

Virginia Department of Environmental Quality
Draft 2022 Water Quality Integrated Report
Public Comment – Response Document

Comments received
July 4, 2022 to August 5, 2022

Table of Contents

Comments from Virginia Association of Municipal Wastewater Agencies (VAMWA) 3
 DEQ Response..... 5

Comments from Western Virginia Water Authority..... 6
 DEQ Response..... 11

Comments from Chesapeake Bay Foundation..... 13
 DEQ Response..... 16

Comments from Hampton Roads Sanitation District..... 18
 DEQ Response..... 21

Comments from Environmental Integrity Project..... 22
 DEQ Response..... 27

General Public Comments Received and DEQ Response..... 29

Comments from Virginia Association of Municipal Wastewater Agencies (VAMWA)



VIRGINIA ASSOCIATION OF MUNICIPAL WASTEWATER AGENCIES, INC.

P.O. Box 51

Richmond, Virginia 23218-0051

Tel (804) 716-9021 • Fax (804) 716-9022

MEMBER AGENCIES

Alexandria Renew Enterprises
County of Arlington
Augusta County Service Authority
Blacksburg-VPI Sanitation Authority
County of Chesterfield
Coeburn-Norton-Wise Reg. Wastewater Auth.
Town of Culpeper
City of Danville
County of Fairfax
Frederick Water
Frederick Winchester Service Authority
Town of Front Royal
Hampton Roads Sanitation District
County of Hanover
Harrisonburg-Rockingham Reg. Sewer Auth.
County of Henrico
Hopewell Water Renewal
Town of Leesburg
Loudoun Water
City of Lynchburg
City of Martinsville
Pepper's Ferry Regional Wastewater Auth.
Prince William County Service Authority
City of Richmond
Rivanna Water and Sewer Authority
South Central Wastewater Authority
County of Spotsylvania
County of Stafford
Upper Occoquan Service Authority
City of Waynesboro
Western Virginia Water Authority
City of Winchester

ASSOCIATE MEMBER AGENCIES

Amherst County Service Authority
Town of Amherst
Bedford Regional Water Authority
Town of Bowling Green
City of Buena Vista
County of Campbell
County of Caroline
Town of Colonial Beach
County of Culpeper
D.C. Water
Dinwiddie County Water Authority
Fauquier County Water & Sanitation Auth.
City of Fredericksburg
County of Goochland
Halifax County Service Authority
Henry County Public Service Authority
King George County Service Authority
Town of Kilmarnock
Louisa County Water Authority
Maury Service Authority
Montgomery County Public Service Auth.
County of New Kent
Town of Onancock
County of Powhatan
Town of Purcellville
Rapidan Service Authority
County of Shenandoah
Town of Strasburg
Sussex Service Authority
Town of Tappahannock
Town of Warsaw
Wise County Public Service Authority
Town of Woodstock

CONSULTANT MEMBERS

ARCADIS
Black & Veatch
CDM Smith
Dewberry Engineers
Greeley and Hansen
Hazen and Sawyer
Jacobs
Ramboll Americas

ASSOCIATE CONSULTANT MEMBERS

AECOM
Brown and Caldwell
Burns & McDonnell Engineering
Carollo Engineers
CHA Consulting
Draper Aden Associates
GHD
HDR, Inc.
Johnson, Mirmiran & Thompson
Kennedy Jenks Consultants
Kimley-Horn & Associates, Inc.
Mangrum Consulting & Design
McGill Associates, P.A.
Pennonni Associates Inc.
Potesta & Associates
RK&K
Short Elliot Hendrickson (SEH)
Stantec
Timmons Group
Whitman, Requardt & Associates
WileyWilson
WW Associates

LEGAL COUNSEL

AquaLaw PLC

August 3, 2022

By U.S. Mail & Email (Sandra.Mueller@deq.virginia.gov)

Ms. Jutta Schneider
Water Planning Division Director

Ms. Sandra E. Mueller
Office of Water Monitoring and Assessment

Ms. Amanda Shaver
Office of Water Monitoring and Assessment

Virginia Department of Environmental Quality
1111 East Main Street
Suite 1400
Richmond, Virginia 23219

Re: 2022 Water Quality Assessment Integrated Report (Draft)

Dear Ms. Schneider, Ms. Mueller, Ms. Shaver:

Please accept this comment in support of the Department's draft 2022 Integrated Report. This is submitted on behalf of the Virginia Association of Municipal Wastewater Agencies and its Water Quality Committee. As you know, VAMWA represents approximately 65 clean water utilities, whose purpose is to work together to promote water quality based on scientific principles and sound policy.

We support the approach and procedures of the draft IR, and we appreciate the July webinar which was helpful.

As always, we appreciate the efforts of the Department and its personnel on the IR and related matters.

Sincerely,

Jamie S. Heisig-Mitchell
Chair, Water Quality Committee

Copy: VAMWA Board
VAMWA Water Quality Committee
Christopher D. Pomeroy, Esq.

DEQ Response: DEQ appreciates the letter of support and positive feedback on the public webinar.

Comments from Western Virginia Water Authority



August 4, 2022

VIA EMAIL

Sandra Mueller
Virginia Department of Environmental Quality
Office of Water Monitoring and Assessment
P.O. Box 1105
Richmond, VA 23218-1105

Re: Draft 2022 305(b)/303(d) Water Quality Assessment Integrated Report
Roanoke and Yadkin River Basins
L04R-03-BEN Roanoke River / Benthic 5A

Dear Ms. Mueller:

Thank you for the opportunity to comment on the draft 2022 Integrated Report. My comments are related to a particular segment of the main stem of the Roanoke River from Niagara Dam to the mouth of Back Creek. This segment has been listed for benthic assessment and I have attached a page from the report as reference.

My comments relate to the description of the segment, specifically:

- 1. Request for Sampling.** The text suggests that the Western Virginia Water Authority (Authority) requested sampling of the impaired segment. This is incorrect. DEQ staff approached Authority staff about their plans to conduct sampling of this segment in preparation for TMDL development. The Authority agreed to participate in DEQ's sampling and data collection efforts but did not request that DEQ initiate such efforts. In addition, the Authority's water pollution control plant is not within the impaired segment and is roughly 4.75 miles from DEQ's sample point (4AROA198.08) and the Save Our Streams (SOS) station noted in the report. Between these points are Niagara Dam and two separate tributary confluences with the Roanoke River, one, Tinker Creek, being the largest tributary to the river in the upper watershed.
- 2. 2021-22 VSCI Sampling.** While the text description is essentially correct, not stated is that 50% of the samples were collected at a reference station outside the impaired segment and upstream of the Authority's WPC Plant. Both sample stations were below DEQ's benchmark of 60 and consistent with previous sample events on this portion of the Roanoke River. In fact, the reference station is located in a benthic-impaired river segment with a completed TMDL that identified sediment as the primary stressor.
- 3. Discussion of benthic communities.** The text states that sampling demonstrates the presence of organisms that "typically dominate streams that have high amounts of organic matter". This is not reflected in the most recent sampling data and appears to be a "text carryover" from previous reports. In fact, this is not even a parameter being evaluated by DEQ at this time. These references should be removed as they are no longer relevant (likely never were).

Our Mission is Clear

601 S. Jefferson Street • Roanoke VA 24011
540-282-2904 • www.westernvawater.org

The text also discusses excessive filamentous algae and periphyton growth and suggests that excess nutrients are the cause. However, this is not reflected in the most recent sampling data and appears to be another "carryover" from previous reports. The source of the "excessive filamentous algae and periphyton growth" reference was from a SOS volunteer visual observation more than 10 years ago. This conclusion was reached without nutrient sampling or comparative analyses of the algae present at the time. I commented on this in a letter to Mr. Darryl M. Glover dated July 10, 2008 for the draft 2008 Integrated Report and noted that the text was speculative, contradictory and might bias future benthic investigations and corrective actions, which now appears to be the case.

As with the current VSCI sampling, Chlorophyll A sampling at the impaired station and reference station are the essentially same with the reference station having slightly higher concentrations. Again, these references to excessive algae growth should be removed as they are no longer relevant or reflective of current conditions.

- 4. Hydraulic Modification of stream segment.** The totality of the data collected in the most recent sampling window suggests that the impairment is likely caused by the hydraulic modification of the river (Niagara Dam) yet this is not discussed as a likely stressor. Given the wealth of data collected around the Commonwealth on the effects of dams on downstream aquatic environments, this should be investigated by DEQ staff and listed as the likely stressor.

Thank you for the opportunity to comment. Authority staff value our relationship with DEQ and have appreciated their involving us in this analysis. Please do not hesitate to contact me if you have any questions.

Sincerely,



Michael T. McEvoy
Executive Director

cc: Scott Shirley, COO Water Quality

**Virginia Department of Environmental Quality
Appendix 4 - Fact Sheets for
Impaired (Category 4 or 5) Waters in 2022**

Roanoke and Yadkin River Basins

Cause Group Code: L04R-03-BEN Roanoke River

Cause Location: Roanoke River mainstem from Niagara Dam downstream to the mouth of Back Creek.

Cause City/County: Bedford County; Roanoke County

Use(s): Aquatic Life

Causes(s)/VA Category: Benthic Macroinvertebrates Bioassessments/5A

Cause Description: The benthic impairment is extended downstream with the 2008 Integrated Report (IR) for 3.16 miles from Niagara Dam downstream to the mouth of Back Creek. The 2008 and 2010 Integrated Reports assigned a Cause Group Code of L04R-01-BEN incorporating the entire 14.45 mile benthic impairment. This 3.14 mile portion is Category 5A as the TMDL Study did not address these waters. Thus a new Cause Group Code of L04R-03-BEN is assigned with the 2012 Integrated Report. The impairment does not include the impounded waters of Niagara Dam.

4AROA198.08- (Explore Park near the Shenandoah Pavilion) The 20122 data window contains eight VSCI surveys (2015-17), 2020 (spring/fall) with an overall average score of 50. (Bio 'IM').

The 2018 data window contains six VSCI surveys (spring & fall, 2014-2016) with an overall average score of 53.1 (Bio 'IM'). This station was sampled at the request of local Virginia SOS citizen monitors and the Western Virginia Water Authority (WVWA). SOS has a station in the reach along Explore Park and WVWA has a wastewater treatment plant (WWTP) upstream in the city of Roanoke. Previous surveys yielded benthic communities dominated by net-spinning caddisfly larvae (Hydropsychidae) and the fourth was dominated by midges (Chironomidae). These organisms typically dominate streams that have high amounts of organic matter. All surveys had lower taxa richness and diversity as well as low numbers of pollution-sensitive taxa such as mayflies and stoneflies and caddisflies Instream habitat, riparian zone vegetation, and bank stability were all optimal providing conditions favorable for a healthy benthic community. However, filamentous algae and periphyton growth was thick on stream substrates indicating that nutrients may be excessive in this reach of the Roanoke River.

The 2016 data window finds impairment from four spring and fall VSCI surveys (2010 & 2014) with an average score of 46.4. Previous surveys yielded benthic communities dominated by net-spinning caddisfly larvae (Hydropsychidae) and the fourth was dominated by midges (Chironomidae). These organisms typically dominate streams that have high amounts of organic matter. All surveys had low taxa richness and diversity as well as low numbers of pollution-sensitive taxa such as mayflies and stoneflies. Instream habitat, riparian zone vegetation, and bank stability were all optimal providing conditions favorable for a healthy benthic community. However, filamentous algae and periphyton growth was thick on stream substrates indicating that nutrients may be excessive in this reach of the Roanoke River. There were no additional within the 2014 data window. The 2012 assessment reports four VSCI surveys (fall 2005 & fall 2009 & 2010 spring & fall) with an average score of 51.5. 2010 and 2008 data windows contain two VSCI surveys 2005 and 2006 both fall scores are 56.3 and 55.0.

| Assessment Unit / Water Name / Location Desc. | Cause Category | Cause Name | Cycle First Listed | TMDL Dev. Priority | Water Size |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------|--------------------|--------------------|------------|
| VAW-L04R_ROA01A00 / Roanoke River / Roanoke River mainstem waters from Niagara Dam downstream to the mouth of Back Creek (PWS section 6i) (RU14). | 5A | Benthic Macroinvertebrates Bioassessments | 2008 | H | 3.17 |

Roanoke River

Aquatic Life

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

| Estuary (Sq. Miles) | Reservoir (Acres) | River (Miles) |
|---------------------|-------------------|---------------|
| | | 3.17 |

Virginia Department of Environmental Quality
Appendix 4 - Fact Sheets for
Impaired (Category 4 or 5) Waters in 2022

Sources: Discharges from Municipal Separate Storm Sewer Systems (MS4); Industrial Point Source Discharge; Industrial/Commercial Site Stormwater Discharge (Permitted); Municipal (Urbanized High Density Area); Municipal Point Source Discharges; Post-development Erosion and Sedimentation; Residential Districts; Sediment Resuspension (Clean Sediment); Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

DEQ Response: DEQ appreciates the comments. Responses to specific comments are provided below.

WVWA Authority Comment 1. Request for Sampling.

DEQ Response: DEQ will remove the following sentence and phrase from the L04R-03-BEN 2022 IR Impaired Waters Fact Sheet as indicated by the strikethrough text below:

~~This station was sampled at the request of local Virginia SOS citizen monitors and the Western Virginia Water Authority (WVWA). SOS has a station in the reach along Explore Park and WVWA has a wastewater treatment plant (WWTP) upstream in the city of Roanoke.~~

WVWA Authority Comment 2. 2021-22 VSCI Sampling.

DEQ Response: The typo (20122) and wording has been edited. The sentence that summarizes the most recent data collected at 4AROA198.08 now reads:

The 2022 data window contains eight VSCI surveys (2015-17, 2020) with an overall average score of 50 (Bio 'IM').

The 2022 Integrated Report data window includes data collected from January 2015 through December 2020; data collected in 2021-2022 will be assessed and included in the 2024 Integrated Report. Impaired waters fact sheets include a summary of current assessment data first, followed by relevant historical information including observations by regional biologists as recorded on biological monitoring field sheets.

The Roanoke River segment included in Cause Group Code L04R-03-BEN was assessed with data collected from DEQ station 4AROA198.08. DEQ is preparing for TMDL development (currently scheduled for 2023-2024) to address the benthic impairment in L04R-03-BEN by conducting a monitoring special study to collect data to determine potential stressors. WVWA's comments regarding upstream stations and the upstream benthic TMDL have been shared with DEQ's TMDL staff. TMDL development for L04R-03-BEN will consider all available data, will include a thorough investigation of stressors, and will provide opportunities for public participation. WVWA is encouraged to participate in the TMDL development process.

WVWA Authority Comment 3. Discussion of benthic communities.

DEQ Response: The stressor identification process to determine cause(s) to benthic macroinvertebrate community impairment will be an integral part of TMDL development. Until a stressor(s) is/are identified, observations from DEQ's biological monitoring program and prior assessment data will continue to be included in the IR fact sheets to provide context and a historical record for the public and for consideration by the TMDL development team. This was also noted in DEQ's response to similar comments from WVWA on the 2008 IR.

Algae data were collected in this reach in 2021 and 2022, and are therefore not included in the 2022 IR assessment cycle.

WVWA Authority Comment 4. Hydraulic Modification of stream segment.

DEQ Response: WVWA's comment regarding hydraulic modification has been shared with DEQ TMDL staff. A more thorough evaluation of the data collected in the ongoing water quality monitoring special study is needed to determine the effect of the upstream dam. This will occur as part of the TMDL development process. Please see DEQ Response to WVWA Comment 2 with respect to TMDL development.

Comments from Chesapeake Bay Foundation



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

August 4, 2022

OFFICERS

Elizabeth Oliver-Farrow
CHAIR

Otis S. Jones
VICE CHAIR

Hilary Harp Falk
PRESIDENT AND CEO

David A. Fogle
TREASURER

William A. Agee
SECRETARY

TRUSTEES

Marnie Abramson

Dara C. Bachman

R. Bruce Bradley

Joan P. Brock

George L. Bunting Jr.

Michael J. Chiaramonte

Brian Cobb

Margaret M. Freeman

Alexandra Grayson

Jennifer E. Green

Harry S. Gruner

Ann D. Horner

Robert A. Kinsley II

Katie Z. Leavy

Jonathan D. Manekin

Anne Mehninger

Pamela B. Murphy

Mamie A. Parker, Ph.D.

Crystal Patterson

Anna R. Pauletta

Ann Pelham

Nathaniel J. Rose

Janine J. Smith

J. Sedwick Sollers III

R. Todd Stravitz, MD

Sandra E. Taylor

Preston M. White

Robert N. Whitescarver

Stephen M. Wolf

**HONORARY
TRUSTEES**

Donald F. Boesch, Ph.D.

W. Russell G. Byers Jr.

D. Keith Campbell

Louisa C. Duemling

Richard L. Franyo

Alan R. Griffith

Carolyn Groobey

Ann Fritz Hackett

C.A. Porter Hopkins

T. Gaylon Layfield III

Harry T. Lester

Byron F. Marchant

M. Lee Marston

Wayne A. Mills

Arnold I. Richman

Marie W. Ridder

James E. Rogers

Truman T. Semans

Simon Sidamon-Eristoff

Jennifer Stanley

Thomas H. Stoner

Bishop Eugene Taylor Sutton

Alan L. Wurtzel

Sandra Mueller
Department of Environmental Quality
P.O. Box 1105
Richmond, 23218

Via email: sandra.mueller@deq.virginia.gov

Dear Ms. Mueller:

On behalf of the Chesapeake Bay Foundation (CBF), we thank you for the opportunity to provide comments on the draft 2022 Integrated Report. We appreciate the Department of Environmental Quality's (DEQ) efforts to assess water quality across the Commonwealth. The draft 2022 Integrated Report clearly shows Virginia's waterways are severely degraded, limiting designated uses across the state.

CBF is a non-profit organization founded in 1967 and is devoted to the restoration and protection of the Chesapeake Bay. We are the largest independent conservation organization dedicated solely to the fight for effective, science-based solutions to the pollution degrading the Bay and its rivers and streams within the 64,000-square-mile-watershed. CBF boasts more than 91,000 members in Virginia and conducts restoration activities through advocacy, education, and litigation.

The draft 2022 Integrated Report provides critical information for improving Virginia's waterways and initiates important rule making for addressing these impairments. We are grateful for the agency's work to develop this report and hope it leads to improved resource protection.

New guidance on assessment of Harmful Algal Blooms

Harmful Algal Blooms, which are exacerbated by nutrient loading, represent an important impact to state waters and can degrade recreational and aquatic life designated uses. We appreciate DEQ's implementation of new guidance—which incorporates Virginia Department of Health (VDH) recreational advisories for listing determinations for the first time.

We urge the agency to provide an inventory of waterways which have dedicated monitoring to support such advisories. Specifically, it would be helpful to address how many waterways are evaluated for advisories each year and what proportion of these are complaint driven.

This summary could follow the standard category assessment summary of waterways and would provide insight into where lack of water quality monitoring may be limiting assessment, which is an important role of this report. Since DEQ is relying upon VDH monitoring to assess waterways for recreational designated uses, the underlying VDH survey process should be included within this report.

Assessment of Submerged Aquatic Vegetation standards

The draft report includes assessment of the tidal waters of the Chesapeake Bay for Submerged Aquatic Vegetation (SAV). Water quality standards for five of the Chesapeake Bay tidal segments are currently proposed by the agency to be revised as a result of Virginia DEQ's recent triennial review process. The proposed revisions will substantively influence the assessment of these waterways, as reported in Figure 4.6-8. *We urge DEQ to update the figures to include the current proposed standards or provide clarifying information that these are likely to be revised in the near future.*

Incorporating freshwater mussels into the Non-Point Source (NPS) Assessment and other benthic assessments

The NPS Assessment plays a critical role in prioritizing the use of restoration funds to benefit aquatic life. Further, it is a pivotal tool for addressing non-point source pollution which drives a significant proportion of Virginia's impairments.

We urge the agency to include indices of freshwater mussels and their habitat in the NPS Assessment. Freshwater mussels are sensitive to pollutants and are broadly imperiled, yet they are not incorporated alongside other benthic macro-invertebrates. Further, non-point source restoration, particularly with riparian forested buffers, is a primary need for this group of species as documented in Virginia's 2022 Wildlife Action Plan. We urge the agency to include freshwater mussels in the assessment of benthic aquatic life.

Thank you for your consideration of our comments and we would be happy to discuss any questions.

Sincerely,



Joseph D. Wood, Ph.D.
Virginia Senior Scientist



Patrick J. Fanning
Virginia Staff Attorney

cc: Mike Rolband, DEQ
Bryant Thomas, DEQ
Tish Robertson, DEQ
Karl Huber, DCR
Margaret L. (Peggy) Sanner, CBF

DEQ Response: DEQ appreciates the comments. Responses to specific comments are provided below.

CBF Comment 1. Harmful Algal Blooms

DEQ Response: The Commonwealth's Harmful Algal Bloom (HAB) activity occurs through a partnership known as the HAB task force, a collaborative group comprised of DEQ, Virginia Department of Health (VDH), state universities and other agencies as appropriate for specific cases. VDH and DEQ do not currently have the funding necessary to adequately support the existing marine HAB monitoring and response program which conducts surveillance year round to protect the public and the shellfish resource on the coast of Virginia. DEQ maintains a robust monitoring network, but has no budget or staff resources to perform the additional monitoring needed to support a consistent schedule of freshwater HAB response monitoring--there is no routine, ambient monitoring program for freshwater HAB species and toxins, as there is for many other water quality factors monitored by DEQ. VDH does not receive any funding to support the 100,000 miles of freshwater rivers and streams and 248 publicly owned lakes, all designated to support recreational uses throughout the state. As such, the freshwater HAB program is entirely report-driven, with field investigations triggered either by reports from the public, made through the [VDH HAB Online Report Form](#) or by observations by field staff that indicate that a bloom may be occurring. DEQ provides much of the field support for the HAB task force and conducts the vast majority of the associated freshwater HAB investigations, with laboratory analytical support from the Old Dominion University Phytoplankton Laboratory. DEQ does not rely on VDH monitoring for freshwater HAB response in most cases. VDH then evaluates the results of these investigations to make advisory decisions, upon which DEQ bases our assessments for HABs.

DEQ communicates our current field practices for conducting HAB investigations to staff through a regularly updated working document titled Decision Tree for Initial Responses to Potentially Harmful Algae Bloom (HAB) Reports. It can be found on the [DEQ Water Quality Monitoring](#) webpage. The practices described in this document are intended to be in keeping with VDH's guidelines [on HAB responses](#) and official [Guidance for Cyanobacteria Advisory Management](#). The most recent summary information on HAB reports made through the VDH online reporting portal, field investigation results and resulting HAB advisories, is contained in [DEQ's 2021 Report to the Virginia General Assembly](#), coauthored by DEQ and VDH. This report contains HAB reports from 2017-2021 and HAB advisories from 2016-2020, summarized by location and time period. The report also contains a historical description of the objectives and activities of the Commonwealth related to HABs, a review of environmental factors that may be causal factors for HABs and their occurrence in the state, and potential reduction and mitigation strategies

CBF Comment 2. Assessment of Submerged Aquatic Vegetation standards

DEQ Response: Language was added to Chapter 4.6 to clarify the status of the revised Submerged Aquatic Vegetation (SAV) criteria in five Virginia Chesapeake Bay segments.

CBF Comment 3. Incorporating freshwater mussels into the Non-Point Source (NPS) Assessment and other benthic assessments

DEQ Response: DEQ recognizes that freshwater mussels are a valuable indicator of water quality and an important component of the biodiversity and ecosystem functioning in many systems. They are not included in DEQ's freshwater benthic assessments because they are not common and widespread enough in Virginia systems to serve as an indicator group for free-flowing systems across the state in the same manner as other groups such as aquatic insects. In addition, their collection using the rapid biological assessment techniques employed by the agency is not appropriate (i.e. is not expected to produce reliable data). For some Virginia streams, quantitative mussel surveys, evaluated with expertise on what mussel species should occur in these systems, and at what abundance they should occur, given their natural settings, would provide valuable information on water quality and ecosystem integrity. However, the agency lacks staff with the detailed and specialized expertise necessary to conduct these evaluations.

Comments from Hampton Roads Sanitation District



August 5, 2022

Sandra Mueller
Virginia Department of Environmental Quality
Office of Water Monitoring and Assessment
P.O. Box 1105
Richmond, VA 23218-1105
Sandra.Mueller@DEQ.Virginia.gov

RE: Comments on Draft 2022 305(b)/303(d) Water Quality Assessment Integrated Report

Dear Ms. Mueller,

Hampton Roads Sanitation District (HRSD) appreciates the opportunity to comment on the above referenced document. The continued efforts of VA DEQ in monitoring and assessing state waters to more accurately characterize their improving quality is extremely encouraging. In general, the trend monitoring depicts a positive outlook and is a testament to the successes of Clean Water Act implementation at the state level. The 2022 Integrated Report (IR) and its content show continued improvement with each assessment cycle. This is especially true given the recent work environment difficulties due to Covid-19. HRSD would like to offer comments on the issues stated below that have potential VPDES regulatory implications.

James River PCB TMDL

The James River has had VDH fish consumption advisories, for PCB's since 2002. This advisory extends from I-95 James River Bridge in Richmond to the Hampton Roads Bridge Tunnel, including tidal portions and tributaries. DEQ completed fish tissue, sediment, and point source monitoring in an effort to begin development of the TMDL. Additionally VA DEQ has begun both public and Technical Advisory Committee meetings in an effort to complete this TMDL process. HRSD supports the completion of the James River PCB TMDL and commends the hard work by both VA DEQ staff and other stakeholders involved in its development.

Harmful Algal Bloom Recreational Advisory

The 2022 Integrated Report is the first cycle in which waterbodies can be listed as impaired due to Virginia Department of Health (VDH) advisories based on the presence of Harmful Algal Blooms (HABs). VDH advisories for HABs present an added level of impairment monitoring that will potentially lead to earlier identification of impaired waterbodies and improvements in recreational use of Virginia public waters. HRSD supports impairment identification based on HAB advisories issued by VDH.

Water Quality Department • PO Box 5911, Virginia Beach, VA 23471-0911 • 757.460.7004

**Commissioners: Frederick N. Elofson, CPA, Chair • Stephen C. Rodriguez, Vice-Chair • Vishnu K. Lakdawala, PhD
Michael E. Glenn • Willie Levenston, Jr. • Elizabeth A. Taraski, PhD • Nancy J. Stern • Ann W. Templeman
www.hrsd.com**

James River Chlorophyll-a Impairment

The 2022 IR states on page 171 that “the James Lower Tidal Fresh and Oligohaline segments fail to meet the Chlorophyll a standards in the Summer months.” Chlorophyll a impairments are clearly shown in Figure 4.6-1 (p. 172) where both the Tidal Fresh (JMSTFL) and Oligohaline (JMSOH) are Chlorophyll a impaired. The Executive Summary indicates that only the Tidal Fresh portion of the Lower James is in exceedance of the chlorophyll a criteria. It’s unclear from this mix of information if the oligohaline portion of the James River has had any exceedances of the current chlorophyll criteria during the assessment period. HRSD asks that DEQ please clarify if there were any exceedances of the current criteria in the oligohaline.

Thank you for the opportunity to review and comment on this report.

Respectfully,



Chris Burbage, PhD
Environmental Scientist
HRSD
1434 Air Rail Avenue
Virginia Beach, VA 23455
757-355-5013
cburbage@hrsd.com

DEQ Response: DEQ appreciates the comments. Responses to specific comments are provided below.

HRSD Comment 1. James River PCB TMDL and Harmful Algal Bloom Recreation Advisory impairment listings

DEQ Response: DEQ appreciates the support .

HRSD Comment 2. James River Chlorophyll-a Impairment

DEQ Response: The text in the Executive Summary will be updated to accurately reflect the results as reported in Chapter 4.6.

Comments from Environmental Integrity Project



1000 Vermont Avenue NW
Suite 1100
Washington, DC 20005
T 202 296 8800
F 202 296 8822
environmentalintegrity.org

Sandra Mueller
Virginia Department of Environmental Quality
Office of Water Monitoring and Assessment
P.O. Box 1105
Richmond, VA 23218-1105
Sent via email to Sandra.mueller@deq.virginia.gov

August 5, 2022

Dear Ms. Mueller,

Thank you for the opportunity to provide comments on Virginia's Draft 2022 305(b)/303(d) Water Quality Assessment Integrated Report (2022 draft assessment report). I respectfully submit these comments on behalf of the Environmental Integrity Project (EIP), Chesapeake Legal Alliance, Waterkeepers Chesapeake, and the Shenandoah Riverkeeper. The Environmental Integrity Project is a nonprofit, non-partisan organization dedicated to the effective enforcement of environmental laws. I am also a Virginia resident.

In June 2021, EIP notified VDEQ's Water Quality Data Analyst, Cleo Baker, that there were inconsistencies between the Department's recreational impairment designations and the monitoring data summaries included in its final 2020 Integrated Report (Attachment 1). Ms. Baker confirmed that EIP had identified mismatched assessment categorizations and indicated that they would be "appropriately updated" for the 2022 assessment report. The errors for rivers in the Shenandoah basin, according to Ms. Baker, were due to the lack of having a full-time assessment planner in the Valley office during the assessment data processing period. Most of these segments should have been listed as impaired in 2020.

The 2020 assessment relied on the state's previous water quality criteria for *E. coli*. VDEQ adopted new, arguably less stringent, water quality criteria for *E. coli* in 2019 and used an updated methodology to evaluate waterways for the draft 2022 assessment report. Our review of the draft 2022 report shows that DEQ is now proposing to list many of the segments that should have already been listed in 2021 based on DEQ's application of the new bacteria water quality criteria. EIP objects to this approach, which amounts to making a de-listing decision without providing sufficient data or an explanation. Moreover, the DEQ's failure to appropriately list several waterways in the 2020 cycle, and its decision to ignore past errors and instead apply the new water quality criteria, has a real impact on several impaired and/or threatened river segments that DEQ should be actively protecting and cleaning up.

For example, a 12.6-mile segment along the South Fork of the Shenandoah River (VAV-B37R_SSF02A10). should have been listed as impaired in VDEQ's 2020 report, based on *E. coli* sampling results collected at 1BSSF068.83 and the water quality criteria and assessment methodology in place at the time. But, instead of correcting its error and listing the segment as impaired, DEQ applied its new recreational

water quality criteria and designated the segment as having insufficient information to make a listing decision. Bacteria sampling along this segment has been sparse. The data used to assess it this cycle, and in the 2020 cycle, are from 2017.

Publicly available photographic evidence indicates that this segment is threatened by sources of bacteria and other pollutants that could be mitigated through the effective implementation of the *E. coli* and benthic stressor TMDL approved by EPA in 2009, 13 years ago.¹ VDEQ has not developed an implementation plan for this watershed. This segment and the entire sub-watershed suffer from persistent algae (<https://www.waterreporter.org/community/reports/19279>), cattle intrusion (<https://www.waterreporter.org/community/reports/2071>), and runoff from farms and urban areas.

DEQ used the same rationale to effectively de-list several other assessment units, including VAV-B46R_BMK01A20, VAV-H18R_HAK01A00, VAV-I36RMRC01A00, and VAN-A11R_DED-1A04, which should have been listed in 2020 and should have been appropriately updated in the 2022 assessment report.

Under 40 C.F.R. § 130.7(b)(6), VDEQ must submit a description of the methodology used to develop its list of impaired waters as part of its request for federal Environmental Protection Agency (EPA) approval of the state's decisions to list or not to list its waters. Under 40 C.F.R. § 130.7(d)(2), the EPA may approve the impaired waters list “only if it meets the requirements of § 130.7(b).” As such, any DEQ decisions regarding listing should be consistent with its published methodology or, at the very least, the Integrated Report should clearly identify any listing decisions that are inconsistent with the methodology and explain why they are still lawful.

DEQ published its listing methodology, the 2022 IR Assessment Guidance,² earlier this year. That document establishes specific processes for listing and de-listing Virginia waters. Essentially, waterways listed as impaired based on older water quality criteria should remain listed until monitoring data show that they fully support the new criteria. However, here, DEQ appears to have ignored its listing methodology and essentially de-listed these segments without properly noticing these actions or ensuring that, per its methodology, appropriate bacteria data was available and assessed. DEQ has not collected nor provided the public with the monitoring data needed to show these segments should be de-listed. We respectfully request that VDEQ list these segments as impaired with the justification that they were inadvertently omitted from the 2020 assessment report.

¹ Bacteria TMDL Development and Benthic Stressor Analysis for South Fork Shenandoah River (July 2009), available at <https://www.deq.virginia.gov/home/showdocument?id=11152&t=637692100794470000>.

² 2022 Water Quality Assessment Guidance Manual (April 2021), p. 7, available at https://townhall.virginia.gov/L/GetFile.cfm?File=C:\TownHall\docroot\GuidanceDocs\440\GDoc_DEQ_6997_v1.pdf.

DEQ Needs to Reconcile Differences Between Appendix 7 and Assessment Unit Designations

EIP reviewed Appendix 7 to the Draft Integrated Report and the geospatial files that Ms. Baker provided in response to a FOIA request.³ Our review identified 3 instances of where, like in its 2020 Integrated Report, DEQ's monitoring station summary data for *E. coli* and the assessment unit designations for recreation appear to be inconsistent. Appendix 7 lists three monitoring sites (2-JMS-J24-JRA, 2-WTK006.35, and 5AJOE003.92) as impaired, but the recreation status for the corresponding assessment unit is listed as fully supporting in the 2022 draft assessment report. We respectfully request that DEQ reconcile these issues or provide a sufficient explanation for the listing decisions prior to finalizing the 2022 Integrated Report.

For example, VDEQ's 2022 draft assessment designates a 7.44-mile-long scenic stretch of the James River as fully supporting recreational use (assessment unit VAP-H39R_JMS01A98). The Department's methodology for making a fully supporting decision based on the bacteria criteria requires both a statistical threshold value (STV) exceedance rate of less than 10 percent in a 90-day period and no geometric mean exceedances.⁴ However, according to Appendix 7, two of the 16 samples (12.5 percent) taken at monitoring station 1-JMS-J24-JRA, a level III citizen monitoring site, exceeded the STV. Appendix 7 also classifies this location as impaired for recreational use. This site is near another level III citizen monitoring sampling location, 2-JMS117.35. VDEQ classified this site as having observed effects with 5 exceedances out of 44 samples taken during the assessment period. It is unclear from the draft assessment why this segment is designated as fully supporting recreational use when DEQ's monitoring assessment suggests otherwise.

DEQ Should Prioritize Developing New TMDLs or TMDL Alternatives to Address Bacteria in the Shenandoah Watershed

We respectfully request that VDEQ prioritize developing new TMDLs, developing implementation plans for existing TMDLs, and reviewing and revising old TMDLs that have not led to the attainment of water quality standards. A TMDL alternative might also be an appropriate tool for the Shenandoah basin. In sum, more work is needed, and needed quickly. Bacteria levels in most of this basin's waterways have been persistent for years. Several of the TMDLs and Implementation Plans developed to address bacteria are now outdated, with milestones for implementation of streamside fencing, monitoring, and meeting water quality criteria long overdue. EIP published a report detailing examples of failed TMDLs and implementation plans in 2021 (Attachment 2).

We recommend that VDEQ prioritize developing a TMDL alternative that requires all cattle farmers to fence cattle out of streams and that farmers applying manure and poultry litter to farmland near waterways install streamside vegetative buffers.

³ Draft 2022 305(b)/303(d) Water Quality Assessment Integrated Report (July 2022), Appendix 7, available at <https://www.deq.virginia.gov/home/showpublisheddocument/15424/637927233169930000>.

⁴ Draft 2022 305(b)/303(d) Water Quality Assessment Integrated Report (July 2022), Chapter 4.1 Assessment Methodology, p. 37, available at <https://www.deq.virginia.gov/home/showpublisheddocument/15460/637915770260370000>.

Thank you,

A handwritten signature in black ink that reads "Courtney Bernhardt". The signature is written in a cursive style with a large initial 'C' and a long horizontal stroke at the end.

Courtney Bernhardt
Research Director, Environmental Integrity Project
cbernhardt@environmentalintegrity.org
202-263-4447

David Reed
Executive Director, Chesapeake Legal Alliance
david@chesapeakelegal.org

Betsy Nicholas
Executive Director, Waterkeepers Chesapeake
betsy@waterkeeperschesapeake.org

Mark Frondorf
Shenandoah Riverkeeper
Mark@shenandoahriverkeeper.org

DEQ Response: DEQ appreciates the comments. Responses to specific comments are provided below.

EIP Comment 1. Bacteria Criteria

DEQ Response: Each assessment cycle begins with the issuance of the Water Quality Assessment Guidance Manual, which is subject to a public comment period before finalizing. The guidance establishes the data window and assessment methods used by DEQ staff to conduct that cycle's water quality assessment. The 2022 IR Guidance Manual introduced the updated assessment process for evaluating the nationally recommended bacteria criteria published by the Environmental Protection Agency and adopted by the Virginia State Water Control Board. Periodically, EPA reviews all of its recommended water quality criteria so that they reflect the best available science. The revised bacteria criteria rely on the latest research and science, including studies that show a link between illness and fecal contamination in recreational waters. They are based on two bacterial indicators of fecal contamination: *E. coli* and enterococci. *E. coli* is the indicator for freshwater systems and enterococci is the indicator for saltwater. They are the same indicator organisms used for the bacteria criteria Virginia adopted in the early 2000s. For the 2022 IR, DEQ conducted water quality assessments for bacteria against the revised bacteria criteria, as outlined in the 2022 Water Quality Assessment Guidance Manual.

The revised bacteria criteria contain three components:

1. A number of culturable colony counts of either the bacteria *E. coli* or enterococci.
2. A duration of 90-days as an averaging period for a measure of central tendency called a geometric mean (GM).
3. An allowable excursion rate of no more than 10% of samples allowed to be greater than a Statistical Threshold Value (STV).

The revised bacteria criteria are more comprehensive than the previous ones for two reasons. First, in the past, a waterbody had to meet only one of the criteria elements and now it must meet two—both the geometric mean and the statistical threshold value. Second, samples were previously collected over a six-year period, but now more frequent samples are collected within a 90-day window. In order for a water to be assessed as fully supporting the recreational designated use, both the GM and STV must be assessed.

In the case of the five assessment units (AUs) identified by EIP, bacteria data were insufficient to make a fully supporting or impaired determination in the 2022 Integrated Report. All of the AUs (VAV-B37R_SSF02A10, VAV-B46R_BMK01A20, VAV-H18R_HAK01A00, VAV-I36R_MRC01A00 and VAN-A11R_DED01A04) are listed in Category 3B, which prioritizes follow up monitoring based on regional monitoring resources. The fifth James River segment is assessed by an ambient trend station that is monitored on a monthly basis. Where available, high frequency bacteria monitoring data will be used to assess these waters against the revised bacteria criteria in the 2024 IR.

Four of the 5 AUs (VAV-B37R_SSF02A10, VAV-B46R_BMK01A20, VAV-H18R_HAK01A00 and VAV-I36R_MRC01A00) mentioned in EIP comments are also covered

by bacteria TMDL studies. These studies cover a watershed area to identify pollution sources and calculate reductions needed to meet water quality standards. Implementation plans of these TMDLs will be forthcoming per WQMIRA.

Stations 2-WTK006.35 and 5AJOE003.92 will carry forward their Fully Supporting status in 2022 for bacteria per Rule 8 of the 2022 Water Quality Assessment Guidance. No new bacteria data were collected in 2019-2020 for these stations. Station 2-JMS-J24-JRA is a James River Association Level 3 non-DEQ station. This station is co-located with DEQ's ambient trend station at 2-JMS117.35. The assessments for these two stations differ in the 2022 cycle. In this case, DEQ Assessment Guidance states the DEQ station should take precedent. As noted earlier, the ambient trend station will be monitored on a monthly basis as follow up.

There are a total of 43 watersheds in the Shenandoah River basin for which bacteria Total Maximum Daily Loads (TMDLs) have been developed. These TMDLs include a total of 4,163 square miles, which is approximately 75% of the Shenandoah River basin (including the Upper Potomac reaches in the northern Valley). TMDL implementation plans (IPs) have been developed for 33 of these 43 watersheds, covering 2,195 square miles, or 40%, of the Shenandoah River basin. Livestock exclusion fencing and associated riparian buffers are included in each of these IPs. An estimated 4.4M linear feet of fencing is called for in these plans, at an estimated cost of \$45.81M. Some of this fencing has been installed since these TMDL IPs were completed beginning in 2001, though far more remains. Fencing is just one component of these plans, with total implementation costs for the 33 watersheds estimated at over \$280M.

These numbers clearly demonstrate that funding is one of the primary factors toward water quality improvements in the basin. The other factor that is currently controlling the pace of water quality improvement is landowner interest. Pasture runoff and direct deposition of bacteria into streams are included in the TMDL load allocation, which is the portion of the overall TMDL that is not regulated. While there remain opportunities for additional bacteria TMDL development in the Shenandoah River basin, they are relatively limited. Existing TMDLs and associated implementation plans could be updated on a continuous basis as land use changes occur and changes in DEQ's water quality standards are implemented; however, this comes at a significant cost. DEQ believes it is far more cost effective to implement existing TMDLs and IPs on an iterative basis. This is especially true since a significant amount of funding has been made available in recent years to support agricultural BMP implementation with a focus on the Chesapeake Bay watershed.

General Public Comments Received and DEQ Response

Questions submitted during Draft 2022 Integrated Report Public Webinar on July 14, 2022

Ann Mallek - Does VA tissue standard testing now include PFAS as in other states? If PFAS family is included, what is the standard? EPA is looking at 4 PPT as measureable but not safe.

DEQ Response: Starting in late 2021, DEQ conducted PFAS monitoring to support several projects and initiatives. This includes sampling for water column, sediment and fish tissue as part of a watershed-specific project focused on the middle and lower reaches of the Chickahominy River and a tributary to the river (White Oak Swamp). DEQ also has conducted surface water monitoring at select locations throughout the Commonwealth to better understand the occurrence and distribution of PFAS. However, PFAS sampling in general, and specifically in fish tissue, is not included in VA's standard monitoring programs. While there is a draft EPA Method for analyzing PFAS in environmental samples, including surface waters, sediment and fish tissue, water quality criteria for evaluating the impacts of PFAS concentrations in the environment are not yet established. The US Environmental Protection Agency (EPA) is in the process of developing recommended criteria for the protection of human health as well as aquatic life. DEQ does conduct limited PFAS sampling, and may include PFAS more regularly in the future as the science and understanding of PFAS in the environment continues to evolve.

Mark Frondorf - Where would HABs be captured on slide 22?

DEQ Response: Only a small number of river miles and estuary square miles were listed due to HABs in 2022, but did not show on the graph. The lake acres impaired for HABs are shown on the graph as a separate column due to the larger number of impaired acres.

Dear Ms. Mueller,

The latest Draft 2022 Integrated Report is out and I hope you might be able to answer a couple of questions for me.

How many of Virginia's approximately 49,000 miles of rivers and streams were actually monitored for this report, including both DEQ efforts and those of volunteer groups such as Friends of the Shenandoah and others?

Would you tell me whether the list of impaired waters requiring a TMDL has increased or decreased since the last report two years ago? And, if convenient, what is the trend over the past decade?

Thanks very much for your consideration.

Best regards,

Jerry McCarthy

DEQ Response: A total of 100,984 miles of rivers were determined to be available for assessment this cycle. 20% of them or 19,799 miles were monitored and assessed during the 2022 cycle. Approximately 65% of Virginia's rivers are headwater systems, and are not monitored by DEQ's ambient water quality network. These waters are routinely monitored via the Probabilistic Monitoring program and are included in watershed cleanup plans.

Rivers show a decrease of 25 miles in Category 5 waters between 2022 and 2020. Reservoirs are up 6,383 acres and estuaries are roughly the same (4 square miles).

The 2018 IR Trend Analysis Results chapter can be made available on request. The 2018 water quality trend analysis is based on 20 years of monitoring data collected at stations monitored monthly or bimonthly across Virginia. Since methodologies for assessment can change cycle to cycle, DEQ is unable to establish formal trends in assessment data; however, DEQ reports on water quality trends in monitoring data every six years. The next water quality trend analysis chapter will be included in the 2024 IR.

Hi Sandy,

I hope you and everyone at DEQ are doing well. I am doing well over here in my new role in Chesterfield.

I was taking a few minutes to look at the 2022 IR draft report and just want to say I really liked the chapter on citizen and nonagency data. The information presented was very concise and did a good job showing the contributions of citizen and nonagency groups. It was also good to see a comparison of the 2022 to 2020 cycles in terms of coverage. It was nice to see the overall mileage increased despite the limitations many groups had over the past couple of years. I am glad to see the program is continuing as strongly as ever.

I do have one comment based on prior IR report cycles. Many groups expressed appreciation with having the IR document the number of miles monitored by each specific group. This was useful information when they applied for grants or when seeking donations. More so since they can reference the actual IR as the source for their figures. Including a table in the IR with the mileage breakdown would be very useful and relatively easy to perform. While past reports documented mileage by each major watershed, I believe just a total riverine, lake, estuary mileage and stations submitted would be of interest to the contributing groups and the public.

That will about do it for my comments for the 2022 IR. It is kind of weird being on the 'outside' commenting on a document I used to help develop for eight cycles. Please let everyone in WQMA know I said hi and am doing well overseeing my own monitoring and assessment program in Chesterfield.

Sincerely,
James Beckley

DEQ Response: Thank you for the feedback. For future Integrated Reports we are exploring new tools to have this data more readily available for the general public.

Hi

I thought the webinar and presentation of data was excellent. I appreciate all the hard work of DEQ staff. The GIS maps are especially useful in visualizing the data. Having used and worked with data and GIS, I know it's labor intensive.

As a suggestion. I would like to see a more proactive approach in releasing "violations" to the general public or County governments. If, for example, ecoli or Harmful Algae Bloom is above the VDH/EPA standard then a coordinated approach should be used to alert the public. It could be as simple as writing code that if above X level, then a message/data is automatically sent to a designated County government official. I believe it is not that difficult or costly to do, and requires minimal labor, but the benefits rewarding.

Thanks for all your hard work.

Regards Timothy Rocke
156 Ridge Rd
Rileyville, VA 22650

DEQ Response: Thank you for the suggestion. We will consider this as we continue to work with the Virginia Department of Health in response to Harmful Algal Blooms.

Hello Sandra

I have just watched the 2022 IR summary presentation and have a question. First, though, let me say that the presentation is excellent. Thank you so much for taking time to provide such a clear and interesting introduction to the report. I'm still wading through the draft, and again, thanks for posting it with section links--makes it much less intimidating to read!

I live in Clarksville, steps away from Kerr Reservoir and frequently swim and paddle in the Roanoke/Staunton, Meherrin, Dan, and Banister Rivers, so I'm particularly interested in learning more about water quality in our Southside region.

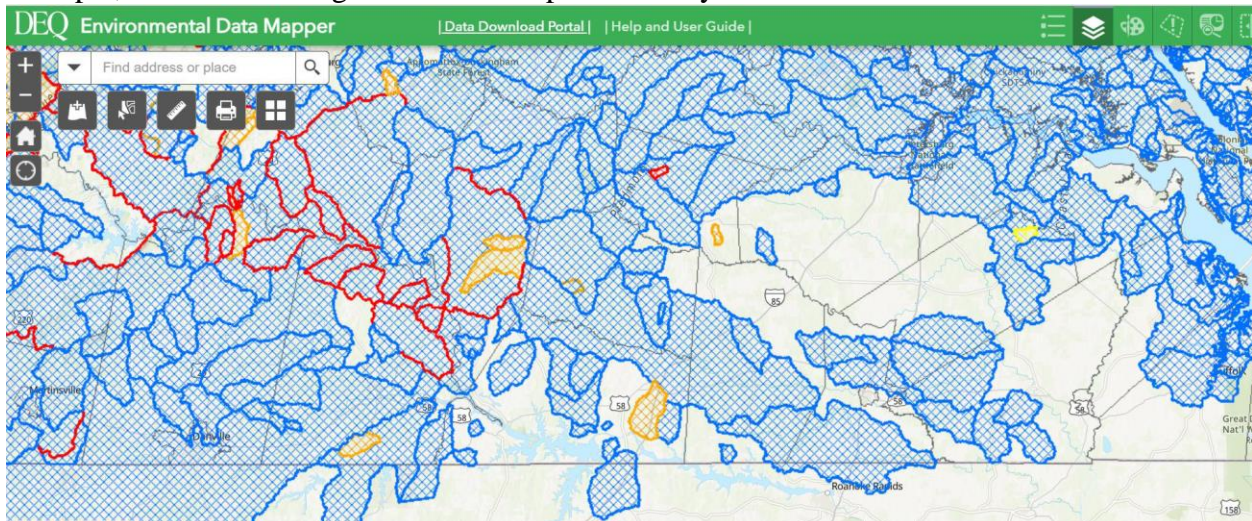
My question is related to slides 30 and 34 of the summary presentation. Slide 30 references 1002 local clean-up plans, and slide 34 references 84 local plans approved. Neither slide shows any shading in the area of Halifax/Mecklenburg Counties and Kerr Reservoir. I tried to use the Environmental Mapper you demo'd to see if I could drill down and find implementation plans, but no luck. Where can I look for local clean-up plans and DEQ TMDL implementation plans for Southside Virginia?

Thanks again. I'm learning a lot from your website, and this IR is giving me a way to focus my exploration of the rather overwhelming amount of information.

Yours
Terri Mewborn
terri.mewborn@gmail.com
(703) 942-6321 text/voice

DEQ Response: Hi Terri,

Sandra Mueller asked me to help answer your questions. First of all, thank you for taking an interest in your area's water quality and for digging into the Environmental Data Mapper. It sounds like you are probably already getting familiar enough with that tool to use it to see where there are clean-up studies (TMDLs) and clean-up plans (Implementation Plans) in place. For example, below is an image of the clean-up studies in your area.



You can also use EDM to find more information about those studies by clicking on a particular watershed (polygon) in the EDM viewer. That will open up a window with some information plus links to additional information. This is true for the clean-up plans as well.

To search on clean-up studies (TMDLs) for a specific waterway, you can use this link (<https://www.deq.virginia.gov/water/water-quality/tmdl-development/approved-tmdls>) or to see a list of clean-up plans (Implementation plans), you can use this link (<https://www.deq.virginia.gov/water/waterquality/implementation/approved-implementation-plans>).

The Data Mapper can also be used to review water quality assessment in your area. Using the "Layer Lists", scroll down to "Water Quality Assessment (WQA) Layers". Once you click on the little arrow next to that layer you will see options to view "2022 Rivers", "2022 Estuaries", or "2022 Reservoirs". After selecting one or more of those options and the map is populated with that information, you can click on any of those waters to see a lot of water quality information about that particular waterway or segment of a waterway. This may help you understand more about water quality in your area.

I hope this helps but please let me know if you would like additional information or have additional questions.

Again, thank you for your interest.

Anne

--

Anne Schlegel
Virginia Department of Environmental Quality
Office of Watershed Programs
PO Box 1105
Richmond, VA 23218
Anne.Schlegel@deq.virginia.gov
804-774-9368 (new phone number)

Thank you for your presentation on DEQs Water Planning webinar.

I would love to talk to you sometime about concerns I have about water quality in Grayson County, Virginia. As a matter of fact, when I was watching the webinar and looking at your slides of all the Virginia counties, I felt Grayson County was underrepresented in water quality monitoring.

Recently, I received my certification as a Citizen water monitor with Virginia Save Our Streams. Of course, I have a lot to learn and will have to get experience. I hope to monitor 2-3 streams this year in the Elk Creek Valley in Grayson County.

Many people in the area have become very concerned about the rapid proliferation of the Christmas Tree industry. There is a big problem with sedimentation because of the massive deforestation.

I think there is very little bio-assessment in that county. It might be good if I can pair up with someone in the area who is already doing this?

Thanks again for your interesting presentation. There are many impaired waterways and I have more questions, but I just wanted to take a moment to say thank you and hope that Virginia DEQ can help us with our concerns.

With kind regards,
Jane Rhudy

DEQ Response: Ms. Rhudy,

I was sent your email about the recent webinar DEQ held about the 2022 Integrated Water Quality Assessment Report from some of the folks in our Central Office. I wanted to share a little more information with you about the monitoring DEQ does in Grayson County. I am the Water Quality Assessor in the Southwest Regional Office and am responsible for doing the assessment that covers the 13 counties and 3 cities of southwestern Virginia.

During the data window for the 2022 Integrated Report (Jan 1 2015 - Dec 31, 2020), DEQ's SWRO sampled 29 stations in Grayson County and the City of Galax. We have a long-term trend monitoring station on the New River just outside of Galax that we've been sampling every other month since 1970. At 8 of those stations, 21 benthic macroinvertebrate samples were during the data window.

We did get SOS monitoring data provided by Virginia Save-Our-Streams on a couple of stations in Carroll County, but none for Grayson. We did get bacteria data from several stations that have been monitored by the New River Conservancy, but I'm not sure they are still collecting data. I'm happy to know you are a certified SOS monitor and encourage you to get out to sample and make sure your data is submitted to Virginia Save Our Streams since they send data to DEQ to use in the assessment.

Last summer, I came out to Independence to present some information about water quality in Grayson County to the Preserve Grayson group and we talked about similar information.

Please don't hesitate to reach out if you have more questions or need information.

Thank you,

Martha

--

Martha Chapman

Water Monitoring & Assessment Scientist

Southwest Regional Office

Virginia Department of Environmental Quality

355A Deadmore Street

Abingdon, VA 24210

Direct: (276) 608-8673

Email: martha.chapman@deq.virginia.gov

www.deq.virginia.gov

Good afternoon,

Thank you for the information as provided in the Webinar. I was wondering if you could help me with locating the EPA category 4 and category 5 details for the waters of Virginia's Eastern Shore.

As you can see in the attached Watershed Summary most of Virginia's Eastern Shore is covered in bacteria and only a fraction of the shore has been assessed and approved for funding. What I am hoping to receive is a breakdown of what the bacteria levels are so we can see the most impaired areas as well as those that are no longer in need of a TMDL.

I thank you for your time and look forward to hearing from you.

Sincerely,
Stacey

[Stacey A Johnson](#)
757-204-1266
Projects Director
Eastern Shore RC&D
director@esrcd.org
<https://www.facebook.com/easternshorercd>

DEQ Response: DEQ Tidewater Regional Office staff provided impaired waters fact sheets from Appendix 4 of the 2022 IR specific to the Eastern Shore of Virginia to Ms. Johnson on Friday, July 29, 2022.

Good afternoon,

Sending in a few questions on the VA DEQ water quality assessment before the comment period closes.

My questions are below:

- Regarding the improvements seen in the Jackson River attributed to a "natural flow regime:" What implications does this success have for future construction, maintenance, and renovation of future dams in Virginia?
- What causal factors does the DEQ currently consider responsible for the algal bloom?
- Could increased rates of microplastics detected in aquatic species' tissues & blood exacerbate, worsen, or compound on the human health effects of high mercury levels detected in this report? If so, how?

Thank you,

Jazmin "Sunny" Murphy, B.Sc.

Science Communicator and Reporter | [Portfolio](#), [Credentials & Features](#)

Black Flower Writing Services & Supplies

DEQ Response: Thank you for your questions on the 2022 Integrated Report.

Potential flow impacts are evaluated during the development of Total Maximum Daily Load (TMDL) studies when freshwater benthic impairments are identified. Flashy flows from storm runoff and scouring events, as well as dam releases could be identified as stressors to the benthic community.

From the Virginia Department of Health [website](#): Blooms are usually a result of too much nutrients in the water. Nutrients end up in the water as a result of pollution from nonpoint sources – such as runoff from the land and discharges. Water temperature has also been related to the occurrence of algal blooms, with unusually warm water being conducive to blooms. Algae use the light energy of the sun and chemical energy of nutrients to make their own food. Waterbodies with a large surface area exposed to the sun, like lakes and estuaries, are more prone to algal blooms.

Microplastics and nanoplastics research is ongoing at EPA, and aims to provide guidance to states on characterizing and quantifying microplastics in sediment and water, and determining potential effects on other contaminants such as mercury. More information is available on EPA's website here: <https://www.epa.gov/water-research/microplastics-research>. DEQ will review recommendations from EPA for consideration in future water quality standards development.

Additionally, DEQ is a member of the Plastic Pollution Action Team, which seeks to reduce the presence and impact of plastic pollution on the Chesapeake Bay and its watershed. Currently the PPAT is addressing this issue by overseeing research to determine the effects that microplastics have on the Chesapeake Bay ecosystem.

To: Sandra Mueller
VA DEQ – Water Monitoring and Assessment Program
P.O. Box 1105
Richmond, Virginia 23218
Sandra.Mueller@deq.virginia.gov

Date: August 4, 2022

Re: Public Comments – Water Quality Assessment Integrated Report

The Executive Study states, "When a waterbody is classified as impaired, DEQ initiates a watershed study, also called a Total Maximum Daily Load (TMDL), for the affected area. Waters are removed from the impaired list by providing new data to the U.S. Environmental Protection Agency that shows attainment of water quality criteria, or updating assessment methodologies. In the 2022 IR, DEQ proposes removing 411 waterbodies from the list. To date, the agency has completed nearly 1,000 watershed plans."

Comment:

TMDLs were completed for the Nansemond River and Chuckatuck Creek located in Suffolk, Virginia. The data that the Nansemond River Preservation Alliance has collected from the Virginia Department of Health, Division of Shellfish Safety, the Suffolk Public Works Department and NRPA's indicate the River and Creek continue to decline as evidenced with increased closures of Oyster Grounds. The current Suffolk TMDL for the upper river plan and Chuckatuck Creek are not working. NRPA is requesting that other methodologies be applied to restore Suffolk's waterways.

Elizabeth Taraski, PhD, CEO/President
Geoff Payne, Chair Water Quality Committee
Nansemond River Preservation Alliance (NRPA)
Taraski.NRPA@gmail.com 757-708-6114 (Mobile)
CleanMyRivers.com

--

Elizabeth Taraski, President/CEO
Nansemond River Preservation Alliance
Mailing: PO Box 6090, Suffolk, Virginia 23433
Location: 8881 Eclipse Drive, Suffolk, Virginia 23433
Office: 757-745-7447
Mobile: 757-708-6114
email: taraski.nrpa@gmail.com

Support NRPA - Donate online at www.nansemondriverpreservationalliance.org

DEQ Response: Thank you for your comment. The water quality programs at DEQ aim to identify, restore, and ultimately protect polluted waters. As you mentioned, when streams fail to meet standards, Section 303(d) of the CWA and the EPA's Water Quality Management and Planning Regulation (40 CFR Part 130) require states to develop a TMDL for each pollutant. When a TMDL is developed, background pollutant concentrations, point source (PS) loadings, and nonpoint source (NPS) loadings are considered. Through the TMDL process, states establish water-quality-based controls to reduce pollution and meet water quality standards. However, the TMDL is not the only plan to help address water quality improvement. With regard to regulated point source discharges, the requirements of a TMDL are implemented through permit programs governing point source dischargers to surface waters.

The next step is to address non-point sources through development of an Implementation Plan (IP) and define on-the-ground projects to reduce NPS loads in the watershed. An IP is developed to describe actions (i.e., best management practices, educational programs, regulations) that should be implemented to meet the nonpoint source load allocations contained in the TMDL. The types and number of best management practices (BMPs), how they will be funded, and the details of implementation are described in a TMDL IP. Currently, Chuckatuck and Brewers Creek have an EPA approved IP. The next step for these watersheds to assist with water quality improvement is to implement the BMPs prescribed in the IP. The EPA approved IPs projects are eligible to receive funding to complete the tasked projects. The goal is that collectively between the TMDL, IP and the on-the ground-projects the impaired waters will see water quality improvements and be restored to meet water quality standards.

Additional information on the implementation planning process and contacts are available at our website, <https://www.deq.virginia.gov/water/water-quality/implementation>.