

Little Dark Run & Robinson River Water Quality Improvement Plan

June 15, 2010 Public Meeting

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Why are we here?

- ▶ Virginia Department of Environmental Quality has identified that poor water quality exists in:
 - Little Dark Run and Robinson River
- ▶ Excessive **bacteria** levels recorded in these streams
- ▶ We are here to discuss a process to clean-up these streams and improve the water quality

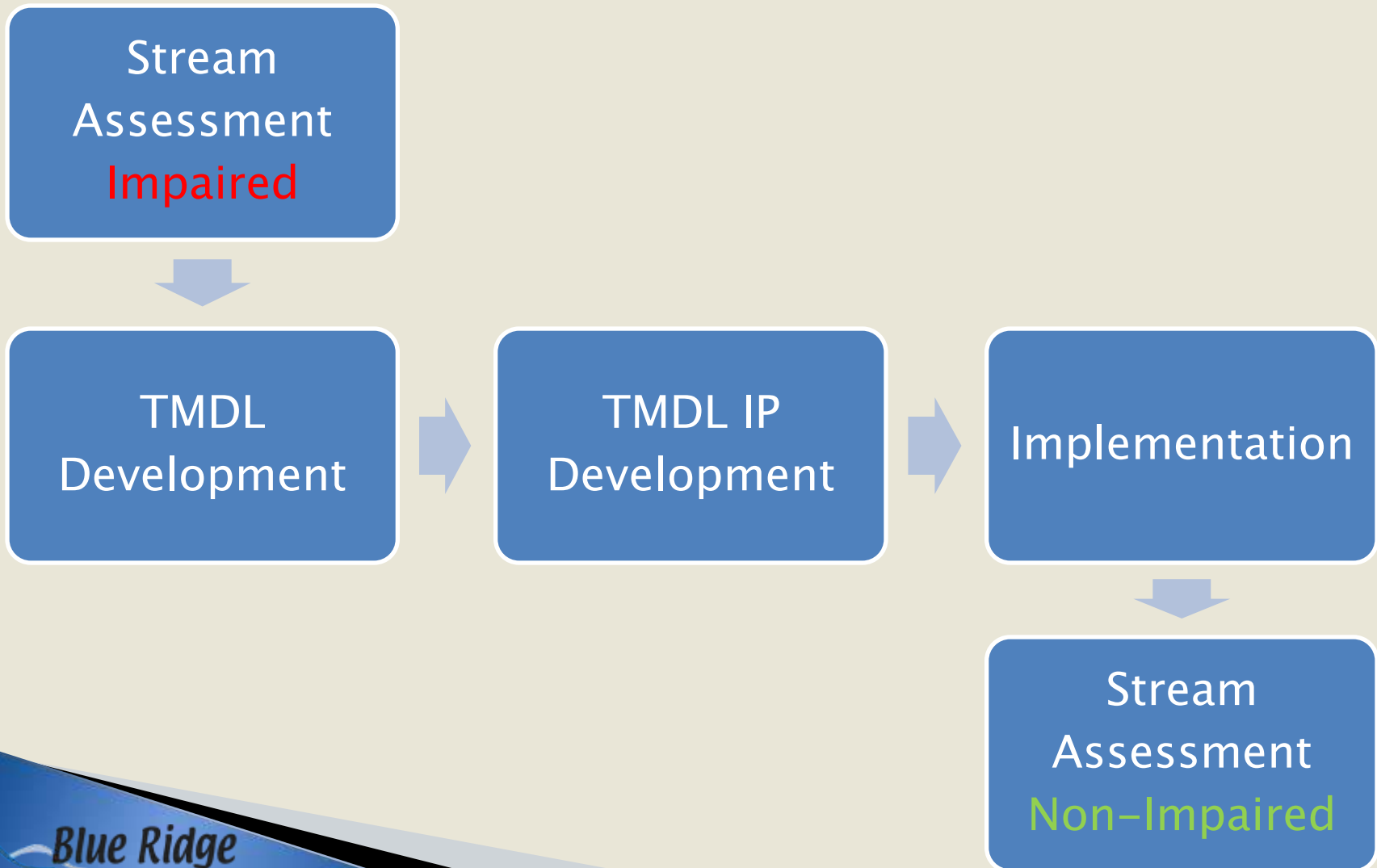
What is a Total Maximum Daily Load?

- ▶ TMDL is a process to restore water quality
- ▶ TMDL is a “pollution budget”
- ▶ TMDL is the maximum amount of bacteria the stream can assimilate without exceeding water quality standard

TMDL Program Background

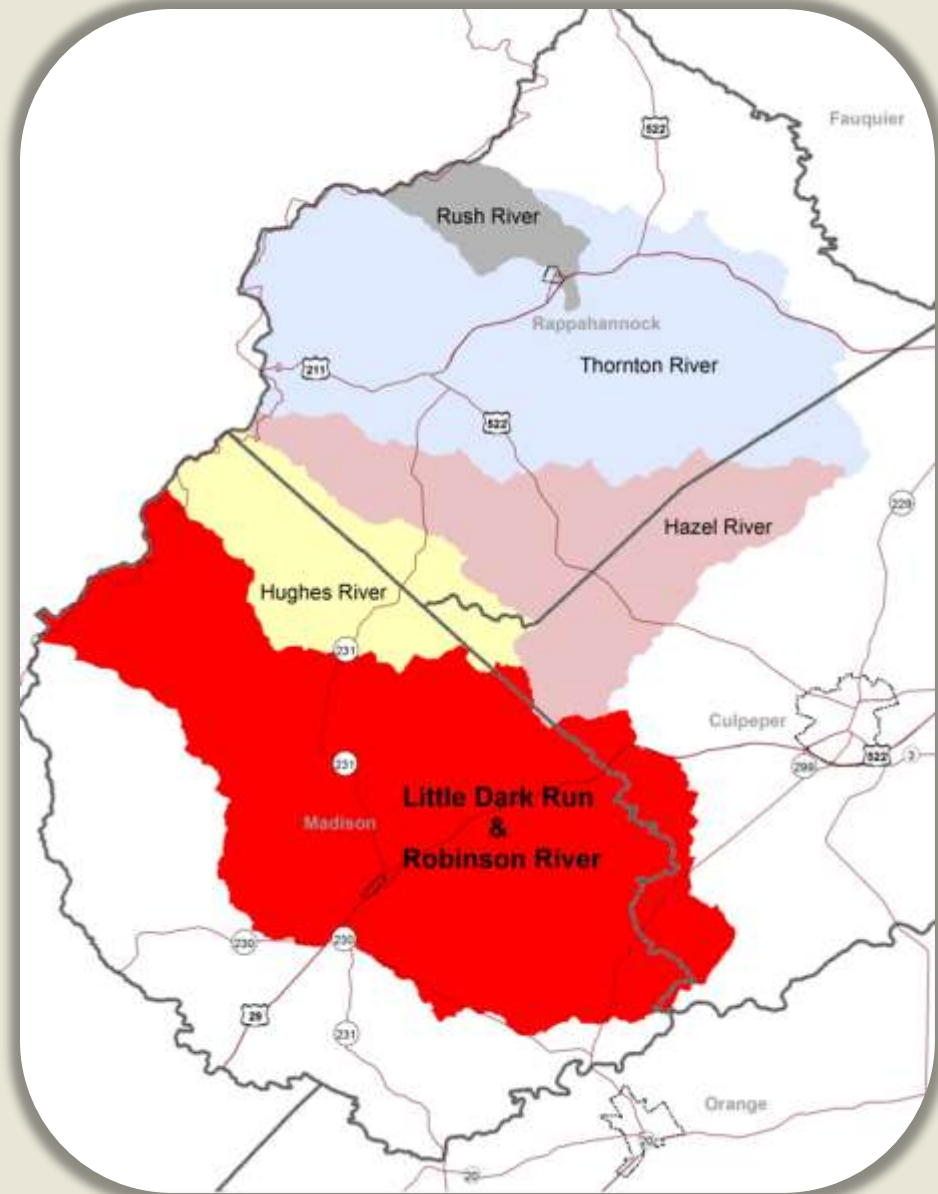
- ▶ Federal 1972 Clean Water Act
 - Water quality monitoring and assessment
 - Impaired waters listing
 - TMDL developed for impairment
- ▶ Virginia's 1997 Water Quality Monitoring, Information, and Restoration Act
 - Impaired waters listing
 - TMDL developed for impaired water
 - Implementation plan developed for TMDL

What is the TMDL process?



Neighboring Developed TMDL IP

- ▶ Upper Hazel River TMDL IP completed in 2009
- ▶ Implementation started in 2009
 - CSWCD lead for agricultural & septic system programs
 - RRRC lead for pet program



What is included in the Water Quality Improvement Plan?

- ▶ Review of TMDL Study
- ▶ Implementation Actions
- ▶ Measureable Goals and Milestones
- ▶ Stakeholder's Roles
- ▶ Potential Funding Sources
- ▶ Public Participation

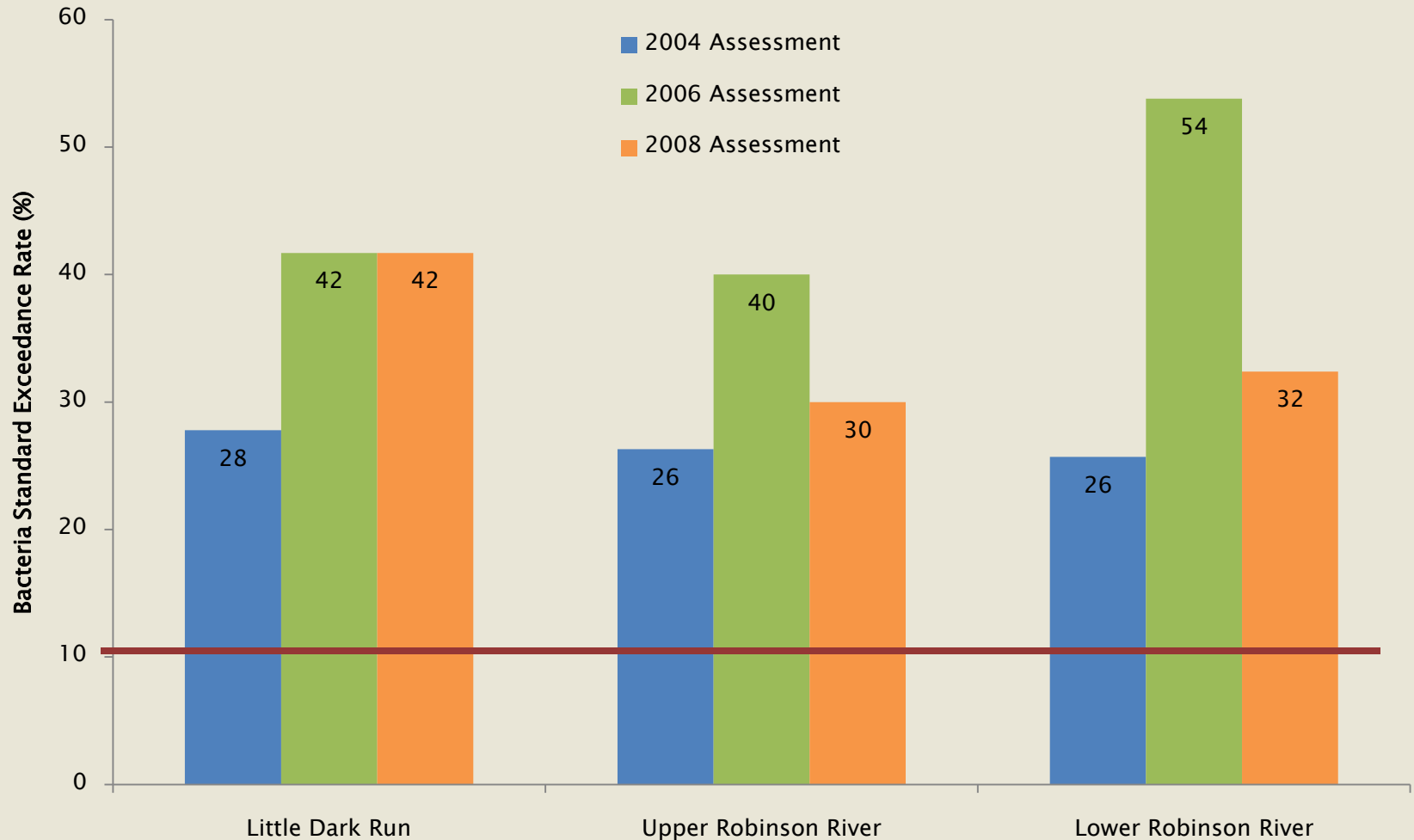


Review of TMDL Study

- ▶ Water quality assessed at stations shown
- ▶ Placed on Impaired Waters List for not supporting Recreational Use
 - Little Dark Run (1994)
 - Upper Robinson R. (2002)
 - Lower Robinson R. (2004)
- ▶ TMDL approved in 2005



Listing Station Standard Exceedances



What bacteria sources are present?

▶ Permitted Point Sources

- Direct to stream

▶ Residential

- Straight pipes, failing septic systems, pets
- Direct to stream, residential



▶ Livestock

- Beef, dairy, horse, biosolids
- Direct to stream, pasture, and cropland



▶ Wildlife

- Bear, deer, turkey, goose, duck, muskrat, raccoon, beaver
- Direct to stream, pasture, cropland, and forest

Reductions to Meet Delisting Goal

(<10.5% Exceedance of Bacteria Standard)

| Impairment | Bacteria Load Reductions (%) | | | | | | |
|----------------------|------------------------------|-------------|------------------|---------|----------|-----------------|--------|
| | Straight Pipes | Residential | Livestock Direct | Pasture | Cropland | Wildlife Direct | Forest |
| Little Dark Run | 100 | 87 | 100 | 99 | 87 | 0 | 0 |
| Upper Robinson River | 100 | 0 | 54 | 0 | 0 | 0 | 0 |
| Lower Robinson River | 100 | 99 | 100 | 99 | 99 | 0 | 0 |

Implementation Actions

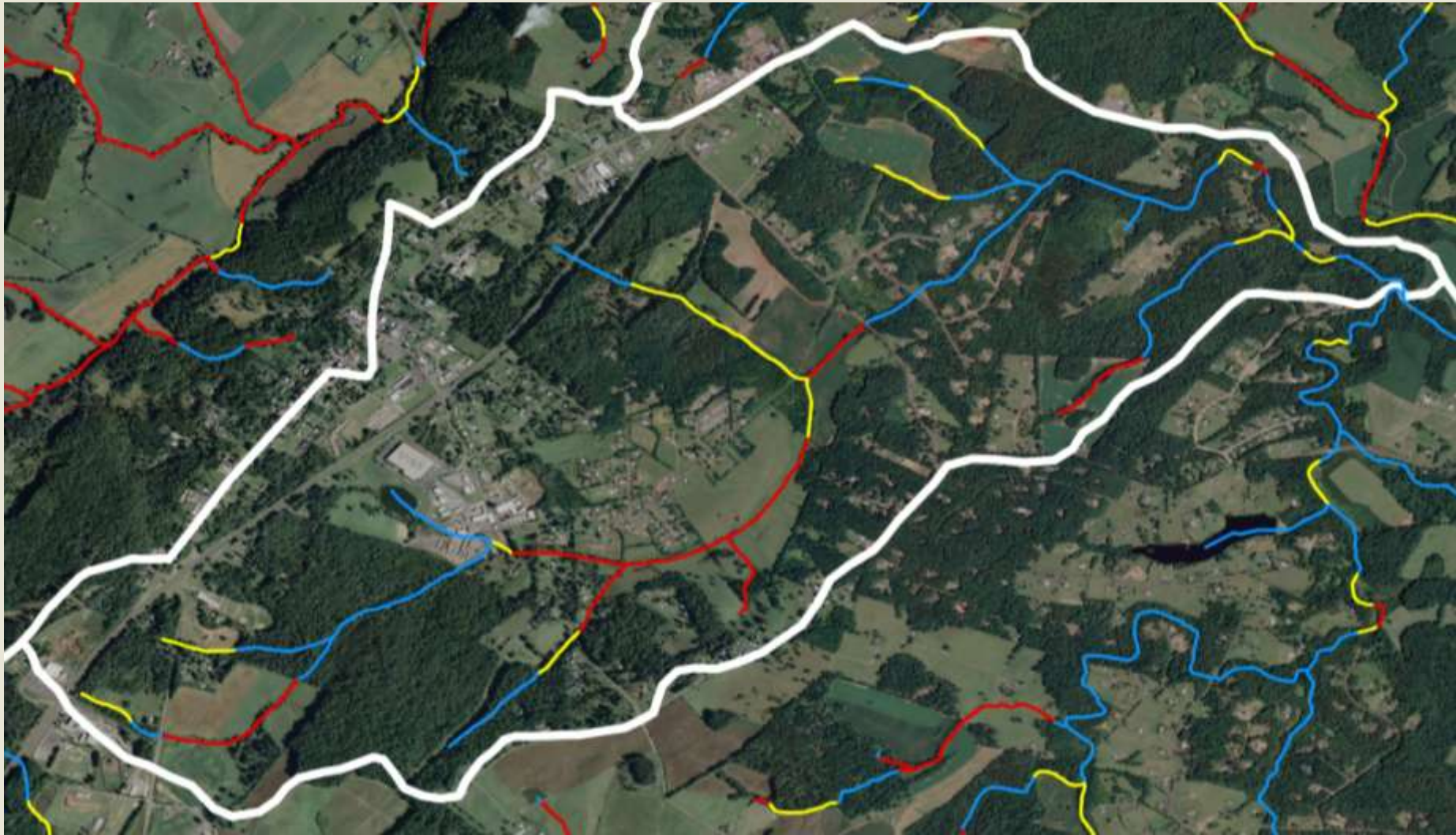
- ▶ Identify and quantify control measures that reduce bacteria
- ▶ Quantify technical assistance needed to implement actions
- ▶ Estimate cost to implement
- ▶ Determine benefits of implementation

Identification and Quantification

- ▶ Spatial analysis (e.g., GIS)
- ▶ DCR Agricultural BMP Database
- ▶ Culpeper SWCD records
- ▶ DEQ records
- ▶ TMDL development document
- ▶ Input from working groups and Steering Committee

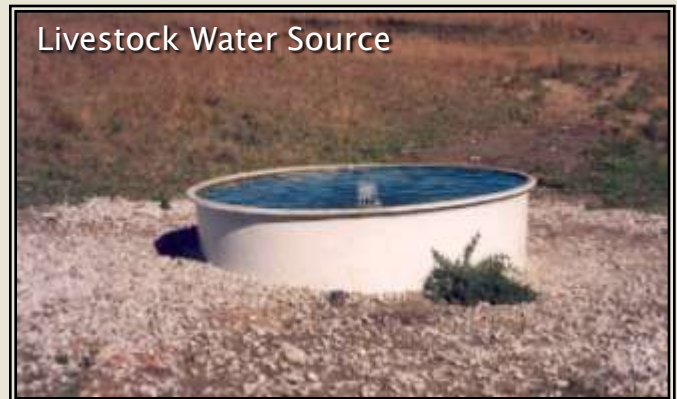


Spatial Analysis: Livestock Stream Access



Implementation Benefits

- ▶ Environmental
 - Bacteria, sediment, and nutrient loads reduced
 - Aquatic community improved
- ▶ Human and herd health
- ▶ Integration with other water quality efforts
 - Madison & Culpeper Counties Comprehensive Plans
 - Chesapeake Bay TMDL
- ▶ Economic
 - Agricultural producers
 - Homeowners
 - Local economy & community



Potential Control Measures Residential



Septic System Pump-out



Septic System Replacement



Septic System Repair



Alternative Sewage Disposal System



Potential Control Measures Residential



Pet Waste Signage



Pet Waste
Disposal
Station



Pet Waste Composters



Vegetated Buffer (No Mow Zone)

Potential Control Measures Pasture



Exclusion
Fencing



Riparian Buffer



Prescribed Grazing



Watering
Trough



Hardened Crossing

Potential Control Measures Cropland



No-till



Reforestation



Cover Crop



Permanent Vegetative Cover on Cropland



Potential Control Measures Other



Chain Harrow for Pasture Management System



Retention Ponds



Wetlands

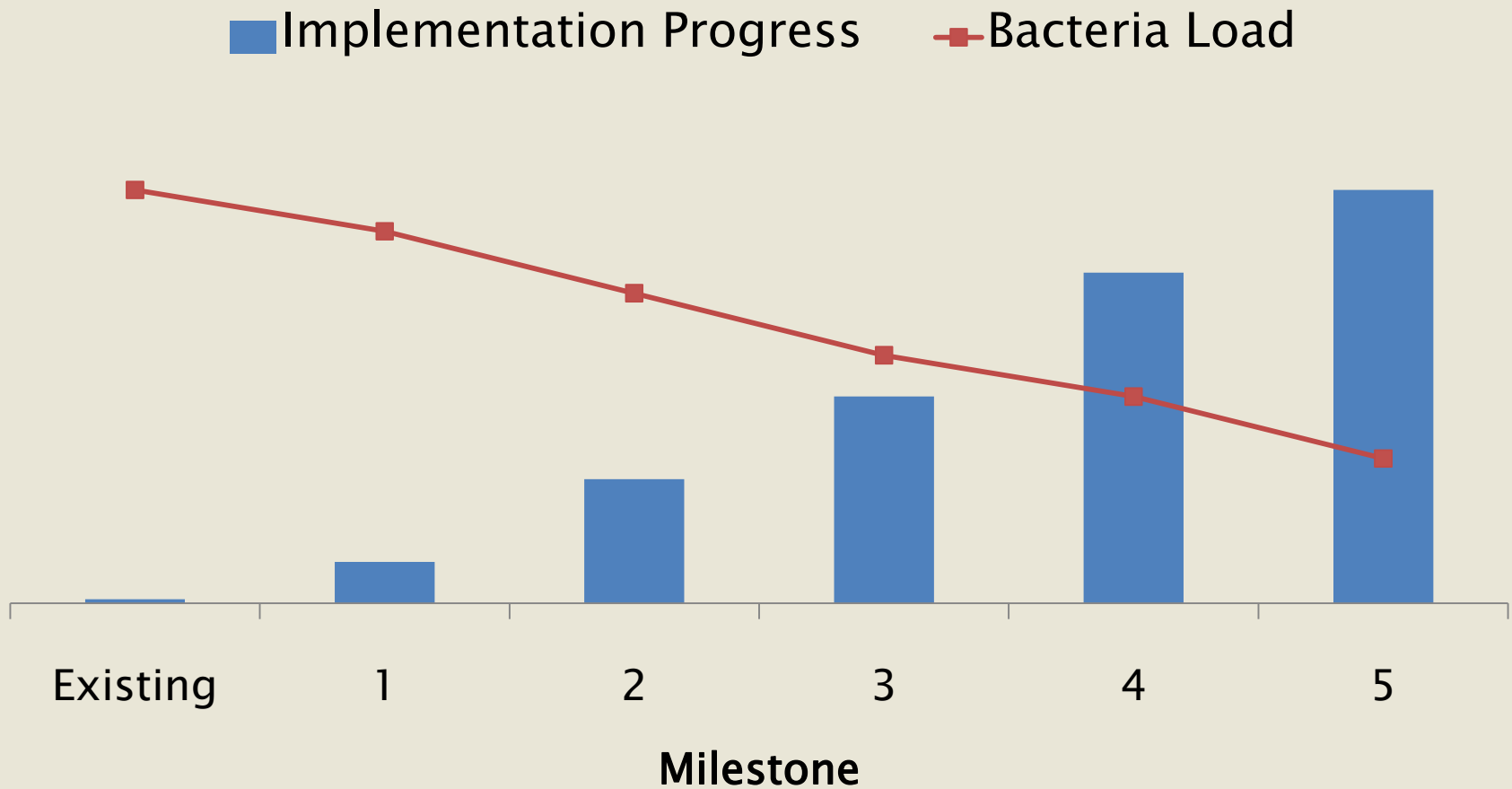


Measurable Goals & Milestones

- ▶ Establish milestones
 - Implementation
 - Water quality
- ▶ Develop tracking & monitoring plans
- ▶ Evaluate progress
 - Take action if milestones not being met



Measurable Goals & Milestones



Stakeholders

Regional / Local

- ▶ Madison and Culpeper Counties landowners & government
- ▶ Culpeper Soil & Water Conservation District
- ▶ Rappahannock–Rapidan Regional Commission

State

- ▶ Department of Conservation and Recreation
- ▶ Department of Environmental Quality
- ▶ Department of Health
- ▶ Department of Agricultural & Consumer Services
- ▶ Cooperative Extension
- ▶ Department of Forestry
- ▶ Department of Game and Inland Fisheries

Federal

- ▶ USDA – Natural Resources Conservation Service
- ▶ United States Environmental Protection Agency



Potential Funding Sources

Federal

- ▶ Federal Clean Water Act Section 319 Increment Funds
- ▶ USDA Conservation Reserve Program (CRP)
- ▶ USDA Conservation Reserve Enhancement Program (CREP)
- ▶ USDA Environmental Quality Incentives Program (EQIP)
- ▶ USDA Forest Incentive Program (FIP)
- ▶ USDA Wildlife Habitat Incentive Program (WHIP)
- ▶ USDA Wetland Reserve Program (WRP)
- ▶ U.S. Fish & Wildlife Service Private Stewardship Program
- ▶ U.S. Fish & Wildlife Service Conservation Grants

Potential Funding Sources

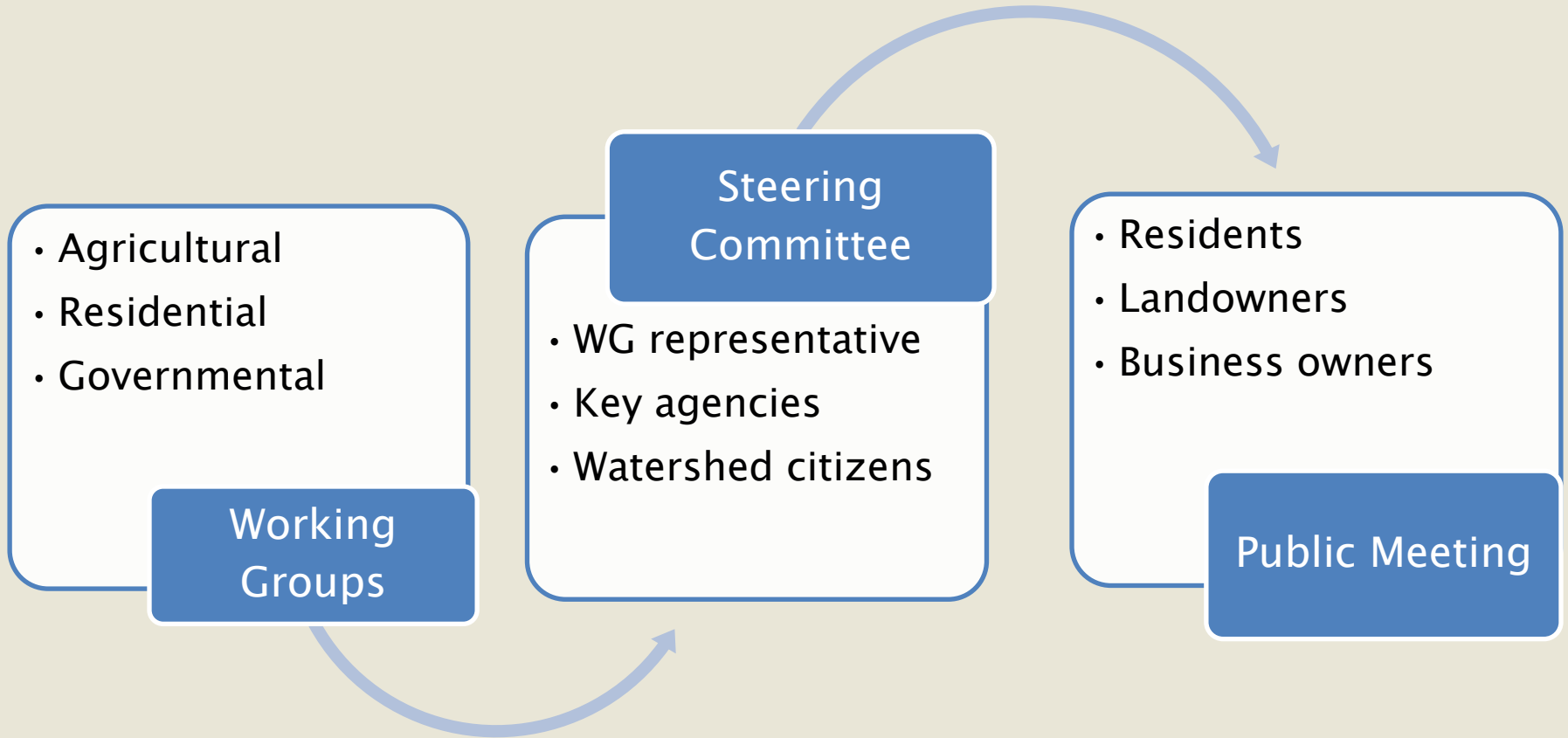
State

- ▶ VA Agricultural BMP Cost-share & Tax Credit Programs
- ▶ VA Water Quality Improvement Fund
- ▶ VA Forest Stewardship Program
- ▶ VA Small Business Envir. Compliance Assistance Fund
- ▶ VA Landowner Incentive Program
- ▶ VA Revolving Loan Programs
- ▶ Community Development Block Grant Program
- ▶ Rural Community Assistance Program

Regional, Local, Private

- ▶ Southeast Rural Community Assistance Project
- ▶ National Fish and Wildlife Foundation
- ▶ Chesapeake Bay Foundation

Public Participation



Working Groups

- ▶ Identify constraints to implementation
- ▶ Recommend control measures
- ▶ Determine appropriate outreach methods
- ▶ Discuss entity to provide technical assistance
- ▶ Identify funding sources / partnerships



Steering Committee

- ▶ Provides overall oversight in Water Quality IP process
- ▶ Examines recommendations from working groups and public meetings
- ▶ Reviews Water Quality IP
- ▶ Continues oversight during implementation and revises Water Quality IP if needed

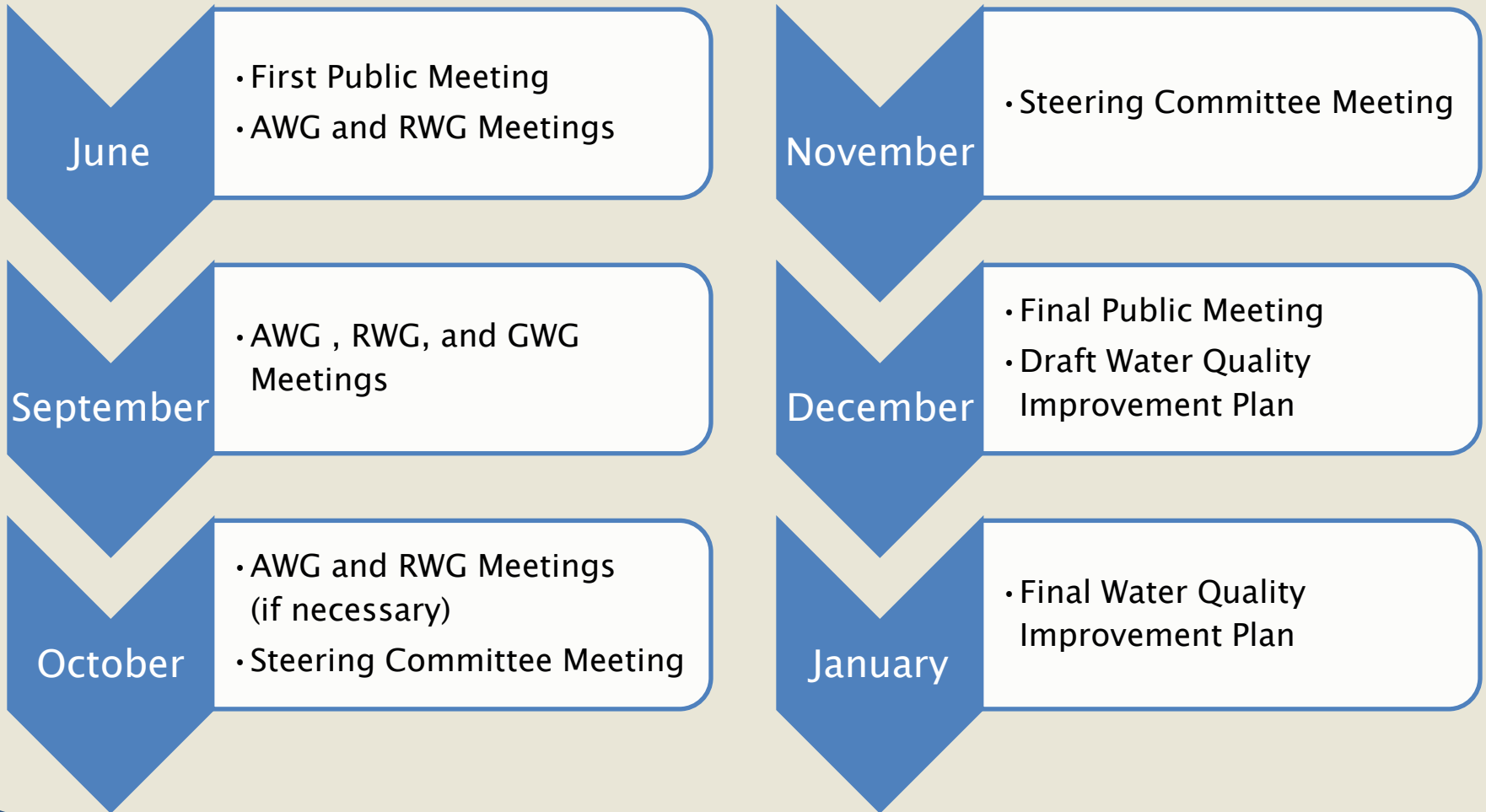


Public Meetings

- ▶ Provide forum for public comment
- ▶ First meeting
 - Offer overview of TMDL program
 - Kick-off water quality improvement plan process
 - Solicit participation in working groups and steering committee
- ▶ Final meeting
 - Present draft Water Quality Improvement Plan



Project Timeline



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