

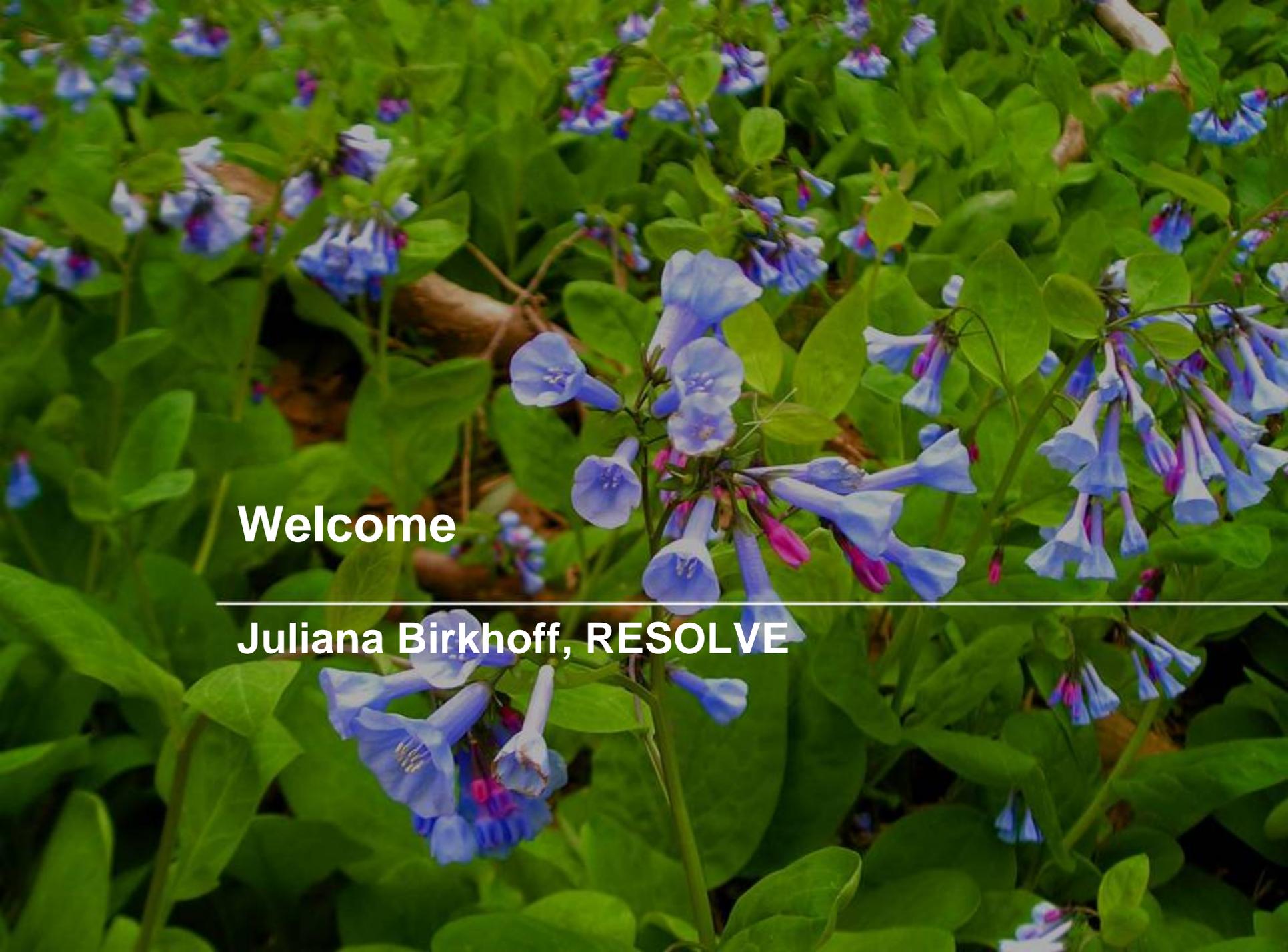
Accotink Creek Watershed Management Plan

Watershed Advisory Group Meeting #5
September 13, 2010

**Fairfax County Department of Public Works
and Environmental Services**

Presented by Watershed Planning & Assessment Branch,
Stormwater Management



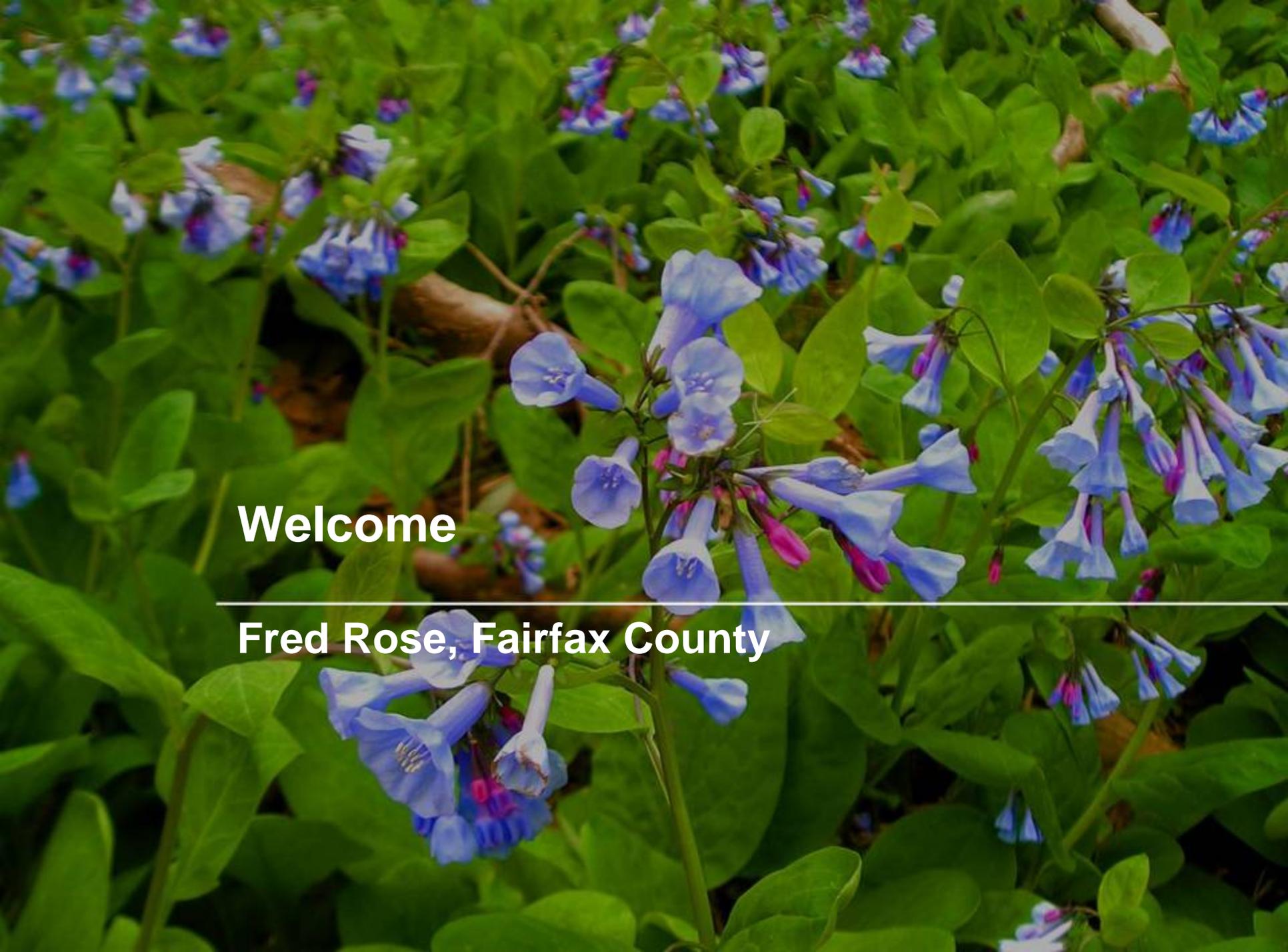
A close-up photograph of a dense field of blue and purple flowers, likely a species of Salpiglossis, with vibrant green foliage. The flowers are bell-shaped and hang from thin stems. The background is filled with more of the same plants, creating a lush, textured appearance.

Welcome

Juliana Birkhoff, RESOLVE

Today's Meeting Goals

- Introduction to Draft Plan contents
- Recap of process
- Discussion of next steps
- Prep for Draft Plan Forum

A close-up photograph of a dense field of blue and purple flowers, likely Virginia Bluebells, with vibrant green foliage. The flowers are bell-shaped and hang from thin stems. The background is filled with more of the same plants, creating a lush, textured appearance.

Welcome

Fred Rose, Fairfax County

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Introduction to Plan Content

Bill Frost, KCI

Plan Contents

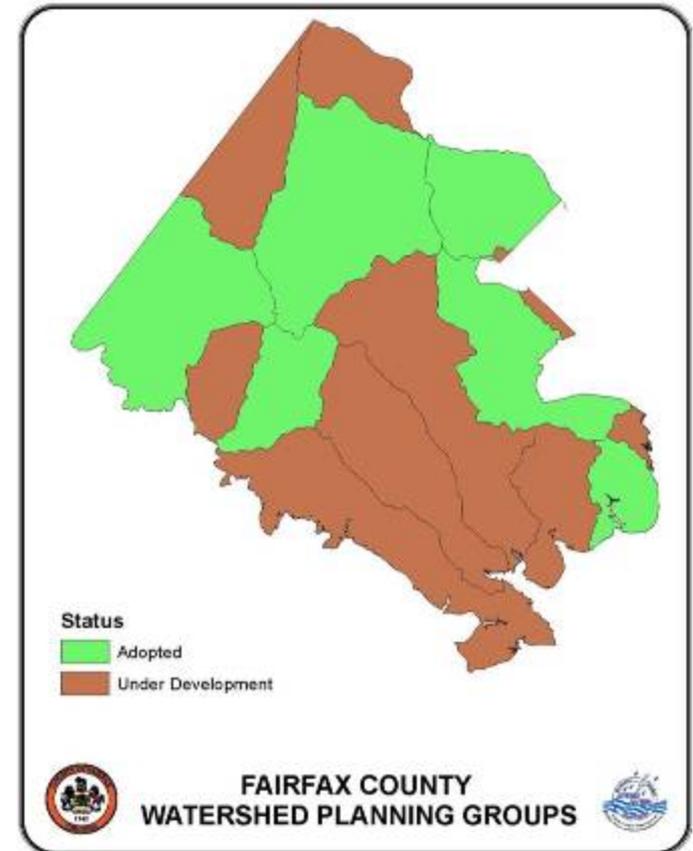
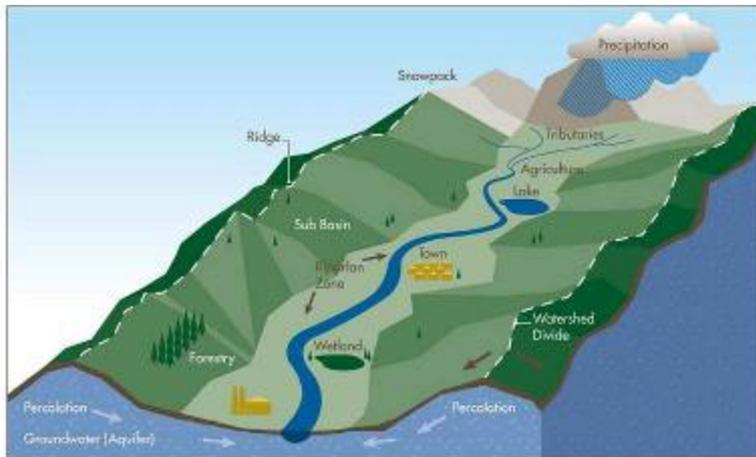
- Executive Summary
- Section 1 - Introduction
- Section 2 - Watershed Planning Process
- Section 3 - Summary of Watershed Conditions
- Section 4 - Summary of Watershed Restoration Strategies
- Section 5 - WMA Restoration Strategies
- Section 6 - Benefits of Plan Implementation
- Section 7 - Glossary and Acronyms
- Appendix A - Watershed Workbook *
- Appendix B - Technical Documents *
- Appendix C - Summary of Public Involvement *

* not included on CD to WAG members



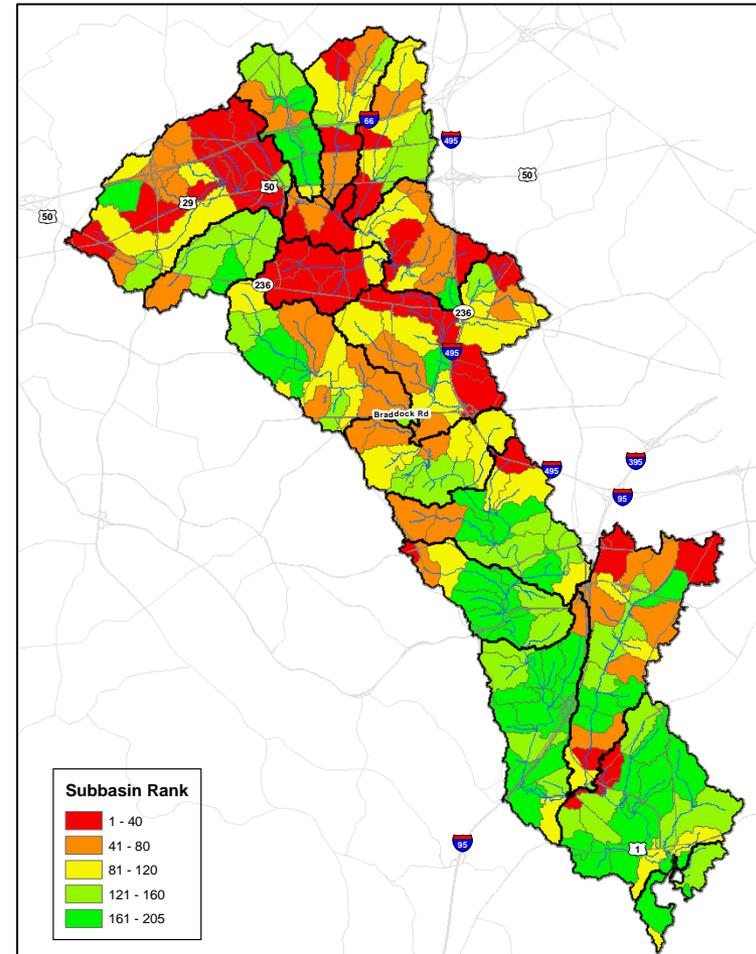
Section 1 - Introduction

- Basics about watersheds
- Countywide watershed planning
 - History
 - Current Plans
- Covered in Issues Forum



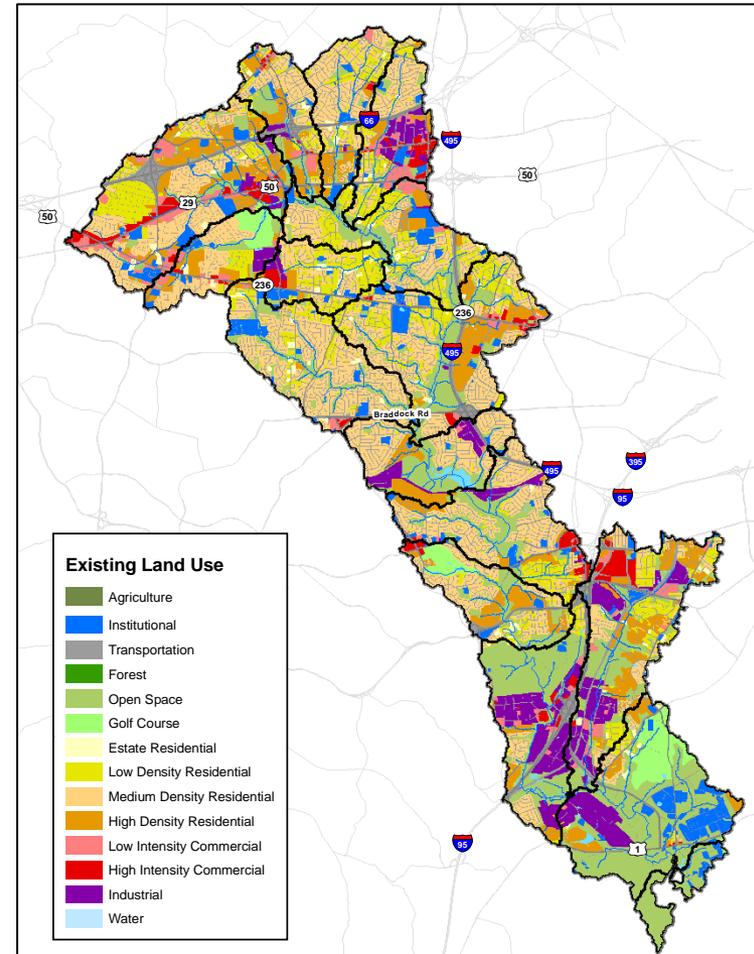
Section 2 - Watershed Planning Process

- County goals and objectives
- Indicators used for scoring
- Subwatershed ranking procedure
- Watershed modeling procedures
- Public involvement
- Covered in WAG #1



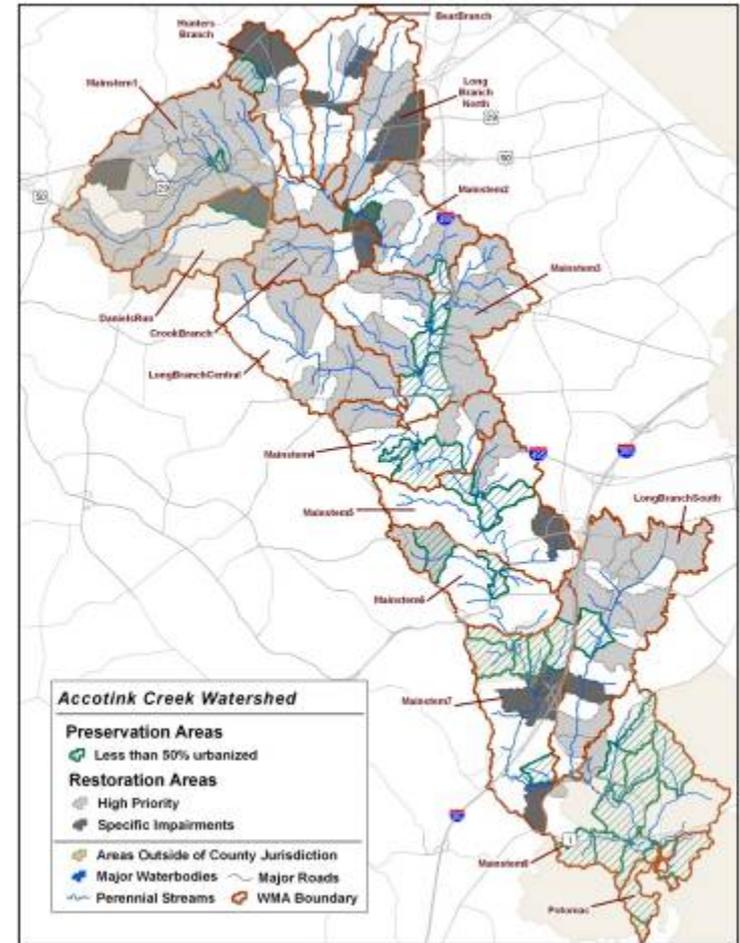
Section 3 - Summary of Watershed Conditions

- Summary of Watershed Workbook
 - Presented at Issues Forum and WAG #1
- Watershed Workbook - Existing watershed conditions
 - Land use
 - Existing stormwater treatment areas
 - Stream Physical Assessment
 - Upland reconnaissance
- Draft Watershed Workbook is in Appendix A
- Discusses results of modeling and ranking (WAG #2)



Section 4 - Summary of Watershed Restoration Strategies

- Description of strategies in relation to County goals and objectives
- Description of structural and non-structural project types (WAG #2)
- Description of project selection and ranking process (WAG #3)
- Master list of proposed projects



Section 4 - Summary of Watershed Restoration Strategies

Table Example: First 15 of 120 Priority Structural Projects

Priority Structural Projects (Ten Year Implementation Plan)						
Project #	Project Type	WMA	Location	Watershed Benefit	Land Owner	Cost
AC9101	Stormwater Pond Retrofit	Mainstem 8	Village of Mount Air	Water Quality and Quantity	Private - HOA	\$89,000
AC9102	Stormwater Pond Retrofit	Long Branch South	Intersection of Telegraph Rd and Fairfax County Pkwy	Water Quality	State - VDOT	\$317,000
AC9105	Stormwater Pond Retrofit	Long Branch South	Pinewood Station	Water Quality and Quantity	Private - HOA	\$168,000
AC9106	Stormwater Pond Retrofit	Long Branch South	Backlick and Cinderbed Roads	Water Quality and Quantity	State - VDOT, Private - Comm	\$234,000
AC9109	Stormwater Pond Retrofit	Long Branch South	Island Creek	Water Quality and Quantity	County - FCPA	\$169,000
AC9110	Stormwater Pond Retrofit	Long Branch South	Amberleigh	Water Quality and Quantity	Private - HOA	\$226,000
AC9111	Stormwater Pond Retrofit	Long Branch South	Amberleigh	Water Quality and Quantity	Private - HOA	\$74,000
AC9112	Stormwater Pond Retrofit	Long Branch South	Springfield Industrial Park	Water Quality and Quantity	Private - Commercial	\$305,000
AC9113	Stormwater Pond Retrofit	Long Branch South	Springfield Industrial Park	Water Quality and Quantity	Private - Commercial	\$186,000
AC9114	Stormwater Pond Retrofit	Long Branch South	Springfield Industrial Park	Water Quality and Quantity	State - VDOT	\$731,000
AC9115	Stormwater Pond Retrofit	Long Branch South	Assembly of God Church	Water Quality and Quantity	State - VDOT	\$105,000
AC9116	Stormwater Pond Retrofit	Long Branch South	Devonshire Townhomes	Water Quality and Quantity	Private - HOA	\$193,000
AC9120	Stormwater Pond Retrofit	Long Branch South	Metropolitan Center Drive	Water Quality and Quantity	Private	\$1,858,000
AC9123	Stormwater Pond Retrofit	Mainstem 7	Gateway 95 Business Park	Water Quality	Private - Commercial	\$61,000
AC9125	Stormwater Pond Retrofit	Mainstem 7	Terra Grande	Water Quality and Quantity	Private - HOA	\$91,000



How to read the fact sheet (front)

Project Number and Type

BE9100 Stormwater Pond Retrofit

Watershed and WMA

**BELLE HAVEN Watershed
Belle Haven Watershed Management Area**

Vicinity Map



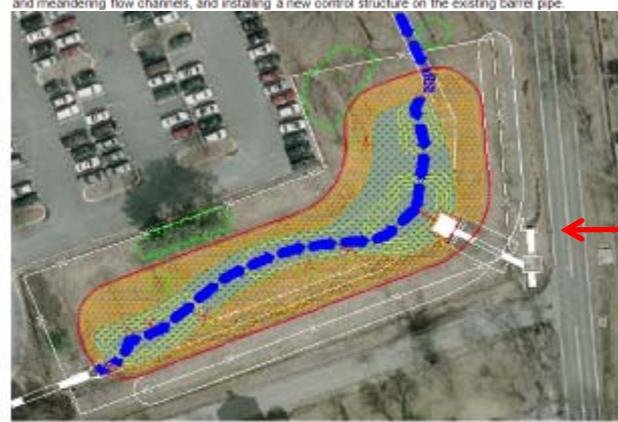
Address: 6500 Quander Road
Location: West Potomac High School
Land Owner: County - FCPS
PIN: 0931 01 0064
Control Type: Water Quality and Quantity
Drainage Area: 42.28 acres
Receiving Waters: Quander Brook

Project Info

- Address
- Location
- Land Owner
- Control Type
- Drainage Area
- Receiving Water

Project Description

Description: Existing detention basin located adjacent to West Potomac High School parking lots to be converted to a shallow wetland by excavating the existing bottom to incorporate wetland planting zones and meandering flow channels, and installing a new control structure on the existing barrel pipe.



Detailed Project Area Map

Project Area Map

Belle Haven, Dogue Creek, and Four Mile Run Watersheds Management Plan



How to read the fact sheet (back)

Project Benefits
Qualitative &
Quantitative
(Modeling)

Project Benefits: This facility has the potential to meet the water quality treatment requirement for the contributing drainage area by incorporating a wetland component into this facility. The permanent wet storage will promote uptake of nutrients, removal of pollutants to downstream channels, and suspension of floatables. It is estimated that a total over 3,300 lbs of sediment, 1.17 lbs of nitrogen and 5.8 lbs of phosphorus would be reduced annually by this project. Peak flow management of the 2-year storm can be provided by installing a new riser structure. This action will reduce erosive velocities exiting the facility and preserve downstream channel conditions. The proposed location of this facility is on the West Potomac High School grounds, which will eliminate or reduce the need for land purchase or acquisition and provides an environmental education/stewardship opportunity for students and parents within the Belle Haven community.

Project Design Considerations: The maximum storage volume in this facility is not capable of reducing 10-year discharge volumes to pre-development conditions. Signs promoting safety and environmental education/stewardship can be used at this site to educate students and parents in the community. Minimal tree removal is required for this retrofit. Environmental permitting issues are expected due to the presence of stream baseflow and wetlands in the facility. Access to the proposed facility is good. Existing utilities conflicts are not anticipated.

Project Design Considerations
-Project Coordination
-Permitting
-Construction Issues
-Environmental Impacts
-Other Features

Costs:

Clear and Grub	0.50	AC	\$8,500.00	\$8,015
Excavate to create low-flow channel	381	LF	\$25.00	\$9,525
Curb Opening	1	EA	\$2,000.00	\$2,000
Tree Removal	6	EA	\$2,000.00	\$12,000
New Riser	1	LS	\$8,000.00	\$8,000
Embedded Dewatering Pipe	1	EA	\$500.00	\$500
Grading and Excavation	076	CY	\$25.00	\$30,660
Remove Existing Headwall	1	LS	\$1,200.00	\$1,200
Soil Borings	1	LS	\$7,300.00	\$7,300
			Initial Project Costs	\$76,400
Plantings	1	LS	5% of Project	\$3,820
Ancillary Items	1	LS	5% of Project	\$3,820
Erosion and Sediment Control	1	LS	10% of Project	\$7,640
			Use Construction Costs	\$91,680
			Mobilization (5%)	\$4,584
			Subtotal 1	\$96,264
			Contingency (25%)	\$24,066
			Subtotal 2	\$120,330
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$54,149
			Estimated Project Cost	\$174,000

Detailed Project Costs

Total Project Cost
Rounded up to
nearest \$10,000

Belle Haven, Dogue Creek, and Four Mile Run Watersheds Management Plan



Section 6 - Benefits of Plan Implementation

- Results of project modeling by WMA and watershed
- Overall cost estimate

Watershed	Area (ac)	Scenario	Runoff Volume (in/yr)		Peak Flow (cfs/ac)		TSS (lb/ac/yr)	TN (lb/ac/yr)	TP (lb/ac/yr)
			2-Year	10-Year	2-Year	10-Year			
Accotink Creek	32,679	Existing Conditions	1.287	2.995	0.113	0.317	268.97	5.89	0.89
		Future Without Projects	1.349	3.077	0.117	0.324	284.15	6.18	0.92
		Future With Projects (10 yr)	1.347	3.071	0.115	0.321	272.36	6.06	0.90
		Future With Projects (25 yr)					265.49	5.99	0.89
		Reduction (10-year Plan)	0.002	0.006	0.002	0.003	11.79	0.12	0.02
		Reduction (25-year Plan)	N/A	N/A	N/A	N/A	18.66	0.19	0.04

	TSS (tons/yr)	TN (lbs/yr)	TP (lbs/yr)	Cost (lbs/yr)
10-yr	192	3,921	654	\$48 mil
10- and 25-yr	305	6,209	1,307	\$75 mil

Appendixes

- Appendix A - Draft Watershed Workbook
 - Details on existing conditions, organized by WMA
 - Previous studies and GIS analysis
 - Upland reconnaissance
 - Stream Physical Assessment
 - Existing SWM facilities
 - Subwatershed ranking
- Appendix B - Technical Documents
 - Project selection
 - Prioritization and ranking
 - Modeling
- Appendix C - Public Involvement
 - Minutes from Issues Scoping Forum
 - Meeting summaries from each WAG meeting

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Process Recap

Bill Frost, KCI Technologies, Inc.

Project Selection

Problem Identification

Formulate subwatershed strategy to identify priority areas for retrofits

Determine problems in each subwatershed based on indicators and project data:

- Stream Restoration
 - Stream assessment photos and data
- Flooding
 - Results of watershed modeling
- Habitat
 - Analysis of maps and aerial photos
- Water Quality
 - Results of watershed modeling

Investigation

Identify types of retrofits which Fairfax County can implement in the watershed

Desktop analysis to identify potential restoration sites for each type of problem

"Universe" of >500 structural projects

Project Evaluation

"Universe"
of projects

Evaluation

Field reconnaissance to assess constraints and feasibility

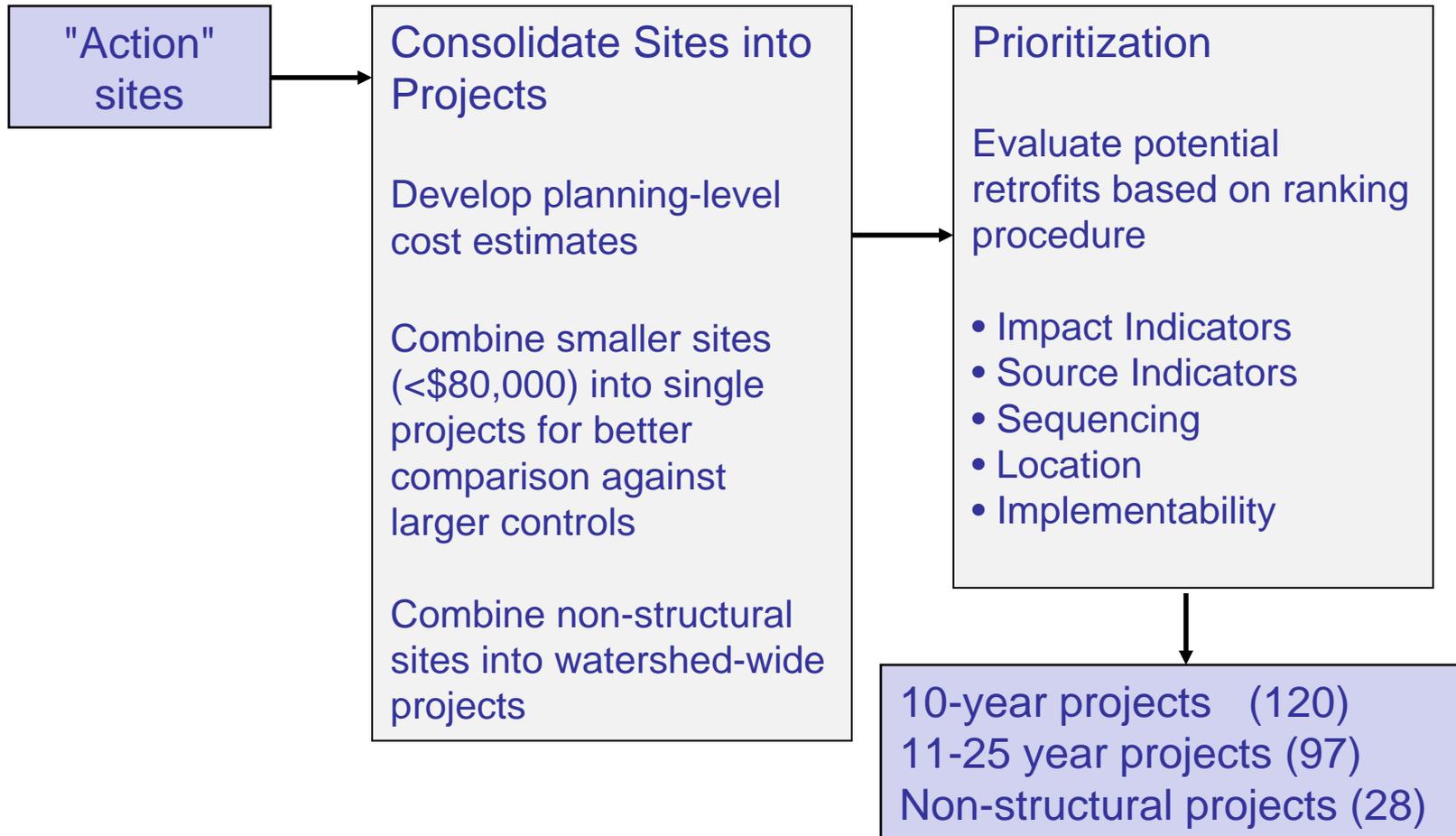
Review projects for that provide overlapping benefits and eliminate less effective ones

Obtain WAG input on priority sites

"Action" list of ~250
candidate sites



Project Prioritization



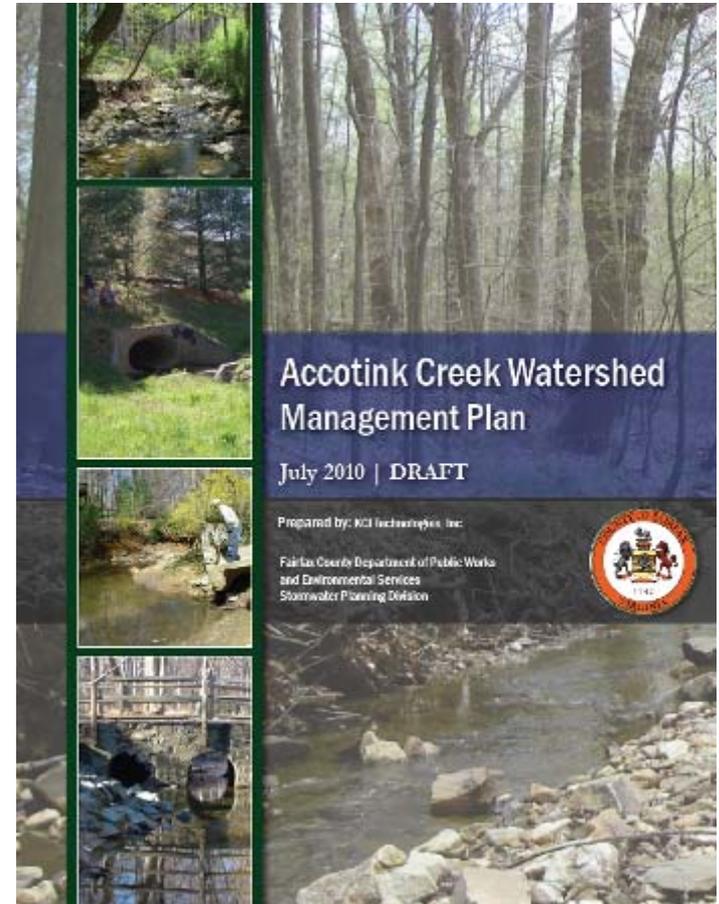
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Next Steps

Danielle Wynne, Fairfax County

Next Steps

- Draft Plan
 - Interagency Review (County)
 - LDS, DPZ, BOS, etc.
 - WAG Review
 - Comments by Oct. 21
 - Draft Plan Public Forum
 - Sept. 21
 - 30-day comment period
 - Edits and revisions
- Final Plan
 - To Board of Supervisors for Adoption
 - Proposed for end of 2010



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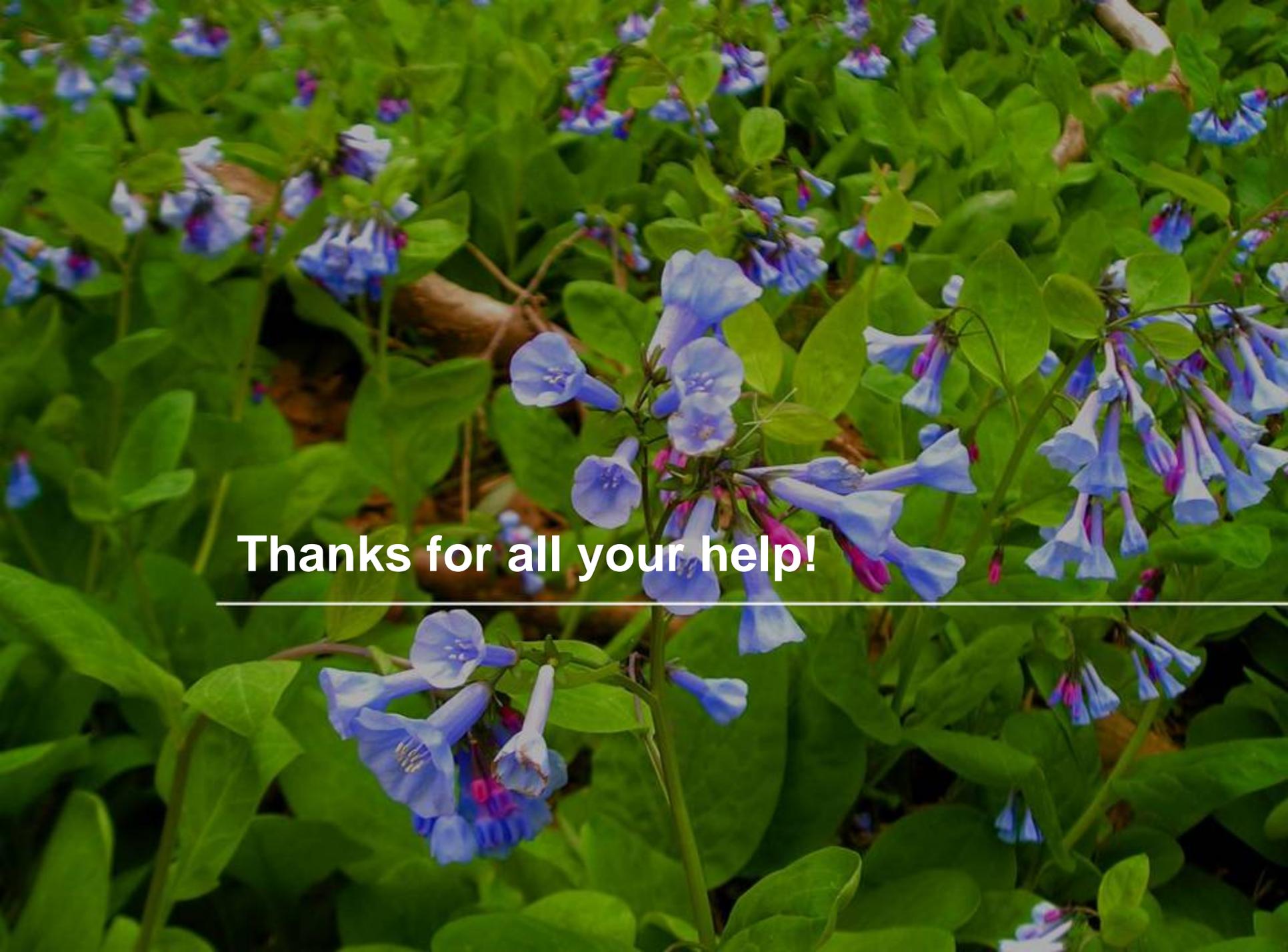
Draft Plan Forum

Danielle Wynne, Fairfax County

Public Participation and Comments

- **Plan has been posted to the Web:**
 - www.fairfaxcounty.gov/dpwes/watersheds/accotinkcreek.htm
- **30-day public comment period**
 - Sept. 21 – Oct. 21
- **How to Comment:**
 - Attend Draft Plan Forum September 21, 2010
 - Email comments to:
 - jgershowitz@resolv.org or
 - watersheds@fairfaxcounty.gov
 - Online comment form available
 - Phone or Fax
 - (p) 703-324-5500, TTY 711
 - (f) 703-802-5955



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Thanks for all your help!
