

Department of Legislative Services  
Maryland General Assembly  
2013 Session

FISCAL AND POLICY NOTE

Senate Bill 979 (Senator Pipkin)  
Education, Health, and Environmental Affairs

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**Environment - Watershed Implementation Plan - Conowingo Dam Environmental Assessment**

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This bill prohibits a person from engaging in any activity or strategy to implement a State Watershed Implementation Plan (WIP) approved by the U.S. Environmental Protection Agency (EPA) to implement the Total Maximum Daily Load for the Chesapeake Bay (Bay TMDL) until the State completes a full assessment of the environmental impacts of the opening of the Conowingo Dam floodgates in September 2011 following Hurricane Irene and Tropical Storm Lee.

The bill takes effect June 1, 2013.

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**Fiscal Summary**

**State Effect:** Because the assessment referred to in the bill is not anticipated to be completed by the bill's effective date, this bill delays implementation of activities and strategies under WIP. As a result, the bill has potentially significant fiscal and operational ramifications for the Maryland Department of the Environment (MDE) and other State agencies involved with WIP.

**Local Effect:** Because the bill delays implementation of activities and strategies under WIP, local expenditures for programs designed to achieve the requirements of the Bay TMDL are delayed. However, to the extent the bill results in EPA sanctions, local expenditures may increase significantly.

**Small Business Effect:** Meaningful.

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## Analysis

**Current Law/Background:** According to Exelon Corporation, the Conowingo Dam has been providing electricity since 1928. When constructed from 1926 to 1928, Conowingo was the largest power plant ever built. When the Conowingo Dam was completed in 1928, producing 252 megawatts, it became the second largest hydroelectric project in the United States, behind Niagara Falls. The Conowingo Dam has a license issued by the Federal Energy Regulatory Commission (FERC) that expires September 1, 2014.

In the Bay TMDL, EPA discusses the importance of several dams along the lower Susquehanna River as a factor influencing nitrogen, phosphorus, and sediment loads to the bay because of the large quantities of these pollutants contained in the dam's reservoirs. In the Bay TMDL, EPA assumes that the current trapping efficiencies will continue. However, if future monitoring shows a change in the capacity of the Conowingo Dam to trap nutrients, the two-year milestone load reductions could be adjusted accordingly. EPA notes that it is imperative for New York, Pennsylvania, and Maryland to work together to develop an implementation strategy for addressing the sediment, nitrogen, and phosphorus behind the Conowingo Dam through their respective WIPs to prepare for any decrease in the dam's trapping efficiencies.

The Department of Natural Resources (DNR) and MDE have begun to study the effects of Hurricane Irene and Tropical Storm Lee on the Conowingo Dam and the Chesapeake Bay. The ongoing study, which was announced in September 2011, is estimated to cost \$1.4 million over a three-year period.

DNR has found that the Chesapeake Bay's "dead zone" (anoxic conditions) were temporarily eliminated by Hurricane Irene but were reset after Tropical Storm Lee, which contributed about 31% of the nitrogen and 61% of the phosphorus from the Susquehanna in 2011. DNR also notes that the muddy waters from the Susquehanna and its tributaries contained large amounts of nutrients capable of fueling large algal blooms. However, Tropical Storm Lee was a rare event and one of the most significant storms on record in terms of its impact on the Chesapeake Bay, exceeded only by Hurricane Agnes in 1972. By contrast, the impact of Hurricane Sandy in 2012 was much less significant in terms of the scouring of accumulated sediment from behind the Conowingo Dam and in terms of the volume of water passing through the dam. MDE and DNR indicate that significant pollutant releases from the Conowingo Dam following large storms are well-known and have been incorporated within the model used to develop the Bay TMDL.

More information on the State's bay restoration efforts, including an overview of the requirements to reduce nutrient and sediment loading under the Bay TMDL and WIP, may be found in **Appendix – Chesapeake Bay Restoration Policy and Status**.

**State/Local Fiscal Effect:** As noted above, DNR and MDE have been studying the effects of Hurricane Irene and Tropical Storm Lee on the Conowingo Dam and the Chesapeake Bay. Currently, DNR and MDE are working with Chesapeake Bay experts from the scientific, research, and academic communities to assess both short-term and long-term impacts of these two storms as well as strategies to protect the Chesapeake Bay in the future. This ongoing study includes assessing the impact of sediment and nutrients released when the flood gates of the Conowingo Dam open. When the study was announced in September 2011, MDE advised that it was estimated to cost \$1.4 million over a three-year period. According to DNR, the study cannot be expedited in order to be completed by the bill's June 1, 2013 effective date. Thus, the bill effectively delays the implementation of WIP activities and strategies until the study is complete, likely sometime in fiscal 2015.

As a result, although the bill delays State and local expenditures for these activities, it may also prevent the State and local governments from being able to achieve the reductions called for under the Bay TMDL by the required deadlines and could result in the violation of certain federal permits (such as permits issued to wastewater facilities). This could elicit any number of responses by EPA, as described in the Appendix. Any decrease in federal funding, withholding of permits, establishment of new permits, reallocation of load reductions, loss of existing State permitting authority, or other sanctions will have significant fiscal and operational impacts on the State and local governments.

**Small Business Effect:** Small businesses may be significantly affected to the extent the bill delays WIP implementation. Many small businesses that are engaged in operations associated with planned or existing Chesapeake Bay restoration efforts may experience a reduction in the demand for their services in the short run. On the other hand, small businesses that are required to reduce nutrient and sediment loading pursuant to the WIP could benefit to the extent the bill delays spending on those activities. Small businesses across many sectors of the Maryland economy are holders of permits issued by EPA. Permit-related costs may increase for many small businesses should the State fail to comply with the Bay TMDL by the required deadlines if EPA exercises its authority to rewrite, withhold, or establish new permits, which are some of the consequences noted by EPA in its accountability framework.

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### **Additional Information**

**Prior Introductions:** SB 695 of 2012 received an unfavorable report from the Senate Education, Health, and Environmental Affairs Committee. A similar bill, SB 18 of the 2011 special session, was referred to the Senate Rules Committee, but no further action was taken.

**Cross File:** None.

**Information Source(s):** Maryland Department of Agriculture, Department of Natural Resources, Maryland Department of the Environment, Maryland Association of Counties, Public Service Commission, U.S. Environmental Protection Agency, Department of Legislative Services

**Fiscal Note History:** First Reader - March 8, 2013  
ncs/lgc

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## Appendix – Chesapeake Bay Restoration Policy and Status

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Past efforts to restore the Chesapeake Bay watershed, which includes parts of Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia, have resulted in insufficient progress and continued poor water quality. However, a regional restoration initiative, required by the federal government and characterized by accountability measures and shorter term program evaluation, is underway.

### *Policy Framework*

The current bay restoration policy framework is primarily guided by an executive order, two-year goal milestone setting, and a Chesapeake Bay Total Maximum Daily Load (TMDL). In May 2009, President Barack Obama signed an executive order that recognizes the bay as a national treasure and calls on the federal government to lead a renewed effort to restore and protect the nation's largest estuary and its watershed. Concurrent with the issuance of the executive order, bay jurisdictions committed to achieving specific, short-term bay restoration milestones in order to assess progress toward achieving nitrogen, phosphorus, and sediment pollution reduction goals. As part of this effort, pollution reduction progress and program information is submitted to the U.S. Environmental Protection Agency (EPA) every two years.

In December 2010, EPA established a Chesapeake Bay TMDL, as required under the federal Clean Water Act and in response to consent decrees in Virginia and the District of Columbia. TMDL sets the maximum amount of nutrient and sediment pollution the bay can receive and still attain water quality standards. It also identifies specific pollution reduction requirements; all reduction measures must be in place by 2025, with at least 60% of the actions completed by 2017. As shown in **Exhibit 1**, the State must establish pollution control measures by 2025 that, based on 2010 levels, will reduce nitrogen loads to the bay by 22.0%, phosphorus loads by 14.9%, and sediment loads by 1.9%.

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**Exhibit 1**  
**Maryland’s Pollution Reduction Goals in the Bay TMDL**  
**(Million Pounds per Year)**

<u>Pollutant</u>	<u>2010 Loads</u>	<u>Bay TMDL Target Load</u>	<u>Percent Reduction</u>
Nitrogen	52.76	41.17	22.0%
Phosphorus	3.30	2.81	14.9%
Sediment	1,376	1,350	1.9%

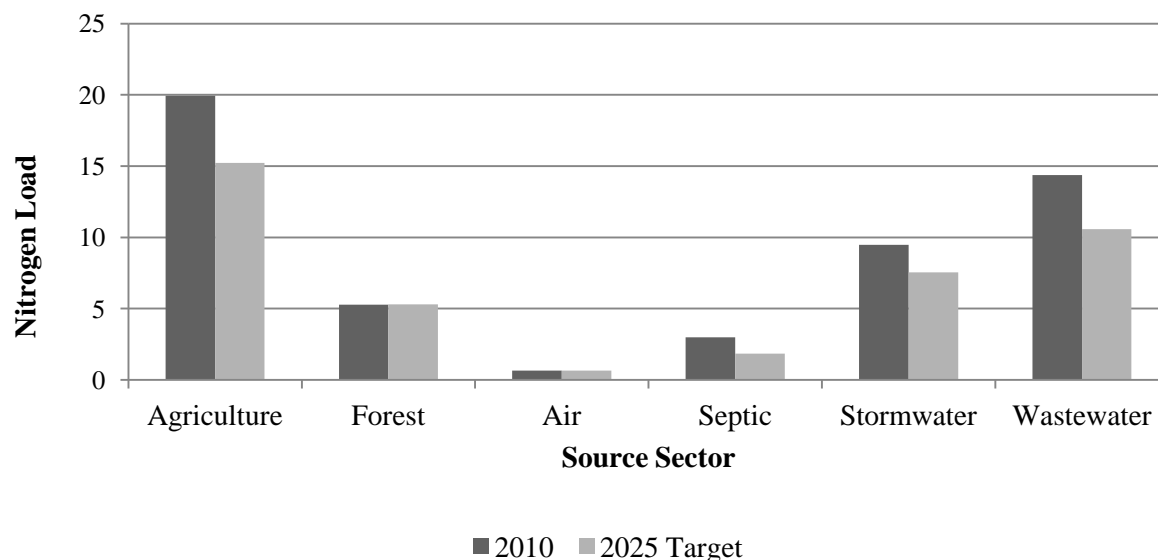
TMDL: Total Maximum Daily Load

Source: Maryland Department of the Environment; U.S. Environmental Protection Agency

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As part of the Chesapeake Bay TMDL, bay jurisdictions must develop watershed implementation plans (WIPs) that identify the measures being put in place to reduce pollution and restore the bay. WIPs (1) identify pollution load reductions to be achieved by various source sectors and in different geographic areas and (2) help to provide “reasonable assurance” that sources of pollution will be cleaned up, which is a basic requirement of all TMDLs. In 2010, bay jurisdictions submitted Phase I WIPs that detail how the jurisdiction plans to achieve its pollution reduction goals under TMDL. The bay jurisdictions were required to submit Phase II WIPs in early 2012 that established more detailed strategies to achieve the bay TMDL on a geographically smaller scale. **Exhibit 2** shows Maryland’s current and 2025 target nitrogen pollution loads by source sector and illustrates that agriculture, wastewater, and stormwater are the major sources of pollution and are being targeted for significant load reductions. A Phase III WIP, which must be submitted to EPA in 2017, will ensure that all practices are in place by 2025 so that water quality standards can be met.

**Exhibit 2**  
**Current and Target Nitrogen Pollution Loads by Source**  
**(Million Pounds per Year)**



Source: Maryland's Phase II Watershed Implementation Plan

EPA has the discretionary authority to ensure that the bay jurisdictions develop and implement appropriate WIPs; attain appropriate two-year milestones of progress; and provide timely and complete information as part of the TMDL process. EPA may, among other things, increase oversight of state-issued pollution permits, require additional pollution reductions, prohibit new or expanded pollution discharges, redirect or condition federal grant funds, and revise water quality standards to better protect local and downstream waters. Last summer, EPA withheld \$1.2 million in federal aid from Virginia and made allocation of the funds contingent upon the state addressing specified stormwater management issues.

*Progress to Date*

Maryland achieved its first set of two-year bay restoration milestone goals and is implementing strategies set forth in its WIP. The first set of two-year milestones required Maryland to reduce nitrogen loads by 3.75 million pounds and phosphorus loads by 193,000 pounds (relative to calendar 2008 load levels). In June 2012, it was announced that Maryland had met its 2009-2011 milestones and was on track to achieve its 2012-2013 milestones. While the State met and even exceeded several goals, it did not meet all of its goals. For example, Maryland committed to installing 125 agricultural water control structures, but only met 39% of that goal. Additionally, the State

committed to stormwater management retrofits to address 119,700 pounds of nutrients, but met only 88% of that goal. During the milestone period, Maryland assessed and adapted goals to reflect actual conditions and overshot its reduction goals for added security.

*More Information*

A December 2012 Department of Legislative Services report titled *Achieving the Chesapeake Bay Restoration Mandate in Maryland* provides more information about this issue and is available at

[http://dls.state.md.us/data/polanasubare/polanasubare\\_natresenvntra/Achieving-the-Chesapeake-Bay-Restoration-Mandate-in-Maryland.pdf](http://dls.state.md.us/data/polanasubare/polanasubare_natresenvntra/Achieving-the-Chesapeake-Bay-Restoration-Mandate-in-Maryland.pdf).