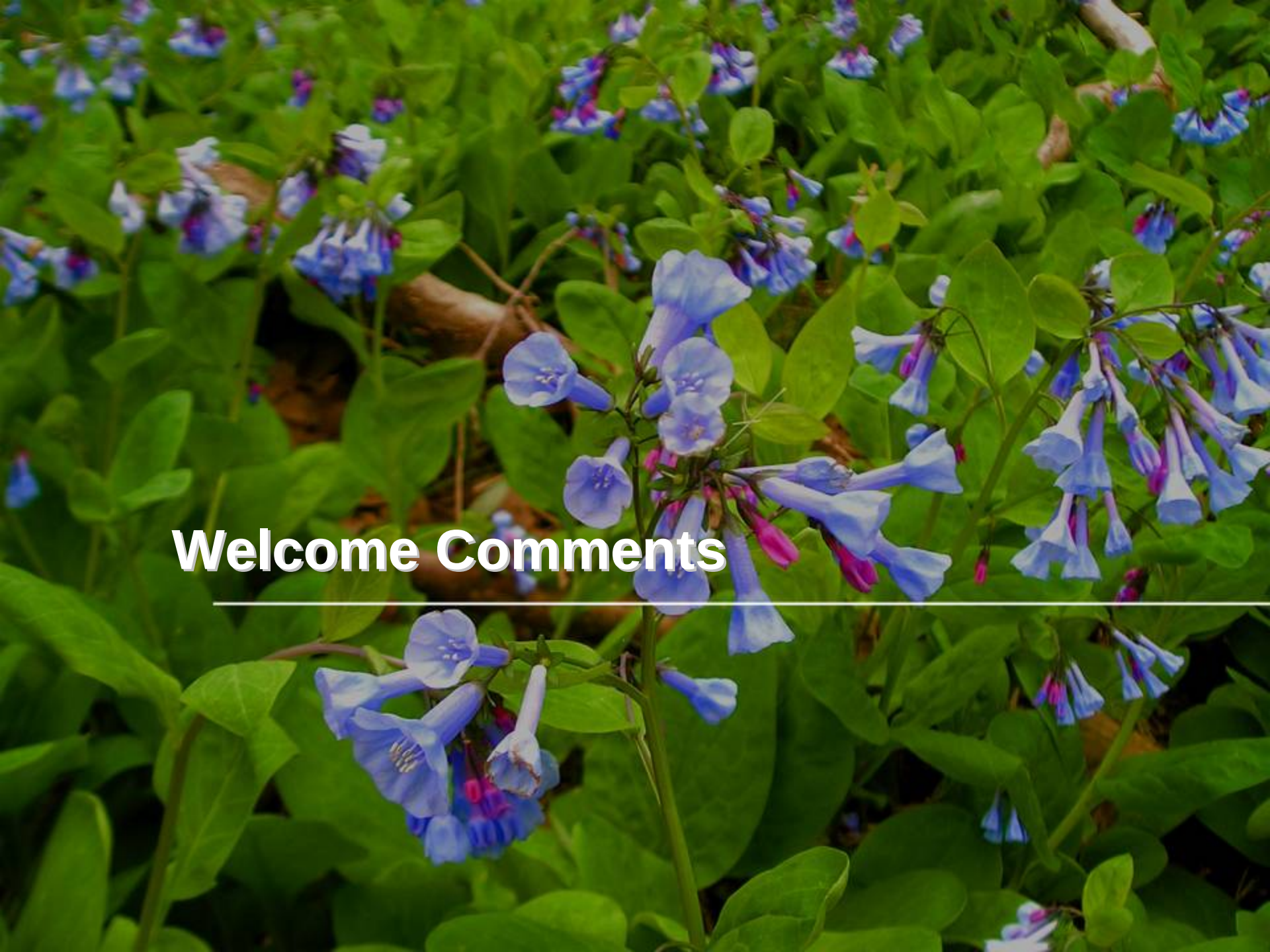
Sugarland Run
Horsepen Creek
Watershed Management Plan

Introductory & Issues Scoping Forum
October 30, 2008

Fairfax County Department of Public Works and Environmental Services
Presented by Watershed Planning & Assessment Branch, Stormwater Management



Welcome Comments

Agenda

- Watershed Primer (10 min.)

  Joe Sanchirico, Fairfax County

- Draft Watershed Workbook Summary (20 min.)

  Melissa Taibi, F.X. Browne, Inc.

- Public Involvement Process (5 min.)

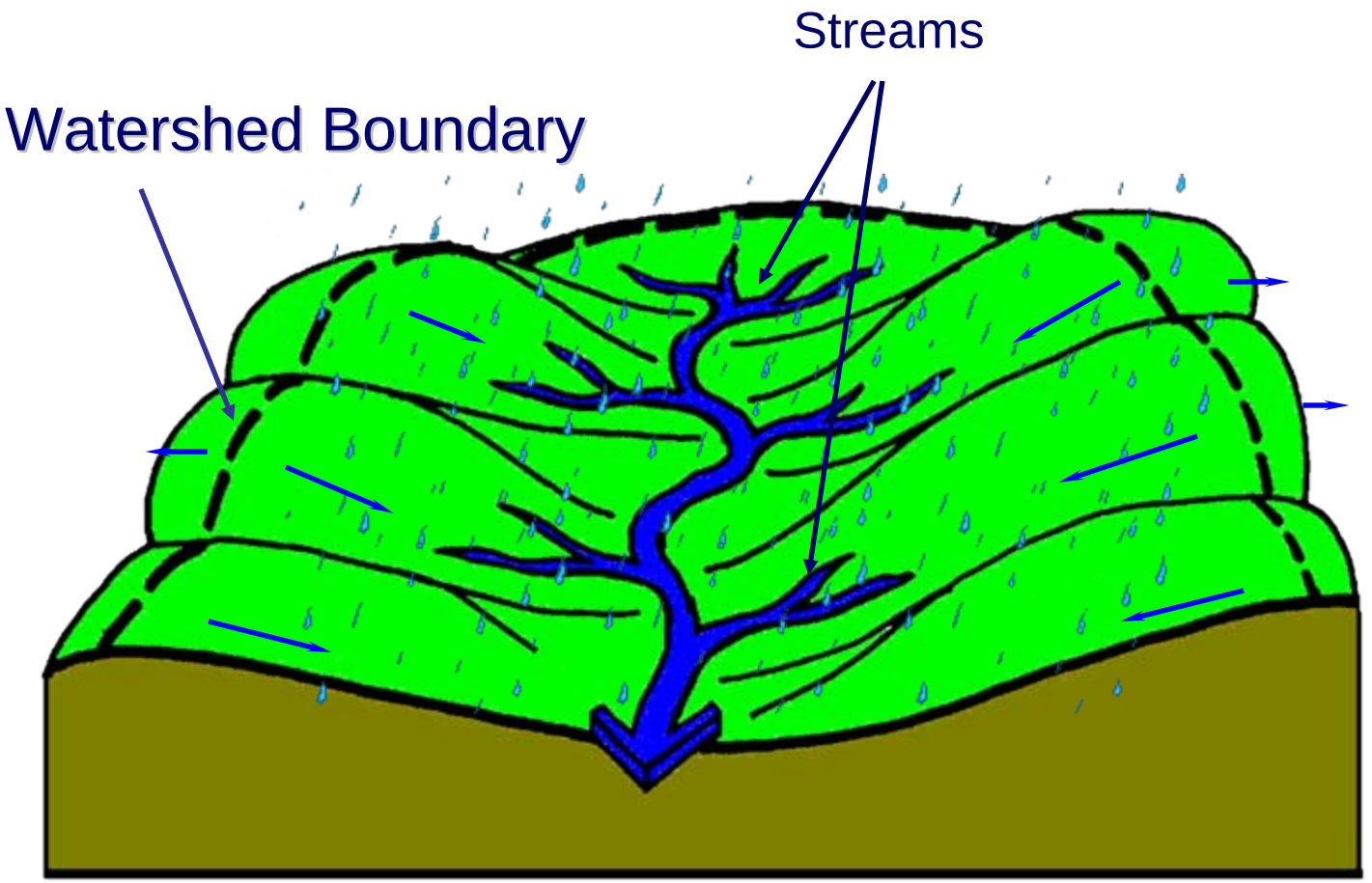
  Juliana Birkhoff, Resolve

- Open House (1 hr.)
  - Break out into 3 groups of the watershed
  - Identify issues, provide comments & concerns

Watershed Primer

Joe Sanchirico, Fairfax County

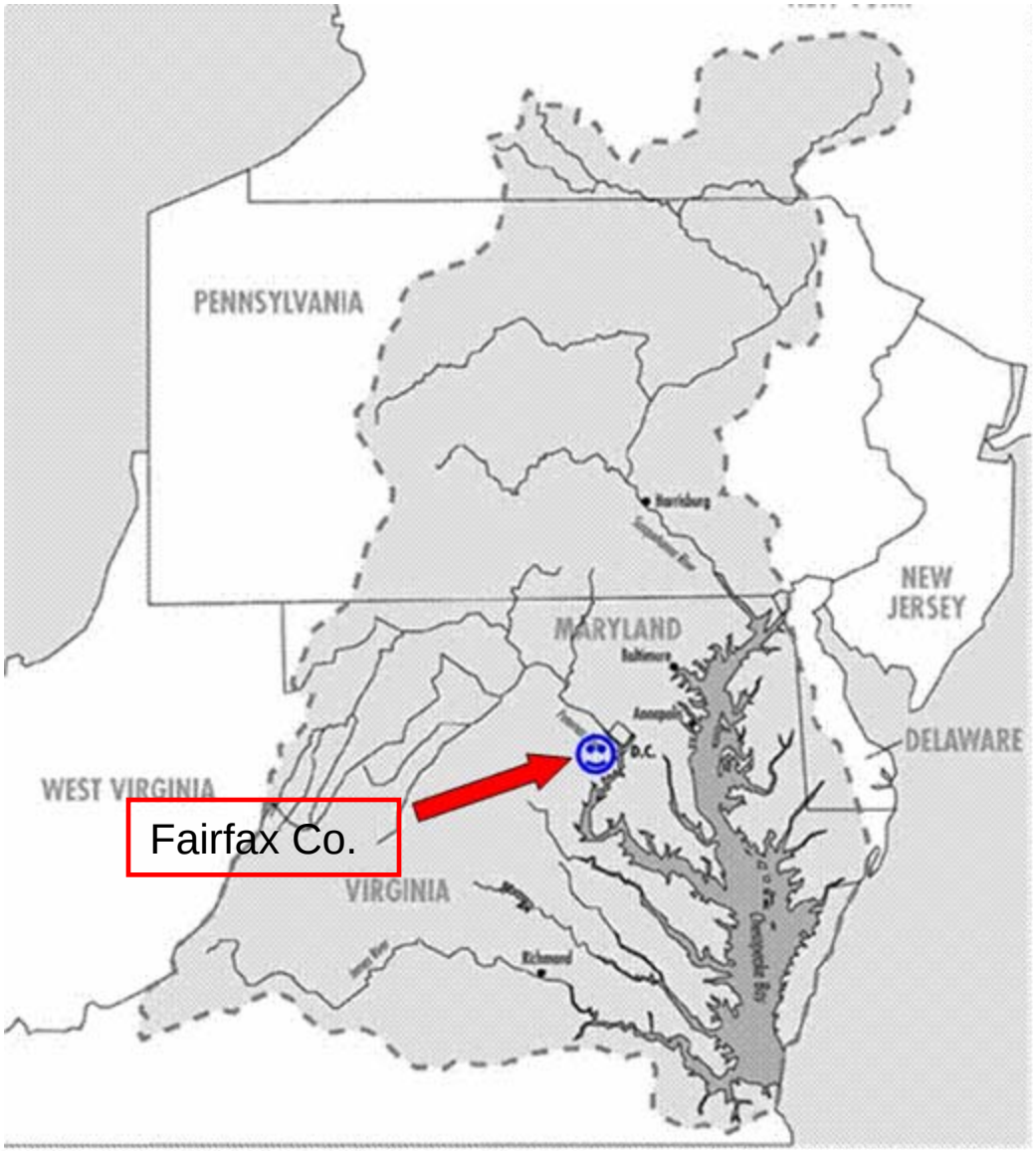
What is a Watershed?



What is a Watershed?

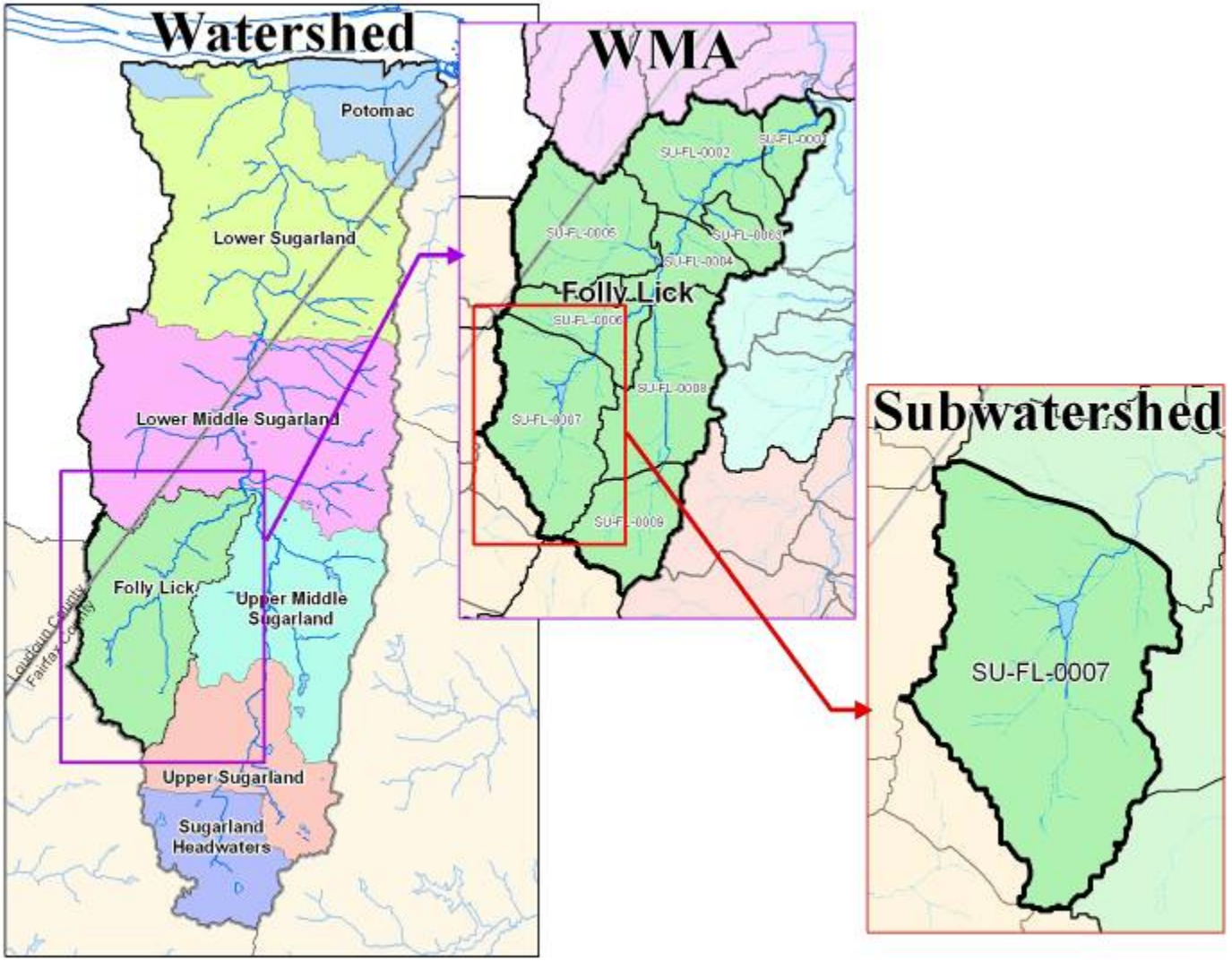
http://www.epa.gov/owow/watershed/whatis.html

Chesapeake Bay Watershed



Fairfax County Watersheds

Watershed Planning Study Units

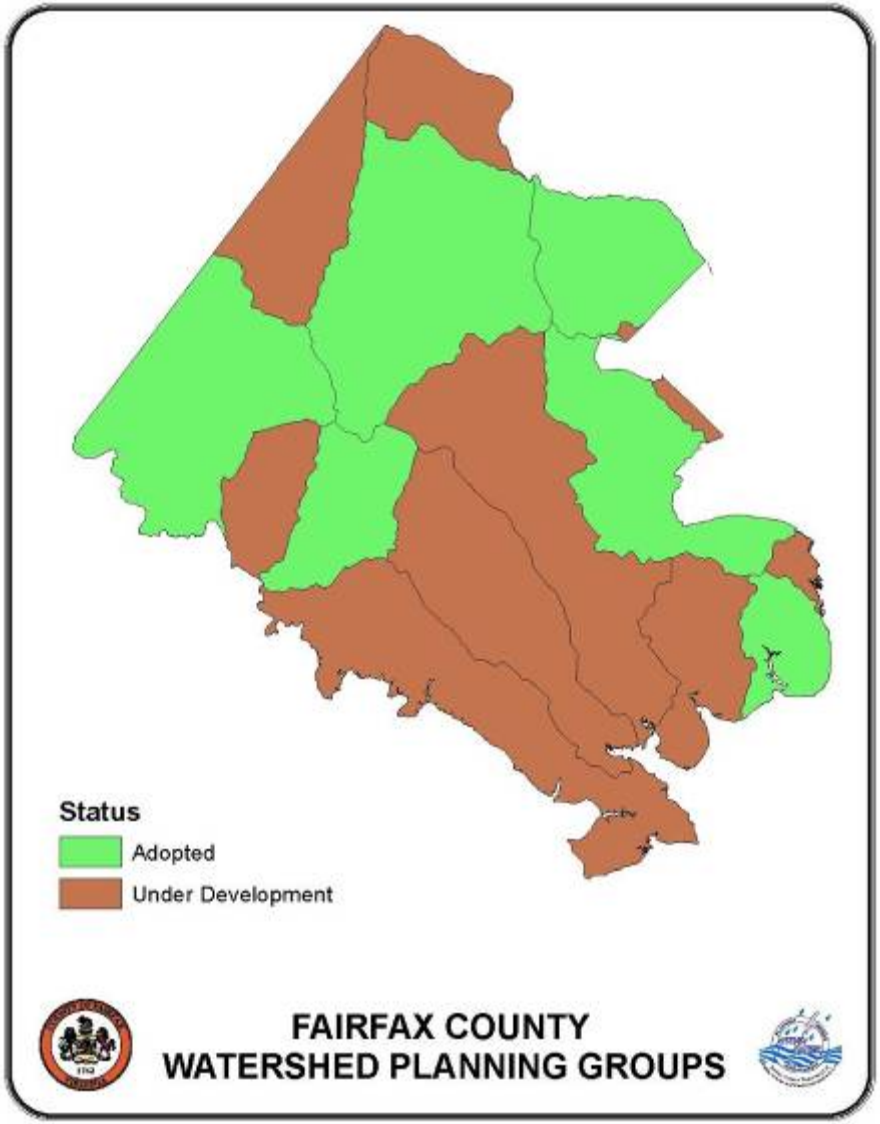


Stormwater Management

The process of controlling **stormwater runoff** that drains from rooftops, driveways, roads and other hard surfaces that do not allow water to permeate into the ground.

Stormwater Management

Watershed Planning



The Watershed Planning Process

Evaluate data to determine the state of the watersheds

Identify ***issues*** that the plan will address

Establish a ***vision*** for the watershed and goals that improve, enhance and protect watersheds

Develop specific ***actions*** to achieve the goals

Create a framework and timeline for ***implementation***

The Watershed Planning Process

- Plan Development
  - Review of previous studies and data compilation
  - Watershed characterization (workbook)
  - Issues Scoping Forum
  - Project Selection
- Draft Plan
  - Draft Plan Forum
- Final Plan
- Adoption by BOS

Watershed Management

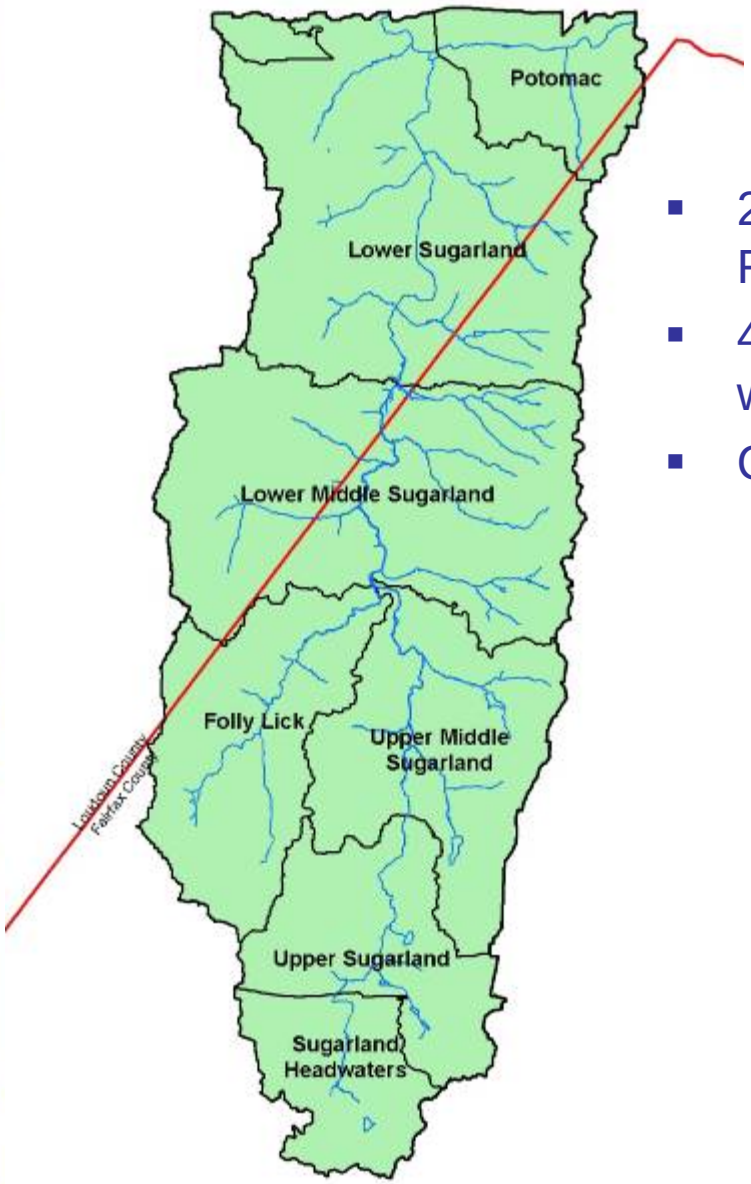
- Retrofit existing ponds
- Create new Best Management Practices (BMPs)
- Implement Low Impact Development (LID) Techniques
- Plant stream buffers
- Stabilize or restore streams

Why create watershed plans?

Healthy watersheds, healthier communities

Watershed Workbook

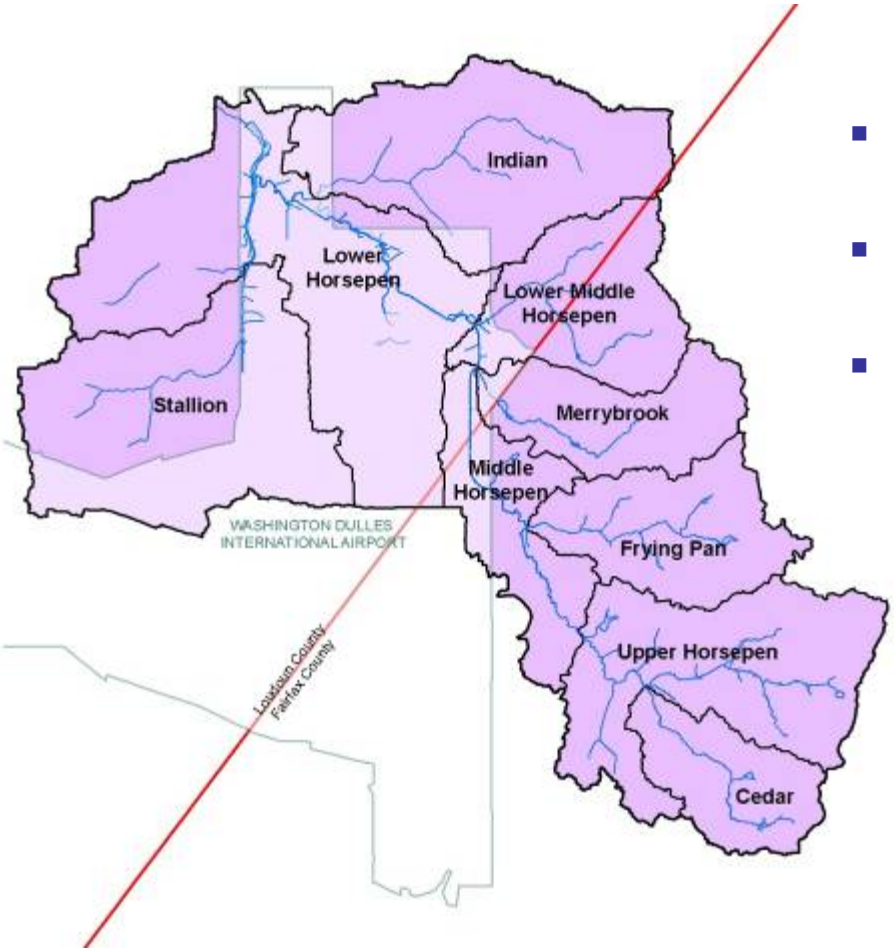
Melissa Taibi, F.X. Browne, Inc.



Sugarland Run Watershed

- 22.5 square miles,13.7 square miles in Fairfax County
- 48.6 miles of perennial streams, 31.0 miles within Fairfax County
- Comprised of seven WMAs:
  - Folly Lick
  - Headwaters
  - Lower Sugarland
  - Lower Middle Sugarland
  - Potomac
  - Upper Sugarland
  - Upper Middle Sugarland

Horsepen Creek Watershed



- 22.8 square miles, 9.8 square miles in Fairfax County
- 36.3 miles of perennial streams, 19.4 miles within Fairfax County
- Comprised of nine WMAs:
  - Cedar Run
  - Frying Pan
  - Indian
  - Lower Horsepen
  - Lower Middle Horsepen
  - Merrybrook
  - Middle Horsepen
  - Stallion
  - Upper Horsepen

Watershed Workbook Structure

- Chapter 1 – Introduction
- Chapter 2 – Watershed Study Methodology
- Chapter 3 – Sugarland Run Watershed
- Chapter 4 – Horsepen Creek Watershed
- Chapter 5 – Glossary of Terms
- *Future Addition – Restoration Strategies*

Chapter 1 – Introduction

- Background, Goals & Objectives
- Watershed Workbook Organization
- Watershed History and Condition
  - General Watershed Characteristics
  - Watershed History and Population Growth
  - Existing and Future Land Use
  - Aquatic Environment
  - Terrestrial Environment
  - Resource Protection Areas
  - Stormwater Management

Chapter 2 – Watershed Study Methodology

- Watershed Management Areas and Subwatersheds
- Existing and Future Land Use
- Field Reconnaissance and Stream Physical Assessment
- Watershed Characterization
- Modeling
- Subwatershed Ranking

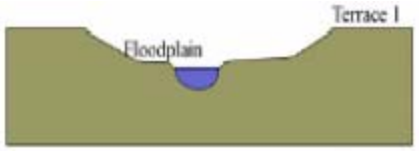
Field Reconnaissance

- Stormwater Management
- Stormwater Infrastructure
- Drainage Complaints
- Proposed County Projects
- Neighborhood Assessments
- Hot Spot Assessments

Stream Physical Assessment

Channel Evolution Model

Stage 1 – Stable

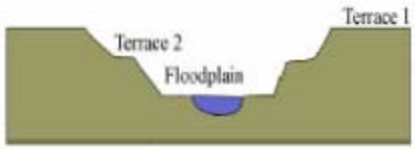


Stage 2 – Incision

Stage 3 – Widening

Stage 4 – Stabilizing

Stage 5 - Stable

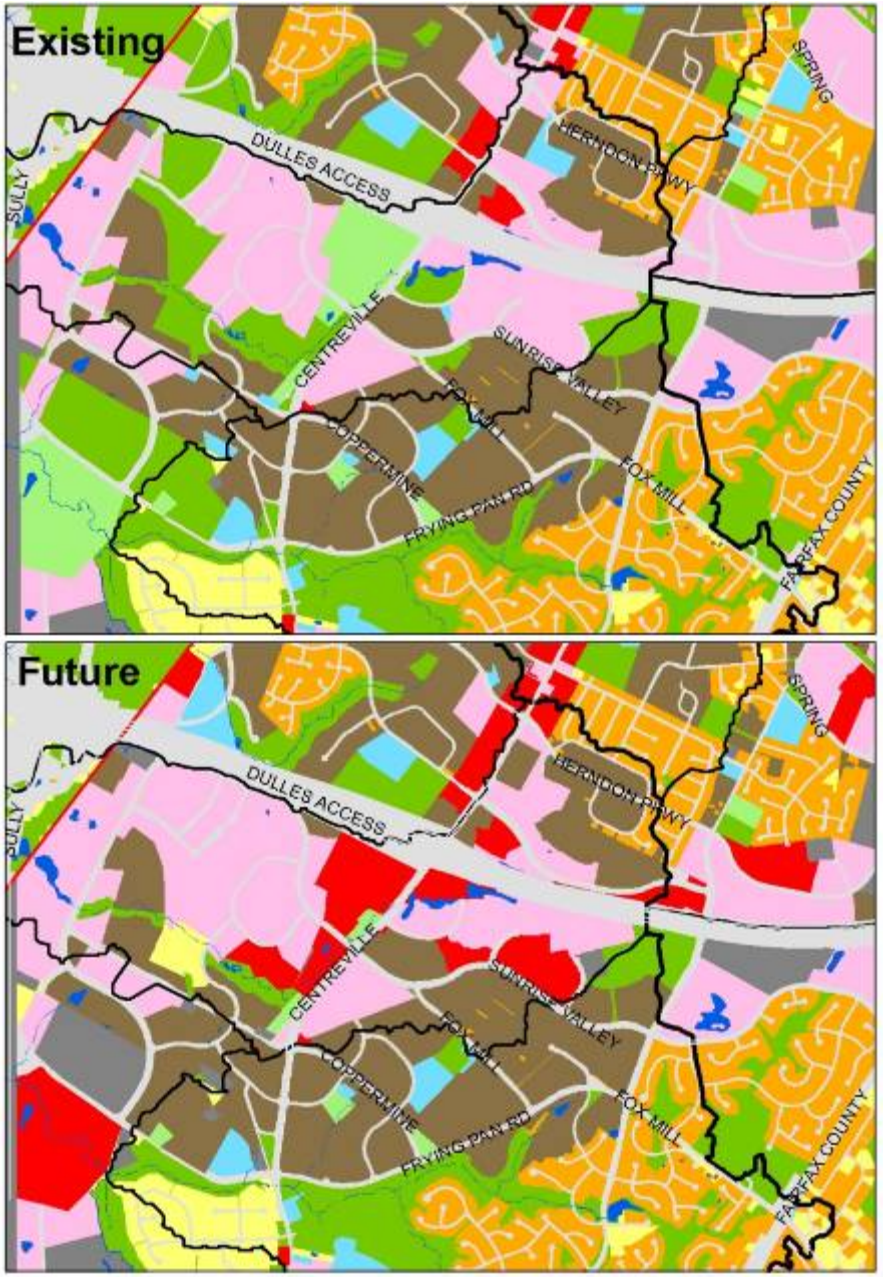


- Supplement 2005 Study
- Habitat conditions
- Impacts to stream from infrastructure & problem areas
- General stream characteristics
- Geomorphic classification
  - Sugarland Run – Stage 3 & 4
  - Horsepen Creek – Stage 2 & 3

Chapters 3 & 4

Sugarland Run and Horsepen Creek

- Initial assessment of existing conditions
  - Land Use
  - Stormwater Infrastructure
  - Stormwater Management
  - Stream Conditions
  - Field Reconnaissance
  - Stormwater Modeling
  - Subwatershed Ranking
- Results depicted at WMA scale



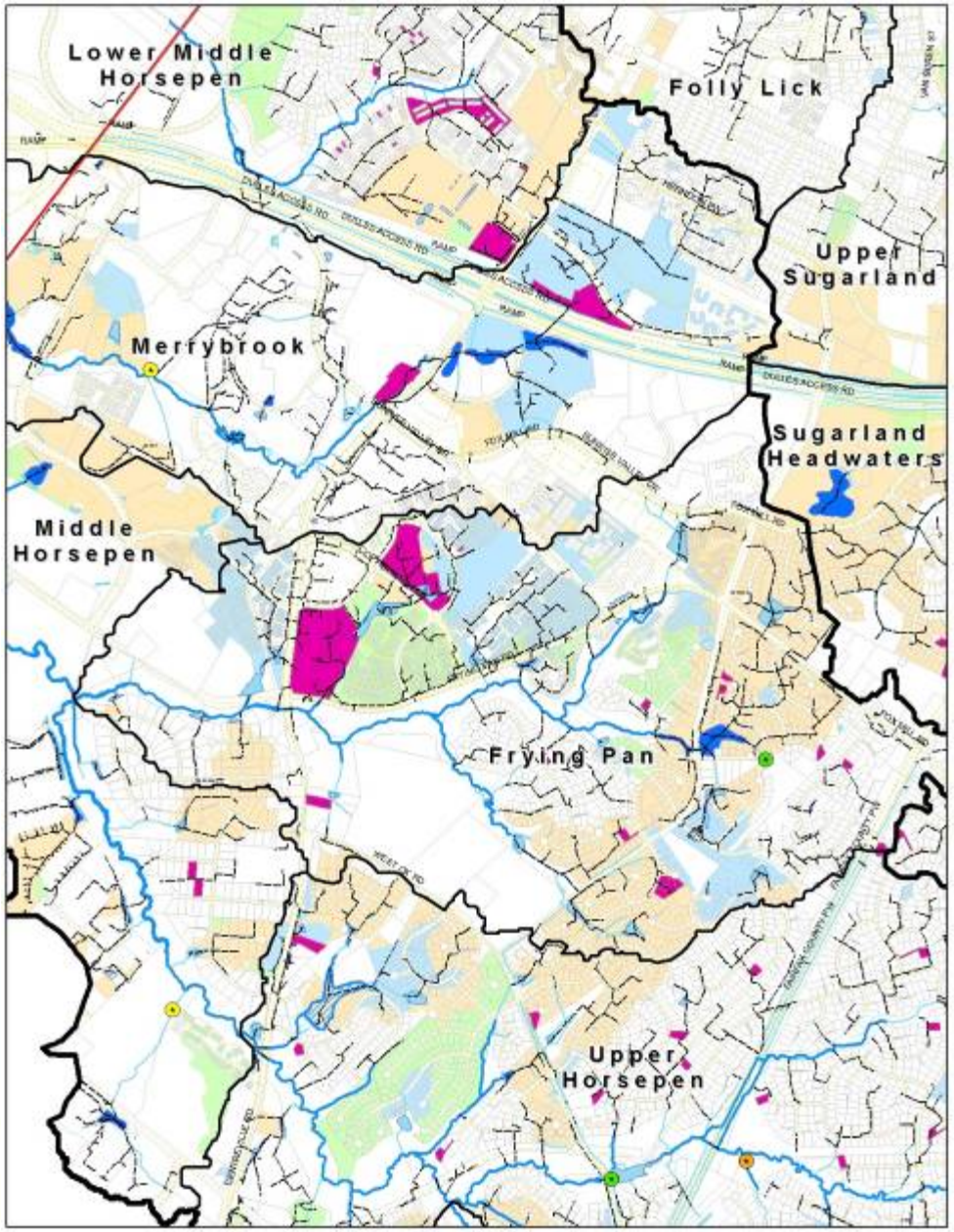
Land Use

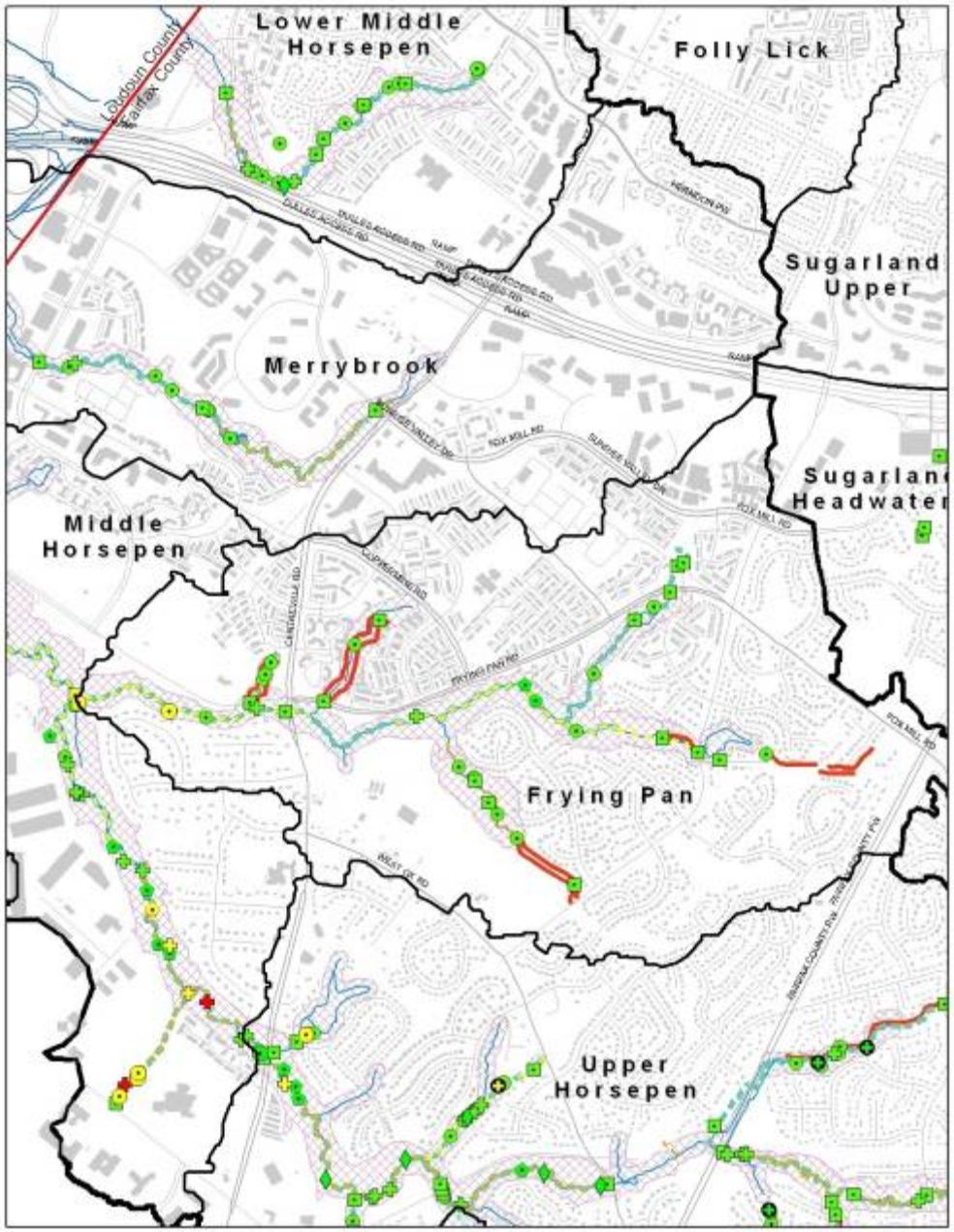
- One of the leading causes of stream degradation, including water quality impairments and habitat decline.
- Future based on County's 25-year Comprehensive Plan

Open Space	Institutional
Golf Course	Low Intensity Commercial
Estate Residential	High Intensity Commercial
Low Density Residential	Industrial
Medium Density Residential	Transportation
High Density Residential	Water

Stormwater Infrastructure

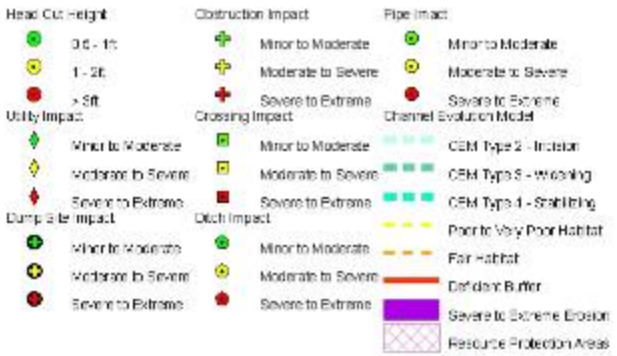
- Regional Ponds
- Stormwater facilities
- Stormwater drainage pipes/channels
- Stormwater Management
  - Detention Only
  - Quality/Quantity
  - Quality Only



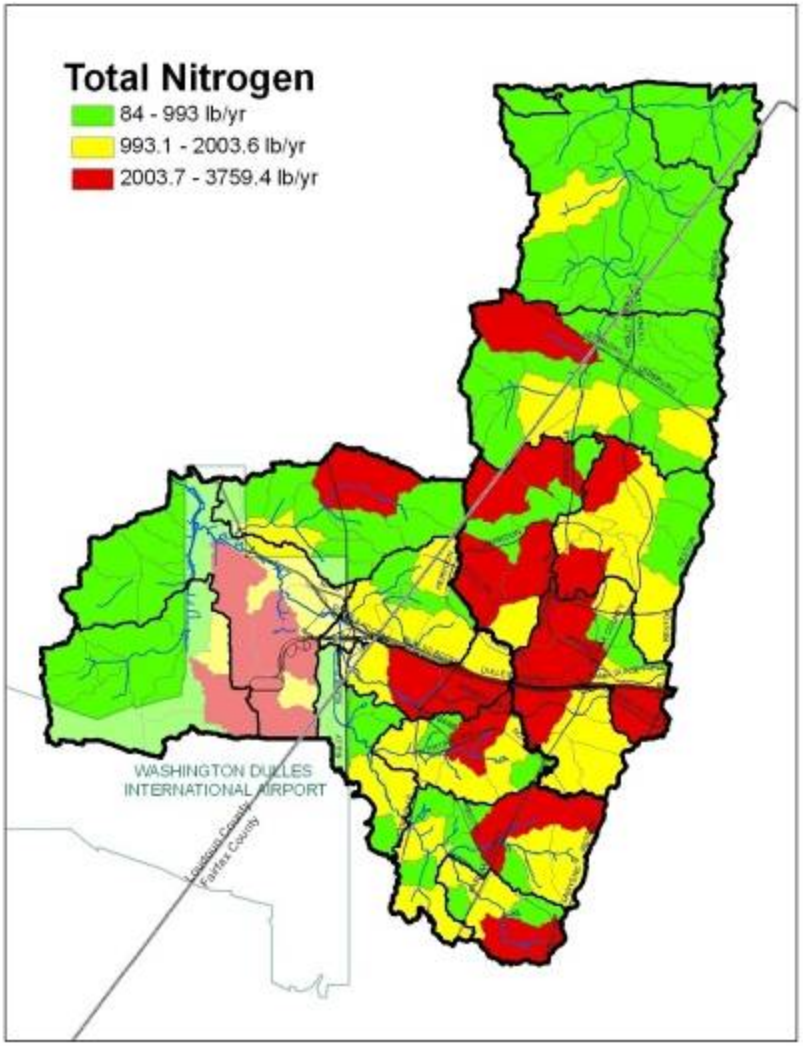


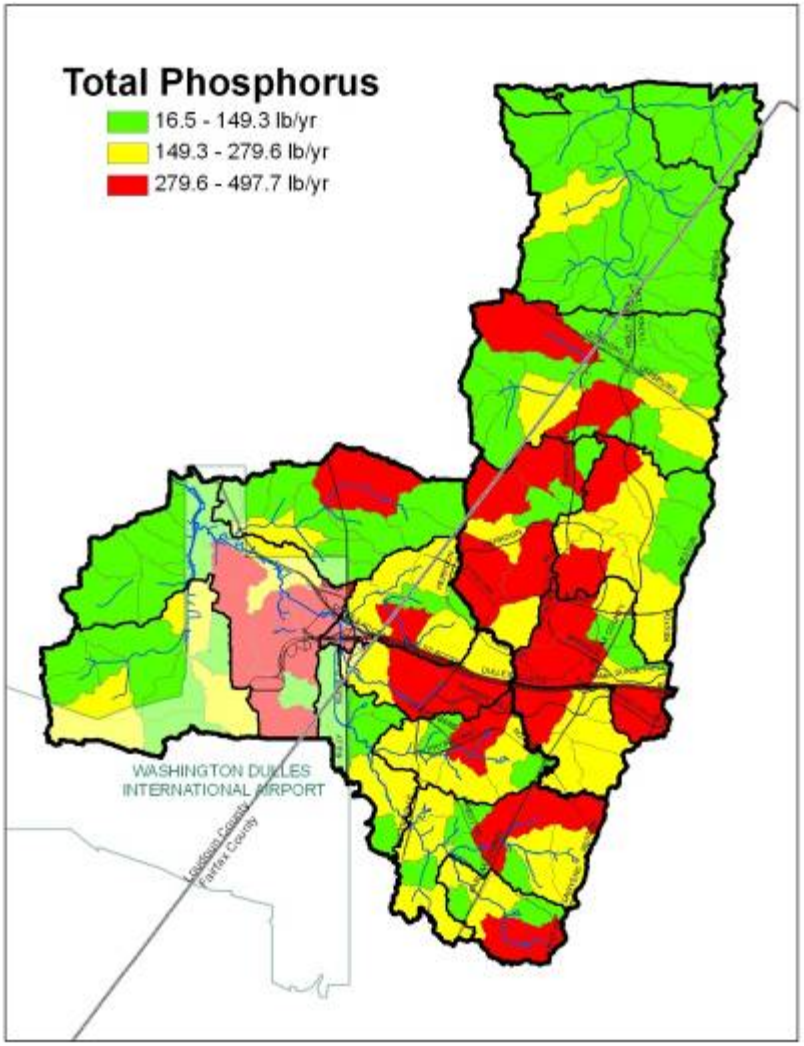
Stream Conditions

- Head Cuts
- Erosion
- Obstructions
- Stream Crossings
- Pipes
- Dump Sites
- Ditches
- Habitat Scores
- Channel Evolution Models
- Deficient Buffers
- Resource Protection Areas

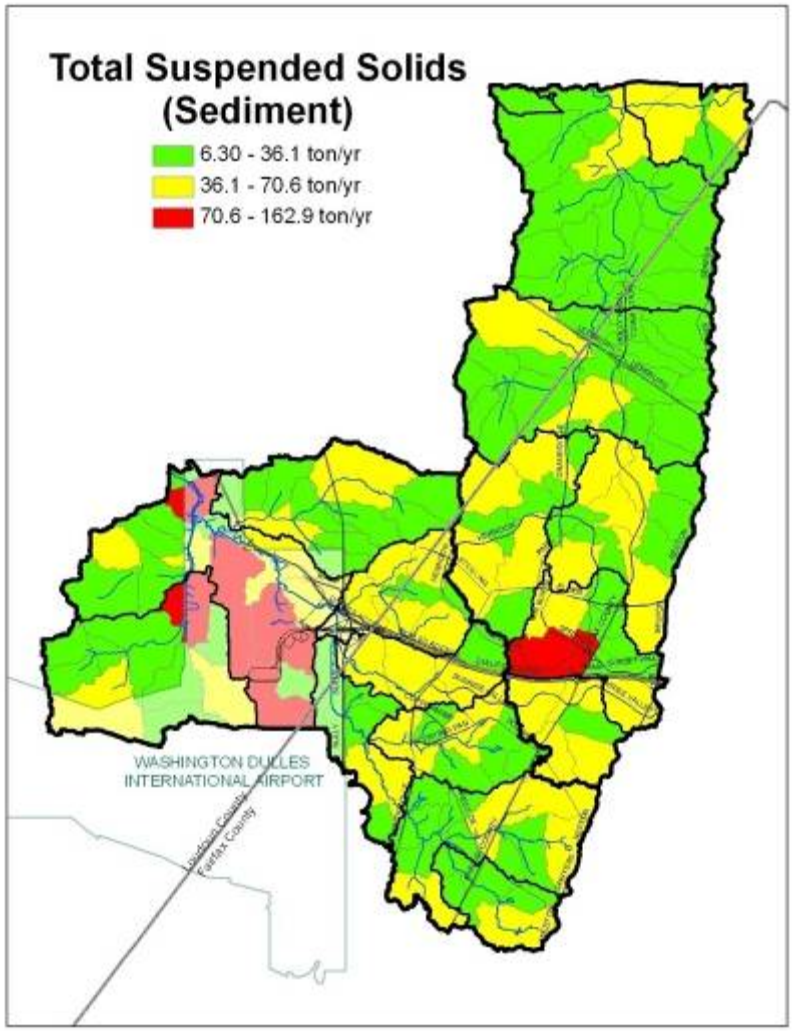


Nutrients from Stormwater Runoff

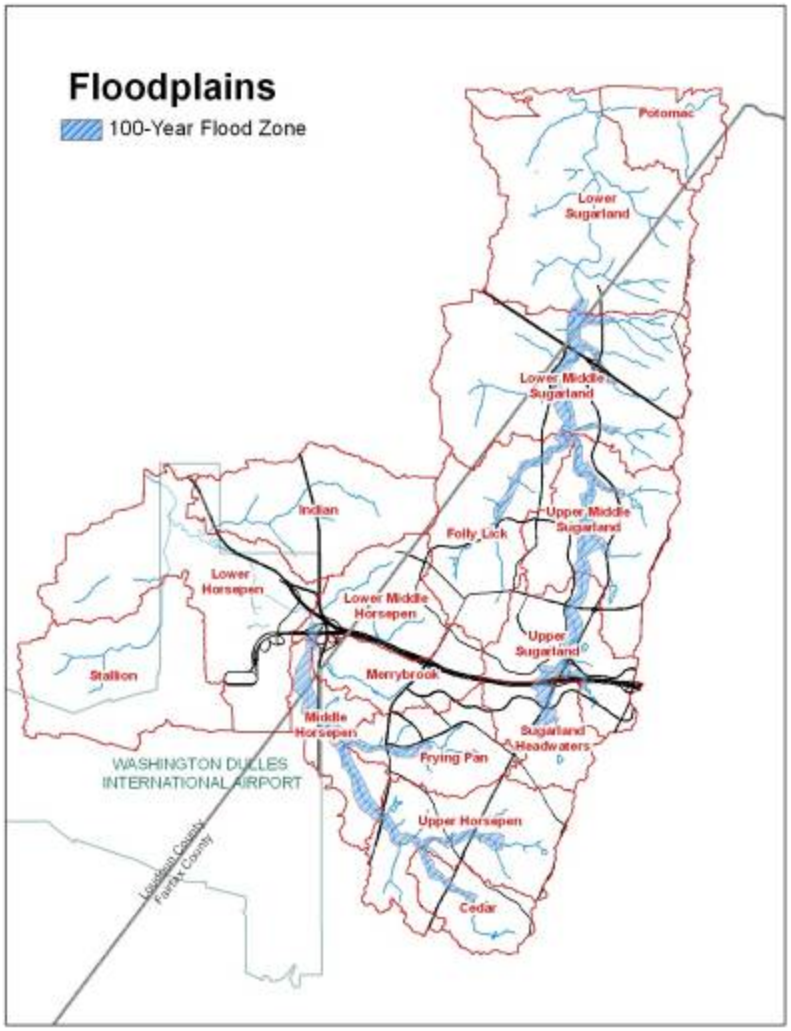




Sediment from Stormwater Runoff



Floodplain Modeling



Subwatershed Ranking

- Provides a systematic means of compiling available water quality and natural resources information.
- Tool for planners and managers to prioritize subwatersheds
- Methods are consistent throughout the latest set of Watershed Management Plans, so ranking is comparable between watersheds.

Subwatershed Ranking

Fairfax County Goals

1. Improve and maintain watershed functions in Fairfax County, including water quality, habitat, and hydrology.
2. Protect human health, safety, and property by reducing stormwater impacts.
3. Involve stakeholders in the protection, maintenance and restoration of county watersheds.

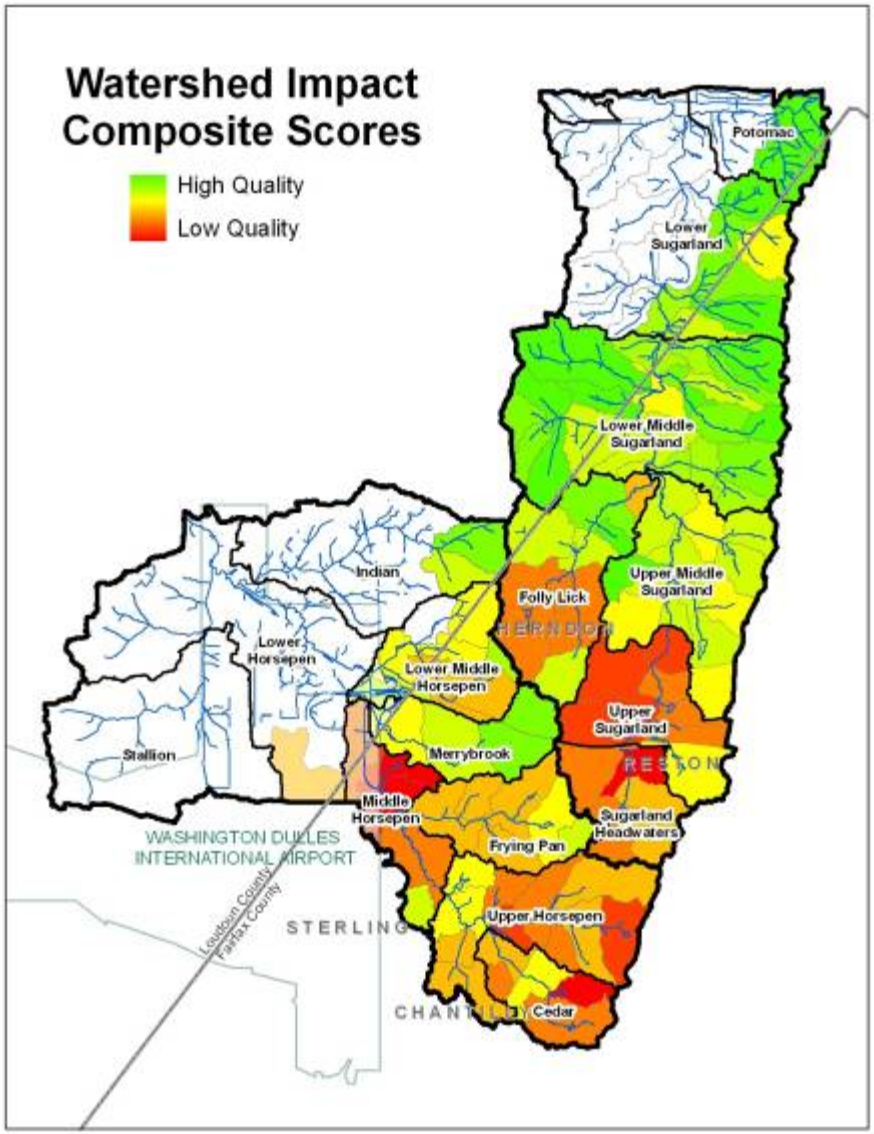
Fairfax County Objectives

1. Hydrology
2. Habitat
3. Stream Water Quality
4. Drinking Water Quality
5. Stewardship

Subwatershed Ranking Indicators

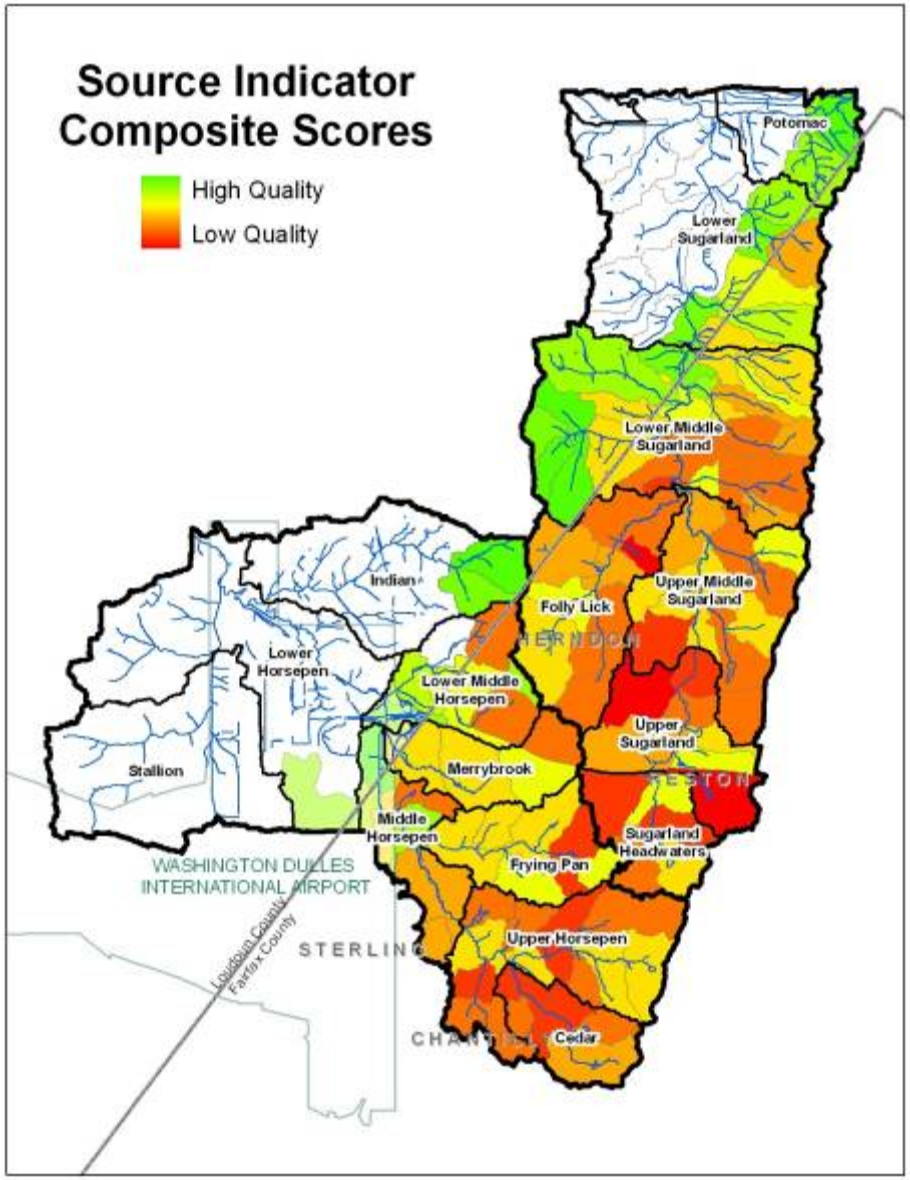
- Watershed Impact Indicators
- Source Indicator
- Programmatic Indicators

Watershed Impact Indicators: *Watershed condition*



- Benthic Communities
- Fish Communities
- Aquatic Habitat
- Channel Morphology
- Instream Sediment
- Building Hazards (floodplain)
- Flood Complaints
- Riparian Habitat
- Wetland Habitat
- Forested Habitat
- E. Coli Concentration
- Sediment & Nutrient Runoff

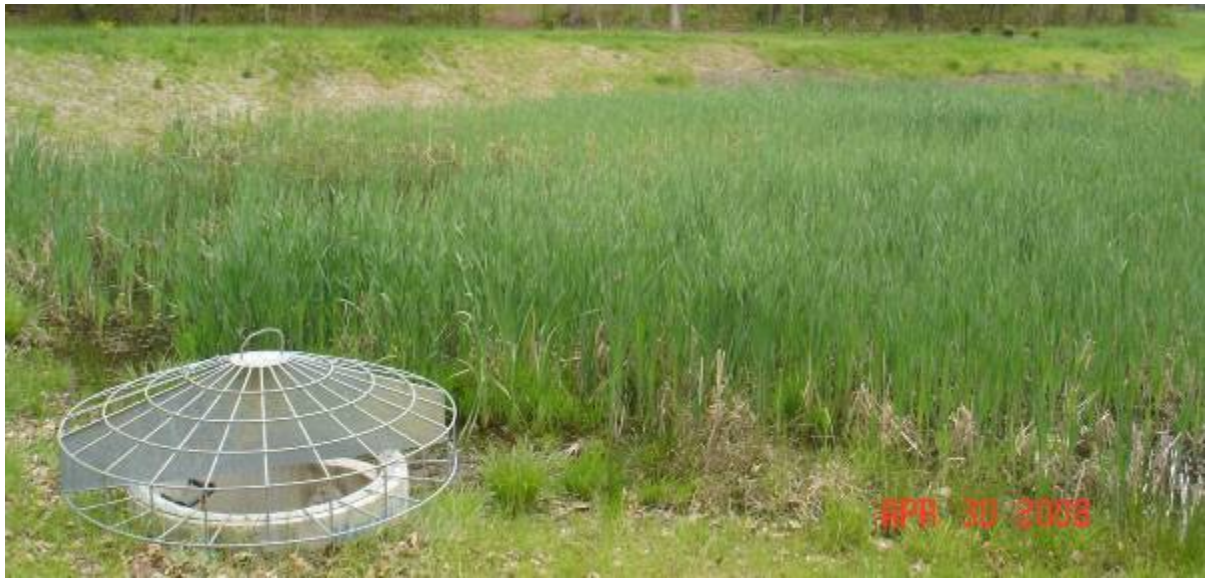
Source Indicators: *Sources of watershed stressors*



- Channelized Streams
- Impervious Area
- Stormwater Outfalls
- Onsite Sewage Disposal
- Streambank Buffer Deficiency
- Sediment & Nutrient Runoff
- Percent Urban Landcover
- Industrial Discharges

Programmatic Indicators

- Existing stormwater management facilities
- A tool to evaluate watershed management needs
- Will be used during *Candidate Project Identification*



Summary

- Where we are in the process
  - Initial Evaluation of Existing Conditions
  - Preliminary Modeling & Subwatershed Ranking
- Next Steps
  - Public Involvement
  - Comprehensive Evaluation of Existing Conditions, Public Input, and Future Build-out Scenarios
  - Develop and Prioritize Restoration and Preservation Strategies

Public Involvement Process

Juliana Birkhoff, Resolve, Inc.

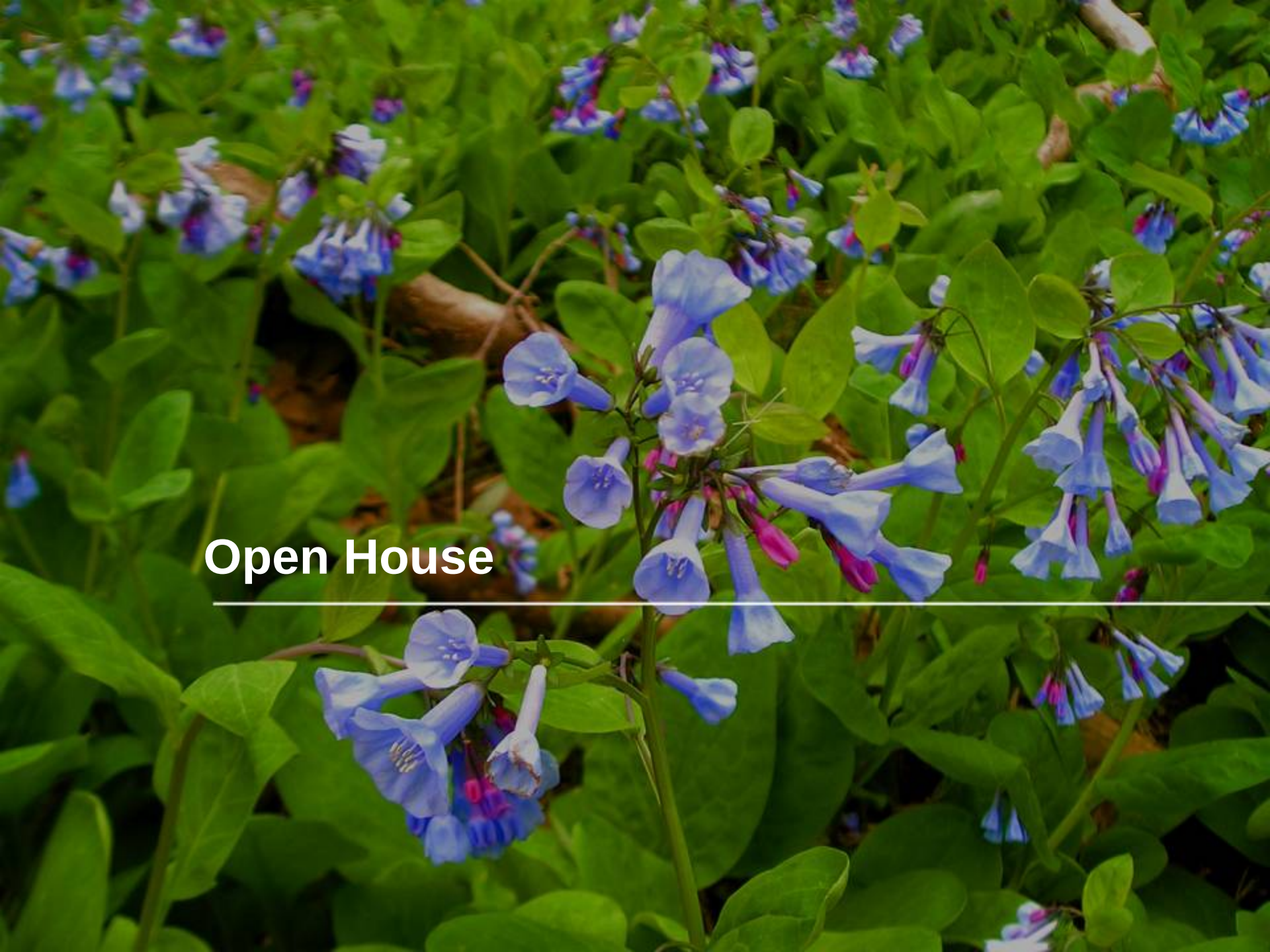
Public Involvement Process

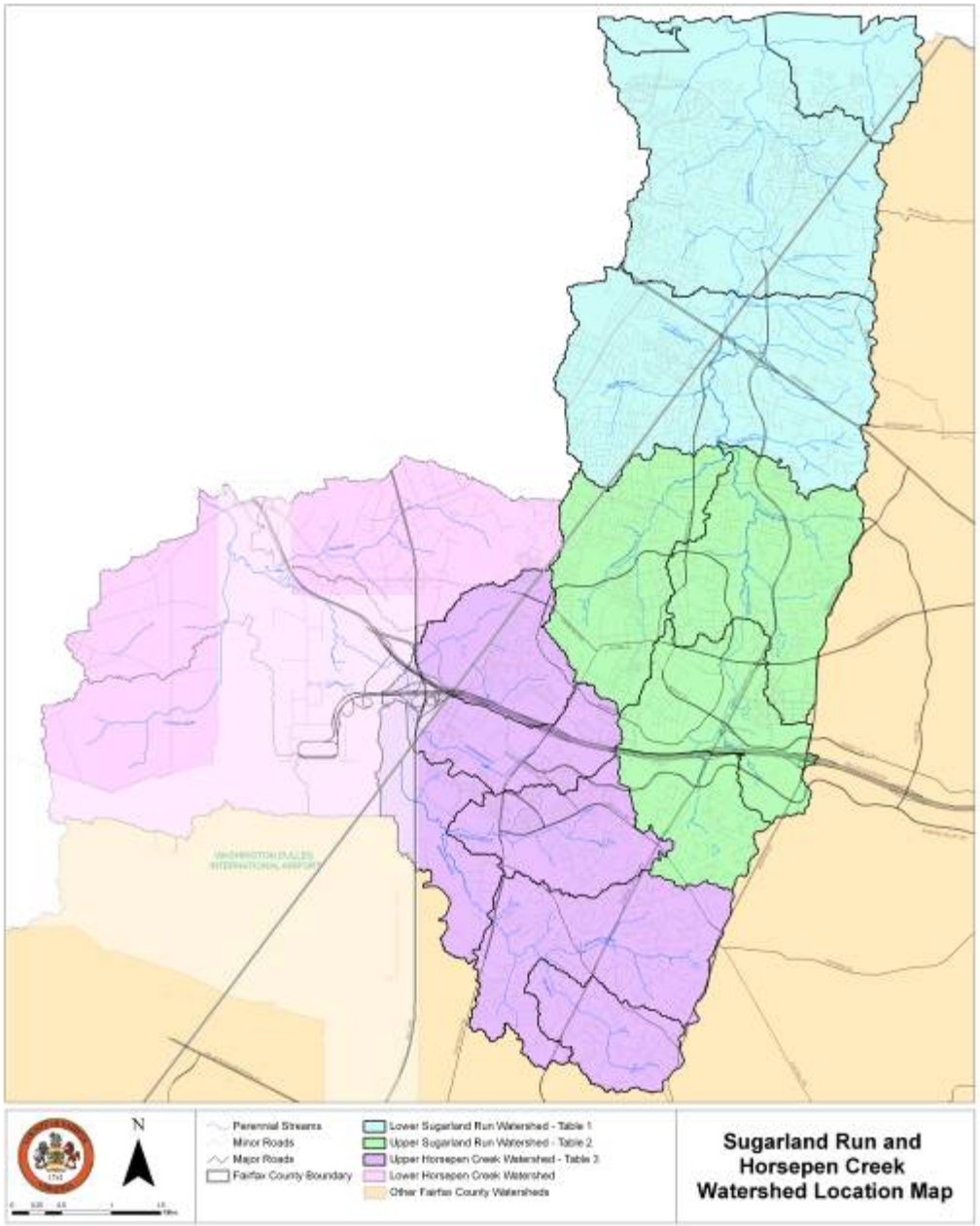
- Introductory and Issues Scoping Forum
- Watershed Advisory Group (WAG)
  - Approximately 20 individuals
  - Represent diverse community needs and interests across the watershed
  - Meets periodically over a 9-12 month period
- Draft Plan Review Workshop
- Final Plan Review period (online)

Getting Involved

1. Join the Sugarland Run/Horsepen Creek WAG
   - Volunteer yourself or suggest others
2. Provide information
   - Neighbors, colleagues, friends
3. Participate in our Virtual Forum

   www.fairfaxcounty.gov/dpwes/watersheds/sugarlandrun.htm
4. Submit Comments or Questions
   - By Phone: 703-324-5500, TTY 711
   - By Email: watersheds@fairfaxcounty.gov
   - By Fax: 703-802-5955


Open House


N
Perennial Streams
Minor Roads
Major Roads
Fairfax County Boundary
Lower Sugarland Run Watershed - Table 1
Upper Sugarland Run Watershed - Table 2
Upper Horsepen Creek Watershed - Table 3
Lower Horsepen Creek Watershed
Other Fairfax County Watersheds
Sugarland Run and
Horsepen Creek
Watershed Location Map