

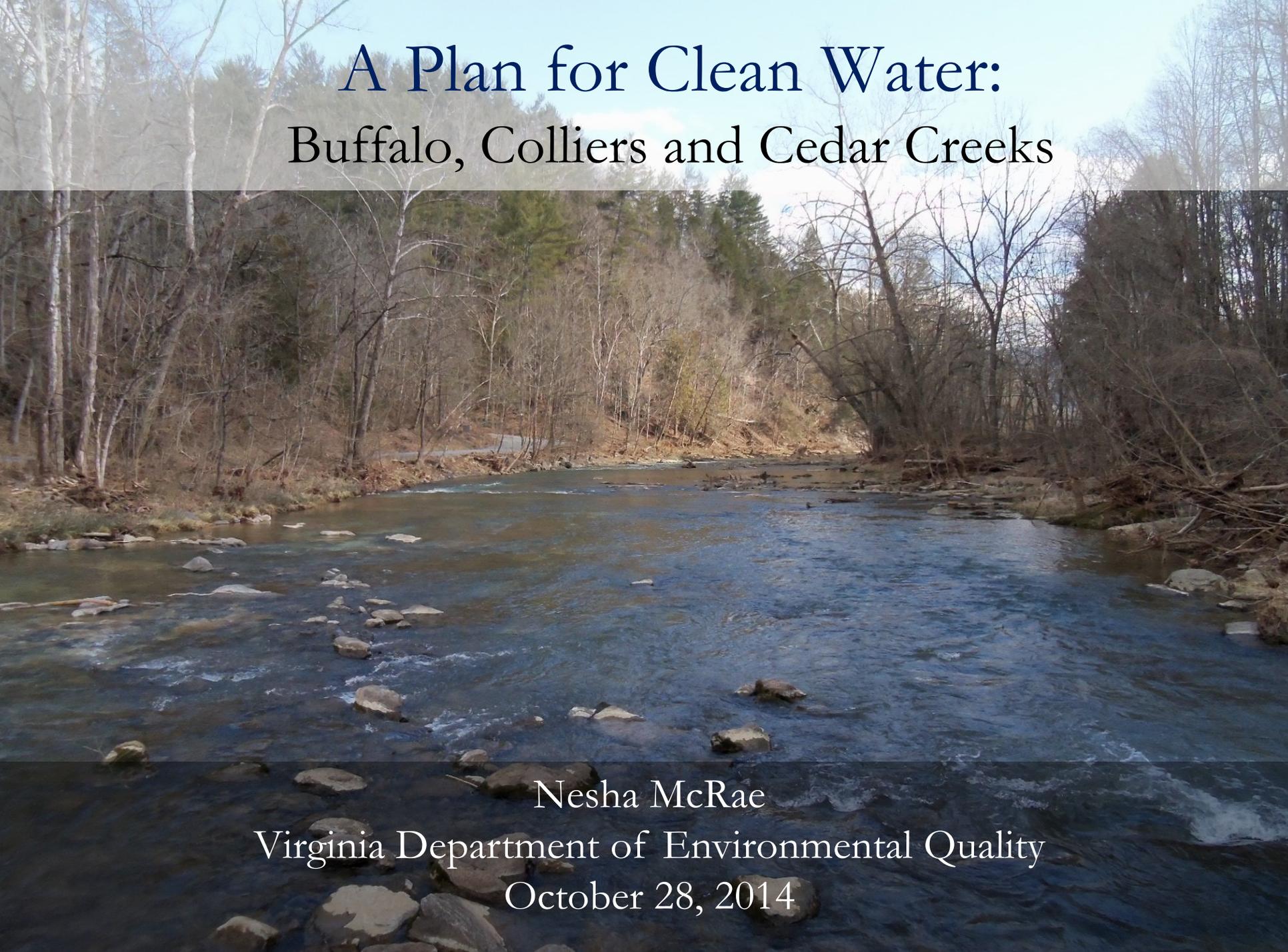
Buffalo, Colliers and Cedar Creek Community Meeting: **AGENDA**

Welcome

- Jeff Waldon, Natural Bridge Park & Historic Hotel/VA Conservation Legacy Fund
- Spencer Suter, Rockbridge County Administrator

DINNER

1. Background on Buffalo, Colliers and Cedar Creek Clean Up Plan
 - Neshia McRae, VA Department of Environmental Quality
2. Maury River Middle School Work on Colliers Creek
 - Maury River Middle School Students
3. Leasing of Agricultural Land in Rockbridge County
 - Tom Stanley, VA Cooperative Extension (Rockbridge County)
4. Landowner Experiences with Agricultural BMPs
 - Linda Leech, Ingleside Dairy Farm



A Plan for Clean Water: Buffalo, Colliers and Cedar Creeks

Nesha McRae
Virginia Department of Environmental Quality
October 28, 2014

Acknowledgements

Boxerwood Nature Center and Garden

Effinger Fire Hall

Maury River Middle School

Natural Bridge Park and Historic Hotel

Natural Bridge Soil and Water Conservation District

Natural Resource Conservation Service

Palmer Community Center

Rockbridge Area Conservation Council

Rockbridge County

Upper James Resource Conservation and Development Council

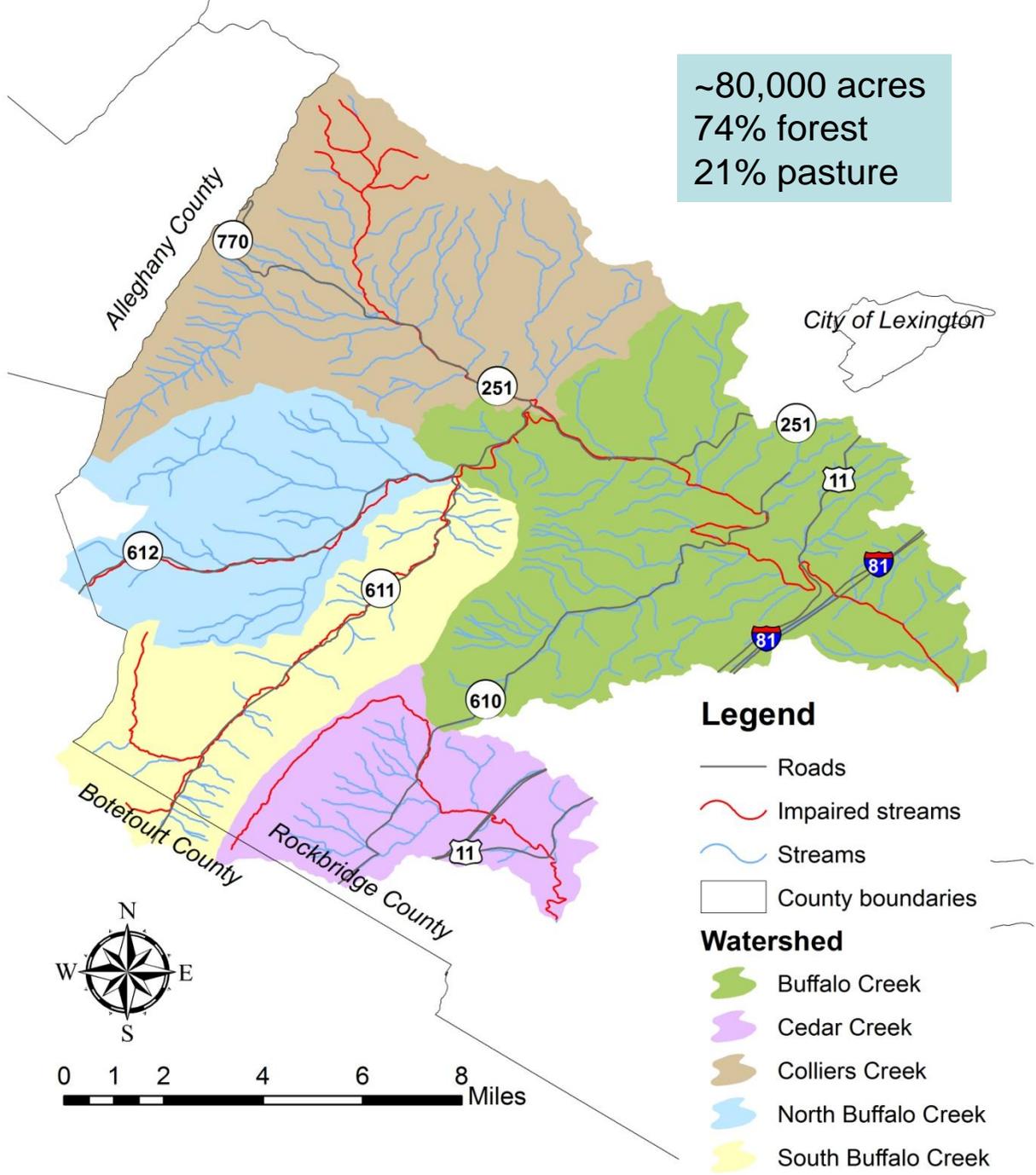
VA Conservation Legacy Fund

Working group and steering committee members

Community Involvement

- 2 public meetings
- 3 agricultural working group meetings
- 2 residential working group meetings
- 1 steering committee meeting
- **Over 300 hours volunteered!!!**

~80,000 acres
74% forest
21% pasture



Legend

- Roads
- Impaired streams
- Streams
- County boundaries

Watershed

- Buffalo Creek
- Cedar Creek
- Colliers Creek
- North Buffalo Creek
- South Buffalo Creek

Why do we need a plan for clean water?

- Too much *E.coli*
 - Human health concern
 - Risk based standard
 - Indicator of pathogens in the water (viruses, protozoans, bacteria)
 - Impacts on livestock
 - >50% of cattle diseases in mid-Atlantic transmitted through fecal oral pathway



Why else do we need a plan for clean water?

- Too much sediment in Colliers Creek
 - Impacts to aquatic life



Photo: K.R.I.S.

Where are we now?

The Planning Process in Buffalo, Colliers & Cedar Creeks

- Study of the watersheds completed in 2013
- Identified sources of bacteria and sediment (Colliers Creek) in the watersheds, their contributions and the reductions needed
- Kicked off development of clean up plan in May 2014
- Working group and steering committee meetings over the past 6 months
- Draft plan has been completed, kicking of 30-day public comment period starting tomorrow
- Plan available at:
<http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs.aspx> (select TMDL and follow the links to TMDL Implementation Plans)

Review of the Study:

Where is the bacteria coming from?

- *E. coli* is found in warm blooded animals
 - Humans
 - Wildlife
 - Livestock
 - Pets
- Some bacteria deposited on the land ends up in the creek
- Impact of direct deposition of bacteria in the creek



Failing septic drain field

Photo: Megan O'Gorek, SVSWCD

Where is the sediment coming from?

Sediment Sources in Colliers Creek

- Transported to the stream when soils are exposed
- Scoured from stream banks when they are exposed, incised or denuded
- Sources include
 - Pasture and hayland
 - Cropland
 - Residential/developed areas
 - Stream channels



Bacteria Reductions Needed for Removal From “Dirty Waters List”

Watershed	% Reduction by Source			
	Livestock in stream	Pasture	Cropland	Straight pipes and failing septic
Buffalo Creek	50%	50%	10%	100%
Colliers Creek	70%	50%	10%	100%
NF Buffalo Creek	35%	35%	10%	100%
SF Buffalo Creek	99%	50%	10%	100%
Cedar Creek	99%	50%	10%	100%

Sediment Reductions Needed in Colliers Creek

Source	Reductions(%)
Cropland	15%
Pasture	34%
Hay	0%
Forest	0%
Developed	0%
Stream channel erosion	15%

What this plan is...

- A road map to water quality improvement
- A timeline for implementation actions
- A source of ideas of outreach activities
- A tool for identifying and bringing in funding

What this plan isn't...

- A regulatory tool for non point source pollution
- A static document that must be followed to the letter

Agricultural Best Management Practices:

Pasture

BMP	Units	Extent
Improved pasture management	Acres	16,156
Reforestation of erodible pasture	Acres	195
Permanent vegetative cover on critical areas	Acres	18
Manure storage facilities	Facilities	2
Small acreage grazing systems (equine)	Acres	24
Runoff control/retention structure	Ac. treated	769
Livestock exclusion from streams	Miles	32
Streambank stabilization	Feet	3,000

Agricultural Best Management Practices:

Cropland

BMP	Units	Extent
Contour stripcropping	Acres	3
Continuous no till	Acres	20
Streamside vegetative buffers	Acres	6

Residential/Developed Area Practices

BMP	Units	Extent
Septic tank pumpout	Pumpout	424
Septic system repair	Systems	209
Septic system replacement	System	180
Alternative waste treatment system	System	53
Pet waste stations	Stations	2
Rain gardens	Ac. treated	5
Stormwater clarifier	Ac. treated	7

Education and Outreach

- Rotational grazing field day
- Rainy day fund for fencing maintenance
- Develop materials highlighting costs and benefits of BMPs
- Partner with VA Cooperative Extension's Master Well Owner Network
- Long term low interest loans for septic replacements
- Establish a citizen monitoring network



How much is it going to cost?

- Agricultural BMPs: \$5.7M
- Septic system and straight pipe BMPs: \$3.3M
- Technical assistance (1 position, 10 yrs): \$500K
- Total estimated cost: \$9.5M over 10 years
- Annual cost: \$950,000/yr

How are we going to pay for it?

- USDA Programs -
CREP/EQIP
- Water Quality
Improvement Fund
- National Fish and Wildlife
Foundation Grants
- EPA 319 Funds (available
through DEQ)
- State Revolving Loan
Funds
- State Cost-Share Program
and Tax Credits



Photo: Jeff Vanuga, NRCS

Implementing the plan...

what's next?

- Voluntary implementation
- Agricultural BMP implementation through Soil and Water Conservation District and Natural Resource Conservation Service
- Pursue grant opportunities for septic BMP programs
 - Hays Creek example
- Citizen monitoring
 - November 18th training

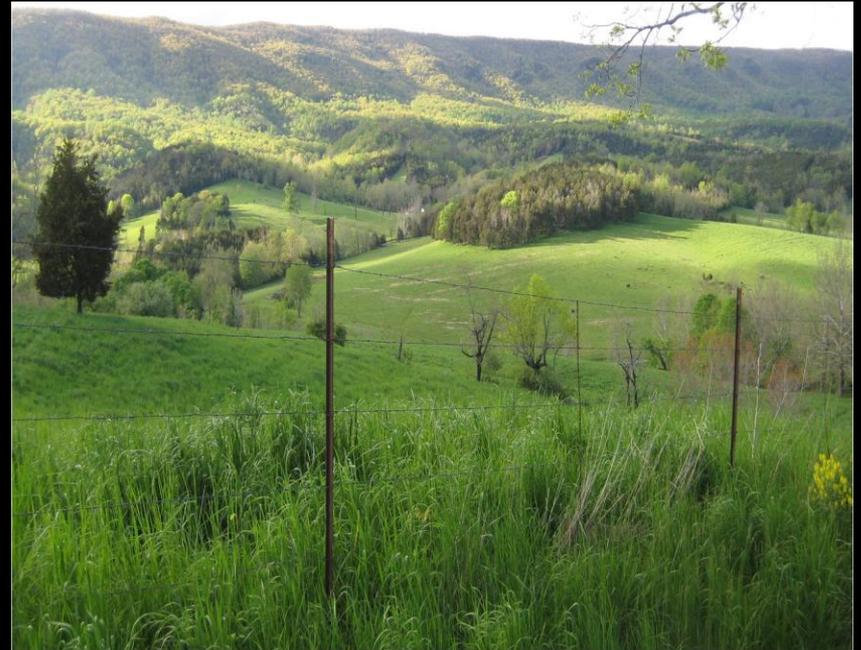


Photo: Rockbridge Area Conservation Council

Why should **you** participate?

- Economic benefits
 - Agricultural producers
 - Homeowners
 - Local economy
- Water quality benefits
 - Environmental
 - Human health



Public Comment Period

- October 29, 2014 – November 28, 2014
- Send written comments to:

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