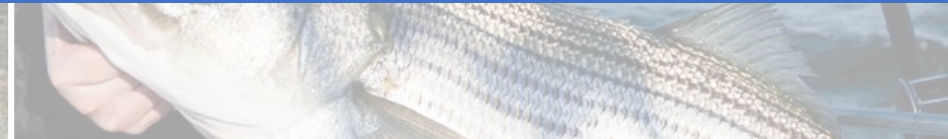




Putting it all together: integrating the monitoring and modeling to inform management



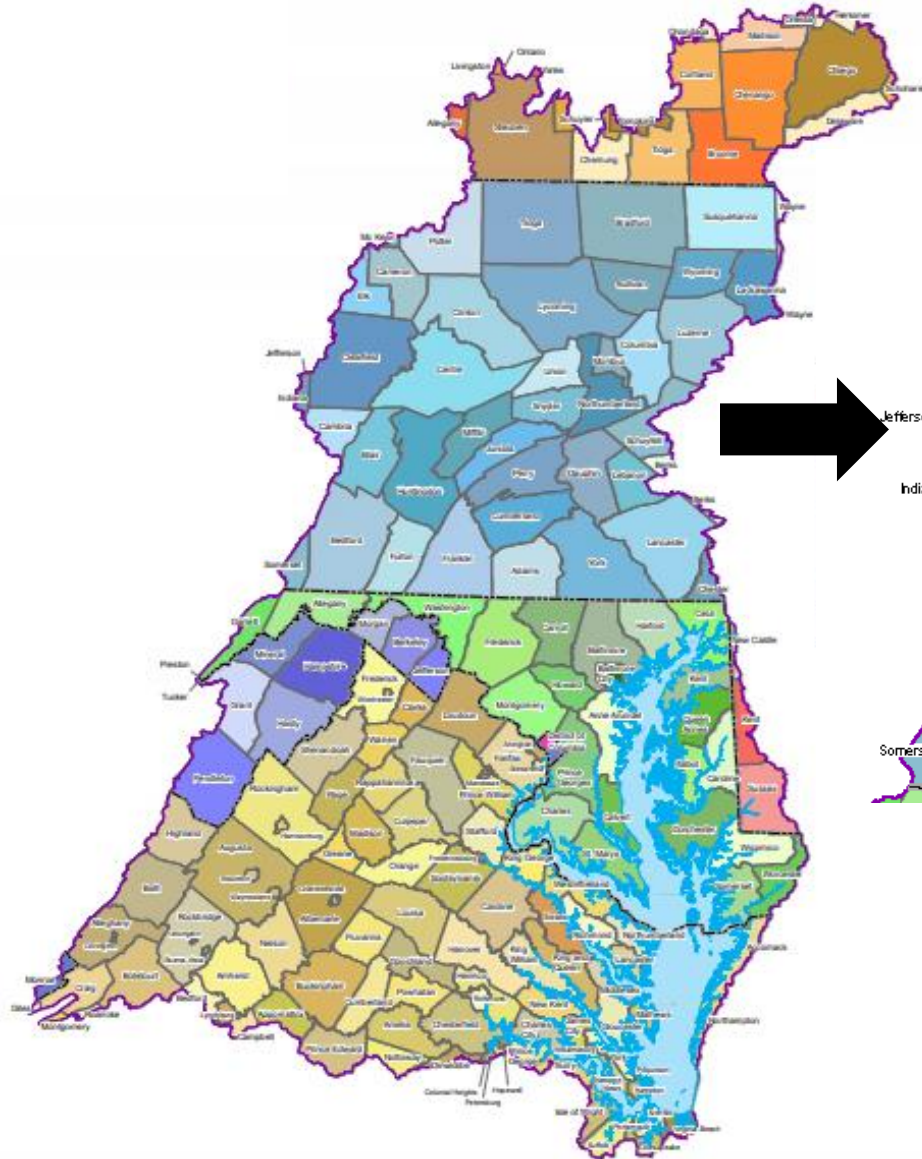
Emily Trentacoste, PhD
EPA Chesapeake Bay Program Office
Chesapeake Bay Commission
11/8/2018

The opinions expressed in this technical presentation are those of the author and do not necessarily reflect the views of US EPA.



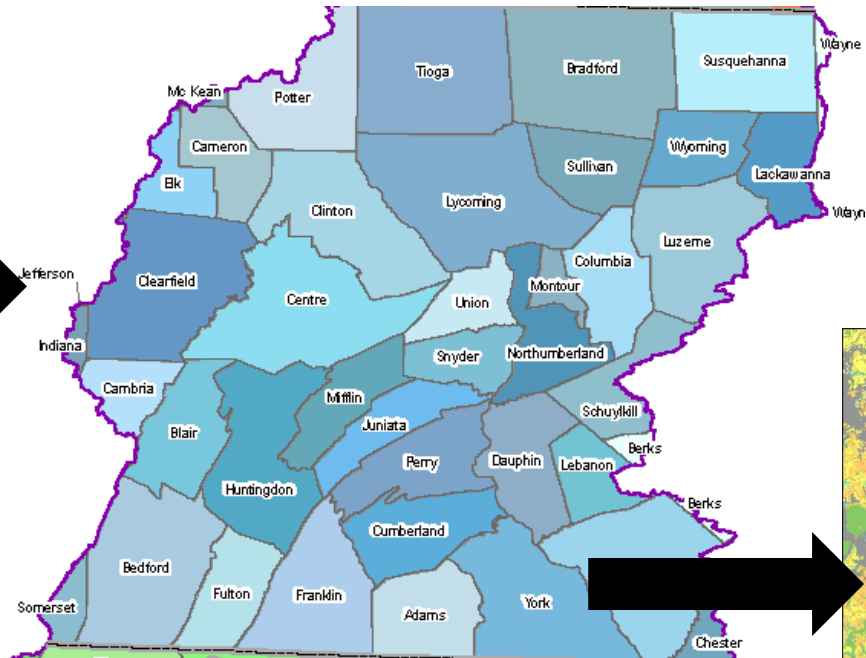
Developing storylines to demonstrate management connections

Chesapeake Bay Watershed Counties

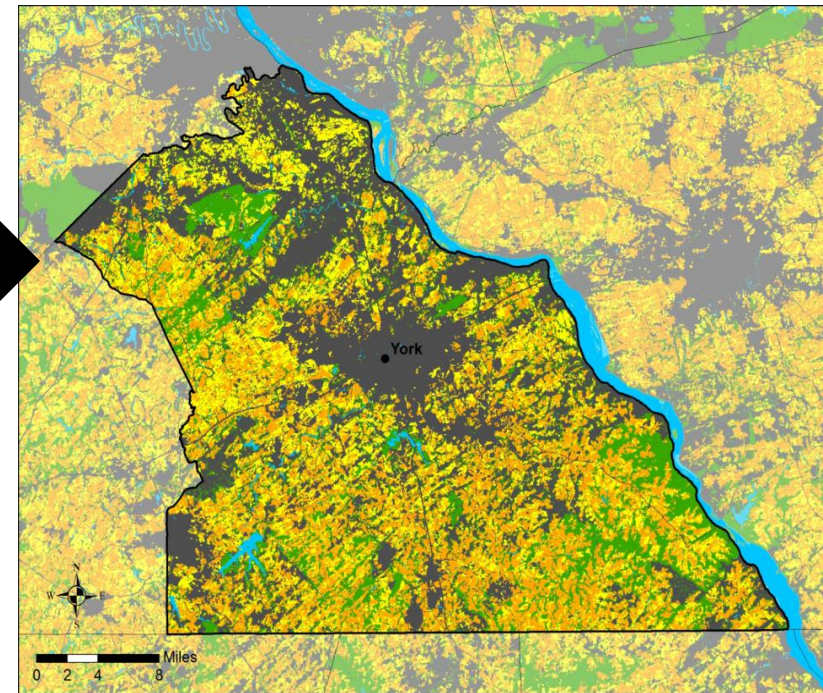


We'll use York County, PA as an example

Pennsylvania Counties

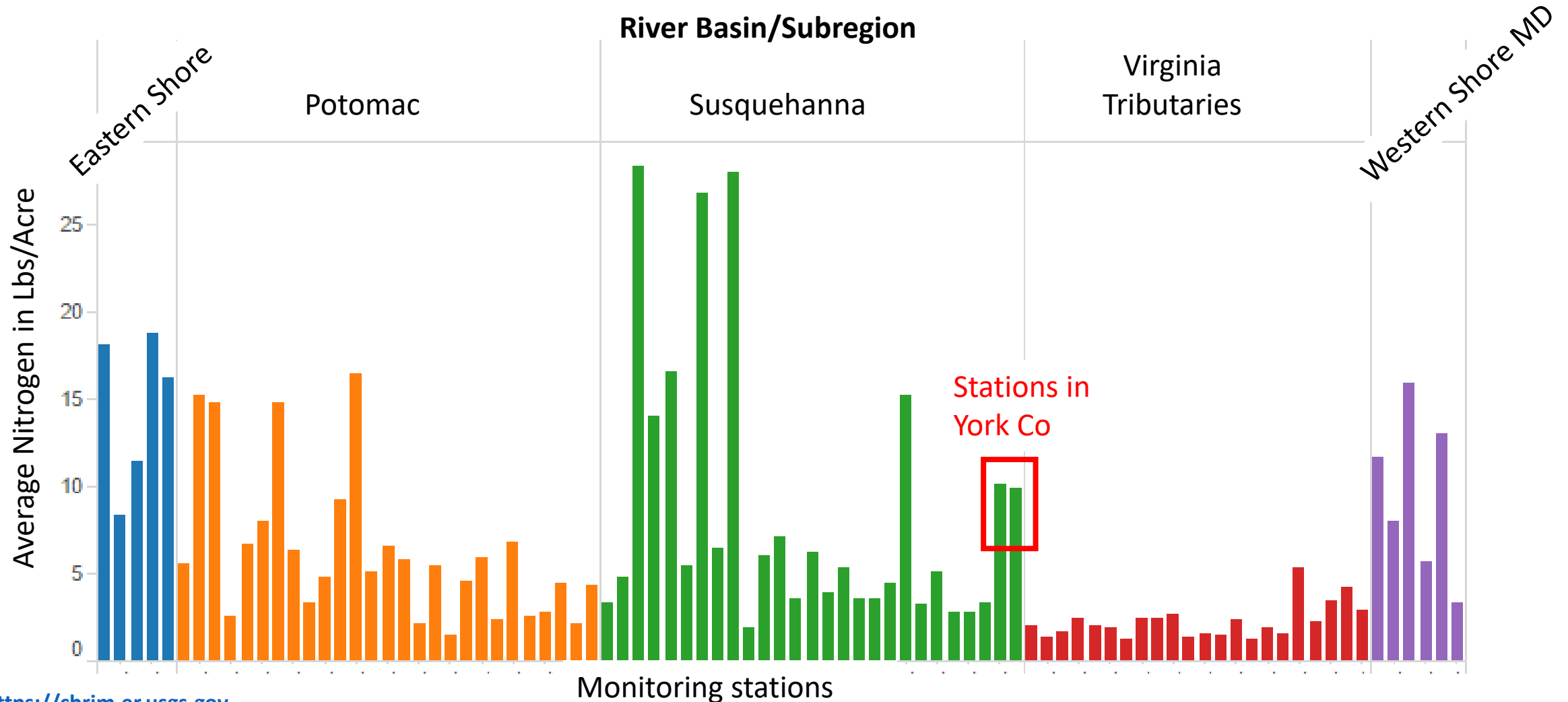


York County, PA



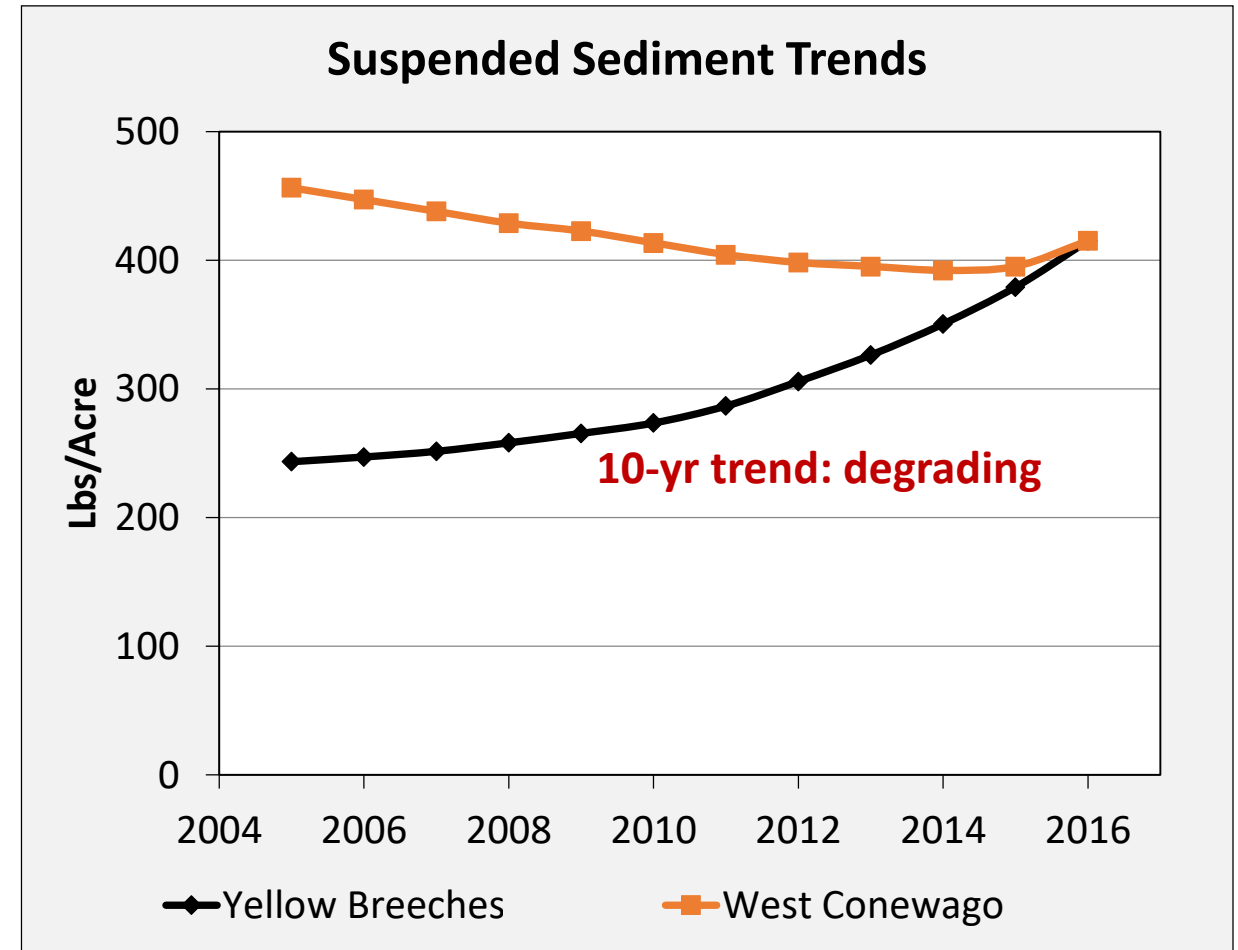
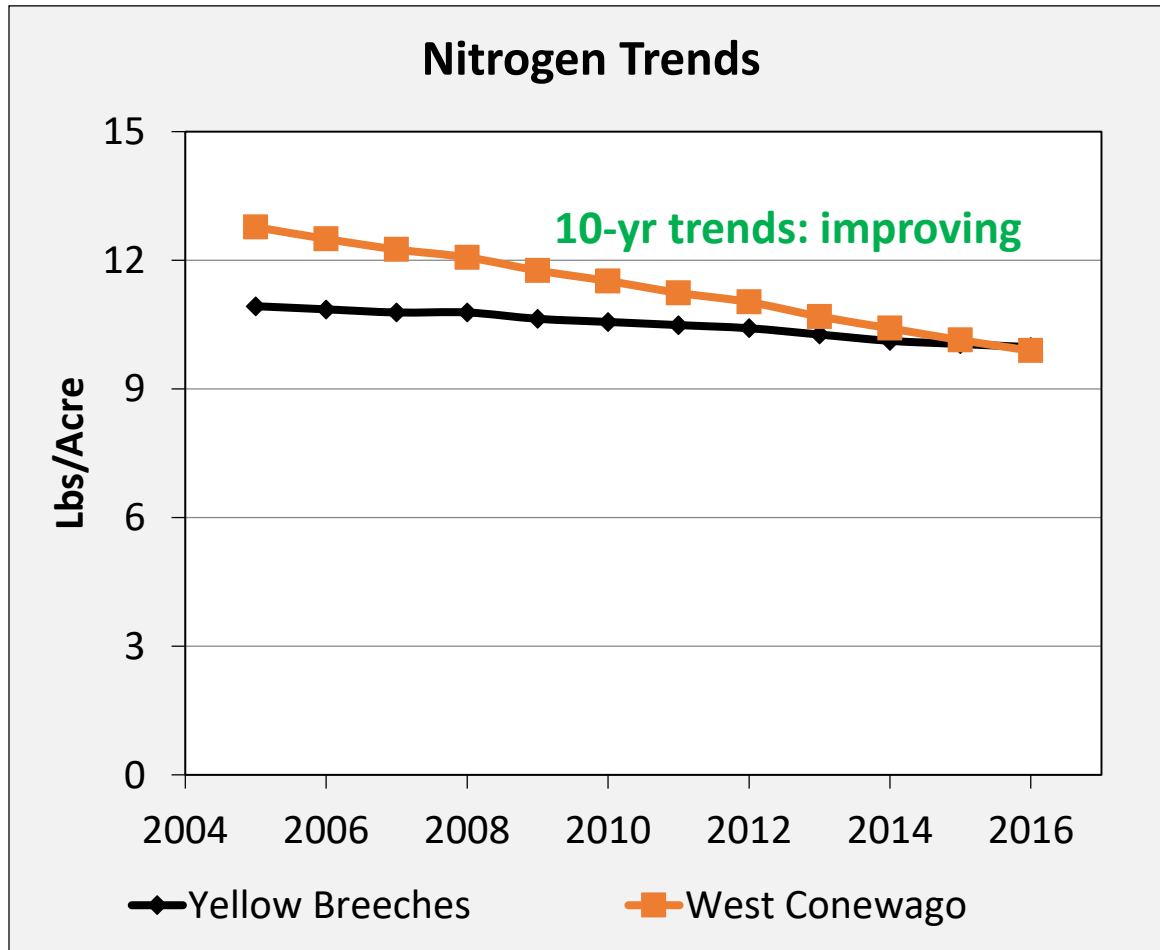
Using the monitoring to inform planning

Amount of nitrogen in streams across all monitoring stations in the Chesapeake Bay watershed



Using the monitoring to inform planning

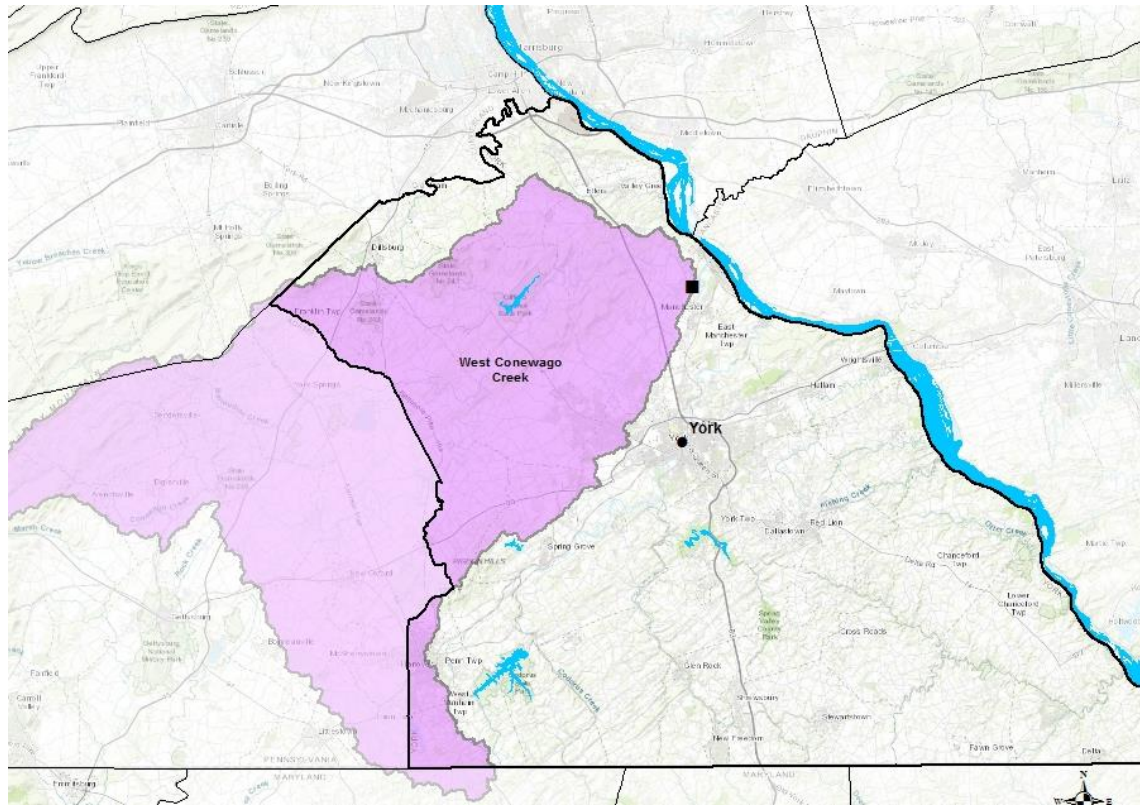
Monitoring in York Co watersheds reveals that we are making progress in some areas, but require more effort in others



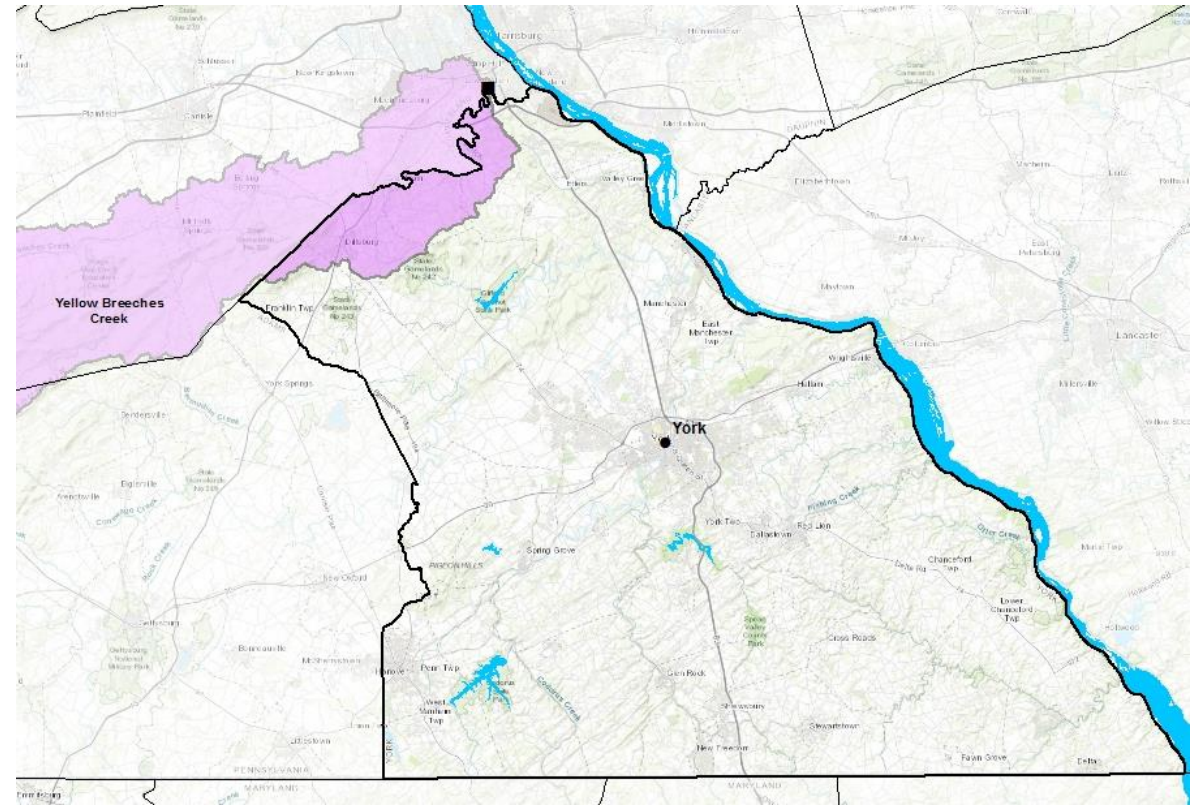
But we can't monitor everywhere

York County's monitoring stations cover less than half the county and overlap other counties

West Conewago Creek

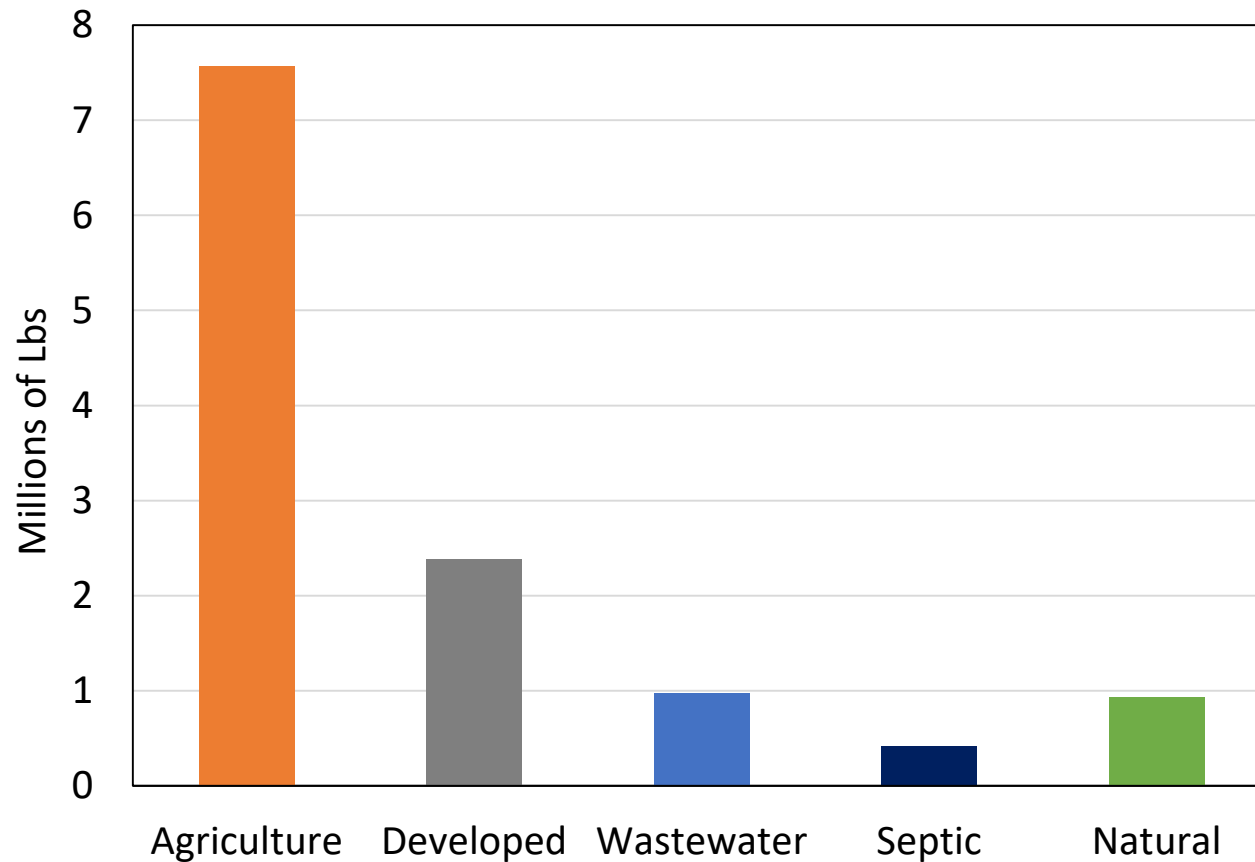


Yellow Breeches Creek

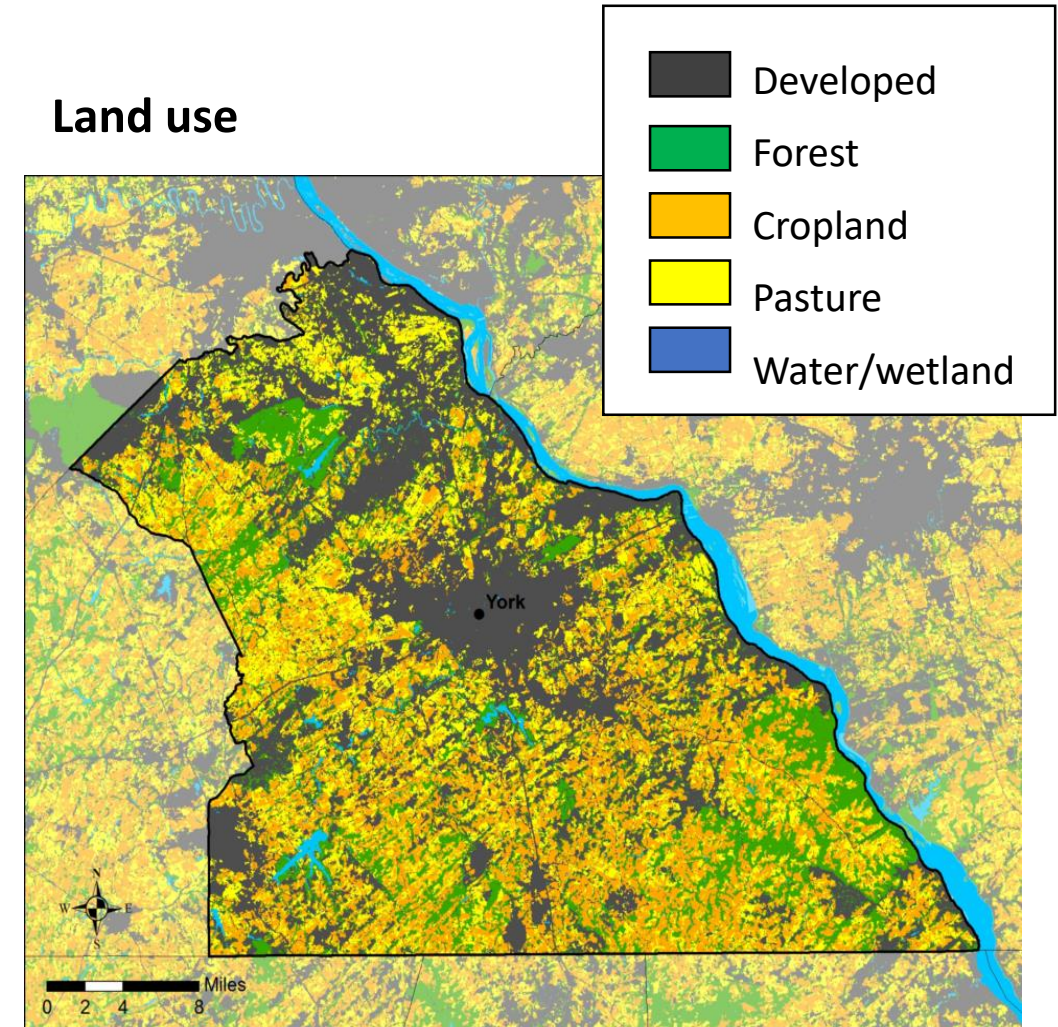


We can use the model to estimate sources

**York County Nitrogen Delivered to Local Streams
(2017 Progress)**



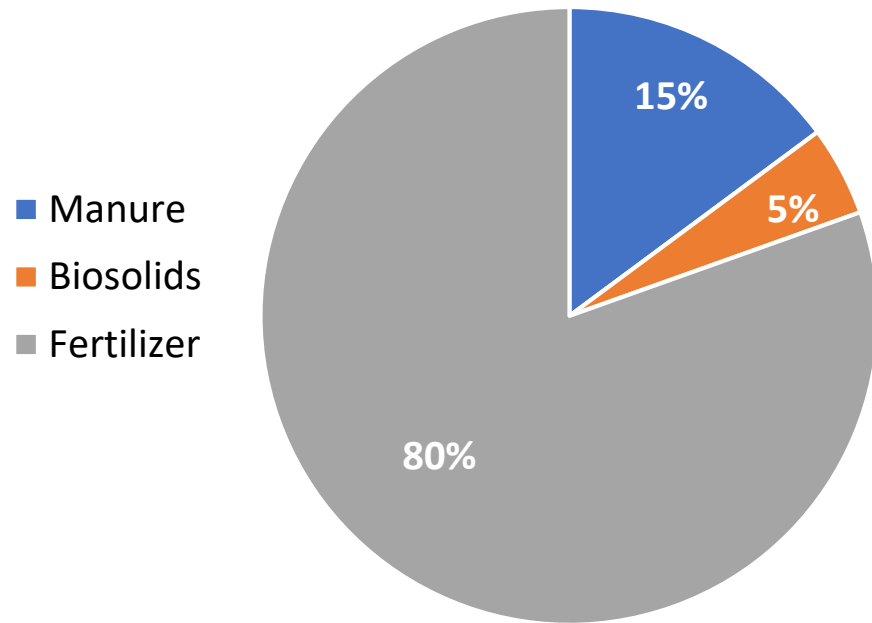
Land use



Understanding sources helps identify opportunities

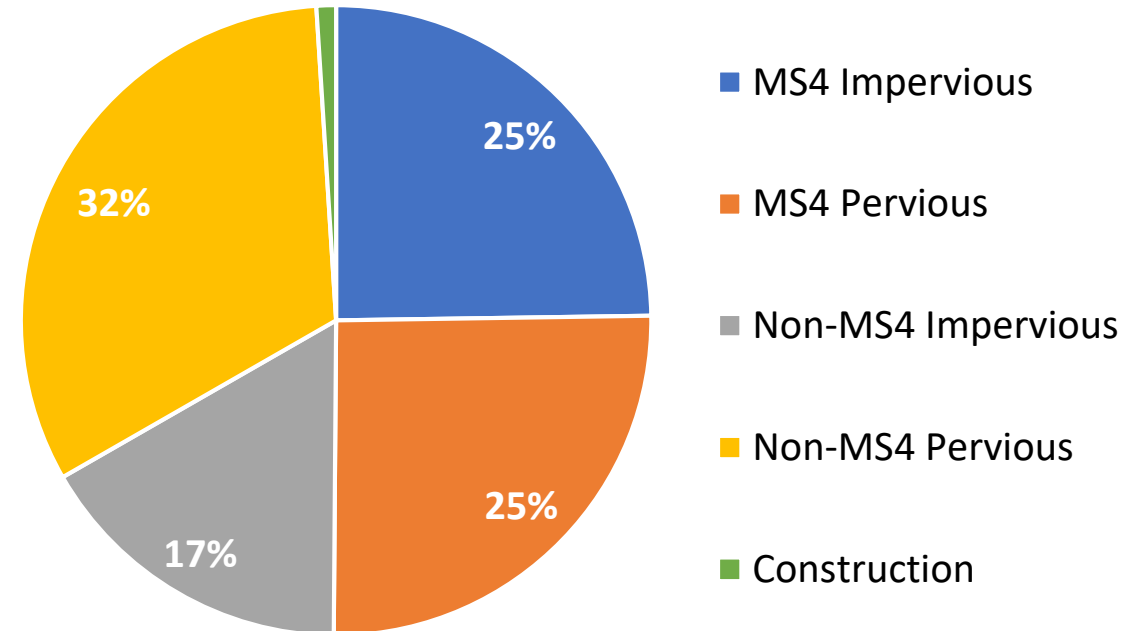
Example: Agricultural Nutrient Application

Estimated Source of Nitrogen Applied in York County



Example: Urban Stormwater Nutrient Sources

Estimated Stormwater Nitrogen Sources in York County



Pervious: grass, lawns, etc.

Impervious: roads, buildings, parking lots, etc.

MS4: Regulated stormwater under MS4 permits

Identifying opportunities for restoration efforts

Remaining Opportunities in York County for Agricultural Practices

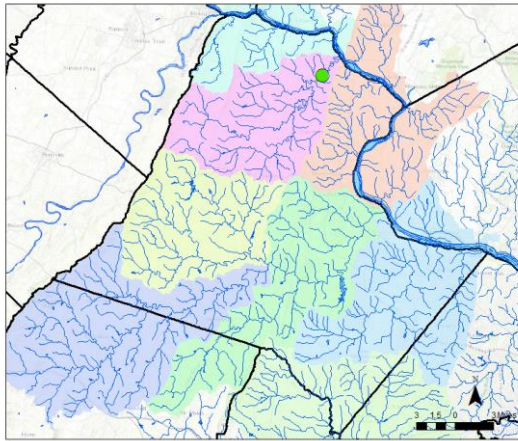
Practice	Current Reported Implementation	Acres Remaining
Basic Nutrient Management	6%	185,000
Conservation Tillage	55%	67,000
Cover Crop	7%	136,000
Prescribed Grazing	6%	18,000
Barnyard Runoff Control	69%	70
Soil & Water Conservation Plans	10%	180,000
Forest Buffers	NA	13,200

Utilizing storylines to demonstrate management connections

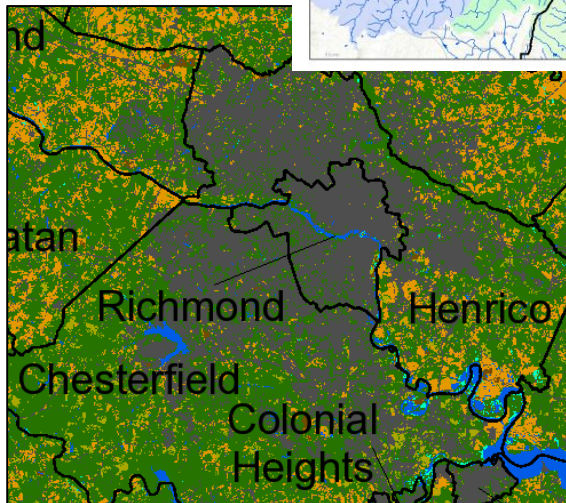
We've developed >20 integrated assessments/storylines at different scales across the entire watershed

These are just a few examples:

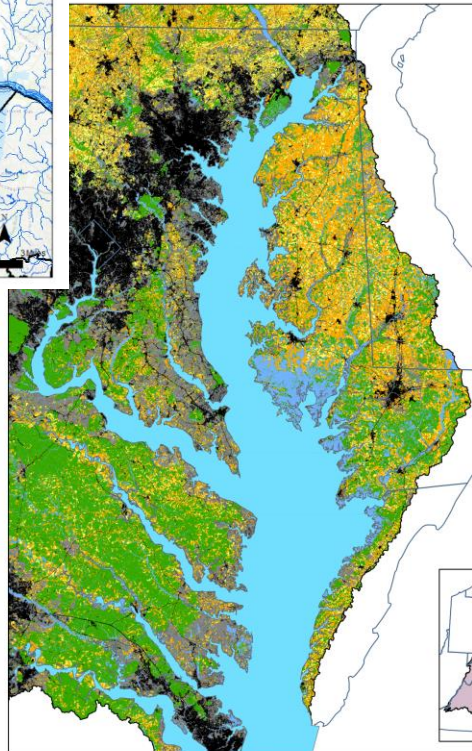
Loudoun County, VA



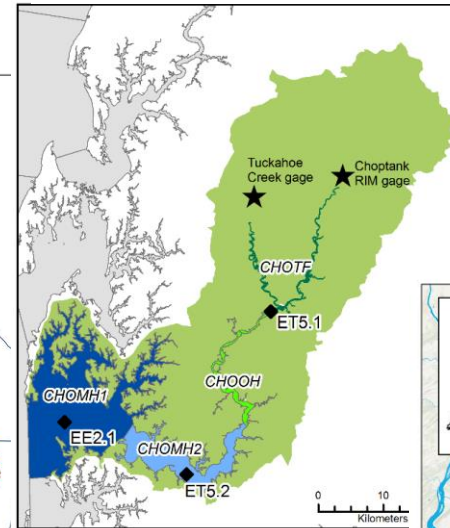
Richmond, VA



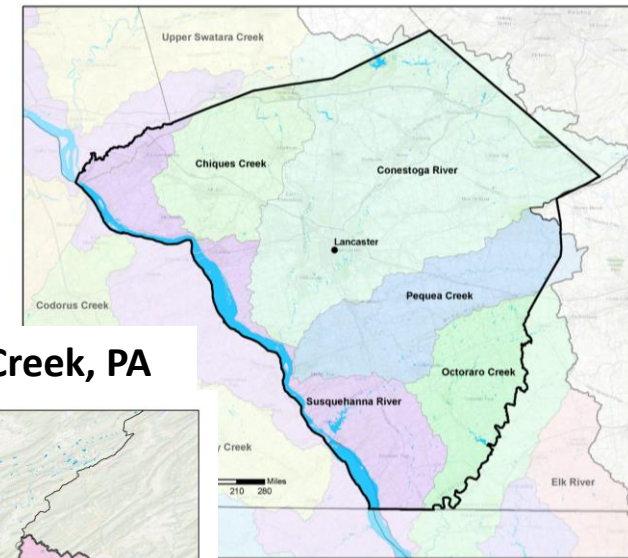
Eastern Shore



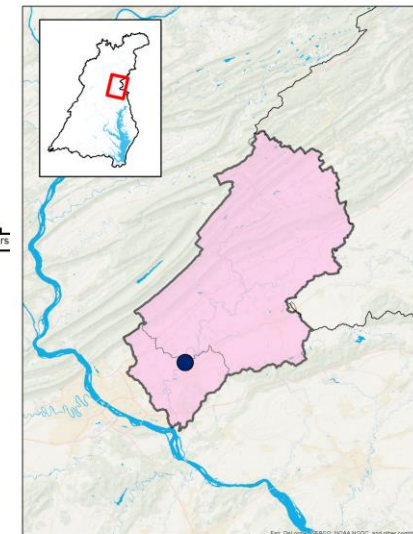
Choptank River in MD



Lancaster County, PA

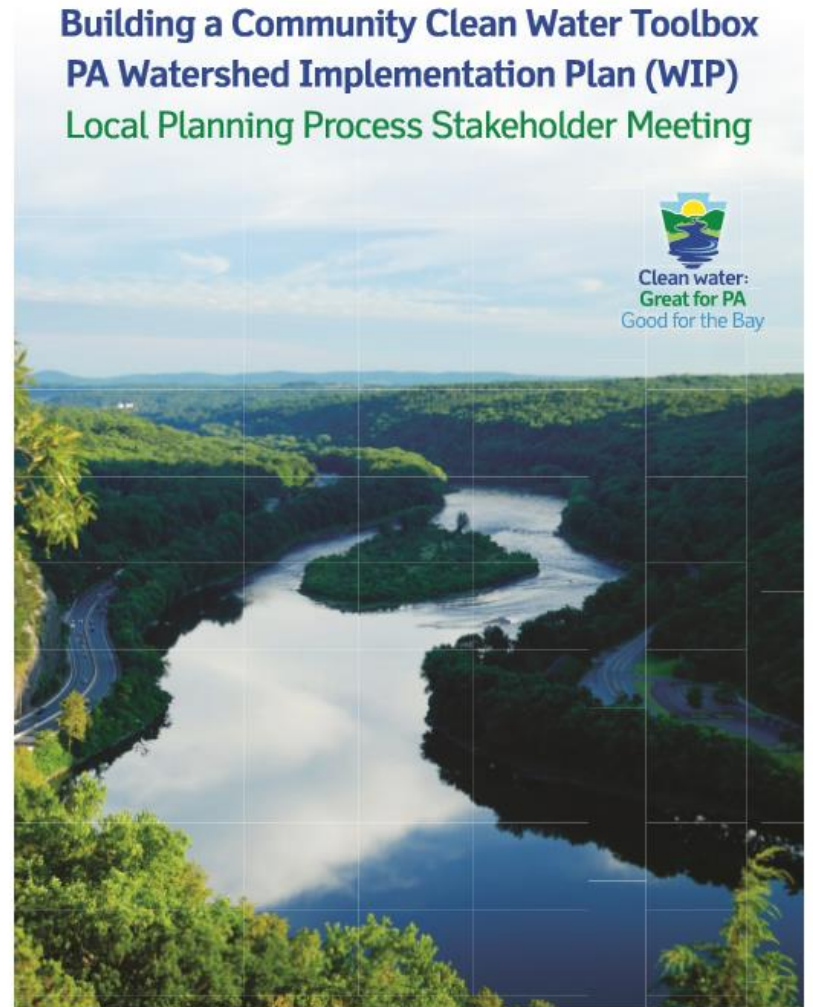


Swatara Creek, PA



Incorporating monitoring and modeling into planning

- Pennsylvania – used storyline concept to develop county-specific “toolboxes” and provide information to local areas
- Watershed groups – created storylines that helped identify areas where they can be more active
- WIP Data Dashboard – developed online tools that consolidate information and allow users to develop their own stories





Emily Trentacoste
trentacoste.emily@epa.gov
410-267-5797

