

Piedmont Regional Pilot Project for Phase II of the Chesapeake Bay TMDL

Middle James Roundtable

March 15, 2011



Piedmont Regional Pilot Project

Chesapeake Bay TMDL Phase II

- * Basics of the Bay TMDL
- * Genesis of the Pilot Project
- * Pilot Project Plan and Steering Committee
- * Stakeholder Engagement
- * Observations from Pilot Project
- * Messages from Stakeholder Participants
- * PRPP Recommendations to DCR and EPA
- * Watershed-based Recommendations

- * **DCR – Phase II WIP update**

Bay TMDL Basics

How Did We Get To This Point?

1972 - Clean Water Act

1987 - Chesapeake Bay Agreement

1999 - Virginia TMDL case settled

2000 - Chesapeake Bay 2000

2008 - Bay states ask EPA to take over Bay TMDL

2010 - Chesapeake Bay Foundation case against EPA settled

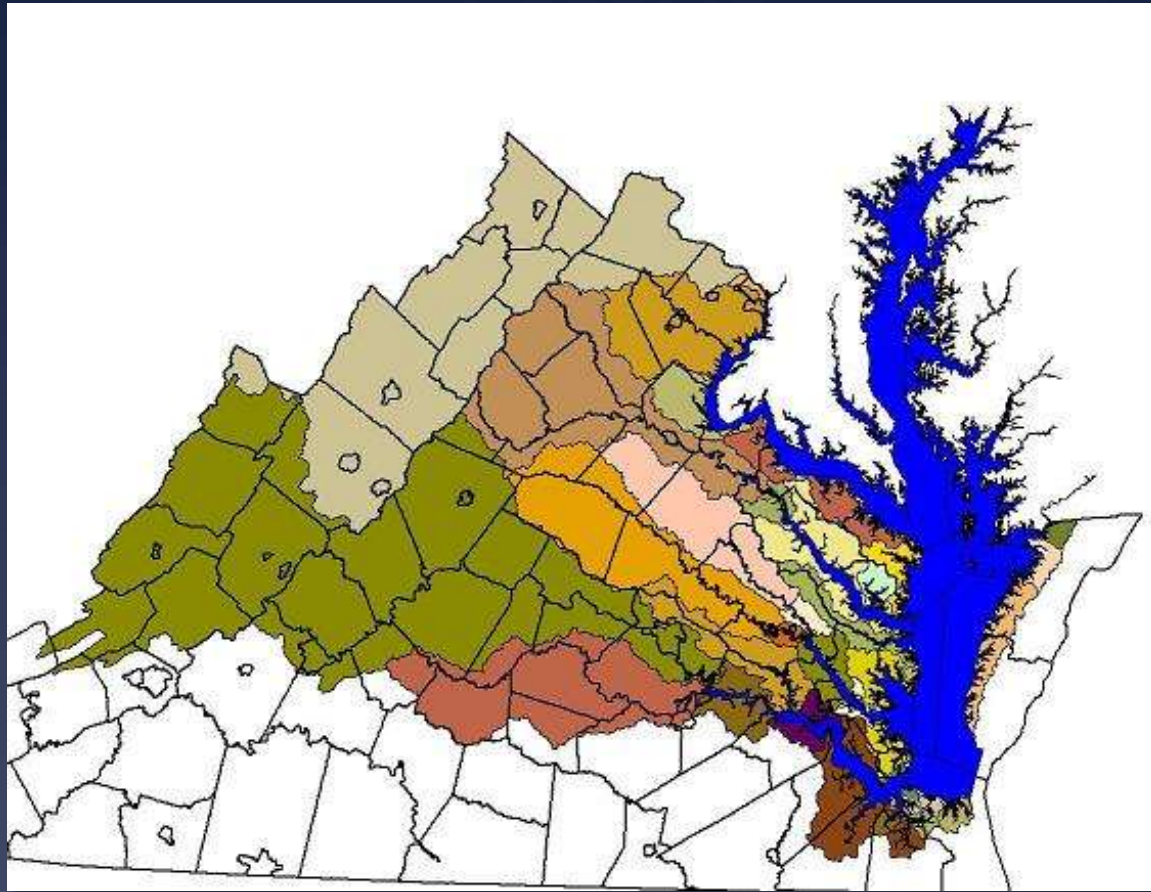
What is a TMDL?

- * **Total Maximum Daily Load** = maximum amount of a pollutant that a body of water may receive and still meet its water quality standards for
- * Shorthand for the amount of a pollutant a water body can receive and still meet its standards *and* the public process by which it is produced
 - * Identify the problems
 - * Identify probable sources
- * Considers all sources of pollution
- * Followed by an Implementation Plan (IP) and the execution of that IP until water quality standards are achieved

Chesapeake Bay TMDL

- * Aquatic life and habitat impaired due to
 - * Low oxygen, minimal SAV, turbidity
- * The culprits:
 - * Nutrients (N and P) and sediment (TSS)
- * Bay TMDL focus: restoring nutrients and sediment to acceptable levels in the Bay
- * Divides Bay and tidal tributaries into 92 segments
- * Many local waters will have to be restored and protected in order for the Bay TMDL to succeed

Virginia Segmentsheds



3 TMDLs per segment

Chesapeake Bay vs. other TMDLs?

- * Most complicated, data-rich TMDL ever developed
- * TMDL load allocations based on sophisticated, yet imperfect set of models
- * Involves 6 states, DC, and multiple federal agencies
- * Includes Watershed Implementation Plans (WIPs) that are developed concurrently with the TMDL
- * Sets 2-year incremental goals through 2025 to build in accountability
- * 60% of implementation to be achieved by 2017
- * Support from Executive Order and Action Plans

Who will be affected?

- * Federal, state and local governments
- * Point sources (wastewater)
- * Permitted stormwater runoff
 - * From developed areas (MS4s)
 - * Development under general and construction permits
- * Agriculture (some more than other, e.g., CAFOs)
- * Alternative and onsite wastewater (including septic)
- * Air deposition
 - * (power plants, vehicles, animal waste lagoons)
- * Natural gas production in Marcellus Shale
- * Homeowners and citizens

In short ... everyone who lives, works, and does business in the Bay watershed

Bay TMDL at the Local Level

- * Allocations by state and major tributary for nitrogen, phosphorous, sediment.
- * “Target” loads by locality and subwatershed achieve allocations.
- * States were given some discretion as to the scale for allocations & planning (localities, SWCDs, PDCs, watersheds).
- * All sectors must reduce pollutant loads, but some discretion will exist for how to meet local pollution allocations as a whole.
- * Responsibility for meeting pollutant loads falls on Virginia and ultimately EPA.

Bay TMDL Timeline

- * Draft Phase I WIPs - September 1, 2010
- * Public Comments - September 24 – November 8
- * Final Phase I WIP - November 29, 2010
- * Final TMDL containing Phase I WIPs – Dec. 29, 2010
- * Phase II (local) WIPs – draft Nov 2011, final early 2012
- * 2-year incremental plans (mini-WIPS) due from states every other year (2012)
- * Phase III WIP by 2017 (60% of goals)
- * Full implementation by 2025

**Actual attainment of water quality standards
in the Bay will follow sometime after 2025**

Elements of Watershed Implementation Plans (WIPs)

- * Interim and Final Target Loads
- * Current loading baseline and program capacity
- * Account for growth
- * Gap analysis (resources, programs, regulations, etc.)
- * Commitment and strategy to fill gaps
- * Tracking and reporting protocols
- * Contingencies for slow or incomplete implementation
- * Detailed targets and schedule

PRPP: January – April 2010

- * **RFP from EPA through the state (DCR) – Identifying resources provided (no direct funding)**
 - * Technical Support – Tetra Tech
 - * Facilitation Support - various EPA contractors
- * **Alternatives considered**
 - * Rivanna watershed only
 - * Local stakeholder engagement: field monitoring workshops to show how data are obtained
 - * Show how analysis of one “data-rich” watershed can inform neighboring “data-poor” watersheds
- * **AMBITIOUS Project proposal from Rivanna River Basin Commission** for the Rivanna watershed with plans to do as many of the WIP elements as possible

Rivanna River Basin Commission

- * Local government commission created by state statute
- * Elected officials:
 - * Two from each of the four localities
 - * One each from Culpeper and Thomas Jefferson SWCD
 - * One appointed citizen from each locality
- * Technical Advisory Committee consisting of local government staff and technical experts
- * Staffed since 2009 by one FT and one PT staff

The RRBC shall provide guidance for the stewardship of the water and natural resources of the Rivanna River Basin and promote activities by local, state, and federal governments, and by individuals, that foster resource stewardship for the environment.

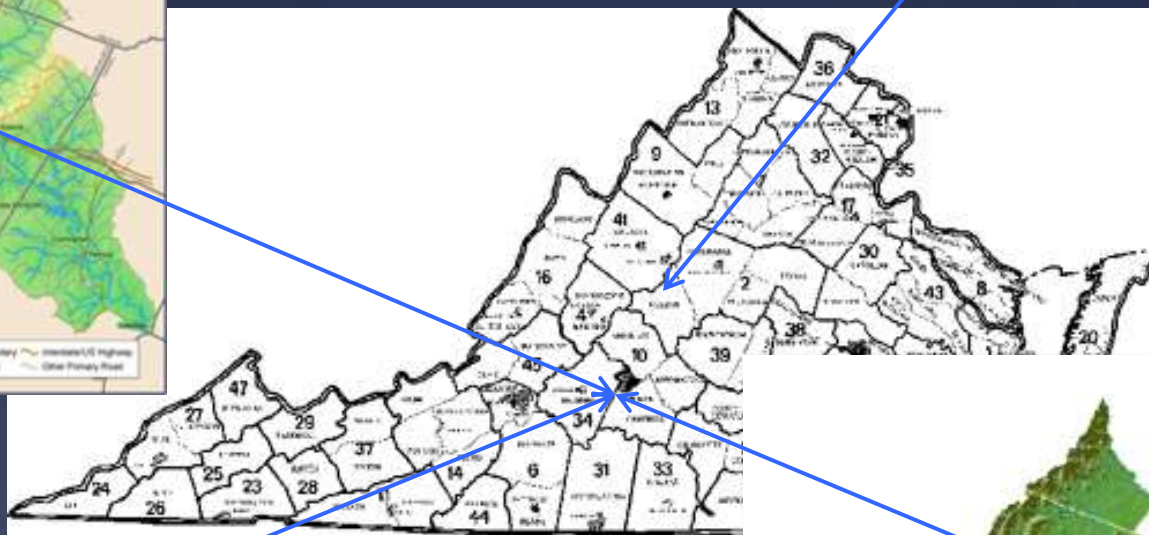


The first challenge:

From Rivanna Watershed to Piedmont Regional Pilot Project



Culpeper SWCD



Crafting the Regional Focus

- * **RRBC** - Rivanna River watershed only
- * **TJSWCD** – includes Nelson and Louisa, not Greene
- * **TJPDC** – includes Nelson, Louisa, and Greene with a local government and regional planning focus
- * Other **local SAG** members
- * **PDC** > bring in elected officials
- * **TNC** > TNC's Chesapeake Bay program

“A committee of the willing”

The Pilot Project Region – PD10

Urban core, suburban growth

Two “Phase 2” MS4 communities
Six MS4 permits

Outlying rural areas

Two fast growing counties

One significant discharger

Multiple non-significant
Multiple industrial

Three major Virginia tributaries

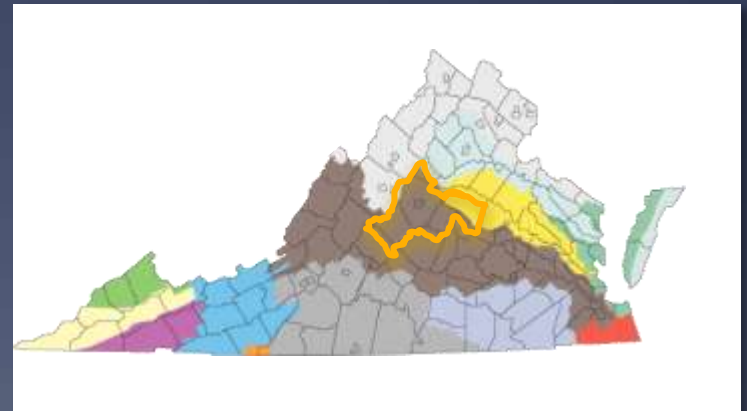
primarily Middle James
Rapidan/Rappahannock
Pamunkey/York

Average land cover

2 - 3% imperviousness
30% in Charlottesville

55 - 70% forest cover
including forest plantations

20-30% open land



Goals of the Pilot Project

Provide accurate information to different groups of stakeholders who will be affected by the Bay TMDL.

Solicit feedback, concerns and suggestions to improve understanding of local implementation challenges.

Provide feedback to Virginia DCR and EPA for the Phase II.

Ascertain the interest in coordinating a regional or watershed based response.

Evaluate whether Bay TMDL requirements can be seen as an opportunity to leverage support for cleaning up local (Piedmont) streams.

Review existing impaired waters and analyze relative to Bay pollution targets in order to coordinate with local clean-up efforts. -- *Technical Task not completed*

We did not attempt to engage citizens, advocacy groups or the general public in any way.

Piedmont Regional Pilot Project Tasks

Task 1: Existing Conditions –

(with assistance from TetraTech)

Analyze estimated waste load allocations in Pilot Project area in comparison to loadings specified in local “equivalent” TMDL in the Rivanna (for sediment).

Task 2: Conduct outreach to pollutant sector stakeholders

Conduct Focus Groups

Prepare findings

Return with findings to local elected bodies

Finalize report for EPA and DCR

Many Meetings!

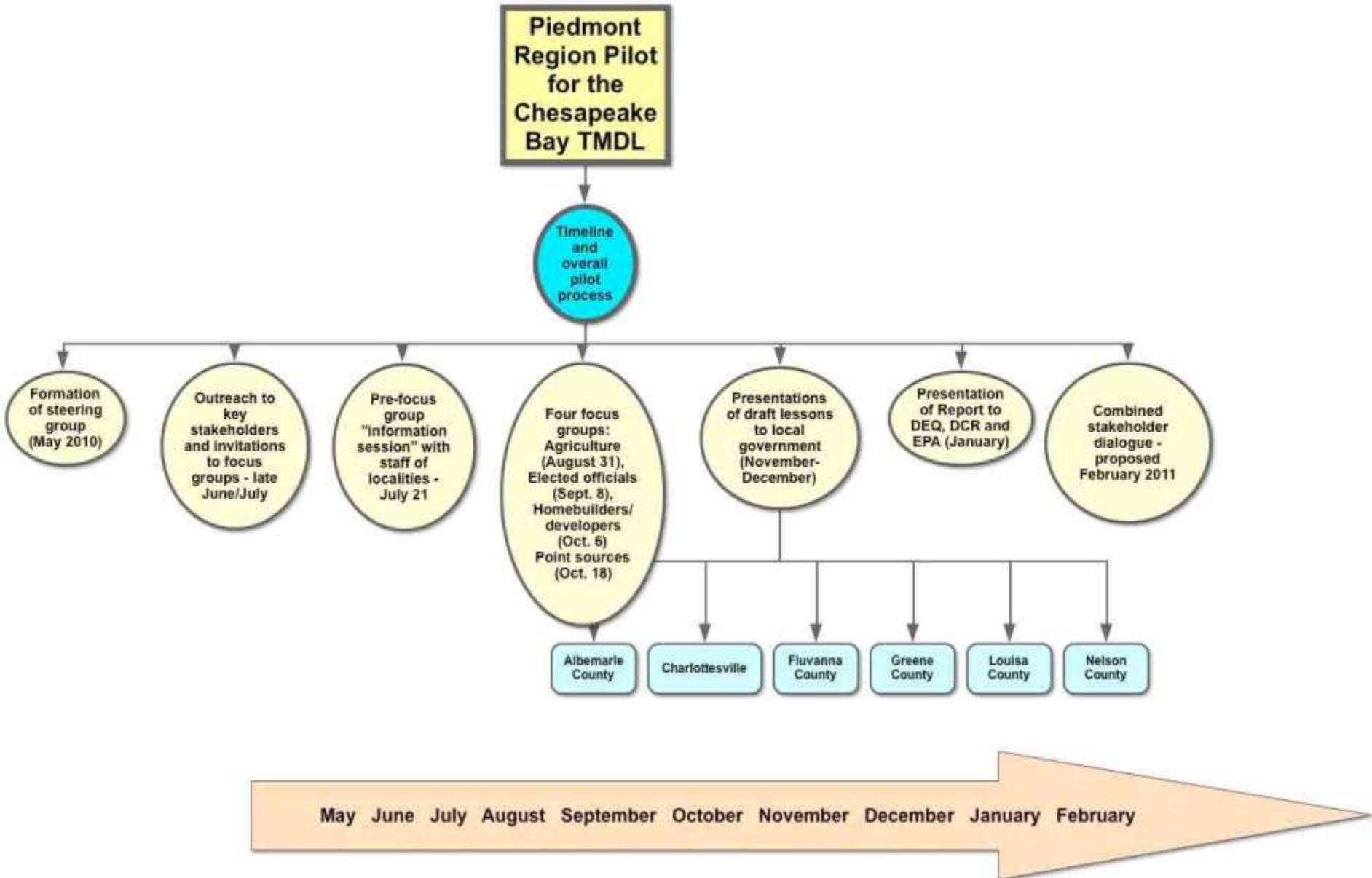
Local government as Phase II implementers

Sector focus groups and participants selected for representativeness and constructive criticism

- * Agriculture/forestry/viticulture
- * Builders/developers and economic development
- * Permit holders (MS4s, point sources)
- * Elected officials and staff

Meetings concurrent with development of draft Virginia WIP and draft BAY TMDL, EPA backstop measures

Task One: Stakeholder Engagement



Input/Discussion

- * Current understanding of Bay TMDL & potential impacts?
- * Biggest concerns about Bay TMDL?
- * Practical ways for farmers to reduce pollution?
- * What could help you to prepare for the TMDL?
- * How can Bay TMDL be used to achieve other goals?
- * From where have you been learning about the TMDL?
- * How would you like to get future updates?
- * What role would you like to play in developing a local WIP; what do you see as a practical scale for a local plan?



So Many Meetings!

Messages from Focus Groups

- * Provide us accurate and timely information
- * Show us that this will be fair
 - * *Use accurate local numbers for all source sectors to communicate about equity*
- * Let us craft our own local response
 - * *Regional planning sounds attractive*
 - * *Trading and offsets between source sectors locally “could work”*
- * Use available local data and engage localities in verification
- * Concern about costs (everyone)

Pilot Project Observations

1. **Complex issue with dense historic and scientific background and evolving requirements offers a challenging situation from which to build local buy-in.**
 - * *Must simplify language but not the science*
 - * *Difficult to judge appropriate level of detail*
 - * *Requires “cyclical learning” (multiple presentations)*
 - * *Bay TMDL just one of many pressing issues facing local elected officials*

Pilot Project Observations

2. To engage local governments and affected stakeholders as partners, it will be essential to share the methodology by which local-level allocations will be (or are being) made.

- * *“We’ll just wait and see.”*
- * *“Just tell us what you need us to do.”*
- * *Outright suspicion of the state and EPA.*

Pilot Project Observations

3. To the degree that the Bay models are used to develop local allocations, it will be essential to:

- * Recognize and acknowledge that local water quality data will always trump model numbers.*
- * Provide mechanisms for utilization of local water quality data in the Bay TMDL process.*

Pilot Project Observations

4. **Dedicated funding for watershed implementation planning will be needed *at the local level* to develop the Phase 2 WIPs.**

- * *Funding necessary to collect and assess local existing conditions (BMP inventories, staff, land use, infrastructure) in order to assess local/regional gap analysis.*
- * *Funding necessary for local government and local and regional agencies to dedicate staff time to develop plans.*
- * *Pilot Project has been extremely staff-time intensive:*
 - * *15+ Steering Committee meetings*
 - * *6 focus group meetings*
 - * *Presentations to 6 elected bodies of local government*
 - * *Coordination, documentation, and reporting*

Pilot Project Observations

5. Resources must be made available at the local level to implement necessary changes.

- * *Cannot assume localities will simply raise local taxes to cover costs of planning and implementation.*
- * *In the absence of detailed state-level resource gap analysis, local governments assume the burden will fall on them.*

Pilot Project Observations

6. Making the case for improved *local water quality and use of local water quality data* may be essential for eliciting buy-in of local governments and affected stakeholders.
 - * *It is cost effective and essential to identify and **protect local existing healthy waters.***
 - * *Local communities want specific and concrete **assurances** that existing local TMDLs are addressed during this process.*
 - * *The **emphasis on trading and offsets raises concerns** about the mechanisms by which will local water quality can be assured.*

Pilot Project Observations

7. A collaborative partnership between local governments, local SWCDs, PDCs, and watershed groups that engages affected stakeholders may be the best approach for developing the Phase 2 WIP.

- * *While local governments will ultimately be “responsible” for implementation, they cannot do so without strong partnerships with SWCDs, PDCs, and watershed groups.*
- * *At the same time, water quality is ultimately watershed-based.*
- * *One size does not fit all localities or regions: it may not be practical or effective to have one entity across the across the state take the lead (e.g. SWCDs or PDCs).*
- * *Local and regional planning should be matched to appropriate scale (e.g., Fairfax County vs City of Charlottesville).*

Pilot Project Observations

8. Utilize existing local forums for bringing together affected stakeholders to develop local/regional solutions.

- * *Conduct focus groups with each sector separately, then offer the possibility of meeting as a larger group.*
- * *The effectiveness of these conversations is reduced when conducted in the context of uncertainty about sector allocations and allowable trading and offset opportunities.*

Messages from Combined Group

- * Local response to locally identified problems is appropriate
- * Local cooperation may allow cost-efficiencies in activities such as water quality monitoring
- * Different sectors universally agreed on these issues and concerns:
 - * The accuracy of the Bay Models in describing existing conditions
 - * Financial costs
 - * Broad solutions that do not reflect local conditions and that impose one-size-fits-all requirements
 - * Concern about unintended consequences, such as pushing growth to rural areas
 - * Inequitable burdens placed on any one sector

Protecting local waters and the Bay is a worthy goal:

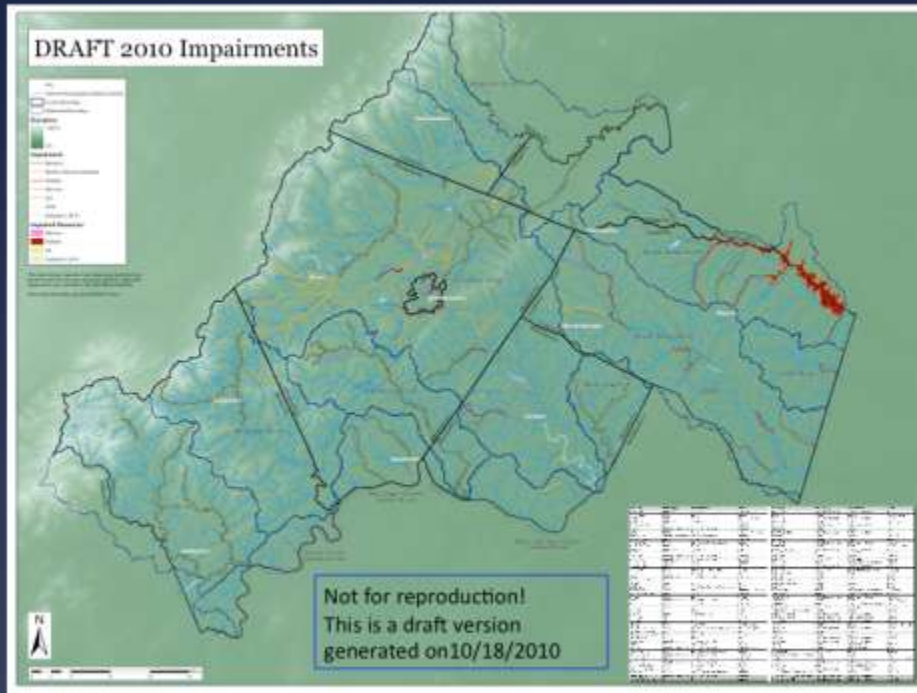
We are willing to bear our share of the burden if the effort is based on good science and equitably shared



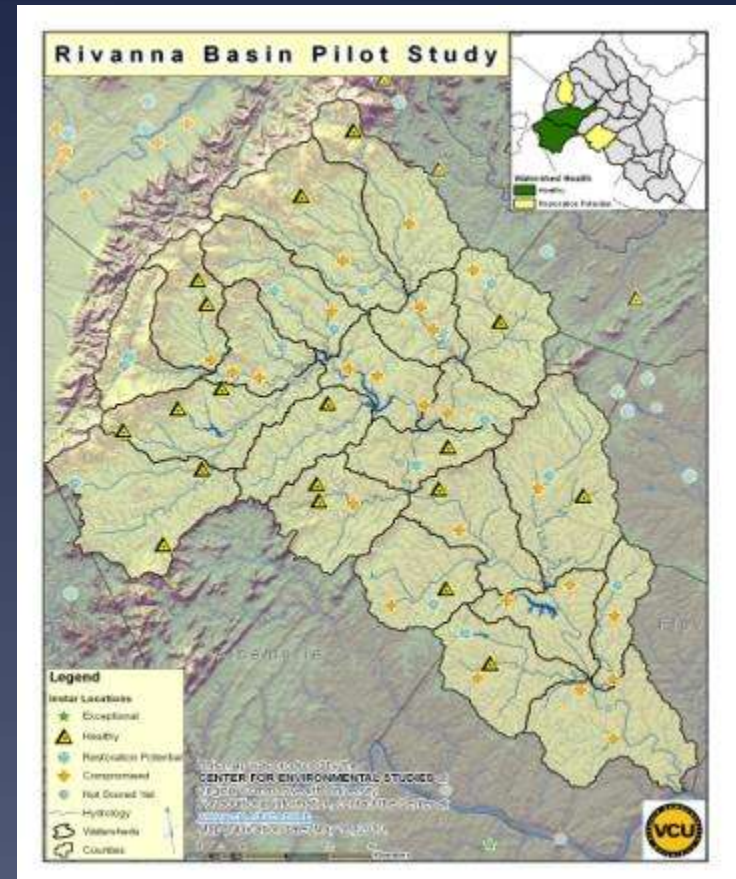
Lessons Learned

- Provide accurate and timely information
 - Engagement is impaired when process is evolving
 - Misinformation management necessary but time-consuming
 - Provide information customized for different sectors
 - Plan on repetition and cyclic learning
- Allow time to build all the relationships
- Seek leaders from within interest groups
- Start by listening to each sector separately
- Tend the relationships between those guiding the process (steering committee members)
 - * **Important to clarify roles especially when scarce resources are at stake**

TMDL = Pollution Reduction Conservation = Pollution Avoidance



Draft 2010 Impairments



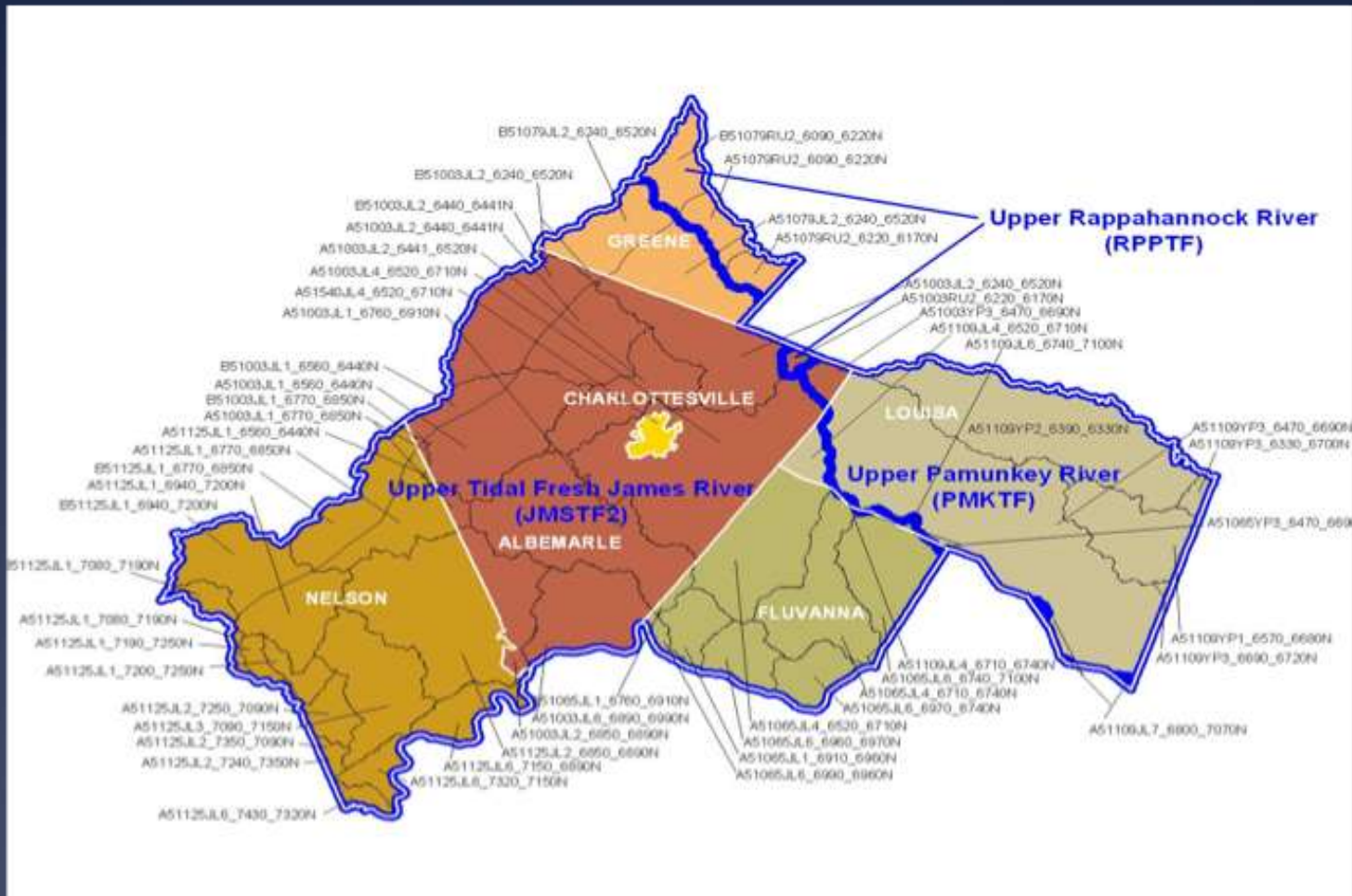
2009 Rivanna Healthy Waters

Moving to Phase II: Provide guidance and tools for

- * Developing uniform accounting of existing practices and BMP efficiencies
- * Establishing baseline conditions
- * Understanding how the Bay Model relates to local water quality
- * Evaluating different scenarios by local governments and partners
- * Using the most current (local) data for Phase II WIP planning, implementation, and assessment
- * Using (qualified) local water quality monitoring data in tracking progress



Bay Model is watershed based



Map Reference showing Assessment Units, Counties, and 5.3 Modeled Subsegments.

Maintain the Watershed Focus

- * Require localities to develop Phase II plans to achieve local nutrient and sediment targets based on watersheds within their political subdivisions.
- * Develop pollution reduction targets for local governments based on the watershed allocations as defined by the Bay Model's sub-segments (prior to aggregation into political sub-division).

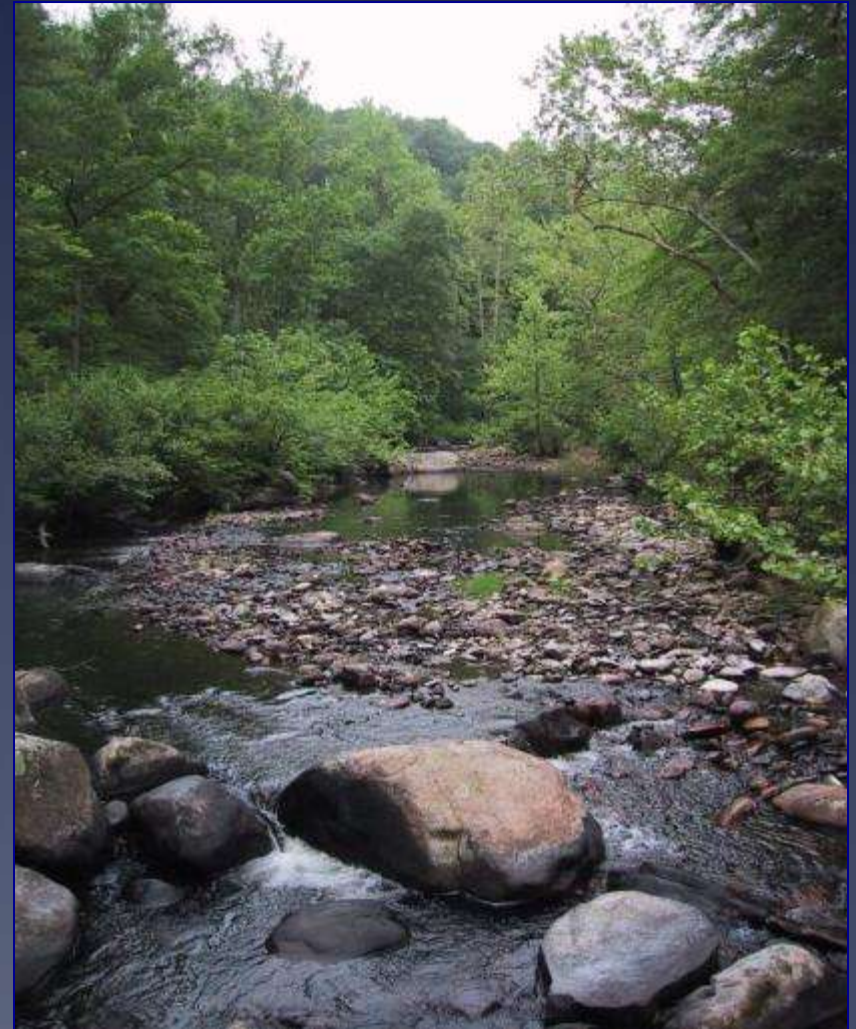
-- From February 16, 2011 Letter from RRBC to Virginia Secretary of Natural Resources

Local Water Quality is the Major Concern Above the Fall Line

The Bay is remote to many in the Virginia Piedmont

Protecting *existing healthy waters* is key message

- * Cost effectiveness of preservation vs. clean-up
- * Economic value of clean waterways for tourism, recreation, drinking water



What's Next?

- * Continue to work together as a Steering Committee
- * Review make-up of Steering Committee
- * Maintain momentum with stakeholders – continue to communicate with participants
- * Continue to communicate with and support local governments
- * Prepare local governments to assess baseline conditions and existing practices (“conservation portfolios”) in preparation for
- * Phase II WIP guidance from DCR