Chesapeake Bay
Fiscal 2015 Budget Overview

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

January 2014

For further information contact: Andrew D. Gray Phone: (410) 946-5530

Analysis in Brief

Major Trends

2012-2013 Milestone Met: Maryland achieved its 2012-2013 milestone nitrogen and sediment goals based on preliminary data submitted to the U.S. Environmental Protection Agency.

Issues

Overall Chesapeake Bay Restoration Funding: Major changes in Chesapeake Bay restoration funding include increased Chesapeake and Atlantic Coastal Bays 2010 Trust Fund funding, contingent reductions for land and conservation easement programs, and transit funding increases in the Maryland Department of Transportation. **The Department of Legislative Services (DLS) recommends the addition of budget bill language to request that the Administration continue to publish the overall Chesapeake Bay restoration data and two-year milestones funding in the Governor's budget books.**

Local Stormwater Fees and Financing: Nine of the 10 jurisdictions have enacted fees that will help them to meet their stormwater remediation goals, although additional financing options, such as the idea of "trading in time" and public-private partnerships, may be needed. **DLS recommends that the BayStat agencies comment on the role of "trading in time", public-private partnerships, and any other financial tools available to reduce Chesapeake Bay restoration stormwater costs. In addition, DLS recommends that the BayStat agencies comment on the cost-effectiveness of agricultural versus stormwater retrofit best management practices. Finally, DLS recommends that the BayStat agencies comment on whether best management practice costs are decreasing over time – an indication that the market for environmental restoration financing is maturing.**

Accounting for Growth: Achieving and maintaining these pollution reductions will be a significant challenge, as Maryland's population of more than 5.7 million people is expected to grow by at least 15% over the next 25 years. Two of Maryland's main efforts to address the reporting of future population growth are implementation of the Sustainable Growth and Agricultural Preservation Act (Chapter 149 of 2012) and creation of a new policy for offsetting pollution from development and redevelopment projects. **DLS recommends that the BayStat agencies comment on the Administration's plan for fully implementing the Sustainable Growth and Agricultural Preservation Act, including enforcement mechanisms, and the next steps in Accounting for Growth regulation development.**

Recommended Actions

	Funds	Positions
1. Add budget bill language on two Chesapeake Bay restoration spending reports.		

Overview

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. The current bay restoration policy framework is described below.

Executive Order

In May 2009, President Barack H. Obama signed an executive order that recognizes the Chesapeake 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. The Chesapeake Bay Protection and Restoration Executive Order established a Federal Leadership Committee to oversee the development and coordination of reporting, data management, and other activities by federal agencies involved in bay restoration. Pursuant to the order, in May 2010, federal agencies released a strategy document summarizing a suite of federal initiatives that could be implemented to restore and protect the bay. Among other things, the document noted that the U.S. Environmental Protection Agency (EPA) would implement a Chesapeake Bay Total Maximum Daily Load (TMDL), expand regulation of urban and suburban stormwater and concentrated animal feeding operations, and increase enforcement activities and funding for state regulatory programs.

Two-year Milestones

Concurrent with issuance of the Chesapeake Bay 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, jurisdictions submit pollution reduction progress and program information to EPA for review every two years. This milestone process has been incorporated into the Chesapeake Bay TMDL process, which is described below, and is serving as an important periodic assessment tool.

Chesapeake Bay Total Maximum Daily Load

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. The 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 60.0% of the actions

completed by 2017. The final target pollution loads for the five major basins in Maryland are shown in **Exhibit 1**.

Exhibit 1
Final Target Pollution Loads for Maryland's Major Basins
(Million Pounds Per Calendar Year)

Major Basin	Nitrogen Pollution	Phosphorus Pollution	Sediment Pollution
Susquehanna	1.19	0.06	64
Eastern Shore	11.82	1.02	189
Western Shore	9.77	0.55	243
Patuxent	3.10	0.24	123
Potomac	15.29	0.94	731
Total	**41.17**	**2.81**	**1,350**

Source: Maryland's Phase II Watershed Implementation Plan

As shown in **Exhibit 2**, the State must establish pollution control measures by 2025 that, based on 2012 levels, will reduce nitrogen loads to the bay by 17.6%, phosphorus loads by 11.6%, and sediment loads by 1.7%.

Exhibit 2
Maryland's Pollution Reduction Goals in the Bay TMDL
(Million Pounds Per Calendar Year)

Pollutant	2012 Loads	Phase II WIP Targets	Percent Reduction
Nitrogen	49.96	41.17	17.6%
Phosphorus	3.18	2.81	11.6%
Sediment	1,373.00	1,350.00	1.7%

TMDL: Total Maximum Daily Load
WIP: Watershed Implementation Plan

Source: Maryland Department of the Environment; Chesapeake Bay Program

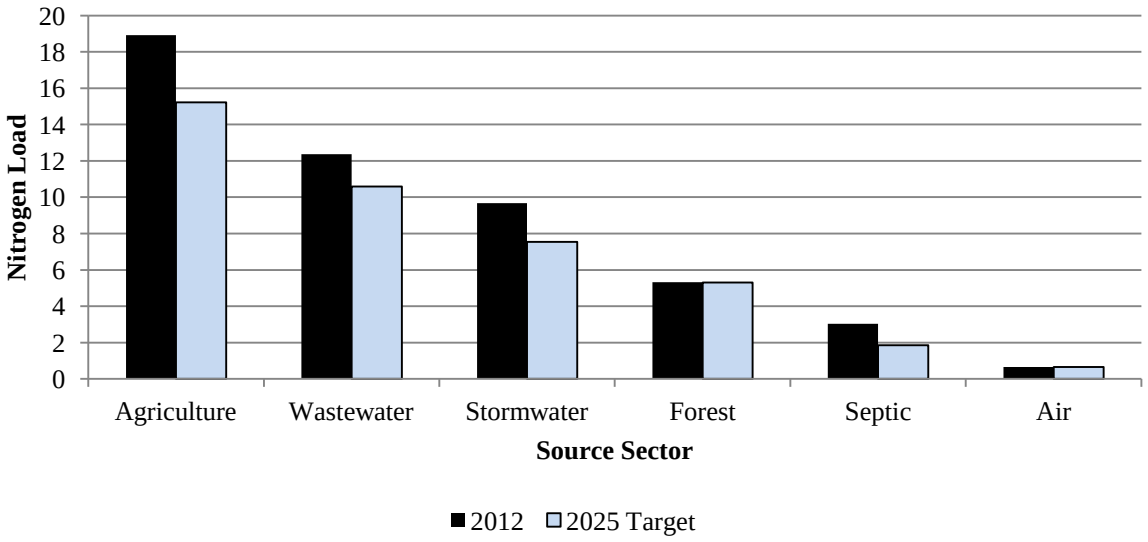
Watershed Implementation Plans

As part of the TMDL, bay jurisdictions must develop Water Implementation Plans (WIP) that identify the measures being put in place to reduce pollution and restore the bay. The 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 jurisdictions plan to achieve pollution reduction goals under the TMDL. Maryland's Phase I WIP proposed an aggressive schedule for reducing nutrient and sediment pollution and focused on (1) developing new pollution reduction technology and approaches before 2017; (2) expanding implementation of existing strategies, such as wastewater treatment plant (WWTP) upgrades and stormwater control projects; and (3) improving regulatory requirements.

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. In the Phase II WIP, the State allocated the final target pollution loads by county-geographic area and by source sector. **Exhibit 3** 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. EPA will modify the TMDL, if necessary, in December 2017 after all the bay jurisdictions have submitted their final Phase III plans.

Exhibit 3
Current and Target Nitrogen Pollution Loads by Source
(Million Pounds Per Year)



Source: Maryland's Phase II Watershed Implementation Plan; Chesapeake Bay Program

Accountability Framework

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. Specifically, to ensure nutrient and sediment pollution reductions, 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. EPA has used this authority to encourage more timely bay restoration action. During summer 2012, 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

2012-2013 Milestones Assessment

Maryland achieved its first set of two-year bay restoration milestone goals, 2009-2011, and in May 2013 the EPA indicated Maryland had also achieved its 2012-2013 milestone nitrogen and sediment goals as well, primarily due to enhanced wastewater load reductions. As shown in **Exhibit 4**, Maryland exceeded its 2013 milestone target for cover crops and conservation plans and for wastewater loads. However, Maryland failed to meet its 2013 milestone target for nutrient application management, mortality composting, and refrofit stormwater management. The Administration indicates that EPA will not officially confirm Maryland's numbers until they are entered into the Chesapeake Bay model early this winter with a final progress report due in May 2014, at which time the 2015 milestone will be determined. The Administration believes that it is on track to meet the 2013 milestone, 2015 milestone, and 2017 target due to continued efforts to improve wastewater treatment plants and local stormwater management.

Exhibit 4

Implementation of Select BMPs and Wastewater Loads for Maryland's 2012-2013 Milestones

	Unit	Progress 2012	Milestone Target 2013
Agriculture			
Nutrient Application Management (All Forms)	Acres	859,469	1,219,566
Cover Crops (All Forms)	Acres	407,591	355,000
Conservation Plans	Acres	970,250	826,000
Mortality Composting	Animal Units	7,467	7,558
Urban			
Retrofit Stormwater Management	Acres	71,557	76,603
Wastewater			
Nitrogen Loads	Pounds Delivered to the Chesapeake Bay	12,362,504	14,386,714

	Unit	Progress 2012	Milestone Target 2013
Wastewater (cont.)			
Phosphorus Loads	Pounds Delivered to the Chesapeake Bay	647,137	674,426
Wastewater Facilities Meeting Water Quality Standards in Chesapeake Bay as of June 30, 2012	Facilities Meeting/Total Facilities (Percent of Facilities)	46/82 (56%)	56/82 (68%)
Significant Facilities with Enhanced Nutrient Removal Upgrades Completed in the Milestone Period	Significant Municipal Wastewater Facilities	6 (as of June 30, 2012)	15

BMP: best management practice

Source: U.S. Environmental Protection Agency

Recent Bay Restoration Policy Actions

As noted by EPA in its May 2013 assessment of Maryland's progress to date, the State appears well positioned to meet its next two-year milestones, in part because of several recent legislative and regulatory actions, which are described below.

Bay Restoration Fee Increase

Chapter 428 of 2004 established the Bay Restoration Fund (BRF), which is administered by the Maryland Department of the Environment (MDE). One of the main goals of the fund is to provide grants to owners of WWTP to reduce pollution by upgrading the systems with enhanced nutrient removal technology. Upgrading the State's 67 major publicly owned WWTPs is a key pollution reduction strategy indentified in the State's Phase II WIP and reflected in the exhibit above. The fund also provides financing to upgrade septic systems with best available technology (BAT) to remove nitrogen and to plant cover crops that soak up excess nutrients from the soil.

The BRF's primary revenue source is a fee imposed on users of wastewater facilities, septic systems, and sewage holding tanks. At the urging of the Bay Restoration Fund Advisory Committee (which is charged with making recommendations regarding any increase in the bay restoration fee deemed necessary to meet the financing needs of the fund), Chapter 150 of 2012 generally doubled the BRF fee beginning July 1, 2012, in order to address a significant funding

shortfall that would have made it very difficult to complete the upgrades to the 67 major publicly owned WWTPs by calendar 2017, as required by the WIP. Chapter 150 also made several other changes, such as establishing additional uses for the fund beginning in fiscal 2018. As a result, the State will be better positioned to complete the WWTP upgrades by 2017. The additional funding will also support upgrades to approximately 2,600 additional septic systems through 2017 and provide cost-share assistance for farmers to plant over 440,000 additional acres of cover crops through 2017.

Best Available Technology Regulations

While nitrogen pollution loading from many sources is declining, nitrogen loading from septic systems continues to increase due to development. Thus, the State's Phase II WIP includes a strategy to upgrade approximately 46,000 additional septic systems with BAT between 2010 and 2017 and to connect nearly 8,000 septic systems to WWTPs between calendar 2010 and 2017. While Chapter 280 of 2009 already required BAT for new and replacement septic systems in the Chesapeake Bay Critical Area or the Atlantic Coastal Bays Critical Area, new regulations finalized in September 2012 expand the requirements of Chapter 280 to require BAT for all septic systems serving new construction in the Chesapeake Bay and Atlantic Coastal Bays watersheds, and in the watershed of any nitrogen impaired water body. The regulations also require BAT for any replacement system on property located in the Chesapeake Bay Critical Area and Atlantic Coastal Bays Critical Area, which is consistent with Chapter 280. Additionally, the regulations require operation and maintenance of BAT for the life of the system. The recent regulatory changes should help the State reduce nitrogen loading attributable to new development.

Local Stormwater Management Fee Authority

Due to the continued concern regarding nitrogen loading to the bay from stormwater runoff, stormwater best management practices (BMP) are a significant component of the State's Phase II WIP. Legislation enacted in 2007 sought to enhance the State's stormwater management program by requiring environmental site design (ESD) to the maximum extent practicable and minimizing the use of structural stormwater management practices (*e.g.*, stormwater ponds and open channels). The ESD relies on integrating site design, natural hydrology, and smaller controls to capture and treat stormwater runoff. Regulations implementing Chapters 121 and 122 of 2007 were approved in April 2010. As a means of assisting local governments, Chapter 151 of 2012 requires each county and municipal corporation subject to a National Pollutant Discharge Elimination System Phase I municipal storm sewer system permit (currently Baltimore City and the nine most populous counties) to adopt local laws or ordinances necessary to establish an annual stormwater remediation fee and a local watershed protection and restoration fund by July 1, 2013. These funds are to be used to provide financial assistance for the implementation of local stormwater management plans. Money derived from the fee is to be used only to support additional (not existing or ongoing efforts) improvements for stormwater management, including stream and wetland restoration projects; operation and maintenance of systems and facilities; and monitoring, inspection, and enforcement activities.

Agricultural Nutrient Management Regulations

The Maryland Department of Agriculture (MDA) adopted regulations that incorporate the latest scientific research and seek to further restrict pollution from agricultural lands in order to help the State achieve its bay restoration goals. The regulations, which took effect in October 2012, establish more rigorous requirements concerning the use of manure, biosolids, and other organic nutrient sources on crop fields. Key features of the new regulations include the following:

- Beginning July 1, 2016, nutrient applications will be prohibited between November 2 and February 28 for Eastern Shore farmers and between November 16 and February 28 for Western Shore farmers.

- Organic nutrients must be incorporated into the soil within 48 hours of application.

- Farmers will be required to plant cover crops when they use organic nutrient sources in the fall.

- Beginning in 2014, farmers will be required to establish a 10- to 35-foot "no fertilizer application zone" adjacent to surface water and streams.

- Beginning in 2014, farmers will be required to protect streams from livestock traffic by providing fencing or approved alternative BMPs.

- Fall fertilizer applications for small grains must be limited.

In January 2013, MDA published additional regulations that update an existing phosphorous pollution management tool used to identify where there is a high potential for phosphorous pollution and to help farmers evaluate management options. In response to farmer concerns about unknown impacts and environmental group concerns about implementation, the regulations underwent significant revision throughout 2013 and were resubmitted in October 2013, but MDA indicated it would not pursue the regulations in November 2013. While it is not clear how the regulations will be further revised, it is anticipated that MDA will seek to address stakeholder concerns and sometime in 2014 will resubmit a new proposal that includes a phased-in approach.

New Chesapeake Bay Watershed Agreement and Leadership

A new updated Chesapeake Bay Watershed Agreement is under development. The next draft is anticipated to be released for public comment on January 29, 2014, for a 45-day public comment period before the final agreement is signed at the Executive Council meeting in May 2014. The new agreement will add Delaware, New York, and West Virginia to the list of existing signatories – Maryland, Pennsylvania, Virginia, the District of Columbia, the Chesapeake Bay Commsion, and EPA – and will provide clear goals and measurable outcomes

for fisheries, habitats, water quality, healthy sub-watersheds, land conservation, public access, and environmental literacy, as well as commitments to management strategies. Governor Martin J. O'Malley was named the chairman of the Chesapeake Executive Council in December 2013.

Issues

1. Overall Chesapeake Bay Restoration Funding

The current state of Chesapeake Bay restoration funding may be reviewed at three levels:

- **Overall Chesapeake Bay Restoration** – actions that include environmental education, land preservation, transit projects, and nutrient and sediment reduction among others;

- **Two-year Milestones** – actions for nutrient and sediment reduction only; and

- **Chesapeake and Atlantic Coastal Bays 2010 Trust Fund** – actions for nutrient and sediment reduction from nonpoint sources only using certain revenues.

Overall Chesapeake Bay Restoration

Section 36 of the fiscal 2014 budget bill expressed the General Assembly's intent that the Department of Natural Resources (DNR), the Department of Budget and Management (DBM), and MDE submit two reports on Chesapeake Bay restoration expenditures as follows:

- **Overall Chesapeake Restoration Spending** – operating and capital expenditures by agency, fund type, and particular fund source based on programs that have over 50% of their activities directly related to Chesapeake Bay restoration for the fiscal 2013 actual, fiscal 2014 working appropriation, and fiscal 2015 allowance; and

- **Two-year Milestones** – two-year milestones funding by agency, BMP, fund type, and particular fund source along with associated nutrient and sediment reductions for fiscal 2012 to 2015.

The overall Chesapeake Bay restoration expenditures exhibit was first included in the Governor's budget books in fiscal 2009. The idea behind the exhibit is to be able to understand the overall scope of Chesapeake Bay restoration funding. The current version of overall Chesapeake Bay restoration funding is Appendix S of the *Maryland Budget Highlights* book and is shown in **Exhibit 5**. The two-year milestones funding data was not completed in time for inclusion in the analysis.

Exhibit 5
Overview of Maryland's Funding for Chesapeake Bay Restoration
Fiscal 2011-2015
Total Funds

Agency/Program	Actual 2011	Actual 2012	Approp 2013.	Approp. 2014	Allowance 2015	$ Change 2014-2015	% Change 2014-2015
Department of Natural Resources	$58,142,268	$55,027,356	$94,014,801	$103,675,698[1]	$117,426,924[2]	$13,751,226	13.26%
Program Open Space	12,196,626	6,026,700	14,657,379	28,065,000	22,872,000[3]	-$5,193,000	-18.50%
Rural Legacy	6,318,000	4,515,000	5,622,000	13,512,000	11,034,975[4]	-$2,477,025	-18.33%
Department of Planning	6,096,402	5,225,369	4,988,878	5,347,936	5,462,482	$114,546	2.14%
Department of Agriculture	45,000,141	42,337,956	38,993,231	46,214,993	32,316,988[5]	-13,898,005	-30.07%
Maryland Agricultural Land Preservation Foundation	16,486,344	16,735,951	12,889,412	35,753,896	26,504,392[6]	-$9,249,504	-25.87%
Maryland Department of the Environment	226,977,532	258,648,207	360,945,068	294,553,265	282,137,483	-$12,415,782	-4.22%
Maryland State Department of Education	919,455	919,455	280,943	416,945	416,945	$0	0.00%
Maryland Higher Education	21,837,119	21,992,772	19,345,005	21,878,401	17,609,041	-$4,269,360	-19.51%
Maryland Department of Transportation	139,924,453	177,486,653	180,107,000	252,419,510	432,113,665	$179,694,155	71.19%
Total	**$533,898,340**	**$588,915,419**	**$731,843,717**	**$801,837,644**	**$947,894,895**	**$146,057,251**	**18.22%**

Fund Type Summary

	Actual 2011	Actual 2012	Actual 2013	Approp. 2014	Allowance 2015	$ Change 2014-2015	% Change 2014-2015
General Fund	38,308,494	36,297,532	34,662,619	33,986,302	37,136,435	3,150,133	9.27%
Special Fund	160,131,465	159,794,055	338,289,432	302,941,047	286,399,667[7]	-16,541,380	-5.46%
Federal Fund	46,731,676	79,852,905	51,932,418	59,451,739	53,736,024	-5,715,715	-9.61%
Reimbursable Funds	14,566,133	10,017,377	8,258,635	11,336,645	9,350,063	-1,986,582	-17.52%
Current Unrestricted	8,288,400	10,227,751	8,742,157	13,504,302	12,574,221	-930,081	-6.89%
Current Restricted	13,548,719	11,765,020	10,602,848	8,374,099	5,034,820	-3,339,279	-39.88%
General Obligation Bonds	112,399,000	103,474,125	99,248,607	119,824,000[8]	111,550,000	-8,274,000	-6.91%
Maryland Department of Transportation Funds	139,924,453	177,486,653	180,107,000	252,419,510	432,113,665	179,694,155	71.19%
Total	**$533,898,340**	**$588,915,418**	**$731,843,716**	**$801,837,644**	**$947,894,895**	**$146,057,251**	**18.22%**

[1] Adjusted to reflect a typographical error that reduced oyster restoration funding by $9,000,000 in fiscal 2014.
[2] Adjusted to reflect a $3,200,000 contingent reduction of the fiscal 2015 allowance
[3] Adjusted to reflect $20,835,570 contingent reduction of the fiscal 2015 allowance.
[4] Adjusted to reflect $8,328,000 contingent reduction of the fiscal 2015 allowance.
[5] Adjusted to reflect $17,600,000 in double budgeted Chesapeake and Atlantic Coastal Bays 2010 Trust Fund Special Funds in the fiscal 2015 allowance.
[6] Adjusted to reflect $17,275,034 contingent reduction of the fiscal 2015 allowance.
[7] Adjusted to reflect $49,638,604 in contingent special fund reductions noted above for the fiscal 2015 allowance and the $17,600,000 in double budgeted Chesapeake and Atlantic Coastal Bays 2010 Trust Fund Special Funds.
[8] Adjusted to reflect a typographical error that reduced oyster funding by $9,000,000 in fiscal 2014.

Note: This presentation only includes State agency programs that have over 50% of their activities directly related to Chesapeake Bay restoration.

Source: Department of Budget and Management; Department of Legislative Services

The major changes between the fiscal 2014 working appropriation and the fiscal 2015 allowance reflected in the overall Chesapeake Bay restoration spending are as follows:

- **DNR –** increases by $13.8 million, primarily due to the $26.5 million in additional Chesapeake and Atlantic Coastal Bays 2010 Trust Fund special fund allocation remaining after the $3.2 million contingent reduction, which is partially offset by a decrease of $11.6 million in general obligation bond funding for Chesapeake and Atlantic Coastal Bays 2010 Trust Fund stormwater restoration projects.

- **Program Open Space, Rural Legacy, Maryland Agricultural Land Preservation Foundation** – decrease by $16.9 million, due to the contingent reduction of $20.8 million in Program Open Space funding, $8.3 million in Rural Legacy funding, and $17.3 million in Maryland Agricultural Land Preservation Foundation funding. General obligation (GO) bond replacement funding is provided for the fiscal 2015 transfers in fiscal 2016 and 2017.

- **MDA** – decreases by $13.9 million, due to the timing of the receipt of the department's Chesapeake and Atlantic Coastal Bays 2010 Trust Fund allocation and a $3.3 million increase in the allocation of GO bonds to the Maryland Agricultural Water Quality Cost-Share Program.

- **MDE** – decreases by $12.4 million, primarily due to reductions of $8.0 million in GO bonds for the Biological Nutrient Removal program and $7.0 million in BRF special funds for upgrades to wastewater treatment plants based on the planned activity level.

- **Maryland Department of Transportation** – increases by $179.7 million, primarily due to Maryland Transit Administration Purple Line ($96.0 million) and Red Line ($29.2 million) transit projects; $27.9 million in State Highway Administration bike/pedestrian community safety and enhancement projects; and $24.5 million in water quality projects.

- **Maryland Higher Education** – decreases by $4.3 million primarily due to a reduction of $1.5 million in current unrestricted funds for the one-time replacement of the University of Maryland, College Park's The Diner's roof with an environmentally friendly roof, and $2.9 million in current restricted funds for hydrologic cycle, blue crab, and aquaculture research at the University of Maryland, Baltimore County.

DLS recommends the addition of budget bill language to request that the Administration continue to publish the overall Chesapeake Bay restoration data and two-year milestones funding in the Governor's budget books.

2. Local Stormwater Fees and Financing

The federal Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States. The National Pollutant Discharge Elimination System (NPDES), a component of the CWA, regulates stormwater discharges from municipal separate storm sewer systems (MS4). There are 10 jurisdictions in Maryland that hold NPDES Phase I MS4 permits (Anne Arundel, Baltimore, Carroll, Charles, Frederick, Harford, Howard, Montgomery, and Prince George's counties, and Baltimore City). In the 2012 legislative session, the General Assembly passed legislation, House Bill 987 (Chapter 151), which required these 10 jurisdictions to establish a local stormwater remediation fee to assist in financing the implementation of the local MS4 permits, including the requirement of each permit to meet the stormwater-related targets under the Chesapeake Bay TMDL. Nine of the 10 jurisdictions have enacted fees that will help them to meet their MS4 permit goals for stormwater remediation, although one jurisdiction's fee will not bring in appreciable revenue and overall additional financing options, such as the idea of "trading in time" and public-private partnerships, may be needed.

Adoption and Implementation of Local Laws

In fiscal 2014, it is estimated that the stormwater fee will generate about $80.2 million across nine jurisdictions; if revenues from the restructured fee established by Montgomery County are counted, fiscal 2014 revenues amount to $103.0 million. The structure and amount of the fees, established pursuant to Chapter 151, vary greatly by jurisdiction, as shown in **Exhibit 6**. For example, with respect to residential fees, four counties chose to establish a flat fee per property or per unit, while four other jurisdictions established fees based on imperviousness, type or size of property, or home size. One county established a hybrid approach, assessing both a flat fee and an impervious unit (IU) fee. Finally, one jurisdiction did not establish a fee. For nonresidential properties, most counties chose to establish a rate based on the amount of impervious surface, as defined through an equivalent residential unit or an IU. Jurisdictions have also established separate fees for certain types of properties, such as properties owned by religious groups or nonprofit organizations.

Exhibit 6
Local Stormwater Remediation Fees

Jurisdiction	Annual Residential Rate	ERU or IU Size	Annual Nonresidential Fee/ERU or IU	Nonresidential Fee Per Acre Equivalent
Anne Arundel	$34.00, $85.00, or $170.00 annually depending on zoning district	ERU = 2,940 sq. ft.	Generally, $85.00 per ERU and capped at 25% of the property's base property tax. Fees vary for specified types of properties	$1,259.39
Baltimore	$21.00 per unit (single family attached); $32.00 per unit (condos); $39.00 (single-family detached and agricultural residential)	ERU = 2,000 sq. ft.	Generally, $69.00 per ERU for nonresidential properties; $20.00 per ERU for nonresidential institutional properties	$1,502.81
Baltimore City	$40.00, $60.00, or $120.00 depending on amount of impervious surface	ERU = 1,050 sq. ft.	Generally, $60.00 per ERU; $12 per ERU for religious nonprofits	$2,489.11
Carroll	None	n/a	None	None
Charles	$43.00 per property (an increase of $29.00 over fiscal 2013 levels)	n/a	$43.00 per property	n/a
Frederick	$0.01 per property	n/a	$0.01 per property	n/a
Harford	$125.00 per property	IU = 500 sq. ft.	$7 per IU	$609.86
Howard	$15.00, $45.00, or $90.00 depending on type and size of property	IU = 500 sq. ft.	$15.00 per IU	$1,306.85
Montgomery	Varies, ranges from $29.17 to $265.20 depending on home size	IU = 2,406 sq. ft.	$88.40 per IU	$1,593.22
Prince George's	$20.58 per property plus $20.90 per IU	IU = 2,456 sq. ft.	$20.90 per IU	$371.10 (plus $20.58 admin. fee), or $391.68

Note: This represents the fee before any phase-in occurs and reflects the actions of jurisdictions as of November 7, 2013.

ERU: equivalent residential unit
IU: impervious unit

Source: Department of Legislative Services

Chapter 151 envisioned that the new fee would supplement other local revenue sources, in recognition that each of these Phase I municipal separate storm sewer system jurisdictions was already implementing a stormwater program. Other, or existing, sources of revenue in fiscal 2014, include such revenue sources as plastic bag charges, bond proceeds, and environmental services fees. In total, local jurisdictions have identified approximately $1,705.4 million of available revenue from all sources to fund stormwater management activities from fiscal 2014 to 2018 based on data through November 7, 2013. There is a considerable range in each jurisdiction's estimated stormwater compliance costs, from about $6.8 million annually for Carroll County, to about $89.8 million annually for Prince George's County. Prince George's and Anne Arundel counties have the highest estimated costs over the fiscal 2014 to 2018 period, at $449 million and $403 million, respectively. As shown in **Exhibit 7**, the overall stormwater costs of $2,073.6 million are estimated to exceed the revenues by $368.2 million over fiscal 2014 to 2018. Howard, Frederick and Montgomery counties are estimated to have the greater funding deficits, at $112.4 million, $89.6 million, and $59.5 million, respectively.

Exhibit 7
Projections of Stormwater Management Revenues and Costs
($ in Millions)

Jurisdiction	Fee Revenues	Bond Revenues	Other Revenues	Total Revenues	Fiscal 2014-2018 Projected Costs	Surplus/Deficit
Anne Arundel	$110.2	$292.5	n/a	$402.7	$402.7	$0.0
Baltimore City	129.2	103.8	n/a	233.0	228.5	4.5
Baltimore	121.5	n/a	50.0	171.5	167.0	4.5
Carroll	n/a	n/a	23.0	23.0	34.1	-11.1
Charles	7.4	31.7	3.6	42.7	47.4	-4.7
Frederick	0.0	n/a	22.4	22.4	112.0	-89.6
Harford	43.1	n/a	n/a	43.1	90.0	-46.9
Howard	54.4	n/a	43.2	97.6	210.0	-112.4
Montgomery	147.3	120.0	6.2	273.4	332.9	-59.5
Prince George's	58.0	338.0	n/a	396.0	449.0	-53.0
Total	**$671.0**	**$886.0**	**$148.4**	**$1,705.4**	**$2,073.6**	**-$368.2**

Source: Department of Legislative Services

"Trading in Time"

The shortfall in revenue for stormwater restoration raises the question of alternative financing methods. One such method is "trading in time", which uses excess WWTP nitrogen load reductions that bring a jurisdiction under its overall nitrogen loading target for all sectors to offset temporarily

stormwater and septic sector loads. This can only be done temporarily because population growth will eventually eliminate the excess WWTP load reductions. MDE presented to local WIP partners at the 2013 spring regional workshops on financially responsible ways to reach the WIP reductions, including the use of "trading in time." The main points of the presentation are as follows:

- meeting the 2025 target is financially viable;
- unused wastewater treatment plant capacity at 2025 buys time;
- urban sector purchase of agricultural credits after the 2017 midpoint assessment could help reduce costs;
- State funding is not sufficient;
- new local funding would be necessary;
- new federal funding should be considered;
- cost reductions should be explored; and
- new technologies, such as 75% septic best available technology, should be considered.

For a hypothetical medium-sized county, unused WWTP capacity could be used to extend the time period over which high-cost stormwater retrofits and septic system upgrades may be financed. MDE indicates that there have been preliminary discussions with several counties who expressed interest in the concept, but further exploration awaits EPA guidance on nutrient trading.

Public-private Partnerships

A second financing method for stormwater remediation is the public-private partnership. Public-private partnerships are typically long-term agreements involving State or local government assets, such as stormwater controls, that can provide benefits by allocating responsibilities and risks to the party – either public or private – that is best positioned to undertake the activity and does so most efficiently or cost-effectively. Public-private partnerships have the potential to provide a wide array of benefits beyond risk sharing, including faster project delivery, application of advanced construction techniques, operational efficiencies, and access to an expanded set of financing resources.

A recent joint EPA/MDE forum entitled *"Community Based Public Private Partnerships Workshop on Green Infrastructure Driven Urban Stormwater Retrofits*" was held on September 26, 2013, in Annapolis. The core public-private partnership example from the workshop was the U.S. Army Residential Communities Initiative – a partnership whereby U.S. Department of Defense revenue is used by a private partner to finance the management of housing for the military.

The Prince George's County Urban Stormwater Retrofit Public-Private Partnership Demonstration Pilot was also featured at the forum. The pilot project is based on the U.S. Army Residential Communities Initiative, even using the same project lead – Corvias Group. Prince George's County is in the process of creating a partnership with Corvias Group, which will allow for a fixed profit to Corvias Group from the county's new stormwater fee and existing ad valorem tax in exchange for a design-build-finance-operate-maintain public-private partnership that will remediate 2,000 or more acres of urban street over a 30-year period for $100.0 million. The main reasons for this financing model appear to be the following:

- **Debt Capacity** – Corvias Group, through Barclays Capital, issues the debt for stormwater remediation and so Prince George's County's debt capacity is not impacted;

- **Procurement** – Corvias Group, through its subcontractors, procures materials and labor thus creating economies of scale and standardization of methods across many projects; and

- **Management** – Corvias Group manages the substantial number of projects over a number of years with no additional county staffing needed.

One of Corvias Group's subcontractors is the Maryland Environmental Service (MES). MES was created by statute (Chapter 240 of 1970) as an independent agency. Executive Order 01.01.1971.11 stipulated that MES has responsibility for the operation and maintenance of all State-owned sewage treatment and solid waste disposal facilities and is an instrumentality of the State and a public corporation. MES provides technical services including engineering, design, financing, construction, and operation of water supply and wastewater treatment facilities, among other activities. MES will be providing education, outreach, geographic information systems and other services to the pilot project.

MES would appear to be an ideal candidate for being Prince George's County's pilot project partner. In fact, MES has approached other counties about similar services but has so far not received any offers from the counties. MES did not approach Prince George's County about the pilot project because the county was already in discussion with the EPA about the public-private partnership model for its demonstration project.

DLS recommends that the BayStat agencies comment on the role of "trading in time", public-private partnerships, and any other financial tools available to reduce Chesapeake Bay restoration stormwater costs. In addition, DLS recommends that the BayStat agencies comment on the cost-effectiveness of agricultural versus stormwater retrofit best management practices. Finally, DLS recommends that the BayStat agencies comment on whether best management practice costs are decreasing over time – an indication that the market for environmental restoration financing is maturing.

3. Accounting for Growth

Achieving and maintaining the pollution reductions required under the TMDL will be a significant challenge, as Maryland's population of more than 5.7 million people is expected to grow by at least 15% over the next 25 years. Two of Maryland's main efforts to address the future impact of population growth are implementation of the Sustainable Growth and Agricultural Preservation Act (Chapter 149 of 2012) and creation of a new policy for offsetting pollution from development and redevelopment projects.

Sustainable Growth and Agricultural Preservation Act of 2012

Septic systems are responsible for a significant portion of the State's total nitrogen pollution load to the bay, and they discharge significantly more pollution than a major WWTP. Chapter 149 aims to steer future residential growth toward more urban forms of development served by public sewers and away from undeveloped lands that require the use of septic systems. It creates four growth tiers based on specified land use characteristics which may be adopted by local jurisdictions and establishes land use and sewerage restrictions applicable to each tier. Beginning December 31, 2012, a jurisdiction could not approve a major residential subdivision served by septic systems, community sewerage systems, or shared systems unless the jurisdiction had adopted growth tiers consistent with the Act. A jurisdiction that does not adopt growth tiers may still authorize either a minor residential subdivision served by septic systems or any subdivision in an area served by public sewer.

As of January 2014, 12 counties and Baltimore City had adopted tier maps, 2 counties had adopted maps, but the Maryland Department of Planning (MDP) had comments on the maps, and 10 counties were still considering options. Because most municipalities are served by existing sewerage systems, a municipality's failure to adopt a tier map has less of an impact on growth. Nevertheless, MDP is encouraging municipalities to complete their tier maps to avoid potential conflicts with county maps.

Implementation of Chapter 149 has not been without challenges. While MDP may make formal comments on a tier map, it lacks the authority to require a jurisdiction to change its tier map. As of August 2013, MDP had submitted comments stating that Cecil and Frederick counties' tier maps violated provisions of the Act, and an Allegany County map raised significant issues. However, Frederick County did voluntarily revise its map in response to MDP concerns. Also, 16 counties have taken advantage of a statutory exemption authorizing the maximum number of lots in a minor subdivision to be increased from five to seven, effectively allowing more development to occur on septic systems. Further, counties may seek to alter their comprehensive plans to effectively limit the Act's impact, as Charles County has done by proposing that 150,000 acres change from conservation to residential use.

New Policy for Managing Future Pollution Growth

To comply with the bay TMDL, Maryland plans to manage new pollution loads in the future by (1) upgrading major WWTPs to accommodate sewage from new development and (2) establishing a new growth policy to offset pollution loads from development. While efforts to upgrade major WWTPs are well underway, the State lacks a strategy to manage new pollution from infrastructure development. The Administration proposed a draft growth offset strategy in 2012; however, it prompted significant stakeholder concerns. In response, the Administration convened an Accounting for Growth Workgroup – comprised of agricultural, environmental, developer, local government, and public interest stakeholders – to craft a policy for offsetting future pollution loads. The workgroup made recommendations in August 2013, including:

- **Threshold** – make development projects that disturb one acre or more of land subject to the policy and establish a reduced or sliding scale fee-in-lieu payment for projects that disturb between 5,000 square feet and one acre of land;

- **Trading Ratio and Credit Retirement** – create a more robust nutrient credit trading policy with a 1:1 trading ratio (*e.g.*, one nonpoint source credit must be generated to offset every point source credit) and that requires 10% of the total credits sold to be "retired" and not used by the buyer to offset pollution; and

- **Permanence** – make pollution offset requirements permanent and guarantee operation and maintenance of pollution reduction practices in perpetuity.

The workgroup did not reach consensus on other issues, such as setting a price for fee-in-lieu amounts, establishing new geographic boundaries for trading, and strengthening existing credit verification policies. The Administration has determined that there are two outstanding nutrient trading issues:

- **Baseline** – how much pollution a new development should be allowed to contribute to the bay before having to offset any remaining pollution; and

- **Phosphorus** – whether phosphorus offsets should be required.

DLS recommends that the BayStat agencies comment on the Administration's plan for fully implementing the Sustainable Growth and Agricultural Preservation Act, including enforcement mechanisms, and the next steps in Accounting for Growth regulation development.

Recommended Actions

1. Add the following section:

SECTION XX. AND BE IT FURTHER ENACTED, That it is the intent of the General Assembly that the Department of Budget and Management, the Department of Natural Resources, and the Maryland Department of the Environment provide two reports on Chesapeake Bay restoration spending. The reports shall be drafted subject to the concurrence of the Department of Legislative Services (DLS) in terms of both electronic format to be used and data to be included. The scope of the reports is as follows:

(1) Chesapeake Bay restoration operating and capital expenditures by agency, fund type, and particular fund source based on programs that have over 50% of their activities directly related to Chesapeake Bay restoration for the fiscal 2014 actual, fiscal 2015 working appropriation, and fiscal 2016 allowance, which is to be included as an appendix in the fiscal 2016 budget volumes and submitted electronically in disaggregated form to DLS; and

(2) two-year milestones funding by agency, best management practice, fund type, and particular fund source along with associated nutrient and sediment reductions for fiscal 2013, 2014, 2015, and 2016, which is to be submitted electronically in disaggregated form to DLS.

Explanation: This language expresses the intent that the Department of Budget and Management (DBM), the Department of Natural Resources (DNR), and the Maryland Department of the Environment (MDE) provide at the time of the fiscal 2016 budget submission information on (1) Chesapeake Bay restoration spending for programs that have over 50% of their activities directly related to Chesapeake Bay restoration; and (2) two-year milestones funding.

Information Request	**Authors**	**Due Date**
Summary of Chesapeake Bay restoration spending for programs that have over 50% of their activities directly related to Chesapeake Bay restoration, and two-year milestones expenditures	DBM DNR MDE	Fiscal 2016 State budget submission