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 2016

TABLE OF CONTENTS

Executive Summary

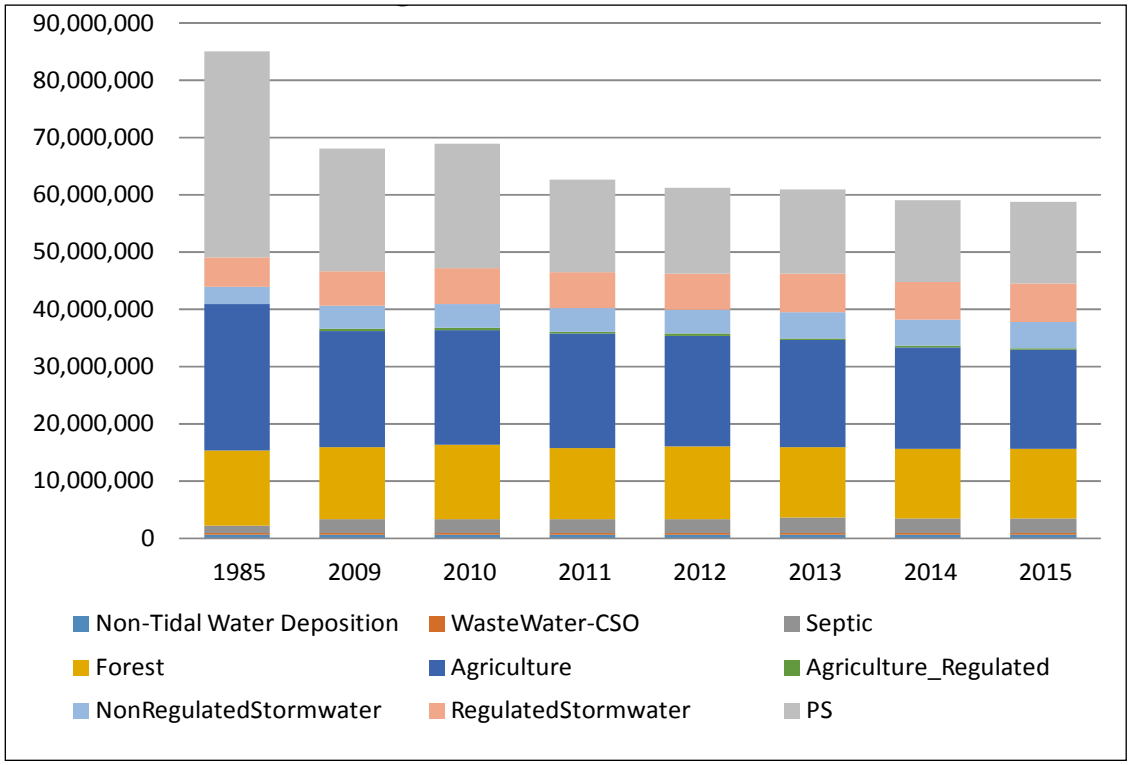
This report was developed to comply with water quality reporting requirements stipulated in §62.1-44.118 of the Code of Virginia. This section of the Code requires the Secretary of Natural Resources to submit semiannual progress reports May 1 and November 1 regarding implementation of the impaired waters 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, various Virginia agencies have invested significant time and effort 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 2015 Progress results for complying with the Chesapeake Bay TMDL, indicating that we met our nutrient reduction goals for the 2015 milestone period and we are ahead of schedule for 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.

Chesapeake Bay 2015 Implementation Progress

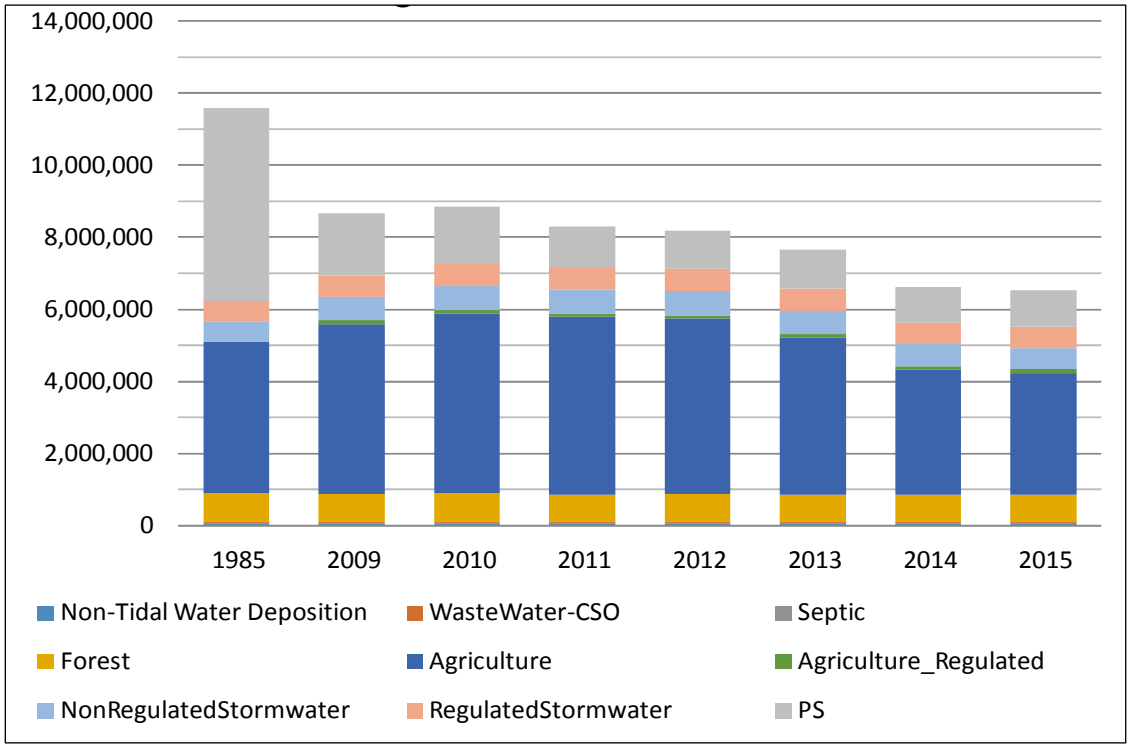
Each year, Virginia, along with the other Bay watershed jurisdictions, submits implementation progress reports to the EPA Chesapeake Bay Program Office. At the same time, modelers at the Bay Program use the best available science to forecast the land use conditions for that progress year. This information 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 2015 Progress Report included increased best management practices (BMP) implementation levels for many practices. The model results, provided by EPA's Chesapeake Bay Program Office and depicted in the following graphs, suggest that we met our goals for the 2015 milestones and that we are ahead of schedule for the 2017 60% target for nutrient reductions, while sediment reductions are lagging slightly behind the projected levels.

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



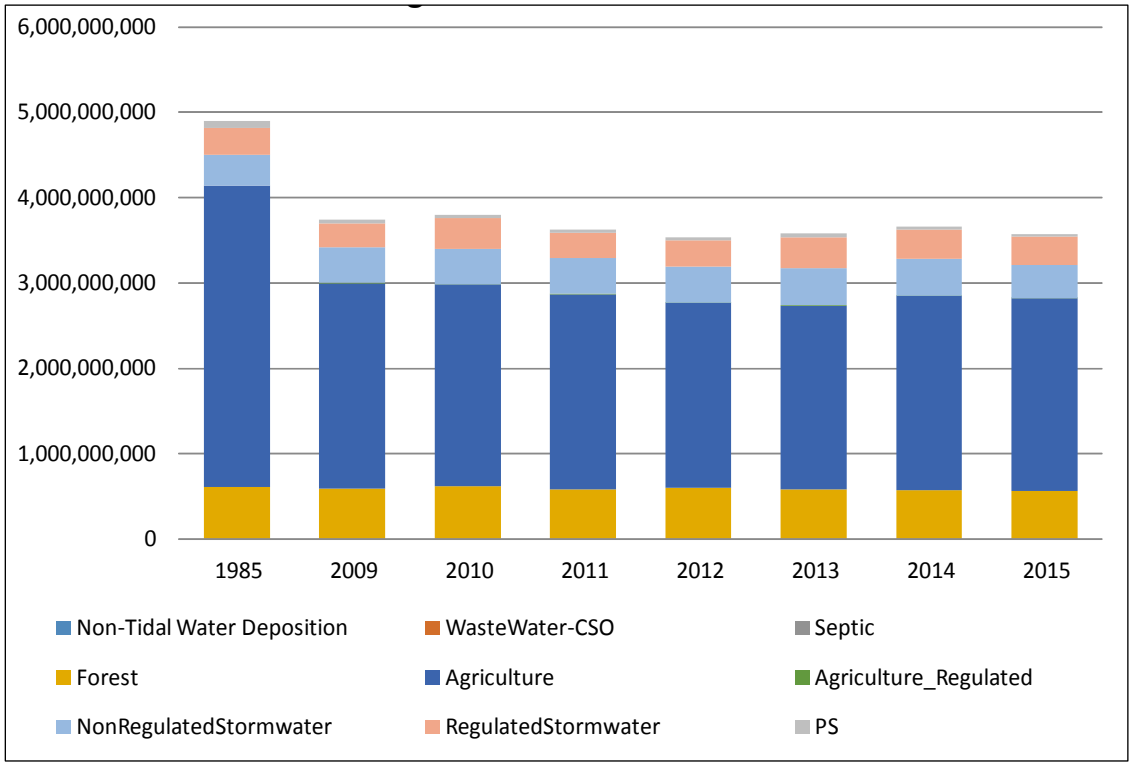
(Source: EPA CBPO, April 2016)

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



(Source: EPA CBPO, April 2016)

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



(Source: EPA CBPO, April 2016)

TMDL Development

As of April 2016, 13 TMDL equations, each representing a watershed area draining to impaired surface waters, have been EPA approved since November 2015 and another 33 (31 new, 2 revised) 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 nonpoint source (NPS) polluted watersheds, to address impairments; and d) developing TMDLs that are more easily 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 during 2016-2022 were assembled into a list and public noticed for public comment on July 27, 2015. Only one comment was received and addressed by DEQ. It did not result in any changes to the priorities list that was then finalized following the close of the 30-day public comment period and submitted to EPA. After a few months of implementing the priorities list, EPA announced that states could revise their priorities lists and include TMDL revisions in the list. Accordingly, in the winter of 2016 DEQ revised the list of prioritized impaired waters and public noticed it for public comment on April 4, 2016.

Watersheds are prioritized for TMDL development based on types of impairment, 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.

Wastewater

No Discharge Zones

In 2014, the Department of Environmental Quality (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

[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.

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.

Agriculture and Forestry

Virginia Resource Management Plan (RMP) Program
The Department of Conservation and Recreation (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. As of December 2015, 278 resource management plans were written in the Chesapeake Bay watershed, covering more than 48,500 acres. The Department has awarded an additional grant in the Chesapeake Bay watershed for plan development work to be completed on another 12,000 acres by June 30, 2016. One Professional Engineer was hired by DCR in November 2014 to assist Soil and Water Conservation Districts with structural agricultural BMPs. DCR hired one additional staff person to assist with agricultural BMP engineering in 2015.

DCR completed a Resource Management Plan Program Highlights Report covering July 1, 2014 through October 31, 2015. The report outlines the status and activities of the RMP Program, including development of an RMP computer module, farm certification process, plan developer certification process, funding, and marketing and program results.

Developed & Developing Lands

Chesapeake Bay Preservation Act Implementation
The Chesapeake Bay Preservation Act continues to be implemented by the 84 localities within the Tidewater region of Virginia. During this fiscal year, DEQ re-initiated the compliance review process for localities subject to the Bay Act. Compliance reviews are underway for eight Bay Act localities and another 11 are due to be completed by the end of calendar year 2016.

Through their annual reports, localities subject to the Bay Act reported that 240 soil and water conservation agricultural assessments were conducted on active agricultural lands. These assessments are required in the Bay Act regulations and specify that all active agricultural lands are to be assessed to determine if there are effective agricultural practices. The annual reports also showed that 17,828 septic systems were pumped (resulting in 8,914 lbs of nitrogen reduction).

Stormwater Management

As of April 2016, 83 local governments have received final approval of their local stormwater management program. In addition, twelve local governments received provisional approval of their local stormwater management program. These twelve local governments are currently in the process of gaining the approval of their local elected bodies for ordinance updates required by DEQ.

To date, DEQ has reissued individual permits for five Phase 1 municipal separate storm sewer systems (MS4). The remaining six Phase 1, large MS4 permits have been drafted and are expected to be issued in 2016. 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.

In response to a Request for Proposals (RFP) for the FY2013 SLAF, $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 FY2015.

DEQ solicited applications for FY2015 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.

From the appropriation provided in the Commonwealth's 2016 Budget, up to $5 million of new appropriation was provided to the SLAF in FY2016. With the addition of approximately $3.5 million carried over from previous SLAF funding, a total of approximately $8.5 million was available for new SLAF projects. DEQ solicited applications for FY2016 SLAF grant assistance

and evaluated the 77 projects received from 25 localities totaling $36,034,351. After an evaluation of the eligible projects, the recommended projects for this phase of SLAF funding include 17 projects in 17 localities totaling $8,486,209 million. The projects recommended for authorization this fiscal year represent the highest ranked project from each locality moving down through the ranking list until all available funds were exhausted. This provides funding for 22% of the projects submitted, to 65% of the localities requesting funding, addressing 23.6% of the total amount requested.

Dan River Coal Ash Spill and State Response

On February 2, 2014, security staff at the Duke Energy Dan River Facility in Eden, NC, observed liquefied coal ash leaking from their primary ash storage pond into the Dan River. A sinkhole had formed inside the primary ash pond due to a break in a 48-inch diameter stormwater pipe that ran underneath. Coal ash is the residue generated from burning coal, and is generally stored at power plants or placed in landfills. Coal ash has a large variety of ingredients – mostly silicon oxide, iron oxide and aluminum oxide, with trace amounts of arsenic, selenium, mercury, boron, thallium, cadmium, chlorides, bromine, magnesium, chromium, copper, nickel, and other metals. It was estimated that about 39,000 tons of coal ash and 27 million gallons of pond water were released into the Dan River. A second, 36-inch stormwater drain pipe discharging arsenic-contaminated water was also identified during this period and subsequently plugged by February 21, 2014.

Emergency response and environmental monitoring was conducted over the next 10-12 months by EPA, DEQ, U.S. Fish and Wildlife Service (USFWS), North Carolina Department of Environment and Natural Resources (NCDENR) and Duke Energy. Analytical results for water samples taken by DEQ staff at four river stations and two reservoir stations located in Virginia's portion of the river showed no violations of water quality standards for the protection of aquatic life. Sediment samples taken from the same locations showed some relatively elevated levels of trace metals, but not above any freshwater ecological screening levels that DEQ uses to indicate potential concerns. In addition to the emergency response environmental monitoring, to protect human health the Virginia Department of Health was involved in finished drinking water testing with the localities that draw their water from the Dan River (Danville, South Boston and Clarksville). All finished water met state and federal drinking water standards throughout the emergency, while the localities ensured compliance by increasing chemical precipitation and segregating the solids removed for proper disposal.

State and federal agencies, along with Duke Energy, continue to monitor the Dan River for potential ecological impacts. DEQ continues implementing its long-term (3 to 5 years) monitoring plan composed of several elements (see map below):

- Monthly water column and sediment sampling at four river stations and two Kerr Reservoir stations.
- Fish tissue collection at eight sites, once at each location annually, during the period September - October.
- "Boatable Probabilistic" monitoring (habitat, macroinvertebrates, fish community structure, and expanded chemical testing) at two stations; sampling done annually in late summer.

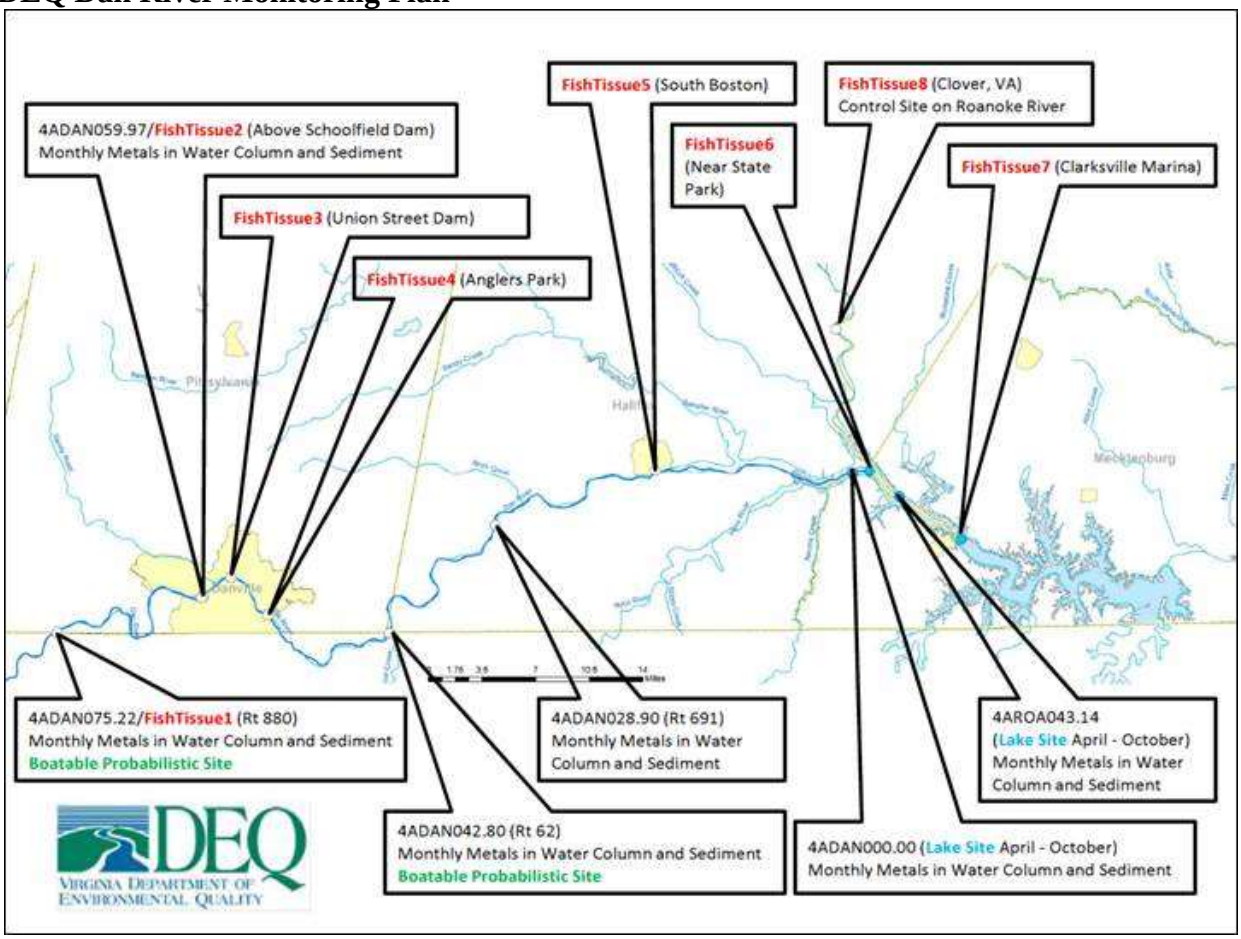
Data collected is being used as part of a basinwide Natural Resources Damage Assessment and Restoration (NRDAR) process being led by USFWS.

Results to-date indicate:

- Sediment metals levels remain low, below thresholds of potential concern, and the ash is becoming mixed and covered by native sediment to non-detectable levels in the biologically active layer throughout the river
- Water column dissolved metals levels remain below water quality standards for both aquatic life and human health protection
- Fish tissue collection and analysis has been completed for all samples taken (320 total) in 2014 and 2015. Lab results are under review by DEQ and Virginia Health Department staff, but early indications are that uptake by fish does not appear to be a concern for metals associated with the coal ash. However, for fish taken in the region of the river where there is an existing consumption advisory due to legacy mercury contamination not associated with the Duke Energy release, the need for the advisory is confirmed.

A group composed of state and federal natural resources Trustees has finalized an early-restoration plan and solicited public input on specific projects that Duke Energy can undertake for environmental improvement and enhancement in the Dan River basin. At their June 25, 2015 meeting, the State Water Control Board approved an enforcement Consent Order negotiated with Duke Energy that included a $2.5 million settlement. Under the Order, Duke Energy has agreed to undertake $2.25 million in environmental projects that benefit Virginia localities affected by the spill. The remaining $250,000 will be placed in the fund DEQ uses to respond to environmental emergencies. Duke Energy is now considering several “early restoration” projects to be implemented before the NRDAR process is completed, including some within Virginia.

DEQ Dan River Monitoring Plan



Regulation and Management of Coal Ash Impoundments in Virginia

Coal ash impoundments throughout the Commonwealth of Virginia are transitioning to closure. This process will include continued oversight by DEQ and the Virginia Department of Conservation and Recreation Dam Safety Program. Discharges from the dewatering of these impoundments will be addressed through Virginia Pollutant Discharge Elimination System (VPDES) permits which contain monitoring requirements, metals limits, and other necessary conditions. The closures of the impoundments will also include DEQ oversight through waste permitting requirements including plan reviews, groundwater and surface water monitoring, post-closure care requirements, and other necessary conditions.

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