





Writing Permits for Impaired Waters

2019 National NPDES Permit Writers Workshop

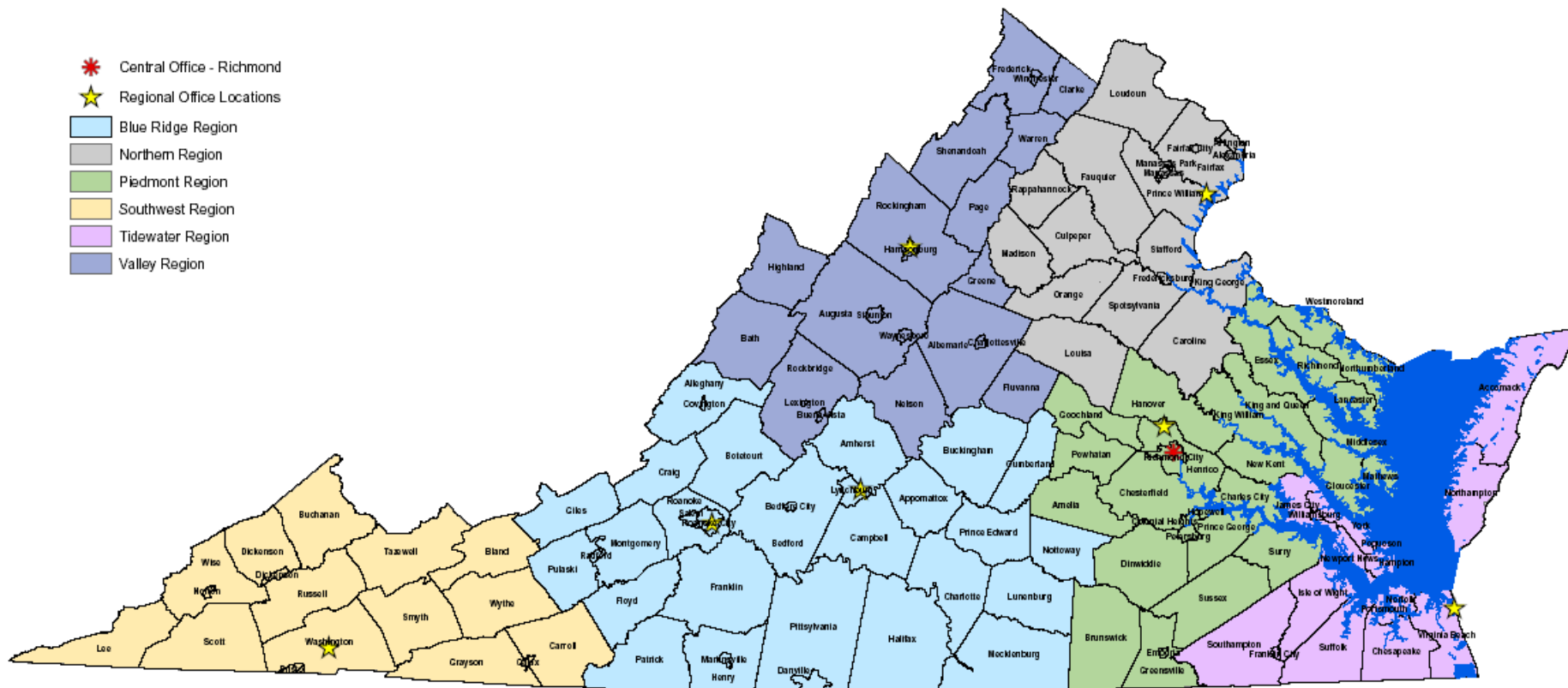
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




Outline – Writing Permits to Impaired Waters

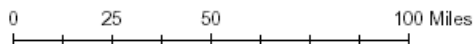
- Background
- Pre-TMDL
 - If / When / How to Address
- Post-TMDL
 - Understanding the TMDL
 - Implementing a WLA
 - Permit Considerations
- Questions / Discussion

Virginia Department of Environmental Quality

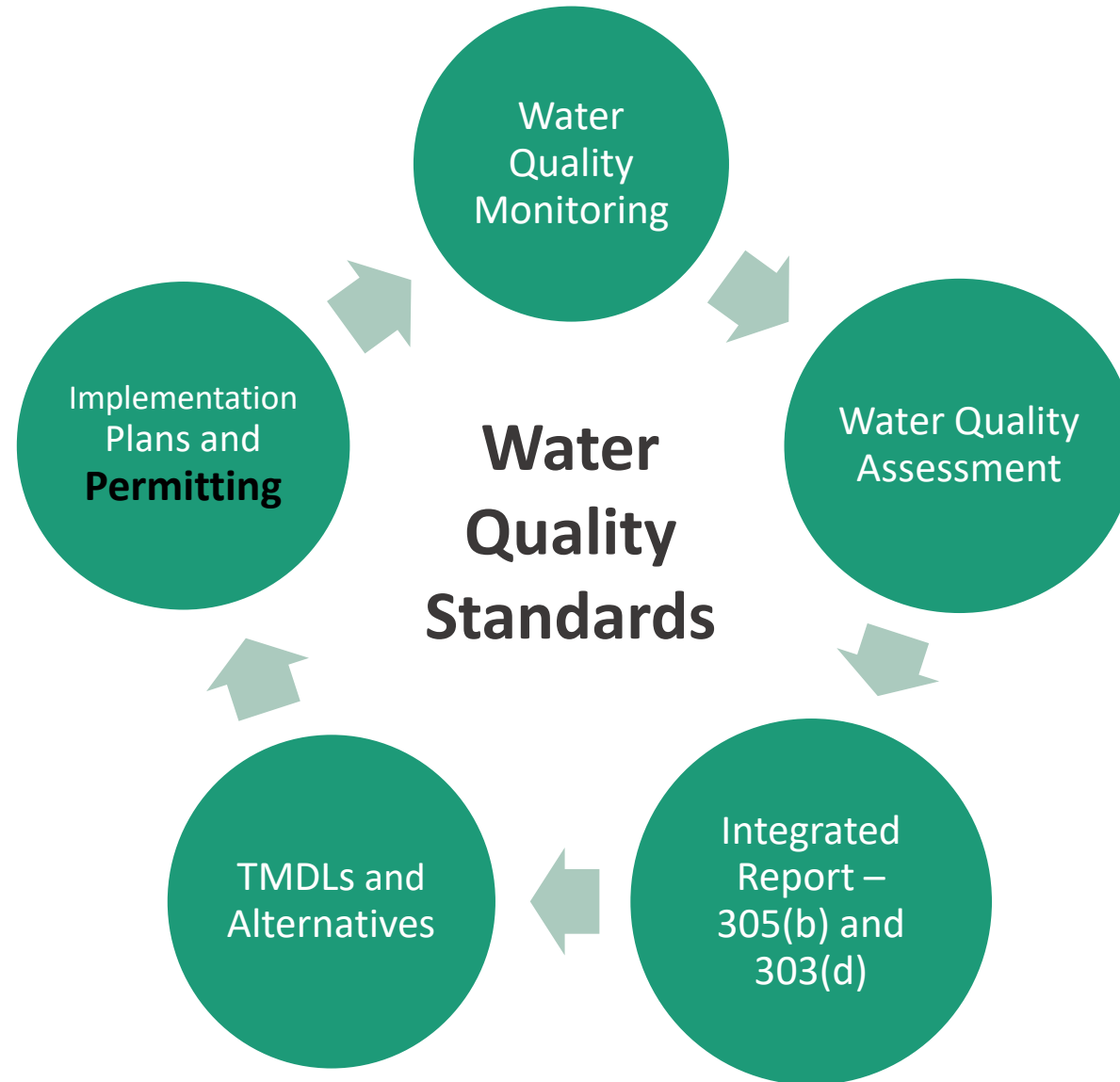
Regional Offices



-  Central Office - Richmond
-  Regional Office Locations
-  Blue Ridge Region
-  Northern Region
-  Piedmont Region
-  Southwest Region
-  Tidewater Region
-  Valley Region



Continuous Planning Process



Permit Development for Impaired Waters

- Responsibility to address water quality problems whether or not there is a completed TMDL
- Regulations establish clear **authority** to implement applicable WLAs with a completed TMDL
- A TMDL [hopefully] provides a clear foundation
 - Special conditions, effluent limitations, and/or monitoring requirements
- Pre-TMDL, the process can be less clear, but the responsibility to address water quality remains

40 CFR 122.44 Establishing limitations, standards, and other permit conditions



Each NPDES permit shall include conditions meeting...

(d) *Water quality standards and State requirements*

(1) ... Achieve water quality standards established under the law and §303 of the CWA, including state narrative criteria for water quality.

(i) Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

(vii) When developing water quality-based effluent limits under this subdivision the permitting authority shall ensure that:

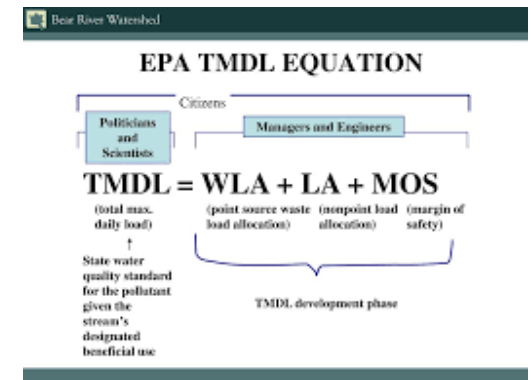
...(B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7

Pre-TMDL - Receiving (and downstream?) Waters are Impaired

- Responsibility to address water quality issues
- Where the cause (e.g. pollutant) of impairment is known
 - Include monitoring for existing discharge(s)
 - Confirm if discharge contributes/causes impairment
 - Collect information to support future TMDL development
 - Establish permit limitations if RP exists
- Where cause is not known (e.g. narrative biological impairment)
 - Work with TMDL staff to determine data needs for existing discharges
- For a new discharge, consider whether additional pollutant inputs can be authorized

Post-TMDL

- Permits are the implementing mechanism for TMDLs
- Implementation Plans in VA focus on the LA (NPS)
- Information Available in the TMDL study
 - Basis of Impairment(s) and Cause(s) / Pollutant(s)
 - Watershed / Receiving Stream Details
 - Modeling Basis and Assumptions
 - TMDL Equation = $\sum WLA + \sum LA + MOS$
- Future growth for new discharges in WLA in VA



Understanding the TMDL

- Identify applicable TMDL(s)
- Know the impairment(s) as it relates to the basis of the TMDL

Examples

- Primary Contact Recreation - WQS bacteria criteria
- Fish Consumption – consumption advisory, WQS criteria
- Aquatic Life – WQS numeric criteria and/or narrative standard

- What was the approach to establishing the TMDL

Possible Considerations

- WQS end-point, Reference Watershed(s), Other
- Model, Load/Flow Duration

- WLAs and Derivation of Effluent Limits

- Reasonable potential analysis generally not necessary where WLA established
- Establishing WLAs in a TMDL is, effectively, permit writing
- Expression of the WLA
 - Aggregated vs. Individual
 - Hourly, Daily, Monthly, Seasonally, Annual, other

Implementation of the TMDL

- Does Consistent with assumptions and requirements... Mean Equal ?
- Does a permit limit have to be expressed in the same units as the WLA?
 - WLAs are usually expressed as a mass loading
 - WQS and model end-points are normally concentration-based
 - TMDL computations/modeling often concentration based converted to mass
- WLAs are water quality-based effluent limits
 - Compliance schedules may come into play
- Should permit limits be mass based, concentration, both?

Implementation of the TMDL

Considerations When Establishing Effluent Limits

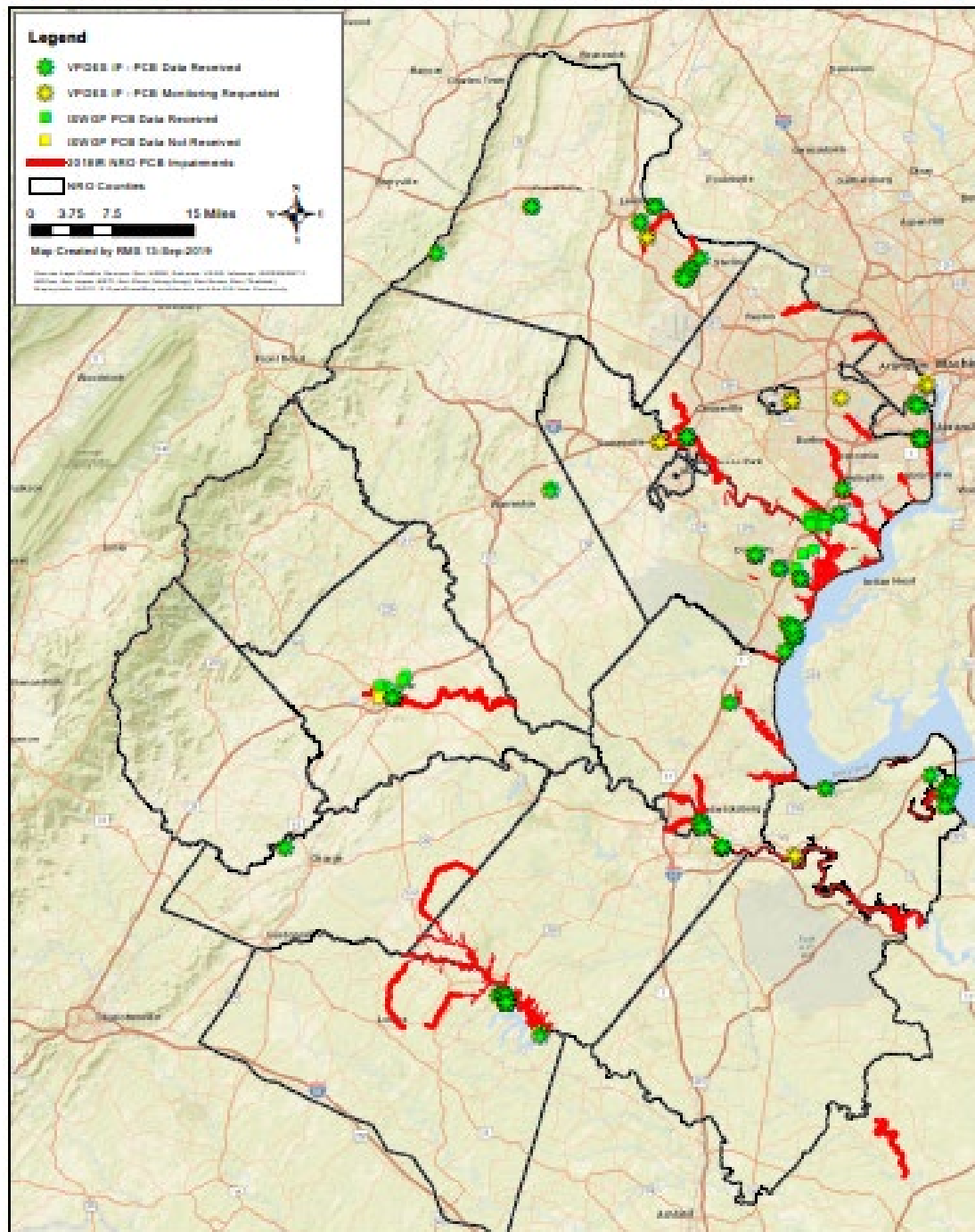
- Regulations (40 CFR §122.45) Require Limits to be Mass, with Three Exceptions:
 - Where pollutants cannot be appropriately expressed in terms of mass (e.g. pH, temperature)
 - When applicable standards and limitations are expressed in other units
 - The mass of a pollutant cannot be related to a measure of operations and dilution doesn't substitute for treatment
- Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations
- Dilution not a substitute for treatment in complying with an applicable WLA
- For continuous discharges, regulations require:

<i>For POTWs</i>	<i>Other Than POTWs</i>
Average Monthly Limits	Average Monthly Limits
Average Weekly Limits	Max. Daily Limits
- May have options -- document logic in fact sheet

Storm Water Discharges

- Types of Permits
 - MS4 (municipal)
 - Construction
 - Industrial (General Permits and Individual Permits)
- Aggregate vs. Individual WLAs
 - Aggregated due to uncertainty
 - Aggregate WLAs support non-numeric WBEL approach (e.g. BMPs)
 - Individual WLAs likely more enforceable and more readily allow for numeric limits
- Numeric limits vs. non-numeric (BMPs)
 - When is it appropriate to include numeric limits ?
 - EPA's Nov. 2010 Memo as Revised Nov 2016
 - Monitoring end-points vs. effluent limits

DEQ NRO PCB Impairments and VPDES PCB Monitoring



A PCB TMDL established for the tidal Potomac River estuary.

Permits Require Monitoring and Pollutant Minimization Plans if exceed EITHER:

- Applicable WLA, or
- WQS derived end-point

PCB Impairments without a TMDL.

Permits Require Monitoring and Pollutant Minimization Plans if exceed WQS derived end-point

Concluding Thoughts...

- Coordination between TMDL and NPDES staff is important
 - Pre-TMDL
 - Data and information to support TMDL development
 - Establish permit requirements in advance of TMDL, as appropriate
 - During TMDL development:
 - Correct/accurate information into TMDLs (facilities, design flows, planned expansions, etc.)
 - Establish WLAs with an eye to how they will be transferred and expressed in permits
 - Include language in the TMDL for how the WLAs are intended to be implemented if not straight forward
- Likely several viable options for translating WLAs into permits
 - Understand the TMDL to develop a defensible permit
 - Document in the fact sheet or statement of basis

A blue-tinted image of a person's head in profile, facing right. A large, stylized question mark is formed by a liquid droplet that has just fallen, creating a splash and ripples in the water below. The background is dark, and the overall mood is contemplative and questioning.

QUESTIONS ?

Contact Information

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