REPORT OF THE SECRETARY OF NATURAL RESOURCES

CHESAPEAKE BAY AND VIRGINIA WATERS CLEAN-UP PLAN - PROGRESS REPORT

TO THE GOVERNOR AND THE CHAIRMEN OF THE SENATE FINANCE COMMITTEE, THE HOUSE COMMITTEE ON APPROPRIATIONS, THE SENATE COMMITTEE ON AGRICULTURE, CONSERVATION AND NATURAL RESOURCES, AND THE HOUSE COMMITTEE ON AGRICULTURE, CHESAPEAKE AND NATURAL RESOURCES

COMMONWEALTH OF VIRGINIA, RICHMOND, MAY 2015

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Executive Summary

This report was developed to comply with water quality reporting requirements stipulated in §62.1-44.118 of the Code of Virginia. This section of the Code requires the Secretary of Natural Resources to submit semiannual progress reports May 1 and November 1 regarding implementation of the impaired waters clean-up plan as described in §62.1-44.117. Pursuant to §62.1-44.118, the May 1 progress report focuses exclusively on clean-up plan implementation whereas the November 1 report consolidates additional annual reporting requirements of § 10.1-2127, § 10.1-2128.1, and § 10.1-2134 and any plan updates or revisions.

During the reporting period, Virginia's Water Quality and Natural Resources agencies have invested significant time and effort in developing Management Strategies for the 2014 Chesapeake Bay Watershed Agreement while continuing to implement existing water quality programs under the framework of the Clean Water Act, state law and the provisions of the Chesapeake Bay Total Maximum Daily Load (TMDL). Some of the significant actions and progress are detailed in this report. Additionally, this report contains Virginia's 2014 Progress results for complying with the Chesapeake Bay TMDL, indicating that we are ahead of schedule for meeting our nutrient reduction goals for the 2015 milestone period and the 2017 60% target for reductions in the TMDL. Sediment reductions are lagging slightly behind the projected reduction levels and will be a focus going forward as Virginia refines its water quality programs and strategies.

Nonpoint Source Management Plan

Section 319 of the Federal Clean Water Act requires that states develop and implement nonpoint source (NPS) pollution management programs. The U.S. Environmental Protection Agency (EPA) issued new guidance in November 2012 and grant guidelines in April 2013 that required all states to have updated management plans by September 30, 2014. The Virginia Department of Environmental Quality (DEQ), in cooperation with other state, federal, regional and local agencies and other organizations, updated the Virginia *Nonpoint Source (NPS) Pollution Management Program Plan (NPS Plan)*, which was approved by EPA on October 22, 2014. This Plan summarizes the State's effort to prevent and control NPS pollution. The updated five-year plan identifies programs and initiatives to achieve long-term statewide NPS goals. The Virginia NPS Management Plan also serves as an update of the nonpoint source elements of the Chesapeake Bay and Virginia Waters Clean-Up Plan developed pursuant to the Chesapeake Bay and Virginia Waters Clean-up and Oversight Act.

The Plan included development of long term goals that cover a five year planning horizon, as well as more specific and programmatic milestones that align with the Chesapeake Bay biennial planning framework and milestone development. This decision, to align NPS milestones with Bay milestones, helps ensure that Virginia's nonpoint source management activities are well coordinated. It also provides a mechanism to ensure that the plan is kept up to date through a semiannual milestone development process. In its approval letter, EPA applauded Virginia for its decision to align these important activities.

Dan River Coal Ash Spill – Summary of Results from First Year of Long-Term Monitoring

Following the February 2014 coal ash spill into the Dan River from a Duke Energy storage pond in Eden, NC, DEQ has implemented a coordinated monitoring plan to help assess any impacts to aquatic resources or exceedances of water quality standards and sediment screening thresholds. Monthly sampling of the water column and sediment occurred at 6 river stations and 2 reservoir stations, along with annual fish tissue collection at 8 stations, as well as benthic condition assessments and fish community analysis at 2 locations (both spring and fall). In addition to typical field parameters (such as dissolved oxygen and temperature), samples were analyzed for several trace metals normally associated with coal ash, particularly arsenic, selenium, copper, and chromium.

DEQ staff has summarized results from the first year of this 3 to 5 year monitoring effort, which generally show that:

- Safe drinking water standards were not violated
- There were no widespread acute (short-term) toxic impacts to aquatic life observed.
- Virginia's water quality standards for aquatic life protection were not exceeded, although there were a few observed iron values above the drinking water standard near Danville (not a toxicity concern; more related to taste and odor affects).
- A few sediment concentrations for selenium and arsenic shortly after the spill at one station (VA/NC state line at Rte. 880 bridge) were among the highest ever observed in Virginia rivers and did exceed potential ecological-effects screening thresholds. However, concentrations quickly declined and are not expected to be cause for concern regarding potential, long-term ecological impacts.
- Benthic (bottom-dwelling) organism surveys showed that pre- and post-spill conditions were essentially comparable; some annual, natural variation was observed that could explain a couple of assessment metrics indicating slightly improved conditions in 2014 compared to 2013.
- Ash survey results directed by the US EPA and US Fish & Wildlife Service, along the affected 80 mile length of the river and into Kerr Reservoir, showed that ash content percentages declined over time as the ash became covered by native sediment and mixing occurred. At their height, ash content percentages generally ranged from the low-teens to "not detected". For comparison, after a massive 2008 coal ash spill in Kingston, TN, impacts to aquatic life were not readily observed until the coal ash to native sediment ratio reached 60% coal ash to 40% sediment.

While these findings may appear favorable in terms of avoided ecological impacts, it must be kept in mind these are preliminary results from just the first year of a long-term monitoring program. In addition, fish tissue results have been delayed while Virginia's State Laboratory has been securing national accreditation for their analytical procedures; data are expected sometime this summer from the analysis of 160 samples. While not cause for immediate concern, the relatively elevated selenium and arsenic levels in sediment and the water column do warrant continued monitoring to help detect any long-term impacts, especially the possibility of fish tissue bioaccumulation. DEQ continues to coordinate monitoring events and sharing results with the NC Dept. of Environment and Natural Resources, federal agencies and Duke Energy.

Wastewater

No Discharge Zones
In 2014, DEQ transmitted four No Discharge Zone (NDZ) applications for Virginia's Northern Neck (the peninsula of land separating the tidal Potomac and Rappahannock Rivers) to Virginia's Secretary of Natural Resources (SNR) for review. The SNR concurred with the applications and submitted them to EPA - the federal agency with the authority to designate NDZs per §312 of the Clean Water Act and enabling regulations at 40 CFR Part 140. EPA has since completed a review of the applications and provided preliminary comments. DEQ and the Northern Neck Planning District Commission are working together to address these. After EPA receives Virginia's responses their determination process, which includes publishing the proposed NDZ designations in the *Federal Register*, will continue. Three other initiatives to address boating discharges in Virginia are in progress. The Go-Green Committee of Gloucester County is working with the Virginia Institute of Marine Science to develop NDZ applications for the Sarah Creek and Perrin River in Gloucester County. The Elizabeth River Project, an independent non-profit organization, has created a task force to achieve increased pump-out compliance by addressing education and accessibility issues. An NDZ application for Owl Creek and Rudee Inlet in Virginia Beach is currently being held in abeyance at EPA. EPA will be asked to review the application again once the construction of a year-round pump-out station accessible to all boats has been completed.

Onsite Sewage Disposal
The Virginia Department of Health (VDH) database, the Virginia Environmental Information Systems (VENIS), is the main record keeping tool for all VDH environmental health programs. The database includes records of on-site sewage disposal system repair permits. Progress for 2014 includes approximately 25,303 pumpouts, an additional 601 nitrogen reducing systems and an additional 549 conversions from septic to sewer in the Chesapeake Bay Watershed.

VDH representatives participated in the Chesapeake Bay Program Onsite Wastewater Treatment Systems Nitrogen Reduction Technology Expert Review Panel to gain approval of additional onsite system BMPs for inclusion in the Bay Model. The existing 50% reduction efficiency practice was retained and additions were made to allow credit for other technologies producing 20%, 38% and 69% reductions in nitrogen loads. The new BMPs will be reportable to the Bay Program starting with the 2015 Progress Year (calendar year 2015).

Agriculture and Forestry

Agricultural Cost-Share Funding
For FY15, DCR allocated almost $23.5 million in agricultural cost-share funds to Soil and Water Conservation Districts. This included $800,000 in Conservation Reserve Enhancement Program (CREP) cost-share funds to be disbursed by Districts as the state match for completed projects. Of the $23.5 million, approximately $22.3 million was distributed to farmers through the Virginia Agricultural Cost-Share Program for implementation of best management practices (BMPs). The funding for FY15 was generated from recordation fees on deeds filed and from

state surplus general funds deposited to the Virginia Natural Resources Commitment Fund (VNRCF).

FY16 allocations from state sources for implementation of agricultural best management practices will have the following breakdown:

- Virginia Agricultural Cost-Share Program funding (50323) - $21.8 million
- District Technical Assistance (50322) - $2.8 million
- District Financial Assistance (50320) - $6.8 million

The funding for FY16 was generated from recordation fees on deeds filed and from state general funds deposited to the Virginia Natural Resources Commitment Fund (VNRCF). FY16 support figures exclude engineering support via DCR staff, IT support, and training/certification assistance.

Agricultural Priority Practices

Implementation of priority agricultural BMPs continues to be a core area of focus for the Commonwealth as it endeavors to achieve its water quality goals. Agricultural conservation practices are highly effective at reducing excessive nutrients. State financial incentives for BMP implementation are administered by the Agricultural BMP Cost-Share Program at DCR. Priority Practice implementation in the Chesapeake Bay for 2014 is listed in the table below.

Practice	Level of Implementation
Nutrient Management on Crop	541,026 acres
Nutrient Management on Pasture	57,345 acres
Cover Crops	106,144 acres
Livestock Exclusion	53,763 acres
Stream Buffers	45,860 acres
Conservation Tillage w/ Continuous No-Till	448,534 acres

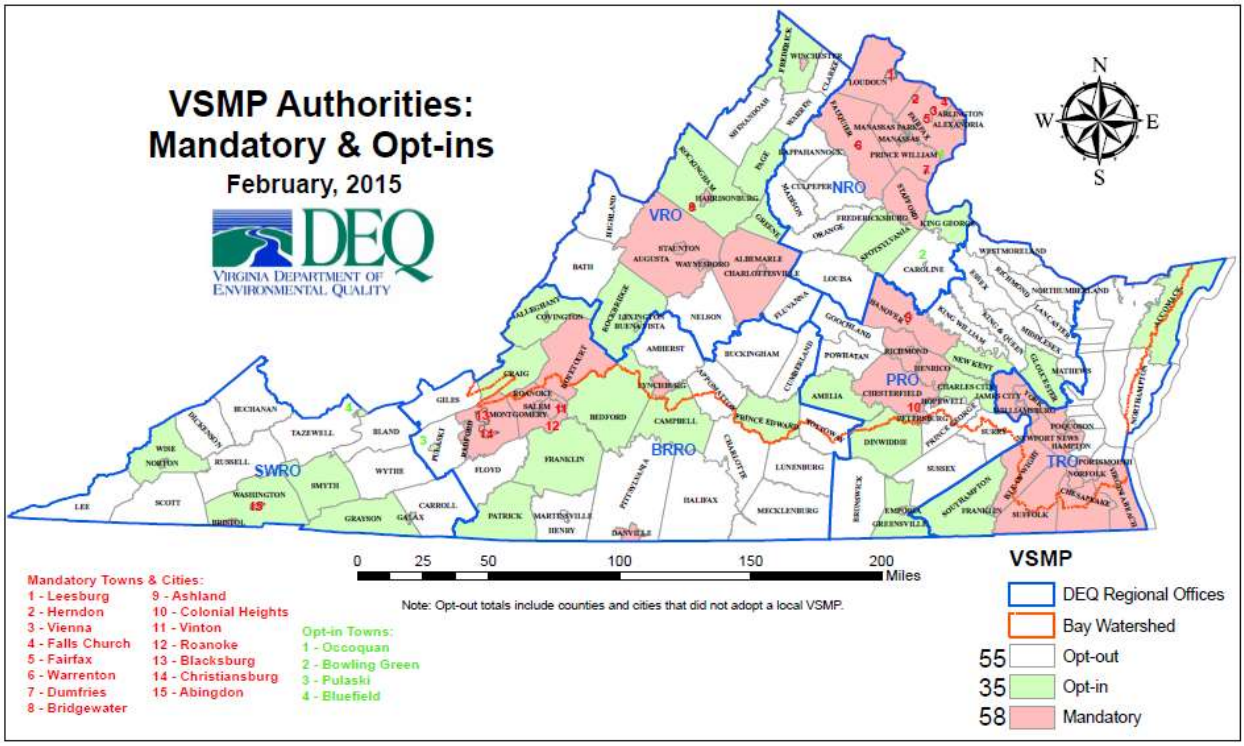
Livestock Stream Exclusion in Virginia

In FY13, DCR allocated approximately $3 million to fund the Virginia Enhanced Conservation Initiative (VECI) Program. This initiative provided 100% of the cost to implement qualifying livestock stream exclusion. DCR continued to offer 100% of the cost for the SL-6 (Stream Exclusion with Grazing Land Management) practice for both FY14 and FY15, after which time the cost-share percentage likely will be reduced. All participant enrollments received during this two-year period will be honored as cost-share funds become available, even if enrollment outpaces available funding during that time. Combined with VECI, in FY13-FY15, a total of $25 million was approved for state funded stream exclusion practices in the Chesapeake Bay watershed, The Virginia Soil and Water Conservation Board set aside $3 million in FY15 for stream exclusion outside the Chesapeake Bay basin. EPA Chesapeake Bay Grants provided a total of $1.7 million inside the Bay basin in FY15. Despite this level of commitment, as of March 30, 2015, $16 million of approved SL-6 practices are awaiting funding, with just over $4 million of that in the Chesapeake Bay watershed.

Virginia Resource Management Plan (RMP) Program
DCR is working closely with other departments and stakeholders to encourage the implementation of RMPs as a vehicle to meet the state's Bay TMDL implementation goals by 2025. The RMP is being considered as a "baseline" (defined as the level of conservation practices that must be in place before credits from the same land could be generated) in the draft Virginia nutrient trading regulations. This could further increase the implementation of RMPs in Virginia. DCR completed the development of the RMP Module of the tracking database in February 2015. The data system provides planning and tracking capabilities for the program. The Department recently awarded grant contracts for the development of 274 RMPs, covering 47,000 acres in the Chesapeake Bay watershed. These plans are scheduled for completion in December 2015. One Professional Engineer was hired by DCR in November 2014 to assist Soil and Water Conservation Districts with structural agricultural BMPs. DCR plans to hire at least one additional engineering staff person in FY16.

Developed & Developing Lands

Stormwater Management
As of April, 2015, 75 local governments have received final approval of their local stormwater management program. In addition, 19 local governments received provisional approval of their local stormwater management program. These 19 local governments are currently working with DEQ regional and central office staff to update their local stormwater management program ordinances to achieve full consistency with the Virginia Stormwater Management Act and attendant regulations.



To date, DEQ has reissued individual permits for 5 Phase 1 municipal separate storm sewer systems (MS4). The remaining 6 Phase 1, large MS4 permits have been drafted and are expected to be issued in 2015. The Phase 2, small MS4 General Permit was reissued July 1, 2013. These permits incorporate waste load allocations consistent with the Chesapeake Bay TMDL.

Stormwater Local Assistance Fund

The 2013 General Assembly authorized $35 million in bond proceeds to fund the Stormwater Local Assistance Fund (SLAF), which will provide 50% cost-share for local Stormwater Management Plan (SWMP) implementation projects, including new stormwater BMPs, installation or retrofit of stormwater control structures, low impact development projects, and stream and wetlands restoration.

The FY13, in response to a Request for Proposals (RFP), $39.4 million in total grant funding was requested from 35 localities, covering 113 individual projects. The recommended project funding list provides funding for the 71 eligible projects identified in the applications received from 31 localities with costs below $50,000 per pound of Total Phosphorus (TP) removal per year, totaling $22,937,158. This first phase of funding allowed for the initiation of projects with better environmental benefit and relative cost-effectiveness and allowed the remaining $12,062,842 to be carried over for an additional solicitation. This carryover was supplemented with an additional General Assembly-authorized $20 million in bond proceeds in FY 2015.

DEQ solicited applications for FY 2015 SLAF grant assistance and evaluated the 65 projects received from 25 localities totaling $21,613,776. After an evaluation of funding availability, project eligibility, priority ranking, and analyses of the cost effectiveness of the eligible projects, the recommended projects for this second phase of SLAF funding include 64 projects in 25 localities totaling $21,488,776. The remaining $6,511,224 will be carried over for a future solicitation. In addition, DEQ has set aside approximately $6 million as a contingency for funded project cost overruns. The General Assembly authorized an additional $5 million in general funds to SLAF for FY16.

TMDL Development

As of April, 2015, 36 TMDLs have been EPA approved in 2015 and another 12 are complete and will be submitted to EPA following State Water Control Board approval.[1]

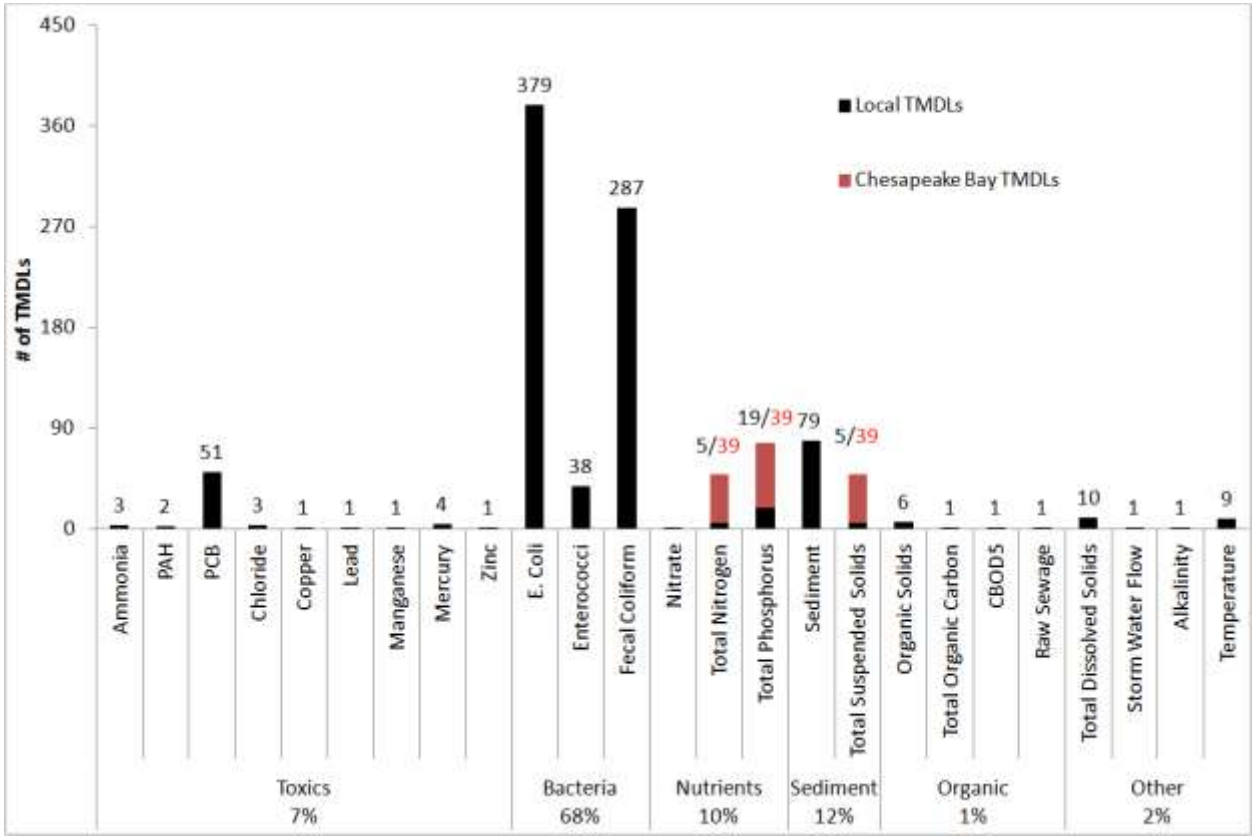
Based on the 2012 Integrated Report, Virginia estimates that over 1,000 impaired waters will require TMDL development in the coming years. To maintain a robust pace of TMDL development with level funding, Virginia has developed several strategies including a) developing TMDLs using a watershed approach to address multiple impairments in watersheds with similar characteristics; b) developing TMDLs in-house; c) identifying non-TMDL solutions, such as plans that outline BMP implementation strategies in predominantly NPS polluted watersheds, to address impairments; and d) developing TMDLs that are more easily

[1] Post-July 1, 2014, TMDLs will be adopted by the State Water Control Board prior to being formally submitted to EPA for approval. This process is in accordance with the exemption requirements in § 2.2-4006.A.14 of Virginia's Administrative Process Act (APA) for adoption, amendment, or repeal of waste load allocations in the Water Quality Management Planning Regulation, 9VAC25-720.

implemented. Virginia continues to explore tools and options for restoring and protecting water quality, both for environmental benefit and efficient program management.

Starting in the winter of 2014, states, including Virginia, began prioritizing watersheds for TMDL or TMDL alternative development for the approaching six year window (2016-2022). DEQ embarked on data analysis to identify high priority watersheds, particularly those that appear to be valued for the impaired designated use. All of the prioritized watersheds for TMDL or TMDL alternative development are now under review by field staff based on practical considerations such as existing monitoring plans, watershed characteristics, and stakeholder participation. Following this step, the final priorities will be reviewed by DEQ leadership and public noticed for public comment in July 2015.

Figure 1 below shows the number of TMDL Equations by Pollutant[2] set across Virginia since the inception of the TMDL program. Watersheds are prioritized for TMDL development based on risk, public interest, available monitoring, regional input, and available funding. TMDL development schedules are developed about every two years, and posted on Virginia's TMDL website: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLDevelopment.aspx.



[2] The graph includes TMDL equations reported previously and newly adopted equations, as well as corrections. The corrections reflect an internal review of the Water Quality Management Planning Regulation (9 VAC 25-720) that occurred in December, which resulted in changes to the number of TMDL equations by pollutant (e.g. PCBs, E. coli).

Chesapeake Bay Watershed Agreement

On June 16, 2014, the new Chesapeake Bay Watershed Agreement was signed by Virginia, Maryland, Pennsylvania, Delaware, West Virginia, New York, the District of Columbia, the U.S. EPA (on behalf of the federal government) and the Chesapeake Bay Commission. This plan for collaboration across the Bay's political boundaries establishes goals and outcomes for the restoration of the Bay, its tributaries and its watershed.
The agreement contains 10 goals, each linked to a set of outcomes, or time-bound and measurable targets that will directly contribute to its achievement. The agreement calls for the development of Management Strategies for each outcome within one year. Participating entities will then have an additional year to develop the first Biennial Workplans. The full text of the agreement and supporting information is available at:
http://www.chesapeakebay.net/chesapeakebaywatershedagreement/page.

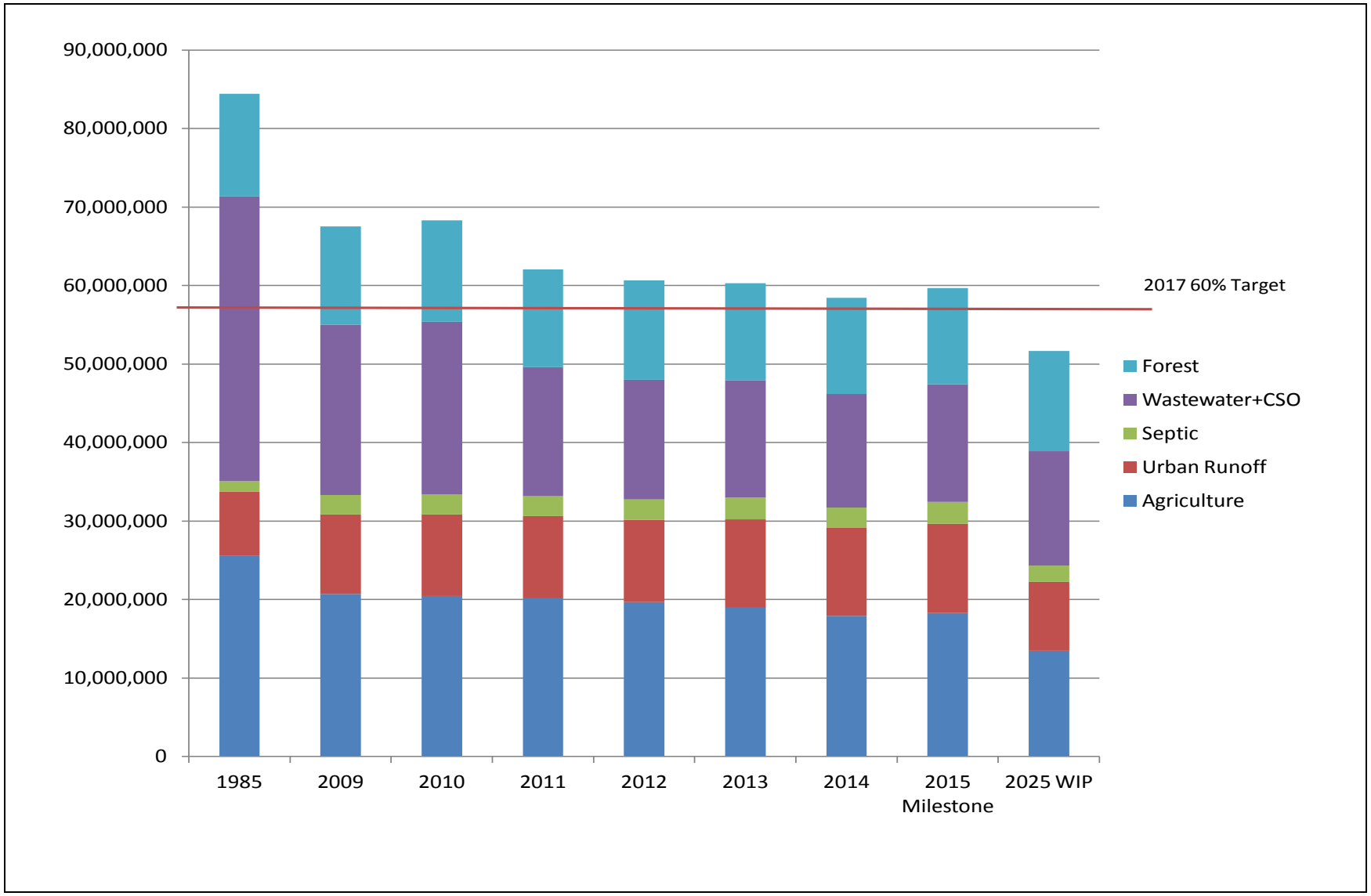
Staff from numerous Virginia agencies actively participated in the development of the Management Strategies. The draft Management Strategies are open for public comment through April 30, 2015 and scheduled to be finalized by July 2015. Staff will then turn their focus to developing the biennial workplan for each strategy.

The agreement outcomes will be incorporated into the Chesapeake Bay and Virginia Waters Clean-up Plan (§62.144.117 of the Code of Virginia) once the Management Strategies and Biennial Workplans are finalized. Once complete, the updated plan will form the framework for the Chesapeake Bay progress reporting requirements of §62.1-44.118 of the Code of Virginia, serving to inform the General Assembly oversight committees of the Commonwealth's progress in implementing the new agreement.

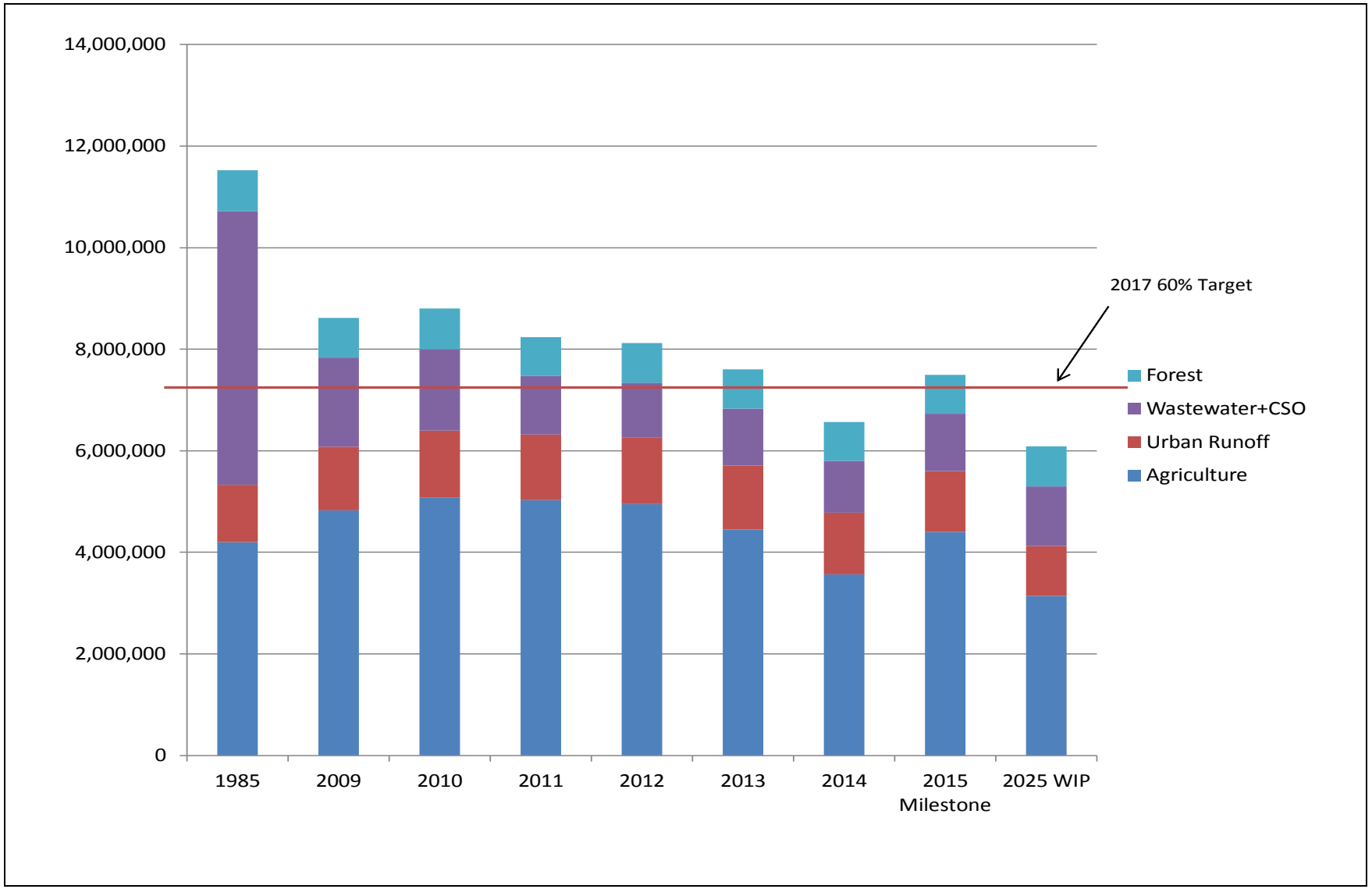
Chesapeake Bay 2014 Implementation Progress

Each year, Virginia, along with the other Bay watershed jurisdictions, submits implementation progress reports to the EPA Chesapeake Bay Program Office. At the same time, modelers at the Bay Program use the best available science to forecast the land use conditions for that progress year. This information is run through the Chesapeake Bay Watershed Model to produce loading estimates for nitrogen, phosphorus and sediment entering the Chesapeake Bay.
In progress year 2014, new data became available Bay watershed-wide from the 2012 Agricultural Census as well as updated population estimates for some areas. This information was incorporated into the Watershed Model and resulted in some significant changes to loads when compared to previous progress and milestones scenarios. For Virginia, the 2014 Progress Report included increased BMP implementation levels for many practices. The model results, depicted in the following graphs, suggest that we are ahead of schedule for meeting our nutrient reduction goals for the 2015 milestones and the 2017 60% target, while sediment reductions are lagging slightly behind the projected levels.

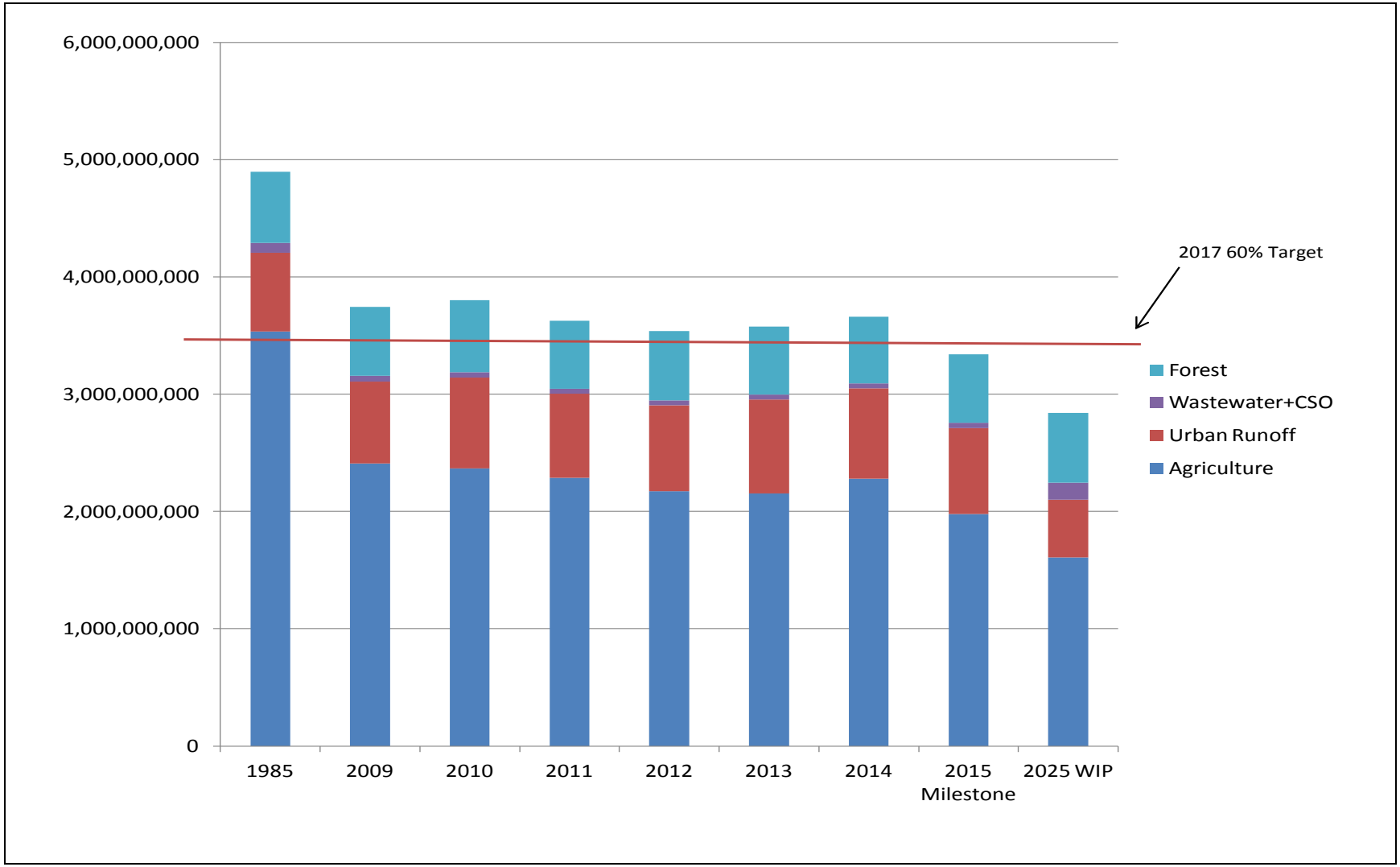
Virginia Delivered Nitrogen Loads per 5.3.2 Watershed Model (Pounds/Year)



Virginia Delivered Phosphorus Loads per 5.3.2 Watershed Model (Pounds/Year)



Virginia Delivered Sediment Loads per 5.3.2 Watershed Model (Pounds/Year)



Glossary of Acronyms

AOSS – Alternative Onsite Sewage Systems
BMP – Best Management Practice
BMP – Best Management Practice
CBIG – Chesapeake Bay Implementation Grant
CBRAP – Chesapeake Bay Regulatory and Accountability Program
DCR – Department of Conservation and Recreation
DEQ – Department of Environmental Quality
DMME – Department of Mines, Minerals, and Energy
DOF – Department of Forestry
FY – Fiscal Year
MS4 – Municipal Separate Storm Sewer System
NDZ – No Discharge Zone
NPS – Nonpoint Source
NRDA – Natural Resource Damage Assessment
PCB – Polychlorinated Biphenyl
PMP – Pollution Minimization Plan
RFP – Request for Proposals
SFY – State Fiscal Year
SLAF – Stormwater Local Assistance Fund
SWMP – Stormwater Management Plan
TMDL – Total Maximum Daily Load
TP – Total Phosphorous
VDACS – Virginia Department of Agriculture and Consumer Services
VDH – Virginia Department of Health
VDOT – Virginia Department of Transportation
VENIS – Virginia Environmental Information System
VENIS - Virginia Environmental Information System
VPDES - Virginia Pollutant Discharge Elimination System
VMRC – Virginia Marine Resource Commission
VSMP – Virginia Stormwater Management Program
WIP –Watershed Implementation Plan
WLA – Waste Load Allocation