



Crab Creek Implementation Plan

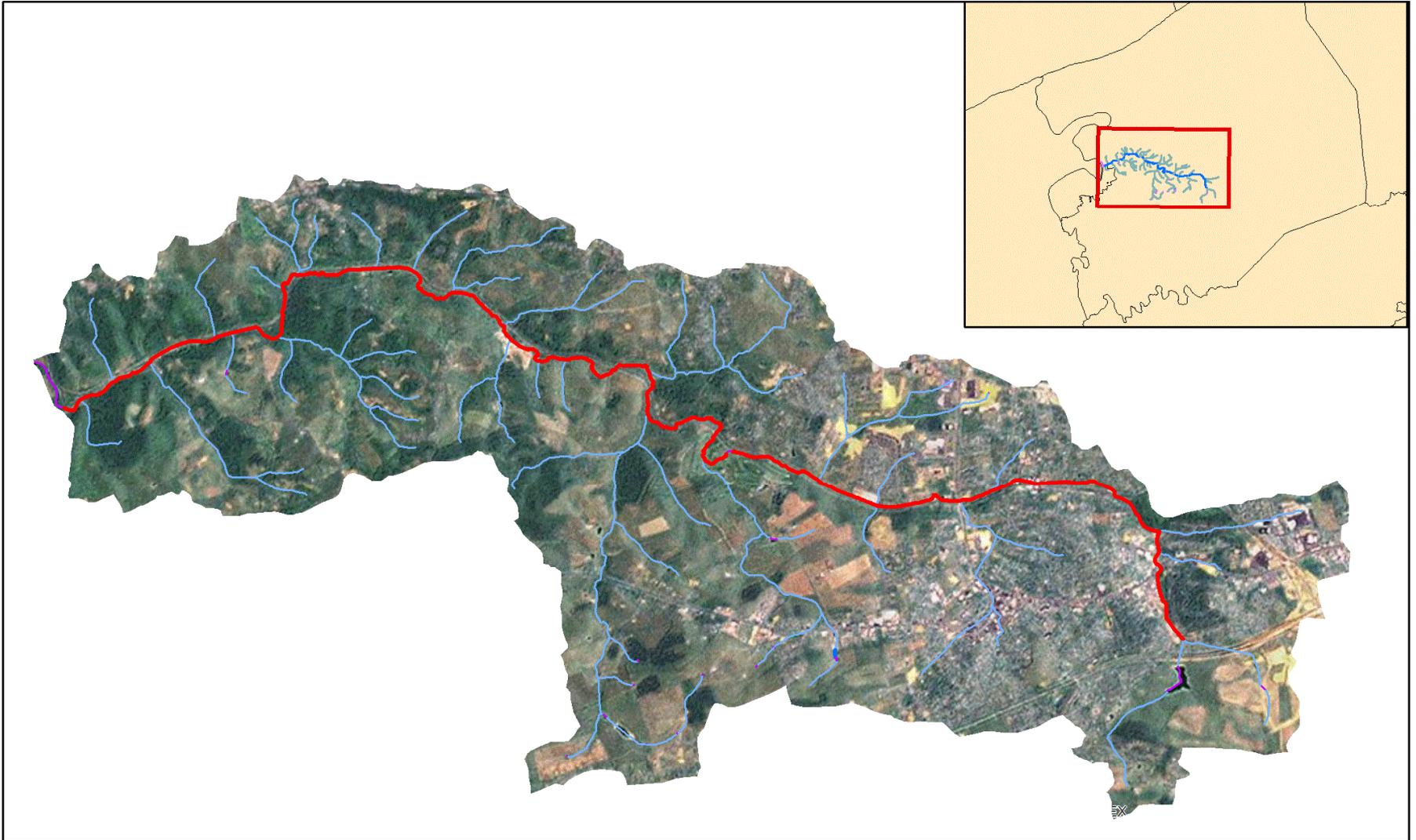
Final Public Meeting
October 7, 2014

Acknowledgements

- Farm Service Agency
- Local residents and landowners
- Montgomery County
- Natural Resources Conservation Service
- New River Conservancy
- New River Valley Planning District Commission
- Skyline Soil and Water Conservation District
- Town of Christiansburg
- Virginia Department of Conservation and Recreation
- Virginia Department of Health
- Virginia Department of Transportation
- Virginia Save Our Streams



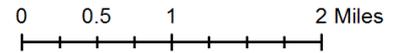
Crab Creek Watershed - Montgomery County, VA



Legend

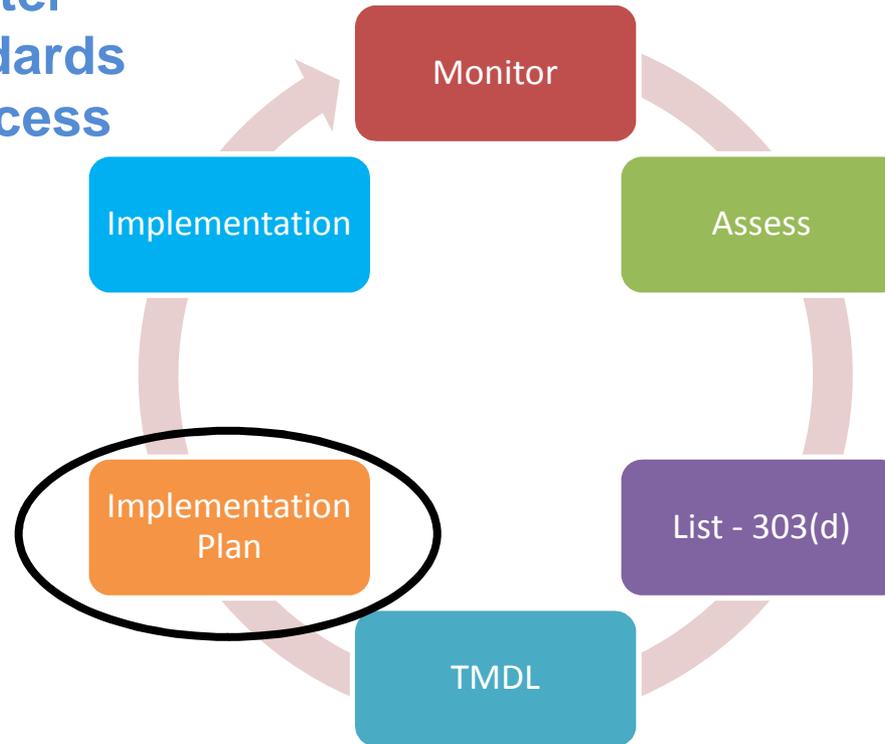
Rivers and Streams

- Intermittent
- Perennial
- Artificial Path
- Impaired Segments



Why do we need a plan for clean water?

Virginia's Water Quality Standards Program Process



Crab Creek

1. Unhealthy for aquatic life
2. Too much fecal bacteria

“A goal without a plan is just a wish.”

- Antoine de Saint-Exupery

Why do we need a plan for clean water?

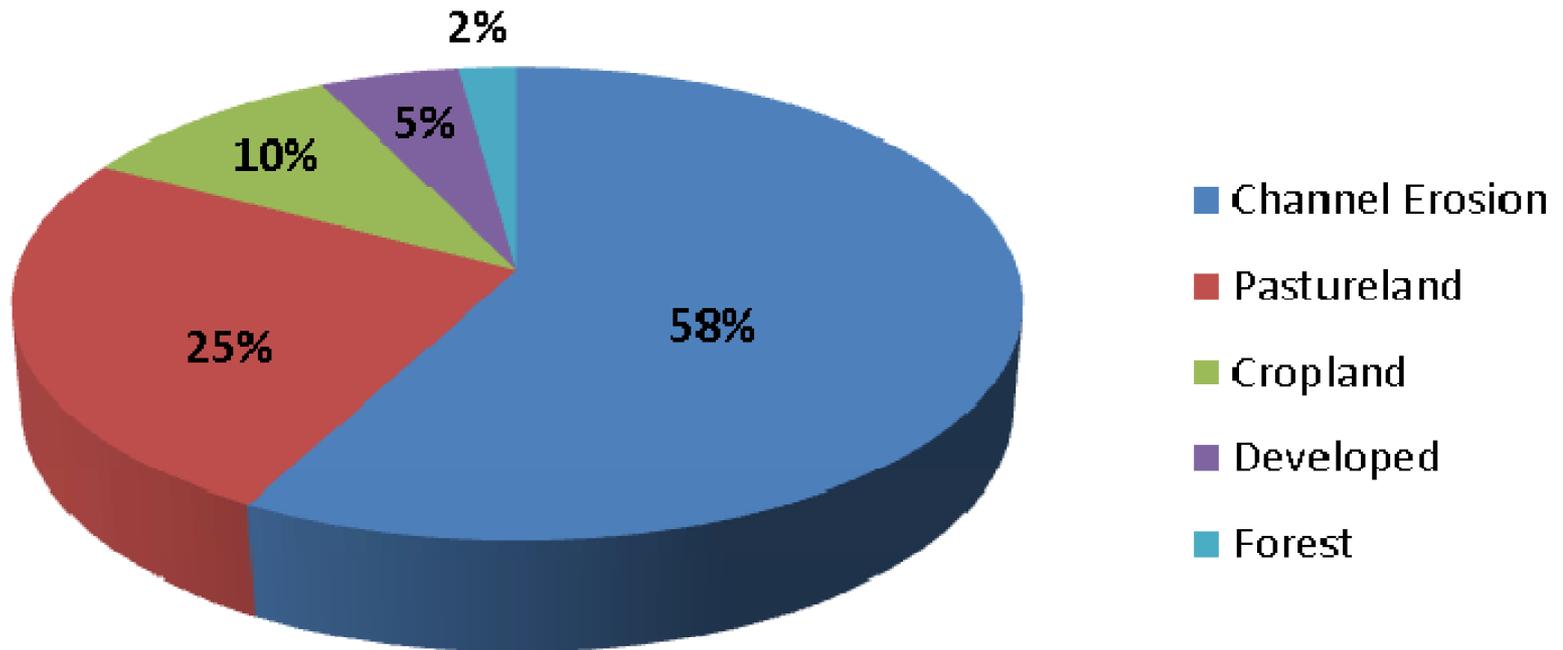
1. Too much sediment in Crab Creek

- Impacts the aquatic life
- Streambank erosion
- Soil loss



Where is the sediment coming from?

Sediment sources in Crab Creek



Why do we need a plan for clean water?

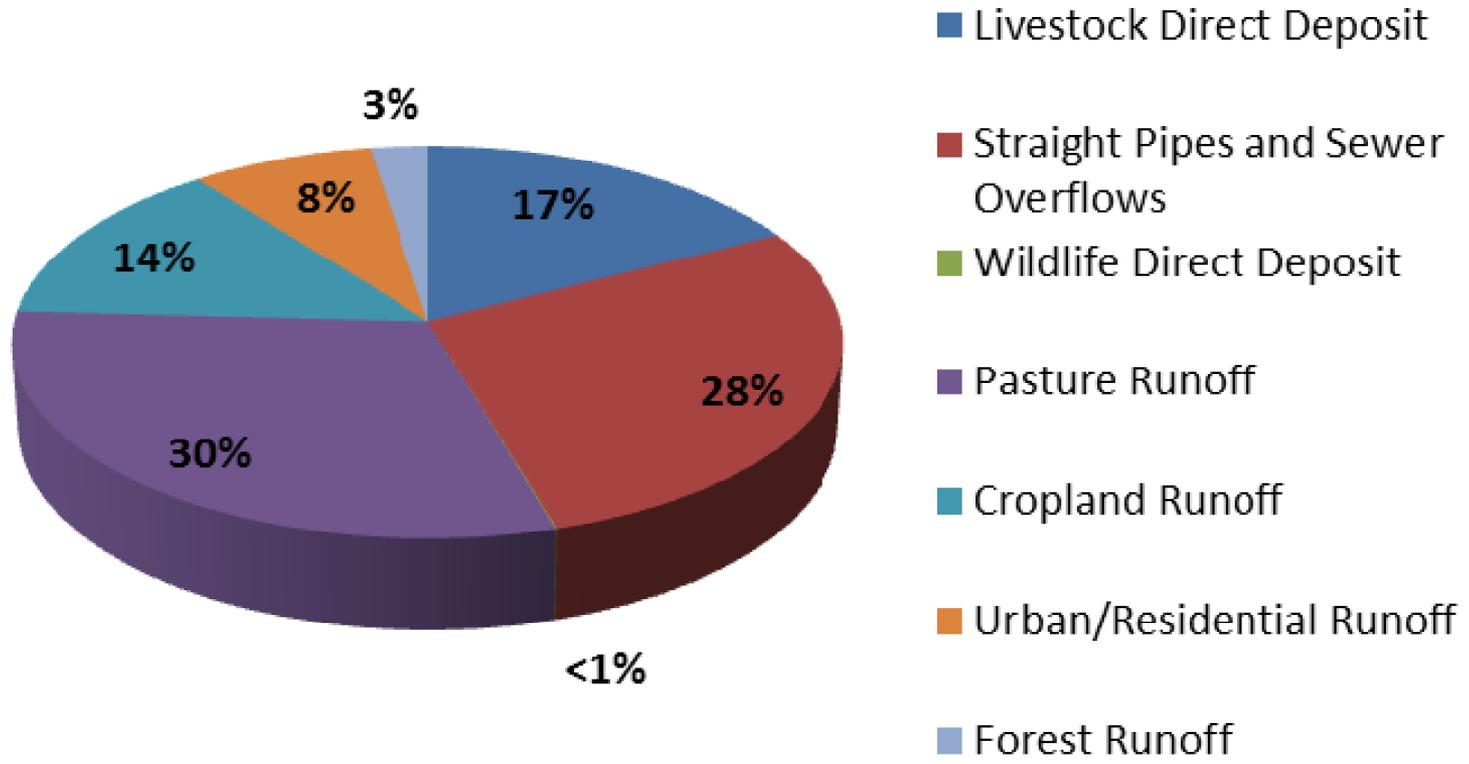


2. Too much *E. coli* in Crab Creek

- Human health concern
- Indicator of pathogens in the water (viruses, protozoans, bacteria)
- Impacts on livestock
 - >50% of cattle diseases in mid-Atlantic transmitted through fecal oral pathway

Where is the bacteria coming from?

Bacteria nonpoint source pollution loads in the Crab Creek watershed



Where are we now?

The Planning Process in Crab Creek

Meeting Date	Meeting Type
November 12, 2013	Watershed Field Tour
	Kick-off Meeting
	Agricultural Working Group
	Residential Working Group
January 10, 2014	Government Working Group
March 13, 2014	Agricultural & Residential Working Groups
August 25, 2014	Steering Committee
October 7, 2014	Final Public Meeting
30-day Public Comment Period starts tomorrow	

What is in the plan?

- Actions to improve water quality (BMPs)
- Outreach strategies
- Costs and benefits
- Funding opportunities
- Project timeline
 - Implementation goals
 - Implementation milestones



Agricultural Best Management Practices:

Pasture and Cropland

BMP	Units	Extent
Improved pasture management	Acres	3,265
Reforestation of erodible pasture	Acres	28
Permanent vegetative cover on critical areas	Acres	29
Heavy use area protection	System	20
Livestock exclusion from streams	Miles	3.6
Continuous no-till	Acres	5
Small grain cover crop	Acres	20

Residential Best Management Practices:

Failing Septic Systems and Straight Pipes

BMP	Units	Extent
Septic tank pump out	Pump out	565
Septic system repair	System	237
Septic system replacement	System	81
Alternative waste treatment system	System	38
Connection to public sewer	Connection	7

Residential Best Management Practices:

Pet Waste

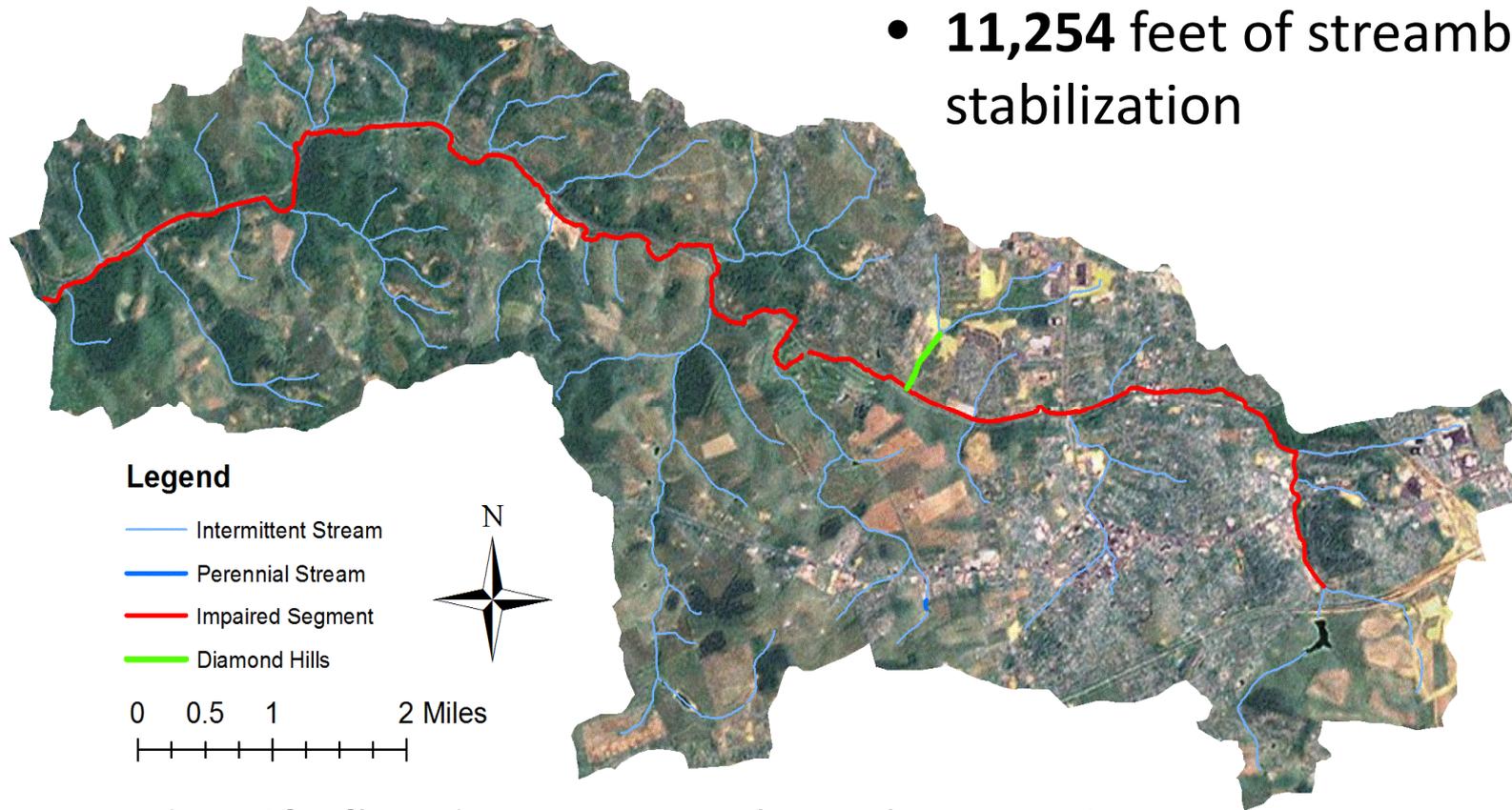
BMP	Units	Extent
Pet Waste Stations	number	15
Pet Waste Composters	number	50
Pet Waste Education Program	program	1

Urban/Residential Stormwater Reductions:

BMP	Extent (acres treated)
Rain gardens	69
Bioretention filters	3.5
Bioswales	7
Riparian buffers - forested	55.5
Riparian buffers – grass/shrub	95
Detention	82
Extended detention	100
Manufactured treatment devices (MTDs)	12.5
Detention and MTDs	15.5
Constructed Wetlands/Wet Ponds	0.5
Infiltration	1.5
Vegetated Open Channels	1

Streambank Stabilization:

- **11,254** feet of streambank stabilization



- Identify flood-prone reaches along mainstem
- Pair with stream fencing in agricultural areas

Education and Outreach

- Focus on economic benefits of agricultural BMPs
 - Skyline SWCD already active in the watershed
 - Virginia Cooperative Extension
- Working with local schools
 - Christiansburg High School
- Farm tours and field days
- Develop and distribute educational materials at ongoing events
 - Farmers Markets
 - Local Festivals



How much is it going to cost?

- Agricultural BMPs: **\$2.1 million**
- Residential and Urban BMPs: **\$3.8 million**
- Streambank Restoration: **\$3.4 million**
- Technical Assistance (2 positions, 10 yrs): **\$1.1 million**
- Total Estimated Cost over 10 years: **\$10.4 million**

How are we going to pay for it?

- USDA Programs – CRP/CREP/EQIP
- US Fish and Wildlife Service
- USEPA 319 Funds (available through DEQ)
- State Revolving Loan Funds
- State Cost-Share Program and Tax Credits
- State Stormwater Assistance Fund
- State Water Quality Improvement Fund
- National Fish and Wildlife Foundation Grants
- Southeast Rural Community Assistance Project
- ... and others

How long is it going to take?

- **10 year timeline:** 2015-2024
- **First 6 years:** critical and reasonable goals
 - Livestock Exclusion and Grazing Systems
 - Continuous No-till and Cover Crops on Cropland
 - Straight Pipe and Septic System Repair and Replacement
 - Pet Waste Management
 - Urban Stormwater Practices
 - Streambank Restoration
- **Second 4 years:** harder to reach goals
 - Livestock Exclusion on Intermittent Streams
 - Protective Practices on Critical Use Pastureland
 - Urban Stormwater Practices

Implementing the plan... what's next?

- Agricultural BMP implementation through Skyline SWCD and Natural Resource Conservation Service
- Pursue grant opportunities for residential and urban BMP programs
- Pursue partnerships with local schools for education and outreach
- Citizen monitoring
 - Virginia Save Our Streams



Why should you participate?

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



Public Comment Period

- October 8, 2014 – November 7, 2014
- Send written comments to:
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