre from Agricultural Land.**

USDA's estimate of the total nitrogen load from agriculture (149.5 million pounds) is 25 percent higher than EPA's estimate (111.1 million pounds). The differences in estimates may be attributed to the differences in cropland acreage within the watershed estimated by EPA and USDA. Load per acre is the amount of load that runs off

an acre of land that is estimated to be delivered to the Bay or its tidal tributaries. Load per acre calculations for total agriculture were similar for nitrogen but significantly different for sediment (three to four times) and phosphorus (1.5 to two times). These differences are significant.

The differences in load per acre and their potential effect on total loads for the Bay are shown in Tables 2 to 4 for nitrogen, sediment, and phosphorus. Each table lists the total load and total acreage and then the calculated load per acre for the EPA and USDA estimates. Calculations are presented for cropland; hay and pasture; CAFO (EPA only); and total agriculture.

As shown in Table 2, USDA estimates that there are 12.12 million acres of agricultural land in the watershed, which is 3.12 million more acres than EPA's estimate (excluding areas associated with confined animal feeding operations, or CAFO). USDA therefore has 34 percent

Table 2. Total Nitrogen Load per Acre for EPA and USDA Estimates

Description	Cropland	Hay & Pasture	CAFO*	Total Agriculture
<i>EPA - Total Nitrogen (million pounds)</i>	<i>74.3</i>	<i>27.8</i>	<i>9.0</i>	<i>111.1</i>
EPA - Land Use (million acres)	3.33	5.67	0.02	9.02
EPA- Total Nitrogen Load per Acre (pounds per acre)	22.3	4.9	469.3	12.3
<i>USDA - Total Nitrogen (million pounds)</i>	<i>94.7</i>	<i>54.8</i>	<i>na</i>	<i>149.5</i>
USDA - Land Use (million acres)	4.38	7.74	na	12.12
USDA - Total Nitrogen per Acre (pounds per acre)	21.6	7.1	na	12.3

*EPA has a combined animal feeding operation (CAFO) load number that the USDA does not — USDA allocates this to land application or reflects the common practice of manure being transported out of the Bay watershed for land application elsewhere.

more agricultural land in its model than EPA has in its model. Based on the significant increase in agricultural land in USDA's estimate, it is not surprising that USDA's estimate of total nitrogen load from agriculture is greater than EPA's estimate. This suggests that the differences in nitrogen loads may be directly associated with assumptions in the amount of agricultural land.

Table 2 also points out some other important differences in the model estimates. For cropland, EPA estimates 0.7 more pounds of nitrogen (22.3 minus 21.6) reach the Bay on a per acre basis from cropland than does USDA— an 3 percent difference. For hay and pasture, USDA estimates 2.2 more pounds of nitrogen (7.1 minus 4.9) reach the Bay on per acre basis than does EPA— a 45 percent difference.

As shown in Tables 3 and 4, the differences in sediment and phosphorus estimates do not appear to be related to differences in assumptions about the amount of agricultural land. EPA sediment load estimates are nearly three times larger than USDA estimates. EPA phosphorus loading estimates are larger (1.3 times) than the USDA estimates. In terms of load per acre, EPA estimates are three to four times larger than USDA estimates for sediment (Table 3) and 1.5 times larger for phosphorus (Table 4).

Table 3. Sediment Load per Acre for EPA and USDA Estimates.

Description	Cropland	Hay & Pasture	CAFO	Total Agriculture
<i>EPA - Sediment (1000 tons)</i>	1,270	1,294.3	20.9	2,585.3
EPA - Land Use (million acres)	3.33	5.67	0.02	9.02
EPA- Sediment Load per Acre (pounds per acre)	761.9	456.6	2,176.3	573.1
<i>USDA - Sediment (1000 tons)</i>	522.7	407.7	na	930.4
USDA - Land Use (million acres)	4.38	7.74	na	12.12
USDA - Sediment Load per Acre (pounds per acre)	238.7	105.4	na	153.5

Table 4. Total Phosphorus Load per Acre for EPA and USDA Estimates

Description	Cropland	Hay & Pasture	CAFO*	Total Agriculture
<i>EPA - Total Phosphorus (million pounds)</i>	4.1	2.7	0.5	7.3
EPA - Land Use (million acres)	3.33	5.67	0.02	9.02
EPA- Total Phosphorus Load per Acre (pounds per acre)	1.2	0.5	24.2	0.8
<i>USDA - Total Phosphorus (million pounds)</i>	3.5	2.0	na	5.5
USDA - Land Use (million acres)	4.38	7.74	na	12.12
USDA - Total Phosphorus Load per Acre (pounds per acre)	0.8	0.3	na	0.5

(b) Differences in Assumed Baseline Loadings of Nitrogen, Phosphorus, and Sediment to the Chesapeake Bay from All Sources and From Agriculture.

Figure 2 illustrates graphically the differences in the EPA and USDA estimates of both total loads of nutrients and sediments delivered to the Bay and its tidal tributaries, and the loads attributed to agriculture. These differences are significant.

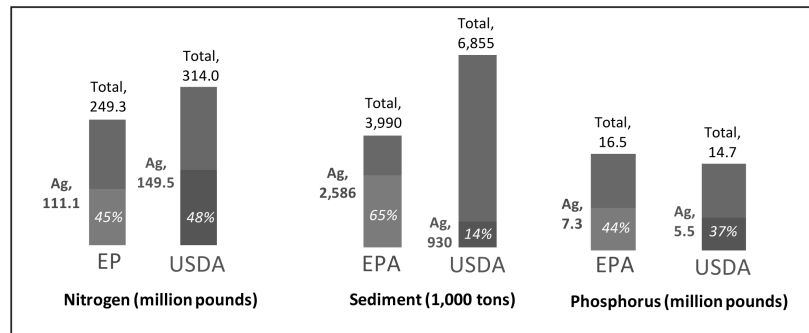


Figure 2. Differences in Estimates of Current Delivered Loads to the Chesapeake Bay, All Sources

EPA estimates that the total load of nitrogen delivered to the Bay from all sources is 249.3 million pounds. This is 64.7 million pounds (21 percent) less than the amount estimated by USDA (314.0 million pounds). EPA estimates that the total load of sediment delivered to the Bay from all sources is 3.99 million tons. This is 2.865 million tons (42 percent) less than USDA's estimate. EPA estimates that the total load of phosphorus delivered to the Bay from all sources is 16.5 million pounds. This is 1.8 million pounds (12 percent) more than USDA's estimate.

EPA's estimate of the percent of the load of nitrogen delivered to the Bay from agriculture land uses (cropland, hay/pasture, and CAFOs) is similar to USDA's estimates. EPA estimates that 45 percent of the total nitrogen load is attributable to agriculture while USDA estimates that agriculture's contribution is 48 percent, a difference of 3 percent. For phosphorus, the difference is greater. EPA estimates that 44 percent of the total load of phosphorus is attributable to agriculture while USDA estimates that agriculture's contribution is 37 percent, a difference of 7 percent. The EPA and USDA estimates are substantially different for sediment. EPA estimates that agriculture contributes 65 percent of the total load of sediment delivered to the Bay while USDA estimates that agriculture's contribution is 14 percent.

(c) Geographic Differences in Estimated Agricultural Loads.

The geographic differences in the estimated agricultural loads that are currently delivered to the Bay were evaluated. As shown in Figure 3, nitrogen loads by geographic region (defined by the USDA) compare relatively well. Differences are

substantial for the Susquehanna and Upper Chesapeake for sediment. For phosphorus, differences in the Susquehanna and Lower Chesapeake are substantial. The USDA regions cut across different states. This suggests that States may need additional time to work with EPA to resolve differences prior to making decisions about additional controls that are needed throughout the Bay (based on model estimates).

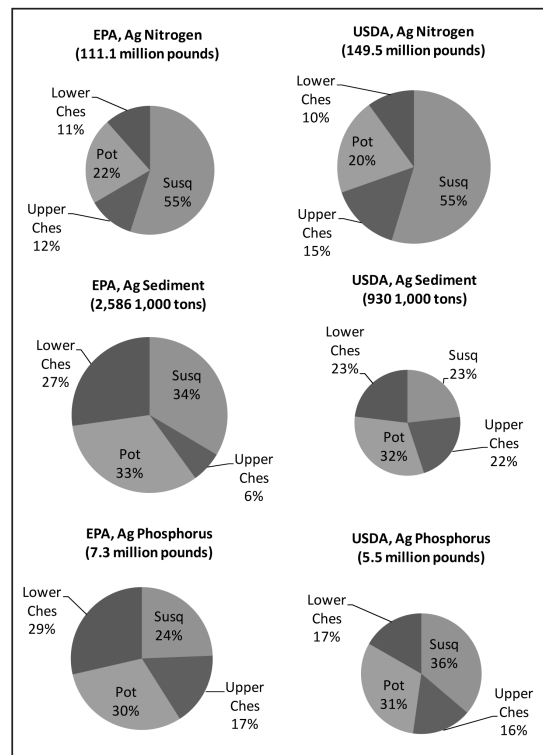


Figure 3. Regional Differences in Estimates of Current Delivered Loads to the Chesapeake Bay, Agricultural Sources

(d) Differences in Assumptions Regarding Agricultural Loadings and Feasible Reductions.

The draft TMDL compounds the problems with assumptions about current agricultural practices (discussed previously) with assumptions about what is feasible in terms of additional conservation practices. LimnoTech compared the current EPA and USDA loads with scenarios where the USDA examined reductions that could be hypothetically achieved if additional acreage were brought under conservation management. Figure 4 provides this comparison with USDA's estimates of an additional 2.5 and 3.5 million acres being brought under a highly aggressive conservation management regime, above and beyond the erosion control and nutrient management practices already in place on these acres.⁸ This additional conservation management regime is assumed adopted irrespective of the economic feasibility of the adoption of such aggressive measures on such a wide geographic scale.⁹

The USDA report indicates that relative to the EPA draft TMDL backstop allocations for phosphorous and sediment, agriculture is already well below the assigned loads. The same is not true in the case of nitrogen. The loads to the Bay depicted in the USDA scenarios (where an aggressive conservation management regime is adopted in addition to the practices already in place and irrespective of economic feasibility) indicate that it may not be feasible to reach EPA's target levels for nitrogen delivered to the Bay from croplands. This obviously has significant management implications for agriculture and other sources.

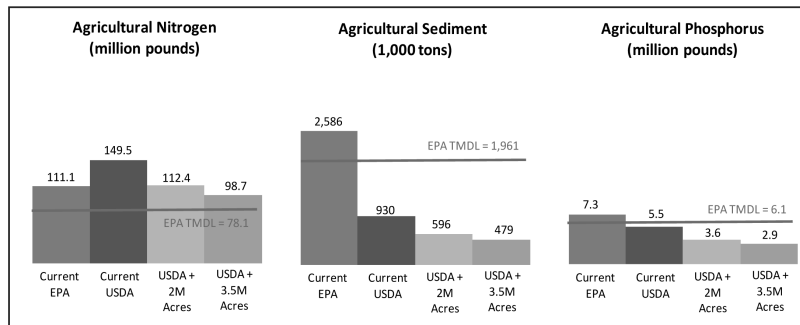


Figure 4. Comparison of USDA Estimates of Delivered Loads to the Draft TMDL

⁸ See Appendix 2 for a summary of current agricultural load estimates from EPA and USDA and assumed reductions in the draft TMDL and the USDA report.

⁹ As stated in the draft USDA report: "The level of conservation treatment is simulated to show potential environmental benefits, but is not designed to achieve specific environmental protection goals. Treatment scenarios were also not designed to represent actual program or policy options for the Chesapeake Bay region. Economic and programmatic aspects--such as producer costs, conservation program costs, and capacity to deliver the required technical assistance--were not considered in the design of the treatment scenarios." NRCS 2010, at 123.

While the USDA scenarios do not assume changes in land use patterns in the Bay, EPA's model assumes significant changes in land use under the TMDL. As shown in Table 5, EPA moved 20 percent (roughly 630,000 acres) of land out of crop production to pasture or forest to help achieve the allocations in the TMDL. It is not possible to ascertain from the available EPA documentation the reasoning or justification that EPA used to support the removal of 20 percent of cropland from crop production under the TMDL. This 20 percent reduction in crop production is assumed on top of the 28 percent decrease in cropland in EPA's baseline assumptions, discussed above. Thus, EPA's draft TMDL assumes a 48 percent reduction in cropland when compared to USDA's assumptions.

Table 5. Comparison of Land Use Assignments in the TMDL

Land Use	EPA Current (acres)	Draft TMDL (acres)	Difference (acres)
Cropland	3,333,949	2,702,791	-631,158
Pasture and Hay	5,668,918	6,017,518	348,600
AFO/CAFO	19,215	18,637	-578
Forest	28,693,725	29,017,859	324,134
Regulated Stormwater	992,607	1,857,241	864,634
Unregulated Stormwater	1,965,550	1,058,706	-906,844
Non-tidal Water Deposition*	424,199	425,348	1,149
Total	41,098,163	41,098,100	-63

*Acres of non-tidal water deposition represent the areas of the Chesapeake Bay watershed (such as ponds, streams, and non-tidal rivers) that receive a nitrogen load from atmospheric deposition.

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Appendices

Appendix A

EPA Data Sources

Results for the EPA model were extracted from summary spreadsheets posted by EPA at <ftp://ftp.chesapeakebay.net>:

- ◆ Baseline results were extracted from the columns titled "p53_2009aveCSO" in ftp://ftp.chesapeakebay.net/Modeling/phase5/Phase53_Loads-Acres-BMPs/P5.3_Loads-Acres_07302010_UpdatedVA.xls
- ◆ TMDL Q-1 results were extracted from ftp://ftp.chesapeakebay.net/Modeling/phase5/Phase53_Loads-Acres-BMPs/DraftWip_DraftTMDL_Inputs_OutPuts/EPAScenarios/P53_Loads_Acres_2010EPA19-20.xls
- ◆ EPA model results presented in this report were generally calculated by aggregating individual segment results according to different grouping criteria for hydrologic region and for land use.

Hydrologic subregions (4-digit HUCs). Many summary tables in this report present both EPA and NRCS model results broken out by the following hydrologic subregions: Susquehanna River, Upper Chesapeake, Potomac, and Lower Chesapeake. The NRCS and EPA delineations of the subregions are consistent except in the lower part of the Eastern Shore. In order to make the subregion results comparable, LimnoTech aggregated EPA model results for the following cells into the Lower Chesapeake subtotals instead of Upper Chesapeake:

Table A-1. Upper Chesapeake Segments in EPA Model Treated as Lower Chesapeake

UNIQID	CNTYNAME	FIPSCATWAT	Acres
6480	ACCOMACK	A51001ELO_6480_0000N	15851.3744887
6550	ACCOMACK	A51001ELO_6550_0000N	14833.2828470
6610	ACCOMACK	A51001ELO_6610_0000N	23906.1567190
6610	NORTHAMPTON	A51131ELO_6610_0000N	25403.6783119
6610	ACCOMACK	A51001ELO_6610_0000Y	72615.1522016
6610	NORTHAMPTON	A51131ELO_6610_0000Y	47807.8271582
6920	NORTHAMPTON	A51131ELO_6920_0000N	17026.3295733
6920	NORTHAMPTON	A51131ELO_6920_0000Y	34870.5629324
7060	NORTHAMPTON	A51131ELO_7060_0000N	11629.0376693
7060	NORTHAMPTON	A51131ELO_7060_0000Y	28009.4240242
7220	NORTHAMPTON	A51131ELO_7220_0000N	9961.82993113
7220	NORTHAMPTON	A51131ELO_7220_0000Y	85943.2787113
5973	ACCOMACK	A51001ELO_5973_0000N	8896.36340825
6191	ACCOMACK	A51001ELO_6191_0000N	10491.7002677
6190	ACCOMACK	A51001ELO_6190_0000N	49210.3012536

Land use. The tabulated NRCS results presented results for cultivated crops, hay and pasture that correspond to several different land use categories used in the EPA model. The following assignments were used to aggregate the EPA model results into similar groupings:

Table A-2. Groupings used for EPA Model Land Uses

Grouping	P533 Landuse/Source Designation	P53 Landuse/Source Name
Agriculture - CAFO	Afo	animal feeding operations
	Cafo	confined Animal feeding operations
Agriculture - Crop	hwm	high-till with manure
	nhi	high-till with manure nutrient management
	hom	high-till without manure
	nho	high-till without manure nutrient management
	lwm	low-till with manure
	nlo	low-till with manure nutrient management
	urs	nursery
Agriculture - Other	hyw	hay with nutrients
	nhy	hay with nutrients nutrient management
	alf	alfalfa
	nal	alfalfa nutrient management
	hyo	hay without nutrients
	pas	pasture
	npa	pasture nutrient management
Forest	trp	pasture corridor
	for	forest
Other	hvf	harvested forest
	wat	water
	atdep	atmospheric deposition to non-tidal water
	puh	high-intensity pervious urban
	imh	high-intensity impervious urban
	bar	bare-construction
	ext	extractive
	css	combined sewer system
	septic	septic
	pul	low-intensity pervious urban
	iml	low-intensity impervious urban
	ps	wastewater

NRCS/CEAP Data Sources

Results are taken from Tables 24, 25, 28, 29, 32, 33, 52, 53, 55, 56, 58, and 59 in the USDA October 2010 Review *Draft of Assessment of the Effects of Conservation Practices in the Chesapeake Bay Region*.

Cropland loads delivered to the Bay were calculated by multiplying “average annual instream load delivered to the Chesapeake Bay from all sources” by “percent of load attributed to cultivated cropland sources”. The ratio of cropland loads delivered to the Bay to cropland loads delivered to watershed outlets was used as the delivery ratio for cropland, hay and pasture loads.

Appendix B

Table B-1 presents a comparison of the EPA and USDA estimates of sediment (1000 tons), nitrogen (Million pounds) and phosphorus (Million pounds) for both the current conditions and assumptions about achievable reductions under the TMDL and additional conservation enhancement assessment programs (CEAPs). In the table, Q-1 represents EPA's definition of the draft TMDL; Q-2 represents EPA's full backstop TMDL; 2M represents the USDA assumption of 2 Million additional acres under conservation; and 3.5M represents the USDA assumption of 3.5 Million additional acres under conservation.

Table B-1. Comparison of Baseline Load Calculations and Reduction Estimates

Sediment (1000 tons)						
Scenario	Ag	Crop	Hay & Pasture	CAFO	Other	Total
Current EPA	2,586	1,270	1,294	21	1,405	3,990
Current USDA (CEAP)	930	523	408	na	5,925	6,855
EPA Q-1 TMDL	1,961	1,645	2,244	34	1,183	3,144
EPA Q-2 TMDL	1,961	1,643	2,244	34	1,173	3,133
Q-1 Reduction from Current EPA	24%	-30%	-73%	-64%	16%	21%
Q-2 Reduction from Current EPA	24%	-29%	-73%	-64%	17%	21%
CEAP - 2M acres add cons	596	189	408		5,925	6,521
CEAP - 3.5M acres add cons	479	72	408		5,925	6,404
CEAP 2M reduction	36%	64%				
CEAP 3.5M reduction	48%	86%				
Nitrogen (Million pounds)						
Scenario	Ag	Crop	Hay & Pasture	CAFO	Other	Total
Current EPA	111.1	74.3	27.8	9.0	138.2	249.3
Current USDA (CEAP)	149.5	94.7	54.8	na	164.6	314.0
EPA Q-1 TMDL	78.1	46.3	28.2	3.6	108.0	186.1
EPA Q-2 TMDL	91.6	49.8	38.2	3.6	95.9	187.4
Q-1 Reduction from Current EPA	30%	38%	-2%	61%	22%	25%
Q-2 Reduction from Current EPA	18%	33%	-37%	60%	31%	25%
CEAP - 2M acres add cons	112.4	57.6	54.8		164.6	277.0
CEAP - 3.5M acres add cons	98.7	43.9	54.8		164.6	263.2
CEAP 2M reduction	25%	39%				
CEAP 3.5M reduction	34%	54%				
Phosphorus (Million pounds)						
Scenario	Ag	Crop	Hay & Pasture	CAFO	Other	Total
Current EPA	7.3	4.1	2.7	0.5	9.2	16.5
Current USDA (CEAP)	5.5	3.5	2.0	na	9.3	14.7
EPA Q-1 TMDL	6.1	3.3	2.6	0.2	6.4	12.4
EPA Q-2 TMDL	7.3	3.6	3.4	0.2	5.0	12.3
Q-1 Reduction from Current EPA	16%	19%	6%	59%	31%	25%
Q-2 Reduction from Current EPA	0%	10%	-25%	58%	46%	26%
CEAP - 2M acres add cons	3.6	1.6	2.0		9.3	12.9
CEAP - 3.5M acres add cons	2.9	1.0	2.0		9.3	12.2
CEAP 2M reduction	35%	54%				
CEAP 3.5M reduction	46%	72%				

The CHAIRMAN. All right, thank you. Mr. Bauhan, welcome to the panel.

STATEMENT OF HOBEY BAUHAN, PRESIDENT, VIRGINIA POULTRY FEDERATION, HARRISONBURG, VA; ON BEHALF OF NATIONAL CHICKEN COUNCIL; NATIONAL TURKEY FEDERATION; U.S. POULTRY AND EGG ASSOCIATION

Mr. BAUHAN. Thank you. Chairman Thompson, Ranking Member Holden, and Members of the Subcommittee, thank you for inviting me to testify on the Chesapeake Bay TMDL. I am Hobey Bauhan, President of Virginia Poultry Federation which represents all sectors of the poultry industry in Virginia. I am also testifying today on behalf of the National Chicken Council, the National Turkey Federation, and the U.S. Poultry and Egg Association.

In Virginia, we are proud of the environmental progress and the innovative steps we have taken to protect water quality. For well more than a decade, poultry farmers have expanded their conservation practices to enhance water quality. The vast majority of poultry farms in Virginia use nutrient management plans, and a large majority have also constructed litter storage sheds. Litter storage sheds which are beyond—above and beyond state or Federal requirements are very effective in minimizing runoff.

We have also adopted feed management practices, a natural enzyme phytase added to poultry feed has achieved major phosphorus reductions in manure more than 25 percent on average. We have also collaborated with environmental groups, universities, and government agencies on innovative solutions for surplus animal manure. In addition, poultry processing plants in the Bay have spent millions of dollars to upgrade their wastewater treatment facilities with state of the art technology. This has reduced wastewater discharges for phosphorous and nitrogen to levels that not long ago were unheard of.

The results of these actions are reflected in EPA's own estimates that between 1985 and 2005 nutrient loads from agriculture decreased in the Chesapeake Bay while load levels from developed lands increased by 16 percent. Poultry in the Bay has been moving forward, not backwards in improving water quality.

Virginia's experience also shows the effective roles—role that states are playing in water quality regulations as opposed to the top down approach sought by EPA. My state has adopted some of the most expansive regulations in the country for poultry farms. These include new plant management plans which are required for some 80 percent of poultry growers in the state. Only the very smallest growers are not under this framework and we also have state requirements for all transporters and end-users of poultry litter.

Yet, despite the steps that we have taken to minimize or eliminate water quality impacts the Bay TMDL sets unprecedented Federal nutrient reduction targets that could adversely impact agriculture. EPA has made it clear that it will tie its strict nutrient diet to an aggressive framework of Federal permitting and paperwork requirements that expand the Federal CAFO universe. The agency supports highly restrictive nutrient management standards and seeks costly controls and additional enforcement. These addi-

tional burdens and bureaucracy are counterproductive to environmental progress.

We are also concerned about the flaws in the data used to justify these new Federal mandates, particularly the data used in EPA's modeling for Bay. For poultry, EPA's TMDL nutrient targets are based on flawed modeling assumptions about manure management practices. For example, the agency estimates that 15 percent of all manure from poultry farms is lost during storage and runs off in into the waterways of the Chesapeake. Fifteen percent—that is an absurdly large number. We informed EPA over a year ago that the number has no basis in actual practice and grossly exaggerates EPA's estimated loadings of nutrient runoff from poultry farms. EPA has acknowledged this may be an issue but has—the agency has never addressed it satisfactorily.

We have outlined other concerns in 2 years of comments to EPA. These includes EPA's methods to justify its nutrient reduction mandates, the threat of Federal backstop requirements and sanctions against states that don't meet TMDL milestones, and EPA's questionable legal authority to promulgate the Bay TMDL in the first place.

To conclude, EPA should recognize the tools and programs that are working in Virginia and across the watershed. Imposing heavy-handed mandates based on questionable data and modeling assumptions burdens family farms with few real benefits for water quality. Future progress is best achieved through consistent and reliable cost-share funding, more collaboration, and strong technical assistance through local conservation agencies. We are ready to do more, but we must focus on what actually works and what is economically feasible. Thank you and I would be pleased to answer any questions you may have.

[The prepared statement of Mr. Bauhan follows:]

PREPARED STATEMENT OF HOBEY BAUHAN, PRESIDENT, VIRGINIA POULTRY FEDERATION, HARRISONBURG, VA; ON BEHALF OF NATIONAL CHICKEN COUNCIL; NATIONAL TURKEY FEDERATION; U.S. POULTRY AND EGG ASSOCIATION

Chairman Thompson, Ranking Member Holden, and Members of the Subcommittee, thank you for inviting me to testify on the Chesapeake Bay Total Maximum Daily Load (TMDL). I am Hobe Bauhan, President of Virginia Poultry Federation (VPF), a nonprofit, statewide trade association representing all sectors of the poultry industry since 1925. VPF's members include poultry processors, poultry farmers and allied companies that provide goods and services to the poultry industry. I am also testifying today on behalf of the National Chicken Council, the National Turkey Federation and the U.S. Poultry and Egg Association, the leading poultry trade associations in the United States.

The National Chicken Council (NCC) represents the vertically integrated companies that produce, process and market more than 95 percent of the young meat chickens (broilers) in the United States. NCC serves as the industry's voice in Washington in the development of national legislative and regulatory policy.

The National Turkey Federation (NTF) represents nearly 100 percent of the turkeys produced in the United States, including all segments of the turkey industry from breeders and hatcheries to growers and processors. Like the other poultry organizations, NTF has strong membership support from companies allied to the poultry business.

The U.S. Poultry and Egg Association is the world's largest poultry organization, whose membership includes producers of broilers, turkeys, ducks, eggs and breeding stock, as well as allied companies. The association focuses on research, education and technical services, as well as communications to keep members of the poultry industry current on important issues.

Poultry contributes more than \$1.5 billion annually to the Virginia economy, supports the livelihood of some 1,100 family farms and employs more than 10,000 people. The poultry industry, which has an overall economic impact in Virginia in excess of \$1.5 billion, generates significant farm income that helps keep farmland in production and slow conversion of farmland for other less environmentally friendly uses, a benefit acknowledged by many, including the EPA Administrator.

Poultry Industry Environmental Stewardship

The Chesapeake Bay is an iconic water body with a rich history. In a May 2009 Executive Order, President Obama stated, “The Chesapeake Bay is a national treasure constituting the largest estuary in the United States and one of the largest and most biologically productive estuaries in the world.” The Bay is indeed a tremendous natural resource. It deserves our active stewardship. However, we believe EPA’s approach in the Chesapeake Bay TMDL raises significant technical, policy and legal questions, and imposes unnecessary costs and burdens on agriculture, without generating meaningful results for the environment.

States and the District of Columbia that are part of the Chesapeake Bay watershed have worked cooperatively on strategies to improve the Bay since the 1980s. Much progress has been made to reduce nitrogen and phosphorus discharges from wastewater treatment plants, and in implementing agricultural and urban best management practices through voluntary and regulatory programs. However, litigation over failure to reach certain water quality goals has led EPA to develop a Chesapeake Bay TMDL. This strict “pollution diet” sets new limits on nutrient (nitrogen and phosphorus) and sediment “loadings” into rivers and streams throughout the 64,000 square mile Bay watershed.

Through compliance with existing government regulations and the implementation of voluntary practices, the poultry industry in Virginia, along with other states in the watershed and across the country, has been a responsible and proactive environmental steward. The industry has long been part of the solution to a cleaner Bay and local waterways. It is our hope that the industry continues to be able to provide the rural jobs and economic base for years to come. Please consider the following:

- In 1995, Virginia’s poultry industry received a “Friend of the Bay” award from the Commonwealth of Virginia for its voluntary initiative to implement Nutrient Management Plans (NMPs) on all Shenandoah Valley poultry farms by the year 2000, a goal largely achieved.
- VPF estimates at least 80 percent of poultry producers in the Shenandoah Valley have constructed sheds for storing poultry litter before it is utilized. (Those with or without sheds must store litter according to state regulatory criteria.)
- For feed management, the poultry industry has adopted new feed management practices using phytase as an enzyme in poultry feed resulting in a more than 25 percent, on average, reduction in phosphorus in poultry litter.
- VPF has also reached out and collaborated with a wide range of organizations to minimize impacts on our water resources. A few examples include:
 - VPF participation in the Virginia Waste Solutions Forum, a collaboration of agriculture, environmental groups, academia, government agencies, and others that have worked since 2004 to identify economically viable solutions for surplus animal manure;
 - VPF’s founding membership of the Shenandoah Valley Pure Water Forum, another group of diverse interests working collaboratively toward improved water quality;
 - VPF participation in a coalition of agricultural and conservation groups that worked successfully together to obtain increased funding for the Virginia Agricultural Best Management Program cost-share program.

The results of these and other actions are reflected in EPA’s own estimates that between 1985–2005 nutrient loads from agriculture decreased to the Chesapeake Bay, while nutrient loadings from developed lands increased by 16 percent. The good news is that the poultry industry in the Bay watershed has been moving forward, not backward, in improving water quality.

Virginia’s experience shows the appropriate role that states are already able to play in water quality regulation and progress *versus* that of Federal EPA. In 1999, the Virginia General Assembly enacted the Poultry Waste Management Program (House Bill 1207). This law charged the State Water Control Board with developing a regulatory program requiring a general permit, incorporating a state-approved, phosphorus-based, nutrient management plan and mandating adequate waste storage for growers.

This program requires tracking and accounting of litter transferred off poultry farms. Growers with 20,000 or more broilers or laying hens, or 11,000 or more turkeys, are required to obtain a state-approved nutrient management plan and file for the general permit. This requirement is at nutrient levels far below the threshold at which Federal regulations define a Concentrated Animal Feeding Operation or CAFO. These nutrient management plans and nutrient controls are in place at more than 80 percent of all family farms in the state. Only the very smallest growers are not under this framework.

Furthermore, the State Water Control Board recently adopted amendments to the Virginia Poultry Waste Management Program to impose additional regulatory requirements upon litter transporters and non-poultry farmers that receive poultry litter for use on their farm. The regulation now imposes enforceable requirements governing “end-users” land-application and storage of poultry litter.

In addition, poultry processors are being required, with no cost-share funding, to spend millions of dollars on wastewater treatment plant and stormwater upgrades. New permits must meet close to “limits of technology” reductions for total nitrogen, in some cases reducing nitrogen by 95 percent—99 percent at a cost of up to \$3 million per plant. This is on top of previous reductions in phosphorus to limits as low as 0.1 mg/liter that cost upwards of \$2 million for some plants.

In light of these and other efforts highlighted above, Virginia’s poultry industry continues to be a responsible and proactive environmental steward on a voluntary basis and through compliance with government regulations.

Selected Industry Concerns

Yet, despite the steps the industry has taken to minimize or eliminate water quality impacts, the Bay TMDL sets unprecedented Federal nutrient-reduction targets for states like Virginia that could adversely impact agriculture. EPA has made it clear that it will:

- tie its strict nutrient “diet” to an extremely ambitious framework of Federal permitting and paperwork requirements that expand the Federal CAFO universe;
- make questionable changes to nutrient management plans;
- impose more costly controls and additional enforcement.

This will not necessarily achieve meaningful environmental progress in the future.

We also believe that EPA’s approach to the Bay TMDL may exceed the authority granted to the agency by Congress. The Clean Water Act prescribes specific requirements and procedures for EPA and states to develop TMDLs for impaired waters, yet it appears that the agency may not have followed them. We will continue to monitor EPA’s legal authority on this issue.

With respect to the development of the TMDL, while the poultry industry has expressed several of its concerns to the agency in the past year, EPA provided very little time to study and provide input on the Bay TMDL. A mere 45 days of public notice and comment is inadequate and inappropriately brief to receive the critically important input on the massive, complex materials with notice posted by EPA in the *Federal Register* on September 22. The draft TMDL document itself was 370 pages, with 22 appendices, consisting of 1,672 pages. It contains highly technical information that made it impossible for citizens to analyze this volume of material and correctly assess its impact within 45 days. Even with the short comment period, EPA received more than 1,120 comments.

Moreover, the poultry industry believes that the agency’s policy of threatening TMDL “backstops” is counterproductive. The term “backstops” refers to the tightest possible limits on point source permits. The agency’s proposed backstops called for greater nutrient reductions at municipal wastewater treatment facilities and greater regulation of Animal Feeding Operations (AFO’s), while both wastewater plants and poultry AFO’s in Virginia have already complied with stringent regulatory requirements at considerable expense. There are legitimate questions of the authority of EPA to require Clean Water Act permits for AFOs.

The poultry industry is also concerned about the accuracy of EPA’s “Scenario Builder” data input tool used to inform the Chesapeake Bay Model and the TMDL’s targeted nutrient reductions. It is essential that the assumptions in these tools are correct so that solutions can be tailored to actual problems. Yet EPA’s required nutrient reductions throughout the watershed are based on flawed assumptions in the agency’s model regarding manure management practices in the poultry industry. In one instance, the agency estimated that 15 percent of all manure from poultry farms is lost and runs off into waterways in the Chesapeake Bay. This is an absurdly large number and not based on actual data. The poultry industry informed EPA that not

only did the number have no basis in actual practice, but it grossly exaggerates EPA's estimated loadings of litter run-off from poultry farms. While EPA has recognized its estimate was potentially exaggerated, an entire year has elapsed and the agency has failed to address the flawed data. Voluntary conservation and nutrient management practices must also be accounted for in the Chesapeake Bay Model, and the model must utilize up-to-date animal production data. At this point, EPA does not use such data.

Finally, it is important for EPA to obtain all applicable data on poultry litter transport and appropriately factor it into the agency's modeling efforts and loadings estimates. Now that Virginia has adopted its new "end-user" regulations, all litter applied on farmland anywhere in Virginia must follow management practices that limit phosphorus buildup in soils and address other environmental risk factors. It is essential that EPA provides industry with proper credit in the model for implementing these best management practices.

Cost, Economic and Social Impacts

Tens of billions of dollars have already been spent on efforts to improve the Chesapeake Bay. The poultry industry has been a willing and proactive steward of the environment, and allocated millions of dollars toward this objective, many directly related to restoration efforts for the Bay. The industry will continue to play an active role, guided by scientific research, technological advancements and cost-feasibility considerations.

The Chesapeake Bay watershed TMDL and associated mandates will require a commitment of tremendous resources at a time when our economy is already struggling. Poultry processors and farmers operate on thin margins, and cannot bear the burden of substantial new regulatory costs, especially if they cannot be scientifically justified. Such costs will make the Bay region struggle to be competitive against other poultry production regions.

Causing the poultry industry to shift production to other areas of the nation or overseas would be damaging for the Bay area economy. The industry currently provides substantial farm income that helps maintain well-managed farmland, which is widely recognized as a one of the best land-uses for maintaining water quality. Jeopardizing the economic viability of the poultry industry will only lead to more farm land being converted into municipal development, such as residential neighborhoods and shopping malls.

Recognizing Successful State Programs

Rather than exceed the limits of its regulatory authority, EPA should recognize and reward the efficiency and effectiveness of state programs. For example, the Virginia Poultry Waste Management Act and regulations can in some cases be more effective for water quality protection than Federal CAFO permits. Ultimately requiring more farmers to be covered under Federal CAFO permits, which are not based on sound science, only burdens them with more paperwork and does nothing for water quality.

Conclusion

EPA should do more to recognize the tools and programs that are working in Virginia, in other states in the Chesapeake Bay watershed, and across the nation. Overrunning states with a heavy handed Federal permitting and penalty scheme—using the Federal TMDL's questionable data and modeling assumptions—only imposes more costs and paperwork for family farms, and achieves marginal benefits at best to water quality.

Future progress is best achieved through consistent and reliable cost-share funding, more collaboration and strong technical assistance through local conservation agencies. We're ready to do more, but we must focus on what actually works and what is economically feasible.

I'd be pleased to answer any questions. Thank you again for the opportunity to share our views.

The CHAIRMAN. Thank you, sir. And now with the consent of the Ranking Member we are going to recognize Mr. Goodlatte for 5 minutes.

Mr. GOODLATTE. Well, thank you for your forbearance, Mr. Chairman. I do have to get to something else and I wanted to have an opportunity to ask a couple of questions. Mr. Hebert, I really appreciate your work on this—the statistical information that you have provided is pretty compelling. And since you work with many

groups that are not solely in the Chesapeake Bay watershed I would like to direct this question to you.

The EPA has stated in the documents called, *Coming Together for Clean Water*, *EPA's Strategy to Protect America's Waters*, that "The Chesapeake Bay watershed will be a model for watershed protection in other parts of the country." Does this statement concern you and do you think that farmers and ranchers in other parts of the country would want to abide by the Draconian requirements that the Chesapeake Bay producers will have to meet under this TMDL?

Mr. HEBERT. Yes, it is—that is a very fair statement and the answer is yes. Agriculture as a whole knows what happens in the Chesapeake Bay could be facing them throughout the rest of the country and very much want to make sure this is done right.

Mr. GOODLATTE. It is really a model in that the EPA has said as much. Mr. Bauhan, welcome. It is always good to see you and I am glad to have one of my constituents here today. In its final implementation plan, Virginia included a new commitment to pursue state legislation that would mandate enforcement controls on agriculture if an agricultural load target for a particular milestone period is not met, provided that sufficient funding is provided. The first milestone is in 2013, just 2 years from now. Do you have concerns about this commitment by the state, and do you think Virginia can achieve their load requirement to prevent this new legislation?

Mr. BAUHAN. I think as we heard from the Secretary that Virginia worked under extremely difficult circumstances to deal with the cards they were dealt with them, yes, I do have significant concerns.

Mr. GOODLATTE. And do you think it is likely that Virginia farmers can meet the commitments in that short period of time?

Mr. BAUHAN. Well, I—Virginia farmers are committed to conservation and in playing their appropriate role, but we have to recognize that farmers are operating on very thin margins to help feed this country and the world. And that it will impose very much difficulty upon them if it comes down to a mandate.

Mr. GOODLATTE. And then I will just go down the row there starting with you, Hobey, and following up on that. The EPA has stated that the Phase II Watershed Implementation Plans be developed by the end of this year. What exactly does that mean for you?

Mr. BAUHAN. Well, I am not sure exactly what it means. There really hasn't been a whole lot done on that so far as we come to the conclusion of the first quarter of the year. I am certainly waiting for more information as to the detail of what exactly that does mean, but I am concerned that it will mean a rationing down of mandates and expectations, and potential consequences of—

Mr. GOODLATTE. The rationing up?

Mr. BAUHAN.—mandates. I think that is what I meant to say. Rationing up.

Mr. GOODLATTE. Thank you—those regulations tightening closer around you and the farmers that your industry relies upon.

Mr. BAUHAN. Yes.

Mr. GOODLATTE. Mr. Hebert?

Mr. HEBERT. I think it means that there—that the implementation of the numbers in the TMDL, as it is currently constituted, which is not just the single number for nonpoint sources and point sources at the state level but the TMDL allocates them all the way down to the individual farmer level, individual community level, and those numbers are going to start to be made real right now. And it is a concern.

Mr. GOODLATTE. And the concern that you expressed earlier that the costs are going to start hitting now——

Mr. HEBERT. Right now. Right now.

Mr. GOODLATTE. The benefits we are not going to know for years.

Mr. HEBERT. Any farmer, any sewage treatment plant that is serious about meeting these commitments has to begin planning of for the investments to meet them now.

Mr. GOODLATTE. Ms. Hoot?

Ms. HOOT. I think it is a tremendous task and we really don't know what that task is, and we won't know what the final figures are until after July. Certainly from an agricultural standpoint there are 58 TMDLs to be produced in Maryland, and we don't have the staffing level within the soil and conservation districts who have the expertise to work with the agricultural community. So, what is going to end up happening, we either meet the deadline with a rushed product that maybe doesn't do as good a job, or we could spend a little bit of time and do something that is more accurate and more likely to succeed.

Mr. GOODLATTE. Mr. Shaffer?

Mr. SHAFFER. I am not sure we can deal with Phase I. So Phase II is way beyond even our comprehension. I would say what is happening is when we look at the conservation districts now they are spending so much of their time trying to educate farmers as far as what the regulations are coming down rather than actually doing their prime objective which is to help the farmer to become a better environmental steward of the land. I think we have proven beyond any doubt that we want to clean up the waters of the United States. Just if nothing else for the fact the amount of Best Management Practices like cover cropping which we aren't mandated to do we do it voluntarily. We do it because we care about the environment and we want to do a better job in cleaning it up. I think that we have already proven that our heart is in the right place on this issue.

Mr. GOODLATTE. Good point. Every farmer has an incentive to conserve the use of fertilizer, to preserve their land from eroding, from washing away, and we certainly want to support that, give good information, and help in any way we can. But the mandates have untold consequences. Mr. Chairman and Ranking Member, thank you. This has been an excellent hearing and I appreciate your allowing me to jump ahead here.

The CHAIRMAN. Thank you, sir. Now I recognize the Ranking Member for 5 minutes.

Mr. HOLDEN. Thank you, Mr. Chairman. Mr. Shaffer, good to see you again. Mr. Shaffer, Mr. Perciasepe told the gentleman from Indiana that during development of the state plans there was consultation with the agricultural community. And in your oral remarks you said there really wasn't a dialogue. It was just basically

my way or the highway. Can you elaborate? Did the Pennsylvania Farm Bureau or the Pennsylvania producers try to reach out to DEP and EPA to say give us some guidance and you were told to submit a plan in its entirety and we will either approve it or disapprove it? Is that what you said?

Mr. SHAFFER. That is exactly what happened because there—it was such a daunting task to come up with this WIP plan to begin with. The State DEP's opinion that we ought to ask about certain aspects of it so we don't have to repeat ourselves and we can do it right. But whenever we would reach out and ask about certain aspects of the plan EPA said submit the plan in its entirety and we will tell you whether it is acceptable. But we found out very quick it wasn't acceptable.

Mr. HOLDEN. No guidance, no consultation, just my way, or the highway?

Mr. SHAFFER. Correct.

Mr. HOLDEN. I believe Mr. Perciasepe also said that there was consultation with the universities. I know you are close to Penn State. Do you have any idea if Penn State had any input at all or any discussions with the plan?

Mr. SHAFFER. It is—the only role that I know right now that Penn State is playing is trying to do, through extension service, trying to help conservation districts also educate farmers as far as what the regulations are that are coming down. Penn State has done a lot of research and has proven over a 20 year period how you can clean up a small watershed or large watershed with nothing but Best Management Practices. They have proven that and they have that documented. It is a matter that we have to decide what course we are going to take when we do this.

Mr. HOLDEN. So, but when the state was developing the plan you don't think that wealth of knowledge at Penn State was used?

Mr. SHAFFER. I don't believe that was used at all because the model is so flawed. You know, the only thing I can look at is the way this is done, and the only thing I can analyze this as—compare it to if I would take a gun and hold it to somebody's head and tell them to go rob a convenience store. Would that person be thought of as the person responsible for voluntarily robbing the convenience store? I don't think so and I think that is the way the states are being treated. There is a gun being held to their head until they come up with a plan that EPA feels is desirable.

Mr. HOLDEN. And finally, Mr. Shaffer, you worked very closely with Mr. Goodlatte and I in the 2008 Farm Bill that we put together the Chesapeake Bay Watershed Initiative. How has that been working in Pennsylvania? I know Chief White elaborated on watershed—why, how successful it has been. How have Pennsylvania producers taken advantage of this program?

Mr. SHAFFER. That has been very valuable. I commend the whole Committee for the work they did in providing the funds in the farm bill because we know how important it is. You can go through there. That money through EQIP and things like that has put an—manure storage on a lot of farms so that they don't have to spread on frozen ground in the winter. They are able to hold that liquid manure until spring or fall and apply it on the—we need to do it

at a pace and in a way that we are going to be able to stay on the farms economically. If we can't it really doesn't matter.

Mr. HOLDEN. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. I recognize the gentleman from Indiana for 5 minutes.

Mr. STUTZMAN. Thank you, Mr. Chairman, and thank you panel for being here. I enjoyed your testimony today and I think it is very practical and sometimes when you get outside the Beltway you hear more commonsense, and I think that is what we need. I am glad you are here today.

Not every Member on this Subcommittee or even the Agriculture Committee represents a district in the Chesapeake Bay watershed and someone asked why a Member like myself in Indiana would really care about this situation. And I guess I would ask, why should I care? And I will just go down the line and any one of you can answer that starting with Mr. Shaffer.

Mr. SHAFFER. I think if you look right in where this started with the Executive Order, if you read the Executive Order it states right in there this could be a model to be used across the United States. Whatever is happening to the six states in this watershed we have already seen it. The Executive Order has now been decreed for the Gulf of Mexico watershed. There are 30+ states and yours is one of them that would be rolling into that. So as I shared with my colleagues of other states a year ago, I said if you snooze on this issue you are going to wake up next year and it is going to be the Gulf of Mexico watershed. And sure enough that is just what exactly has happened.

Mr. STUTZMAN. Thank you.

Ms. HOOT. I would like to agree with that comment that you are definitely going to be following in our footsteps not that I would like for us to be the guinea pigs, but I do think that we are learning ways to do this better. Our showcase watersheds, we are learning how to work with every farmer and do everything. There are a lot of farmers to work with, and I think we will come up with some good models to help you as long as you give us the resources so we can learn how to do it right.

Mr. STUTZMAN. Yes.

Mr. HEBERT. To put a little more fine point on what Mr. Shaffer said, it is the dissolved oxygen standards in the deep waters of the Chesapeake Bay that are driving EPA to push the states to get farmers to do things all the way up in New York and throughout Pennsylvania, and beyond the Shenandoahs in West Virginia in portions far away from the Bay. It will be the same dissolved oxygen concerns in the northern Gulf of Mexico that will drive this right up past the Wabash. And I imagine right into your farmer's districts and their discharges, whether or not the waters that they are actually farming around are impaired or not.

Mr. STUTZMAN. Yes.

Mr. HEBERT. And it is a model that EPA is trying to use and aggressively pursue and it can be done right. We can make this work we believe, or it can be done wrong, and we are worried about how it is being done in the Bay.

Mr. BAUHAN. Yes, I would like to think there are a lot of ancillary issues that go along with this that have national impacts. I am

well acquainted with my counterpart in Indiana in the poultry industry and I understand you have a significant poultry industry there. But some of the things that we are concerned about are plans for EPA to expand their universe of farms that would be covered under CAFOs.

Now, certainly there was a lawsuit announced yesterday that will impact that. Also there are discussions and EPA has advocated a very, very stringent level of—for a phosphorous standard that could severely restrict the ability of farmers to apply manure on farmland. And those efforts, while I think they are being driven by the Chesapeake Bay TMDL will have national implications.

Mr. STUTZMAN. I agree and just kind of a follow-up question, as you know the EPA backstopped West Virginia's plan to require that 75 percent of West Virginia's small animal feeding operations should be treated in the TMDL as if they were regulated CAFOs. Do you all have the same concerns EPA would take similar back-stop actions in your respective states?

Mr. BAUHAN. Well, as I have mentioned in my testimony, Virginia already has a permitting program for animal feeding operations. It goes down to a very small level of—in terms of size. And it has all the BMP's in it that would be in the Federal CAFO permit. So really from a water quality protection standpoint the CAFO program does not add anything that we don't already have in Virginia. It just adds a lot of bureaucracy and costly red tape and more severe penalties that could have an adverse impact on our producers.

Mr. HEBERT. Yes. EPA has made it very clear that they want to amend the CAFO rule so that it is easier nationwide to designate smaller AFOs, medium-sized AFOs as CAFOs and subject them to the permit requirements, so yes, very much so.

Mr. STUTZMAN. And that is my fear is that you know I come from the state legislature in Indiana and you—we have varying operations across the state. And you know there is—counties have different challenges from top to bottom and we are just trying to put everybody in the same box that is going to continue to squeeze agriculture more and more. So thank you, Mr. Chairman. I yield back.

The CHAIRMAN. I thank the gentleman. My Congressional district, it speaks to the question of why should somebody else outside of the Chesapeake Bay be concerned. And I put it in the context of my farmers, the agricultural community. Because my district in Pennsylvania I have the Chesapeake Bay watershed. I have the Gulf of Mexico watershed. I have the Great Lakes watershed. And I don't care where my farmers are, they are aware of what is going—you know the ones that are not currently impacted by what is going on in the Chesapeake Bay they clearly, those other farmers, all the farmers understand and they are very concerned. They see these mandates and they are all concerned about the environment as well.

I consider farmers the original environmentalists. They live on the land; they love the land. Mr. Shaffer, you talked about the dichotomy between the conditions of the Susquehanna River when you were growing up *versus* the state of water quality today. Other than your anecdotal evidence are you aware of any hard data sug-

gesting that the Susquehanna's water quality is actually improving?

Mr. SHAFFER. Yes, sir. The Susquehanna River Basin Commission has—I believe it has since in the mid 1980's they have had six monitoring stations on the Susquehanna River Basin. And what they have shown in their data that all six of those stations have shown a very sizable reduction in nitrogen. All six of them have shown a very sizable reduction in sediment, and four out of the six have shown sizable reductions in phosphorus, and the other two have shown no increase. They have held their own in those two monitoring stations. So that shows me what the progress has been. Also, I can just look at—this is where I get confused. I read an article just last year in the *Baltimore Sun* that said it is about the Chesapeake Bay: it has been the best fishing and crabbing and oyster season in 30 years. And that is what we seem to keep focusing on or is to get the fishing and the oysters back. Well, if it has been the best in 30 years it tells me something is being done right. Maybe that is just too simplistic, but it is just things like that that I look at makes me feel that we are on the right track.

The CHAIRMAN. The NRCS draft report found that sediment contributions from the—actually I think I am taking this from your written testimony, Mr. Shaffer, cultivated cropland from the bays, rivers, and streams were reduced by 64 percent nitrogen—nitrogen by 36 percent and phosphorus by 43 percent and this is for all the members of the panel. Are you—you know I—last week when Ms. Jackson was here I really tried to push her for data that showed longitudinal studies and analysis that showed—you know we know where the Bay was. It was unfortunate. It is tragic, but we know for 30 years we have invested literally hundreds of billions of dollars. And the EPA is involved, the USDA has been key with their work, the Army Corps of Engineers and I just had one of the Colonel's in from the Baltimore regional office. They have Chesapeake Bay initiatives that they have been investing tremendous amounts of money, monies that have been flowing. There are municipalities used; they are investing and a lot of money coming from all over the place. So and I haven't gotten good data from the EPA. I want to know are there—what other statistics are you aware of showing quantifiable progress in both the Susquehanna River and the Bay?

Ms. HOOT. I certainly, to Mr. Shaffer's point, we have seen an increase in oysters and recovery, some in crabs and rock fish has been very successful. So we definitely have seen some quantifiable areas there and we just know that by the Best Management Practices that we are putting on when you plant 400,000 acres of cover crop, you know there is going to be reduction of nutrients getting into the Chesapeake. So we are very comfortable that there is progress being made and the water quality is improving.

But one of the things I would like to point out is if you—the Corsica River watershed is a pretty small watershed over on the Eastern Shore and if you look at the work they have done in that watershed it shows that even in that small watershed work that takes place on the land of some areas of that small watershed today it is going to be 20 years before that impacts the water quality in the Chesapeake Bay. I think a lot of what we have done has not

showed up in the watershed yet. So, I think there is a lot about to happen and if we continue our good work it will continue.

The CHAIRMAN. Allowing time to see some of those quantifiable outcomes to occur. I would agree. Mr. Hebert?

Mr. HEBERT. Mr. Chairman, I would just add I am not an expert in the data about the Chesapeake Bay. It is clear to me though that it is one of the things that we are not lacking which is data. And the Chesapeake Bay program will have a lot of information about how the quality of the Bay has progressed. What we haven't had is a good tool to be able to link up in any kind of comprehensive sense what farmers are doing and how that is affecting the Bay. And that is why we are very excited about this CEAP analysis because now we can say exactly what our farmers are doing in a statistically valid way, and link that up to reductions and loads leaving their farms and reaching the Bay and use the models to predict what that means for water quality and ultimately observe it in the way that Mr. Shaffer and Ms. Hoot are talking about. And so we are excited about the capability that has been developed. But to your basic question I believe that with some work we could get you some good numbers about how the Bay has progressed over time and it has certainly gotten better in many, many ways.

The CHAIRMAN. Very good. Mr. Bauhan, any thoughts?

Mr. BAUHAN. I don't really have anything to add on that question. Thank you.

The CHAIRMAN. Okay. Very good. Well, I just want to wrap up with one question. Mr. Shaffer and bringing back to my home state—no actually let me throw this out because we have a number of states represented here: Pennsylvania, Maryland, Virginia, with your nutrient policy work impacting all the—what in your view would be the cumulative result on agriculture in your respective states should the TMDL go into effect as it is proposed? Start with Pennsylvania and we will work our way across.

Mr. SHAFFER. Are you asking what I feel the—

The CHAIRMAN. Yes.

Mr. SHAFFER.—consequence is with?

The CHAIRMAN. Of the TMDL if it goes unchecked and is on agriculture.

Mr. SHAFFER. I feel the consequence is it is going to drive a lot of the farmers in Pennsylvania just plain out of business especially—we have a lot of Plain Sect farmers also in Pennsylvania who are very, very concerned because they don't know if they are able to cope with what is going on. Understand one thing and I don't know if this is their ultimate goal. It seems in my opinion it is. They would like to require every farmer to get an NPDES permit, a National Pollutant Discharge Elimination System. That is a very expensive permit to get. It is very expensive to maintain. The paperwork that goes with that is tremendous and it really opens you up of a citizen suit. So, the bottom line of how it is going to help the Bay it is a paper fix in my opinion. I don't think it has anything to do with improving the Bay. But what it will do it will put some farmers out of business. I am pretty sure about that and if that wasn't the case, the members of Pennsylvania Farm Bureau wouldn't be nearly as concerned as they are today.

The CHAIRMAN. Very good. Ms. Hoot?

Mr. HOOT. I think there is a tremendous amount of concern amongst the agricultural community about what it may mean. As we look at the Phase I WIP in Maryland, the milestones that are there for the next 2 years are doable, but it is only if the resources are there for technical assistance and financial assistance. I think our biggest concern is because it is more cost effective to do Best Management Practices on agriculture than stormwater, sediment, and all these other urban practices. But what happens when they don't do their part? And we have a major concern because they certainly haven't done it yet. Those areas have gone backwards. I think our biggest concern is what happens down the road when the Bay is still not clean because agriculture is doing its part but everybody else probably isn't. So that is a concern we have.

The CHAIRMAN. All right, thank you. Mr. Hebert?

Mr. HEBERT. I think four things will happen. Farmers are going to adopt a lot of practices. We know that and they will continue to do that. They will reduce loads. Because the TMDL very well might be wrong in terms of the way it has characterized agriculture's contribution to the Bay, they still might not be able to say using the TMDL and the Bay models that agriculture is meeting—helping to meet the water quality standards in the Bay. And if that happens under the WIPs the states are told, have agreed to, seek, explore seeking mandatory controls on farmers under state law to control those discharges, all of which may prove to be unnecessary because the Bay model as it is applied in this case to agriculture is wrong. And we will all be back in this room 2 or 3 years from now having to talk about it all again.

Mr. BAUHAN. Someone earlier indicated that farmer's biggest fear is not taxes or other issues, but government regulation and I think we are in a situation where some farmers are ready to hang it up as it is. The talk in the farm community back in the Shenandoah Valley, where I come from, is the fact that EPA has flown airplanes over the valley, doing surveillance of farms and then coming through with inspections of agricultural operations. And so the biggest fear is that regulations will get ratcheted up as Mr. Goodlatte indicated and this will be a tightening noose around operations that are already under very thin margins. And you know that it will result in more farmers going out of business and conversion of farmland to other less environmentally friendly uses, which is not going to be good for the Chesapeake Bay.

The CHAIRMAN. Thank you. Well, before we adjourn I invite the Ranking Member to make any closing remarks he has. None? Well, I want to thank the panel certainly for your expertise, your commitment to agriculture, for being here on a very important issue. You know, as Mr. Shaffer well remarked, America is blessed with the highest quality and the most affordable food supply anywhere in the world, and that is something we can never take for granted and we have to watch where we create regulatory burdens that would prevent that from happening. This is—the Chesapeake Bay Initiative, the TMDL is something that—cleaning up the Bay is very important but it is an issue that needs to be done in a way that is very transparent and a way that is accountable and takes into consideration that we have to have—always have a balance between the environment and the economy. And the economics of an

affordable food supply, USDA is an important partner in that, and frankly, it is a partner that I view and I have observed to be a collaborative, progressive problem solver working with our agriculture community. On the other hand, my observations with Environmental Protection Agency, at least it is perceived by many, comes across as a punitive mandate. In this situation where the EPA has imposed and have stated with no provided cost-benefit analysis, a basic element of any time that you are looking at imposing these types of changes. So I thank the panel. Under the rules the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member. This hearing of the Subcommittee on Conservation, Energy, and Forestry is adjourned.

[Whereupon, at 12:28 p.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY KEITH CURLEY, DIRECTOR OF GOVERNMENT AFFAIRS, TROUT
UNLIMITED

March 15, 2011

Hon. GLENN THOMPSON,
Chairman,

Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.;

Hon. TIM HOLDEN,
Ranking Minority Member,

Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.

RE: Hearing to review the Chesapeake Bay TMDL, agricultural conservation practices, and their implications on national watersheds

Dear Chairman Thompson and Ranking Member Holden:

I am writing on behalf of Trout Unlimited to express our support for finalizing and implementing the Chesapeake Bay Total Maximum Daily Load (TMDL). The TMDL would require reductions in nitrogen, phosphorous and sediment pollution flowing to the Chesapeake Bay. The health of the Chesapeake Bay is dependent upon a steady source of clean, cold water from its headwater streams. The TMDL will help reduce pollution throughout the Chesapeake Bay watershed, including headwater areas where water quality improvements will benefit native brook trout and other wild trout.

Trout Unlimited's mission is to conserve, protect and restore North America's trout and salmon fisheries and their watersheds. Trout Unlimited has more than 10,000 members living in the Chesapeake Bay watershed and a long history of grassroots habitat restoration work in the Bay's headwater streams. On average, each Trout Unlimited chapter contributes more than 1,000 volunteer hours working with government agencies, private landowners, local schools, and others in their communities to improve rivers and streams through clean-up days, tree plantings and other activities.

Throughout the 64,000 square mile Chesapeake Bay watershed, hundreds of mountain streams and valley spring creeks provide habitat for native brook trout and contribute clean, cold water to the Chesapeake Bay. However, the same pollutants that plague the Chesapeake Bay impair trout habitat in the headwaters. Nutrient pollution fuels algal blooms, which deprives the water of dissolved oxygen. Reductions in dissolved oxygen negatively affects trout, a species that requires relatively high amounts of dissolved oxygen to survive.

Sedimentation also has serious impacts on trout habitat. Brook trout are highly reliant on clean substrate for spawning and rearing, and a great deal of their decline is due to increased sedimentation and water temperatures.¹ Increased sediment loads can cause fish mortality by "clogging gills and opercular cavities" and also create distributional changes such as "avoidance behavior, reduced feeding and growth, respiratory impairment, and general physiological stress that can lead to a reduced tolerance to diseases and toxicants."² The negative effects of increased sedimentation on brook trout populations in particular are well documented in the scientific literature.³ Controlling sediment is critical to maintaining habitat for brook trout and other coldwater species.

Trout Unlimited is working extensively throughout the Bay watershed to restore trout habitat and reduce pollution. In addition to numerous grassroots-level projects, TU currently operates three watershed-scale conservation efforts in the Chesapeake

¹Eastern Brook Trout Joint Venture, Status and Threats. Available at <http://www.easternbrooktrout.org/docs/brookiereportfinal.pdf>.

²Jeffrey W. Lilly, *Regulatory Violations in the Mining Industry: Mountaintop Removal Mine Valley Fills Violate the Federal Clean Water Act*. 100 W. VA. L. REV. 691, 728-29. (1998) (summarizing a telephone interview with Dan Ramsey, Environmental Contaminants Specialist, U.S. Fish and Wildlife Service).

³See, e.g., S.M. Reid, S. Stoklosar, S. Metikosh, & J. Evans, *Effectiveness of isolated pipeline crossing techniques to mitigate sediment impacts on brook trout streams*, WATER QUALITY RESEARCH JOURNAL OF CANADA. Vol. 37, No. 2, pp. 473-88 (2002) (noting that stream populations of brook trout are sensitive to sediment-caused changes to habitat, including increased embeddedness of bed material); J.P. Hakala & K.J. Hartman, *Drought effect on stream morphology and brook trout populations in forested headwater streams*, HYDROBIOLOGIA. Vol. 515, pp. 203-13.

Bay watershed: instream and riparian habitat restoration in cooperation with agricultural landowners in the Potomac and Shenandoah River headwaters, and restoration of streams impaired by acid mine drainage in Pennsylvania's West Branch Susquehanna watershed. For example, in West Virginia's Potomac River headwaters Trout Unlimited has worked with the Fish and Wildlife Service and private landowners to install between 100,000 and 120,000 feet of livestock exclusion fencing annually over the past several years, helping to stabilize streambanks and filter pollutants.

These restoration efforts have resulted in real, on-the-ground improvements to habitat and water quality. Such restoration work is an essential component to bringing back healthy trout populations in headwater streams and to meeting pollution reduction goals under the TMDL. The TMDL will help concentrate attention and funding on successful partnerships so that Trout Unlimited and others can dramatically increase the amount of restoration work we accomplish in the coming years.

Given the scale of the challenge, however, restoration alone will not succeed. Robust restoration efforts must be accompanied by effective regulations that reduce pollution levels and prevent new sources from undermining hard-earned water quality gains. The TMDL will result in an increased level of focus and accountability that helps spur water quality and habitat improvements throughout the Bay watershed.

Trout Unlimited supports the TMDL and looks forward to working with state, Federal and private partners in the Chesapeake Bay headwater areas to achieve pollution reduction goals.

Sincerely,



KEITH CURLEY.

SUBMITTED LETTER BY JON P. DEVINE, JR., SENIOR ATTORNEY, WATER PROGRAM,
NATURAL RESOURCES DEFENSE COUNCIL

March 15, 2011

Hon. GLENN THOMPSON,
Chairman,

Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.;

Hon. TIM HOLDEN,

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Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.

RE: Hearing to review the Chesapeake Bay TMDL, agricultural conservation practices, and their implications on national watersheds

Dear Chairman Thompson and Ranking Member Holden:

On behalf of its members who reside and recreate in the Chesapeake Bay watershed, thank you for the opportunity to submit comments for the record of your March 16, 2011 hearing on the Chesapeake Bay total maximum daily load (TMDL), the pollution cleanup plan for the Bay and its tributaries. The Natural Resources Defense Council (NRDC) is a national nonprofit environmental organization with 1.3 million members and online activists. NRDC uses law, science and the support of its members to safeguard the Earth: its people, its plants and animals, and the natural systems on which all life depends. One of NRDC's priorities is to protect and restore the integrity of water systems that sustain and benefit its members. As part of its efforts to achieve this goal, NRDC has undertaken a wide range of activities to stem water pollution from numerous sources. NRDC has engaged in advocacy with Executive and Legislative Branch officials, has produced material for public education, and has participated in litigation, all to promote better regulation of water pollution.

The Bay TMDL Is Necessary To Restore Health to the Bay and Overcome Decades of Missed Deadlines and Opportunities

The Chesapeake Bay is the nation's largest estuary and the third largest estuary in the world. Considered a national treasure, the Bay drains an immense 64,000

square miles in six states: New York, Pennsylvania, West Virginia, Delaware, Maryland and Virginia, as well as Washington, D.C. The watershed is not only the largest in landscape, but also population. The area's population is growing by more than 170,000 residents a year, and has surpassed 17 million people.

For more than thirty years, Federal and state governments have sought to reverse the decline of the Bay's water quality through legislative, regulatory, and voluntary programs. These efforts have led to the creation of inter-governmental working groups, a dedicated EPA program office, and the amendment of the Clean Water Act with Chesapeake Bay-specific provisions. The lack of progress by the states in completing TMDLs for these Bay tributaries eventually led to litigation, which in turn led to commitments to develop TMDLs for Bay waters and tributaries.

In June, 2000, after decades of effort and enormous expenditures failed to achieve the desired restoration of the Bay's health, the Chesapeake Executive Council signed the *Chesapeake 2000* Agreement. This Agreement created new, stronger nutrient and sediment reduction goals, buttressed by a package of regulatory and voluntary actions intended to either ensure that the 2010 clean up goals would be met, or that EPA issued its own TMDL no later than May 1, 2011. In October 2007, "the seven watershed jurisdictions and EPA reached consensus that EPA would establish the Bay TMDL on behalf of the jurisdictions with a target restoration date of 2025."¹ EPA's release of its final TMDL in December 2010 is the culmination of this lengthy process, and critical to the ultimate reduction of the excess nutrients and sediment that have diminished the health and productivity of this national treasure.

EPA Has a Legal Obligation To Develop the TMDL and Assure It Will Be Achieved

The Bay TMDL is premised upon, and is essential to implement, EPA's general obligations under the Clean Water Act and its specific duties concerning the Chesapeake Bay watershed. We strongly believe that the Agency's action in establishing the TMDL and insisting on watershed implementation plans (WIPs) from the Bay states is consistent with sections 303(d) and 117 of the Clean Water Act, the resolution of a number of lawsuits concerning the Bay and its tributaries, and EPA regulations and guidance.

EPA notes that it is appropriate for the Agency to establish a TMDL under the authority of section 303 of the Act in a situation like that in the Bay region:

where impaired waters have been identified on jurisdictions' section 303(d) lists for many years, where the states in question have decided not to establish their own TMDLs for those waters, where EPA is establishing a TMDL for those waters at the discretion or, and in cooperation with, the jurisdictions in question, and where those waters are part of an interrelated and interstate water system. . . .²

While this is by no means the only circumstance in which EPA needs to act, NRDC agrees that the current situation in the Bay demands EPA action.³

In addition, NRDC agrees that section 117 and the Agency's TMDL authority provide authority for EPA's "accountability framework," which includes submission of WIPs, biennial milestones for progress, and Federal actions as a consequence of state failures. First, section 117 directs EPA to "ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain," among other things, "the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed [and] the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem. . . ."⁴ Second, as EPA's TMDL guidance discusses:

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the

¹U.S. EPA, Draft Chesapeake Bay Total Maximum Daily Load, at p. 1-5 (Sept. 24, 2010) (hereinafter "Draft TMDL") (citation and footnote omitted).

²*Id.* at p. 1-13.

³*See generally* 33 U.S.C. 1313(d)(2) (concerning EPA action where states fail to submit approvable TMDLs); *Dioxin/Organochlorine Center v. Clarke*, 57 F.3d 1517, 1520 (9th Cir. 1995) (Oregon, Washington & Idaho "requested the EPA to issue the proposed and final TMDL as a Federal action under the authority of § 1313(d)(2)").

⁴33 U.S.C. §§ 1267(g)(1)(A) & (B).

load and wasteload allocations, has been established at a level necessary to implement water quality standards.⁵

This position is consistent with EPA's TMDL regulations, which provide for flexibility in allocating the loads between point and nonpoint sources, something that is appropriate only if EPA can be equally confident that the more stringent load allocations will in fact be realized as EPA can be that wasteload allocations (typically embodied in NPDES permits) will be met.⁶ Accordingly, EPA can insist that state WIPs reflect actions that are sufficient to provide "reasonable assurance" that nonpoint source reductions will actually occur. Finally, with respect to the signatories to the Chesapeake 2000 Agreement, section 117's direction to EPA to "ensure" that states not only plan to make needed reductions, but also implement such reductions, empowers the Agency to demand that Maryland, Virginia, Pennsylvania, and the District of Columbia provide even more of a guarantee that WLAs and LAs will be met. Accordingly, we support EPA's expectation that the signatory states will "develop Plans to achieve needed nutrient and sediment reductions whose control actions are based on regulations, permits or otherwise enforceable Agreements that apply to all major sources of these pollutants, including nonpoint sources."⁷

EPA also has significant authority to secure reductions in nutrients and sediment directly through regulations it promulgates or through improved oversight and enforcement of state CWA programs. For example, the Agency can expand the universe of sources of runoff pollution for which it develops NPDES permit requirements under its "residual designation" authority.⁸ We believe EPA's willingness to implement residual designation and other "consequences" in the event that states do not make expected progress in meeting their reduction milestones is critical to ensure success.⁹

EPA and the States Must Work Together To Reduce Pollutant Loadings to the Chesapeake Bay

Throughout the TMDL, EPA has expressed its willingness to partner with the Bay states in identifying and scheduling specific programs and practices to control pollutant loadings. Some measure of deference is indeed appropriate, given the need for flexible responses to local conditions. However, EPA cannot simply hope the states' nutrient and sediment management practices will succeed. The goal of the iterative approach embodied in the three phases of WIP preparation is to select, prioritize and localize the practices that are most locally appropriate to control nutrient and sediment loadings to the Bay.¹⁰

Through the WIP process, states are given control to address all sources of pollution, developing a plan each state believes will reach its targeted pollution reductions. The states are also working throughout the region to ensure plans are tailored to each local community's needs. Of course, given the reality that nonpoint source pollution, including farm runoff, is a major source of pollution to the Bay and its tributaries, these sources too will need to contribute to the cleanup plan.

It is likely the valuable agricultural conservation efforts some of our region's farmers are implementing will be discussed during your hearings. We applaud the farmers who are working hard to preserve their lands and their local waters, and support efforts by the agricultural community to document these achievements to include in the Bay model.

We urge you to allow the states to work with the EPA to finish what they have started and continue on a path that will provide clean water for the region.

Respectfully submitted,



JON P. DEVINE, JR.,

⁵ U.S. EPA, "Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992," available at <http://water.epa.gov/lawsregs/lawguidance/cwa/tmdl/final52002.cfm>.

⁶ See generally 40 CFR § 130.2(i) ("If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent.")

⁷ Letter from William C. Early, Acting EPA Region III Administrator, to L. Preston Bryant, Jr., Virginia Secretary of Natural Resources, at 16 (Nov. 4, 2009).

⁸ See 33 U.S.C. § 1342(p)(2)(E).

⁹ Letter from Shawn M. Garvin, EPA Region III Administrator, to L. Preston Bryant, Jr., Virginia Secretary of Natural Resources, at 3-4 (Dec. 29, 2009).

¹⁰ See Letter from William C. Early, EPA Region 3 Acting Administrator to L. Preston Bryant, Jr., Virginia Secretary of Natural Resources, at 4 (Nov. 4, 2009).

Senior Attorney, Water Program.

SUBMITTED LETTER BY ROBERT E. HUGHES, EXECUTIVE DIRECTOR, EASTERN PA
COALITION FOR ABANDONED MINE RECLAMATION

March 15, 2011

Hon. GLENN THOMPSON,
Chairman,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.;

Hon. TIM HOLDEN,
Ranking Minority Member,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.

RE: Hearing to review the Chesapeake Bay TMDL, Watershed Implementation Projects, and their implications on national watersheds

Dear Chairman Thompson and Ranking Member Holden:

On behalf of the Eastern PA Coalition for Abandoned Mine Reclamation (EPCAMR), we would like to thank you for the opportunity to submit comments on the record related to your hearing on the Chesapeake Bay TMDL.

As the Executive Director of the Eastern PA Coalition for Abandoned Mine Reclamation (EPCAMR) for the last 14 years, who has spent the majority of his time working in the Chesapeake Bay watershed on abandoned mine reclamation, watershed restoration, environmental education, environmental action projects, stream restoration, and abandoned mine drainage remediation projects, in partnership with a myriad of organizations from the Federal, state, county, and local grassroots level, I would like to respectfully submit comments on the Pennsylvania Department of Environmental Protection's Draft Chesapeake Bay Watershed Implementation Plan (draft WIP) and Draft TMDL. To date, our organization has not received any official comment and response document to our suggestions that you will see below in the context of this testimony, from the U.S. EPA or the PA DEP on whether or not any of our positive suggestions would be or could be incorporated into the Chesapeake Bay TMDL or Watershed Implementation Plan. Our initial public comments to the Water Docket were submitted on October 20, 2010.

EPCAMR works to provide technical and administrative support to the Conservation Districts, coordinate reclamation activities, establish a public education outreach program within the schools, and to rejuvenate local watershed groups, primarily in those areas where streams are adversely affected by abandoned mine siltation and abandoned mine drainage. EPCAMR works together with nearly 75 local groups to inform and educate the public and to organize environmental interests relative to the purpose and value of specific reclamation, remining, and remediation techniques being proposed for sites in their local community.

I am a lifelong resident of the Wyoming Valley, and am particularly knowledgeable about the past mining impacts on the water quality of the Susquehanna River and its tributaries, having an extensive background in anthracite mining geology, aquatic biology, history, and underground hydrogeology of this area. As the Executive Director of EPCAMR, I have had the opportunity for many years to Chair the PA DEP's 319 Non-Point Source (NPS) Liaison Resource Extraction Workgroup Subcommittee that updated the PA DEP and U.S. EPA Region III on project successes, outreach efforts, new innovative treatment technologies, implementation plans, watershed assessments, and networking opportunities that were convened on a yearly basis. I am also a member of the PA DEP's Mining Reclamation Advisory Board, as an Alternate Member appointed by the State Conservation Commission and have been a technical advisor and *Ad Hoc* Reclamation Committee member to the full MRAB for over a decade. I also sit on the Susquehanna River Basin Commission's Water Quality Advisory Committee and have done so for many years. A majority of EPCAMR's workload has been contained within the Susquehanna River Basin, and therefore, the Chesapeake Bay watershed. EPCAMR Staff have assisted County Conservation Districts over the years to develop their Chesapeake Bay Tributary Implementation Strategies as well, providing statistical analyses of GIS data on stream segment impairments by cause and assisting with making recommendations on how to implement best management practices (BMPs) for those impairments, be

it AMD treatment, land reclamation, agricultural impacts, stormwater runoff, streambank erosion, and riparian buffer establishment.

EPCAMR is aware that Pennsylvania's draft WIP was prepared to address the EPA's expectations for the Chesapeake Bay Total Maximum Daily Load (TMDL), scheduled for publication in December 2010. EPCAMR has reviewed many TMDL Reports for watersheds in our region and provided water quality data, field reconnaissance support, GIS Mapping assistance to staff biologists of the Susquehanna River Basin Commission, and recommendations to the PA DEP Section 319 NPS Program water pollution biologists on stream segments previously impacted by AMD for removal from the Federal List of Impaired Waters due to our analyses of water quality improvements and aquatic insect population improvements over time, as well as due to the increase in the number of AMD remediation treatment systems that were constructed to reduce the loading rates of common metals (iron, aluminum, and manganese) found in AMD to our impaired watersheds.

EPCAMR understands that the U.S. EPA directed the states to develop a Phase II WIP which will further subdivide the loads by local area (county). We also understand that these will NOT be regulatory allocations to each of the counties. Rather, they are to inform local implementers (e.g., municipal elected officials and planning agency personnel, county conservation districts and planning commissions) and organizations like ours, or community watershed organizations, of the nutrient, metal, and sediment loads generated by their geographical area so we can help implement or plan appropriate actions to reduce the loads. Local implementation efforts should focus on compliance with existing rules and regulations, as well as seeking opportunities for additional management actions from EPA's standpoint. Community groups are not trying to disobey or break current or existing rules and regulations, their watersheds, rivers, and streams, are already in non-compliance, from the standpoint that they do not have clean water available to them for a multitude of uses that others enjoy across the Commonwealth in healthier watersheds with minimal impacts.

AMD is "abandoned" mine drainage. Communities are not trying to force compliance on anyone; groups like ours are trying to develop landowner relationships and agreements to allow for the construction and remediation of AMD on parcels of their properties where the discharges emanate from, for the betterment of the entire community and watershed. However, they need some protections and compensation for the perpetual loss of the use of those particular parcels for them to get on board with our recommended implementation projects. The Commonwealth of PA would be very hard pressed to force a single landowner where an AMD discharge comes to the surface and flows across their land into compliance, when the underground mine water complexes, from which the water flows could be miles away in all directions, and take in many additional landowners on the surface. That is why voluntary cooperation by landowners is of the utmost importance to our partnerships with local community groups and municipalities.

Community awareness of the problems and the potential solutions to the impacts left by past mining practices is needed in our region. Most elementary aged school children do not even know what water pollution is. Sure they know that the streams are orange, red, and yellow, and have been told anecdotal stories by their parents or grandparents about the dangers of hanging around the local streams because of the mining impacts, but what they do not know is that they can become a part of the solution to cleaning up and restoring their own watersheds. EPCAMR has made it a point in our environmental education and outreach efforts to take school aged children and their teachers in our underserved, more impoverished, and underrepresented school districts to the streams within their local watersheds to teach them about historical mining impacts, water quality, fishery biology, stream ecology, and community volunteerism. This is where the focus should be. I've been in the schools for over a decade and you would be shocked to find that most elementary aged students do not even know the name of the Susquehanna River or their home watersheds in which they live. None of them have even heard of the Chesapeake Bay. Therefore, EPCAMR believes that a place-based Environmental Education component should be involved in the WIP, not just loading reductions. We need increases in awareness of the problem in the communities where we want to treat the water.

EPCAMR is currently working with the SRBC to develop an Anthracite Region AMD Remediation Strategy. EPCAMR and the SRBC are in the process of developing a strategy to assist in the cost-effective restoration efforts for AMD areas by identifying watersheds where reclamation activities would result in the greatest water quality improvements. We would like to seek additional funding to develop a comprehensive Mine Pool Evaluation of the Northern and Eastern Middle Anthracite Coal Fields. By June of 2011, EPCAMR will be reporting on and completing a comprehensive underground mine pool evaluation report for the Southern and West-

ern Middle Anthracite Coal Fields, based on best available mapping and water quality resources available. The anticipated evaluation would dovetail with the proposed remediation strategy as SRBC would be able to assess the potential for augmenting low flows during droughts and for the possible use of small-scale hydroelectric power production at selected sites to provide revenues that would help to offset treatment costs and reduce waste allocation loads. Tom Clark, AMD Coordinator for the SRBC is working side by side with EPCAMR on these two complimentary efforts and is continuing to seek additional funds to complete the work plans.

EPCAMR's geographic information system (GIS) known as the Reclaimed Abandoned Mine Land Inventory System (RAMLIS), based on PA DEP's Abandoned Mine Land Inventory System estimates that there are over 1,920 miles of AMD impacted streams on the Integrated List of Impaired waters within the Susquehanna River Basin and there are around 1,924 designated Problem Areas within the Basin that contain abandoned mine land features and polygons that total 12,706 in number and just over 86,230 acres. Around ten, 417 of those features are unreclaimed for a total of 86,232 acres, and around 2,289 features have been reclaimed for a total number of 13,144 acres within the Susquehanna River Basin alone. Between 27–29% of the Susquehanna River Basin is impaired by AMD. Over 530 miles of the impaired miles of streams are within 517 square mile drainage of the Anthracite Coal Fields.

EPCAMR believes that the focus should also be on working with the local community groups to raise the level of the segments that are impaired either by watershed or stream segment to become eligible for additional funding through other state agency programs such as the PA DEP's Set Aside Program, under the Title IV, Surface Mining Control & Reclamation Act (SMCRA), 2006, as amended, as a Qualified Hydrologic Unit (Qualified Hydrologic Unit). Currently, throughout the Susquehanna River Basin, there are only four watersheds and or segments that qualify for additional Federal funding under SMCRA. For instance in Luzerne County, there is not a single watershed or stream segment that is impaired on the Federal List of Impaired Waters, formerly known as the 303(d) List, that is eligible for Federal funding under this Title IV Program until a QHU Plan is developed. Our organization would like to assist in the development of these QHUs, provided that future funding is made available to provide the local community watershed associations and local governments with the technical expertise and assistance that would qualify segments within their watershed boundaries or political jurisdictions for funding. EPCAMR realizes that this is a separate funding source and that historically PA Growing Greener Funding under the Watershed Environmental Stewardship Fund through the Section 319 Program has provided funding for other types of projects, including AMD assessment and remediation.

EPCAMR would like to be more actively involved with the Phase II WIP Implementation in partnership with the U.S. EPA from December 2010 until 2017 and learn about the details on how it will be phased into the communities and the watersheds impacted. This involvement by EPCAMR is contingent upon being able to secure additional funding to support our full-time staff of two to continue providing the expertise and community support that we have been doing since 1997 in the NorthCentral and NorthEastern parts of PA impacted by past mining. While it's formidable that the U.S. EPA has looked ahead towards the second stage of implementation that will extend from 2018 to 2025, when controls will be implemented to reduce loads from the interim to final target levels. EPCAMR does not have the ability to see that far into the future.

EPCAMR wants to believe that Pennsylvania is committed to protecting and enhancing our streams and watersheds and that the efforts here at home will in turn help in further restoring the Chesapeake Bay by 2025. There is no doubt in my mind that over the years, significant progress has been made to reduce nitrogen and phosphorus pollution of the local waters in the Pennsylvania watershed. EPCAMR believes that more attention needs to be paid to metal allocation loads in the tributaries of the Chesapeake Bay watershed where the AMD impacts are. EPCAMR realizes that it is a difficult concept to understand when it comes to relating AMD to the Chesapeake Bay, but all you have to do is look at the legacy sediments and coal silt that is located behind every dam on the Susquehanna River from here to Maryland to realize that if those dams were not in place, that the coal fines, silt, acidity levels, and metals contamination would be much greater at the mouth of the Bay. In all of the Tributary Strategies developed by EPCAMR and our supporting Conservation Districts, many recommendations were made to implement strategies to remediate AMD problems in the tributaries, but not many were followed through on due to lack of funding and or lack of prioritization. More needs to be done.

Why is there not a Phase 5.3 Watershed Model for Metal Loads to the Chesapeake Bay throughout PA?

Milestone Implementation and Tracking

Is the Chesapeake Bay Model incorporating AMD Treatment systems constructed as BMPs? Are the state's abandoned mine land reclamation projects in terms of acres reclaimed and stream miles restored being added to the model? Are the reductions in loadings of metal contamination to the streams within the Chesapeake Bay tributaries for specific segments being incorporated into the model? If not, they should be. Since there is no mechanism for reporting private efforts (Anthracite Operators that are reclaiming abandoned mine lands), private foundations such as the Foundation for PA Watersheds, or industry efforts such as Co-generation Plants that operate within the Basin under the trade association of ARIPPA (www.arippa.org).

In the Anthracite Region, we cannot thank some of our regional co-generation facilities enough for the great job they do in reclaiming abandoned mine lands. These private companies are not obstacles, they should be considered one of the greatest assets we have in our region. Let us not forget that much of this work has been completed at no cost to the state or taxpayers. The backlog of reclamation needed for the nearly 190,000 acres of abandoned mine lands left unreclaimed in PA and over 5,500 miles of streams impacted by AMD is projected to cost more than \$3,000,000,000 in PA, and that only includes the Priority 1 and Priority 2 Sites. There are still nearly 11 Million Tons of CFB—ash has being beneficially used at abandoned mine sites throughout PA. Over 2 Billion Tons of waste coal has been burned as an alternative energy fuel source in PA.

Approximately 4,500 acres of waste coal piles have been reclaimed in the last 20 years. PA DEP estimates that it costs around \$20,000 to clean up just one acre of abandoned mine lands. This estimate does not include the elimination of AMD that has detrimentally impacted our streams and rivers.

For example, in the Wyoming Valley, Luzerne County, PA, hundreds of acres of abandoned culm banks have literally disappeared. The once dirty, ominous, abandoned mine land features that have dominated the landscape for nearly 8 decades and blocked the beautiful view of the Susquehanna River from the East side of the Valley from the West, have been reclaimed utilizing coal ash for abandoned mine reclamation. People can travel the local highways and Interstate I-81 and now see clear cross the Wyoming Valley. Northampton Generating Supply Company, separated the culm, hauled it away, brought back the ash, compacted in lifts on the same site in which it came from, filled the mine voids, and reclaimed the site. It was a win-win situation. In the land beneath these culm banks, there's economic and environmental value.

Within the culm banks, there is energy to be recycled, and in the continued removal of these eyesores, EPCAMR sees great satisfaction in the reclaimed aesthetic look for Northeastern PA and across the State of PA as a whole. We should concentrate our efforts on reclamation of these undeveloped acres for social, economic, as well as environmental uses. Expanding and reconnecting our communities separated by mountains of culm, creation of open space areas, wildlife habitat enhancement, water quality improvements, improving the areas quality of life, recreational opportunities, stream restoration, and economic development of these abandoned mine lands should be of the utmost importance.

EPCAMR believes that PA has ample and effective waste disposal and management regulations already in place. It is important that we continue to support private business and industry that successfully balance economic development with environmental protection. Innovative solutions to environmental problems should be applauded, not restricted, or overly regulated. EPCAMR believes that these successes are being under reported and should be added to the Chesapeake Bay Model.

Possibly the PA DEP could fund an AMD BMP tracking pilot projects to explore the possibility of doing county "sweeps" for BMP information. It is widely known that there are over 285 AMD Treatment Systems state-wide that have been funded in part, by the Federal Office of Surface Mining and the PA DEP. What are not known collectively for the Susquehanna River Basin is the impacts and load reductions to the Chesapeake Bay from these completed systems. Each one of them is retaining metal loadings in their designed ponds that aren't reaching the streams and in some cases is being harvested and recycled by groups such as Hedin Environmental and EPCAMR. Perhaps a BMP repository can be accessed on the EPCAMR and WPCAMR websites for community groups and watershed organizations to add their projects in addition to the state and federally funded projects.

EPCAMR is well aware of the West Branch AMD Remediation Strategy developed by the SRBC and its partners, but there is no comprehensive Strategy completed as of yet to look at the AMD pollution loads to the Susquehanna River and the Chesapeake Bay on a whole. There is also the West Branch Task Force, under the direction and leadership of Amy Wolfe—Abandoned Mine Lands Program Director

for National Trout Unlimited that could also provide additional insight, data, loadings, and numbers to assist with improving the overall Chesapeake Bay Model.

New Technology and Nutrient Trading

New technologies that can create electrical generation and power from AMD should be looked at further. Several of these types of projects have been funded in Western PA, but not in the East. The Old Forge Borehole, Jeddo Mine Tunnel, Solomon's Creek Boreholes, Susquehanna #7 Outfall, and other AMD discharges with high volume flows in the other Coal Regions within the Susquehanna River Basin could potentially become income generators and opportunities for economic redevelopment.

EPCAMR has been involved with the USDA, Capital Area Resource Conservation & Development Council, Pennsylvania Environmental Council, Chesapeake Bay Foundation, Foundation for PA Watersheds, Penn-State University, Conservation Districts within the EPCAMR Region, and other partners a few years ago to locate abandoned mine lands in close proximity to the more rural farms that had excess nitrogen and manure wastes from their Concentrated Animal Operations (CAOs) and Concentrated Animal Feeding Operations (CAFOs). EPCAMR provided all of the GIS mapping for the project and conducted the research with Conservation District Chesapeake Bay Technicians to obtain the necessary information to get the totals on the number of CAOs and CAFOs in the EPCAMR Region. Composting facilities and the Co-Generation Facilities in Eastern PA were also mapped. The **Manure and Minelands Project** was coordinated to be able to put the farmer and the land reclamation entities together to work out some nutrient trading or business transactions that would save them time, resources, and money. Abandoned mine lands need manure because they lack topsoil for the most part and farmers need to dispose of their excess manure to avoid any pollution problems to the streams within their farmland properties. Mushroom compost, horse manure, chicken manure, all have beneficial qualities to land reclamation and AMD remediation, if mixed with the proper constituents and are not too wet. Yet another win-win.

EPCAMR worked with The Conservation Fund and the Keith Campbell Foundation for the Environment earlier this year to provide them with written examples, photographs, and project successes to inform others in the region how they can improve the environment in their communities impacted by abandoned mine lands. My co-worker, Mike Hewitt, and I provided details on project successes related to the effort mentioned in the previous paragraph to Mr. David G. Burke, President of Burke Environmental Associates, and Mr. Joel E. Dunn, Program Coordinator, for Sustainable Chesapeake—The Conservation Fund. These two individuals edited and authored the publication, entitled, **A Sustainable Chesapeake: Better Models for Conservation** (2010). The book can be found online on The Conservation Fund website at (www.conservationfund.org/sustainable-chesapeake). It is a way to take a look at 31 projects that summarizes the principles of sustainability illustrated by the profiles contained within each project with creativity, outside of the box thinking, a great deal of volunteer time and effort, and much needed partnerships and funding sources to make them stand out from many others around the Chesapeake Bay.

Compliance

EPCAMR realizes that construction and post-construction stormwater management is being addressed in the recently adopted revisions to Chapter 102, erosion and sedimentation regulations and that the PA DEP is also developing the next-generation general permit for Municipal Separate Storm Sewer System (MS4) communities. EPCAMR was integral to authoring a four page section of a guide book (<http://www.stormwaterresourcesformunicipalities.com/>) for municipalities on Stormwater Management in partnership with the Pocono NE Resource Conservation & Development Council that took into consideration the post-construction stormwater impacts on downstream areas of recently reclaimed abandoned mine lands and on not encouraging the BMP of infiltration in areas of the Coalfields that were previously mined due to the potential for creating additional abandoned mine drainage (AMD), subsurface, in areas that were previously mined. Nearly 400 copies of the guidebook were distributed by the Pocono NE RC & DC just a few years ago and are still readily available to other municipalities online.

Next Steps

EPCAMR would like to be represented on the WIP workgroup in the near future, if you are looking for additional input from another organization that has already demonstrated the commitment to help protect and restore the Chesapeake Bay. We would hope to think that we are a leader in the environmental restoration of AMD impacted watersheds in Eastern PA and throughout the Chesapeake Bay watershed.

EPA's Legal Framework for the Chesapeake Bay TMDL

EPCAMR understands that the Chesapeake Bay TMDL addresses ONLY the restoration of aquatic life uses for the Bay and its tributaries that are impaired from excess nutrients and sediment. EPCAMR has performed biological sampling on stream segments over the years where aquatic life has been restored to segments of streams that have been previously impaired by AMD and are now being restored due to the implementation of AMD remediation strategies and implementation of construction projects. Perhaps a more comprehensive biological assessment review needs to be completed in the tributaries of the Chesapeake Bay, particularly downstream of treated AMD stream segments or pollution sources. Since sediment is a major contributor to the problems within the Chesapeake Bay, the TMDL should consider that AMD in its iron hydroxide form, and in the form of fine coal silt, once it settles out on the streambeds are sediments that can choke out all aquatic life, stream habitats, spawning grounds, promote algal growth, and create areas of low dissolved oxygen levels. In areas where the coal silt basins and abandoned culm banks are directly along the streambanks of some of our rivers and streams, riparian corridor establishment would help to prevent further streambank erosion and siltation into the watersheds during peak stormflows and flooding events. Air deposition to the watershed, particularly in the Northeast Region of the Basin, contribute much of the acid impaired headwater streams that lack the buffering capacity to handle the acid rain contributions from the Western Ohio and Pittsburgh Region that tends to fall over our portion of the basin. See <http://www.tu.org/conservation/eastern-conservation/brook-trout/education/threats/acid-deposition> for details.

Watershed Implementation Plans

EPCAMR believes that before some WIPS can be completed that watershed assessments still remain to be completed for several watersheds in the Basin. Comprehensive watershed assessments should be completed before developing implementation plans. In the last round of PA's Growing Greener, watershed assessments were not a priority for funding, and in order for them to be eligible for other types of state and Federal funds they need to be. In the Coal Region, implementation plans need to take in to consideration the underground mining hydrogeology and complex geology of the Anthracite Region before we can jump to conclusions that treating in one location is going to improve another that is tied to an underground reservoir that fluctuates temporally and seasonally with rainfall and drought conditions. Loadings will also fluctuate in this situation. EPCAMR staff has assisted the PA DEP and many of our community watershed organizations in the completion of Watershed Implementation Plans in the past.

Development of Phase I Watershed Implementation Plan and Public Participation

EPCAMR had been involved with many of the Conservation Districts in the development of their Chesapeake Bay Tributary Strategies and would like to continue to do so in the future implementation of the other phases. We will keep in touch with our Conservation District Chesapeake Bay Technicians within our Region to provide updates to their County Implementation Tributary Strategies.

Resource Extraction

1,575 Resource Extraction operations are within the Susquehanna River Basin according to PA DEP's eFACTs tracking system in 2010. The resource extraction activities subject to NPDES permitting in the Bay watershed include coal mining, noncoal mining and the earth disturbance related to abandoned mine reclamation activities. Oil and Gas development activities are not subject to NPDES permitting.

Coal mining permits are typically accompanied by an NPDES permit. Most coal mining permit areas include erosion and sedimentation controls that are permitted stormwater outfalls under an NPDES permit. Some coal mining activity permits include BMPs that are designed to prevent a stormwater discharge. A typical example of this is in the anthracite coal fields where new mining re-affects abandoned mine lands (AML), and all stormwater is contained in the pit. However, an unlined pit that is not compacted with a liner or bentonite clay might as well have an open conduit to the underground mine pools beneath the mining affected regions because without it, promotion of AMD is likely to occur in those areas, and an increase in the amount of groundwater reaching a subsurface mine pool complex is possible. EPCAMR encourages and supports re-mining of abandoned mine lands by the Anthracite Industry and other operators in the Northern Bituminous Region to reclaim additional acres of abandoned mine lands and to eliminate further generation of py-

ritic material and AMD from getting into our watersheds and underground mine pool complexes.

Current Programs and Capacity

Resource extraction activities and abandoned mine lands (AML) have the potential to release sediment into nearby surface waters. EPCAMR firmly believes that abandoned mine drainage (AMD) from AML can impair the ability of streams to assimilate these nutrients effectively. My reason for repeating some of the information in the draft TMDL WIP Report is so that the general public interested in the abandoned mine issues can hone in directly on parts of the draft that could potentially impact their local watersheds, so I apologize for some redundancy, however, in this case I think it is warranted.

Reclamation methods include PA DEP's primary efforts to improve water quality through reclamation of abandoned mine lands (for abandoned mining) and through the National Pollution Discharge Elimination System (NPDES) permit program (for active mining). EPCAMR currently receives the majority of its funding for projects designed to achieve water quality benefits from the U.S. EPA Section 319 Grant Program and Pennsylvania's Growing Greener Program. Federal funding is from the Department of the Interior's Office of Surface Mining (OSM) for reclamation and mine drainage treatment through the Appalachian Clean Streams Initiative and through Watershed Cooperative Agreements have also been a part of EPCAMR's historical funding streams to work with community groups to design, build, construct, operate and maintain AMD treatment systems within the Chesapeake Bay watershed.

The DEP Bureau of District Mining Operations (DMO) administers an environmental regulatory program for all coal and noncoal mining activities. DEP offers re-mining incentives for coal mining which are geared toward reclaiming abandoned mine features and stabilizing the areas. Regulatory programs are assisting in the reclamation and restoration of Pennsylvania's land and water. DEP has been effective in implementing the NPDES program for mining operations throughout the Commonwealth. This reclamation was done through the use of re-mining permits that have the potential for reclaiming abandoned mine lands, at no cost to the Commonwealth or the Federal Government. EPCAMR is unsure if these re-mining sites are being considered by the Chesapeake Bay Model, and if not, they should be.

Programmatic

The primary concept employed by the mining program in dealing with sediment issues is prevention. The permitting process provides the framework for the necessary measures, typically collection ditches and sedimentation ponds, to have effective controls. Standard BMPs are employed on most permits. Coal mining permits and large noncoal permits typically include site-specific engineered Erosion and Sedimentation control plans.

There are about 1,750 permitted mine sites in Pennsylvania in the Bay watershed. Each of these permits include Best Management Practices for prevention of erosion and sedimentation. These permits also include revegetation plans to stabilize the post-mining reclamation area. There are about 475 mining sites in the Bay watershed for which there are NPDES permits. These permits include effluent limits for suspended solid and/or settleable solids. These measures prevent contributions of sediment in the watershed.

The point of planning and permitting is to prevent increased sediment loads as the level of earth disturbance increases. Mine sites and oil and gas development sites are subject to permitting which minimizes their impact on loads. In the case of coal mining, most new mine permits include some re-mining where AML is reclaimed in the course of mining. While the potential impact of the earth disturbance for mining is temporary, the overall improvement (*i.e.*, the reclamation of AML) is permanent.

Funding/Staffing

DEP BAMR, which administers the program to address the Commonwealth's abandoned mine reclamation program, has established a comprehensive plan for abandoned mine reclamation to prioritize and guide reclamation efforts for throughout the Commonwealth to make the best use of valuable funds (http://www.portal.state.pa.us/portal/server.pt/community/pennsylvania%27s_comprehensive_plan_for_abandoned_mine_reclamation/13964). In developing and implementing a comprehensive plan for abandoned mine reclamation, the resources (both human and financial) of the participants must be coordinated to insure cost-effective results.

EPCAMR and WPCAMR assisted in the development of the PA Comprehensive Plan for Abandoned Mine Reclamation. EPCAMR and WPCAMR have served as the

local liaison for the Commonwealth of PA for more than 20 years in WPCAMR's case, and for more than 14 years, in the case of my organization. I was previously employed by the PA DEP Bureau of Abandoned Mine Reclamation's Wilkes-Barre Office in the Northeast Region as a Science Intern in 1993 and as a Hydrogeological Intern for the Hawk Run District Mining Office in Western PA, now the Moshannon District Mining Office, in 1994 and 1995, prior to graduating from Penn-State.

The following set of principles guides this decision making process:

- Partnerships between DEP, EPCAMR, WPCAMR, watershed associations, local governments, environmental groups, other state agencies, Federal agencies, & other groups organized to reclaim abandoned mine lands are essential to achieving reclamation & abating acid mine drainage in an efficient & effective manner.
- Partnerships between AML interests and active mine operators are important and essential in reclaiming abandoned mine lands.
- Preferential consideration for the development of AML reclamation or AMD abatement projects will be given to watersheds or areas for which there is an approved rehabilitation plan.
- Preferential consideration for the use of designated reclamation monies will be given to projects that have obtained other sources or means to partially fund the project or to projects that need the funds to match other sources of funds.
- Preferential consideration for the use of available monies from Federal and other sources will be given to projects where there are institutional arrangements for any necessary long-term operation and maintenance costs.
- Preferential consideration for the use of available monies from Federal and other sources will be given to projects that have the greatest worth.
- Preferential consideration for the development of AML projects will be given to AML problems that impact people over those that impact property.
- No plan is an absolute; occasional deviations are to be expected.

Since 2000, new approaches to mine reclamation and mine drainage remediation have been explored and projects funded to address problems in innovative ways. EPCAMR has been an instrumental partner in the development of these new approaches. EPCAMR co-coordinates State-wide Conferences on Abandoned Mine Reclamation with its' sister organization, WPCAMR, and a Planning Committee made up of state-wide regional nonprofits, state representatives, Foundation representatives, and Colleges and Universities to network and exchange ideas on these new approaches and innovative AMD Treatment technologies. See our websites at (www.epcamr.org, www.amrclearinghouse.org and www.treatminewater.com).

These include: Awards of grants for: (1) proposals with economic development or industrial application as their primary goal and which rely on recycled mine water and/or a site that has been made suitable for the location of a facility through the elimination of existing Priority 1 or 2 hazards; and (2) new and innovative mine drainage treatment technologies that provide waters of higher purity that may be needed by a particular industry at costs below conventional treatment in common use today or that reduce the costs of water treatment below those of conventional lime treatment plants.

Projects using water from mine pools in an innovative fashion, such as the Shannopin Deep Mine Pool (in southwestern Pennsylvania), the Barnes & Tucker Deep Mine Pool (the Susquehanna River Basin into the Upper West Branch Susquehanna River), EPCAMR's Mine Pool Mapping Project and Groundwater Modeling for the Western & Southern Anthracite Coal Fields) and the Wadesville Deep Mine Pool (Exelon Generation in Schuylkill County) have also been funded.

Current and Future Reclamation Efforts in the Watershed

EPCAMR agrees that while numerous remediation projects have already been completed and others are underway, it will take decades at current funding levels until the entire problem areas in the Chesapeake Bay watershed are addressed. EPCAMR thinks that Pennsylvania should place an even higher priority on efforts throughout the entire Chesapeake Bay watershed, particularly in the Anthracite Coal Region. If the Chesapeake Bay Tributary Strategy is to be effective, than funding needs to be provided to projects in the tributaries. In addition to the problems associated with the water quality itself, tremendous amounts of recreation and tourism dollars have been lost in the watershed due to the mining impacts. EPCAMR feels that additional funding should be provided to community groups under the State's Set-Aside Program to conduct the necessary watershed assessments to make them eligible for the Title IV Funding that is currently being held in an interest

bearing account while a re-prioritization of the criteria to become eligible for the funding is finalized.

Tracking and Reporting Protocol

EPCAMR's RAMLIS GIS Tool (<http://epcamr.org/index.php?name=Content&pa=showpage&pid=81>) can also provide reports that can be developed that present data about the number of active mining permits and the overall disturbed area associated with these permits. EPCAMR uses (lat/long) coordinates to locate projects, however, the projections of our data are not tied to the NHD on the larger national scale, it is very localized and layered based on much smaller watershed units within the Chesapeake Bay watershed, that we believe gives it a more accurate reflection of the data and leaves less room for error. AML is also tracked in our RAMLIS GIS Tool and is updated by EPCAMR and its community partners, in addition to information provided by the Commonwealth's Bureau of Abandoned Mine Reclamation. EPCAMR has the ability to statistically summarize the percentage of problem areas reclaimed in a watershed area, municipal boundary, legislative district, and the PA portion of the Chesapeake Bay. Stream miles restored can also be provided as well as water quality analyses. Much of our current work right now is in developing the Anthracite Region AMD Remediation Strategy with the SRBC.

Mining Stormwater General Permit

EPCAMR supports the PA DEP in developing a stormwater NPDES General Permit (GP) for mining activities. The intent of this permit should be to manage stormwater from mine sites where the hydrologic impact is limited to surface water. The GP requires the use of BMPs to manage stormwater to prevent sedimentation. It is anticipated that this GP will be finalized during the summer of 2010. However, again, it must be stated that the encouragement of infiltration into stormwater detention basins that are unlined on abandoned mine lands only encourage surface infiltration of runoff into the deeper mine pool complexes and local underground groundwater reservoirs. The PA DEP should consider looking into the underground effects of infiltration of stormwater runoff from abandoned mine sites (<http://www.stormwaterresourcesformunicipalities.com/>).

Oil and Gas Development

While oil and gas development activities are not subject to NPDES permitting, EPCAMR understands and is aware that the PA DEP has in place an Erosion and Sedimentation Control General Permit (ESCGP-1). In response to the EPA's rule-making and the effect of the Federal Energy Policy Act of 2005, DEP issued the ESCGP-1 for oil and gas activities that disturb 5 acres or greater at one time over the life of the project. This permit applies to earth disturbance activities for oil and gas exploration, production, processing, treatment operations or transmission facilities (oil and gas industry). The added protection gained through this permit will ensure that proper best management practices (BMPs) will be planned, implemented and maintained for erosion and sediment control and post construction stormwater runoff from these activities. In addition, this approach is an incentive for the operator to minimize the disturbed area and restore the area promptly after completion of the well or installation of the pipeline. However, this does not deal with subsurface potential for contamination or underground mine pool complexes and the effects the project may have on AMD discharges that are not located at the site of the project location.

Riparian Forest Buffer Guidance

In 2009, the Department published the draft Riparian Forest Buffer Guidance, Commonwealth of Pennsylvania, Department of Environmental Protection, Document #395-5600-001 (2009), as amended and updated. The guidance lists various design, construction, and maintenance standards for developing a riparian forest buffer.

If initial WIP results indicate that a change in this approach is warranted, these funds can be targeted to specific locations and to specific BMPs. PA DEP could also target the specific BMPs identified by EPA Region III as their most critical for Bay model loadings. One of the five BMPs, which track closely to those that have been given priority in the effort, is: riparian buffers. Riparian buffers can still be implemented and planted along many of our rivers and streams in the Coal Region to reduce the overall sedimentation loads to the watershed and can be mapped by EPCAMR based on our RAMLIS GIS tool in relation to those abandoned mine lands that are adjacent to rivers and streams and have problem areas where sedimentation is prevalent and continues to downcut, undercut, and erode the culm banks.

A good example would be along the Lackawanna River in Lackawanna County, where acres of culm banks lay along the streambank of the Lackawanna River and

during storm events and flooding events, slough off into the River and the sediments are carried downstream. Increased volume of stormwater runoff results in an increase in the frequency of bank full or near bank full flow conditions in stream channels. The increased presence of high flow conditions in riparian sections has a detrimental effect on stream shaping, including stream channel and overall stream morphology. Stream bank erosion is greatly accelerated. As banks are eroded and undercut and as stream channels are gouged and straightened, meanders, pools, riffles, and other essential elements of habitat are lost or greatly diminished.

Laws, Regulations, Funding, Staffing and Technical Capacity

EPCAMR supports the increase in funding to support and fund the Pennsylvania Department of Environmental Protection, Department of Agriculture, County Conservation Districts, organizations such as ours, and Critical Programs such as Growing Greener and Clean Water Act, Section 319 so as to assure robust levels of personnel to provide outreach, technical assistance and cost-share funding in the implementation of necessary BMPs and to assure, where applicable, compliance inspections and enforcement of all existing regulations are being adhered to. EPCAMR works to reclaim abandoned mine land and watersheds impacted by abandoned mine drainage throughout the North Central Bituminous Region and Anthracite Coal Region of Northeastern PA, in partnership with our sponsoring Conservation Districts. Conservation Districts sustain, protect and restore the natural resources for the Commonwealth of Pennsylvania.

EPCAMR supports Conservation Districts within the EPCAMR Region who are seeking dedicated sources of funding to provide 50% cost-share for basic staff positions and cost-of-living increases to meet their goals. One possible source of dedicated funding for all Conservation Districts is through a severance tax in Pennsylvania for extraction of oil and gas deposits. Although Pennsylvania has never initiated a severance tax, many other states in the country have established this type of tax to fund various budgetary items. For instance, Oklahoma has a gross production tax on oil, a small portion of which is earmarked for natural resource protection. Wyoming has a severance tax that subsidizes their state's general fund, thus indirectly partially funding Conservation District activities.

EPCAMR also supports a portion of any severance tax for the Environmental Stewardship Fund, which has funded many "Growing Greener" grant projects that EPCAMR has been awarded in the past or where EPCAMR has been a partner. Funding for our organization and our sister organization (WPCAMR) is also vital to continue the reclamation of abandoned mine lands, remediation of streams and rivers impacted by abandoned mine drainage (AMD), and to further the economic redevelopment potential of the reuse of underground abandoned mine pools throughout PA. Only \$6 Million is anticipated to be allocated state-wide in the most recent round of Growing Greener for watershed restoration projects. EPCAMR firmly believes that a small, predictable portion of any state mandated severance tax should be allocated directly to the Conservation District Fund to help all Conservation Districts across the state maintain their environmental protection programs. Using a natural gas severance tax of 5% on the value of the natural gas at the wellhead, plus 4.7¢ per 1,000 cubic feet of natural gas taken from the ground, \$178.6 million would be generated in the 2010–2011 Fiscal Year and increase to \$475.6 million by 2014–2015. We recommend 3% of the severance tax, or approximately \$5.358 million in the 2010–2011 Fiscal Year, be dedicated to the Conservation District Fund.

By the 2014–2015 Fiscal Year as the severance tax revenue grows, approximately \$14.3 million would be generated for the Conservation District Fund. Obviously this type of dedicated funding would resolve many of the financial challenges our Conservation Districts collectively face on a daily basis.

EPCAMR is also in need of additional administrative funds that can be found through grant funds under the Environmental Stewardship Fund. We are in a position as a regional nonprofit environmental organization, founded by Eastern PA Conservation Districts and other reclamation related partners and watershed groups that has been providing technical assistance, grant writing assistance, project coordination, project management, grant administration, Geographic Information System mapping assistance, research on AMD Treatment technologies, innovative AMD Treatment Design and Construction, environmental education, and the continued building of diverse partnerships and leveraged funds to reclaim our Commonwealth's abandoned mines and watersheds impacted by AMD. For more nearly 15 years, EPCAMR has been providing support to our Conservation Districts, watershed organizations, and local governments within the EPCAMR Region on abandoned mine reclamation issues, environmental education, and watershed improvement projects.

It is undisputed that EPCAMR and Conservation Districts provide much needed services to Commonwealth citizens to help them identify and resolve critical natural resource concerns. EPCAMR and Conservation Districts deliver essential services that protect our soil, water and air for a reasonable cost. Since there is a direct link between the removal of natural resources and natural resource protection activities, it makes sense to consider advocating a portion of a severance tax for natural resource protection activities. A severance tax, a portion of which would be dedicated to the Conservation District Fund and to the Environmental Stewardship Fund should be enacted. We do not underestimate the power on a local level of other regional nonprofits, nor do we claim that we are the only organizations that can provide some assistance to the PA DEP and the U.S. EPA. We just want to make the Commonwealth and the U.S. EPA Region III know that our organization would like to have an integral relationship in the protection and restoration of the Chesapeake Bay watershed and that we have been supporting such efforts for nearly 15 years. We do not have all the answers either, but we are part of the solution.

Urban and Rural Reforestation

The two additional DCNR-based programs that promote reforestation of urban and rural parts of the Bay watershed, TreeVitalize could be promoted more widely to our community groups and watershed associations in the mining impacted areas to assist with the replanting of riparian buffers along our rivers and streams where culm banks are a part of the landscape in the urban and rural settings. This program is not often promoted to these organizations. The Scranton-Wilkes-Barre Area, Pottsville, Shamokin, Mt. Carmel, Hazleton Area, are all urban communities that this Program could be expanded into. EPCAMR would be willing to promote it within these communities to our partners.

Riparian Forest Buffer Initiative

EPCAMR in the past had played an important role in implementing small riparian forest buffers along stream channels that had been recently reclaimed through the construction of rip rap channels to control overland flows off of the reclaimed mine sites. In 2005, Plymouth Township, Luzerne County, we were able to plant willow sheens, native shrubs, viburnum, and other wetland plants donated by the Octoraro Nursery in partnership with the Chesapeake Bay Foundation, Alliance for the Chesapeake Bay, and the Plymouth Township Planning Commission along a 1500' section of an unnamed tributary to the Susquehanna River that we called Sickler Run, locally. It is anticipated that more of these riparian buffer projects can be completed to add to the Stream ReLeaf, or Riparian Forest Buffer database in years to come.

Appalachian Regional Reforestation Initiative

The Appalachian Regional Reforestation Initiative (ARRI), a Federal partnership program that supports planting trees for water quality, is a coalition of citizens, nonprofit groups, the Federal Office of Surface Mining (OSM), and states who are dedicated to restoring forests on coal mined lands in the Eastern United States. GIS analysis indicates that there are 120,000 acres of abandoned mine lands within the Upper Susquehanna-Lackawanna River Basins. These lands represent a great opportunity to expand forest cover within the Bay watershed while reintroducing native trees to the region. The restoration has already begun. EPCAMR, SRBC, Earth Conservancy, and the Lackawanna River Corridor already have existing relationships with many landowners, community watershed organizations, regional nonprofits, and coal operators in this Region. EPCAMR is also already an ARRI partner and has signed its Statement of Mutual Intent. EPCAMR is very supportive of The American Chestnut Foundation and its mission to help restore the American Chestnut propagation back into our landscape, including on abandoned mine lands.

Many of the forested acres are managed with best management practices are not currently recognized or counted in the Chesapeake Bay model either and should be added to the mix. EPCAMR believes that every tree planted on an abandoned mine site, be it by the private coal mining industry, or volunteers, or through ARRI should be counted for consideration as an innovative approach to sequester carbon. Trees are growing on these sites over the years as a part of the reclamation plan and are providing additional root zones to fixate nitrogen and to trap CO₂. Some of the Pennsylvania Game Commission's 1.04 million acres of forestland in the Bay watershed, are all well-managed and follow multiple best management practices, and do include some abandoned mine lands that can fall under the ARRI Initiative. Even reclamation mixes of grasses, legumes, and other ground-cover vegetation plant species are reducing the runoff from abandoned mine sites following the reclamation phase of mining. Vegetated reclamation sites should also be included in the Chesapeake Bay Model under number of reclaimed acres.

Remediation of Acid Mine Drainage Sites

EPCAMR agrees that remediation of abandoned mine drainage (AMD) sites in forested areas represents an opportunity for increased biological activity and algal uptake of nutrients and should be accounted for as reductions to the forest load in the Chesapeake Bay model. A study completed by Stroud Water Research Center showed that “despite near-neutral pH in the AMD-impacted stream (Lorberry Creek), iron hydroxide deposition interferes with normal periphyton colonization and enzyme activities”. Rattling Run, an Exceptional Value stream in the Anthracite region, had chlorophyll *a* levels nearly fifteen times greater than Lorberry Creek. Stroud also stated that the “most important implication of these findings is that, although water chemistry in a stream might be technically within a range that can sustain aquatic life (*i.e.*, circumneutral pH and low dissolved metals concentrations), metal deposition on substrata clearly inhibits microbial colonization and severely limits phosphorus availability to aquatic bacteria, fungi, and algae.” EPCAMR has numerous other project locations within the Anthracite Region that concur with the Stroud Water Research Center’s example.

For example, here in Luzerne County, many of the tributary streams impacted by AMD are circumneutral with a pH of 6–6.5, are more alkaline than acidic, often have high sulfate concentrations, Total suspended solids, area large volume flows, and have heavy loadings of suspended iron that are severely coating the bottoms of the stream channels for miles until reaching the Susquehanna River. This iron hydroxide coating, prevents the aquatic populations from reproducing in these areas, leaving them with little biological diversity and stagnant. However, if additional AMD treatment systems are designed and constructed, the metal loadings can be reduced through the use of artificially constructed wetland systems, specifically constructed for the removal of the iron loadings that will reduce the overall iron loadings to the Susquehanna River and eventually the Chesapeake Bay. EPCAMR has even found several ways to recycle, harvest, dry, and re-use the iron hydroxide from these treatment systems to help fund its environmental education programs in the Region.

We’ve been doing this for nearly a decade. See our link at (<http://epcamr.org/storage/EnvEdBrochure2010.pdf>). EPCAMR has had the iron hydroxide tested for pigment quality and it is very high in a number of discharges within the Chesapeake Bay, upwards in the range of 92–98% pure iron oxide, once dried. EPCAMR makes its own wood stains for public recreational and trail projects, iron oxide chalk programs in schools, AMD Tie Dye Workshops, Art Shows with various regional Art Leagues, mixes its own paint, and has sold it to over ten states to community groups interested in utilizing it for similar projects that we’ve initiated in PA. See our link (http://epcamr.org/storage/iron_oxide_recovery_pamphlet2.pdf).

There are many uses for iron oxide in the United States and worldwide. The current markets for low-grade iron oxides in the United States alone is approximately 175,000 tons per year (1995 estimate; *Hedin Environmental SBIR research*), while the current world market for a similar grade product is approximately 850,000 tons per year. The typical revenue from this quality of material is approximately \$0.10–\$0.75/lb (Hoover Color; Bayferrox Corp). Higher value “specialty” iron oxide products are typically used in the animal vitamin supplement or cosmetics markets and have a higher associated economic value, as much as \$3.00–\$4.00/lb. EPCAMR has been able to sell the iron oxide that we process in-house in 5 gallon buckets collected by ourselves or seasonal interns and dried in a small soil oven, big enough to make four batches of cookies for \$5.00/oz. and it still does not cover the costs of our time to get it to the final form to get it to market. However, we are utilizing the iron oxide to support our educational programs and not for a profit. These load reductions in terms of pounds of iron oxide removed from the AMD treatment systems should also be included in the Chesapeake Bay Model.

EPCAMR totally agrees with the logic presented by the Stroud Water Research Center that the nutrients (especially phosphorus) being transported to Chesapeake Bay associated with metal hydroxide-based sediments, to which dissolved phosphorus has a strong affinity, could be reduced through remediation of the mined site and restoration of aquatic life to the stream. Similarly, even though the nitrogen species do not have the same affinity for sediments as the dissolved phosphorus, nitrogen uptake within the watershed by the benthic algae would decrease that available to be delivered to Chesapeake Bay. EPCAMR agrees that these reductions should be credited to the forested areas because the load was probably attributed to forest in the original modeling as the calibration gages are downstream of primarily forested sites.

However, EPCAMR does feel that not only should there be an emphasis on the restoration of the publicly owned lands, but in the urban environments, where the larger number of communities and population centers are being directly affected by

the AMD pollution problem. Funding spent in these areas where there is a much higher incidence of local traffic by the local community would not only benefit them in achieving a higher quality of life, but it could lead to an increase in personal property values, increased recreational opportunities like swimming and fishing, economic redevelopment opportunities, conversion of abandoned mine lands into recreational spaces like trails constructed by the Earth Conservancy and others, an increase in water quality and improved aquatic stream health, and an increase in the number of visits to their local places as opposed to having to drive much further to State Parks and State Game Land areas during economic hard times.

EPCAMR Staff worked and participated with The American Chestnut Foundation, the Pennsylvania Game Commission, OSM's Patrick Angel, other OSM staff, volunteers from the OSM/VISTA Appalachian Coal Country Watershed Team, Schuylkill County Conservation District, and the Schuylkill Headwaters Association community volunteers to plant the 2,500 trees on an abandoned mine land site in Schuylkill County in 2009 in partnership with a local Anthracite Coal Company Operator. The ACCWT is a national team of AmeriCorps VISTA volunteers supported by the Corporation for National Service, the Office of Surface Mining, and local sponsors, such as EPCAMR and the Anthracite Heritage Alliance. They are providing much needed additional on the ground support to groups like EPCAMR, Schuylkill Headwaters Association, Schuylkill County Conservation District, and other community groups. See more details on the ACCWT Team on (www.accwt.org).

EPCAMR understands that without clean water, land, and water, the social, recreational, economic, and environmental vitality of the Commonwealth and in the Chesapeake Bay watershed, our children will be severely disadvantaged for future generations. PA DEP and the U.S. EPA should continue to be the true leader in the continuing efforts to research and implement remediation and reclamation techniques on abandoned mine lands and the other environmental issues that have plagued the Bay for decades. Not all decisions are best made at the Federal level or state level through regulations and compliance.

EPCAMR believes that given the adequate amount of funding, expertise, engineering assistance, technical assistance, and guidance from the Commonwealth, groups like ours and other community groups and municipalities at the local level CAN effectively and HAVE implemented many of the ideas presented or suggested in this public comment document. Too many stream miles have been on the Federal List of Impaired Waters due to AMD for as long as I have been the Executive Director for EPCAMR, and slowly some of them are being removed due to the hard work and efforts of community volunteers, watershed organizations, and assistance from various state, Federal, county, and local level partners. Additional funding has to find a way down to the local level for implementation. Other states should follow our lead. Let's Change the Chesapeake! While I firmly believe the motto that "We All Live Downstream", I also believe that we need to lead by example and take care of PA's watersheds first.

Article I, Section 27 of the Pennsylvania Constitution provides as follows:

Sec. 27. Natural Resources and the Public Estate

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

This amendment, which was adopted in 1972, encompasses two basic principles. First, Pennsylvanians have a right to a decent environment, and second, Pennsylvania government has a trusteeship responsibility to protect that environment on behalf of future generations. EPCAMR is doing its part to uphold these Constitutional principles. As a public citizen, community leader, and active community volunteer, speaking on behalf of other Coalfield residents, I feel that I have done my part and continue to do so by actively contributing in this democratic public participation process of having my voice heard.

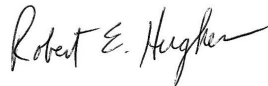
The Chesapeake Bay is an iconic national treasure and an over \$1 trillion resource. The Clean Water Act, three major Bay Agreements and scores of minor ones, three consent decrees, dozens of Memoranda of Agreement/Understanding (MOA/MOU) and a Presidential Executive Order all require development of a Bay-wide TMDL. It is not only legally required, but perfectly logical, appropriate and fair for EPA to develop this TMDL. Moreover, EPA has used this authority wisely, engaging in a transparent public process developing the TMDL (and seeking comments on the

draft), providing states opportunity to prepare and revise draft Watershed Implementation Plans, (WIPs), and seeking to implement allocations that are substantially equivalent to those the states have had since 2003.

Through the WIP process states are given control to address all sources of pollution, developing a plan each state believes will reach its targeted pollution reductions. The reality is that nonpoint source pollution is the largest source of pollution to the Bay and its tributaries.

We urge you to allow the states to work with the EPA to finish what they have started and continue on a path that will provide clean water for the region. EPCAMR is here to help at the local level.

Sincerely,
Respectfully submitted,



ROBERT E. HUGHES,
EPCAMR *Executive Director*.

CC:

EPCAMR Region Congressmen, State Representatives, and Senators within the Chesapeake Bay Watershed;
Water Docket, Environmental Protection Agency—Region III;
EPCAMR Board of Directors;
Chesapeake Bay Foundation;
Alliance for the Chesapeake Bay;
Susquehanna River Basin Commission;
Lackawanna River Corridor Association;
Sustainable Chesapeake—The Conservation Fund;
Burke Environmental Associates;
PA DEP Office of Policy and Communications;
PA DEP Section 319 Program;
PA DEP Bureau of Abandoned Mine Reclamation;
PA DEP Bureau of District Mining Operations—Pottsville & Moshannon Office;
Pocono NE RC & DC;
Capital Area RC & DC;
PA Mining & Reclamation Advisory Board;
PA DCNR Bureau of Forestry;
PA Citizens Advisory Council;
PA Environmental Council;
PA Anthracite Council;
PennFuture;
Office of Surface Mining—Harrisburg Office;
State Conservation Commission;
Appalachian Coal Country Watershed Team;
Earth Conservancy;
National Trout Unlimited;
Appalachian Region Reforestation Initiative (ARRI);
ARIPPA;
WPCAMR.

SUBMITTED LETTER BY MELINDA HUGHES-WERT, PRESIDENT, NATURE ABOUNDS

March 14, 2011

Hon. GLENN THOMPSON,
Chairman,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.;
Hon. TIM HOLDEN,
Ranking Minority Member,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.

RE: Hearing to review the Chesapeake Bay TMDL, agricultural conservation practices, and their implications on national watersheds

Dear Chairman Thompson and Ranking Member Holden:

On behalf of Nature Abounds, a national nonprofit located in Congressman Thompson's District, we would like to thank you for the opportunity to submit comments on the record related to your hearing on the Chesapeake Bay TMDL.

As you know, the Chesapeake Bay is an iconic national treasure and an over \$1 trillion resource. The Clean Water Act, three major Bay Agreements and scores of minor ones, three consent decrees, dozens of Memoranda of Agreement/Understanding (MOA/MOU) and a Presidential Executive Order all require development of a Bay-wide TMDL. It is not only legally required, but perfectly logical, appropriate and fair for EPA to develop this TMDL. Moreover, EPA has used this authority wisely, engaging in a transparent public process developing the TMDL (and seeking comments on the draft), providing states opportunity to prepare and revise draft Watershed Implementation Plans, (WIPs), and seeking to implement allocations that are substantially equivalent to those the states have had since 2003.

We all must do our part to protect water resources in the region because millions of residents pull their drinking water directly from the rivers that flow to the Chesapeake Bay—from Richmond and Lynchburg, Virginia all the way up to Elmira and Binghamton, New York, and many places in between like Washington, D.C. More locally on the West Branch of the Susquehanna River, there are 580,000 citizens that rely on safe drinking water.

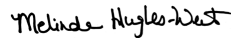
The reality is that nonpoint source pollution is the largest source of pollution to the Bay and its tributaries. Scientists calculate that agriculture is responsible for almost half of the nutrient pollution discharged into rivers that flow into the Bay watershed, and 60% of the sediment pollution. It is likely the valuable agricultural conservation efforts some of our region's farmers are implementing will be discussed during your hearings. We applaud the farmers who are working hard to preserve their lands and their local waters, and we hope the agricultural community finds a way to document these achievements to include in the Bay model.

Likewise, in our area located near the headwaters of the West Branch of the Susquehanna, in addition to agriculture run off, we are once again experiencing more natural resource extraction and timbering due to the Marcellus Shale development. This of course is a concern as well as the Abandoned Mine Drainage that has already contaminated some of our streams.

Through the WIP process, states are given control to address all sources of pollution, developing a plan each state believes will reach its targeted pollution reductions. The states are also working throughout the region to ensure plans are tailored to each local community's needs. For example, each state addresses agriculture differently within their WIPs, but the plans would not be successful without addressing agriculture in the scope of all pollution sources. Allowing the EPA to continue their work with the states allows us all to work together towards a healthy economy as well as a healthy environment for the Chesapeake Bay region.

Pollution is affecting the community that we live in. Water pollution isn't just dangerous to fish; it can be a detrimental to human health. We urge you to allow the states to work with the EPA to finish what they have started and continue on a path that will provide clean water for the region, not only for the Chesapeake Bay itself, but for the people living upstream, as we do in Congressman Thompson's District.

Sincerely,



MELINDA HUGHES-WERT,
President.

SUBMITTED LETTER BY JAN JARRETT, PRESIDENT & CEO, CITIZENS FOR
PENNSYLVANIA'S FUTURE

Hon. GLENN THOMPSON,
Chairman,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.;
Hon. TIM HOLDEN,
Ranking Minority Member,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.

RE: Hearing to review the Chesapeake Bay TMDL, agricultural conservation practices, and their implications on national watersheds

Dear Chairman Thompson and Ranking Member Holden:

On behalf of Citizens for Pennsylvania's Future (PennFuture), we would like to thank you for the opportunity to submit comments on the record related to your hearing on the Chesapeake Bay TMDL and clean water throughout the region.

The Chesapeake Bay is an iconic national treasure with an estimated value of over \$1 trillion. The Clean Water Act, three major Bay Agreements and scores of minor ones, three consent decrees, dozens of Memoranda of Agreement/Understanding (MOA/MOU) and a Presidential Executive Order all require development of a Bay-wide TMDL. It is not only legally required, but perfectly logical, appropriate and fair for EPA to develop this TMDL. Moreover, EPA has used this authority wisely, engaging in a transparent public process developing the TMDL (and seeking comments on the draft), providing states opportunity to prepare and revise draft Watershed Implementation Plans, (WIPs), and seeking to implement allocations that are substantially equivalent to those the states have had since 2003.

We all must do our part to protect water resources in the region because millions of residents pull their drinking water directly from the rivers that flow to the Chesapeake Bay—from Richmond and Lynchburg, Virginia all the way up to Elmira and Binghamton, New York, and many places in between like Washington, D.C. I'm sure you are aware of the many Pennsylvania communities that rely on our local waterways for drinking, recreation and tourism.

Through the WIP process states are given control to address all sources of pollution, developing a plan each state believes will reach its targeted pollution reductions. The states are also working throughout the region to ensure plans are tailored to each local community's needs. The reality is that nonpoint source pollution, including farm runoff, is the largest source of pollution to the Bay and its tributaries. There is no place this is more evident than right here in central Pennsylvania. Scientists calculate that agriculture is responsible for almost half of the nutrient pollution discharged into rivers that flow into the Bay watershed, and 60% of the sediment pollution. Each state addresses agriculture differently within their WIPs, but the plans would not be successful without addressing agriculture in the scope of all pollution sources.

It is likely the valuable agricultural conservation efforts some of our region's farmers are implementing will be discussed during your hearing. We applaud the farmers who are working hard to preserve their lands and their local waters. Many in the agricultural community have taken advantage of the vast state and Federal financial resources available to make these upgrades. Others have used personal resources to reinvest back into their operations for the sake of sustainability. We hope the agricultural community finds a way to document these achievements to include in the Bay model.

Pollution is affecting the community that we live in; for example, City Island Beach in Harrisburg experiences beach closures almost every summer because of high *E. coli* levels and poor water quality. Water pollution isn't just dangerous to fish; it can be a detrimental to human health because of unsafe drinking water and flooding. We urge you to allow the states to work with the EPA to finish what they have started and continue on a path that will provide clean water for the region.

Sincerely,



JAN JARRETT,
President & CEO,
Citizens for Pennsylvania's Future (PennFuture).

SUBMITTED LETTER BY DAVE O'LEARY, CONSERVATION CHAIR, MARYLAND SIERRA CLUB

March 14, 2011

Hon. GLENN THOMPSON,
Chairman,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.;
Hon. TIM HOLDEN,

Ranking Minority Member,
 Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
 Washington, D.C.

RE: Hearing to review the Chesapeake Bay TMDL, agricultural conservation practices, and their implications on national watersheds

Dear Chairman Thompson and Ranking Member Holden:

On behalf of the 14,000 members of the Sierra Club, we would like to thank you for the opportunity to submit comments on the record related to your hearing on the Chesapeake Bay TMDL.

The Chesapeake Bay is an iconic national treasure and an over \$1 trillion resource. The Clean Water Act, three major Bay Agreements and scores of minor ones, three consent decrees, dozens of Memoranda of Agreement/Understanding (MOA/MOU) and a Presidential Executive Order all require development of a Bay-wide TMDL. It is not only legally required, but perfectly logical, appropriate and fair for EPA to develop this TMDL. Moreover, EPA has used this authority wisely, engaging in a transparent public process developing the TMDL (and seeking comments on the draft), providing states opportunity to prepare and revise draft Watershed Implementation Plans, (WIPs), and seeking to implement allocations that are substantially equivalent to those the states have had since 2003.

We all must do our part to protect water resources in the region because millions of residents pull their drinking water directly from the rivers that flow to the Chesapeake Bay—from Richmond and Lynchburg, Virginia all the way up to Elmira and Binghamton, New York, and many places in between like Washington, D.C.

Through the WIP process states are given control to address all sources of pollution, developing a plan each state believes will reach its targeted pollution reductions. The states are also working throughout the region to ensure plans are tailored to each local community's needs. The reality is that nonpoint source pollution, including farm runoff, is the largest source of pollution to the Bay and its tributaries. Scientists calculate that agriculture is responsible for almost half of the nutrient pollution discharged into rivers that flow into the Bay watershed, and 60% of the sediment pollution. Each state addresses agriculture differently within their WIPs, but the plans would not be successful without addressing agriculture in the scope of all pollution sources.

It is likely the valuable agricultural conservation efforts some of our region's farmers are implementing will be discussed during your hearing. We applaud the farmers who are working hard to preserve their lands and their local waters, and we hope the agricultural community finds a way to document these achievements to include in the Bay model.

Pollution is affecting the communities that we live in. There are countless examples throughout our State of Maryland where nutrient pollution is affecting the quality of life of our citizens. The inner harbor in Baltimore, for instance, is heavily polluted and its water quality is ranked as poor to very poor based on all major water quality indicators, including dissolved oxygen, bacterial growth; bio-diversity; and algae growth. In Anne Arundel County, based on that county's own research, all streams are biologically impaired and many are impacted by erosion that leads to the destruction of the flood plain and requires costly reconstruction. Finally, the Mattawoman creek in Charles and Prince George's county is the best and most productive tributary to the Chesapeake Bay according to Maryland Department of Natural Resources; Mattawoman creek is Chesapeake's Bay most productive migratory fish nursery, yet the creek's waters are listed as impaired by EPA, and it is at very high risk of further degradation.

Water pollution is dangerous to all living beings, including people; it can be dangerous to humans when flooding occurs and detrimental to human health if water quality is impacted by bacteria. We urge you to allow the states to work with the EPA to finish what they have started and continue on a path that will provide clean water for the region.

Sincerely,

DAVE O'LEARY,
Conservation Chair,
 Maryland Sierra Club.

SUBMITTED LETTER BY DOUG SIGLIN, FEDERAL AFFAIRS DIRECTOR, CHESAPEAKE BAY
FOUNDATION

March 15, 2011

Hon. GLENN THOMPSON,
Chairman,

Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.

Dear Chairman Thompson,

On behalf of the Chesapeake Bay Foundation, I respectfully request that this letter and the accompanying paper be included in the official record of your Subcommittee's March 16, 2011 "*Public hearing to review the Chesapeake Bay TMDL, agricultural conservation practices, and their implications on national watersheds.*"

Earlier today the USDA's Natural Resources Conservation Service (NRCS) released its final *Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region* (NRCS study). As you are well aware, collectively agriculture is the largest remaining source of nutrient pollution to the Chesapeake Bay and its tributaries. The conservation practices highlighted in the NRCS study are critical to achieve the pollution reductions outlined by the states in their recently-submitted Watershed Implementation Plans.

According to the NRCS study, eight out of ten cropped acres in the watershed require additional treatment to reduce nutrient and sediment losses from farm fields, especially nitrogen in subsurface flows. A key finding of the study is that within this 80% of cropped acres, about ¼ remains critically undertreated:

" . . . 19 percent of cropped acres (810,000 acres) have a high level of need for additional conservation treatment. Acres with a high level of need consist of the most vulnerable acres with the least conservation treatment and the highest losses of sediment and nutrients. Model simulations show that adoption of additional conservation practices on these 810,000 acres would, compared to the 2003–06 baseline, further reduce edge-of-field sediment loss by 37 percent, losses of nitrogen with surface by 27 percent, losses of nitrogen in subsurface flows by 20 percent, and losses of phosphorous (sediment attached and soluble) by 25 percent."

Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region, page 6.

Further, the NRCS study finds that only 9% of the cropped acres in the watershed meet criteria for adequate treatment of both phosphorous and nitrogen (page 31.)

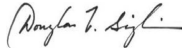
The NRCS study also finds that in the Susquehanna River watershed, 84% of crop acres are undertreated and 32% of that acreage is critically undertreated. This critically undertreated percentage is higher than any other cited watershed or region in the Chesapeake Bay region. According to NRCS, targeting assistance to these and other critically undertreated acres greatly enhances benefits to Chesapeake Bay water quality almost two times as much as treating those acres with moderate or low conservation need.

The NRCS report also highlights the extreme vulnerability of the Chesapeake Bay watershed to nutrient and sediment losses. In fact, the report says "Because of the higher vulnerability factors, the Chesapeake Bay region has higher per-acre average annual losses of sediment, nitrogen, and phosphorus from fields than does the Upper Mississippi River Basin."

We urge you to make it a very high priority in the 2012 Farm Bill to focus conservation technical and financial assistance on the ¼ of cropped acres in the Chesapeake Bay watershed still in need of water quality treatment, and within that, to ensure that priority is given to the vulnerable acres most in need of one or more additional conservation practices. The 2008 Farm Bill took important steps in this direction through the creation of the Chesapeake Bay Watershed Initiative, which has a \$250 million baseline for the next 5 year period. We urge you to do all you can to continue this program, expand it, and search for ways to make it even more effective on the ground.

Improving the historically insufficient air and water quality performance of agriculture in the Chesapeake Bay region and around the nation, while at the same time meeting the world's need for adequate and nutritious food, is one of the great challenges that our country faces in the coming decades. We ask that you and your colleagues on the House Agriculture Committee do all you can to begin to address these challenges with singular focus, energy and wisdom in the 2012 Farm Bill.

Thank you for consideration of this request.



DOUG SIGLIN,
Federal Affairs Director.

CC:

Hon. TIM HOLDEN, *Ranking Minority Member*, Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture.

ATTACHMENT

The LimnoTech Report: A Faulty and Misleading Distraction

Beth McGee, Ph.D., Senior Scientist, Chesapeake Bay Foundation

In December 2010, the Agricultural Nutrient Policy Council (ANPC) released a report, prepared by LimnoTech, entitled "Comparison of Draft Load Estimates for Cultivated Cropland in the Chesapeake Bay Watershed." The ANPC is chaired by the American Farm Bureau Federation's Director of Regulatory Services, Don Parrish. Other steering committee members include: The Fertilizer Institute, the National Pork Producers Council, the National Corn Growers Association and the Agribusiness Retailers Association.

The LimnoTech report levied criticisms at the computer model used by the Environmental Protection Agency (EPA) to develop the Chesapeake Bay 'pollution diet' or Total Maximum Daily Load (TMDL). Specifically, the report compared the Chesapeake Bay Program (CBP) Partnership's Watershed Model to one used by the U.S. Department of Agriculture (USDA) in its Conservation Effects Assessment Project (CEAP) report for the Chesapeake Bay Region. LimnoTech alleges that differences between the two modeling efforts draw into question the validity of using the CBP Watershed model to develop the Bay TMDL. **This contention is completely without merit. Not only is the CBP Watershed Model a fully valid basis for the TMDL, the CEAP report reaffirms the need for agriculture to do far more to reduce its water quality impacts.**

The CBP Watershed Model and the CEAP model were developed for two different purposes. The CBP Watershed Model was created as a management decision-making tool to assist with the development of the TMDL and includes comparable information about multiple pollution sources. The CEAP model is more narrowly focused on evaluating the effects of conservation practices on cropland. Because they were developed independently to achieve different goals, it is not surprising the modeling framework and several model parameters (*e.g.*, hydrology, time frame, spatial scale) differ. Hence, comparing the models is like comparing apples to oranges.

At its core, the LimnoTech report is an attempt by national agribusiness lobbying groups to discredit the Chesapeake Bay TMDL and delay efforts to clean up the region's rivers, streams, and the Chesapeake Bay. The Bay TMDL is a scientifically-based tool developed over a decade in collaboration with numerous Federal, state, and academic partners using a state of the art model that peer reviews have validated time and time again. ANPC's efforts to undermine the TMDL by attacking the credibility of the CBP Watershed Model distracts us from the real issue that agriculture, like all other sources of pollution, must do more if we are to restore the Chesapeake and the rivers that feed it.

Flaws

1. The LimnoTech report is fundamentally wrong to compare the CBP Watershed Model's estimates of TMDL caps for agriculture with the CEAP model's agricultural pollution loads.

LimnoTech presents, on the front page of its report, graphs that compare pollution load estimates from cropland for the CBP Watershed Model and CEAP model to the Bay TMDL pollution caps or limits for each pollutant that agriculture is responsible for achieving. This comparison is misleading and inappropriate. As noted above, the two models' designs are inherently different.

By way of example, let's say you go shopping for a new suit and are alarmed to find that you no longer fit into a size 8 of your favorite brand. Now you are a size 10. You decide, on the spot, to lose weight so you can fit into a size 8. The same day, you go into another store and try on a size 8 of a different brand and it fits. Does that mean you don't need to lose weight? No! It means the brands are sized differently and to gauge your progress on losing weight, you should compare your ability to fit into your favorite brand.

In the case of the CEAP and CBP Watershed models, differences in things like time frames, rainfall inputs, and averaging period mean that the outputs from the models will be different. Directly comparing the estimated pollution loads from one model, with the TMDL pollution limits estimated by another, is not scientifically valid or appropriate.

2. Differences in land use are explainable.

The LimnoTech report indicates that the CBP Watershed Model assumes there are 41.1 million acres of land in the watershed while the CEAP model uses an estimate of 42.49 million acres. The reason why the CEAP model figure is higher is because it includes areas that are not inside the Bay watershed; *e.g.*, this estimate includes most of the land on the Delmarva Peninsula, only part of which is in the Chesapeake Bay watershed. If one reconciles the differences, the estimates used for each model are very similar.

Furthermore, differences in estimated acreages of cropland are also explainable if one considers the above differences in the acreage estimates for the watershed as well as the fact that LimnoTech compared crop data from the CBP Watershed Model from 2009 to data from 2003–2006 in the CEAP model. The LimnoTech report fails to highlight these important differences.

3. The LimnoTech report fails to note that differences in estimates of acreage under conservation tillage are a reporting issue, not a modeling issue.

Some have suggested that agricultural practices that are implemented voluntarily (*i.e.*, without state or Federal cost-share assistance) are not being counted and reported by the states to EPA and thus not included in the CBP Watershed Model. The CEAP report based its rate of practice implementation on farmer surveys; *i.e.*, on what a farmer says he/she is doing in the field. There is great interest from EPA, USDA, and the Bay jurisdictions in better quantification and accounting of implemented practices, particularly cover crops and no-till, that farmers often implement without cost-share assistance. USDA and EPA have agreed to work cooperatively to address this issue. This commitment is also contained within the *Strategy for Protecting and Restoring the Chesapeake Bay* developed in response to the Chesapeake Bay Executive Order (13508).

Thus, this omission of implementation data in the CBP Watershed Model is a reporting issue, not a flaw in the model as concluded by LimnoTech. As verified implementation data are acquired, the CBP Watershed Model will be updated to include this new information. This omission, however, has no bearing on the TMDL allocations, another point LimnoTech fails to acknowledge.

4. LimnoTech is wrong when it concludes EPA “moved 20 percent of land out of crop production to pasture or forest to help achieve the allocations in the TMDL.”

This statement typifies a number of inaccuracies found throughout the LimnoTech report. The Bay TMDL was based on the Bay jurisdictions’ watershed implementation plans, which detail the management measures those jurisdictions conclude are necessary to achieve the TMDL allocations. The jurisdictions, not the EPA, made the decisions about conversion of cropland to pasture, hayland, forest, or forested buffers. LimnoTech is wrong to state otherwise.

Conclusion

It is important to note that the overall conclusions drawn from both the USDA CEAP report and the CBP Watershed Model about agricultural runoff and Bay restoration are entirely consistent. We have made progress to date, reducing nitrogen, phosphorus, and sediment pollution from agricultural runoff. More is left to be done, and the deadline is 2025.

We can achieve even greater reductions from the agricultural sector by implementing basic soil conservation and nutrient management plans on the region’s cropland. The fact that two entirely different models, with different assumptions and inputs, have reached the same overall conclusion is quite reaffirming in terms of the management decisions we are making to clean up the region’s waterways.

SUBMITTED LETTER BY CHOOSE CLEAN WATER COALITION

March 16, 2011

Hon. GLENN THOMPSON,
Chairman,

Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.;

Hon. TIM HOLDEN,
Ranking Minority Member,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture
Washington, D.C.

RE: Hearing to review the Chesapeake Bay TMDL, agricultural conservation practices, and their implications on national watersheds

Dear Chairman Thompson and Ranking Member Holden:

On behalf of the members of the Choose Clean Water Coalition (Coalition) listed below, we would like to thank you for the opportunity to submit comments on the record related to your March 16, 2011 hearing on the Chesapeake Bay TMDL.

The Chesapeake Bay is an iconic national treasure and an over \$1 trillion resource.¹ Right now is our best opportunity in a generation to restore the Bay and all the waters that feed it. While we have made progress on a number of fronts, we simply have not done enough thus far to stem pollution to our waterways. The U.S. Environmental Protection Agency (EPA) and the Bay states collaborated on the issuance of the TMDL, and we formally express our strong support to implement the Bay-wide TMDL.

We have a moral, economic and legal imperative to protect these local waters upon which 17 million people rely. The Clean Water Act, three major Bay Agreements and scores of minor ones, three consent decrees, dozens of Memoranda of Agreement/Understanding (MOA/MOU) and a Presidential Executive Order all required the development of a Bay-wide TMDL. It was not only legally required, but perfectly logical, appropriate and fair for EPA to develop this TMDL. Moreover, EPA has used this authority wisely, engaging in a highly transparent public process developing the TMDL (and seeking comments on the draft), providing the states opportunity to prepare and revise draft and then final Watershed Implementation Plans (WIPs), and seeking to implement allocations that are substantially equivalent to those the states have had since 2003.

The decline of this ecological national treasure stems from human activity that has altered the landscape throughout the Bay's 64,000 square mile watershed comprised of parts of Maryland, Virginia, Pennsylvania, Delaware, New York, West Virginia and all of the District of Columbia ("Bay states"). The population in the watershed has doubled since 1950 (now around 17 million), and much of this growth and development—leveling trees, forests and wetlands and replacing farms with subdivisions and malls—has taken place close to the Bay or to its sensitive tributaries, harming natural filters that are critical to a healthy ecosystem.

The Chesapeake has historically been America's great protein factory—once producing 25 million bushels of oysters annually and, until recently, 50% of the nation's blue crabs. The Bay is the spawning and nursery grounds for up to 90% of the Atlantic stocks of striped bass. But, the most recent harvest of oysters was down to 200,000 bushels—far below historic levels—and only about 1/3 of the nation's blue crabs now come from the Chesapeake.

The most critical measure of the Bay's health is water quality. A healthy and productive Bay must be safe for people and support abundant aquatic life, such as oysters, fish and crabs. The water should be clear enough for underwater grasses, a critical habitat for these species, to thrive. The Bay's primary water quality problem is caused by excessive amounts of nutrients, specifically nitrogen and phosphorus, and sediment that flow from tributaries and lead to murky water and algae blooms. Excess algae cloud the water and block sunlight from reaching the Bay grasses on the bottom. Decaying algae create low oxygen levels for aquatic life throughout the Bay. The latest indicators of Bay health from EPA in 2009, showed the Bay to be meeting only 24% of its water quality goals.²

Origins of Chesapeake Bay Management and Restoration

In 1972, Tropical Storm Agnes exacerbated the decline of the Bay, which led U.S. Senator Charles "Mac" Mathias (R-Md) to set out on a lengthy tour of the Bay in the summer of 1973. Six years and \$27 million later, the EPA finished the comprehensive study and, in September 1983, released a lengthy report, *Chesapeake*

¹ 2004 Chesapeake Bay Watershed Blue Ribbon Finance Panel Report, "Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay".

² *Bay Barometer: A Health and Restoration Assessment of the Chesapeake Bay and Watershed in 2009*, EPA 2010.

Bay: A Framework for Action. The report identified nutrient pollution as the greatest threat to the Bay, and recognized that the problem could not be solved without addressing the entire watershed—not just the tidal Bay states of Maryland and Virginia. The report also provided an innovative blueprint for the intergovernmental, inter-jurisdictional “Chesapeake Bay Program” that was formed in December when the *Chesapeake Bay Agreement of 1983* was signed by a group that would be known as the Chesapeake Executive Council—the Governors of Maryland, Pennsylvania and Virginia, the Mayor of the District of Columbia, and the Administrator of the EPA.

In February, 1987 Congress passed the reauthorization of the Clean Water Act³ (CWA), which included a new section entitled “Chesapeake Bay”. This provision, known as Section 117, basically codified the Chesapeake Bay Program and authorized Congress to continue funding the restoration effort at \$13 million annually.⁴ In December 1987, the Chesapeake Executive Council, now expanded to include the chair of the Chesapeake Bay Commission, signed the *1987 Chesapeake Bay Agreement*, which for the first time included specific quantitative goals and commitments. The centerpiece of the *Agreement* was a goal to reduce nutrient pollution to the Bay by 40% by 2000. The *1992 Amendments to the Chesapeake Bay Agreement* was signed by the Council and “capped” the 40% reduction goal after 2000. In addition, the *1992 Amendments* recognized the need to reduce nutrients in the tributaries, and called for the states to develop “tributary-specific strategies” on how to meet the nutrient reduction goal. The *Amendments* also recognized the need for “intensified efforts to control nonpoint sources of pollution, including agriculture and developed areas . . .”, as well as the need to engage Delaware, New York and West Virginia in the efforts to reduce nutrients in the tributaries.

In 1998, a lawsuit filed by the American Canoe and American Littoral Society against EPA alleged Virginia was not timely and complete in listing its Clean Water Act Section 303(d) impaired waters and preparing TMDLs for those waters, and that EPA failed in its non-discretionary duty under the Clean Water Act to take over when the state had failed to do so.

Virginia submitted an incomplete list of impaired waters in 1996. That list, which included Virginia’s portion of the Chesapeake Bay, was partially approved by EPA in 1998. The lawsuit was settled with a consent agreement in the Federal Eastern District of Virginia court on June 11, 1999. Under the terms of the court agreement, EPA would ensure that Virginia completed its listing of impaired waters and developed TMDLs for all waters on the 1998 list by May 1, 2010. If Virginia did not do so, EPA would complete them no later than May 1, 2011. If waters met water quality standards any time up to May 1, 2011, they would be removed from the list and there would be no need for TMDLs for those waters.

The Chesapeake Executive Council signed the *Chesapeake 2000 Agreement* on June 28, 2000. Delaware and New York both signed an MOU with the other Chesapeake Bay Program partners and agreed to adopt the Water Quality goals of the *Chesapeake 2000 Agreement*—West Virginia followed suit in 2002.

All of the Bay states developed updated tributary specific strategies, most were final in 2004. For the past 7 years all of the Bay states have known what their load reduction allocations would be, and have developed strategies to meet them, which are now called “watershed implementation plans (WIPs)”.

At the 2007 Chesapeake Executive Council meeting, Maryland’s Governor Martin O’Malley, chair of the Chesapeake Executive Council, formally announced that the Chesapeake Bay Program would not meet its water quality goals by 2010. Removing the Bay from the Section 303(d) list would have avoided the need for development of a TMDL for the Bay. The failure to meet that deadline triggered the court ordered obligations found in the *American Canoe* and *Kingman Park* consent decrees and the MOU with Maryland to develop a Bay TMDL discussed in further detail below.

This failure to meet the 2010 restoration goals was acknowledged again in 2008 at the annual Council meeting, when EPA revealed that the current restoration pace would not meet the nitrogen goals until 2034 and the phosphorus goals until 2050. In June 2008, the Principals’ Staff Committee of the Chesapeake Bay Program formally requested that EPA accelerate the Bay TMDL so it takes effect no later than December 31, 2010—not May 1, 2011.⁵ EPA agreed to the request from its partners and pledged to finalize the Bay TMDL by the end of 2010.

³ Water Quality Act of 1987.

⁴ In 2000, Congress passed a reauthorization of Section 117 of the Clean Water Act which increased the authorization level to \$40 million annually.

⁵ PSC Meeting minutes June 18–19, 2008.

Congress and the Administration have increased commitments of financial and agency support for restoration and protection of the Chesapeake Bay watershed since the 1980s. There has been a considerable amount of Federal support to states, local governments, farmers and others to implement on-the-ground practices that will be needed to succeed. This funding support has been increasing over the years as the TMDL has gotten closer, including, the 2008 Farm Bill, in which Congress allocated \$188 million over 6 years in mandatory spending for agricultural conservation practices on farms in the Chesapeake Bay watershed portion of the six states. This is a critical source of substantial funding for farmers to implement practices to support efforts to meet the requirements of the TMDL and their state WIPs.

In May 2009, President Obama issued Executive Order 13508 “Chesapeake Bay Protection and Restoration,” which aligned the Federal Government with efforts necessary to restore the Bay’s water quality and other restoration and protection goals. This historic effort will ensure unprecedented Federal support for efforts to restore the Bay and to meet the TMDL. In September 2009, USDA Secretary Vilsack announced that there would be \$638 million over 5 years from various USDA programs devoted to Chesapeake Bay restoration activities—though this is not all directly for water quality.

The EPA, along with the Bay states, has worked for decades in a cooperative manner through a transparent and public process to reduce pollution leading to the Chesapeake Bay. Unfortunately, water quality goals set in the 1980s and in 2000 have not been met, triggering the development of the TMDL. In addition there is a clear and lengthy record of EPA, and the Bay states, going to considerable lengths to ensure that both technical and economic attainability were addressed during this process. The new Chesapeake Bay tidal water quality standards are both scientifically valid and protective under the Clean Water Act, and at the same time, are economically and technically attainable. It is important to note that since the 1999 court agreement with EPA over the listing of Virginia’s Bay waters as impaired, there has been ongoing progress by EPA and the Federal Government to follow that agreement, the Chesapeake 2000 Agreement and ultimately the development of the Chesapeake Bay TMDL. This progress, though sometimes delayed by technical issues, continued unabated through the Administrations of Presidents Bill Clinton, George W. Bush, and Barrack Obama.

EPA is Legally Obligated To Develop a Bay Wide TMDL

EPA’s statutory authority to develop the Bay-wide TMDL is derived from Section 303(d) of the Clean Water Act.

The CWA required each state, . . . to submit by June 28, 1979 (no more than 180 days after the EPA identified certain pollutants, pursuant to § 1314(a)(2)(D)) the first of its TMDL calculations to the Administrator of the EPA. Within thirty days after this submission, the Administrator must take one of two actions. She may approve the TMDL, in which case it becomes binding on the states. If, however, she disapproves it, the Administrator must devise her own binding TMDL for the state within thirty days of disapproval. CWA § 303(d)(2), 33 U.S.C. § 1313(d)(2).

Not only have none of the Bay states developed TMDLs for either their portions of the Bay (Maryland and Virginia) or their tributaries to the Bay, but they have affirmatively asserted that they were not able to develop the TMDL on their own, and invited EPA to assume the lead and take over developing the Bay TMDL.⁶ Further, states agreed that a “state by state” approach to develop the TMDLs was scientifically and administratively less desirable than continuing to use a regional approach as they did with the water quality criteria. The well established doctrine of “constructive submission” of an inadequate TMDL by a state, which triggers EPA’s duty to take over, coupled with the states’ express request in this case that EPA take the lead in developing the Bay wide TMDL, provide ample authority for EPA’s action in doing so.

In addition to the request of the states and EPA’s legal obligation under the constructive submission doctrine, there is a compelling and logical reason for EPA to manage or coordinate the development of the Bay TMDL. The Bay watershed includes portions of six states, and all of the District of Columbia, and it would be

⁶This decision was formalized at the meeting of the Principals’ Staff Committee (PSC) on October 1, 2007. It was agreed that the Bay watershed TMDLs would be developed jointly between the six Bay watershed states, the District of Columbia and EPA, and then established by EPA. It was further agreed that the Water Quality Steering Committee would draft nutrient and sediment cap load allocations by tributary basin and jurisdiction, and the Principals’ Staff Committee would formally adopt these allocations.

impossible for one state to develop a TMDL to address more than a small part of the problem. No matter how firm Maryland and Virginia are with polluters or dischargers in their states, they could not fix the problems alone and could not order polluters or dischargers in upstream states, Pennsylvania or New York, for example, to cut back on their discharges.

Section 117(g) of the Clean Water Act

EPA's authority to issue the Bay wide TMDL is enshrined in Section 117 of the Clean Water Act, which states:

"The Administrator, in coordination with other members of the Chesapeake Executive Council, shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain—

(A) the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed.

(B) the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem; . . ."

EPA is required by this language to "ensure that management plans are developed and implementation is begun" to, among other things, achieve and maintain the nutrient reduction goals of the *Chesapeake 2000* Agreement—40% nutrient reduction and removal of the Bay from the Section 303(d) list. The proposed Chesapeake Bay TMDL and accompanying state developed WIPs are in fact the Congressionally required management plans to "achieve and maintain . . . the nutrient goals . . . [and] water quality requirements" referred to in Section 117(g) because they are tailored to achieving compliance with the water quality standards for nutrients and sediment. The TMDL is the principal tool provided in the Clean Water Act for this purpose, and therefore is precisely what Congress intended that EPA should do in implementing Sections 303(d) and 117(g).

In addition to the statutory requirements that EPA develop a Bay-wide TMDL, EPA is also required to take this action pursuant to the consent decree in the *Fowler* case. In that case, EPA was sued for failing to comply with Section 117(g) and the Bay Agreements. *Fowler v. EPA*, Case No. 09-cv-00005-CKK, D. D.C., January 5, 2009. That matter was settled by agreement between the parties. The agreement provides that EPA will develop a Bay wide TMDL "[b]y December 31, 2010, pursuant to 33 U.S.C. §§1313(d) and 1267 . . ." Settlement Agreement Section III.A.1. That agreement set forth a number of other deadlines for submission and completion of state watershed implementation plans. Thus, EPA is also required pursuant to the settlement agreement in *Fowler* to develop a Bay wide TMDL.

In its TMDL document EPA describes, thoroughly and accurately, the lengthy history leading to its development of the draft TMDL, including the legal framework (Sections 1–3). In Section 8, it describes the development by the states of their Watershed Implementation Plans, EPA's evaluation of them, and the use by EPA of "backstop" allocations which EPA developed, based on its exhaustive modeling and data-gathering efforts, to ensure that, where the WIPs fail to demonstrate eventual achievement of the loading caps, the "backstop" allocations will do so.

Consistent with the statutory scheme, binding judicial agreements, and at the request of the Bay states, EPA has taken the lead in developing and proposing the TMDL, based on years of discussions and hard work with representatives of the Bay states, the scientific community, members of the public, local officials and other stakeholders. Given the multi-jurisdictional nature of the water quality problems in the Bay, it also makes immense practical sense for EPA to take the lead. EPA's lead role in developing and issuing the TMDL and the final deadlines of December 2010 and 2025, for implementation, are further supported by the final strategies developed pursuant to the President's May 12, 2009 Executive Order.

Chesapeake Bay Program Computer Models

What is commonly referred to as "the Bay model" is actually a series of linked three-dimensional models. The suite of Chesapeake Bay models has been developed through an extensive peer reviewed scientific process over the past 20 to 30 years, with broad-based collaboration among Federal, state, academic and private partners. In 2003, the model simulations and other data pointed toward a nitrogen allocation of 175 million pounds annually. Federal and state decision makers ultimately allocated 183 million pounds of nitrogen to the seven Bay watershed jurisdictions, each of which developed Tributary Strategies, which were blueprints on how to meet each state's nutrient and sediment allocation. Additional information, including a newer Phase 5 model led to a very similar allocation in 2010 of 187.44 million

pounds of nitrogen to the seven jurisdictions. The allocations in 2010 for the TMDL were very close to those that the states were given 6 years earlier.

The Phase 5 Watershed Model has almost 100 collaborators and partners led by EPA, Virginia Department of Conservation and Recreation, Interstate Commission on the Potomac River Basin, University System of Maryland, Maryland Department of the Environment, U.S. Geological Survey, Chesapeake Research Consortium, and Virginia Polytechnic Institute. Special attention has been paid to the agricultural assumptions in the model with specific input from the Bay Program's Agricultural Nutrient and Sediment Reduction Workgroup.⁷ In addition, the Bay Program partnership recently funded University of Maryland's Mid-Atlantic Water Program to complete a 2 year study to update the effectiveness estimates of every best management practice in the model which resulted in a 900 page report that summarizes for each practice, all data evaluated, the technical experts involved in developing the recommendation, and all accounting of discussions and decisions made.

In its April 2007 report, *Taking Environmental Protection to the Next Level*,⁸ the National Academy of Public Administration stated that:

EPA's Chesapeake Bay Program has led the way in developing a comprehensive water monitoring and assessment program that tracks and compiles the water quality conditions throughout the Bay. Based on the monitoring data, the CBP has developed sophisticated Chesapeake Bay watershed and airshed models that have enhanced the understanding of the complex problem of nutrient pollution and its effects on the Bay waters. This watershed-wide understanding provided the foundation for the 1987 Chesapeake Bay Agreement and helped to coordinate and assign responsibility among the Bay states for achieving water quality goals.

A public criticism of the model has been that many practices, particularly agricultural ones, implemented voluntarily, are not being accounted for in the model. While this statement is true, in reality, it is not a flaw of the model, but rather a failure to collect the proper input information to feed into the model. The solution to this problem is to provide better accounting, not to change any of the model parameters. In addition, this under-counting of implemented practices does not affect the TMDL load allocations to the states which were based on the relative difference between maximum implementation of practices and no-action.

EPA, in cooperation with its Bay state partners and after years of allocation experience, has established sound, supportable rules and methods for the Bay TMDL. The Chesapeake Bay Program models are a critical tool in the adaptive management framework currently employed by the EPA and the Bay states to identify a path forward for restoration of the Chesapeake Bay. While water quality data and the actual living resources in the Chesapeake Bay will ultimately determine when we have restored a clean Bay, the Chesapeake Bay Program models help us develop a scientifically valid path to our goals.

The Economic Argument for a Clean Bay

Congress has recognized that the Chesapeake Bay is a "national treasure and resource of worldwide significance."⁹ Valued at over \$1 trillion, a restored and protected Chesapeake Bay is essential for a healthy and vibrant regional economy. Failure to "save the Bay" threatens this economic driver and, in fact, economic losses have already occurred due to water quality degradation throughout the watershed. More importantly, investing in clean water technology creates jobs, generates economic activity, and can save money in the long run.

Perhaps no other creature better exemplifies the Chesapeake Bay than the blue crab, *Callinectes sapidus*. For more than a half century, the blue crab has been at the apex of the Bay's commercial fisheries. Over 1/3 of the nation's blue crab harvest comes from the Chesapeake Bay. The average annual commercial harvest in Maryland and Virginia between 1999 and 2008 was about 55 million pounds.¹⁰ The dock-side value of the blue crab harvest Bay-wide in 2008 was approximately \$70 mil-

⁷ http://www.chesapeakebay.net/committee_agworkgroup_info.aspx?menuitem=16731.

⁸ 2007. National Academy of Public Administration. "Taking Environmental Protection to the Next Level: An Assessment of the U.S. Environmental Services Delivery System" 2048.

⁹ Chesapeake Bay Restoration Act of 2000, Nov. 7, 2000, P.L. 106-457, Title II, § 202, 114 Stat. 1967.

¹⁰ NOAA 2008. 2008 Fisheries Economics of the U.S. http://www.st.nmfs.noaa.gov/st5/publication/econ/2008/MA_ALL_Econ.pdf.

lion.¹¹ The recreational fishery also provides a significant financial off-set for Bay residents—the cost of catching crabs is far less than having to buy them.

The overall trend, however, since the 1990's has been a decrease in landings despite increased crabbing effort.¹² In addition, the number of crabs one year and older dropped from 276 million in 1990 to 131 million in 2008.¹³ When the broader impact on restaurants, crab processors, wholesalers, grocers, and watermen is added up, the decline of crabs in the Bay meant a cumulative loss to Maryland and Virginia of about \$640 million between 1998 and 2006.¹⁴

In its entirety, the fisheries industry is a significant part of local economies. The 2008 *Fisheries Economics of the U.S.* report by the National Oceanic and Atmospheric Administration (NOAA) indicates that commercial seafood industry in Maryland and Virginia contributed \$2 billion in sales, \$1 billion in income, and more than 41,000 jobs to the local economy.¹⁵ In addition there are indirect benefits to the economy in terms of jobs and work created for those who sell fishing tackle, maintain and repair boats and equipment and provide other related goods and services.

The economic benefits of saltwater recreational fishing are equally as impressive, contributing \$1.6 billion in sales which in turn contributed to more than \$ 800 million of additional economic activity and roughly 13,000 jobs.¹⁶ The majority (90–98%) of the commercial and recreational saltwater landings in this region come from the Chesapeake Bay.¹⁷

A 2001 study compared the 1996 water quality of the Bay with what it would have been without the Clean Water Act. Results indicated that benefits of water quality improvements to annual recreational boating, fishing, and swimming ranged from \$357.9 million to \$1.8 billion.¹⁸ Fisheries declines since the 1990s indicates that early progress reducing pollution hasn't been sustained—we must reverse this trend.

These economic impacts are not restricted to the tidal regions of the Bay watershed. According to the Pennsylvania Fish and Boat Commission (PFBC), nearly two million people go fishing in Pennsylvania each year, contributing over \$1.6 billion to the economy. Among the most popular species for anglers are smallmouth bass and coldwater species, such as brook trout. The PFBC recently passed a proposal to be enacted January 1 that mandates total catch-and-release of smallmouth bass in certain areas of the Susquehanna River because of population declines associated with water quality problems. Degraded stream habitat has restricted brook trout to a mere fraction of its historical distribution.

Virginia, and to a lesser extent Maryland, also support significant freshwater recreational fisheries, with roughly one million anglers participating and contributing millions to local economies.¹⁹ By way of example, a fish kill in the Shenandoah River watershed in 2005, likely caused by a variety of factors including poor water quality, resulted in roughly a \$700,000 loss in retail sales and revenues.²⁰

If pollution to the Bay is left unabated, we will see more continued decline of the region's fisheries and the resulting economic impacts. In short, we cannot afford *not* to clean up the Bay.

Unhealthy waters increase public health burdens associated with consuming tainted fish or shellfish or exposure to waterborne infectious disease while recreating. For example, one study estimated the cost associated with exposure to pol-

¹¹ NOAA Fisheries: Office of Science & Technology, Annual Commercial Landing Statistics website, http://www.st.nmfs.noaa.gov/st1/commercial/landings/annual_landings.html.

¹² Tom Horton. 2003. *Turning the Tide: Saving the Chesapeake Bay*. Second Edition. Island Press. Washington, D.C. 2003.

¹³ Chesapeake Bay Program. 2010. <http://www.chesapeakebay.net/status/bluecrab.aspx?menuitem=19683>.

¹⁴ Unpublished data. Dr. James Kirkley, Virginia Institute of Marine Science.

¹⁵ NOAA 2008. *2008 Fisheries Economics of the U.S.* (see 24).

¹⁶ NOAA 2008. *2008 Fisheries Economics of the U.S.* (see 24)

¹⁷ Lellis-Dibble, K.A., K.E. McGlynn, and T.E. Bigford. 2008. *Estuarine Fish and Shellfish Species in U.S. Commercial and Recreational Fisheries: Economic value as an incentive to protect and restore estuarine habitat*. NOAA TECHNICAL MEMORANDUM. <http://spo.nwr.noaa.gov/tm/TM90.pdf>.

¹⁸ Morgan, et al. 2001. *Benefits of water quality policies: the Chesapeake Bay*. ECOLOGICAL ECONOMICS. Vol. 39: 271–284.

¹⁹ U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*.

²⁰ Papadakis, M. 2006. *The Economic Impact of the 2005 Shenandoah Fish Kill: A preliminary economic assessment*. James Madison University. www.dep.state.va.us/export/sites/default/info/documents/fishkillReport-final.pdf.

luted recreational marine waters to be \$37 per gastrointestinal illness, \$38 per ear ailment, and \$27 per eye ailment due to lost wages and medical care.²¹

Roughly eight million wildlife watchers spent \$636 million, \$960 million and \$1.4 billion in Maryland, Virginia and Pennsylvania, respectively in 2006 on trip-related expenses and equipment.²² These estimates do not include other economic benefits of these expenditures such as job creation and the multiplier effect on local economies. Recreational boating is also a strong economic driver in Maryland, Pennsylvania and Virginia. The total impact on the Maryland economy from recreational boating is estimated to be about \$2.03 billion and 35,025 jobs.²³ Similarly, Pennsylvania residents spend \$1.7 billion on boating annually. The average expenditure per recreational boater is \$274. Of this amount, roughly \$113 a year is spent in direct boating-related expenses and \$161 is spent on trip-related expenses, including: auto fuel, meals, lodging and admission/entrance fees.²⁴

A recent study in Hampton, Virginia found that resident and non-resident boaters were responsible for \$55.0 million in economic impact to this city. This impact represents \$32.5 million in new value added, \$22.2 million in incomes and 698 jobs.²⁵ The majority of expenditures were by out-of-region boating-visitors which represents an inflow of “new” capital into the community. The study also indicated that “water quality, fishing quality and other environmental factors” ranked among the most important, in terms of factors that influence a boater’s decision on where to keep his/her boat.

A study by the University of Virginia found that implementation of the agricultural practices such as livestock stream exclusion, buffers, and cover crops, would generate significant economic impacts.²⁶ Every \$1 of state and/or Federal funding invested in agricultural best management practices would generate \$1.56 in economic activity in Virginia. Implementing agricultural practices, in Virginia, to the levels necessary to restore the Bay would create nearly 12,000 jobs of approximately one year duration.

A recent analysis of the value of investing in water and sewer infrastructure concluded that these investments typically yield greater returns than most other types of public infrastructure.²⁷ For example, \$1 of water and sewer infrastructure investment increases private output (Gross Domestic Product) in the long-term by \$6.35. Furthermore, adding one job in water and sewer creates 3.68 jobs to support that job.

Efforts to delay implementation of the Bay TMDL will only exacerbate the economic impacts this region has already experienced due to poor water quality. Furthermore, a recent poll in Virginia found that an overwhelming majority believe the state can protect water quality and still have a strong economy.²⁸ Eighty percent of respondents agreed with the statement, “we can protect the water quality in rivers, creeks and the Chesapeake Bay and have a strong economy with good jobs for Virginians, without having to choose one over the other.” Of those polled, 92% believe the Bay is “important for Virginia’s economy.” Implementation of the TMDL will result in clean water, a healthy Bay and a strong regional economy.

Conclusion

The voluntary, cooperative efforts to restore the Bay, which began in earnest in 1983, did not succeed in meeting any significant water quality improvement goals, with only 24% of the Bay’s water quality goals met in 2009. The latest estimate for meeting the nutrient reductions necessary to restore the Bay, at the current pace

²¹ R.H. Dwight, et al. 2005. *Estimating the economic burden from illnesses associated with recreational coastal water pollution—a case study in Orange County, California*. JOURNAL OF ENVIRONMENTAL MANAGEMENT. Vol.: 95–103.

²² U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*.

²³ Lipton, D. 2007. *Economic Impact of Maryland Boating in 2007*. University of Maryland Sea Grant Program.

²⁴ http://www.fish.state.pa.us/promo/funding/fact_economic_impact.htm.

²⁵ Virginia Institute of Marine Science. 2009. *Assessment of the Economic Impacts of Recreational Boating in the City of Hampton*. http://web.vims.edu/adv/econ/MRR2009_2.pdf.

²⁶ Rephann, T.J. 2010. *Economic Impacts of Implementing Agricultural Best Management Practices to Achieve Goals Outlined in Virginia’s Tributary Strategy*. Weldon Cooper Center for Public Service, University of Virginia. www.coopercenter.org/sites/default/files/publications/BMP_paper_final.pdf.

²⁷ Krop, R.A., C. Hernick, and C. Frantz. 2008. *Local Government Investment in Water and Sewer Infrastructure: Adding Value to the National Economy*. The U.S. Conference of Mayors, Mayors Water Council.

²⁸ <http://www.cbj.org/Document.Doc?id=562>.

of the voluntary programs, is in 2050. That would be 67 years from when the Bay Program was first formed.

The *1987 Chesapeake Bay Agreement* was very specific, laying out the purpose of this first historic water quality goal for the Chesapeake, "To ensure the productivity of the living resources of the Bay, we must clearly establish the water quality conditions they require and must then attain and maintain those conditions. Foremost, we must improve or maintain dissolved oxygen concentration in the Bay and its tributaries through a continued and expanded commitment to the reduction of nutrients from both point and nonpoint sources." For the first time in 24 years this water quality goal has a chance of being met because the Chesapeake Bay TMDL addresses everything that was laid out in 1987; the establishment of new dissolved oxygen water quality standards for the Bay and its tidal tributaries, and nutrient and sediment reduction allocations to the states, which will have to address both point and nonpoint sources of pollution. The court sanctioned Virginia consent agreement in 1999 established the requirement and deadlines for the Chesapeake Bay TMDL and was the trigger for the water quality section in the *Chesapeake 2000 Agreement*. This fact should rule out any reasonable argument that there has not been enough notice that there would be a Chesapeake Bay TMDL. Eleven years of consideration is sufficient. Moreover, EPA had no choice but to develop a TMDL because the states had failed to do so. This action by EPA was required by the CWA and an abundance of other legally binding agreements.

Given the size and complexity of the system and the failure of "voluntary" efforts to restore the Bay, the TMDL issued by EPA is consistent with the legislative recognition by the Bay states and absolutely essential. The regional commitment to restoring the Bay, and the efforts undertaken pursuant to the Executive Order, give us some hope that this suite of TMDLs will be more successful in restoring water quality than previous efforts. There were a variety of reasons for prior failures, including inadequate data, failure to update plans when progress lagged, and most especially, the failure to connect to a real and enforceable, approved implementation plan. We expect that a well implemented TMDL will provide what we have been lacking: strong science and implementation plans built on principles of adaptive management that can and will be enforced.

Sincerely,

1000 Friends of Maryland;
Adkins Arboretum;
American Rivers;
American Canoe Association;
Anacostia Watershed Society;
Audubon Maryland-D.C.;
Audubon Naturalist Society;
Chesapeake Bay Foundation;
Chester River Association;
Citizens for a Fort Monroe National Park;
Citizens for Pennsylvania's Future (PennFuture);
Clean Water Action;
Corsica River Conservancy;
Delaware Nature Society;
Eastern Pennsylvania Coalition for Abandoned Mine Reclamation;
Environment America;
Environment Maryland;
Environment Virginia;
Environmental Working Group;
Float Fisherman of Virginia;
Friends of Dyke Marsh;
Friends of Lower Beaverdam Creek;
Friends of Powhatan Creek Watershed;
Friends of the North Fork of the Shenandoah River;
Friends of the Rivers of Virginia (FORVA);
Friends of the Shenandoah River;
Goose Creek Association;
Loudoun Wildlife Conservancy;
Maryland League of Conservation Voters;
Midshore Riverkeeper Conservancy;
National Parks Conservation Association;
National Wildlife Federation;
Peach Bottom Concerned Citizens Group;
PennEnvironment;

Pennsylvania Council of Churches;
 Pennsylvania Organization of Watersheds and Rivers;
 Piedmont Environmental Council;
 Potomac Riverkeeper;
 Queen Anne's Conservation Association;
 Savage River Watershed Association;
 Southern Environmental Law Center;
 Virginia Conservation Network;
 Virginia League of Conservation Voters;
 Virginia Sierra Club;
 West Virginia Rivers Coalition;
 West/Rhode Riverkeeper;
 Western Clinton Sportsmen's Association.

SUPPLEMENTARY MATERIAL SUBMITTED BY BOB PERCIASEPE, DEPUTY
 ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

During the March 16, 2011 hearing entitled, *Hearing To Review the Chesapeake Bay TMDL, Agricultural Conservation Practices, and Their Implications on National Watersheds*, requests for information were made to EPA. The following are their information submissions for the record.

Insert 1

The CHAIRMAN. . . . One of the things I had asked Ms. Jackson about and wanted to get a follow up and then a confirmation. I had requested to see if the EPA has longitudinal studies over the past 30 years since we began to invest in a very important initiative in cleaning up the Chesapeake Bay. And I had requested that whatever longitudinal study may be out there by the EPA in terms of showing the trajectory of the health of the Bay over time. Is that something that you were able to bring with you today?

Mr. PERCIASEPE. Mr. Chairman, I don't have it with me today. The most up-to-date one will be out in about a month in April and I would like it if I can get you last year's summary. It is called the *Bay Barometer* and it is something that all the states and the Federal agencies all work on together and they track 13 important parameters in the Bay. And there is no doubt that many of them have improved over the last 20 years and some have stayed static and some have gotten a little worse as you might expect from the state of affairs. But the most recent one based on 2010 information will be available by April. I think what we would make available to the Committee and of course this is available on the web, but we will make it available to the Committee, the 2009 version and then make sure that you have 2010 version.

2009 Health & Restoration Assessment of the Chesapeake Bay & Watershed

Background:

Since its inception in 1983, the Chesapeake Bay Program (CBP) has been providing periodic updates on its progress to the public. Through time, the CBP continually improved its science defining the health of the Chesapeake Bay and its watershed as well as its ability to set and measure goals for its restoration and protection.

Since 2005, the CBP has annually produced a health and restoration assessment of the Bay and watershed, largely using indicators to show status and trends related to the health of the bay and its watershed, factors affecting that health, and measuring progress toward meeting the restoration goals committed to by the CBP partnership.

While some indicators in the 2009 assessment, released in April 2010, show considerable progress in partners' efforts since 1985, much more work needs to be done to restore the Bay and its watershed. In fact, the assessment concluded that the Bay continues to be degraded, illustrating a clear need to continue to accelerate restoration efforts across the region.

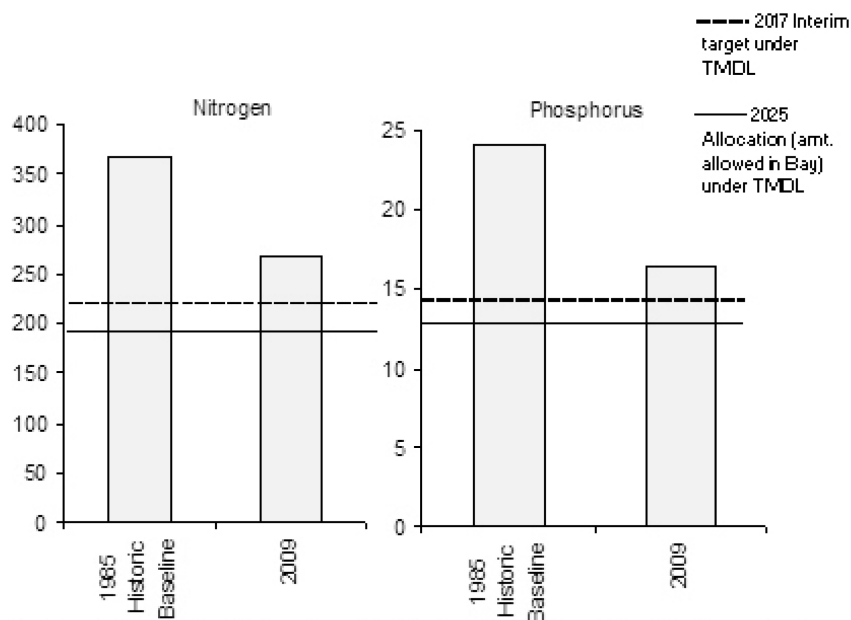
This briefing paper shows trends for several indicators used in the 2009 assessment, which we believe would be of interest to your members. More information on these and numerous other indicators can be found at <http://www.chesapeakebay.net/indicatorshome.aspx>.

Restoration and Protection Efforts

Implementing Efforts to Reduce Nitrogen and Phosphorus Pollution

- In December 2010, the Environmental Protection Agency established the Chesapeake Bay Total Maximum Daily Load (TMDL). As a result of this new Bay-wide “pollution diet,” Bay Program partners are revising their goals, schedules and ways to evaluate their efforts to reduce nitrogen, phosphorus and sediment pollution.
- The Bay TMDL is designed to ensure that all pollution control measures needed to fully restore the Bay and its tidal rivers are in place by 2025, with at least 60 percent of the actions completed by 2017. The 2025 date was established by the jurisdictions at the 2009 Chesapeake Executive Council meeting.
- Long-term average hydrology simulations, indicate that between 1985 and 2009:
 - nitrogen loads decreased 101 million pounds, from 368 to 267 million pounds/year.
 - phosphorus loads decreased 7.6 million pounds, from 24.1 to 16.5 million pounds/year.
- Pollutant loads to the Bay in any given year are influenced by changes in land-use activities and management practices, as well as the amount of water flowing to the Bay (hydrology).
 - Annual rain and snowfall influence the amount of water in rivers flowing to the Bay.
 - To understand the effects of management actions on nutrient loads (independent of annual variations in hydrology), it is appropriate to use climate-adjusted methods, such as watershed model simulations.

Total Pollution Loads to the Bay* in millions of pounds/year (Simulated)



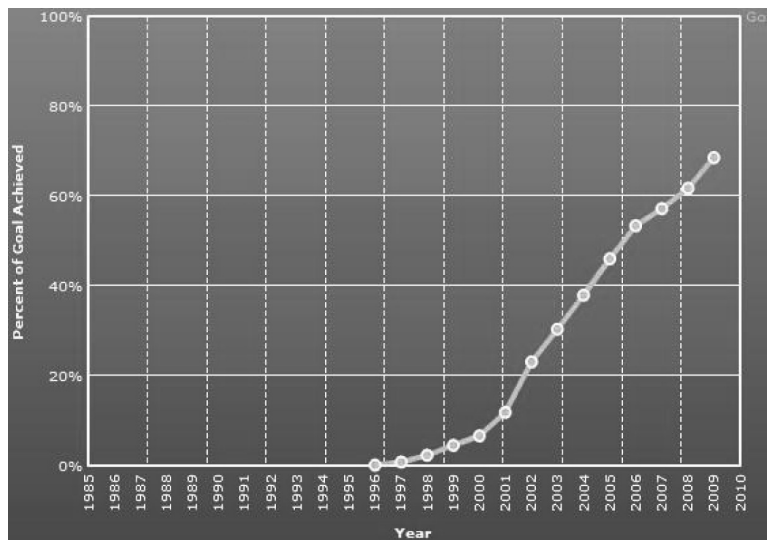
* Loads simulated using 5.3 version of Watershed model. Loads include atmospheric deposition of nitrogen to tidal waters.

Restoration and Protection Efforts

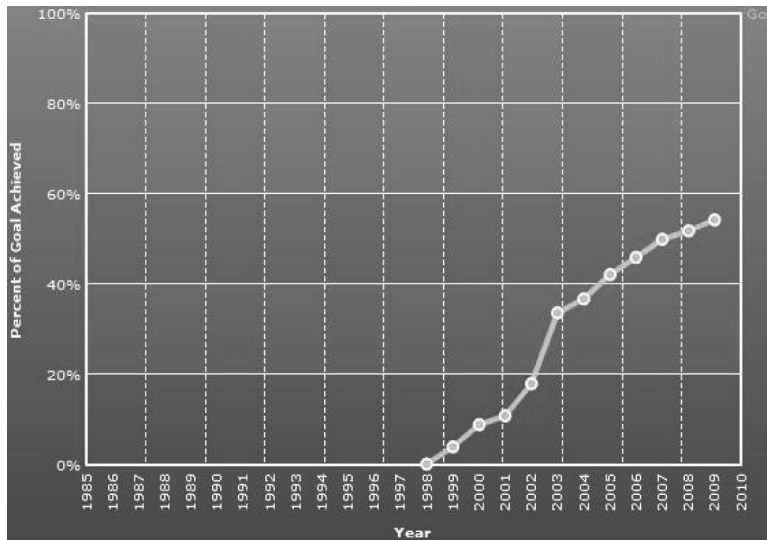
Planting Forest Buffers and Restoring Wetlands

- The Bay Program's near-term goals are to plant 10,000 miles of forest buffers and to restore 25,054 acres of wetlands in the watershed portions of Maryland, Pennsylvania, Virginia and Washington, D.C. by 2010.
 - Between 1996 and 2009, 6,858 miles of forest buffer were planted, achieving 69 percent of the goal.
 - Between 1998 and 2009, 13,614 acres of wetlands were established or re-established, achieving 54 percent of the goal.

Restoring Forest Buffers



Restoring Wetlands



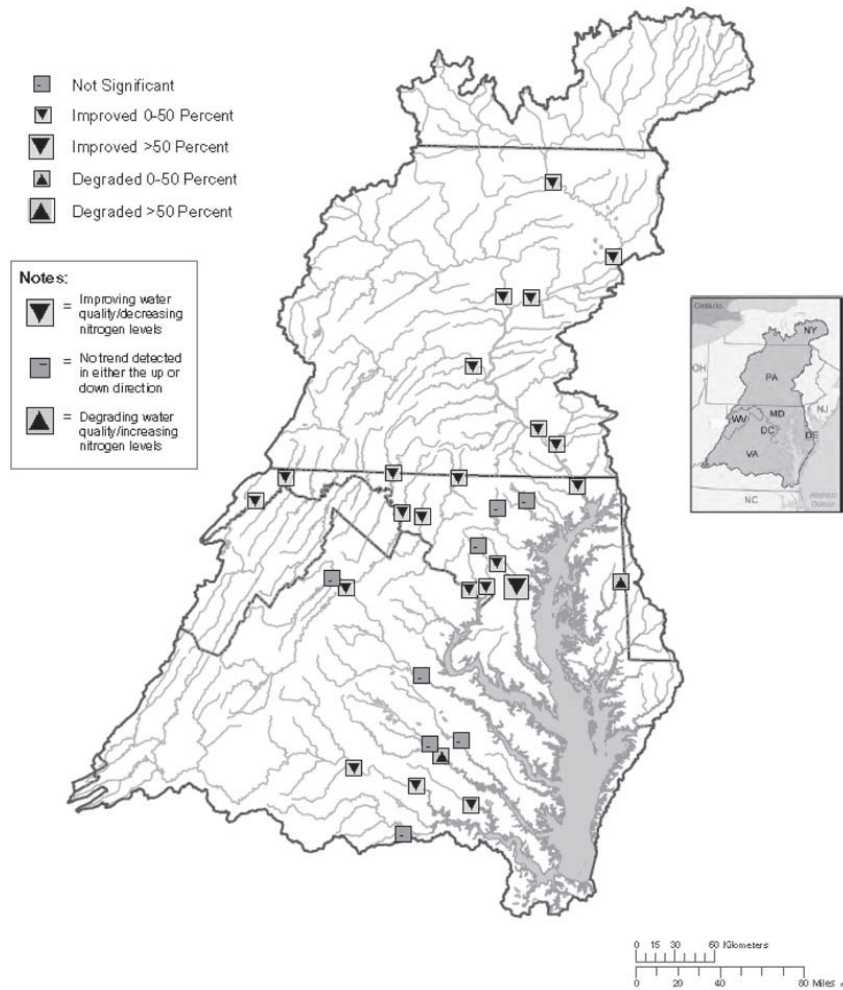
Watershed Health

Flow Adjusted Pollutant Trends in Non-tidal Rivers

- Since the 1980s, Bay Program partners have collected data on stream flow and water quality at 32 locations throughout the non-tidal portions of the watershed.
- Concentrations of pollutants are highly variable, depending on the amount of water flowing in streams and rivers throughout the Bay watershed. Therefore, scientists calculate flow-adjusted trends to determine whether concentrations have changed over time. By removing the effects of natural variations in stream flow, resource managers can evaluate the changes in stream health that may result from pollution reduction actions or other changes in the watershed.
- The majority of long-term stream monitoring sites show downward trends in flow-adjusted nitrogen concentrations, reflecting an improvement in conditions since the mid 1980s.

Long-Term Flow-Adjusted Trends for Total Nitrogen for 32 Sites in the Chesapeake Bay Watershed, 1985–2009

Long-Term Trend in Total Nitrogen



Data Sources: The nontidal water quality monitoring network which is a coordinated water quality monitoring program for the nontidal streams and rivers in the Chesapeake Bay Watershed. Monitoring is coordinated by the following partners: USGS, VA DEQ, MD DNR, WV DEP, PA DEP, S RBC, NYSDEC, and DN REC.

Trends in the Chesapeake Bay may differ from measured values due to downstream ecological processes. For more information on nitrogen trends in the Bay see http://www.chesapeakebay.net/status_pollutants.aspx.

For more information, visit www.chesapeakebay.net.

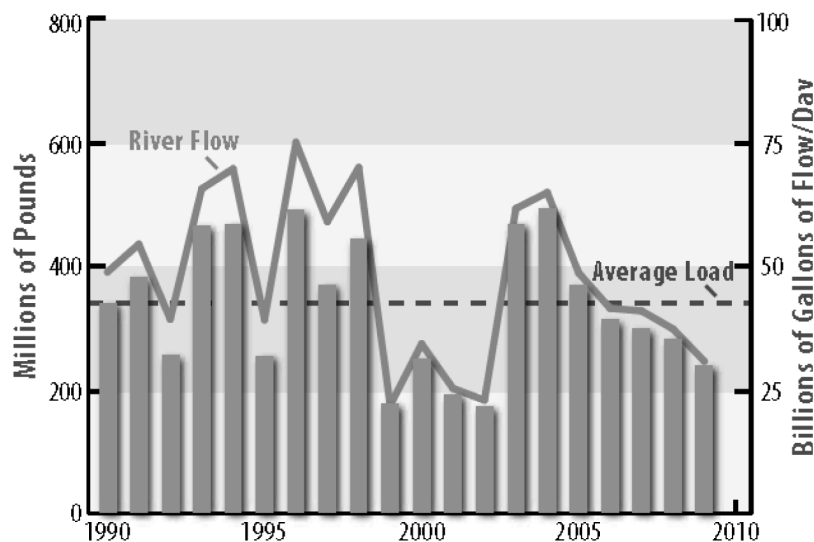
Disclaimer: www.chesapeakebay.net/termsfuse.htm.

Factors Impacting Bay and Watershed Health

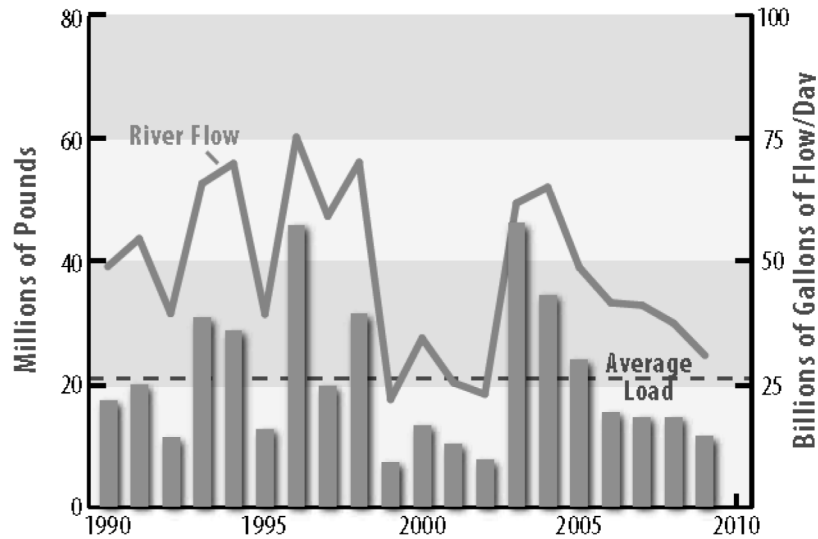
River Flow and Pollutant Loads to the Bay

- The amount of nutrients delivered to the Bay changes dramatically from year-to-year, depending on annual hydrological conditions.
 - 2009 river flow levels were less than previous years, resulting in less nitrogen and phosphorus reaching the Bay.
 - The annual variations complicate efforts to determine trends through time.
- It is important to calculate the amount of river flow and pollution loads to the Bay in any particular year in order to understand and explain changes in Bay water quality conditions.
- To calculate loads of nitrogen and phosphorus reaching the Bay, scientists use:
 - water samples collected at river input monitoring (RIM) sites to estimate loads from the majority of the watershed.
 - water samples collected at wastewater treatment facilities downstream of the RIM sites.
 - computer modeling to estimate loads from nonpoint sources downstream of the RIM sites.

Nitrogen Loads and Annual Average River Flow



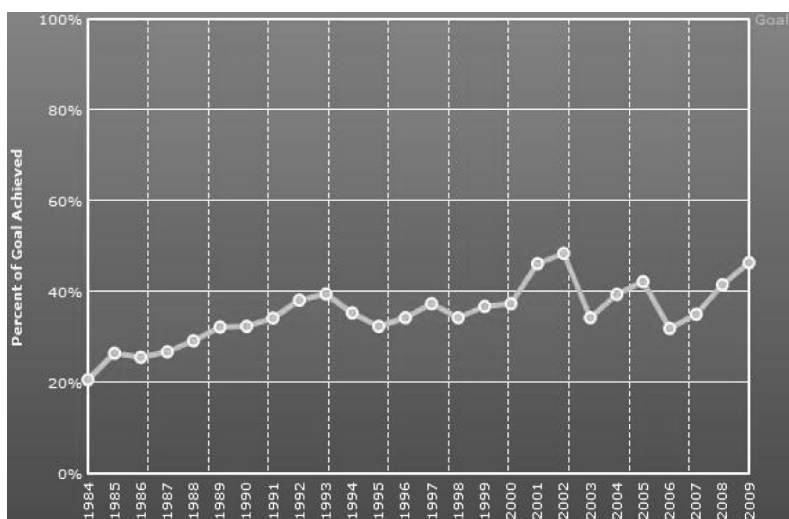
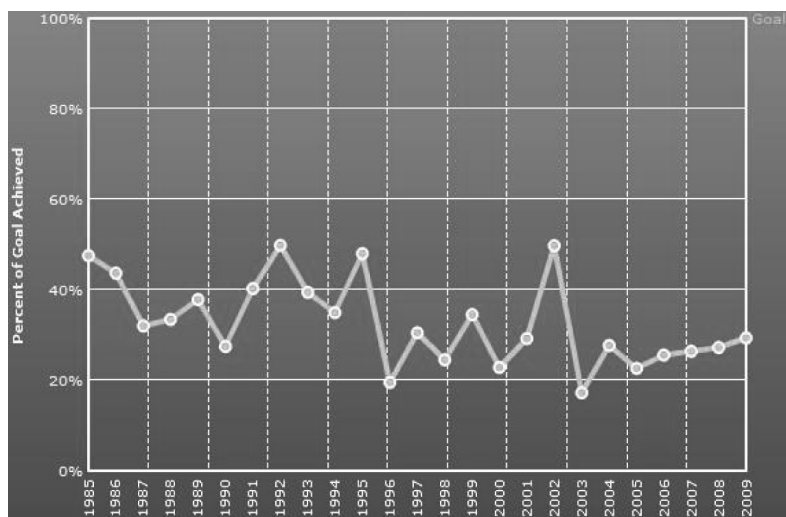
Phosphorus Loads and Annual Average River Flow



Bay Health

Underwater Bay Grass Abundance and Chlorophyll *a* Concentrations

- Underwater bay grasses serve many essential ecological functions and are among the most closely monitored habitats in the Bay. Their abundance is an excellent barometer of the health of the Bay because they depend on good local water quality and provide significant benefits to aquatic life.
 - Bay grass abundance increased from 38,228 acres in 1984 to 85,899 acres in 2009 (46% of the 185,000 acre goal).
- Scientists study chlorophyll *a* to determine the amount of algae present in the Bay. Algae are the foundation of the food web and are a necessary part of a balanced ecosystem. However, too much algae can block sunlight from reaching underwater grasses, reducing the habitat and oxygen that underwater life need to survive.
 - The goal is for concentrations of chlorophyll *a* to be below certain thresholds acceptable to underwater bay grasses. In 2009, 29 percent of tidal waters achieved the goal.
 - Annual variations complicate efforts to determine trends, however, there has been a generally decreasing (degrading) trend between 1985 and 2009.

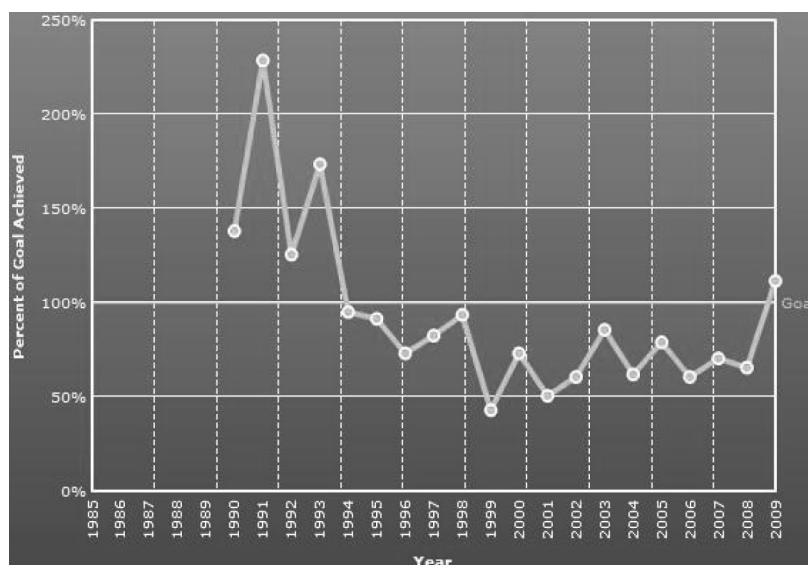
Bay Grass Abundance**Chlorophyll *a***

Bay Health

Blue Crab

- Perhaps no species is more closely associated with the Chesapeake Bay than the blue crab. It is estimated that $\frac{1}{3}$ of the nation's blue crab catch comes from the Bay. Because they reproduce by the millions and eat virtually anything, crabs are one of the Bay's most hardy species. Good water quality and adequate habitat are important for the crab's continued health.
- The interim target is to have 200 million adult (one year and older) blue crabs in the Bay.
 - In 2009, the population of adult blue crabs in the Bay rose to 223 million, exceeding the interim target level for the first time since 1993.
 - Note, abundance continued to climb in 2010 to 315 million, exceeding the interim target for two years in a row.
 - Regulatory actions beginning in 2008 are thought to be the primary factor in the crab's recent recovery.
 - A new benchmark assessment will be completed and reviewed in 2011 and results may lead to establishing a new target level for the future.

Blue Crab Abundance (Adults)



Insert 2

Mr. STUTZMAN. . . . I would like to start off first of all with the—last week the EPA Administrator, Ms. Jackson, testified before this Committee. In her testimony the Administrator said that the Bay plan was developed in consultation with the agricultural community. What role has the ag community played in developing the process?

Mr. PERCIASEPE. Well, there have been numerous—over 20 years of interaction with the agricultural community. There is significant input to the Bay program from all the agricultural colleges in the region and that has expanded recently. There are members of the agricultural community on a number of the advisory committees that go to the Bay program, so there has been significant involvement back and forth on—with the agricultural community over the years. And I can provide for the record a much more detailed accounting of that if you would like.

EPA Engagement with the Agriculture Community

EPA, USDA, the state agricultural agencies and the agricultural community have a long history of collaborating on Chesapeake Bay restoration to ensure a healthy Bay and viable agriculture in the Chesapeake Bay watershed. USDA, the state agricultural agencies, and agricultural industry groups have been active participants in the Chesapeake Bay Program: from helping to inform modeling efforts to working together to identify and credit agricultural practices, to working with the states on their agricultural commitments in the Watershed Implementation Plans and Bay TMDL.

Continued collaboration with the agriculture community will be critical in the coming years to refine modeling tools, improve agricultural conservation tracking and verification, and accelerate agricultural nutrient and sediment reductions necessary to restore the Bay and local waters. This document summarizes EPA's collaboration with USDA and the agriculture community on Chesapeake Bay watershed restoration efforts.

EPA Outreach During TMDL and WIP Development

EPA conducted an extensive, two year outreach program to exchange information with key stakeholders and the broader public during the development of the Chesapeake Bay TMDL. Outreach to the agriculture community was particularly focused and occurred throughout the region. EPA consulted with the agricultural community through three primary forums: stakeholder meetings, meetings with jurisdictions on Watershed Implementation Plan development, and meetings with agricultural community on Chesapeake Bay Program Watershed Model.

Stakeholder meetings: The outreach program in 2009 and 2010 featured hundreds of meetings with interested groups; two extensive rounds of public meetings, stakeholder sessions; a series of monthly interactive webinars accessed online by more than 2,500 people; three notices published in the Federal Register; and a close working relationship with Chesapeake Bay Program committees. Many agricultural groups and stakeholders participated in these meetings including the Farm Bureau, agribusiness organizations, individual farmers, as well as state agricultural agencies and conservation districts. In addition, to the general TMDL outreach meetings, EPA worked with the states to host sector-specific meetings with key stakeholders from the agricultural community, the homebuilder community, and conservation groups. EPA reached out to key agricultural leaders within each state to co-host these meetings in order to give the farming community a chance to ask questions, voice concerns, and discuss what the TMDL means for agriculture. (See *Attachment A* for the complete list of public meetings and stakeholder meetings held as part of the TMDL outreach effort. Actual sign-in sheets from these public meetings and from the separate stakeholder meetings are available upon request.)

In addition to the public outreach and sector-specific meetings, many farming groups and regional and national agriculture associations invited EPA to brief them on the Bay TMDL. An example of one of the earliest outreach efforts is an August 2009 informal "coffee conversation" with EPA officials, organized by NRCS and the American Farmland Trust (see *Attachment B* for a participants list, a copy of the invitation, and prep questions). Other agricultural organizations that EPA met with over the past two years to discuss the Bay TMDL include:

- National Pork Producers.
- National Turkey Federation.
- U.S. Poultry & Egg Association representatives.
- American Farmland Trust and NRCS organized a meeting between Bay watershed farmers and EPA senior leaders to discuss TMDL and how it relates to farmers. Virginia's Waste Solution Forum in the Shenandoah Valley.
- Conservation Technology Innovation Center annual tour 2010—audience: over 100 VA farmers, conservation district, university and NRCS representatives.
- Pennsylvania All Bay Day—audience: PA conservation districts and agency representatives.
- Mid-Atlantic Certified Crop Advisors Board—crop advisors in VA, MD, DE, and WV.
- Governor Harry Hughes Agro-Ecology Center Board.
- Maryland Association of Conservation Districts Board.
- National Webcast on "Changing Management of Nutrients in the Chesapeake Bay Watershed" hosted by the Extension Livestock and Poultry Environmental Learning Center with over 150 representatives from agricultural organizations, agencies, and land-grant universities.

- *WIP development discussions with jurisdictions*—In 2010, EPA had extensive formal and informal discussions with the state Watershed Implementation Plan stakeholder teams as the TMDL and Watershed Implementation Plans were being drafted and finalized. Many agricultural groups and stakeholders participated in these teams and were present at these meetings including the Farm Bureau, agribusiness organizations, as well as state agricultural agencies and conservation districts (See *Attachment C* for lists of WIP teams).

EPA senior leadership also held frequent discussions with state agricultural secretaries on topics such as Ag Certainty and WIP development and participated in key policy discussions with the Chesapeake Bay Program's Principal Staff Committee to the Chesapeake Bay Executive Council throughout the development of the Bay TMDL.

Looking back over the past decades, the agriculture community has been engaged since the development of the Chesapeake Bay Tributary Strategy (started in 1995) that served as a starting point for most WIPs.

Agriculture Participation in CBP Watershed Model

The suite of models used for the TMDL have been developed and utilized over 20 years through extensive collaboration with federal, state, academic and private partners. This includes extensive input from USDA, state agricultural agencies, and agricultural organizations on the CBP Agriculture Workgroup. Use and development of the models is fully transparent and open with all decisions and refinements to the model made at public meetings of the Chesapeake Bay Program. The Agriculture Workgroup holds regular public meetings to provide extensive input into all decisions regarding conservation practice effectiveness, tracking and verification, and model refinements. The Agriculture Workgroup is co-chaired by USDA NRCS and the University of Maryland and is comprised of the following organizations:

Leadership:

—Chair, UMD and Vice Chair, USDA NRCS

Agricultural Organizations:

—Delaware Maryland Agribusiness Association
 —Virginia Poultry Association
 —Mid-Atlantic Farm Credit
 —U.S. Poultry & Egg Association
 —MD Farm Bureau
 —Virginia Agribusiness Council
 —VA Grain Producers Association
 —West Virginia Department of Agriculture
 —Delmarva Poultry Industry, Inc.
 —VA Farm Bureau
 —Delaware Pork Producers Association
 —American Farmland Trust

Federal and State Agricultural Agencies:

—USDA Natural Resources Conservation Service
 —Maryland Department of Agriculture
 —West Virginia Department of Agriculture—Regulatory and Environmental Affairs Division
 —Delaware Department of Agriculture
 —Pennsylvania State Conservation Commission
 —Maryland Department of Agriculture

Land-Grant Universities and Extension:

—West Virginia University
 —Pennsylvania State University
 —University of Maryland—College Park
 —University of Delaware
 —Cornell University
 —University of Maryland Cooperative Extension

Conservation Districts and Commissions/Coalitions:

- Lancaster County Conservation District
- Cortland County Soil and Water Conservation District
- Madison Co. SWCD
- Chesapeake Bay Commission
- Upper Susquehanna Coalition
- PA No-Till Alliance
- Center for Conservation Incentives at Environmental Defense

EPA and State Environmental Agencies:

- U.S. Environmental Protection Agency
- Virginia Department of Environmental Quality
- Maryland Department of Natural Resources
- New York State Department of Environmental Conservation
- Virginia Department of Conservation and Recreation
- Pennsylvania Department of Environmental Protection
- West Virginia Department of Environmental Protection

In addition to extensive agriculture stakeholder involvement in the Agriculture Workgroup, EPA has also responded to requests from the agricultural community for more comprehensive briefings on the Bay TMDL and the CBP Watershed Model. On March 22, 2010, EPA worked with USDA to host a webinar on March 22, 2010 to answer the agricultural community's questions about the model and to identify opportunities for model refinements in the future. Following the webinar, EPA held a session with the poultry industry to provide a forum for the poultry industry to discuss specific poultry modeling and data issues.

USDA's Natural Resources Conservation Service (NRCS) has played a critical role in reviewing and providing data to the CBP Watershed Model, including coordinating the CBP's Nutrient Subcommittee over almost a decade, serving on the Agriculture Workgroup (currently vice chair) which makes all decisions related to agricultural modeling, participating on technical panels to develop conservation effectiveness estimates, and collaborating with EPA on USDA Conservation Effects Assessment Project and CBP Watershed Model efforts.

EPA-USDA Coordination

EPA and USDA play an active role in the Chesapeake Bay Program to work towards maintaining well-managed farms and restoring the Bay. Both agencies agree that maintaining the viability of agriculture is an essential component to sustaining ecosystems in the Bay. Both acknowledge the enormous contribution that farmers are making to improve Bay water quality. And, both are committed to strong partnerships and collaboration with states and local governments, urban, suburban and rural communities, and the private sector to achieve environmental objectives for the Bay. Throughout the TMDL process, EPA and USDA had on-going discussions and extensive briefings on the TMDL, models, state Watershed Implementation Plans, *etc.* Recent examples of that collaboration include:

- Developing and implementing the Strategy for Protecting and Restoring the Chesapeake Bay Watershed pursuant to Executive Order 13508.
- Developing a framework to provide certainty to farmers who implement practices that protect water quality in the Chesapeake Bay.
- Working with the National Association of Conservation Districts, state agricultural agencies, and agricultural community to ensure that non-cost shared data can be tracked, verified, and credited in the CBP Watershed Model as committed to in the E.O. Strategy.
- Supporting the states in implementing the commitments outlined in their TMDL Watershed Implementation Plans.
- Aligning innovation grants programs to support key priorities for addressing water quality challenges facing agriculture (EPA's Innovative Nutrient and Sediment Reduction program and NRCS's Conservation Innovation Grants program).
- Working together to coordinate respective modeling efforts.

ATTACHMENT A

Washington, D.C.

Wednesday, September 29

1:00 p.m.–3:00 p.m.
 Public Meeting and Webinar
 Washington National Zoo Visitor Center Auditorium, 3001 Connecticut Avenue,
 NW,
 Washington, D.C.
 4:00 p.m.–5:30 p.m.
 Stakeholder Outreach—Local Government
Location: Metropolitan Washington Council of Governments, 777 North Capitol
 Street, NE; Suite 300, Washington, DC 20002, 3rd Floor Board Room
Contact: Ted Graham, Water Resources Program Director, [Redacted], [Redacted].

Virginia

Monday, October 4—Harrisonburg

11:00 a.m.–12:30 p.m.
 Stakeholder Outreach—Agriculture
Location: Virginia Cooperative Extension Northwest District Office, 2322 Blue Stone
 Hills Drive, Suite 140, Harrisonburg, VA
Contact: Hobe Bauhan, Virginia Poultry Federation and co-chair of the Waste Solu-
 tions Forum, [Redacted], [Redacted].
 2:30 p.m.–4:00 p.m.
 Stakeholder Outreach—Environmental groups
Location: DEQ Valley Regional Office, 4411 Early Road, Harrisonburg, VA 22801
 [Redacted]
Contact: Patrick Felling, Policy Director for Virginia & West Virginia, [Redacted],
 [Redacted]; Leslie D. Mitchell-Watson, Executive Director, Friends of the North
 Fork of the Shenandoah River, [Redacted], [Redacted].

6:00 p.m.–8:00 p.m.
 Public Meeting
Location: Grafton Theatre, James Madison University, 281 Warren Service Drive,
 Harrisonburg, VA

Tuesday, October 5—Northern Virginia

10:00 a.m.–11:30 a.m.
 Stakeholder Outreach—Environmental Groups
Location: Northern Virginia Regional Commission, 3060 Williams Drive, Suite 510,
 Fairfax, VA 22031
Contact: Stella Koch, Audubon Naturalist Society, [Redacted], [Redacted].
 12:30 p.m.–2:00 p.m.
 Stakeholder Outreach—Local Government
Location: Northern Virginia Regional Commission, 3060 Williams Drive, Suite 510,
 Fairfax, VA 22031
Contact: Norm Goulet, [Redacted], Sr Environmental Planner & Occoquan Pro-
 gram Mgr. Phone: [Redacted].

2:30 p.m.–4:00 p.m.
 Stakeholder Outreach—Developers and Homebuilders
Location: Dewberry, 8403 Arlington Boulevard, Fairfax, VA (ESI Conference Room)
Contact: Phil Abraham, Director and General Counsel, The Vectre Corporation and
 Homebuilders Association of Virginia, [Redacted], [Redacted].

6:00 p.m.–8:00 p.m.
 Public Meeting
Location: Northern Virginia Community College, Annandale Campus, Ernst Com-
 munity Cultural Center, 8333 Little River Tpke, Annandale, VA

Wednesday, October 6—Richmond

8:30 a.m.–10:00 a.m.
 Stakeholder Outreach—Wastewater
Location: Hunton & Williams, Riverfront Plaza, East Tower, 951 East Byrd Street,
 Richmond, Virginia 23219–4074—20th floor
Contact: Bobbie Suggs, AquaLaw, [Redacted], [Redacted].

10:30 a.m.–12:00 p.m.
 Stakeholder Outreach—Developers and Homebuilders
Location: Homebuilders Association of Virginia, 707 East Franklin Street, Rich-
 mond, VA 23219
Contact: Mike Toalson, Homebuilders Association of Virginia executive vice presi-
 dent, [Redacted], [Redacted].

2:30 p.m.–4:00 p.m.
 Stakeholder Outreach—state legislators

Location: Room 4 West in the General Assembly Building
Contact: Ann Swanson, Chesapeake Bay Commission executive director, [Redacted], [Redacted].

6:00 p.m.–8:00 p.m.

Public Meeting

Location: Robins Pavilion Jepson Alumni Center, University of Richmond, 28 Westhampton Way, Richmond, VA

Thursday, October 7—Richmond and Hampton

9:00 a.m.–10:30 a.m.

Stakeholder Outreach—Environmental Groups

Location: Chesapeake Bay Foundation, 1108 East Main Street, Richmond 23219, 2nd floor conference room

Contact: Ann Jennings, Virginia director of CBF, [Redacted], [Redacted].

1:00 p.m.–3:00 p.m.

Meeting and Webinar—Hampton Roads Planning District

Location: 723 Woodlake Drive, Chesapeake, Virginia 23320

Contact: John Carlock, [Redacted].

6:00 p.m.–8:00 p.m.

Public Meeting

Location: Crowne Plaza Hampton Marina Hotel, 700 Settlers Landing Road, Hampton, VA

Delaware-Maryland

Monday, October 11—Georgetown, DE

9:00 a.m.–10:30 a.m.

Stakeholder Outreach—Agriculture

Location: 16686 County Seat Hwy. Georgetown, DE 19947

Contact: Jennifer Volk, Delaware Department of Natural Resources and Environmental Control, [Redacted], [Redacted].

11:00 a.m.–12:30 p.m.

Stakeholder Outreach—Local Government

Location: Seaford City Council Chambers, 414 High Street, Seaford DE

Contact: Jennifer Volk, Delaware Department of Natural Resources and Environmental Control, [Redacted], [Redacted].

2:00 p.m.–3:30 p.m.

Stakeholder Outreach—Developers and Homebuilders

Location: TBD

Contact: Jennifer Volk, Delaware Department of Natural Resources and Environmental Control, [Redacted], [Redacted].

5:00 p.m.–7:00 p.m.

Public Meeting

Delaware Tech, Owens Campus, Arts and Science Center, Theatre, Route 18, Georgetown, DE

Tuesday, October 12—Easton

11:00 a.m.–12:30 p.m.

Stakeholder Outreach—Environmental Groups

Location: General Tanuki's restaurant, 25 Goldsborough St. Easton, MD 21601

Contact: Ryan Ewing, Choose Clean Water Coalition, [Redacted], [Redacted].

2:00 p.m.–4:00 p.m.

Public Meeting

Location: The Easton Club, 28449 Clubhouse Drive, Easton, MD

Wednesday, October 13—Annapolis

8:30 a.m.–10:00 a.m.

Stakeholder Outreach—Developers and Homebuilders

Location: Fish Shack, Chesapeake Bay Program Office, 410 Severn Avenue, Annapolis, MD 21403

Contact: Katie Maloney, Maryland Homebuilders Association, [Redacted], [Redacted].

10:30 a.m.–12:00 p.m.

Stakeholder Outreach—state legislators

Location: House Office Building, room 250, Annapolis, MD

Contact: Ann Swanson, Chesapeake Bay Commission executive director, [Redacted], [Redacted].

2:00 p.m.–4:00 p.m.

Public Meeting
2010, Sheraton Annapolis, 173 Jennifer Road, Annapolis, MD 21403

Thursday, October 14—Frederick and Hagerstown

8:00 p.m.–9:30 a.m.

Stakeholder Outreach—Local Government

Location: Maryland Municipal League, 1212 West Street, Annapolis, MD 21401

Contact: Leslie Knapp, Jr., Maryland Association of Counties, [Redacted], [Redacted]; Candace L. Donoho, Maryland Municipal League, [Redacted], or [Redacted], [Redacted].

11:00 a.m.–12:30 p.m.

Stakeholder Outreach—Agriculture

Location: University of Maryland Cooperative Extension—Frederick County Office, 330 Montevue Lane, Frederick, MD 21702

Contact: Mark Dubin, [Redacted], [Redacted].

2:00 p.m.–4:00 p.m.

Public Meeting

Location: Hagerstown Hotel and Convention Center, 1901 Dual Hwy, Hagerstown, MD

Pennsylvania

Friday, October 15

10:30 a.m.–11:30 a.m.

Media conference call with Pennsylvania press

Radio Talk Show—Guest on live public affairs talk/call-in program heard on two NPR stations covering nearly the entire Pennsylvania portion of the Bay watershed. *Radio Smart Talk* on WITF, 9 a.m.–10 a.m.

Contact: Scott LaMar, director, Radio Smart Talk, [Redacted], [Redacted].

Monday, October 18

8:30 a.m.–10 a.m.

Meet with local government officials in Lancaster. *Location:* Southern Market Center, 100 South Queen Street, Lancaster.

Contact: Mary Gattis, senior environmental planner, Lancaster County Planning Commission, [Redacted], [Redacted].

11 a.m.–12:30 p.m.

Meet with key agriculture representatives and area farmers. *Location:* Farm and Home Center, 1383 Arcadia Road, Lancaster.

Contact: Don McNutt, district administrator, Lancaster County Conservation District, [Redacted], [Redacted].

Notes: Attendees will include mix of area farmers and representative of groups and agencies such as the PA Farm Bureau, PennAg Industries, Wenger Feeds, PA Association of Conservation Districts, PA State Conservation Commission and others. Secretary Redding will attend and give remarks. Kelly and Hank will be there to assist.

2 p.m.–4 p.m.

Public Meeting, Lancaster

Location: Best Western Eden Resort, 222 Eden Road, Lancaster.

Media availability—1:30 p.m.–1:50 p.m.

6 p.m.–8 p.m.

Meet over dinner with Pennsylvania legislative delegation and staff

Location: Harrisburg Hilton, Bridgeport Room, 1 North Second Street, Harrisburg.

Contact: Marel Raub, Pennsylvania Director, Chesapeake Bay Commission (CBC), [Redacted], [Redacted].

Notes: Attendees will include the CBC state legislative delegation, area state legislators, majority staff from the House Environment and Energy Committee, and majority and minority staff from the House Agriculture Committee.

Tuesday, October 19

Meet with Pennsylvania Municipal Authorities Association members

Location: PMAA office, 1000 North Front St., Suite 401, Wormleysburg, PA

Contact: John Brosious, deputy director, PMAA, [Redacted], [Redacted].

Notes: More than a dozen attendees confirmed.

9:30 a.m.–11 a.m.

Meet with environment/watershed groups in person and via conference line

Location: PennFuture, 610 North Third Street, Harrisburg.

Contact: Tanya Dierolf, Central Pennsylvania Outreach Coordinator, Citizens for Pennsylvania's Future (PennFuture), [Redacted], [Redacted].

Notes: More than a dozen representatives of environmental groups are expected, including PennFuture, CBF, Clean Water Action, American Rivers, PA Council of Churches, Pennsylvania Environmental Council, Alliance for the Chesapeake Bay, Nature Abounds and Senior Environmental Corps, among others.

2 p.m.–4 p.m.

Public Meeting, State College,

Location: Knights of Columbus, 850 Stratford Drive, State College.

Media availability—1:30 p.m.–1:50 p.m.

5 p.m.–7 p.m.

Meet with Penn State agriculture representatives over dinner.

Location: TBD.

Contact: Kristen Saacke Blunk, senior extension associate and director, Penn State Agriculture & Environment Center, [Redacted], cell: [Redacted], [Redacted].

Wednesday, October 20

8:30 a.m.–10 a.m.

Meet with Pennsylvania Builders Association members,

Location: Lycoming County Executive Plaza Building, 330 Pine St., First Floor Commissioner's Board Room, Williamsport.

Contact: Grant Gulibon, regulatory specialist, PBA, [Redacted], [Redacted].

10:30 a.m.–12 p.m.

Meet with Lycoming County area officials

Location: Lycoming County Executive Plaza Building, 330 Pine St., First Floor Commissioner's Board Room, Williamsport.

Contact: Megan Lehman, environmental planner, Lycoming County, [Redacted], [Redacted].

Notes: Attendees will include members of the Lycoming County Chesapeake Bay Tributary Strategy Advisory Committee: state, county and local officials; and business, environmental, point- and nonpoint source representatives.

12:00 p.m.–1 p.m.

Meet with Commissioner Wheeland and small group

Location: Ross Club, 201 W. 4th Street, Williamsport.

2 p.m.–4 p.m.

Public Meeting/Webinar, Williamsport,

Location: Lycoming College, Wendle Hall, 700 College Place, Williamsport.

Media availability—1:30 p.m.–1:50 p.m.

Thursday, October 21

9:30 a.m.–10:30 a.m.

Meet with Scranton Times Tribune editorial board and reporter Laura Legere.

Location: Scranton Times Tribune office, 149 Penn Ave., Scranton.

Contact: Laura Legere, [Redacted], [Redacted] or Patrick McKenna, [Redacted], [Redacted].

11:30 a.m.–12:30 p.m.

Meet with *Wilkes-Barre Times Leader* editorial board.

Location: Times Leader office, 15 N. Main Street, Wilkes-Barre.

Contact: Mark Jones, editorial page editor, [Redacted], [Redacted].

2 p.m.–4 p.m.

Public Meeting, Wilkes-Barre

Location: Bentley's, 2300 Route 309, Ashley.

Media availability—1:30 p.m.–1:50 p.m.

New York

Tuesday, October 26

1:00 p.m.–2:00 p.m.

Binghamton Press and Star Editorial Board

33 Lewis Rd., Binghamton, NY 13905-1044

3:15 p.m.–4:15 p.m.

Steel Memorial Library, 101 East Church Street, Elmira, NY 14091

Notes: NY WWTP Operator's Scheduled by DEC, for 27 WWTP in the Upper Susquehanna River Watershed. Congressional Offices (Acuri and Hinchey) maybe in attendance.

6:00 p.m.–8:00 p.m.

Public Meeting Riverview Holiday Inn Elmira

760 East Water Street, Elmira, NY

Wednesday October 27

8:00 a.m.–9:00 a.m.
 Chemung County Storm Water Coalition
 851 Chemung Street, Horseheads, NY 14845
 10:00 a.m.–11:30 a.m.
 Upper Susquehanna Coalition
 Owego Town Hall, 2354 State Route 434, Apalachin, NY, 13732
 11:30 a.m.–12:30 p.m.
 Farm Bureau
 Owego Town Hall, 2354 State Route 434, Apalachin, NY, 13732
 2:00 p.m.–4:00 p.m.
 Public Meeting Binghamton Regency Hotel
 225 Water Street, Binghamton, NY

West Virginia

Wednesday, November 3—Martinsburg, WV

10:30 a.m.–12:00 p.m.
 Stakeholder Outreach—Environmental Groups
Location: Freshwater Institute, 1098 Turner Road, Shepherdstown, WV 25443
Contact: Michael Schwartz, senior environmental associate, Freshwater Institute, [Redacted], [Redacted].
 1:00 p.m.–2:30 p.m.
 Stakeholder Outreach—Developers and Homebuilders
Location: Eastern Panhandle Home Builders Association Inc., 430 Randolph Street Suite C, Martinsburg, WV 25401
Contact: David Hartley, Eastern Pandhandle Home Builders Association, [Redacted], [Redacted].
 3:00 p.m.–4:30 p.m.
 Stakeholder Outreach—Local Government
Location: Berkeley County Public Sewer Service District, 65 District Way, Martinsburg, WV 25402
Contact: Carol Crabtree, executive director, Region 9 Eastern Panhandle Regional Planning and Development Council, [Redacted], [Redacted].
 6:00 p.m.–8:00
 Public Meeting
Location: Comfort Inn, 1872 Edwin Miller Blvd., Martinsburg, WV

Thursday, November 4—Romney, WV

10:00 a.m.–11:30 a.m.
 Stakeholder Outreach—Agriculture
Location: NRCS Building, Heritage Hill Complex, 500 East Main Street, Romney, WV 26757. (2nd floor)
Contact: Matt Monroe, environmental programs supervisor, WV Dept. of Ag., [Redacted], [Redacted].
 12:30 p.m.–2:00 p.m.
 Stakeholder Outreach—Local Government
Location: Old Courthouse, junction of Route 50 or Main Street, with Route 28 or High Street, Romney, WV
Contact: Alana Hartman, West Virginia Department of Environmental Quality, [Redacted] office, [Redacted] cell, [Redacted].
 2:30 p.m.–4:00 p.m.
 Stakeholder Outreach—Developers and Homebuilders
Location: Old Courthouse, junction of Route 50 or Main Street, with Route 28 or High Street, Romney, WV
Contact: Alana Hartman, West Virginia Department of Environmental Quality, [Redacted] office, [Redacted] cell, [Redacted].
 6:00 p.m.–8:00 p.m.
 Public Meeting
Location: South Branch Inn, Route 50 East, Romney, WV

ATTACHMENT B

Our Collective Challenge: Viable Ag and Clean Water in the Chesapeake Bay Watershed

Date: August 7 Gather at 9 for coffee.
Meeting will go to 12:30. Those who can to stay for lunch, we will go to a near by restaurant.

Where: Maryland State Highway Administration,
Training Room # 1,
5111 Buckeystown Pike,
Frederick, Maryland 21704 (Directions below)

Objectives:

1. Build a relationship and conversation between EPA participants and Ag leaders;
2. Understand the real world challenges and concerns in achieving viable Ag and clean water;
3. Identify some approaches to moving forward; and
4. Some possible next steps.

Facilitators: Jim Baird Mid-Atlantic States Director, American Farmland Trust and Dana York Senior Advisor to the Bay Program from NRCS.

Invitation List

State	County	Name	Work and Volunteer Positions
MD	St. Marys	Buddy Hance	Secretary, MDA; grain farmer; Past President MDFB Grain
MD	Q. Anne's	Luke Howard	Organic & specialty crop producer. Former Ag Commission Chair, County Farm Bureau Director, County Planning Commission
MD	Q. Anne's	Jenny Rhodes	Poultry, grain, Extension Agent
MD	Dorchester	Terry Wolf-King	Poultry, Young farmers Commission
MD	Montgomery	Robert N. Stabler	Grain and beef farmer. Mid Atlantic Farm Credit Maryland Ag Commission Montgomery County Soil Conservation (supervisor). Montgomery County Ag, MD Cattlemen's Assn, NCBA, MDGPA, NCGA, MD & County Farm Bureau Farm Bureau.
MD	Washington	Don Spickler	Former dairy farmer. Independent Crop Insurance business. Active in MACD & NACD.
MD	Howard	Bob Ensor	County Conservation District Manager, retired NRCS, former head of MD Water Quality Cost Share Program
MD	Frederick	James Stup	Dairy
PA	State-wide	Russell Reading	PDA Asst. Secretary
PA	Lancaster	Don McNutt	District Administrator 25 yr career teaching and advising High School, college and farmers, 10 years with Lanc Distr 6 as Administrator. Born and raised on a dairy farm in W. PA. . . Still involved in the 250 cow operation remotely.
PA	State-wide	George Hazard	PAFB Environmental Coordinator. Former Crop Consultant
PA	Lancaster	Ron Kreider	Dairy, private label milk products and produce.
PA	York	Jack Dehoff	Dairy farmer, State Conservation Commission Member
PA	Snyder	Jim Brubaker	Swine, Nutrient Mgt Advisory Board
PA	Lancaster	Christ Plank	Old Order Amish Steering Committee Represents, retired dairy farmer
PA	Lancaster	J.B. Byler	Retired dairy farmer. Old Order Amish Steering Committee
PA	Dauphin	Keith Oellig	Grain Farmer and PFB member
VA	Orange	Monk Sanford	Dairy farmer; VA Dairymen's Association representative
VA	Montgomery	Bill McKinnon	Cattle farmer; Executive Director VA Cattlemen's Association
VA	?	Steve Sturgis	Vegetable and grain farmer; VA Potato and Vegetable Grower Association President
VA	Cumberland	Will Sanderson	Poultry Farmer; VA Poultry Federation representative; Young Farmer
VA		Katie Frazier	VA Agribusiness Council
VA		Wilmer Stoneman	VA Farm Bureau Federation
VA		Christina Hyre	VA Grain Producers Association, Communications Director
VA	Rockingham	Buff Showalter	Beef, poultry, partner in Poultry Specialties, Valley Conservation Council
VA	Rockingham	Anthony Beery	Dairy and Poultry
		Chuck Fox	Special Assistant to the Administrator for Chesapeake Bay and Anacostia River

Invitation List—Continued

State	County	Name	Work and Volunteer Positions
		Larry Elworth	Agricultural Counselor to the Administrator; former Exec. Director of Center for Agricultural Partnerships, USDA and the Domestic Policy Council.
		Kelly Shenk	EPA Agricultural Policy Coordinator, EPA Chesapeake Bay Program Office
		Dana York	Special Advisor to the Chesapeake Bay Program, NRCS
		Jim Baird	MidAtlantic States Director, American Farmland Trust

American Farmland Trust and the National Conservation Resource Service are pleased to invite you to a conversation with representatives from the Environmental Protection Agency.

Our Collective Challenge: Viable Ag and Clean Water in the Chesapeake Bay Watershed

Date: August 7 Gather at 9 for coffee.
Meeting will go to 12:30. Those who can to stay for lunch, we will go to a near by restaurant.

Where: Maryland State Highway Administration,
Training Room # 1,
5111 Buckeystown Pike,
Frederick, Maryland 21704 (Directions below)

Objectives:

1. Build a relationship and conversation between EPA participants and Ag leaders;
2. Understand the real world challenges and concerns in achieving viable Ag and clean water;
3. Identify some approaches to moving forward; and
4. Some possible next steps.

Facilitators: Jim Baird MidAtlantic States Director, American Farmland Trust and Dana York Senior Advisor to the Bay Program from NRCS.

Agenda

Viable Farms and Clean Water in the Chesapeake Bay Watershed Producer and Ag Industry Conversation with EPA

Time	Activity
9:30	(1) Welcome, Overview & Participant Introductions (2) Welcome to My World—Describing the current situation from sector perspectives (a) Chuck Fox, Senior EPA Advisor to the Chesapeake Bay Program (3) Break (a) Bay Farmers from Maryland, Pennsylvania and Virginia (4) Moving to Solutions: Identify potential steps to achieve clean water and viable farms. (5) Next steps—Where/how can this conversation be carried on? (6) Comments and Feedback on the meeting
12:30	Close
	Jim Baird * Dana York *

* **Editor's note:** the phone numbers and e-mail addresses have been redacted.

Directions to District 7, State Highway Administration, 5111 Buckeystown Pike, Frederick, MD 21704

From Western Maryland: (Cumberland/Hagerstown)

1. Follow I-68 East to I-70 East at Hancock, Maryland.
2. Continue on I-70 to I-270 South (Washington) at Frederick, Maryland.
3. Follow I-270 South to Exit 31B (Buckeystown) Route 85 South.
4. Immediately descending the exit ramp will be a Hampton Inn on the left.
5. Continue on through the light at the intersection of Crestwood Blvd.
6. At the next light turn left to the District 7 Office and Frederick Maintenance Facility.

Go straight—training rooms are on the right.

From East of Frederick: (Mount Airy/Columbia) (Baltimore)

1. Take I-70 West to Exit 53 A, this is I-270 South (Washington)
2. Follow I-270 South to Exit 31 B (Buckeystown) Route 85 South
3. Immediately descending the exit ramp will be a Hampton Inn on the left.
4. Continue on through the light at the intersection of Crestwood Blvd.
5. At the next light turn left to the SHA District Office and Frederick Shop Maintenance Facility.

Go straight—training rooms are on the right.

From Washington/Rockville Via I-270: (Gaithersburg/Rockville)

1. Follow I-270 North to Frederick, Maryland. Continue on I-270 to Exit 31 (Buckeystown) Route 85 South.
2. Immediately descending the exit ramp will be a Hampton Inn on the left.
3. Continue on through the light at the intersection of Crestwood Blvd
4. At the next light turn left to the District 7 Office and Frederick Maintenance Facility

Go straight—training rooms are on the right.

From Virginia Line:

1. Follow Route 340 to the I-70/I-270 split and take I-270 South (Washington).
2. Proceed on I-270 for approximately 1 mile to Exit 31B (Buckeystown), which is Route 85.
3. Follow Route 85 past the Hampton Inn and Shockley Honda.
4. At the next light turn left to the District 7 Office and Frederick Maintenance Facility.

Go straight—training rooms are on the right.

American Farmland Trust

Dear Participant:

We are asking all participants to think about and respond to 3 questions to prepare for the meeting:

1. What do you hope to learn at this meeting?
 - a. from EPA?
 - b. from producers?
2. What are the main **challenges** that **you** face in trying to achieve both clean water and viable farms?
3. What are the main **opportunities** that **you** see to help achieve clean water and viable farms?

If you send us your responses (soon!) we will compile them and pick out the major themes, concerns and ideas prior to the meeting. *This is voluntary and no names will be used.* The point is to get a feeling of **what the group sees** as the priority issues and ensure they get talked about. You can send your responses as follows:

1. Send the attached document to [Redacted] or fax to [Redacted] or by letter to the address below.
2. Visit this website and respond electronically.
3. Call Jim Baird at [Redacted] and tell him over the phone.

ATTACHMENT C

State Watershed Implementation Plan (WIP) Teams**Pennsylvania****Chesapeake Bay Watershed Implementation Plan (WIP) Agricultural Workgroup Chair/ Co-Chair: Karl Brown and Mike Pechart, Co-Chair: Frank Schneider**

EPA met frequently with the PA WIP Agricultural Workgroup which had a number of key agricultural stakeholders represented such as the PA Farm Bureau, PennAg Industries, PA Conservation Commission, PA Department of Agriculture, PA conservation districts, Pennsylvania State University, and individual farmers.

Name	Organization
1. Don McNutt	Lancaster Co. Con. Dist.
2. Mark Richards	Ag Coalition
3. John Shuman	LandStudies—Lycoming County
4. David Brown (Susan Burky to coordinate)	USDA—NRCS
5. Jennifer Reed-Harry	PennAg Industries
6. Eric Hershey	HRG
7. Paul Lyskava	PA Forest Products Assn.
8. Tracey Coulter (alternate)	DCNR BOF
9. Tanya Dierolf	PennFuture
10. Susan Marquart	PACD
11. Brenda Shambaugh	PACD
12. Kristen Saacke Blunk	PSU
13. Larry Martick Adams	CCD
14. Marel Raub	Chesapeake Bay Commission
15. Suzanne Hall	EPA
16. John Dawes	Foundation for Pennsylvania Watersheds
17. Karl Brown	SCC
18. Mary Bender	SCC
19. John Bell (when position is field it will be the Natural Resources Director)	PA Farm Bureau
20. Sara Nicholas	DCNR
21. Grant Guilbon	Pa Builders Association
22. Kim Snell-Zarcone	PennFuture
23. John Seitz	York County Planning Commission
24. Grant Guilbon	Pa Builders Association
25. Jeff Wendle	CET
26. Scott Wyland	Hawke McKeon & Sniscak
27. Lamonte Garber	Chesapeake Bay Foundation
28. Rebecca Wiser	Cumberland County Planning Dept.
29. Mike Brubaker	Brubaker Farms
30. Matt Ehrhart	Chesapeake Bay Foundation
31. Pam Eyer	Cumberland County Conservation Dist
32. Dr. Beegle	PSU
33. Andy Zemba	DEP
34. Steve Taglang	DEP
35. Ann Smith Road	DEP
36. Pat Buckley	DEP
37. Kenn Pattison	DEP
38. Michael Pechart	PDA
39. Frank Schneider	DEP

Editor's note: the e-mail address column for this table have been redacted.

Staff: Andy Zemba, Pat Buckley, Steve Taglang, Kenn Pattison, and Ann Roda (please copy on all e-mails sent regarding this workgroup).

Virginia TMDL Stakeholder Group Membership

The Commonwealth established and engaged this stakeholder group to help develop the Watershed Implementation Plan. EPA attended many of the meetings to be available to answer questions. EPA also met with a subset of this group to discuss the agricultural portion of the plan with the Assistant Agriculture Secretary, Virginia Farm Bureau, Virginia Agribusiness, Virginia Department of Conservation and Recreation, and the Virginia Department of Environmental Quality.

Ag Industry:

- VA Agribusiness Council—Katie Frazier
- VA Farm Bureau Federation—Wilmer Stoneman
- VA Poultry Federation—Hobey Bauhan
- VA State Dairymen's Association—Eric Paulson
- VA Grain Producers—Molly Pugh
- VA Forestry Association—Paul Howe

Wastewater:

- VAMWA—Chris Pomeroy & James Pletl
- Virginia Manufacturers Association—Brooks Smith & Tom Botkins
- Navy—DOD—David Cotnoir

Developed and Developing Lands:

- Homebuilders of Virginia—Mike Toalson
- Virginia Municipal Stormwater Association—Randy Bartlett
- James River Green Builders Council—Richard K. Friesner
- VA Association of Planning District Commissions—Deirdre Clark & Stuart McKenzie (Norm Goulet alternate)
- Fountainhead Alliance—David Anderson
- VA Association for Commercial Real Estate—Phil Abraham
- Wetland Studies and Solutions—Mike Rolband

Conservation/Environmental:

- Chesapeake Bay Foundation—Ann Jennings (Mike Gerel as alternate)
- James River Association—Bill Street
- Friends of the Rappahannock—John Tippet
- Southern Environmental Law Center—Rick Parrish
- Shenandoah Riverkeeper—Jeff Kelble
- Wetlands Watch—Skip Stiles

Local/Federal Gov't:

- VML—Joe Lerch
- VaCo—Larry Land
- Rappahannock River Basin Commission—Eldon James
- Rivanna River Basin Commission—Leslie Middleton
- NRCS—Jack Bricker

Other:

- Virginia Seafood Council—Francis Porter
- Virginia Watermen's Association—Ken Smith
- Virginia Chamber of Commerce—Tyler Craddock
- Virginia Association of Soil and Water Conservation Districts—Wilkie Chafin
- Chesapeake Bay Commission—Suzan Bulbulkaya
- VA CAC Member—Stella Koch
- VA STAC Member—Carl Hershner
- VA LGAC Member—Sally Thomas

Other Private Sector Stakeholders:

- CDM—Chris Tabor
- PBS&J—Tom Singleton (Chad Smith as alternate)

Agency Staff to Stakeholder Group:

- VA DCR
- VA DEQ
- VDH

Agencies to Consult:

- VA DOF
- VDACS
- VDOT

Delaware Phase I Watershed Implementation Plan Agriculture Subcommittee

EPA met frequently with the Delaware Phase I Watershed Implementation Plan Agriculture Subcommittee during the development and refinement of the Watershed Implementation Plan. The members of the Subcommittee are as follows:

Agriculture Subcommittee Member Organization

Farmer Representatives:

- David Baker Farmer Representative
- Laura Hill Farmer Representative

DE Department of Agriculture:

- Mark Davis, DE Department of Agriculture
- Chris Cadwallader, DE Department of Agriculture
- William Rohrer, DE Department of Agriculture

U.S. Department of Agriculture:

- Dastina Johnson USDA
- Denise Macleis USDA
- Jack Tarburton USDA
- Lynn Manges USDA
- Marianne Hardesty USDA
- Paul Petrichenko USDA
- Robin Talley USDA

Conservation Districts:

- Debbie Absher Sussex Conservation District
- Kevin Donnelly New Castle Conservation District
- Fred Mott Kent Conservation District
- Paul Morrill New Castle Conservation District
- Timothy Riley Kent Conservation District

Scientists:

- Dave Hansen University of Delaware
- Judy Denver and Mark Nardi USGS

DNREC:

- Robert Baldwin DNREC
- Thomas Barthelmeh DNREC
- Bryan Bloch DNREC
- Michael Brown DNREC
- Elizabeth Goldbaum DNREC
- Jennifer Nelson DNREC
- Robert Palmer DNREC
- Jennifer Walls DNREC
- Jennifer Volk DNREC

Maryland Watershed Implementation Plan Action Team and MD Watershed Implementation Plan Stakeholder Advisory Group

The MD WIP Action team is an internal agency focus group, representing the primary state contacts. EPA met frequently with the Action Team which included the Maryland Department of Agriculture, during the development and refinement of the

WIPs. MD also created the Watershed Implementation Plan Stakeholder Advisory Group to serve as the external focus group. This stakeholder group, along with public meetings and the online suggestion box served as the venue for soliciting agricultural and other public stakeholder input into the WIP development process.

Action Team:

- Maryland Department of Agriculture
- Maryland Department of Natural Resources
- Maryland Department of the Environment
- Maryland Department of Planning

Stakeholder Advisory Group:

- Carlton Haywood, Chair—Middle Potomac Tributary Team
- Les Knapp—Maryland Association of Counties (MACo)
- Candace Donoho—Maryland Municipal League (MML)
- Katie Maloney—Maryland State Homebuilders Association
- Jen Aiosa Chesapeake Bay Foundation (CBF)
- Valerie Connelly—MD Farm Bureau
- Bill Satterfield—Delmarva Poultry Industry Inc.
- Bruce Williams—Chesapeake Bay Local Government Advisory Committee
- Lynn Hoot—Maryland Association of Soil Conservation Districts (MASCDC)
- Jamie Brunkow—Sassafras River Association
- Terry Matthews—State Water Quality Advisory Committee (SWQAC) (Sarah Taylor)
- Katheleen Freeman—Coastal & Watershed Resources Advisory Committee (CWRAC)
- Lisa Ochsenhirt—Maryland Association of Municipal Wastewater Agencies
- Jim Gracie—Sport Fisheries Advisory Commission
- Richard Young—Tidal Fisheries Advisory Commission
- Tom Filip—P/B Tributary Team
- Jen Dindinger—Choptank Tributary Team
- Julie Pippel—Upper Potomac Tributary Team
- Rupert Rossetti—Upper Western Shore Tributary Team
- Bob Boxwell—Lower Potomac Tributary Team
- Ginger Ellis—Lower Western Shore
- E.B. James—Lower Eastern Shore/Nanticoke River Conservancy

MD State Staff:

- Beth Horsey—MDA
- John Rhoderick—MDA
- Sara Lane—DNR
- Catherine Shanks—DNR
- Mike Bilek—DNR
- Claudia Donegan—DNR
- Chris Aadland—DNR
- Jim George—MDE
- Maria Levelev—MDE
- Paul Emmart—MDE
- Joe Tassone—MDP
- Jason Dubow—MDP
- Dan Baldwin—MDP

Others:

- Peter Bouxein—CBF
- Moir Croghan—Sassafras River Association

West Virginia Phase I Watershed Implementation Plan Team

EPA met frequently with the WV Watershed Implementation Plan Team which was comprised of key agricultural agencies such as the WV Department of Agriculture and WV Conservation Agency.

WV Department of Agriculture:

—Steve Hannah
—Matt Monroe

WV Conservation Agency:

—Carla Hardy
—Pam Russell

WVU Extension Service:

—Rick Herd
—Jeff Skousen

West Virginia Department of Environmental Protection:

—Theresa Koon
—Dave Montali

Jefferson County, WV:

—Jennifer Brockman

Potomac River Keepers:

—Brent Walls

New York Watershed Implementation Plan Team

EPA met frequently with the NY Watershed Implementation Plan Team which was comprised of key agricultural agencies and land grant universities such as the Upper Susquehanna Coalition, the NYS Soil and Water Conservation Committee, NRCS, and Cornell University.

—Upper Susquehanna Coalition
—New York Department of Environmental
—NYS Soil and Water Conservation
—Natural Resources Conservation Service
—Cornell University

Insert 3

Mr. GOODLATTE. And your contention is that the Clean Water Act gives you authority to supersede the decision of the states regarding to the—regarding the Water Implementation Plan? That is obviously the subject of at least one lawsuit. You have had your ears pinned back on several others in the Ninth Circuit and now in the Fifth Circuit. You have been told you don't have those authorities. Is it really your contention in spite of growing legal decisions that the EPA has this authority? And if it has the authority why is it that we have legislation to codify it, to codify the President's Executive order? We wouldn't need it. If it is already in the law you wouldn't need that would you?

Mr. PERCIASEPE. I don't have any comment on any legislation, but I can tell you that there is a series of constructions in the original Clean Water Act of 1972 that once we delegate the authorities to the states that they are required to set the standards and put the plans in place to meet those standards. And the EPA if those are not sufficient does have the authority in the Clean Water Act to backstop that. We do not want to do that. I want to be clear. We do not want to do that.

Clean Water Act Section 303(d)

(d)(1)(A) Each State shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

(B) Each State shall identify those waters or parts thereof within its boundaries for which controls on thermal discharges under section 301 are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

(C) Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

(D) Each State shall estimate for the waters identified in paragraph (1)(D) of this subsection the total maximum daily thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for such protection and propagation in the identified waters or parts thereof.

(2) Each State shall submit to the Administrator from time to time, with the first such submission not later than one hundred and eighty days after the date of publication of the first identification of pollutants under section 304(a)(2)(D), for his approval the waters identified and the loads established under paragraphs (1)(A), (1)(B), (1)(C), and (1)(D) of this subsection. The Administrator shall either approve or disapprove such identification and load not later than thirty days after the date of submission. If the Administrator approves such identification and load, such State shall incorporate them into its current plan under subsection (e) of this section. If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such State and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section.

(3) For the specific purpose of developing information, each State shall identify all waters within its boundaries which it has not identified under paragraph (1)(A) and (1)(B) of this subsection and estimate for such waters the total maximum daily load with seasonal variations and margins of safety, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation and for thermal discharges, at a level that would assure protection and propagation of a balanced indigenous population of fish, shellfish and wildlife.

(4) LIMITATIONS ON REVISION OF CERTAIN EFFLUENT LIMITATIONS.—

(A) STANDARD NOT ATTAINED.—For waters identified under paragraph (1)(A) where the applicable water quality standard has not yet been attained, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section may be revised only if (i) the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations established under this section.

(B) STANDARD ATTAINED.—For waters identified under paragraph (1)(A) where the quality of such waters equals or exceeds levels necessary to protect the designated use for such waters or otherwise required by applicable water quality standard, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section, or any water quality standard established under this section, or any other permitting standard may be revised only if such revision is subject to and consistent with the antidegradation policy established under this section.

(Emphasis added.)

Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment

December 29, 2010

* * * * *

1.4 Legal Framework for the Chesapeake Bay TMDL

1.4.1 What is a TMDL?

As discussed more fully in Section 1.1, a TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet applicable WQS. Allocations to point sources are called wasteload allocations or WLAs, while allocations to nonpoint sources are called load allocations or LAs. A TMDL is the sum of the WLAs (for point sources), LAs (for nonpoint sources and natural background) (40 CFR 130.2), and a margin of safety (CWA section 303(d)(1)(C)). Section 303(d) requires that TMDLs be established for impaired waterbodies “at a level necessary to implement the applicable [WQS].”³

TMDLs are “primarily informational tools” that “serve as a link in an implementation chain that includes federally regulated point source controls, state or local plans for point and nonpoint source pollutant reduction, and assessment of the impact of such measures on water quality, all to the end of attaining water quality goals for the nation’s waters.”⁴ Recognizing a TMDL’s role as a vital link in the implementation chain, federal regulations require that effluent limits in NPDES permits be “consistent with the assumptions and requirements of any available WLA” in an approved TMDL.⁵

In addition, before EPA establishes or approves a TMDL that allocates pollutant loads to both point and nonpoint sources, it determines whether there is reasonable assurance that the nonpoint source LAs will, in fact, be achieved and WQS will be attained (USEPA 1991b). If the reductions embodied in LAs are not fully achieved, the collective reductions from point and nonpoint sources will not result in attainment of the WQS.

The Bay TMDL will be implemented using an accountability framework that includes the jurisdictions’ WIPs, 2 year milestones, EPA’s tracking and assessment of restoration progress and, as necessary, specific federal actions if the Bay jurisdictions do not meet their commitments. The accountability framework is being established, in part, to demonstrate that the Bay TMDL is supported by reasonable assurance. The accountability framework is also being established pursuant to CWA section 117(g)(1). Section 117(g) of the CWA directs the EPA Administrator to “ensure that management plans are developed and implementation is begun . . . to achieve and maintain . . . the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed, [and] the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem.”⁶ In addition, Executive Order 13508 directs EPA and other federal agencies to build a new accountability framework that guides local, state, and federal water quality restoration efforts. The accountability framework is designed to help ensure that the Bay’s nitrogen, phosphorus, and sediment goals, as embodied in the Chesapeake Bay TMDL, are met. While the accountability framework informs the TMDL, section 303(d) does not require that EPA “approve” the framework *per se*, or the jurisdictions’ WIPs that constitute part of that framework.

1.4.2 Why is EPA establishing this TMDL?

In 1998, data showed the mainstem and tidal tributary waters of the Chesapeake Bay to be impaired for aquatic life resources. EPA determined that the mainstem and tidal tributary waters of the Chesapeake Bay must be placed on Virginia’s section 303(d) list. EPA therefore added the mainstem of the Chesapeake Bay to Virginia’s final section 303(d) list. As described in Section 2, each tidal river, tributary, embayment, and other tidal waterbody that is part of the Chesapeake Bay TMDL is included on a jurisdiction’s section 303(d) list.

EPA established the Chesapeake Bay TMDL pursuant to a number of existing authorities, including the CWA and its implementing regulations, judicial consent decrees requiring EPA to address certain impaired Chesapeake Bay and tidal tributary and embayment waters, a settlement agreement resolving litigation brought by the Chesapeake Bay Foundation, the 2000 Chesapeake Agreement, and Executive Order 13508. In establishing the Bay TMDL, EPA acted pursuant to the consensus direction of the Chesapeake Executive Council’s PSC and in partnership with each of the seven Chesapeake Bay watershed jurisdictions.

The CWA provides EPA with ample authority to establish the Chesapeake Bay TMDL. CWA section 117(g)(1) provides that “[t]he Administrator, in coordination

³ 33 U.S.C. 1313(d)(1)(C).

⁴ *Pronsolino v. Nastri*, 291 F.3d 1123, 1129 (9th Cir. 2002).

⁵ 40 CFR 122.44(d)(1)(vii)(B).

⁶ Clean Water Act section 117(g)(1)(A)–(B), 33 U.S.C. 1267(g)(1)(A)–(B).

with other members of the [CEC], shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain [among other things] the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed [and] the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem.” Because it establishes the Bay and tidal tributaries’ nutrient and sediment loading and allocation targets, the Chesapeake Bay TMDL is itself such a “management plan.” In addition, the Bay TMDL’s loading and allocation targets both inform and are informed by a larger set of federal and state management plans being developed for the Bay, including the Bay watershed jurisdictions’ WIPs and the May 2010 *Strategy for Protecting and Restoring the Chesapeake Bay* (FLCCB 2010).

CWA section 303(d) requires jurisdictions to establish and submit TMDLs to EPA for review. Under certain circumstances, EPA also has the authority to establish TMDLs. The circumstances of this TMDL do not necessarily identify the outer bounds of EPA’s authority. However, where—as here—impaired waters have been identified on jurisdictions’ section 303(d) lists for many years, where the jurisdictions in question decided not to establish their own TMDLs for those waters, where EPA is establishing a TMDL for those waters at the direction of, and in cooperation with, the jurisdictions in question, and where those waters are part of an inter-related and interstate water system like the Chesapeake Bay that is impaired by pollutant loadings from sources in seven different jurisdictions, CWA section 303(d) authorizes EPA to establish that TMDL.⁷

On May 12, 2009, President Barack Obama signed Executive Order 13508—*Chesapeake Bay Protection and Restoration*. The Executive Order’s overarching goal is “to protect and restore the health, heritage, natural resources, and social and economic value of the Nation’s largest estuarine ecosystem and the natural sustainability of its watershed.” The Executive Order says the federal government “should lead this effort” and acknowledges that progress in restoring the Bay “will depend on the support of state and local governments.” To that end, the Executive Order directs the lead federal agencies, including EPA, to work in close collaboration with their state partners. To protect and restore the Chesapeake Bay and its tidal tributaries, the President directed EPA to “make full use of its authorities under the [CWA].” In establishing the Bay TMDL, EPA is doing no more-or less-than making full use of its CWA authorities to lead a collaborative and effective federal and state effort to meet the Bay’s nutrient and sediment goals.

A number of consent decrees, memoranda of understanding (MOUs), and settlement agreements provide additional support for EPA’s decision to establish the Chesapeake Bay TMDL addressing certain waters identified as impaired on the Maryland, Virginia, and the District of Columbia’s 1998 section 303(d) lists and on the Delaware 1996 section 303(d) list. EPA established the Chesapeake Bay TMDL consistent with those consent decrees, MOUs, and settlement agreements, described below.

Virginia-EPA Consent Decree

The American Canoe Association, Inc., and the American Littoral Society filed a complaint against EPA for failing to comply with the CWA, including section 303(d), regarding the TMDL program in the Commonwealth of Virginia. A consent decree signed in 1999 resolved the litigation.⁸ The consent decree includes a 12 year schedule for developing TMDLs for impaired segments identified on Virginia’s 1998 section 303(d) list. The consent decree requires EPA to establish TMDLs for those waters, by May 1, 2011, if Virginia fails to do so according to the established schedule. Virginia has requested that EPA establish TMDLs for the nutrient- and sediment-impaired tidal portions of the Chesapeake Bay and its tributaries and embayments in accordance with the Virginia consent decree schedule (CBP PSC 2007). *Table 1–3* provides a list of the Virginia consent decree waters that were addressed by the Chesapeake Bay TMDLs for nitrogen, phosphorus, and sediment.

⁷*Dioxin/Organochlorine Center v. Clarke*, 57 F.3d 1517 (9th Cir. 1995); *Scott v. City of Hammond*, 741 F.2d 992(7th Cir. 1984); *American Canoe Assn. v. EPA*, 54 F.Supp.2d 621 (E.D.Va. 1999).

⁸*American Canoe Association v. EPA*, 98cv979 (June 11, 1999).

Table 1-3. Virginia consent decree (CD) waters impaired for dissolved oxygen (DO) and/or nutrients addressed by the Chesapeake Bay TMDL

Waterbody Name	CD Segment ID	Chesapeake Bay Segment ID	CD Impairment
Bailey Bay, Bailey Creek—Tidal	VAP-G03E	JMSTF1	DO
Broad Creek	VAT-G15E	ELIPH, WBEMH, SBEMH, EBEMH	DO
Chesapeake Bay Mainstem	Narrative ^a	CB5MH, CB6PH, CB7PH	Nutrients
Chesapeake Bay Mainstem	VACB-R01E	CB5MH, CB6PH, CB7PH	DO
Elizabeth River—Tidal	Narrative ^b	ELIPH, WBEMH, SBEMH, EBEMH	Nutrients
Hungars Creek	VAT-C14R	CB7PH	DO
James River—Tidal	Narrative ^c	JMSTF2, JMSTF1, JMSOH, JMSMH, JMSPH	Nutrients
King Creek	VAT-F27E	YRKPH	DO
Mattaponi River—Tidal	Narrative ^d	MPNTF, MPNOH	Nutrients
Messongo Creek	VAT-C10E	POCMH	DO
North Branch Onancock Creek	VAT-C11E	CB7PH	DO
Pagan River	VAT-G11E	JMSMH	DO
Pamunkey River—Tidal	Narrative ^e	PMKTF, PMKOH	Nutrients
Queen Creek	VAT-F26E	YRKMH	DO
Rappahannock River	Narrative ^f	RPPMH	Nutrients
Rappahannock River	VAP-E25E	RPPMH	Nutrients
Rappahannock River	VAP-E25E	RPPMH	DO
Rappahannock River	VAP-E26E	RPPMH	Nutrients
Rappahannock River	VAP-E26E	RPPMH	DO
Thalia Creek	VAT-C08E	LYNPH	DO
Williams Creek	VAN-A30E	POTMH	DO
York River	Narrative ^g	YRKMH, YRKPH	Nutrients
York River	VAT-F27E	YRKPH	DO

Source: *American Canoe Association v. EPA*, 98cv979 (June 11, 1999).

Notes:

^a = Chesapeake Bay Mainstem (VACB-R01E) impaired for nutrients.

^b = Elizabeth River (VAT-G15E) impaired for DO, nutrients.

^c = James River (VAP-G01E, VAP-G03E, VAP-G02E, VAP-G04E, VAP-G11E, and VAP-G15E) impaired for nutrients.

^d = Mattaponi River (VAP-F24E and VAP-F25E) impaired for nutrients.

^e = Pamunkey River (VAP-F13E and VAP-F14E) impaired for DO, nutrients.

^f = Rappahannock River (VAP-E24E) impaired for DO.

^g = York River (VAT-F26E) impaired for nutrients.

District of Columbia-EPA Consent Decree

In 1998 Kingman Park Civic Association and others filed a similar suit against EPA.⁹ The lawsuit was settled through the entry of a consent decree requiring EPA to, among other things, establish TMDLs for the District of Columbia's portions of the tidal Potomac and tidal Anacostia rivers if not established by the District of Columbia by a certain date.

The impairment of the District of Columbia's portion of the upper tidal Potomac River by low pH is directly related to the Chesapeake Bay water quality impairments because the low pH is a result of excess nutrients causing algal blooms in the tidal river. Establishing a tidal Potomac River pH TMDL is directly linked to establishing the Chesapeake Bay TMDL because of their common impairing pollutants (nitrogen and phosphorus) and the hydrologic connection between the District's portion of the tidal Potomac River and the Chesapeake Bay. EPA and the Kingman Park plaintiffs jointly sought, and received on February 12, 2008, a formal extension of the District of Columbia TMDL Consent Decree so that EPA could complete the Potomac River pH TMDL on the same schedule as the Chesapeake Bay TMDL.¹⁰ The District of Columbia requested that EPA establish the pH TMDL for the District's portion of the tidal Potomac River (CBP PSC 2007). *Table 1-4* provides a list of the District's consent decree waters that were addressed by the Chesapeake Bay TMDLs for nitrogen, phosphorus, and sediment.

In addition, Anacostia Riverkeeper and Friends of the Earth filed suit against EPA challenging more than 300 TMDLs for the District of Columbia, including the Anacostia River TMDLs, because the TMDLs were not expressed as daily loads. On May 25, 2010, the District Court for the District of Columbia ordered the vacatur of the District of Columbia's TMDL for pH for the Washington Ship Channel, with a stay of vacatur until May 31, 2011.¹¹ With publication of the Bay TMDL, the

⁹ *Kingman Park Civic Association v. EPA*, 98cv00758 (June 13, 2000).

¹⁰ *Kingman Park Civic Association v. EPA*, 98cv00758 (Order February 12, 2008).

¹¹ *Anacostia Riverkeeper, et al. v. Jackson*, 1:2009cv00098 (D.D.C.) (Mem. and Order May 25, 2010).

Washington Ship Channel pH impairment has been addressed and the pH TMDL for the Ship Channel approved by EPA on December 15, 2004 has been superseded.

Table 1–4. District of Columbia consent decree (CD) waters impaired for pH addressed by the Chesapeake Bay TMDL

Waterbody Name	CD Segment ID	Chesapeake Bay Segment ID	CD Impairment
Washington Ship Channel	DCPWC04E 00	POTTFF DC	pH
Middle Potomac River	DCPMS00E	POTTFF DC	pH

Source: *Kingman Park Civic Association v. EPA*, 98cv00758 (June 13, 2000).

Delaware-EPA Consent Decree

In 1996 the American Littoral Society and the Sierra Club filed a suit against EPA to ensure that TMDLs were developed for waters on Delaware's 1996 section 303(d) list, one of which is a tidal Bay segment (Upper Nanticoke River). The parties entered into a consent decree resolving the lawsuit.¹² The consent decree required EPA to establish TMDLs if Delaware failed to do so within the 10 year TMDL development schedule. Although Delaware established TMDLs for the one listed tidal Bay segment (DE DNREC 1998), the TMDLs were established to meet prior WQS and are insufficient to attain Chesapeake Bay WQS.

Maryland-EPA MOU

In 1998 Maryland and EPA Region 3 entered into an MOU that, among other things, established a 10 year schedule for addressing waters on Maryland's 1998 section 303(d) list, with completion by 2008 (MDE 1998). Because of funding constraints, the complexity of some TMDLs, and limited staff resources, Maryland determined that it would not be able to address all 1998 listed waters by 2008. Further, the Chesapeake 2000 Agreement established a goal of meeting water quality standards in the Chesapeake Bay by 2010 (CEC 2000). Many of the waters on Maryland's 1998 section 303(d) list were open waters of the Bay or tidal tributaries and embayments to the Bay. Maryland determined that developing TMDLs for those tidal waters before the deadline established by the MOU, as would be required under the schedule established in 1998, "would undermine the spirit of the agreement" because of a lack of integration between the CBP partnership and Maryland efforts (MDE 2004). Therefore, Maryland decided to postpone development of TMDLs for Maryland's listed Chesapeake Bay and its tidal tributary and embayment waters until the two programs could coordinate efforts.

In September 2004, Maryland and EPA Region 3 entered into a revised MOU that extended the schedule for TMDL development to 13 years (by 2011) (MDE 2004). Although neither Maryland nor EPA is under a consent decree for establishing TMDLs for Maryland waters, the state has requested that EPA develop the TMDLs for the Maryland portion of the Chesapeake Bay and tidal tributaries and embayments impaired by excess nitrogen, phosphorus, and sediment as recognized in the MOU between Maryland and EPA (CBP PSC 2007).

Chesapeake Bay Foundation Settlement Agreement

In January 2009, the Chesapeake Bay Foundation and others filed suit against EPA in U.S. District Court for the District of Columbia (1:09-cv-00005-CKK) alleging, among other things, that EPA had failed to carry out nondiscretionary duties under CWA section 117(g) designed to restore and preserve the Chesapeake Bay. In May 2010, EPA signed a settlement agreement with the plaintiffs promising to take a number of actions to restore and preserve the Bay. In particular, EPA promised that by December 31, 2010, it would establish a TMDL for those segments of the Chesapeake Bay impaired by nitrogen, phosphorus, and sediment. EPA is establishing this TMDL, in part, to meet that commitment.

* * * * *

Response to Public Comments

Chesapeake Bay TMDL for Nitrogen, Phosphorus and Sediment

December 29, 2010

Docket #: EPA-R03-OW-2010-0736

* * * * *

¹² *American Littoral Society, et al. v. EPA, et al.*, 96cv591 (D.Del. 1997).

Chapter 1—Comments and Responses

Part 1

* * * * *

Legal Comments

* * * * *

Comment ID 0288.1.001.036

Author Name: Pomeroy Christopher

Organization: Virginia Association of Municipal Wastewater Agencies, Inc. (VAMWA)

The American Canoe AND Kingman Park Consent Decrees Do Not Address Virginia's Chlorophyll *a*

EPA continues to assert in it must complete the Bay TMDL by 2011 (the December, 2010 deadline is a self-imposed acceleration) because of two consent decrees issued in the late 1990/early 2000 timeframe, *American Canoe Association, Inc., et al. v. EPA*, Civil Action No. 98–99–A (U.S. D.Ct. ED VA, 1999)[FN102] and *Kingman Park Civic Association, et al. v. EPA*, Case No. 1:98CV00758 (U.S. D.Ct. D.C., 2000). Draft TMDL at 1–14 to 1–16.

VAMWA submits that EPA's obligations to develop a TMDL by May, 2011 do not extend to establishing loadings on the James River for chlorophyll *a*. As the earlier discussion of the history of the establishment of the standard (see Section VI above) illustrates, the James River chlorophyll *a* standard was not even adopted until 2005. In contrast, the American Canoe Consent Decree, was signed and filed in Federal Court in 1999 and covers TMDLs on the then-existing 1998/99 303(d) list for Virginia. It is therefore impossible that EPA's obligation from the American Canoe Consent Decree extends to chlorophyll *a* on the James given that the standard did not even come into existence until six years later. Although EPA has wrapped the James chlorophyll *a* issue up into this TMDL, it is not obligated to do so, and should not have done so in light of the major concerns expressed by the State and VAMWA regarding the existing standard.

[FN102] Attached hereto as Appendix 51. [Comment Letter contains additional information in the form of an attachment. See original comment letter 0288.A51]

Response: Thank you for the comment. For a comprehensive discussion of legal issues see EPA Essay Response to Legal Issues provided in response to comment number 0293.1.001.014.

Comment ID 0293.1.001.014

Author Name: Pomeroy Christopher

Organization: Virginia Municipal Stormwater Association, Inc. (VAMSA)

VAMSA does not dispute that TMDL implementation planning is important for moving clean-up programs ahead after TMDL adoption and for illustrating NPS reductions plans. However, because WIPs are not derived from CWA section 303(d) authority,[FN30] the details of these plans are not subject to EPA approval or control. EPA's decision in its Draft TMDL to create "backstops"—requirements that in effect revise the Virginia's Draft WIP—is not supported by federal law.

In addition to acting without specific authorization from federal law, EPA's actions are also inconsistent with state primacy granted by Section 510 of the Act:

“Except as expressly provided in this Act, nothing in this Act shall (1) preclude or deny the right of any state or political subdivision thereof or interstate agency to adopt or enforce (A) any standard or limitation respecting discharges of pollutants, or (B) any requirement respecting control or abatement of pollution; except that if an effluent limitation, or other limitation, effluent standard, prohibition, pretreatment standard, or standard of performance is in effect under this Act, such State or political subdivision or interstate agency may not adopt or enforce any effluent limitation, or other limitation, effluent standard, prohibition, pretreatment standard, or standard of performance which is less stringent than the effluent limitation, or other limitation, effluent standard, prohibition, pretreatment standard, or standard of performance under this Act; or (2) be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States.” [FN31]

Federal law clearly gives Virginia the authority to develop its own requirements and programs, so long as they are not less stringent than those established under

the Act.[FN32] Because EPA has no statutory authority to establish WIPs, it is impossible for Virginia's Draft WIP to be less stringent.

For these reasons, Virginia should have the discretion to establish its own WIP, without EPA passing judgment and usurping what is rightfully the state's role in this process.

[FN30] Section 303(d) of the Clean Water Act mandates that states must prepare TMDLs for impaired waters, and authorizes EPA to approve or disapprove the loadings. If EPA chooses to disapprove, it has the authority to develop loadings on its own accord ("If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such state and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section.") 33 U.S.C. § 1313. Section 303(e) specifically gives the State the authority and responsibility to develop a "continuing planning process" for addressing navigable waters. A part of this planning process is TMDLs (again, TMDL implementation plans are not mentioned). Nowhere in the text of Section 303(d) or (e) is EPA permitted to pass judgment on state implementation plans.

[FN31] 33 U.S.C. 1370.

[FN32] Virginia law (Chesapeake Bay and Virginia Waters Clean-Up and Oversight Act) includes a provision for the development of a Bay clean-up plan. Va. Code 62.1-44.117.

Response:

EPA Response to Legal Comments Regarding the Chesapeake Bay TMDL

EPA received a number of comments that raise legal issues in connection with EPA's establishment of the Chesapeake Bay TMDL. Identical (or very similar) issues were raised by a number of different commenters. In hopes of providing a more readable and understandable response to these legal comments, EPA has developed this consolidated response, rather than responding "piecemeal" to all the individual comments raising legal issues. In addition, readers are referred to those sections of the draft and final TMDL discussing TMDL's and the CWA and the Bay TMDL's legal framework.

A. Comments regarding EPA authority to establish the TMDL and its allocations

1. While some commenters appeared to concede that EPA had authority to establish the Bay TMDL at least for waters covered by the Virginia, D.C., and Delaware consent decrees, other commenters challenged EPA authority to establish the Bay TMDL for any of the Bay's waters.

Response: As discussed in the draft and final TMDLs, EPA is establishing the Chesapeake Bay TMDL pursuant to a number of existing authorities, including the CWA and its implementing regulations, judicial consent decrees requiring EPA to address certain impaired Chesapeake Bay and tidal tributary waters, a settlement agreement resolving litigation brought by the Chesapeake Bay Foundation, the current Chesapeake Bay Agreement, and Executive Order 13508. In establishing the Bay TMDL, EPA has acted pursuant to the consensus direction of the Chesapeake Executive Council's PSC and in partnership with each of the seven Chesapeake Bay watershed jurisdictions.

The CWA provides EPA with ample authority to establish the Chesapeake Bay TMDL. CWA section 117(g)(1) provides that [t]he Administrator, in coordination with other members of the [CEC], shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain [among other things] the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed [and] the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem. Because it establishes the Bay and tidal tributaries' nutrient and sediment loading and allocation targets, the Chesapeake Bay TMDL is such a management plan. In addition, the Bay TMDL's loading and allocation targets both inform and are informed by, a larger set of federal and state management plans being developed for the Bay, including the jurisdiction WIPs and the May 2010 Bay strategy.

CWA section 303(d) requires jurisdictions to establish and submit TMDLs to EPA for review. Under certain circumstances, EPA also has the authority to establish TMDLs. The circumstances of this TMDL do not necessarily identify the outer bounds of EPA's authority. However, where impaired waters have been identified on jurisdictions' section 303(d) lists for many years, where the states in question

have decided not to establish their own TMDLs for those waters, where EPA is establishing a TMDL for those waters at the direction of, and in cooperation with, the jurisdictions in question, and where those waters are part of an interrelated and interstate water system like the Chesapeake Bay that is impaired by pollutant loadings from sources in seven different jurisdictions, CWA section 303(d) authorizes EPA authority to establish that TMDL. *Dioxin/Organochlorine Center v. Clarke*, 57 F.3d 1517 (9th Cir. 1995); *Scott v. City of Hammond*, 741 F.2d 992 (7th Cir. 1984); *American Canoe Ass'n. v. EPA*, 54 F.Supp.2d 621 (E.D.Va. 1999).

On May 12, 2009, President Barack Obama signed Executive Order 13508—*Chesapeake Bay Protection and Restoration*. The Executive Order's overarching goal is to protect and restore the health, heritage, natural resources, and social and economic value of the Nation's largest estuarine ecosystem and the natural sustainability of its watershed. The Executive Order says the federal government should lead this effort and acknowledges that progress in restoring the Bay will depend on the support of state and local governments. To that end, the Executive Order directs the lead federal agencies, including EPA, to work in close collaboration with their state partners. To protect and restore the Chesapeake Bay and its tidal tributaries, the President directed EPA to "make full use of its authorities under the [CWA]." In establishing the Bay TMDL, EPA is doing no more-or less-than making full use of its CWA authorities to lead a collaborative and effective federal and state effort to meet the Bay's nutrient and sediment goals.

In addition, as discussed in the TMDL itself, a number of consent decrees, MOUs, and settlement agreements provide additional authority and support for EPA's decision to establish the Chesapeake Bay TMDL addressing certain waters identified as impaired on the Maryland, Virginia, and District of Columbia's 1998 section 303(d) lists and on the Delaware 1996 section 303(d) list. EPA is establishing the Chesapeake Bay TMDL consistent with those consent decrees, MOUs, and settlement agreements. It is immaterial whether Virginia was a party to the litigation that resulted in the Virginia consent decree. The decree represents a judicially-enforceable obligation that EPA must fulfill if necessary, as is the case here.

2. One commenter said that EPA had inappropriately relied on *Dioxin/ Organochlorine Center v. Clarke*, 57 F.3d 1517 (9th Cir. 1995), *Scott v. City of Hammond*, 741 F.2d 992 (7th Cir. 1984) and *American Canoe Ass'n v. EPA*, 54 F.Supp.2d 621 (E.D.Va. 1999) as support for including Bay TMDL allocations for New York. The commenter said those cases were inapposite because (1) New York (and presumably the other Bay headwaters States) did not have impaired waters addressed by the Bay TMDL and (2) the Bay TMDL (and its headwaters allocations) was based on Bay-State water quality standards and not on water quality standards adopted by New York (and the other headwaters jurisdictions) that already accounted for how local conditions affected the downstream Bay impairments.

Response: It is true that none of the cited cases had a need (based on their facts) to expressly address the issue of whether EPA has the authority to establish allocations for upstream States (and sources) in a TMDL for an interstate waterbody whose impairments are caused, in significant part, by pollutants originating in upstream states. The fact that the cited cases did not specifically address the out-of-State allocation issue does not make EPA's reliance on them "inappropriate." Indeed, all three cases clearly support the proposition that EPA has authority to establish this watershed TMDL for the 92 impaired Bay segments on the four Bay States' 303(d) lists. That being the case, it follows logically that—in establishing a TMDL for these 92 segments—EPA also must have authority to establish allocations within the entire Bay watershed at levels necessary to implement the water quality standards "applicable" to those 92 segments. If EPA does not have such authority, it is limited to establishing a TMDL for the 92 Bay segments that either (1) makes no allocations to (or assumptions about reductions from) the headwaters States and, instead, allocates or assumes reductions only from VA, MD, D.C., and DE and places the burden on those States alone to meet the Bay's water quality standards; or (2) assumes (but does not allocate) reductions from the three headwaters States and makes allocations to VA, MD, D.C., and DE at a level consistent with the assumed headwater State reductions. In the context of this TMDL and this interstate waterbody—where a significant portion of the nutrient and sediment loads originate in the headwaters States—EPA believes it is unreasonable to read the CWA as constraining its authority to make allocations only to the four tidal Bay jurisdictions. EPA also believes it is unreasonable to interpret the CWA as forcing EPA to establish TMDL allocations for the tidal bay jurisdictions that rely only on unspecified and unsupported "assumed" reductions from the headwaters States. In light of the CWA's goals and objectives, EPA believes this to be an unnecessarily narrow read-

ing of the Act and—based on past history—one not likely to result in attainment of the Bay’s applicable water quality standards.

3. One commenter says that EPA did not follow the CWA’s “statutory scheme” for setting the TMDL’s allocations for New York because it based those allocations on water quality standards applicable to the tidal Chesapeake and not on New York’s own water quality standards.

Response: EPA did establish New York’s (and other headwater States’) allocations consistent with CWA authority. EPA established the Chesapeake Bay TMDL to address 92 impaired segments of the Bay and its tidal tributaries within the boundaries of Virginia, D.C., Maryland, and Delaware. Section 303(d) requires that the Bay TMDL be established at a “level necessary to implement the applicable water quality standards . . .” For the Bay TMDL, the applicable water quality standards are those standards established by Virginia, D.C., Maryland, and Delaware (and approved by EPA) for the 92 impaired tidal Bay segments. Pursuant to EPA’s regulations (130.2(i)), a TMDL is defined as the sum of its wasteload allocations and load allocations. Accordingly, EPA was required by the CWA and its regulations to establish the TMDL’s allocations (including allocations for headwater States like New York) consistent with implementing water quality standards applicable to the tidal Bay waters. This is what EPA did.

As a legal matter, EPA is authorized to consider downstream water quality standards (including those in other states), when establishing or approving a TMDL. The U.S. Supreme Court in *Arkansas v. Oklahoma*, 503 U.S. 91 (1992), held that EPA has the authority to impose NPDES permit limitations and conditions based on downstream water standards. At issue in that case was EPA’s issuance of an NPDES permit to an Arkansas facility that imposed conditions derived from the downstream state’s water quality standards. Noting that “the statute clearly does not limit the EPA’s authority to mandate such compliance,” the Court held, “The regulations relied on by the EPA were a perfectly reasonable exercise of the Agency’s statutory discretion. The application of state water quality standards in the interstate context is wholly consistent with the Act’s broad purpose ‘to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.’” 33 U.S.C. § 1251(a). Moreover, as noted above, § 301(b)(1)(C) expressly identifies the achievement of state water quality standards as one of the Act’s central objectives. The Agency’s regulations conditioning NPDES permits are a well-tailored means of achieving this goal.” The regulations considered by the court, 40 C.F.R. § 122.4(d), provide, “No permit shall be issued . . . [w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States.”

The principle articulated by the Supreme Court in the NPDES permitting context applies with equal force to TMDLs, which are an important tool for implementing section 301(b)(1)(C) with respect to point source discharges. As the Supreme Court held, EPA as the permitting authority is authorized to consider water quality standards in downstream segments (including those in other states) when establishing NPDES permit limitations and conditions for sources whose discharges ultimately flow to the downstream segments. For sources discharging to waters flowing into the Chesapeake Bay, those permit limitations would be derived from the TMDL for the Chesapeake Bay. See 40 C.F.R. § 122.44(d)(1)(vii)(B). Therefore, it follows that EPA is authorized to establish or approve TMDLs for impaired Bay waters with wasteload allocations and load allocations for upstream sources that take into account the downstream water quality standards that the TMDL is designed to meet.

4. One commenter seemed to suggest that EPA did not have authority “to establish a Bay TMDL for New York” because (1) New York had not failed to submit an appropriate TMDL and (2) EPA had not first required New York to revise its State water quality standards.

Response: EPA disagrees with the comment and its underlying assumption that any Bay-related TMDL allocations affecting nutrient and sediment pollutant loadings originating in New York (or the other headwater States) must be established by those headwaters States and based solely on their own State water quality standards. In the 38 years since passage of the CWA, none of the Bay headwaters States (New York, Pennsylvania, and West Virginia) has established or submitted a TMDL to EPA that allocates nutrient or sediment loadings in their jurisdictions at a level necessary to implement water quality standards in the Bay or its tidal tributaries. Moreover, the headwaters States requested and collaborated with EPA in the establishment of this Bay TMDL and its allocations. Accordingly, EPA has acted within its authority under CWA 303(d) to establish allocations to the headwater States in

the Bay TMDL consistent with the need to implement tidal Bay water quality standards.

Nor was it necessary for EPA to first require that the headwaters States revise their own water quality standards to “take into consideration” the applicable tidal Bay water quality standards and “ensure” that their “upstream” standards provide for “downstream” standards attainment. EPA is establishing the Bay TMDL to implement the tidal Bay standards, not the headwater States’ own “upstream” standards. (Reductions made to achieve the Bay TMDL are expected to improve the local water quality of the nontidal receiving waters.) The fact that a headwater State’s standards may not already be stringent enough per 131.10(b) to ensure implementation of the tidal Bay standards does not constrain EPA’s ability and authority under 303(d) to establish Bay TMDL allocations that are fully protective of the applicable downstream tidal Bay standards. To interpret CWA 303(c) and (d) otherwise would turn the Act on its head by subjecting a TMDL’s ability to protect its targeted waters (and their “applicable” water quality standards) to limitations contained in upstream water quality standards. Likewise, under the framework of the Bay TMDL, EPA need not establish TMDLs or allocations for specific waters on New York’s 303(d) list because they are not meeting local water quality standards. The purpose of this TMDL is to achieve the applicable standards for the 92 impaired Bay segments. New York is free to develop TMDLs for waters with local impairments outside the context of this TMDL on an appropriate schedule.

5. A number of commenters said that that—rather than “usurping” the States’ roles—EPA should work “collaboratively” with them and recognize their “environmental stewardship.”

Response: EPA believes the record of EPA’s actions in establishing this TMDL clearly demonstrates that EPA has used a collaborative process to arrive at the final TMDL, one that has recognized and encouraged the environmental stewardship of all the watershed States, without whose full cooperation restoration of the Bay will be not occur.

6. One commenter said EPA was attempting to expand its CWA authority by referencing a TMDL-establishment MOU with Maryland, the 2010 settlement agreement resolving *Fowler v. EPA*, and the Chesapeake Bay Executive Order.

Response: EPA agrees that its settlement agreement resolving *Fowler v. EPA* and the Executive Order do not expand its CWA authority to establish the Bay TMDL. EPA never said they did. Rather, EPA said it was establishing the Bay TMDL by December 31, 2010 to meet a commitment it made in the settlement agreement to act by that date. Regarding the Maryland MOU, EPA referenced that document (signed in 1998; revised in 2004) in the draft TMDL because Maryland’s commitments in that MOU were key to EPA victory (twice) in lawsuits alleging that Maryland was in default of its CWA TMDL obligations. Without Maryland’s MOU commitments (and actions), it is possible the court might have found Maryland in default and ordered establishment of TMDLs via an EPA backstop on a schedule similar to the Virginia consent decree. If that had happened, EPA’s authority to establish TMDLs for Maryland’s impaired Bay waters would be as clear as it is for Virginia. While it is true that an MOU cannot by itself enlarge Congressionally-bestowed powers, under these circumstances the existence of the Maryland MOU in the context of the two Maryland TMDL lawsuits explains why it is reasonable for EPA to establish within the Bay TMDL—and with Maryland’s full agreement—“backstop” TMDLs for Maryland’s impaired Bay waters.

B. Comments regarding the Watershed Implementation Plans (WIPs)

1. Some commenters said that implementation plans associated with the TMDL are not part of the TMDL itself and, thus, not subject to EPA approval. More specifically, some commenters claim that EPA’s “rejection” of Virginia’s draft WIP is “legally objectionable” because the CWA does not give EPA the authority to review and/or approve WIPs, or to direct their specific terms.

Response: EPA agrees with the commenters that the CWA does not require or authorize EPA to “approve” or “disapprove” jurisdictions’ WIPs. And EPA has not done that here. Nor did EPA direct their specific terms. Instead, EPA identified expectations and a guide for the contours of the WIPs, and asked the jurisdictions to submit WIPs to support their recommendations for the decision by EPA in making its TMDL allocation decisions for various pollutant loading sectors. EPA reviewed the WIPs to determine if they provide adequate “reasonable assurance” to support the jurisdictions’ recommended allocation scenarios. Where those WIPs were determined to provide adequate reasonable assurance and met the respective jurisdictions’ pollutant cap loading, EPA used all (or those parts found adequate) as the basis for

its TMDL allocations for that jurisdiction. Where portions of the WIPs did not provide such assurances, as the CWA requires, EPA establishes the backstop allocations in an appropriate manner so the resulting TMDL allocations are established at a level necessary to implement applicable water quality standards.

2. Some commenters said EPA did not have authority to establish a 2025 compliance deadline in the Bay TMDL.

Response: CWA section 117(g) requires that EPA “ensure that management plans are developed and implementation is begun” to meet the Bay’s nutrient goals and water quality requirements. Pursuant to that authority, and to support the TMDL EPA is establishing pursuant to section 303(d), EPA asked the Bay jurisdictions to develop and submit WIPs that provided for 60% implementation by 2017 and 100% implementation by 2025. In light of the decades-long history of not meeting these goals, a two-phase implementation framework is reasonable. EPA recognizes that there is much work to be done to restore the Bay; hence the final implementation target extending to 2025. In light of the Bay’s importance, the delays so far in reaching those targets, and EPA’s belief that this job can be done in the projected time, the staged 2017/2025 implementation framework is both lawful and reasonable. That being said, the TMDL by itself is not a self implementing mechanism and does not contain an implementation plan. That plan, or rather plans, are set forth in the State WIPs, the two year milestones, and other federal actions—components of the broader Chesapeake Bay Restoration Accountability Framework discussed in TMDL section 1.2.2 and 7.2.

C. Comments regarding “Reasonable Assurance”

1. One commenter asserts that “reasonable assurance” “is a concept that does not originate in either the CWA or EPA regulations” and that EPA “created” the concept of reasonable assurance in 1997 guidance. The commenter goes on to assert that a TMDL is a “number” and “[n]othing in the statute gives EPA the authority to judge how that number is assigned or divided.”

Response: EPA disagrees that “reasonable assurance” “is a concept that does not originate in either the CWA or EPA regulations” and that EPA “created” the concept of reasonable assurance in 1997 guidance.

In the first place, EPA explained the concept of reasonable assurance as early as its initial TMDL guidance in April 1991, not 1997. The concept has been further explained in subsequent guidance documents.

More importantly, the commenter is incorrect in asserting that a TMDL is merely a “number” and “[n]othing in the statute gives EPA the authority to judge how that number is assigned or divided.” A TMDL not just is a number. Rather, it is a collection of numbers representing WLAs and LAs assigned to various pollutant sources, all of which must add up to a “total” loading of pollutants consistent with meeting applicable water quality standards. $TMDL = WLA(s) + LA(s) + MOS$. When approving (or in the case of the Bay TMDL) establishing a TMDL, EPA has an obligation to ensure that the sum of the WLAs and the LAs adds up to a “total” number that will implement the applicable water quality standards. This is where “reasonable assurance” comes in.

While neither the CWA nor EPA’s regulations expressly mention the phrase “reasonable assurance,” the congruent requirements of CWA 303(d)(1)(C) and 301(b)(1)(C) implicitly require it. Section 303(d)(1)(C) requires that a TMDL be “established at a level necessary to implement the applicable water quality standards . . .” See also 40 C.F.R. 130.7(c)(1). A TMDL calculates the maximum amount of pollutant loadings that a waterbody can receive and still meet water quality standards, sometimes referred to as assimilative capacity. For waterbodies with both point and nonpoint sources of pollutants, a TMDL writer must decide how to apportion loadings between point and nonpoint sources subject to the TMDL. Section 303(d)(1)(C) requires that the point source/nonpoint source allocation split be “at a level necessary to implement the applicable water quality standards.” Without a demonstration in the TMDL’s record of “reasonable assurance” that the chosen nonpoint source load allocations will in fact be met, there is no assurance that the TMDL equation will not add up to a sum that exceeds a level necessary to implement the applicable water quality standards.

Section 301(b)(1)(C) and EPA’s permitting regulations provide additional support for reading a “reasonable assurance” requirement into a TMDL. Section 301(b)(1)(C) requires that point source permits have effluent limits as stringent as necessary to meet water quality standards. EPA’s permitting regulations echo that requirement and, in addition, require that permits include effluent limits “consistent with the assumptions and requirements of any available wasteload allocation for the discharge”

approved by EPA. 40 CFR 122.44(d)(1)(vii)(A) & (B). For WLAs to serve as a basis for a WQBEL, they must themselves be stringent enough so that (in conjunction with the waterbody's other loadings) they meet water quality standards. In the absence of reasonable assurance that a TMDL's LAs will in fact be met, the TMDL's WLAs cannot serve as an effective permitting guide. That can happen, however, if (1) the TMDL's combined nonpoint source load allocations and point source wasteload allocations do not exceed the water quality standard-based loading capacity and (2) there is "reasonable assurance" that the load allocation will be achieved. Such a demonstration ensures that an effluent limitation that is "consistent" with a TMDL's wasteload allocation pursuant to 122.44 (d)(1)(vii)(B) will also meet water quality standards as required by CWA 301(b)(1)(C) and 122.44 (d)(1)(vii)(A).

D. Comments regarding TMDL's "Backstop allocations"

1. Some commenters said EPA should "delay adoption of the TMDL and backstops for at least one year" because (1) there is no legal authority for the urban/suburban retrofits necessary to implement the TMDL and (2) such measures would be far more expensive and cost-effective than POTW upgrades or agricultural BMPs.

Response: EPA disagrees with the commenter's assertion about lack of CWA legal authority for urban/suburban stormwater controls necessary to implement the Bay TMDL. Moreover, these arguments do not support delaying the TMDL. It is important that EPA establish the Bay TMDL as soon as possible. The TMDL is an important element in Bay restoration, and the Bay's waters have been impaired and restoration delayed for many years. EPA afforded the Bay jurisdictions two opportunities (draft Phase I WIPs and final Phase II WIPs) to describe the mix of implementation measures (informed by cost and other considerations) they intend to pursue in order to meet the TMDL's nutrient and sediment targets. EPA has taken the jurisdiction's WIPs into account in establishing allocations in the TMDL. Because this is EPA's TMDL, the CWA requires that EPA establish nutrient and sediment allocations at a level necessary to implement applicable water quality standards. To the extent EPA backstop assumptions serve as a basis for the TMDL's final allocations, those assumptions would have been necessitated by inadequacies in the jurisdictions' WIPs. That being the case, EPA would have been obligated to make allocations stringent enough to meet applicable standards sooner or later based, in part, on such assumptions. EPA has reasonably decided to establish the Bay TMDL and its allocations sooner rather than later. For further information on retrofits please see response to comment number 0232.1.001.004.

E. Comments regarding James River allocations

1. Some commenters said it was not EPA's responsibility under the Virginia or D.C. consent decrees to establish a TMDL to meet the *James River's* 2005 chlorophyll standards.

Response: EPA disagrees. The Virginia consent decree requires EPA to establish a TMDL at a level necessary to implement the applicable water quality standards for "each water and pollutant identified in Attachment A and C" of the decree if Virginia has not done so by a date certain. The James River's tidal tributaries are identified on Attachment A (Part 2) of the 1999 Virginia consent decree as impaired by "nutrients," with specific focus on "aquatic life concerns." It is immaterial that Virginia did not establish a numeric chlorophyll standard for those segments until 2005. The numeric chlorophyll *a* criteria adopted by Virginia specific to the James is to provide additional protection to aquatic life uses from the harmful effects of excess nutrients. These numeric criteria reinforce and support the restoration of those portions of the James River identified on the 1998 303(d) listing for impaired aquatic life uses. At the time EPA established this TMDL, the segments remained listed and impaired, and the 2005 chlorophyll standard was an "applicable" water quality standard for purposes of section 303(d)(1)(C). Accordingly, the 1999 Virginia consent decree requires that EPA establish a TMDL for those segments at a level that implements the applicable chlorophyll standard.

2. Some commenters said the James River has "very little impact" on the main stem and dead zone of the Bay and achievement of the proposed James River nutrient allocations "will not improve the Bay water quality."

EPA provides responses to that comment elsewhere in this document.

3. Some commentators said the James River chlorophyll standard "lacks a sound scientific foundation."

Response: EPA approved this submission of revised James River numeric chlorophyll *a* criteria (WQS) by Virginia in 2005 as effective and applicable water quality standards (WQS) for purposes of the CWA. On that basis EPA disagrees with this comment. This comment is outside the scope of the TMDL, since the CWA requires TMDLs to be established to “applicable” WQS, and the numeric chlorophyll *a* criteria are such standards. See above response. EPA suggests the commenter review the 2005 submission by Virginia and EPA’s approval if the commenter has further questions.

F. Comments re length of comment period and modeling information

1. Many commenters requested EPA to extend the TMDL’s 45 day comment period.

Response: It is true EPA declined to extend the TMDL’s 45 day comment period. To do so would have made it impossible for EPA to establish the Bay TMDL by December 31, 2010. EPA places a very high value on meeting its public commitment to establish the TMDL by that date. EPA does not want to break faith with the States who requested it or the public who expects it. Moreover, EPA is acting pursuant to Executive Order 13508 to “make full use of its authorities” to protect the Bay, as well as a promise EPA made in a May 2010 settlement agreement resolving *Fowler v. EPA*. While EPA could have attempted to negotiate an extension of the *Fowler* agreement date, EPA believes that—under all the circumstances of this TMDL, including the considerable transparency of the process to date and EPA’s considerable efforts to engage in public outreach—its efforts were better spent finishing work on the TMDL in order to avoid any further delays in implementing EPA’s and States’ 27+ year old commitment to restore the Bay’s water quality.

EPA agrees that its settlement agreement resolving *Fowler v. EPA* and the Executive Order do not expand its CWA authority to establish the Bay TMDL. EPA never said they did. Rather, EPA said it was establishing the Bay TMDL by December 31, 2010 to meet a commitment it made in the settlement agreement to act by that date.

2. Some commenters stated that EPA did not make information on Scenario Builder model available and requested EPA to make more modeling-related information available.

Response: EPA disagrees that it had not made information on Scenario Builder and other essential models available. For example EPA posted scenario builder information that was used for all of the calibration model inputs (the same thing as SB output) except for the acres of BMPs, which was calculated outside of SB in March 2010 at: <ftp://ftp.chesapeakebay.net/modeling/phase5/Phase%205.3%20Calibration/Model%20Input/>.

In addition the following information on the Watershed Model calibration was posted on the following websites spring of 2010:

<http://www.chesapeakebay.net/phase5.htm>: Scroll down to Phase 5.3 Watershed Model Output Data and Phase 5.3 Watershed Model Input Data

<http://ftp.chesapeakebay.net/Modeling/phase5/Phase%205.3%20Calibration/>

This information was also available through links provided in Section 5 of the draft TMDL, which was released for a 45 day public comment period on September 24th. Further, the Watershed Model code and calibration data, as well as the Scenario Builder documentation, were linked to our website before the draft TMDL was released.

The Scenario Builder programming codes are available for download at: <http://ftp.chesapeakebay.net/modeling/ScenarioBuilder/ScenarioBuilderSource/>.

In response to requests for more specific SB information, EPA also made additional information available in November 2010 as discussed in e-mails from EPA James Curtin to several persons including Susan Bodine dated November 2, 2010. EPA believes it has made sufficient information available for the public to reasonably and intelligently comment on the Bay TMDL. For a more detailed response on modeling, please see response to comment number 379.1.001.006.

G. Comments regarding CWA 117(g)

1. A number of commenters questioned EPA’s reliance on CWA section 117(g) in support of its authority to establish the Bay TMDL and headwater State allocations.

Response: EPA disagrees with commenters who believe section 117(g) does not provide additional authority for EPA to establish the Bay TMDL.

Specifically, EPA disagrees with the comment that the term “management plans,” as used in section 117(g), may not be interpreted to include the Bay TMDL. EPA notes that Congress did not include within section 117(g) a definition of the term “management plans.” Accordingly, there is room for reasonable interpretation of its meaning. Webster’s defines a “plan” as a “goal; aim,” or, alternatively, “an orderly arrangement of parts of an overall design or objective.” Defined this way, a section 117(g) Chesapeake Bay “management plan” may reasonably be interpreted to include its goal, aim, or objective—in this case, the Bay TMDL and its allocations.

In section 117(g) Congress directed EPA, in coordination with the signatories to the Chesapeake Bay Agreement, to “ensure that management plans are developed and implementation is begun to achieve and maintain, among other things (1) the ‘nutrient goals’ of the Bay agreement ‘for nitrogen and phosphorus entering the Chesapeake Bay and its watershed’ and (2) ‘the water quality requirements necessary to restore living resources in the Chesapeake Bay.’” In this context it is reasonable for EPA to interpret the term “management plans” as used in section 117(g) to include, not only an identification of the actions proposed to be taken by EPA and the other signatories, but also the section 303(d)-based identification of the numerically-expressed “nutrient goals” and “water quality requirements” [nitrogen, phosphorus, and sediment allocations] that would inform those actions. The fact that Congress may have used similar terms in wholly different contexts, *e.g.*, “management program” in section 319, “management plan” in section 320, “areawide waste treatment management plan” in section 208, does not mean that—for the purposes of interpreting and implementing section 117(g)—EPA may not interpret the section 117(g) term “management plans” to include that part of the plan that identifies its target or goal.

EPA also disagrees with the comment that EPA may not allocate pollutant reductions to New York because it was not a signatory to the Bay Agreement but only a “voluntary partner.” Even if section 117(g) were not part of the CWA, section 303(d) gives EPA all the authority it needs to establish this TMDL. Section 117(g) merely underscores that authority as well as specifically directing EPA to take such actions to further restore Bay water quality. While it is true that New York (as well as West Virginia and Delaware) did not sign the 2000 Bay Agreement, those States subsequently (in 2000 and 2002) signed a MOU with EPA and the other four Bay watershed jurisdictions in which they agreed to work cooperatively to meet the Bay Agreement’s goals by 2010 so the Bay’s impaired waters could be removed from the States’ section 303(d) lists. Moreover, in 2007 New York, West Virginia and Delaware reached consensus with the signatory jurisdictions that EPA should establish the Bay TMDL on behalf of them all. By signing the MOU, joining the consensus that EPA should establish this TMDL, and participating with EPA in the development of the TMDL and their own WIPs, New York and the other non-signatory States have made themselves functionally and—for the TMDL’s purposes—legally equivalent to the signatory States regarding their Bay TMDL status.

2. Some commenters said that Congress did not “provide authority to EPA to achieve the goals set in section 117” of the CWA and that regulation and enforcement is “directly in the hands of each signatory.” Others said Congress did not provide EPA in 117(g) with “regulatory authority” to achieve those goals, or authority to “approve, disapprove, or change the state WIPs.”

Response: CWA section 117(g) requires that EPA “ensure that management plans are developed and implementation is begun” to meet the Bay’s nutrient goals and water quality requirements. EPA is not sure what the commenter means by saying that Congress did not provide EPA with authority (“regulatory,” or otherwise) to achieve the goals of CWA section 117(g). EPA has ample authority in the CWA (see *e.g.*, sections 301, 303(c) and (d), 402, 319 and other provisions) to achieve the water quality goals of section 117(g). In addition, section 117(g) expressly directs (and impliedly authorizes) EPA “to ensure that management plans are developed and implementation is begun” to meet the Bay’s nutrient goals and water quality requirements. That direction and authorization—even if it arguably does not provide EPA with any “additional” regulatory authorities—surely does not constrain use of authorities provided elsewhere in the Act. EPA has not asserted that section 117(g) gave it authority to “approve, disapprove, or change the state WIPs,” and EPA has not done so. EPA has exercised the leadership role accorded to it by section 117(g) in a responsible and appropriate way by working collaboratively with the Bay jurisdictions to ensure that their WIPs are of sufficiently high quality to achieve the Bay’s water quality goals.

H. Comments regarding CWA 510

1. Some commenters said EPA's disapproval of State WIPs, establishment of replacement WIPs, or establishment of the Bay TMDL is inconsistent with state primacy under CWA section 510.

Response: EPA disagrees with this comment. In the first place, EPA has not “disapproved” any State WIPs or established a replacement WIP for a State. Instead, EPA asked the jurisdictions to submit WIPs to support their recommendations for EPA’s TMDL allocation decisions for various pollutant loading sectors. EPA reviewed the WIPs to determine if they provide adequate “reasonable assurance” to support the jurisdictions’ allocations. Where the WIPs did not provide such assurances, the CWA required EPA to adjust the allocations in an appropriate manner so they are established at a level necessary to implement applicable water quality standards. CWA section 510 preserves a State’s right to adopt its own standards or limitations regarding discharges of pollutants, except that States may not be “less stringent” than applicable federal requirements. EPA reviewed the WIPs to determine if they provide adequate “reasonable assurance” to support the jurisdictions’ recommended allocations scenario. Where those WIPs were determined to provide adequate reasonable assurance and met the respective jurisdictions’ pollutant cap loading, EPA used all (or those portions found adequate) as the basis for its TMDL allocations for that jurisdiction. Where portions of the WIPs did not provide such assurances, as the CWA requires, EPA makes backstop allocations in an appropriate manner so the resulting TMDL allocations are established at a level necessary to implement applicable water quality standards. In so doing, EPA did not act in contravention of Section 510 because nothing in section 510 precludes EPA from establishing a TMDL at a level necessary to implement the applicable State-adopted and EPA-approved water quality standards.

2. Some commenters allege that EPA’s establishment of the Bay TMDL is an impermissible intrusion into State authority and an exercise in State “compulsion” in violation of the 10th Amendment and principles of federalism.

Response: EPA disagrees. Taken as a whole, the record of EPA’s and the Bay jurisdictions’ activities over the past decade demonstrates that EPA has established the Bay TMDL in collaborative partnership with the Bay jurisdictions and not through compulsion of them. EPA is under legal obligation to establish the Bay TMDL for certain waters in Virginia, D.C., and Delaware.

Each of those jurisdictions has collaborated with EPA in establishing the TMDL. In a similar manner, Maryland (pursuant to its MOU) and the headwaters states of New York, Pennsylvania, and West Virginia have also collaborated with EPA, the Chesapeake Executive Council and the PSC in developing the Bay watershed TMDL. EPA has neither impermissibly intruded into State authority nor compelled the jurisdictions in violation of the 10th Amendment or principles of federalism. Indeed, EPA has invited the jurisdictions to take the lead in developing WIPs for their own States designed to inform EPA’s TMDL allocations decisions and thereafter implement the TMDL’s loading targets. In doing so, EPA demonstrated its respect for our federal system and the priority of the States to determine how the TMDL will be implemented.

While it is true that EPA on a number of occasions provided the jurisdictions with its “expectations” regarding their implementation efforts, EPA did not “compel” any particular outcomes. The jurisdictions’ discretion was bounded only by the statutory requirement that their implementation proposals provide EPA with sufficient “reasonable assurance” that the TMDL allocations are established at a level necessary to implement the applicable Bay-wide water quality standards. To the extent a jurisdiction’s WIP did not do that, EPA was compelled by the CWA to establish allocations in the TMDL to meet standards. While some of those allocations may have been based on assumptions about additional implementation and oversight by EPA, that is nothing more (under the circumstances) than the federal-state scheme established by the Act contemplates and requires. This approach is fully consistent with CWA, the Constitution, and principles of federalism. It is also consistent with the Ninth Circuit’s 2002 decision in *Pronsolino v. Nastri*, 291 F.3d 1123. As in *Pronsolino*, EPA recognizes that implementation of the Bay TMDL is primarily a state responsibility. Here—as in *Pronsolino*—EPA did not require or include implementation plans “within the TMDL.” EPA asked for them—in part pursuant to section 117(g)—to inform and support the allocation setting process. As with the Garcia River TMDL, the Bay TMDL “serves as an informational tool for the creation of the state’s implementation plan.” It is not a substitute for it.

Nor is it the case that assumptions about future EPA regulatory or NPDES oversight authority that support any EPA allocation decisions “commandeer” State legis-

lative processes in violation of the 10th Amendment to the Constitution. During the TMDL development process, EPA invited the jurisdictions to make the difficult legal, policy, and budgetary choices necessary to implement the pollution reductions needed to meet applicable Bay water quality standards. The Chesapeake Bay Commission (CBC), a member of the Chesapeake Executive Council, represents the legislatures of the three signatory states. The CBC has been an active participant in this process. The States have also made such hard choices in their WIPs. If EPA believes some of those measures are insufficient in the aggregate to meet those standards, it must establish TMDL allocations that it believes (“reasonable assurance”) can, and will, meet standards. The Bay jurisdictions have choices and discretion regarding how to implement their WIPs in service of the TMDL. EPA has not—and will not—“commandeer” their legislative and administrative processes. However, EPA does reserve the right to exercise its own federal authorities and prerogatives in an appropriate manner (either through rulemaking, enforcement, NPDES oversight, or other means) to ensure that the TMDL’s and CWA’s goals are met. In relying on assumptions about potential future federal actions, EPA is not “prejudging” the outcome of future rulemakings or other actions. The exact scope and design of any such rulemakings must of necessity await the conclusion of the APA rulemaking process, including the opportunity for public comment, or in the case of a designation process, as provided by the CWA and its implementing regulations. However, in assessing and providing “reasonable assurance” to support the TMDL’s allocations, it is appropriate for EPA to make allocations based on certain assumptions about what “backstop” actions are available to it in the event the jurisdictions’ WIPs (or their implementation) are not sufficiently robust to meet the Bay’s water quality standards.

H. Miscellaneous Legal Issues

1. One commenter asked whether EPA considered how the TMDL might impact environmental justice, especially with regard to its impacts within densely populated watersheds.

Response: EPA believes the Bay TMDL and Bay restoration in general is fully consistent with its broader efforts to promote environmental justice. Around the watershed there are many disadvantaged and minority communities whose lives and livelihoods are closely tied to a healthy Bay: as a source of employment, recreation, food, and quality of life. EPA recognizes that restoring Bay water quality will not be cheap and that the costs may have to be borne broadly. However, on balance, EPA believes restoring Bay water quality is fully consistent with environmental justice principles.

2. Some commenters assert that the high estimated costs of stormwater retrofits “approach” a “taking” without compensation prohibited by State and the U.S. Constitution.

Response: EPA disagrees. EPA’s Bay TMDL is not a federal or state regulation, and its wasteload and load allocations do not as a matter of law effect an unconstitutional “taking” of private property. Nor is the TMDL a permit that requires a private property owner to retrofit his or her property. The TMDL and its allocations are, instead, a reasonable and lawful exercise of EPA’s authority under CWA 303(d) to establish pollutant loading targets that guide the jurisdictions’ and EPA’s efforts to implement measures designed to implement the Bay’s water quality standards. See also response to Comment number 0232.1.001.004 for more discussion of the takings issue.

3. One commenter [0533.1.001.001] questioned whether EPA’s TMDL is based on data EPA collected from survey’s of communities, wastewater treatment plants, and other regulated entities without the proper OMB clearance.

Response: EPA disagrees. While EPA used information from a great number of sources, to the best of EPA’s knowledge, EPA used the OMB clearance numbers associated with general TMDL development and establishment as authorized. For some information, EPA relied on responses from entities already required to submit information under such instruments as NPDES permits and/or other federal requirements.

Comment ID 0293.1.001.026

Author Name: Pomeroy Christopher

Organization: Virginia Municipal Stormwater Association, Inc. (VAMSA)

The *American Canoe* and *Kingman Park* Consent Decrees Do Not Address Virginia Chlorophyll *a*

EPA continues to assert in it must complete the Bay TMDL by 2011 (the December, 2010 deadline is a self-imposed acceleration) because of two consent decrees issued in the late 1990/early 2000 timeframe, *American Canoe Association, Inc. v. EPA*, Civil Action No. 98-99-A (E.D. Va. 1999) [FN43] and *Kingman Park Civic Association v. EPA*, Case No. 1:98CV00758 (E.D. Va. 2000). Draft TMDL at 1-14 to 1-16.

VAMSA submits that EPA's obligations to develop a TMDL by May, 2011 do not extend to establishing loadings on the . . .

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SUBMITTED QUESTIONS

Response from U.S. Environmental Protection Agency

May 9, 2011

Hon. GLENN THOMPSON,
Chairman,
Subcommittee on Conservation, Energy, and Forestry, House Committee on Agriculture,
Washington, D.C.

Dear Mr. Chairman:

Thank you for the opportunity to respond to questions for the record that followed the March 16, 2011 hearing before the Subcommittee on Conservation, Energy, and Forestry regarding the Chesapeake Bay Total Maximum Daily Load (TMDL). I hope this information will be useful to you and the Subcommittee.

If you have any further questions, please contact me or your staff may contact Greg Spraul in my office at [Redacted].

Sincerely,



ARVIN R. GANESAN,
Deputy Associate Administrator,
Office Of Congressional and Intergovernmental Relations,
U.S. Environmental Protection Agency.

Question Submitted by Hon. Tim Holden, a Representative in Congress from Pennsylvania

Question. The Commonwealth of Pennsylvania has developed a system for certifying permanent verifiable reductions in nitrogen and other nutrients. This effort has helped to encourage low-cost solutions to limiting run-off from farms and other nonpoint sources. Pennsylvania has been rigorous in its requirements for these credits, and has instituted robust and ongoing reporting requirements on those entities generating the credits.

Would the EPA support intra-basin trading of those credits (or verifiable credits that have been certified in other states)? For example, if other states in the Chesapeake Bay basin purchased Pennsylvania-approved credits, would the EPA allow those credits to be used to meet their TMDL requirements?

Answer. EPA believes nutrient credit trading can be an important part of achieving water quality standards in the Chesapeake Bay and is working with the jurisdictions and with its Federal partners to advance this approach. EPA would support inter-jurisdictional, intra-basin trading of nutrient credits, assuming that such trading is consistent with the Clean Water Act and the trading-related definitions, elements and safeguards in Appendix S of the TMDL. These definitions, elements and safeguards are designed to facilitate nutrient credit trading, including inter jurisdictional trading, as a means of improving the water quality of the Chesapeake Bay and its tributaries.

EPA is currently initiating a review of the jurisdictions' trading programs to determine the consistency of those programs with the TMDL and the Clean Water Act. The results of that review will be shared with the jurisdictions in the hopes that they will make any necessary adjustments to the programs to achieve consistency with the TMDL and the Clean Water Act. Until that review is complete, EPA is not

in a position to comment on the viability of a specific jurisdiction's credits for inter-basin or interstate trading.

Question Submitted by Hon. Reid J. Ribble, a Representative in Congress from Wisconsin

Question. In his testimony, Mr. Domenech highlighted a significant discrepancy between the loading calculations from EPA's Bay Model and those from USDA's Natural Resources Conservation Service. Can you comment on this?

Answer. Both USDA and EPA use models to help describe the effectiveness of actions on the land and to inform decision making.

While the Chesapeake Bay Program Partnership's Bay Watershed Model (CBP Watershed Model) and USDA's Conservation Effects Assessment Project (CEAP) have both been extensively peer-reviewed and represent state-of-the-art modeling approaches, they were developed for different purposes.

The CEAP Chesapeake Bay report provides estimates, at a large basin scale, of the effectiveness of conservation activities on cultivated cropland in reducing field-level nutrient and sediment losses to the Chesapeake Bay.

The CBP Watershed Model was designed to account for all nutrient and sediment loading sources to the Chesapeake Bay in the context of the Bay TMDL, and focus specifically on describing how actions on the land from all sources affect nutrient loadings to the Bay and the associated Bay water quality.

Although these and other technical differences exist in the models, they both show that the agricultural sector has done much to reduce nutrient and sediment loadings in the Bay watershed, and also that there is more to do.

It is very affirming to have two different models, built for two different purposes, give us similar findings at the large basin scale in terms of relative nutrient loads from agricultural lands in the Chesapeake Bay watershed, and where we need to head next.

EPA and USDA are committed to continuing collaboration on their respective modeling efforts and are developing a joint workplan that outlines short- and long-term activities for this continued collaboration.

