



# Rivanna River Basin Commission

## DEQ Watersheds Discussion

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Justin Williams, Manager

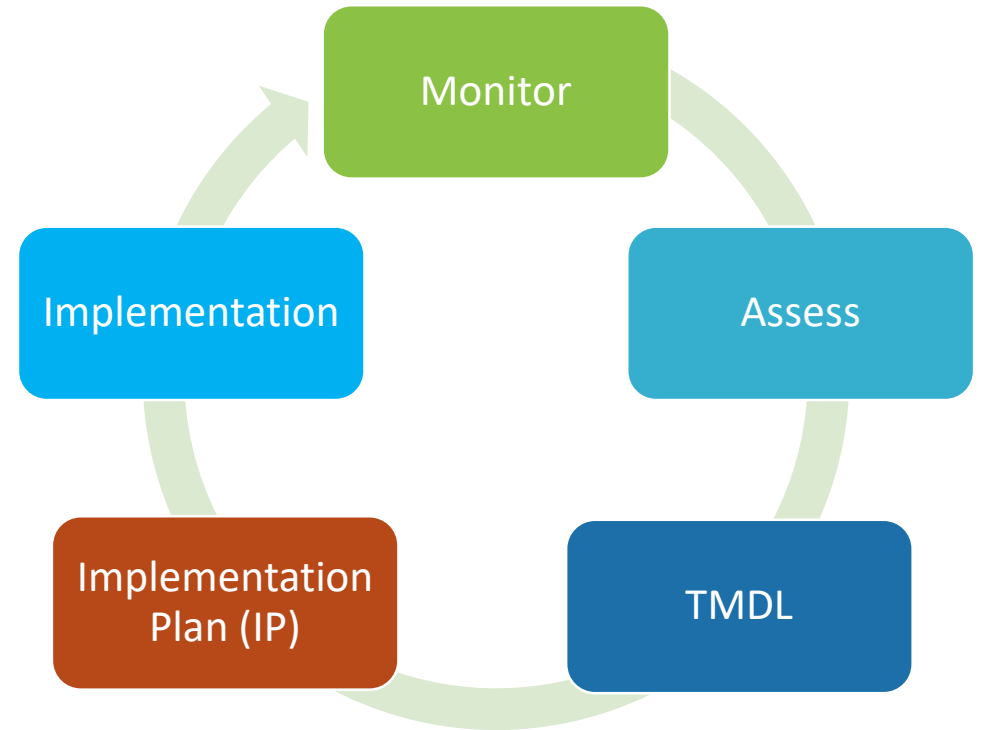
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Office of Watersheds and Local Government Assistance

August 22, 2023

# Watersheds Overview

- Monitoring/Assessment
  - Identify Impaired Streams
- TMDL:
  - Identify Point/NPS Loads
- Implementation Plan
  - Identify Needed NPS BMPs
  - Ag/Septic/Urban
- Implementation
  - 319 Funding

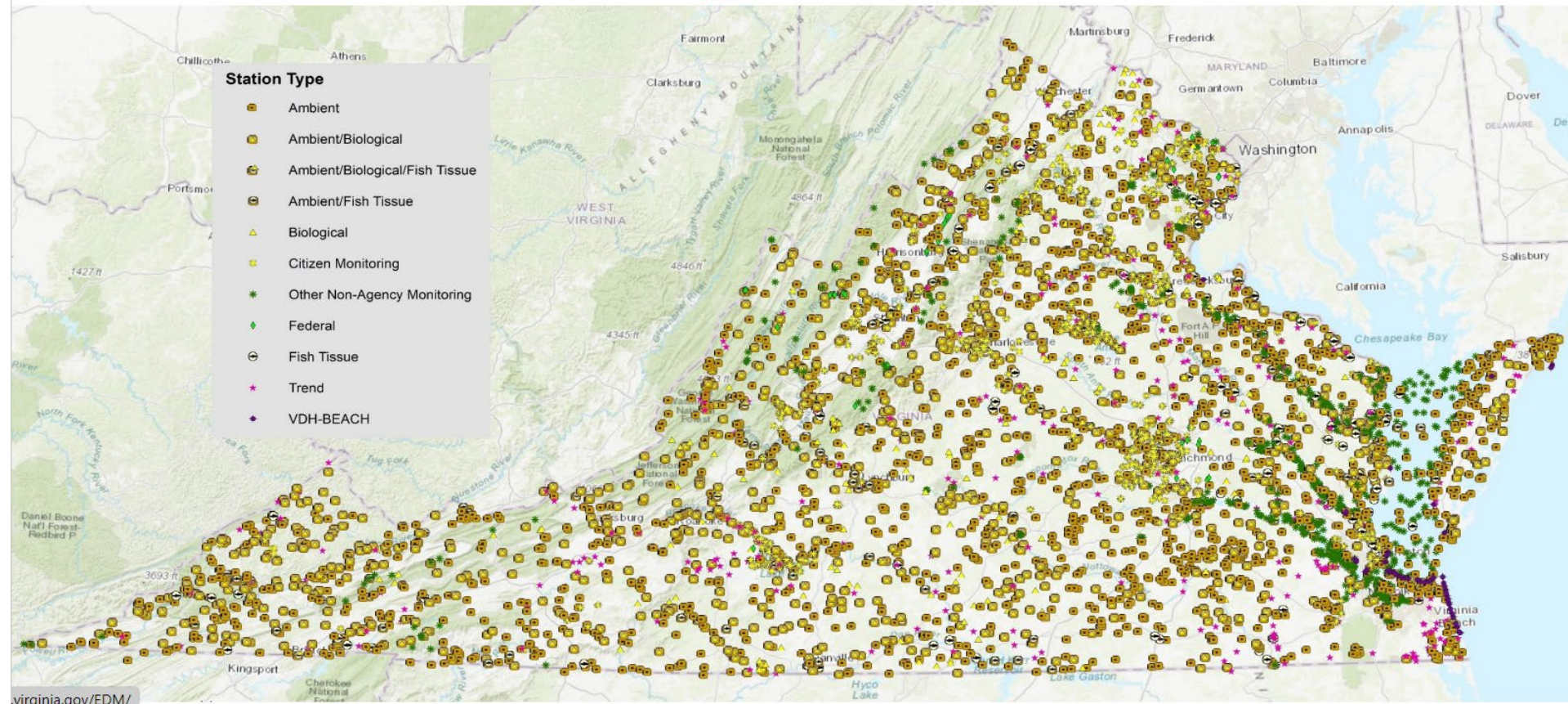


## Water Quality Monitoring and Assessment

- 3,420 DEQ water quality monitoring stations sampled
- Over 100,000 field measurements for temperature, pH, & DO
- 52,626 samples analyzed for bacteria
- 80,688 samples analyzed for nutrients
- 270 DEQ fish tissue stations visited
- 1,152 samples analyzed for PCBs
- 1,495 samples analyzed for metals, including Mercury
- 1,121 DEQ biological stations visited
- 3,137 benthic macroinvertebrate sampling events (each with 200 bugs identified to genus)

# Water Quality Monitoring and Assessment

## 2022 IR – Monitoring Stations

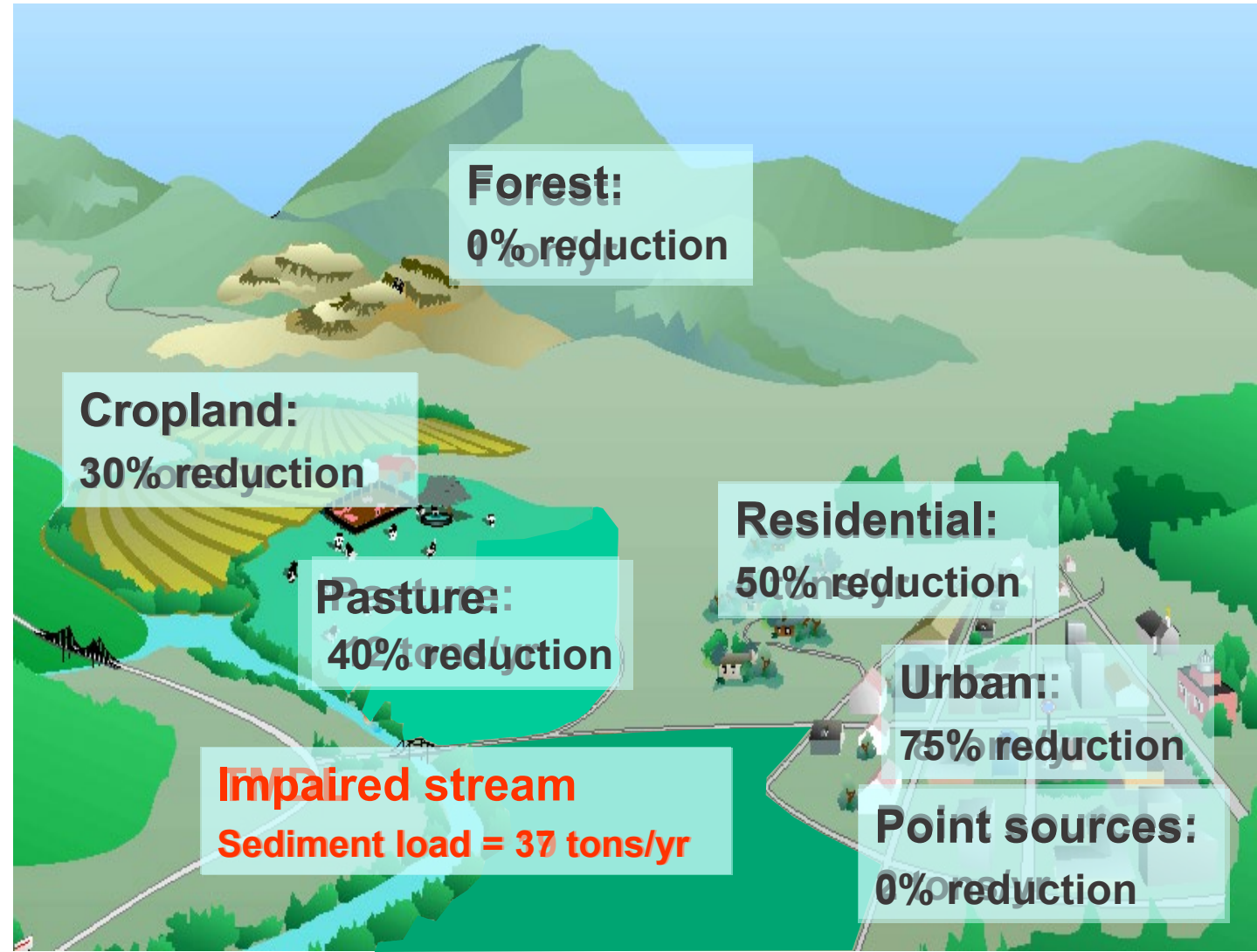


virginia.gov/EDM/

# How do we develop a TMDL?

*What's the magic number...*

1. Identify sources of the pollutant
2. Model their path to the stream
3. Determine reductions needed from each source to meet standard



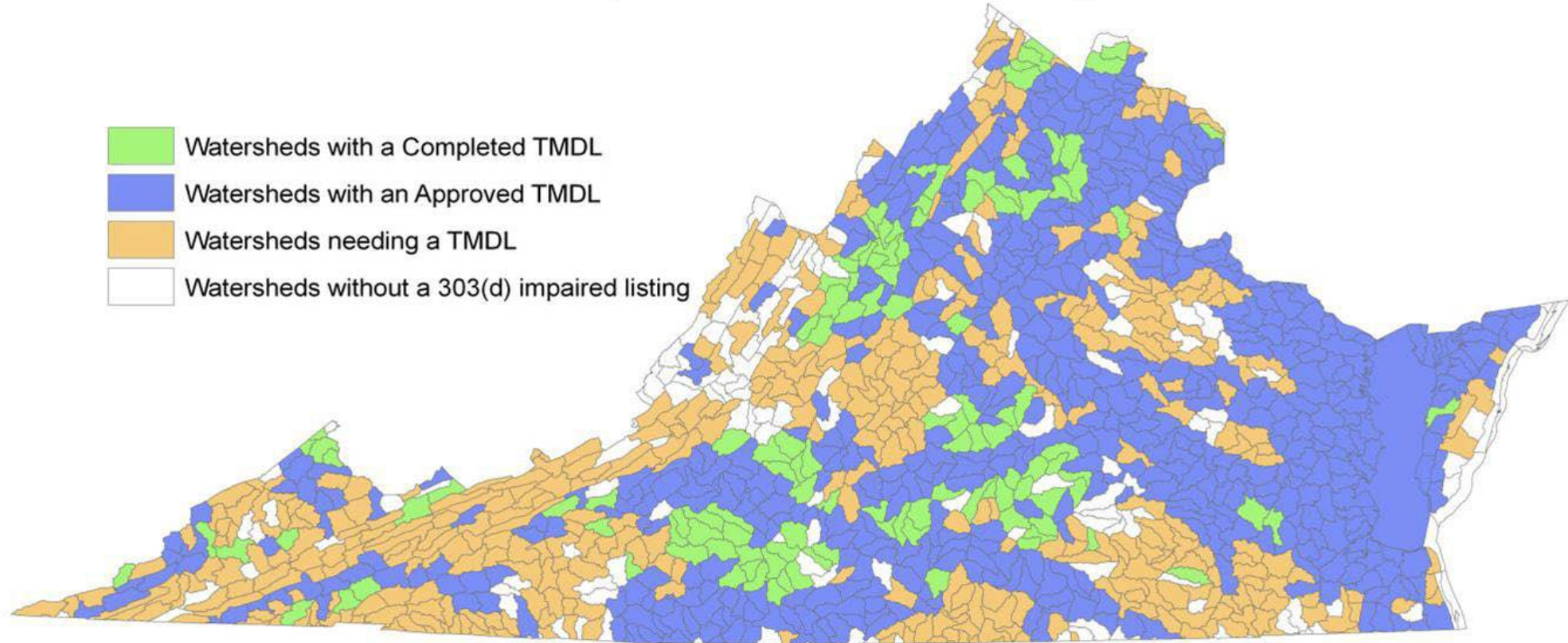
# Total Maximum Daily Load





- A **TMDL** is the total amount of a pollutant a waterbody can receive and still not exceed water quality standards
- $TMDL = WLA + LA + MOS$ 
  - WLA = Wasteload Allocation
  - LA = Load Allocation
  - MOS = Margin of Safety
- Required by federal and state law
- The **TMDL** Process: 2 phases when cause to Aquatic Life Use Impairment is identified as Benthic Macroinvertebrates
  - Phase I: Conduct a Stressor Analysis
  - Phase II: Develop TMDL

## Phase II: TMDL Development

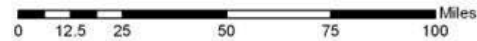
- Characterize watershed
- Account for point and nonpoint sources
  - Assess pollutant sources
  - Model pollutant loadings
- Calculate pollutant reductions to attain Standards
- Allocate allowable loadings
- Include a margin of safety

# TMDL Completion Status in Virginia



-  Watersheds with a Completed TMDL
-  Watersheds with an Approved TMDL
-  Watersheds needing a TMDL
-  Watersheds without a 303(d) impaired listing

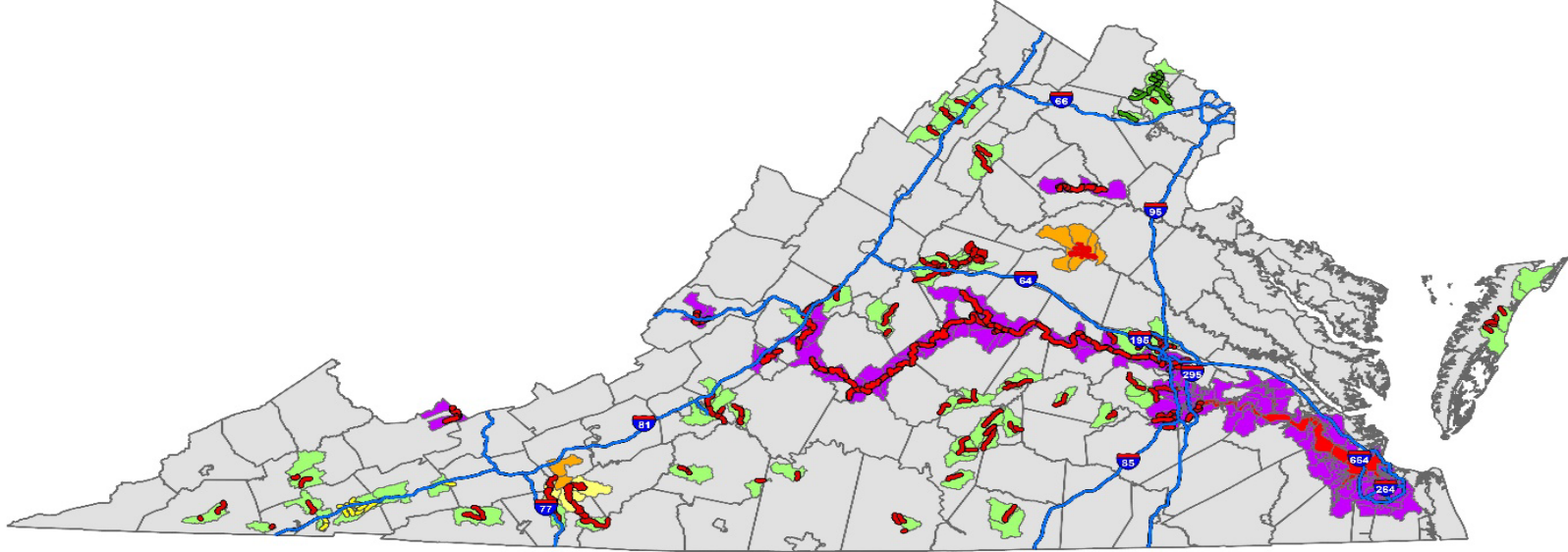
Note: Some watersheds have multiple impairments with differing TMDL completion dates. Natural impairments do not require a TMDL and are excluded from this tally. TMDL status is as of January 2012.



Sources: Virginia Department of Environmental Quality  
Virginia Department of Conservation and Recreation



# TMDL Priorities for 2023-2024

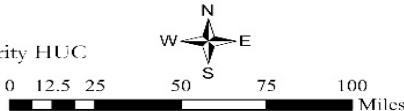


\*SOME HUCS MAY BE PRIORITIZED FOR MORE THAN ONE USE, BUT ONLY DISPLAYED ONCE

Report Type

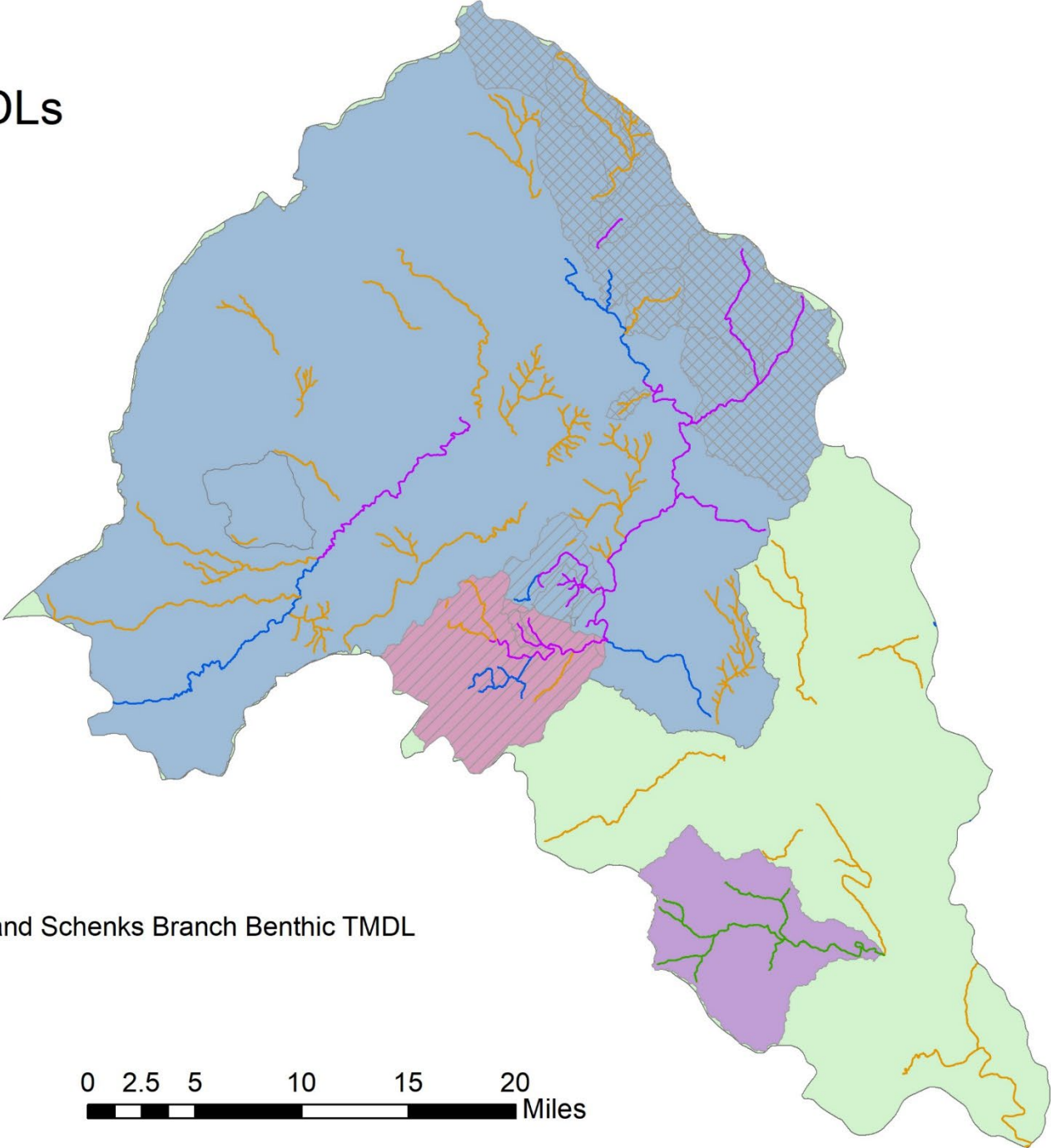
- TMDL or TMDL-Alternative
- Stressor Analysis
- TMDL Revision
- VA Interstate

- Recreation Use Priority HUC
- Fish Consumption Use Priority HUC
- Aquatic Life Use Priority HUC
- Recreation/Aquatic Life Use Priority HUC
- County Boundary



Data Sources: VA DEQ, VA DCR, VA DOT

# Rivanna River Watershed TMDLs



### Legend

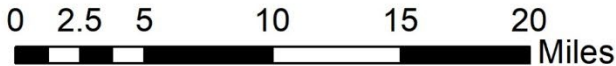
Rivanna River Watershed

### Impaired streams

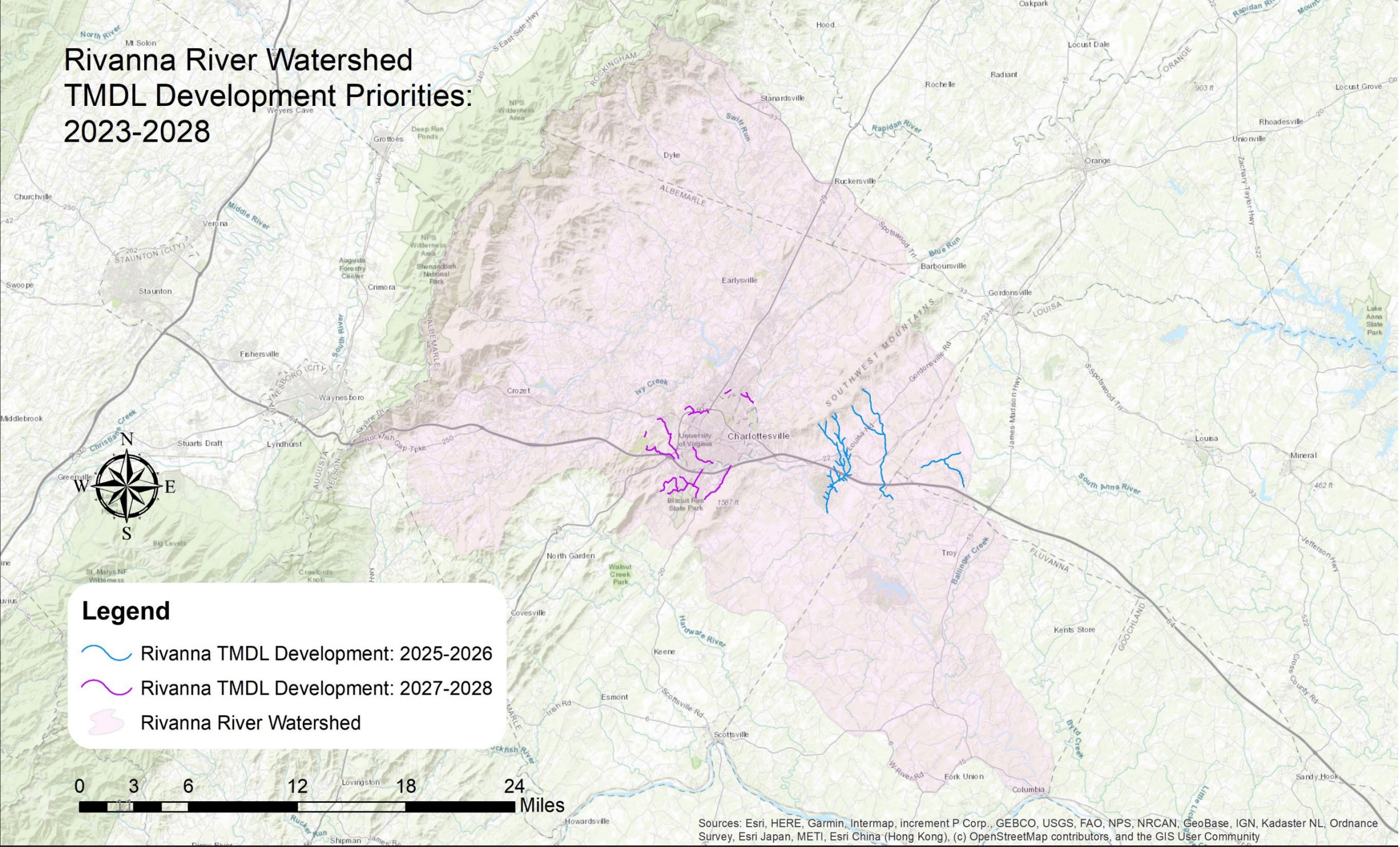
- Impaired with TMDL
- Impaired, TMDL needed
- Multiple impairments, additional TMDL needed
- Impaired, watershed plan developed

### Existing TMDLs


- Moores Creek, Lodge Creek, Meadow Creek, and Schenks Branch Benthic TMDL
- Moores Creek Bacteria TMDL
- North Fork Rivanna Benthic TMDL
- Rivanna River Bacteria TMDL
- Cunningham Creek Watershed Plan



# Rivanna River Watershed TMDL Development Priorities: 2023-2028



## Legend

-  Rivanna TMDL Development: 2025-2026
-  Rivanna TMDL Development: 2027-2028
-  Rivanna River Watershed



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



# What's Next?

- TMDL Implementation Plan

- a document that details actions/strategies to achieve load reductions for nonpoint source pollutants as defined by the TMDL

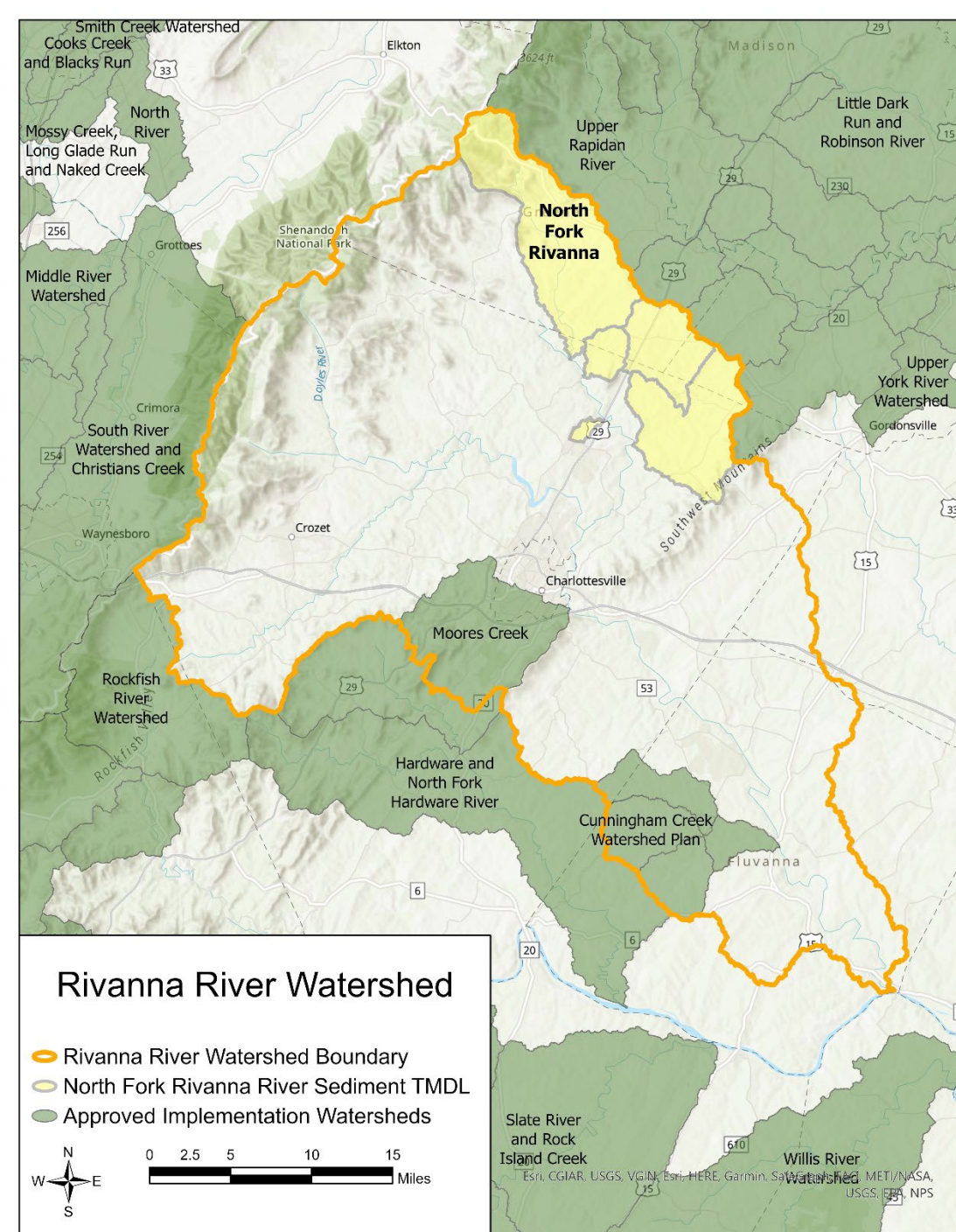
1. Reviews TMDL
2. Actions to improve water quality (corrective actions)
  - BMPs, education & outreach, incentives, etc...
3. Cost-Benefit Analysis
4. Measurable goals
5. Timeline to achieve water quality goals/objectives
6. Public participation

# How implement a TMDL Implementation Plan

- Section 319(h) NPS Implementation Program Request for Applications (RFA)
  - What is 319(h) funding?
    - EPA awards 319(h) funds (Clean Water Act) to states, territories, and tribes to implement TMDL Implementation Plans.
  - Who can apply?
    - Local governments, county health departments, SWCDs, Virginia institutes of higher education, Planning District Commissions, Regional Commissions, nonprofits, and other agencies/departments of the Commonwealth.
  - What can you apply for?
    - BMPs (agricultural, residential septic, pet waste, urban)
    - Education and Outreach
    - Water Quality Monitoring
  - Where can you work?
    - In an approved TMDL Implementation Plan

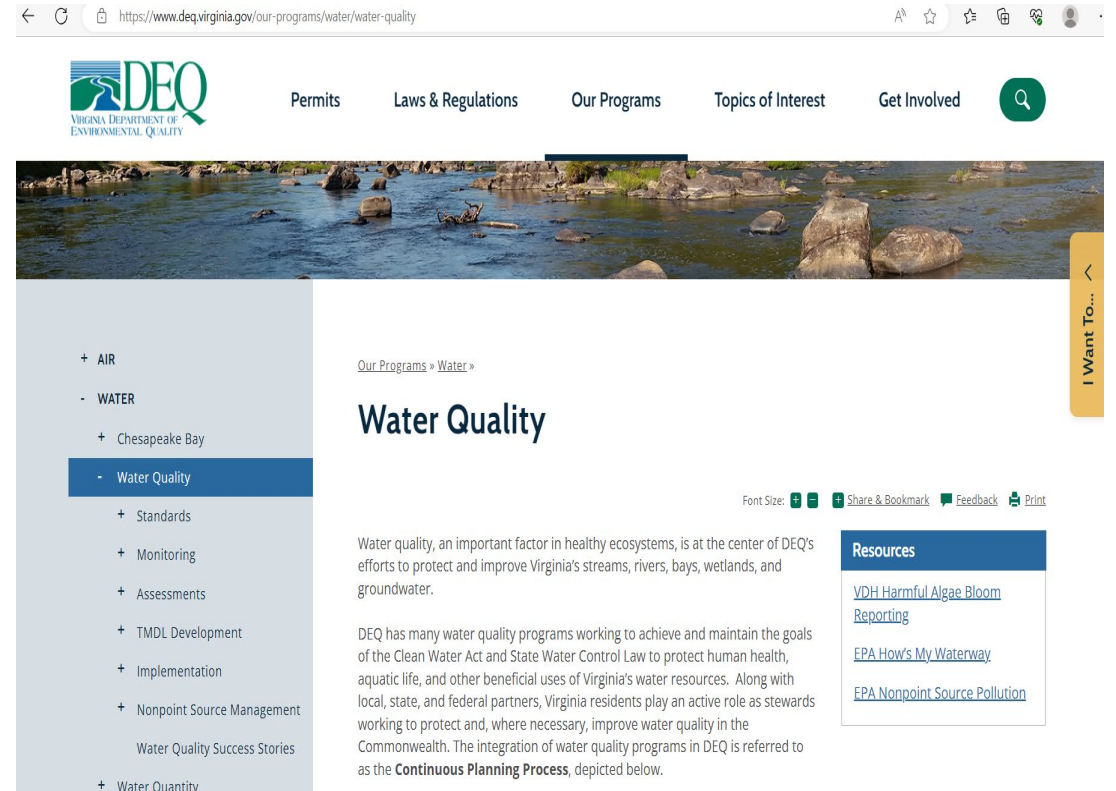
# Implementation Plans within the Rivanna River Watershed

- Moores Creek IP (approved)
  - Able to apply for implementation within the watershed for the current 319(h) RFA (due August 31<sup>st</sup>, 2023).
- North Fork Rivanna IP (in progress)
  - 1<sup>st</sup> public meeting will be held September 20, 2023.



# Resources

- DEQ's Environmental Data Mapper:  
<https://apps.deq.virginia.gov/EDM/>
- DEQ Website
  - Monitoring/Assessment
  - TMDL
  - Implementation
  - Nonpoint Source Management
- [NPSgrants@deq.virginia.gov](mailto:NPSgrants@deq.virginia.gov)



The screenshot shows the DEQ website's "Water Quality" page. The browser address bar displays "https://www.deq.virginia.gov/our-programs/water/water-quality". The DEQ logo is in the top left, and navigation links for "Permits", "Laws & Regulations", "Our Programs", "Topics of Interest", and "Get Involved" are in the top right. A search icon is also present. Below the navigation is a banner image of a river with rocks. A left sidebar menu is open, showing a tree structure: AIR, WATER, Chesapeake Bay, Water Quality (selected), Standards, Monitoring, Assessments, TMDL Development, Implementation, Nonpoint Source Management, Water Quality Success Stories, and Water Quantity. The main content area has a breadcrumb "Our Programs » Water »" and the title "Water Quality". Below the title are font size controls, "Share & Bookmark", "Feedback", and "Print" icons. The text describes water quality as an important factor in healthy ecosystems and mentions the Clean Water Act and State Water Control Law. A "Resources" box on the right contains links for "VDH Harmful Algae Bloom Reporting", "EPA How's My Waterway", and "EPA Nonpoint Source Pollution". A vertical "I Want To..." button is on the far right.

Questions?

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