

A photograph of a forest stream with trees and fallen leaves. The stream is in the foreground, and the trees are in the background. The leaves are mostly yellow and orange, indicating autumn. The water is clear and flows over rocks.

Mattaponi River Bacteria Watershed Plan

Technical Advisory Committee
March 4, 2015

Rebecca Shoemaker
TMDL Coordinator
DEQ Northern Regional Office



Meeting Agenda

- Introductions
- Virginia's Water Quality Standards overview
- Watershed Plan process overview
- Project impairment information
- Project plan overview
- Questions and discussion





Technical Advisory Committee

- Public body – meetings open to public
- Members are determined by DEQ
 - Governmental agencies
 - Permittees
 - Non-governmental groups
- Meeting announced on VA Town Hall and DEQ website
- Meeting minutes posted to VA Town Hall

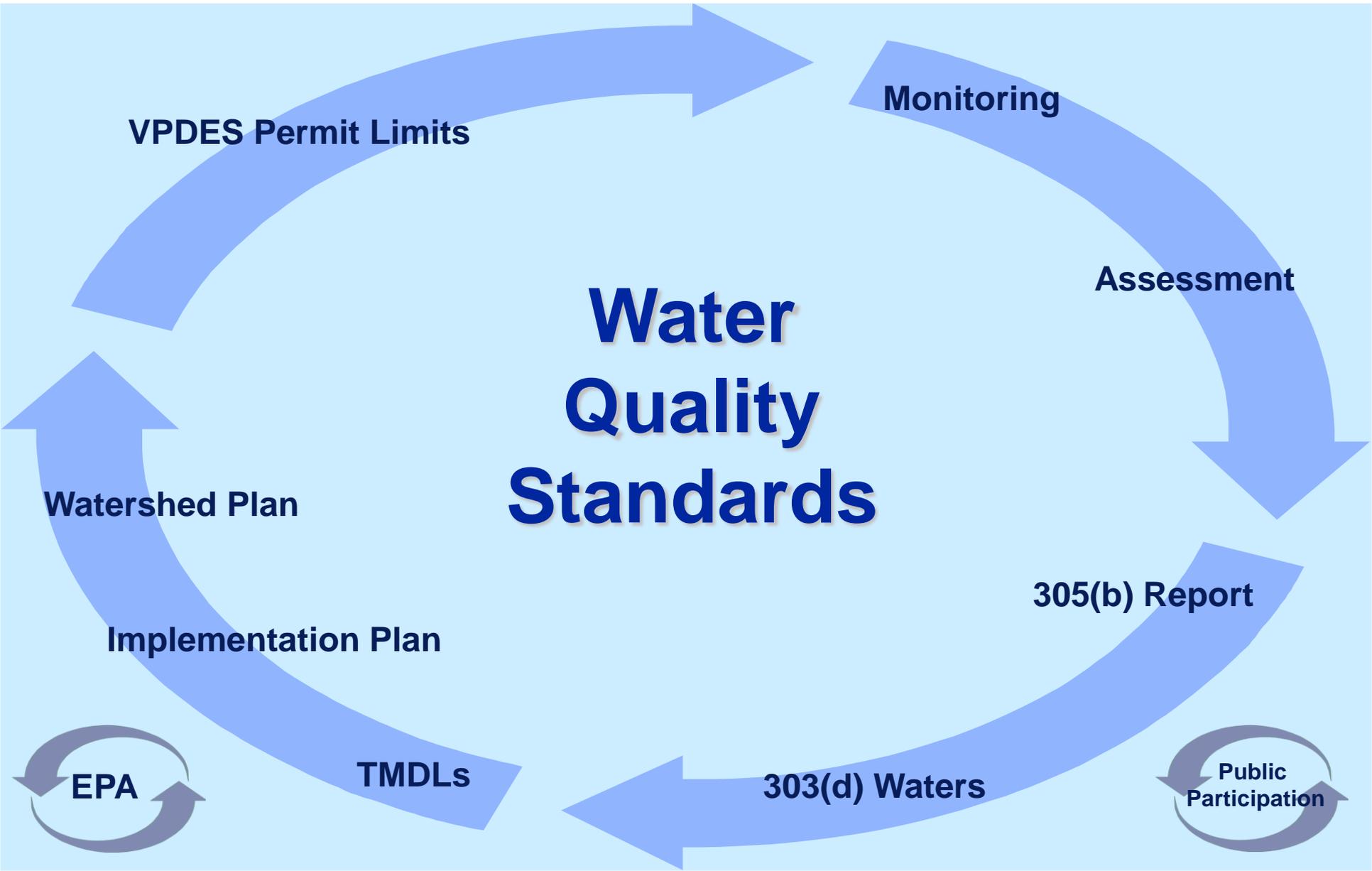


Water Quality Standards



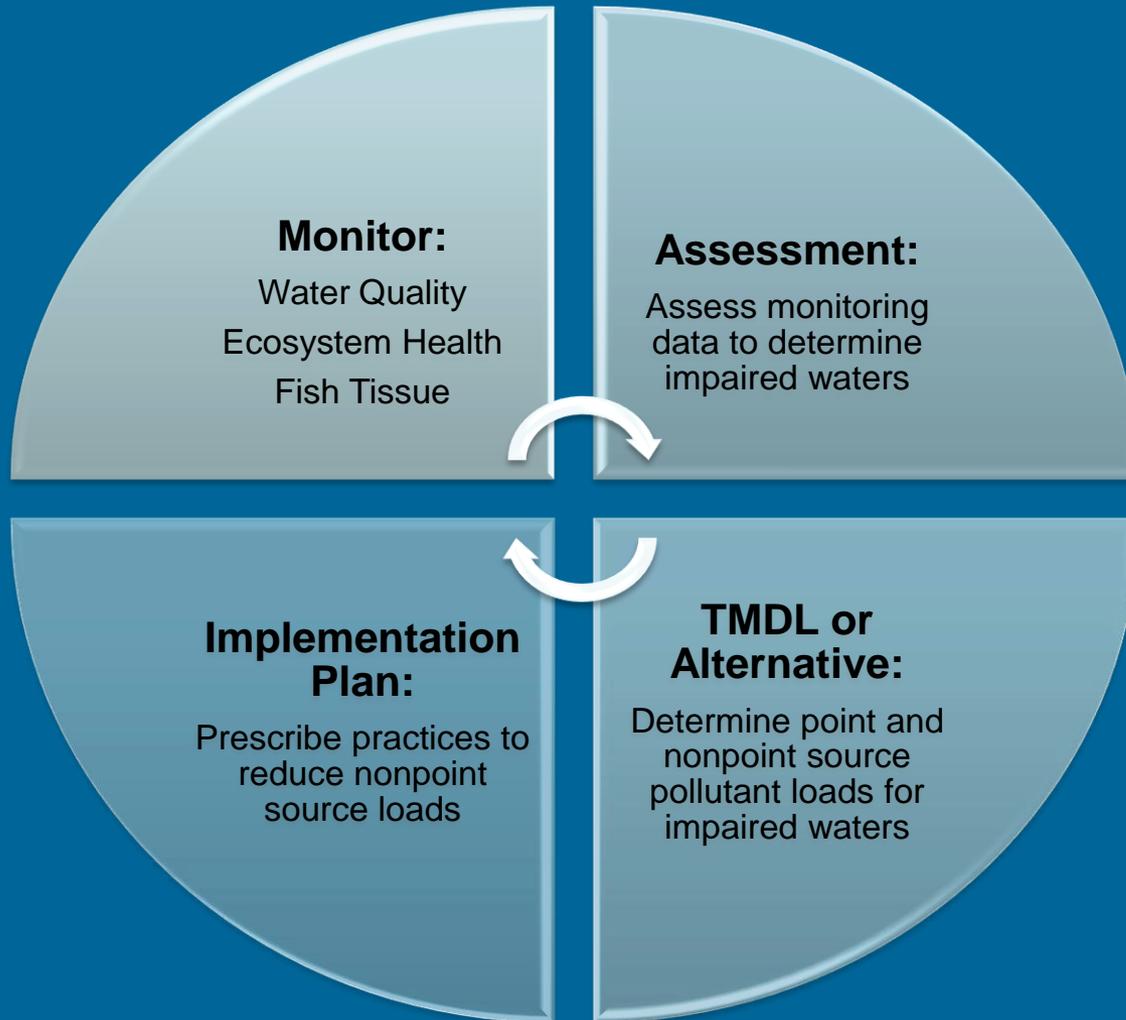


Continuous Planning Process





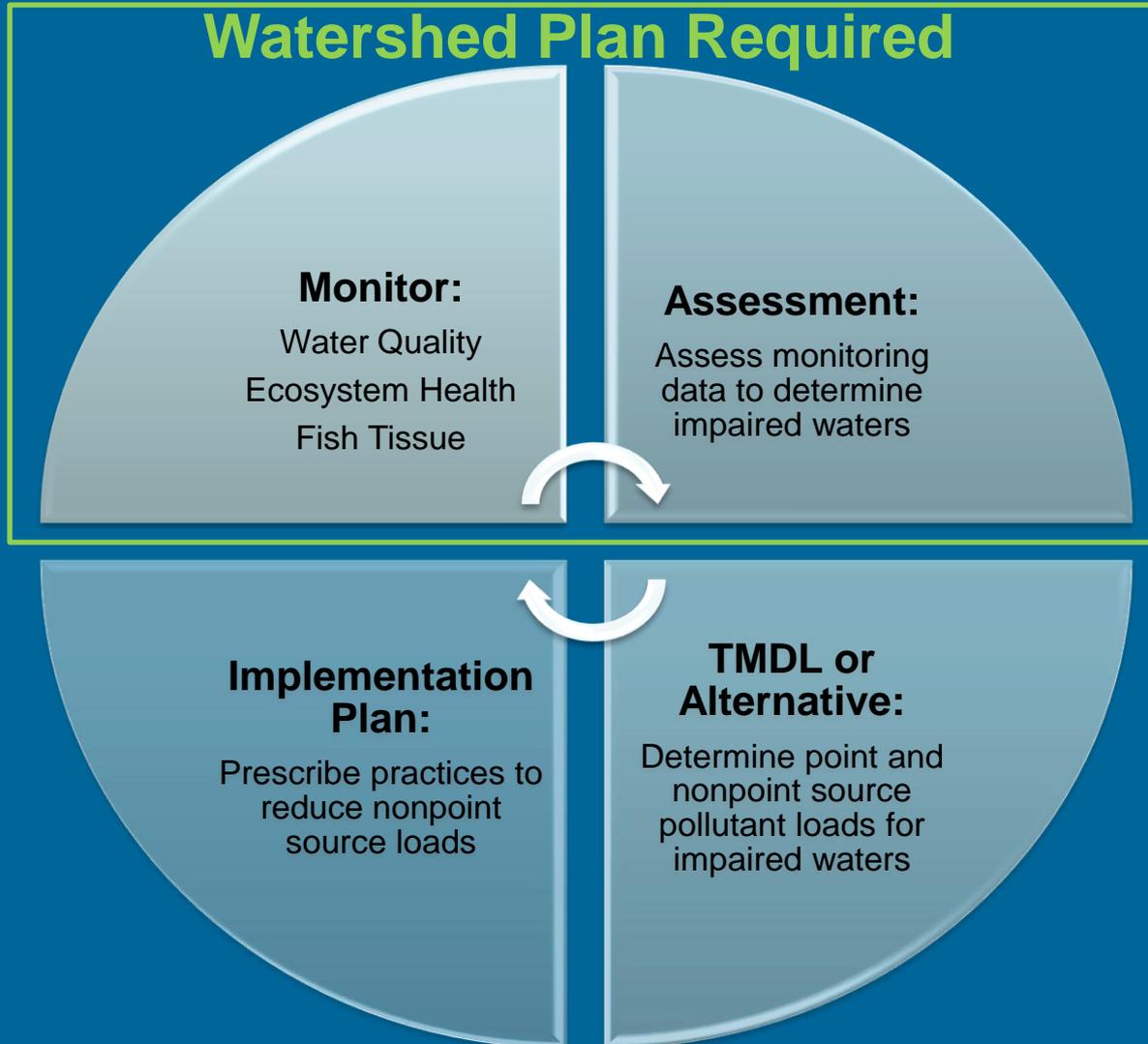
Watershed Plan Overview





Watershed Plan Overview

Watershed Plan Required





Water Quality Standards: Designated Uses

- Recreation
- Aquatic Life
- Wildlife
- Fish Consumption
- Shellfish
- Public Water Supply



*The attainment of the recreational use is evaluated by testing for the presence of **E. coli bacteria in freshwater systems** and **enterococci bacteria in transitional and salt waters**.*



Water Quality Standards: Recreation Use Water Quality Criteria

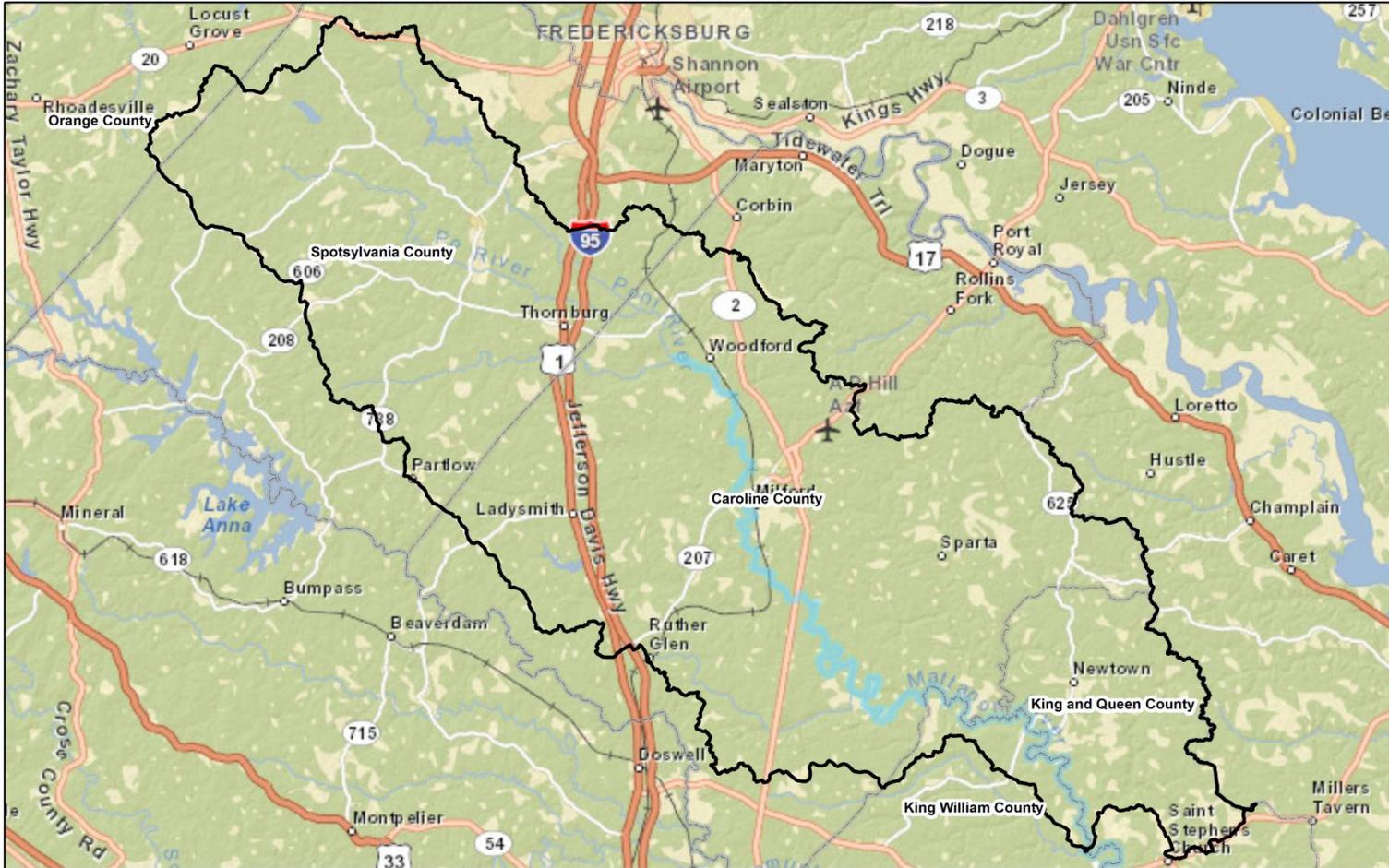
E. Coli bacteria in freshwater:

- Monthly geometric mean not exceeding **126 CFU/100 ml**
- If insufficient data to calculate geometric mean, no more than 10% of total samples **>235 CFU/100 ml**





Mattaponi Watershed Plan Project Area



Mattaponi Watershed Plan Project Area
 Mattaponi Main Stem



Data Sources:
 VADEQ - Watersheds, Assessment Segments, Monitoring Stations
 USGS - National Hydrography Dataset
 ESRI - Roads and Jurisdictional Boundaries

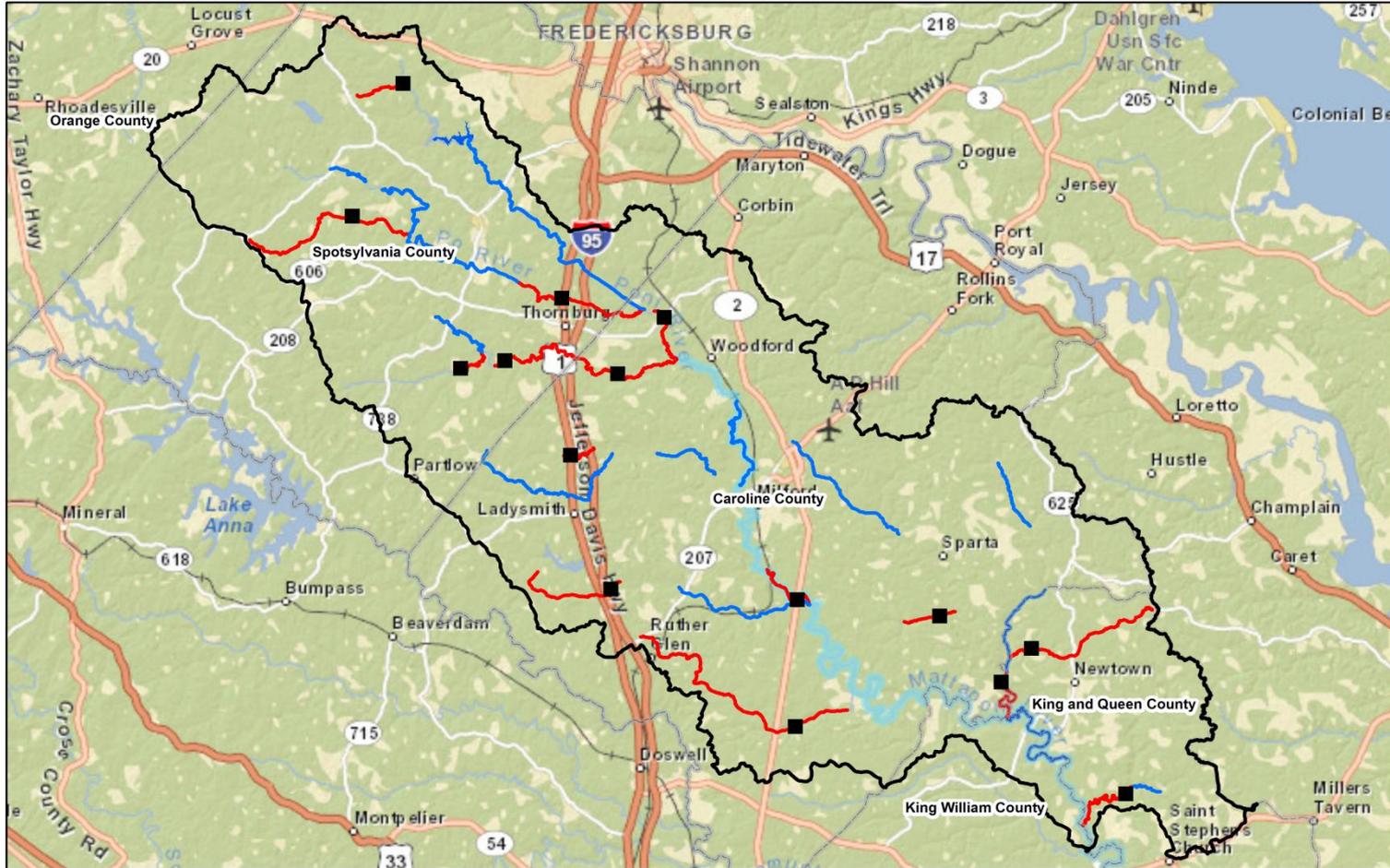
Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand).

The information contained in this map is for reference only and is not certified to be absolutely complete or correct.





Mattaponi Watershed Plan Project Area: 2014 Draft Recreation Use Assessment



DEQ Monitoring Stations - Bacteria Impairments
 Mattaponi Watershed Plan Project Area
 Mattaponi Main Stem

2014 DRAFT Clean Water Act §305(b) List Recreation Use
 Fully Supporting
 Not Supporting

0 5 10 20 Miles

Data Sources:
 VADEQ - Watersheds, Assessment Segments, Monitoring Stations
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Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand).

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Mattaponi Watershed Plan Project Area: Recreation Impairments

- Impairment information included in the 2014 **DRAFT** Assessment
- All impairments currently caused by *E. coli* bacteria

Impaired Stream Name	Impairment Length (miles)	Year Impairment First Listed	Upstream Limit	Downstream Limit	Impairment Listing Station
Brock Run	2.56	2008	Aunt Sarah Spring Creek	Ni River	8-BRK000.06
Chapel Creek	4.44	2014	Beaver Branch	Mattaponi River	8-CPL004.15
Doctors Creek	2.32	2014	Tanyard Swamp	Maracossic Creek	8-DOC000.69
Glady Run	9.30	2010	headwaters	Po River	8-GDY003.00
Maracossic Creek	4.21	2006	Beverly Run	Mattaponi River	8-MAR003.24
Mat River	2.30	2014	~0.3 mi upstream from Route 647	Ta River	8-MAT001.87
Matta River	11.89	2004*	~0.5 mi upstream from Route 646	Poni River	8-MTA001.69, 8-MTA008.96
Mattaponi River	3.20	2008	unnamed tributary draining from Goose Pond	Polecat Creek	8-MPN083.62
Motto River	1.80	2014	~0.4 mi upstream from Route 1	~0.2 mi downstream from I-95.	8-MOT002.62
Po River	7.21	2010	~2.7 mi upstream from Route 1	Ni River	8-POR004.13
Polecat Creek	5.31	2012	headwaters	Stevens Mill Run	8-PCT010.10
Poni River	3.21	2010	~0.7 mi upstream from Route 606	Matta River	8-PNI002.43
Reedy Creek	9.39	2004†	headwaters	Route 301	8-RDY003.43
	3.30		Route 301	Reedy Millpond	
Root Swamp	7.83	2014	headwaters	Beverly Run	8-ROT001.09

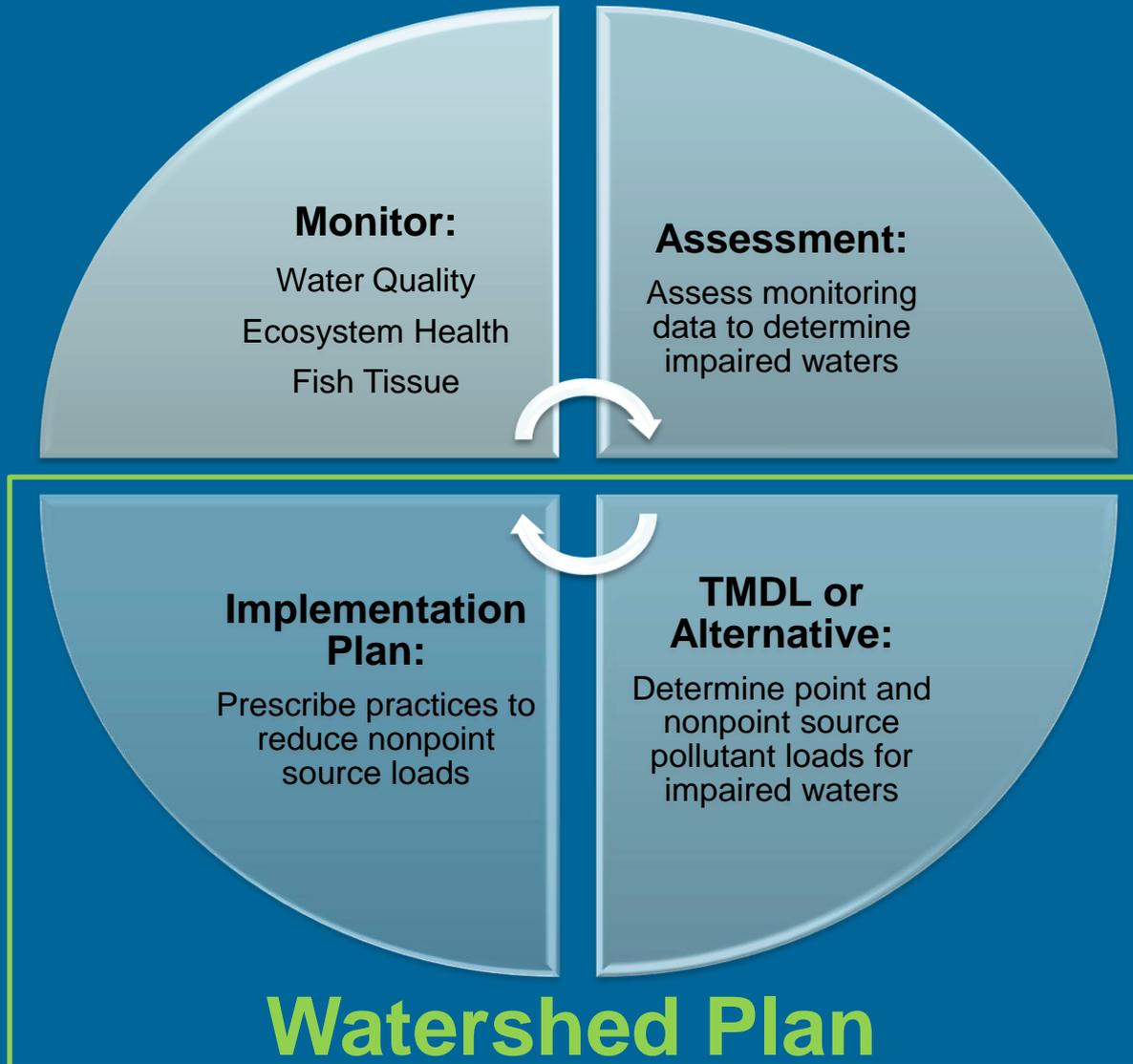
- 15 Segments
- 78 miles

* *Matta River* impaired for fecal coliform bacteria in 2004 assessment

† *Reedy Creek* impaired for fecal coliform bacteria in 2004, 2006, 2008 assessments



Watershed Plan Overview





Watershed Plan: Total Maximum Daily Load

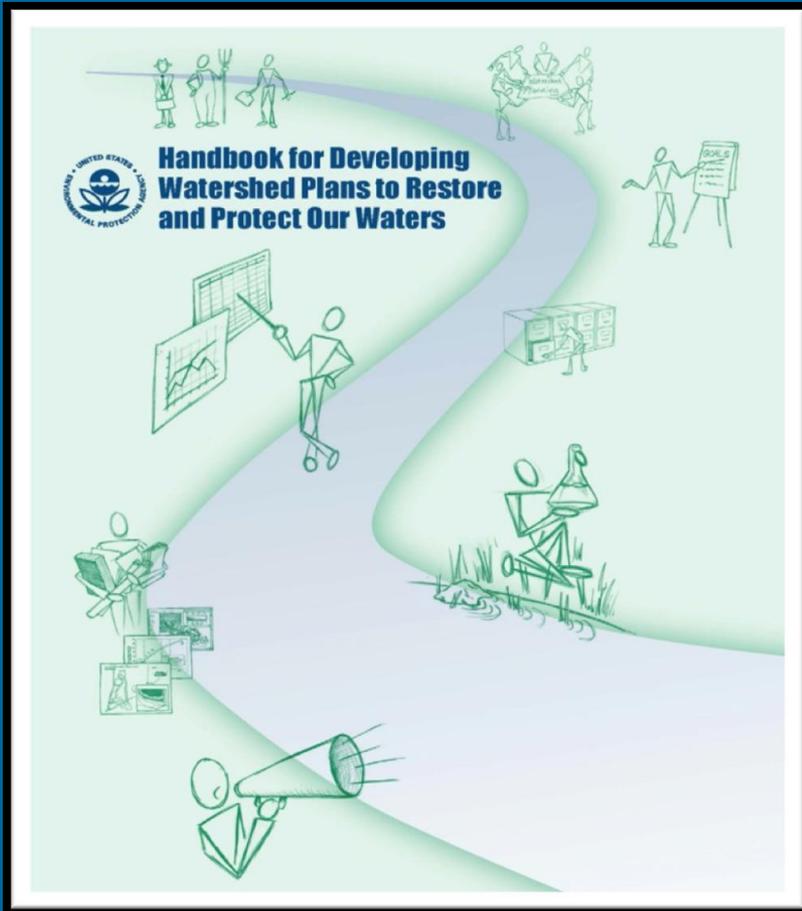
- A **TMDL** is the total amount of a pollutant a waterbody can receive and still not exceed water quality standards
- Required by federal and state law
- The **TMDL** Process
 - Characterize watershed
 - Account for point and nonpoint sources
 - Assess pollutant sources
 - Model pollutant loadings
 - Calculate pollutant reductions to attain Standards
 - Allocate allowable loadings
 - Include a margin of safety





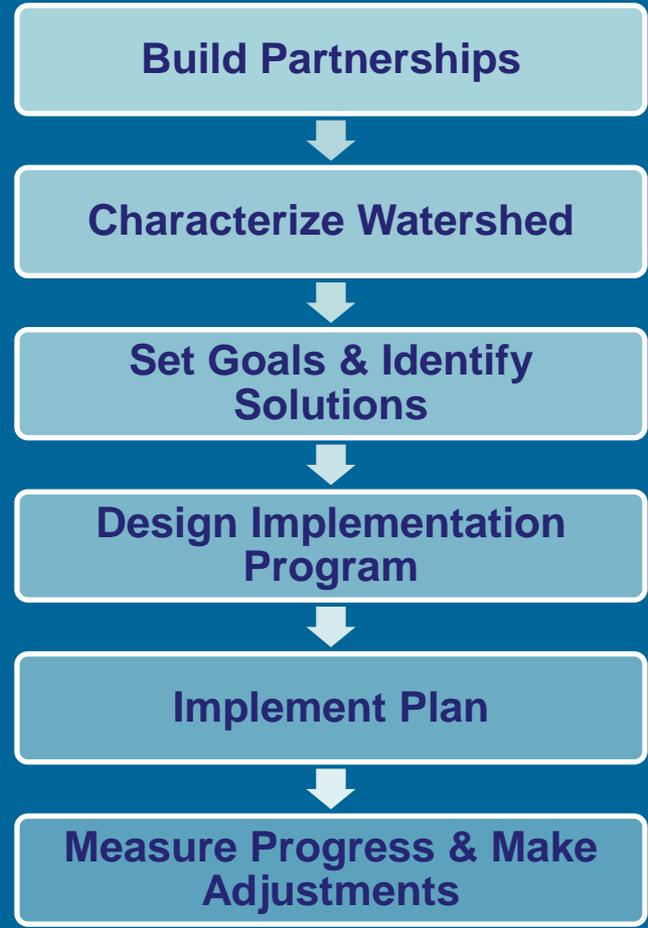
Watershed Plan: Implementation

2008 EPA Manual



http://water.epa.gov/polwaste/nps/handbook_index.cfm

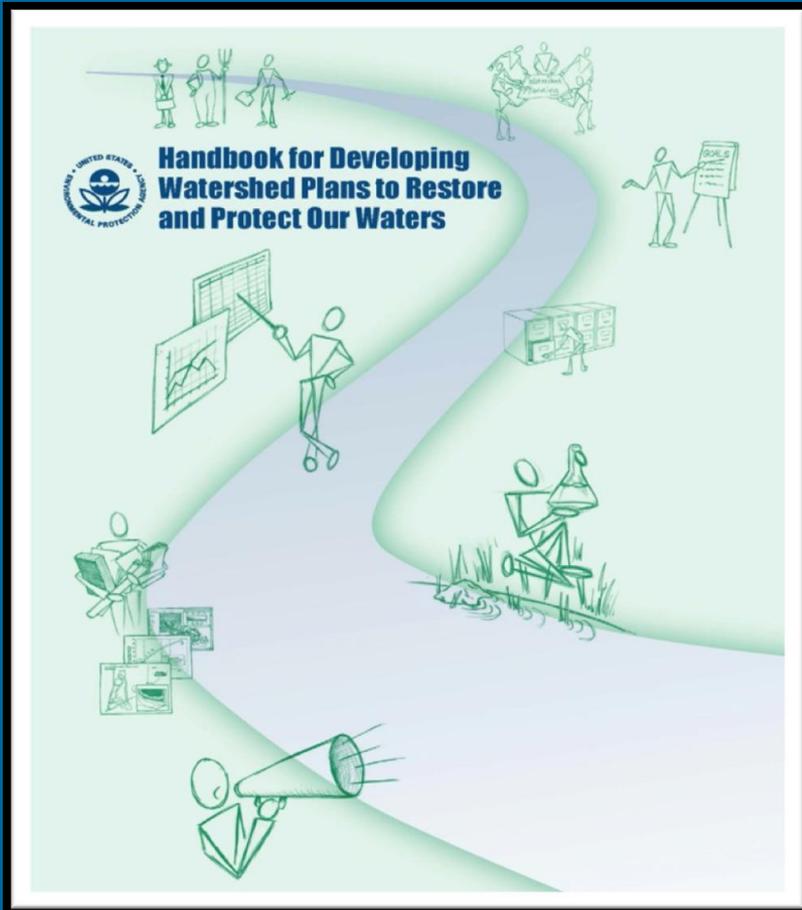
Six steps:





Watershed Plan: Implementation

2008 EPA Manual



http://water.epa.gov/polwaste/nps/handbook_index.cfm

Nine Elements

- a. Identify causes and sources of pollution
- b. Estimate load reductions expected
- c. Describe management measures and targeted critical areas
- d. Estimate technical and financial assistance needed
- e. Develop an information and education component
- f. Develop a project schedule
- g. Describe interim, measurable milestones
- h. Identify indicators to measure progress
- i. Develop a monitoring component



Watershed Plan: Implementation

Planning is done **locally**

Public and TAC Meetings

- Residents
- Landowners
- Business Owners
- Government Agencies
- Community Groups
- Permit Holders



Working Groups

- Agricultural
- Residential
- Governmental



Steering Committee

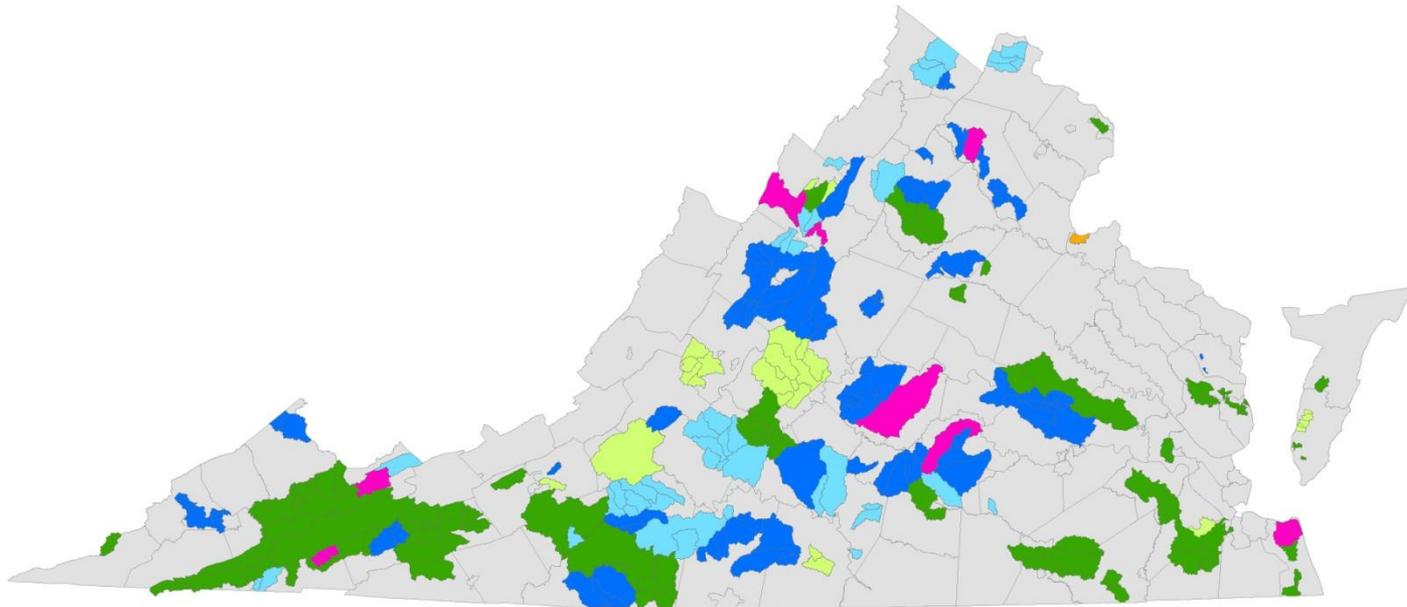
- WG Representatives
- Key Agencies
- Citizens





VA Implementation Progress

TMDL Implementation Watersheds



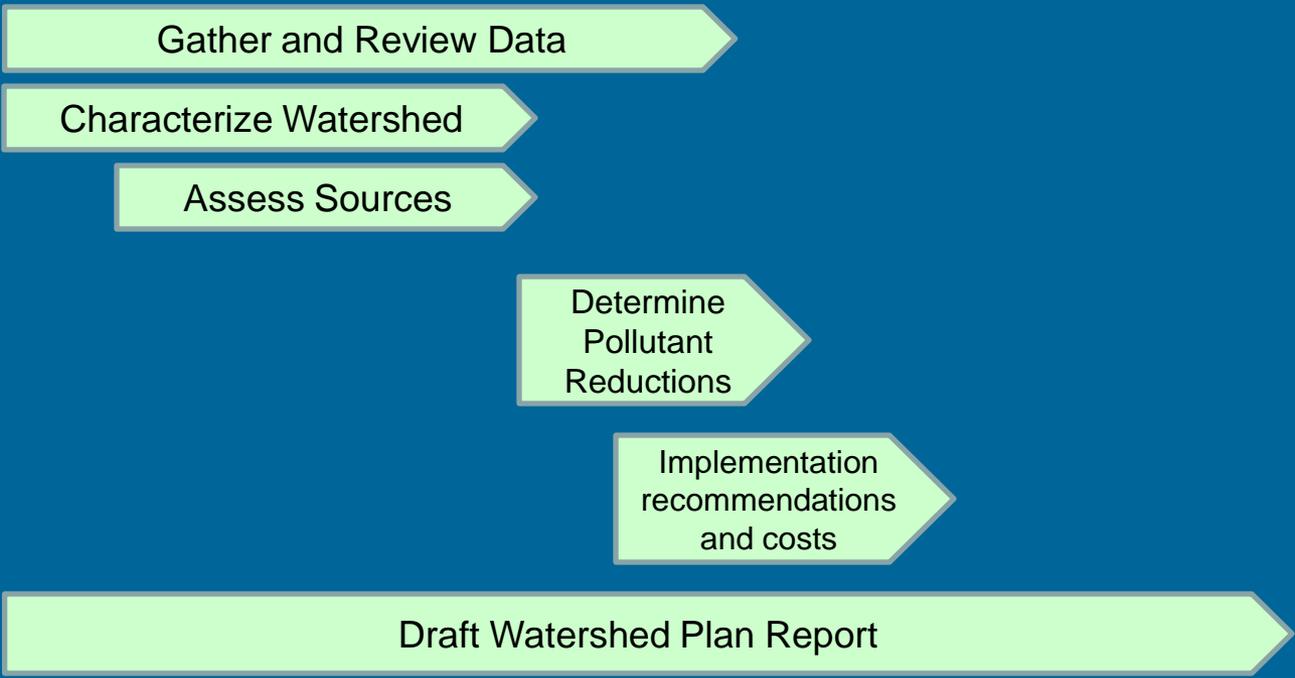
- | | |
|--------------------------------------|-----------------------------------|
| Implementation Project Underway - 89 | Implementation Plan Underway - 25 |
| Implementation Project Closed - 54 | Implementation Plan Complete - 99 |
| Watershed Plan Underway - 1 | Virginia Success Story - 14 |





Project Plan

Six Steps:





Project Plan

Six Steps:

Build Partnerships

Characterize Watershed

Set Goals & Identify Solutions

Design Implementation Program

Implement Plan

Measure Progress & Make Adjustments



Gather and Review Data

Characterize Watershed

Assess Sources

Determine Pollutant Reductions

Implementation recommendations and costs

Draft Watershed Plan Report



Data Collection: Watershed Characterization

Characteristic	Data
Climate Data	Precipitation Temperature Evapotranspiration (sources such as NASA, NWS, Virginia IFLOWS)
Land Use/Land Cover	Department of Health National Agricultural Statistics Survey National Land Cover Database Soil and Water Conservation Districts
Soils	NRCS SSURGO
Stream Flow	USGS National Water Information System
Topography	USGS National Water Information System
Water Quality	DEQ USGS
Watersheds and Subwatershed Boundaries	National Watershed Boundary Dataset



Data Collection: Permits

- No MS4 permits
- No Animal Feeding Operation permits
- 11 domestic General VPDES permits
- 11 applicable Individual VPDES permits:

Facility Name	Type	Receiving Stream
Berkeley Elementary School	Minor Municipal	Mat River, UT
Bowling Green Wastewater Treatment Plant	Minor Municipal	Mattaponi River, UT
Caroline County Regional Wastewater Treatment Plant	Minor Municipal	Polecat Creek
Dominion Campground Incorporated	Minor Municipal	Ni River, UT
Hill Mobile Home Park Sewage Treatment Plant 2	Minor Municipal	Maracossic Creek, UT
John J Wright Educational and Cultural Center	Minor Municipal	Po River, UT
Land Or Utility	Minor Municipal	South River, UT
Po River Water and Sewer WWTP	Minor Municipal	Po River
Spotsylvania County High School	Minor Municipal	Ta River
Thornburg Community Sewage Treatment Plant	Minor Municipal	Po River, UT
Woodford Estates MHC Limited Liability Corporation	Minor Municipal	Motto River, UT



Source Assessment

- Permitted Point Sources
- Humans
 - Failed septic systems
 - Straight pipes
 - Overflows
- Pets
- Agriculture/Livestock
- Wildlife





Project Plan

Six Steps:

Build Partnerships

Characterize Watershed

Set Goals & Identify Solutions

Design Implementation Program

Implement Plan

Measure Progress & Make Adjustments



First Public Meeting

March 18, 2015

6:00 p.m.

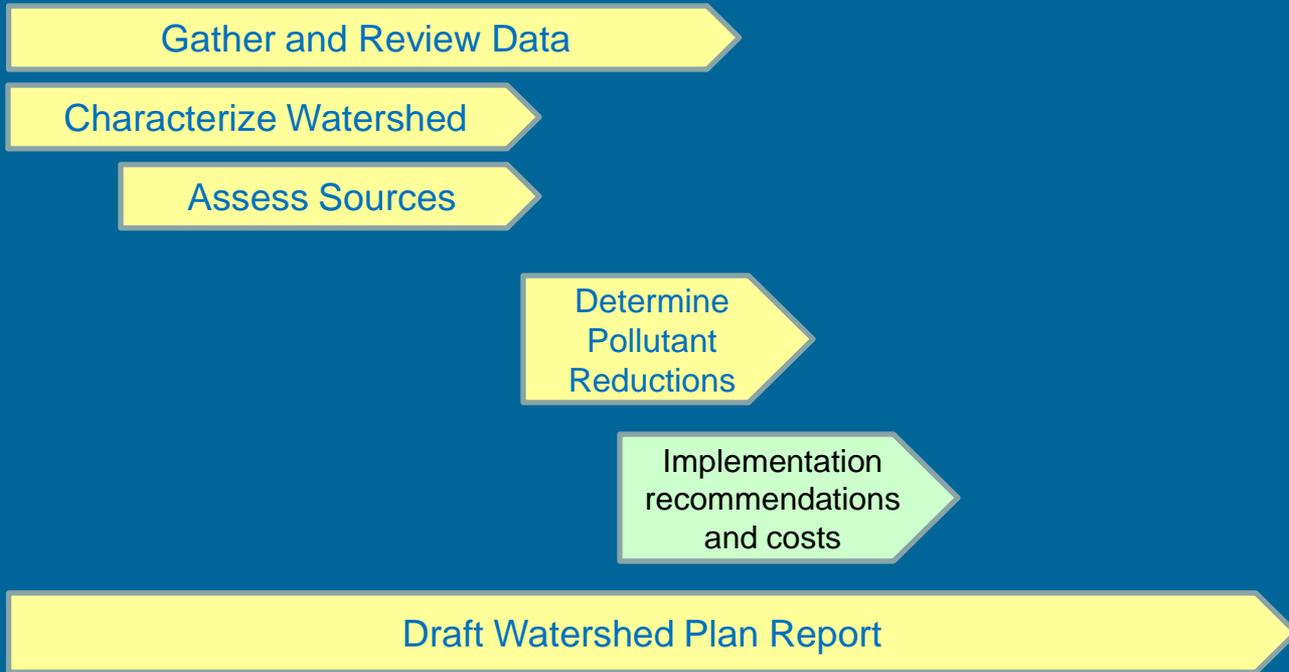
Bowling Green Town Hall –
Rappahannock Reception Room
117 Butler Street, Bowling Green, VA 22427



Project Plan

Spring - Summer 2015

Six Steps:





Project Plan

Fall 2015 - Spring 2016

Six Steps:

Build Partnerships

Characterize Watershed

Set Goals & Identify Solutions

Design Implementation Program

Implement Plan

Measure Progress & Make Adjustments



Gather and Review Data

Characterize Watershed

Assess Sources

Determine Pollutant Reductions

Implementation recommendations and costs

Draft Watershed Plan Report



Project Plan and Timeline

Six Steps:

Build Partnerships

Characterize Watershed

Set Goals & Identify Solutions

Design Implementation Program

Implement Plan

Measure Progress & Make Adjustments



- EPA Approval is not the end of the project!
- Plan implementation = control measures
 - Straight pipe removal
 - Septic system repair/replacement
 - Pet waste management
 - Educational programs
 - Stormwater controls
 - Agricultural Best Management Practices (BMPs)



Potential Control Measures

On-site Sewage Disposal Systems



Septic System Pump-out



Septic System Replacement



Septic System Repair



Alternative On-site Sewage Disposal Systems



Potential Control Measures

Pet Waste Management and Stormwater BMPs



Pet Waste
Composters



Pet Waste Disposal
Program



Rain Gardens

Potential Control Measures

Agricultural BMPs: Exclusion Fencing and Riparian Buffers





Potential Control Measures

Agricultural BMPs



Water Troughs



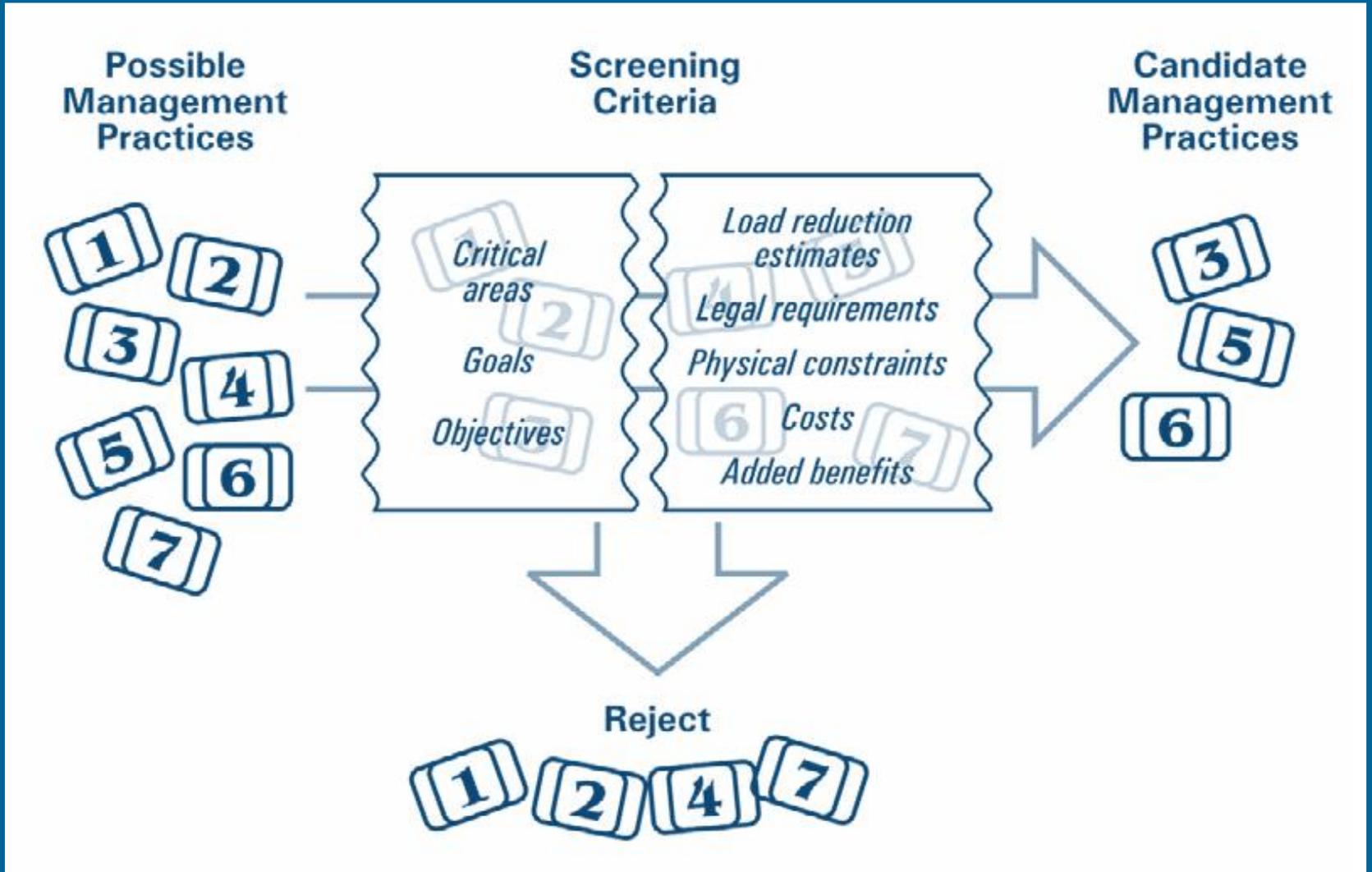
Hardened Crossings



Rotational Grazing



Potential Control Measures





Potential Funding Sources



- Water Quality Improvement Fund
- State Revolving Loan Funds
- EPA 319 funds
- State Tax Credits
- Community Development Block Grants
- USDA Environmental Quality Incentives Program
- NRCS Regional Conservation Partnership Program
- National Fish and Wildlife Foundation
- Chesapeake Bay Restoration Fund
- Non-profits





Progress Evaluation

Six Steps:

Build Partnerships

Characterize Watershed

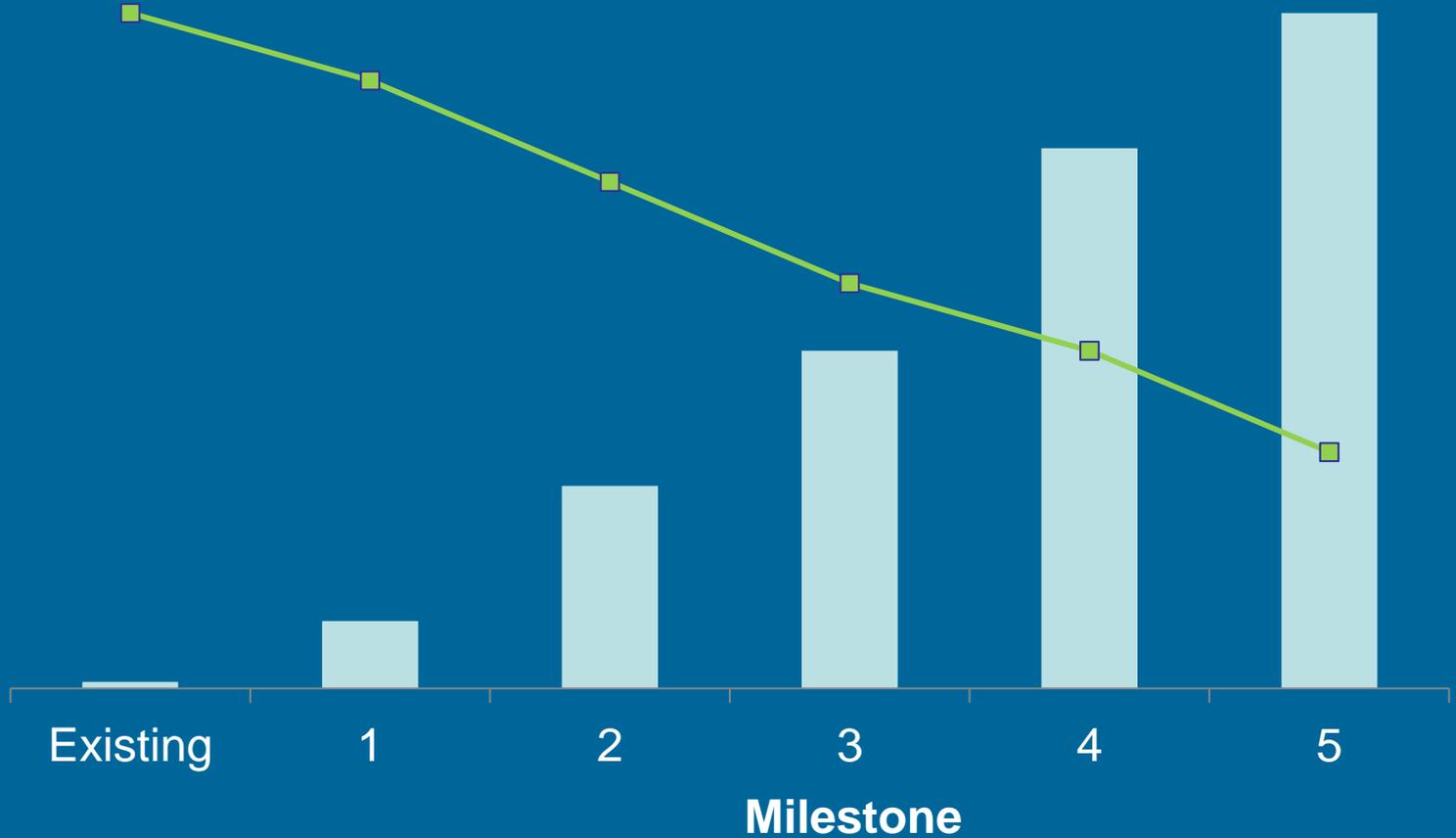
Set Goals & Identify Solutions

Design Implementation Program

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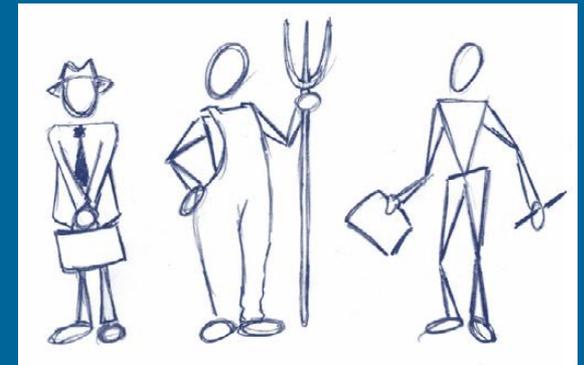
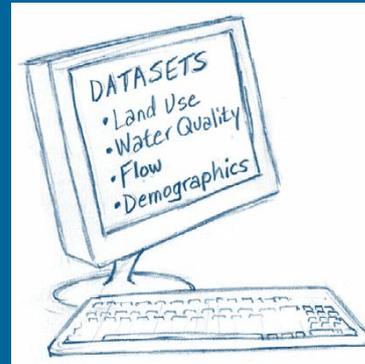
Measure Progress & Make Adjustments

Implementation Progress Bacteria Load



What's Next?

- Remember – watershed plan is a mechanism for restoring water quality and an **opportunity** for diverse groups to come together
- Provide watershed data, bacteria sources, or other information
- Form Working Groups
 - Residential
 - Agricultural
 - Governmental
- Form Steering Committee





Questions? Comments?

C O N T A C T S

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