Statement of Wade T. Najjum
Assistant Inspector General for Program Evaluation
Office of Inspector General
U.S. Environmental Protection Agency
Before the
Subcommittee on Water Resources and Environment
Committee on Transportation and Infrastructure
U.S. House of Representatives
July 30, 2008

Good afternoon Madam Chairwoman and Members of the Subcommittee. I am Wade Najjum, Assistant Inspector General for Program Evaluation with the U.S. Environmental Protection Agency (EPA) Office of Inspector General (OIG). I am pleased to be here today to discuss the OIG's evaluation work that examined how well EPA is working with its Chesapeake Bay partners in cleaning up the Bay. The Bay partners face significant challenges to meeting their cleanup goals: 1) increasing implementation of agricultural conservation practices; 2) managing land development; 3) seeking greater reductions in air emissions; and 4) upgrading wastewater treatment facilities. Despite some noteworthy accomplishments by EPA and the Bay partners, the Bay remains degraded. Moreover, achieving the Chesapeake Bay water quality goals is in serious jeopardy. EPA can do more to assist its partners and to improve its communication with Congress and residents of the Bay watershed. But our work shows that EPA also lacks the resources, tools, and authorities to fully address these challenges.

Congressional Request to Review Chesapeake Bay Cleanup Progress

In 2000, Maryland, Pennsylvania, Virginia, and the District of Columbia renewed their agreement to reduce nutrient and sediment loads in the Chesapeake Bay. Nutrient and sediment overloading was identified as the primary cause of water quality degradation within the Bay. Known as the *Chesapeake 2000* agreement, it established the goal of improving water quality in the Bay and its tributaries so that these waters could be removed from the EPA's impaired waters list by 2010. However, Bay stakeholders have questioned whether the needed load reductions will be met.

In response to a 2005 request from Senator Barbara Mikulski of Maryland, the OIG conducted four reviews of the EPA Chesapeake Bay Program's efforts in reducing excess nutrients and sediments into the Bay. We focused on the key sources of nutrients and sediments: agriculture; air deposition; developing land; and wastewater treatment facilities. The diagram in Figure 1 shows how excess nutrients from all four sources end up in the Bay. We issued separate reports for each topic, which contained recommendations to the EPA Regional Administrator for Region 3. In addition, we issued a report on July 14, 2008, entitled *EPA Needs to Better Report Chesapeake Bay Challenges: A Summary Report*, that summarizes these evaluations and includes additional recommendations on overall issues to the EPA Administrator. A listing of our relevant Bay reports along with brief summaries is attached.

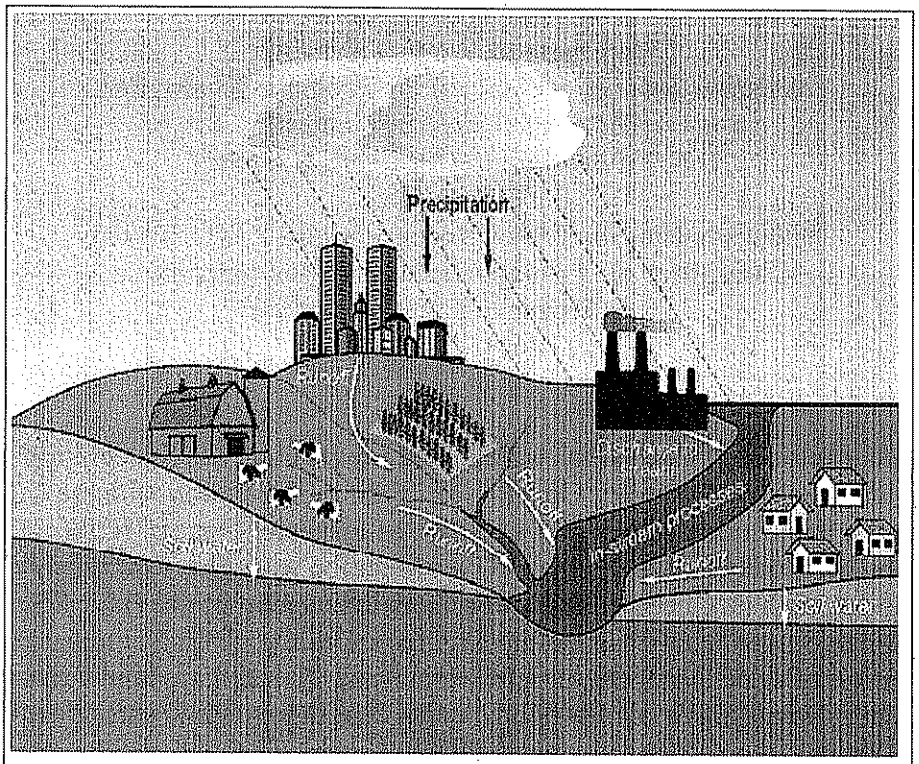

Figure 1: Conceptual Diagram of Nutrient and Sediment Sources and Pathways in the Chesapeake Bay Watershed
Source: U.S. Geological Survey

State of the Chesapeake Bay

The Chesapeake Bay is North America's largest and most biologically diverse estuary and provides the region significant economic and recreational benefits. The Bay watershed covers 64,000 square miles and includes parts of six States – Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia – and all of the District of Columbia. A watershed refers to a geographic area in which water drains to a common outlet. As of 2005, about 16 million people lived within the Bay watershed. According to a 1989 economic study by Maryland, the Bay provides economic and recreational opportunities estimated to exceed $33 billion annually.

However, most of the Bay's waters are degraded. Sediment from urban development, agricultural lands, and natural sources is carried into the Bay and clouds its waters. Algal blooms fed by nutrient pollution also block sunlight from reaching underwater bay grasses and can lead to low oxygen levels in the water and fish kills. Many of the Bay's fish and shellfish populations are below historic levels. The blue crab population has been below management targets for the past 10 years. Fish and shellfish are at about two-fifths of desired levels.

In 2006, after we had started our reviews, EPA acknowledged that the nutrient goals established in the *Chesapeake 2000* agreement would not be met by 2010, but it has not set a new target date. Restoring the Bay's water quality is still far from being

accomplished. However, it is clear that at the current rate of progress, the Bay will remain impaired for decades. In addition, because the Chesapeake Bay Program is the most mature watershed restoration program in the nation, successful approaches and solutions for organizing and managing cleanup will be highly relevant to stakeholders in other watershed throughout the nation. For these reasons, the OIG earlier this month designated the Chesapeake Bay Program a top management challenge facing EPA (http://www.epa.gov/oig/reports/2008/FiscalYear2008mgmtchallenges.pdf).

EPA's Role in the Chesapeake Bay

EPA has multiple responsibilities in the Bay watershed including overseeing States' implementation of the Clean Water Act, issuing and renewing permits for point sources, and ensuring compliance with those permits. EPA also has direct implementation responsibility for permittees within the District of Columbia. However, EPA's principal role in promoting water quality goals for the Bay involves running the Chesapeake Bay Program. The Program is a regional partnership of State and Federal agencies, academic institutions, and non-governmental organizations formed in 1983 to lead and direct restoration of the Chesapeake Bay. It supports the goals of the Chesapeake Bay Agreements (1983, 1987, and 2000) signed by the States of Maryland, Pennsylvania, and Virginia (referred to as the "signatory States"); the District of Columbia; the Chesapeake Bay Commission (a tri-state legislative advisory body); and EPA, representing the Federal Government. Representatives of the "headwater" States of Delaware, New York, and West Virginia also participate in decisions including setting nutrient and sediment cap load allocations. The Program is comprised of numerous committees and sub-committees responsible for technical and administrative actions. They work under the umbrella of the Chesapeake Executive Council, which consists of the governors of the signatory States; the Mayor of the District of Columbia; the Chair of the Chesapeake Bay Commission; and the EPA Administrator, who represents the Federal Government on the council.

Under section 117 of the Clean Water Act, Congress charged EPA's Chesapeake Bay Program Office (CBPO) with the responsibility to coordinate cleanup efforts with other Federal agencies and State and local governments. CBPO was also given the responsibility to report to Congress on the progress in cleaning up the Bay. Congress provides a higher level of funding to CBPO than it does for any other geographically-based program within EPA's appropriation. The 2009 budget requests $29 million for CBPO within EPA's appropriation. These funds support operations of the CBPO and provide significant funds to States to support Bay goals. For the years 2003-2005, EPA awarded $8 million for State implementation grants and $7 million for technical assistance and other grants for specific purposes. CBPO, located in Annapolis, Maryland, is part of EPA's Region 3.

Noteworthy Achievements of EPA and its Bay Partners

EPA and its Bay partners have played a beneficial role in cleaning up the Bay. EPA assisted the States in adopting stronger water quality standards to control nutrient discharges. This laid the groundwork from which EPA Regions 2 and 3 and the Chesapeake Bay jurisdictional partners developed and agreed to the *NPDES Permitting*

Approach for Discharges of Nutrients in the Chesapeake Bay Watershed for municipal and industrial wastewater NPDES discharge sources. With this approach, EPA and State NPDES permitting authorities agreed to place annual total nitrogen and phosphorus load limits and monitoring requirements in the permits of all significant dischargers in the Chesapeake Bay watershed. This is particularly noteworthy considering some dischargers are hundreds of miles upstream and may not directly benefit from improvements to the Bay.

Also noteworthy, a 2006 OIG audit found that EPA grants contributed toward meeting the goals of the Clean Water Act and the *Chesapeake 2000* agreement. These grants funded activities designed primarily to reduce nutrients and sediment entering the Bay and its tributaries; monitor ongoing efforts to restore Bay quality; and model the results of Bay implementation strategies, among others. Such efforts contributed to EPA's overall Bay restoration effort. A 2007 OIG evaluation found EPA and the States are successfully managing how major Federal facilities comply with their National Pollutant Discharge Elimination System (NPDES) permits. In EPA's last reporting period (2004), major Federal facilities in the Chesapeake Bay watershed had a lower rate of Significant Noncompliance than other Federal and non-Federal major-permit facilities nationwide.

States have also played a significant role in cleaning the Bay. For example, Maryland created the Bay Restoration Fund of 2004 that established fees to support enhanced nutrient removal upgrades at wastewater treatment facilities, septic system upgrades, and planting of cover crops. Virginia enacted its Water Quality Improvement Act of 1997, which established the Water Quality Improvement Fund to provide 50 percent of the capital costs to install nutrient removal facilities. Finally, Pennsylvania and Virginia created nutrient trading programs for their wastewater treatment facilities and, in Pennsylvania, agricultural producers. EPA has assisted Pennsylvania and Virginia in developing these programs.

Challenges Facing the Bay Partners in Cleaning Up the Bay

Despite the accomplishments made by the Chesapeake Bay partners, the Bay remains degraded. At the current rate of nutrient and sediment reductions, it will take decades to meet the 2010 goals, a challenge that calls for a fundamental reexamination of current approaches and strategies. The Bay partners need to address current and emerging challenges involving limited implementation of agricultural conservation practices; uncontrolled land development; limited control over air emissions; and progress in upgrading wastewater treatment facilities. In addition, the Bay partners need to improve its communication to Congress and Bay residents on what it will take to clean the Bay and when the water quality goals will be achieved. These challenges will not be easy to address. They require resources, tools, and authorities that EPA lacks; and changes in individual lifestyles and local government practices.

Agricultural Conservation Practices

The Federal Government needs to ensure national agricultural and environmental programs work together to support common goals. The Federal Government needs to establish policies that both protect the Nation's waters and support agricultural issues.

The agricultural sector is the single largest contributor of the pollutants harming the Bay. Based on 2007 data, 65 percent of nitrogen, 60 percent of phosphorus, and 86 percent of sediment reductions needed to meet reduction goals are expected to come from agriculture. The U.S. Department of Agriculture (USDA), a Bay partner, provides leadership on agricultural and conservation practices. In our joint 2006 report with the USDA OIG on agricultural practices, we reported that few of the agricultural practices were reported to have been implemented.

Agricultural pollution can be controlled through regulation or sound conservation practices. However, EPA's regulatory authority and financial aid for agriculture is limited. EPA is only allowed to regulate concentrated animal feeding operations that discharge into the Nation's waters, but EPA was unable to provide us with information on how many farms or how much pollution is under EPA regulatory control in the Chesapeake Bay watershed. Nationwide, EPA estimates that only about 5 percent of animal feeding operations are regulated; the others operate under voluntary programs.

EPA provides a small amount of incentive funding to agricultural producers, usually just for one-time demonstration projects. USDA provides substantially more financial funding plus technical assistance. For example, from 2003 to 2005, EPA awarded approximately $11 million from its nonpoint source program for agricultural projects statewide in Maryland, Pennsylvania, and Virginia. In contrast, for the same period and scope, USDA provided over $250 million for conservation practices. It should be noted, the recently passed Farm Bill does provide substantial amounts of money for conservation projects. Regardless, current budgets cannot fill the demand for assistance programs, making it difficult to expand incentives for agricultural producers.

Even though USDA has been encouraging science-based conservation practices in the region for years, it has not significantly adapted its strategies to meet the specific needs of the Chesapeake Bay. Many agricultural conservation practices must be implemented on a consistent basis to improve water quality, and substantial, long-term financial commitments will be needed. Obtaining sufficient data on the actual extent and success of agricultural conservation estimates has also been limited. To address this, the Bay partners need to work with USDA and the agricultural community to develop a better reporting and measurement system. In our November 2006 report on agriculture, we recommended that EPA and USDA improve their coordination and better track progress of conservation practices. EPA and USDA concurred with our recommendations and have taken steps, such as signing a memorandum agreement, to improve coordination efforts.

Bay partners have recently identified the emerging biofuel industry as another challenge to reducing nutrients from the agricultural sector. To lessen dependence on imported oil and reduce green-house gases, the Nation is exploring homegrown

renewable fuels. With its proximity to oil refineries and rising corn prices, agricultural producers in the Chesapeake Bay region may decide to expand their acreage devoted to corn – the primary source for grain-based ethanol. The Chesapeake Bay Commission estimated that Bay area agricultural producers growing corn to support the emerging ethanol industry could introduce as much as an additional 5 million pounds of nitrogen per year to the Bay. If this takes place, it will add an additional burden on the Bay partners' efforts.

Managing Growth

New development is increasing nutrient and sediment loads at rates faster than restoration efforts on developed lands are reducing them. Further, while developed lands contribute less than one-third of the Bay loads, they are expected to require about two-thirds of the overall estimated restoration costs. New development also places a burden on existing drinking water and wastewater systems. Systems across the country are already failing to keep up with repairs and new construction necessary to comply with current Federal water standards because of the funding gap. Municipalities must pass increasing costs of meeting new standards to the facilities' consumers. But some municipalities are resisting these new standards. For example, Pennsylvania is being sued by a group of localities over more stringent permit limits required to meet Bay water quality standards, which localities view as an unfunded mandate.

The key decision-makers in how the Chesapeake Bay watershed develops will be the local governments and citizens, not EPA. However, "smart growth" techniques can be a cost-effective way for communities to manage new development, and EPA should encourage such growth. Communities could incorporate smart growth practices into local codes and regulations.

While smart growth practices can lessen development impact, they do not eliminate it. EPA needs to engage the States, local governments and watershed organizations to agree to a strategy on how communities in the Bay watershed will continue to develop while improving water quality. Such a strategy should identify actions needed, responsible action officials, and funding. In our September 2007 report on development growth, we recommended that EPA develop such a strategy and include local governments in planning. EPA concurred with our recommendations. EPA can also impact local decision making by establishing a strong stormwater permit program, and sharing knowledge on smart growth best management practices. In its annual reporting, EPA should identify the economic and social challenges that the partners and local governments are facing in managing development so that citizens and political leaders will be able to make informed decisions about meeting the challenges.

Air Emission Reductions

Airborne emissions of nitrogen oxide in the eastern United States can eventually deposit back to the earth and contribute to the overall nitrogen loads of the Chesapeake Bay. Atmospheric deposition of nitrogen oxide (NOx) emissions is a significant contributor to the Bay's overall nitrogen loads, and accounts for about one-fourth to one-third of the nitrogen loads to the Bay. As part of nation's ongoing efforts to meet the

Clean Air Act (CAA) National Ambient Air Quality Standards (NAAQS) for ozone and particulate matter, EPA and States have implemented and planned numerous actions to reduce NOx emissions. CBPO is relying on the anticipated nitrogen deposition reductions from these CAA-related actions, combined with anticipated reductions from other non-air sources, to meet water quality goals for the Bay watershed.

Since non-air sectors have not reduced their nitrogen loads as planned, additional reductions in NOx air emissions and its resulting atmospheric deposition may be needed. Two recent Clean Air Act-related actions could result in additional decreases in nitrogen deposition to the Bay. EPA recently lowered its 8-hour ozone standard, which could require nonattainment areas to make additional reductions in NOx emissions since NOx reacts with volatile organic compounds in the presence of sunlight to cause ground-level ozone. Also, EPA is reviewing its secondary standard for nitrogen dioxide (NO2). The secondary standard addresses the impact of air pollutant emissions on the environment. If EPA tightens this standard, States may need to further reduce NOx emissions. Importantly, EPA plans to address the impact of ammonia emissions on the Bay's nitrogen loads as part of its review of the secondary standard. Our prior report on air deposition in the Bay reported that ammonia emissions from animal feeding operations represent a potentially significant uncontrolled contributor of nitrogen loads to the Bay. CBPO should have the opportunity to review and comment on any proposed rulemaking resulting from EPA's review of the secondary standard because of the potential impact that revision of the secondary standard for NO2 could have on the Bay.

Absent any new CAA requirements, additional NOx reductions would likely have to be State-initiated. We identified several opportunities for reducing mobile source emissions, the predominant source of atmospheric deposition to the Bay, which would not require additional CAA regulations or revisions. Some of these actions are voluntary initiatives while others would require State regulatory action. These initiatives can be controversial (e.g., adopting Low Emitting Vehicle standards) or difficult to implement (e.g., voluntary programs). Consequently, States may be reluctant to take such initiatives, particularly those outside the Bay watershed.

It should be noted that a recent Federal Court of Appeals decision to vacate EPA's 2005 Clean Air Interstate Rule (CAIR) significantly impacts State plans for meeting the NAAQS for ozone and fine particulate matter, as well as the CBPO's estimates for reducing nitrogen load in the Bay. EPA had estimated that the NOx emission reductions obtained from CAIR would result in an 8 million pound annual reduction in nitrogen deposition to the Bay beginning in 2010. If the CAIR vacature is upheld and comparable NOx reductions cannot be obtained from alternative CAA-related actions, the CBPO would need to revise its current load allocations to reflect these lost reductions.

Wastewater Treatment Upgrades

EPA and its State partners have taken a number of steps to lay the foundation to achieve wastewater nutrient loading goals. Water quality standards have been set, nutrient loadings have been allocated, and nutrient limits are beginning to be incorporated into permits. However, States need to finish adding nutrient limits to the permits, and significant and costly upgrades will need to be made to wastewater treatment facilities.

These facilities will need to overcome significant challenges to achieve and maintain their nutrient reduction allocations. Significant challenges include generating sufficient funding and addressing population growth. As stated in our January 2008 report on wastewater facilities, we recommended that EPA work with the States to establish interim construction milestones for priority facilities; monitor milestone and financial funding progress for these facilities; and continue efforts in developing effective and credible water quality trading programs. EPA concurred with our recommendations and is in the process of carrying out these activities.

Reporting of Bay Challenges to Congress and Bay Citizens

Surmounting the challenges of excessive nutrient and sediment loadings calls for concerted action by States, local governments, watershed organizations, and Federal agencies. EPA's principal role will be to facilitate and motivate these other key stakeholders to take the necessary steps, many of which will be expensive and politically difficult. A key task for EPA will be to provide Congress and Bay citizens with a realistic picture of what it will take to clean the Bay, challenges and obstacles, and a realistic timeframe for when the water quality goals will be achieved. Providing sound information to decision makers and stakeholders will allow them to make decisions about whether to take the steps needed to restore the Bay.

The Clean Water Act requires the EPA Administrator to report to Congress every 5 years on the state of the Bay and to make recommendations for improvement. EPA has not yet utilized these reporting vehicles to provide complete information on Bay activities and challenges. CBPO did not effectively use its first Chesapeake Bay 5-year report, issued in 2003, to make recommendations for improved management strategies. CBPO missed the opportunity to inform Congress of higher-level challenges, delaying the success of the program. Congress' requirement for the 5-year report also directs that the information be presented in such a format as to be readily transferable to and useable by other watersheds. Since Congress provides CBPO with the highest level of funding among all of EPA's great waters programs, CBPO needs to ensure that other estuary programs can benefit from the Chesapeake Bay experience.

CBPO should work with its partners to determine appropriate mechanisms for reporting. This should include funding gaps, the status of wastewater treatment facility construction, local regulatory issues, and other impediments to cleaning up the Bay. By improving the information it shares with Congress and the public and further leveraging partner resources, EPA can facilitate bringing about the changes needed to achieve the goals desired by the Chesapeake Bay watershed stakeholders.

How EPA Can Help Its Bay Partners Achieve Water Quality Goals

In our prior reports, the OIG made recommendations to the EPA Regional Administrator for Region 3 to address individual sector needs (agricultural, developing lands, air deposition, and wastewater). We addressed our summary report to the EPA Administrator because EPA's implementation of all the previously issued recommendations alone cannot ensure that the Bay partners will achieve their water quality goals. Other Federal agencies, along with State and local governments and

watershed organizations, have responsibilities to clean up the Bay. Restoration cannot succeed without their active involvement.

We made three specific recommendations to the EPA Administrator. One, improve reporting to Congress and the public on the actual state of the Chesapeake Bay and actions necessary to improve its health. Information that should be included in an appropriate report are the activities and resources necessary to accomplish the *Chesapeake 2000* agreement goals; activities that are not supported with funding or a commitment from the responsible Federal, State, or local government; challenges significantly hindering Bay partners in adequately reducing nutrients and sediment; milestones for generating funding and accomplishing activities; and the impact on the health of the Bay if those milestones are not met. Two, develop a strategy to further engage local governments and watershed organizations to capitalize on their resources, tools, authorities, and information to advance the mission of the Chesapeake Bay Program and include key actions as developed into the Chesapeake Action Plan. Finally, provide CBPO with the opportunity to review and comment on any proposed rulemakings resulting from the EPA Office of Air and Radiation's review of the secondary standard for NO_2.

In response to our draft report, the EPA Administrator concurred with our recommendations and will provide us a corrective action plan detailing actions the EPA will take or have taken to address our recommendations within 90 days of the final report date.

The Status of OIG Recommendations

We made a total of 16 recommendations to EPA and four recommendations to USDA in our five Bay evaluation reports. Progress is being made on all of our recommendations. EPA has successfully completed five of the recommendations, including agreeing to a Memorandum of Understanding with USDA and enhancing grant guidance. In addition, USDA has assigned a senior level Departmental official to better coordinate USDA goals and programs with EPA and the Chesapeake Bay Program. A complete listing of our recommendations and their status is attached.

Conclusion

At the current rate of progress, it will take decades to achieve the water quality goals established in the *Chesapeake 2000* agreement. Implementing the OIG's recommendations will be helpful but much more is needed. Meeting the various challenges facing the Bay will require a fundamental reexamination of current approaches and strategies used by EPA and its Bay partners at the Federal, State, and local levels. For example, the Federal Government needs to establish a coherent national policy that helps agricultural producers be protective of water quality while remaining profitable. Local communities will need to incorporate broader concerns when deciding how to develop. Given its limited financial resources and regulatory authority, EPA's greatest role will be in facilitating and motivating States and local governments and watershed groups to address the challenges and consider the sacrifices that will be required. EPA also needs to more clearly communicate to its partners and Congress the

extent of the challenges and chart a realistic path for achieving and sustaining water quality goals. But EPA alone cannot restore the Bay since it lacks the resources, tools, and authorities to fully address the challenges posed by agricultural runoff, new development, air pollution, and wastewater treatment upgrades. Lastly, because the Chesapeake Bay Program is at the forefront of watershed restoration, finding successful solutions to cleaning up the Bay is important to estuaries across the country experiencing similar challenges.

Thank you for inviting me to testify before you today. I would be pleased to answer any questions the Subcommittee may have.

Attachment A

Summaries of EPA Office of Inspector General Reports on the Chesapeake Bay

Summaries of Five Prior Reports Issued in Response to Congressional Request

Below are summaries on the five reports we have already published in response to the congressional request by Senator Mikulski.

Saving the Chesapeake Bay Watershed Requires Better Coordination of Environmental and Agricultural Resources	2007-P-00004 November 20, 2006

State-level partners have committed the agricultural community to making nutrient reductions, but numerous practices abound and are generally performed on a voluntary basis. Few of the agricultural practices in the tributary strategies have been implemented because the agricultural community considers many of these practices as either being unprofitable or requiring significant changes in farming techniques. Although the State-level partners have provided substantial funding to implement these practices, one of the key State partners acknowledged substantial additional funding is still needed. At the federal level, applications for USDA's technical and financial assistance programs went unfunded, making it difficult to expand incentives for Bay area agricultural producers.

EPA must improve its coordination and collaboration with its Bay partners and the agricultural community to better reduce nutrients and sediment entering the Chesapeake Bay watershed. However, members of the agricultural community have been reluctant to participate with EPA because of EPA's regulatory enforcement role. USDA, a Bay partner at the federal level, could significantly assist EPA in implementing the needed conservation practices within the agricultural community, given its many conservation programs, extensive field organization, and long experience working with the agricultural community. However, USDA has not coordinated a Department-wide strategy or policy to address its commitment as a Bay partner.

EPA Relying on Clean Air Act Regulations to Reduce Atmospheric Deposition to the Chesapeake Bay and Its Watershed	2007-P-00009 February 28, 2007

CBPO is relying on anticipated nitrogen deposition reductions from Clean Air Act regulations already issued by EPA, combined with anticipated reductions from other non-air sources, to meet water quality goals for the Bay watershed. EPA

believes these activities will provide sufficient nitrogen deposition reduction to enable the Bay to meet its overall nitrogen cap load, assuming non-air activities achieve planned reductions. EPA estimates that Clean Air Act regulations already issued will reduce nitrogen that falls directly into the Bay, as well as nitrogen deposited to the Bay watershed, by 19.6 million pounds annually by 2010. Even greater reductions should occur as States undertake additional measures in the next few years to meet the ozone and fine particulate matter standards. State and EPA strategies do not include additional air reduction activities specifically designed to clean up the Bay, although many State activities should have the co-benefit of reducing nitrogen deposition in the Bay.

If additional reductions in air emissions are needed to clean up the Bay, one potentially significant source of deposition not currently controlled is ammonia emissions from animal feeding operations. The magnitude of these emissions to nitrogen deposition in the Bay is uncertain. Ammonia emissions monitoring of animal feeding operations, expected to begin in the spring or early summer of 2008, should provide data to help EPA better determine the amount of such emissions from farming operations.

Development Growth Outpacing Progress in Watershed Efforts to Restore the Chesapeake Bay	**2007-P-00031 September 10, 2007**

EPA and its Chesapeake Bay watershed partners will not meet load reduction goals for developed lands by 2010 as established in the *Chesapeake 2000* agreement. In fact, new development is increasing nutrient and sediment loads at rates faster than restoration efforts are reducing them. Developed lands contribute less than one-third of the Bay loads but would require about two-thirds of the overall estimated restoration costs. Consequently, EPA and its Bay partners focused on more cost-effective approaches, such as upgrading wastewater facilities and implementing agricultural best practices. Additional challenges impeding progress include:

- Lack of community-level loading caps.
- Shortage of up-to-date information on development patterns.
- Ineffective use of regulatory programs to achieve reductions.
- Limited information and guidance on planning and applying environmentally sensitive development practices.
- Limited funding available for costly practices.

A cost-effective start to reversing the trend of increasing loads from developed land is for communities to concentrate on new development. Opportunities abound for EPA to show greater leadership in identifying practices that result in no-net increases in nutrient and sediment loads from new development and assisting communities in implementing these practices. If communities do not sufficiently address runoff from new development, loads from developed lands will continue to increase rather than diminish.

Despite Progress, EPA Needs to Improve Oversight of Wastewater Upgrades in the Chesapeake Bay Watershed	08-P-0049 January 8, 2008

Chesapeake Bay wastewater treatment facilities risk not meeting the 2010 deadline for nutrient reductions if key facilities are not upgraded in time. In the 7 years since signing the *Chesapeake 2000* agreement, EPA and its State partners have taken a number of steps to lay the foundation for achieving the 2010 wastewater nutrient reduction goals. Water quality standards have been set, nutrient loadings have been allocated, and nutrient limits are beginning to be incorporated into permits. However, States need to finish adding nutrient limits to the permits, and the facilities will need to make significant reductions by 2010. Crucially, these reductions will need to be maintained once achieved. Significant challenges include generating sufficient funding and addressing continuing population growth. EPA needs to better monitor progress to ensure needed upgrades occur on time and loading reductions are achieved and maintained. Otherwise, Bay waters will continue to be impaired.

EPA Needs to Better Report Chesapeake Bay Challenges: A Summary Report	08-P-0199 July 14, 2008

Despite many noteworthy accomplishments by the Chesapeake Bay partners, the Bay remains degraded. This has resulted in continuing threats to aquatic life and human health, and citizens being deprived of the Bay's full economic and recreational benefits. Through its reporting responsibilities, EPA could better advise Congress and the Chesapeake Bay community that (a) the Bay program is significantly short of its goals and (b) partners need to make major changes if goals are to be met. Current efforts will not enable partners to meet their goal of restoring the Bay by 2010. Further, new challenges are emerging. Bay partners need to address:

- uncontrolled land development
- limited implementation of agricultural conservation practices
- limited control over air emissions affecting Bay water quality

EPA does not have the resources, tools, or authorities to fully address all of these challenges. Farm policies, local land development decisions, and individual life styles have huge impacts on the amount of pollution being discharged to the Bay. EPA needs to further engage local governments and watershed organizations in efforts to clean up the Bay.

Summaries of Two Additional Reports Involving Chesapeake Bay

EPA Grants Supported Restoring the Chesapeake Bay	2006-P-00032 September 6, 2006

EPA awarded assistance agreements (grants) that contributed toward meeting the goals of the Clean Water Act and the *Chesapeake 2000* agreement. These grants funded activities designed primarily to: reduce the nutrients and sediment entering the Bay and its tributaries, monitor ongoing efforts to restore Bay water quality, and model (estimate) the results of Bay implementation strategies. In Fiscal Years 2003, 2004, and 2005, Congress appropriated $23 million each year for EPA's Chesapeake Bay Program. In each of those years, EPA awarded about $8 million for State implementation grants and $7 million for technical and other grants for specific projects. EPA used the remaining $8 million to fund EPA personnel and office management, interagency agreements, and congressional earmarks. The efforts contributed to EPA's overall Bay restoration program. This report did not contain recommendations.

Federal Facilities in Chesapeake Bay Watershed Generally Comply with Major Clean Water Act Permits	2007-P-00032 September 5, 2007

Overall, EPA and the States are doing well managing how major federal facilities comply with their NPDES permits. In EPA's last reporting period (2004), major federal facilities in the Chesapeake Bay watershed had a lower rate of Significant Noncompliance than other federal and non-federal major-permit facilities nationwide. EPA and States have a variety of formal and informal tools available to enforce federal facility compliance with NPDES permits. These tools included: multimedia, voluntary agreement, and media press release approaches; Notices of Violation; an administrative order; and a Federal Facility Compliance Agreement. Also, EPA developed the Wastewater Integrated Strategy, which seeks to eliminate federal facility Significant Noncompliance with NPDES permit limits. EPA also worked with the Department of Defense to make NPDES permit compliance a higher priority at military installations (eight of the nine federal facilities with major NPDES permits are at military installations). We made no recommendations in this report.

Attachment B

Status of Recommendations for EPA Office of Inspector General Reports on the Chesapeake Bay

Saving the Chesapeake Bay Watershed Requires Better Coordination of Environmental and Agricultural Resources	2007-P-00004 November 20, 2006

The OIG has accepted EPA's corrective action plan for all recommendations.

Recommendation 1: We recommend that the EPA Administrator propose executing a Memorandum of Agreement with the USDA to assist the Bay partners in meeting their nutrient reduction goals by:

a. Identifying conservation practices USDA will promote with either technical assistance or cost-share programs.
b. Developing procedures for promoting and fast-tracking alternative practices for cost-share programs and technical assistance.
c. Establishing a task force to identify how USDA cost-share programs can better assist the States in carrying out their tributary strategies.
d. Establishing demonstration projects to emphasize producer benefits, not just environmental benefits of best management practices in tributary strategies.
e. Conducting research to quantify accurately the nutrient load reductions from alternative best management practice strategies to ensure these practices are the best for removing nutrients and to improve the models.
f. Developing a tracking system to determine a more accurate picture of the agricultural community's commitment to implementing the tributary strategies.

Status: Completed. On May 9, 2007, EPA and USDA agreed to a Memorandum of Understanding to carry out activities to help Chesapeake Bay Program partners meet their nutrient reduction goals.

Recommendation 2: We recommend that the EPA Region 3 Regional Administrator instruct EPA/CBPO to work with USDA, the States, local governments, land grant universities, and agricultural organizations to revisit State tributary strategies to ensure that the mix of best management practices chosen are those most suitable to the area, have the greatest potential for implementation, and can effectively reduce nutrient and sediment loss.

Status: Task ongoing. As of March 9, 2007, EPA plans to actively participate in USDA priority-setting activities and program guidance forums to advance the Bay Program nutrient reduction priorities. The Nutrient Subcommittee and its Agricultural Nutrient Reduction Workgroup is critically

evaluating cost-effective practices and developing a plan for how to accelerate implementation of these practices. EPA is working to finalize the Chesapeake Bay Watershed Model (Phase 5.0). EPA has funded the Cooperative State Research, Education, and Extension Service Mid-Atlantic Regional Water Program to improve the description of pollutant removal efficiencies of agricultural best management practices. Several Bay States are using nutrient trading as a tool to help meet Chesapeake Bay water quality goals.

Recommendation 3: We recommend that the EPA Region 3 Regional Administrator instruct EPA/CBPO to include development of implementation plans as a special condition in Chesapeake Bay Program grant agreements for States that have not submitted an implementation plan.

Status: Completed. In the 2007 Grant Guidance, EPA requires that any signatory jurisdiction or headwater State that does not have an approved Tributary Strategy implementation plan work directly with its Project Officer to assure that any missing elements of Tributary Strategy implementation plans are incorporated into its Work Plan.

NOTE: *The four following recommendations were made to USDA for which the USDA OIG is conducting the audit follow-up.*

USDA OIG has accepted USDA's corrective action plan for all recommendations.

Recommendation 4: We recommended that the USDA Secretary or Deputy Secretary assign a senior level Departmental official to coordinate USDA goals and programs with EPA and the Chesapeake Bay Program. Delegate to that official authority to direct and coordinate goals and programs across USDA mission areas and agencies and to monitor USDA actions to meet the Chesapeake Bay Program goals.

Status: Completed. On February 18, 2007, USDA Secretary Mike Johanns designated the Under Secretary, Natural Resources and Environment (NRE), as the USDA official responsible for coordinating USDA program activities and initiatives with the Environmental Protection Agency, its Chesapeake Bay Program Office, and others that have an interest in restoring the Chesapeake Bay. This designated official will also provide the leadership necessary to monitor USDA actions and results in meeting mutual goals and objectives of the Bay, as well as provide periodic briefings regarding USDA's coordinated efforts.

Recommendation 5: We recommended that the USDA Secretary or Deputy Secretary review the feasibility of targeting or redirecting USDA funds (or allocating USDA funds) on a regional and/or geographical basis to coordinate with the environmental restoration of the Chesapeake Bay, including the possibility of linking the availability of financial and technical assistance to proximity to the Chesapeake Bay watershed.

Status: Completed. On March 11, 2008, NRCS, as the lead agency for NRE, achieved final action when it provided evidence that USDA had reviewed the

feasibility of targeting or redirecting USDA funds (or allocating USDA funds) on a regional and/or geographical basis to coordinate with the environmental restoration of the Chesapeake Bay, including the possibility of linking the availability of financial and technical assistance to proximity to the Chesapeake Bay. An independent third party contactor, selected competitively to examine the efficacy of its program allocation formula, concluded that NRCS needs to (1) develop better outcome based performance information and integrate the information into its allocation formulas; (2) improve the analytical soundness of the allocation models, factors, weights and data particularly through the elimination of redundant factors; and (3) improve the transparency of the budget allocation formula. The contractor's report also recommended that NRCS minimize the use of factors which are not related to performance. The prime example of this is the use of base factors which attempt to define the landmass being addressed by the program. (i.e., NRCS should avoid targeting or redirecting funds on a regional and/or geographical basis.)

Recommendation 6: We recommended that the USDA Secretary or Deputy Secretary direct USDA agencies to expedite the development and implementation of outcome-based performance measurements for evaluating the effectiveness of their conservation efforts and programs.

Status: Task ongoing. In its October 12, 2006 response, NRCS, as lead agency for NRE, stated it has directed USDA agencies to expedite the development and implementation of outcome-based performance measurements through the Conservation Effects Assessment Project (CEAP), a significant multi-agency effort designed to quantify the benefits of conservation practices implemented by private landowners participating in selected USDA conservation programs. The agencies expect that CEAP will provide much needed data, methods, and information to improve measurement of program performance, and will also assist in development of improved measures that better reflect desired environmental outcomes. NRCS' leadership is scheduled to meet again by June 2008 to assess the direction needed to accomplish the recommendation.

Recommendation 7: We recommended that the USDA NRCS Chief develop a tracking system for maintaining a list of technical assistance and financial assistance requests from landowners and agricultural producers that cannot be completed due to limited funding.

Status: Task ongoing. In its October 12, 2006 response, NRCS agreed to develop a tracking system for technical assistance requests. In January 2008, NRCS advised it no longer intends to develop a tracking system for technical assistance requests. Instead, NRCS will seek a change in management decision (a new corrective action plan) and request final action. NRCS stated it is developing of a new agency-wide tracking system for all its program activity. The creation of an interim process to track unfunded technical and financial assistance requests is no longer a prudent use of limited resources.

NRCS leadership is scheduled to meet again by June 2008 to assess the direction needed to accomplish the recommendation.

EPA Relying on Clean Air Act Regulations to Reduce Atmospheric Deposition to the Chesapeake Bay and Its Watershed	2007-P-00009 February 28, 2007

The OIG has accepted EPA's corrective action plan for the recommendation.

Recommendation 1: We recommend that the EPA Region 3 Regional Administrator instruct CBPO to use the results of the animal feeding operations emissions monitoring studies to determine what actions and strategies are warranted to address animal feeding operations' nitrogen deposition to the Chesapeake Bay.

Status: Task ongoing. CBPO and its partners continue to use the results of the Community Multiscale Air Quality Model to factor in the estimated water quality benefits of Clean Air Act regulations within the development of the Chesapeake Bay watershed TMDL currently underway. The Mid-Atlantic Water Quality Program has completed development of best management practices and efficiencies for application to animal feeding operations that will yield reductions in ammonia emissions. These best management practices and efficiencies are currently undergoing review through the Chesapeake Bay Program's Nutrient Subcommittee and technical workgroup prior to submission to the Program's Water Quality Steering Committee for final approval for application by the watershed partners.

Development Growth Outpacing Progress in Watershed Efforts to Restore the Chesapeake Bay	2007-P-00031 September 10, 2007

The OIG has accepted EPA's corrective action plan for all recommendations.

Recommendation 2-1: We recommend that the EPA Region 3 Regional Administrator charge the CBPO Director to prepare and implement a strategy that demonstrates leadership in reversing the trend of increasing nutrient and sediment loads from developed and developing lands. Such a strategy should include steps to:

- develop a set of Environmentally Sensitive Development practices that result in no-net increase in nutrient and sediment loads and flows in new developments and may be applicable to existing development and redevelopment;
- work with State and local partners, developers, federal agencies, and other stakeholders to implement these practices through regulatory, voluntary, and incentive approaches;
- educate municipal officials on these practices and other aspects of Environmentally Sensitive Development;

- target technical assistance to local governments interested in pursuing tools and strategies for reducing runoff from development;
- identify progressive local governments and leaders in the housing and commercial development fields and create forums for sharing information;
- report on progress through the existing annual reporting structure; and
- evaluate the effectiveness of the strategy.

Status: Task ongoing. CBPO has agreed to formulate a strategy for developed and developing lands by September 10, 2008. Also, CBPO, will issue an annual report on progress toward reducing nutrient and sediment loads from developed and developing lands, starting in September 2009.

Recommendation 2-2: We recommend that the EPA Region 3 Regional Administrator charge the CBPO Director to work with the Chesapeake Bay partners to set realistic, community-level goals for reducing nutrient and sediment loads from developed and developing lands.

Status: Task ongoing. By March 2009, EPA and State partners will begin to reach agreement on needed changes to Bay-wide caps and allocate those caps by tributary. By July 2010, EPA will confirm that the individual jurisdictional allocation and implementation strategies that States will develop will result in achievement of Chesapeake Bay water quality standards. These allocations will be reflected in the draft watershed TMDL expected to be published in 2011.

Recommendation 2-3: We recommend that the EPA Region 3 Regional Administrator charge the Water Protection Division Director to establish, with the delegated States, a documented permitting approach that achieves greater nutrient and sediment reductions in municipal separate storm sewer system permits across the watershed by:

- incorporating measurable outcomes in line with waste load allocations, when established for local waters and the Chesapeake Bay, through the TMDL regulatory program;
- including retrofitting of developed areas where these actions would benefit local waters as well as the Bay; and
- disallowing increases in loads and flows.

Status: Task ongoing. EPA has agreed to develop a technical support document to establish common expectations with respect to the municipal separate storm sewer system program for permit writers and the regulated community by April 2008. EPA will establish a permitting approach with States by October 2008.

The OIG has accepted EPA's corrective action plan for recommendations 2-1 thru 2-5. The OIG's acceptance of Recommendation 3-1 is pending EPA's submission of dates when proposed actions will be completed.

Recommendation 2-1: We recommend that the EPA Region 3 Regional Administrator instruct staff to review and comment on State-drafted NPDES permits for significant facilities to ensure that interim construction milestones are included in compliance schedules longer than 1 year to meet the Chesapeake Bay allocations. The milestones should include:

- design construction
- construction start
- construction completion
- compliance with permit limits

Status: Task ongoing. EPA will continue to review and comment on State-drafted NPDES permits for significant facilities. EPA will assure that milestones are in place if the compliance schedule to achieve the permit limit exceeds 1 year. EPA will seek to include the following milestones, as appropriate in the permits: design completion, construction start, construction completion, and compliance with permit limits.

Recommendation 2-2: We recommend that the EPA Region 3 Regional Administrator instruct staff to obtain from NPDES-authorized States information on progress in achieving the milestones above the "select priority facilities." Such priority facilities include those that are identified as needing the largest nutrient reductions and are identified by the States as missing the interim milestones noted in Recommendation 2-1. If milestones are missed, EPA will work with the States to take appropriate follow-up action to ensure compliance with the milestones.

Status: Task ongoing. By October 1, 2008, EPA will:

- Initiate milestone tracking for 10 designated priority facilities. These priority facilities are estimated to achieve about 75 percent of the total nitrogen reductions and about 50 percent of the phosphorus reductions planned for significant facilities.
- Identify interim milestones for each design completion, construction start, construction completion, and compliance with permit limits.

After October 1, 2008, EPA will commit to:

- Identify those facilities that have not met their interim or final milestones.
- Within 60 days of identifying such a facility, will initiate a corrective action dialogue with the State.

Recommendation 2-3: We recommend that the EPA Region 3 Regional Administrator instruct staff to collect information and report on the amount and source of funding for the aforementioned "select priority facilities" as part of the CBPO's annual reporting process.

> **Status:** Task ongoing. Starting on January 1, 2009, and every year thereafter until the priority facilities have completed their upgrades, EPA will track the amount and source of funding allocated for undertaking the required treatment upgrades for each of the priority facilities identified by EPA. This information will be included in the Chesapeake Action Plan's operation data base, which will be updated at least annually and distributed to the Bay partners.

Recommendation 2-4: We recommend that the EPA Region 3 Regional Administrator instruct staff to promote awareness of and use of the "Financing Alternatives Comparison Tool" and other financial analysis tools within the Chesapeake Bay community.

> **Status:** Task ongoing. To promote greater awareness and use of the "Financing Alternatives Comparison Tool," EPA will: continue to develop and implement webcasts on the tool for States and grantees; streamline the tool to make it easier to use for local governments; and expand the existing user guide and release it by October 1, 2008.

Recommendation 2-5: We recommend that the EPA Region 3 Regional Administrator instruct staff to continue to assist States in their development of effective trading programs by ensuring that: (a) States establish a common nutrient trading currency, and (b) lessons learned are captured and disseminated. In addition, if an interstate trading protocol program is developed, EPA should develop a formal mechanism to track water quality trading across State lines.

> **Status:** Task ongoing. EPA is providing assistance to States in developing effective trading programs by: (a) establishing the "delivered load" as a common currency using the Chesapeake Bay watershed model, and (b) sharing lessons learned through a standing EPA-State nutrient trading workgroups. EPA will also document the lessons learned on the Chesapeake Bay trading programs to share with other watersheds. EPA will develop a process for tracking interstate trades if they occur that will transparently track trades across State lines and assure that such trades use the same trading "currency."

Recommendation 3-1: We recommend that the EPA Region 3 Regional Administrator work with NPDES-delegated States to complete current efforts, related to industrial discharges, to: (a) characterize current nutrient discharge levels; (b) refine nutrient cap loads, where appropriate; and (c) issue permits reflecting modified cap load.

> **Status:** Task ongoing. (a) EPA has already worked with key States to obtain the necessary data to properly characterize the nutrient loadings from industrial dischargers. These point sources are being required through their

permits to conduct the appropriate monitoring. By May 2011, EPA will work with the States to: (b) develop facility specific nutrient loading targets for those facilities and (c) place these loading targets, where appropriate, into the NPDES permits for these facilities as permit limits.

EPA Needs to Better Report Chesapeake Bay Challenges: A Summary Report	08-P-0199 July 14, 2008

Recommendation 1: Improve reporting to Congress and the public on the actual state of the Chesapeake Bay and actions necessary to improve its health by including the following information in an appropriate report:

- Activities and resources necessary to accomplish the Chesapeake 2000 agreement goals;
- Activities that are not supported with funding or a commitment from the responsible federal, State, or local government;
- Challenges significantly hindering the Bay partners in adequately reducing nutrients and sediment;
- Milestones for generating funding and accomplishing activities; and
- Impact on the health of the Bay if milestones are not accomplished.

Status: EPA is reviewing this recommendation. Its written response including its corrective action plan is due on October 13, 2008.

Recommendation 2: Develop a strategy to further engage local governments and watershed organizations to capitalize on their resources, tools, authorities, and information to advance the mission of the Chesapeake Bay and include key actions as developed into the Chesapeake Action Plan.

Status: EPA is reviewing this recommendation. Its written response including its corrective action plan is due on October 13, 2008.

Recommendation 3: Provide CBPO with the opportunity to review and comment on any proposed rulemakings resulting from the Office of Air and Radiation's review of the secondary standard for NO2.

Status: EPA is reviewing this recommendation. Its written response including its corrective action plan is due on October 13, 2008.