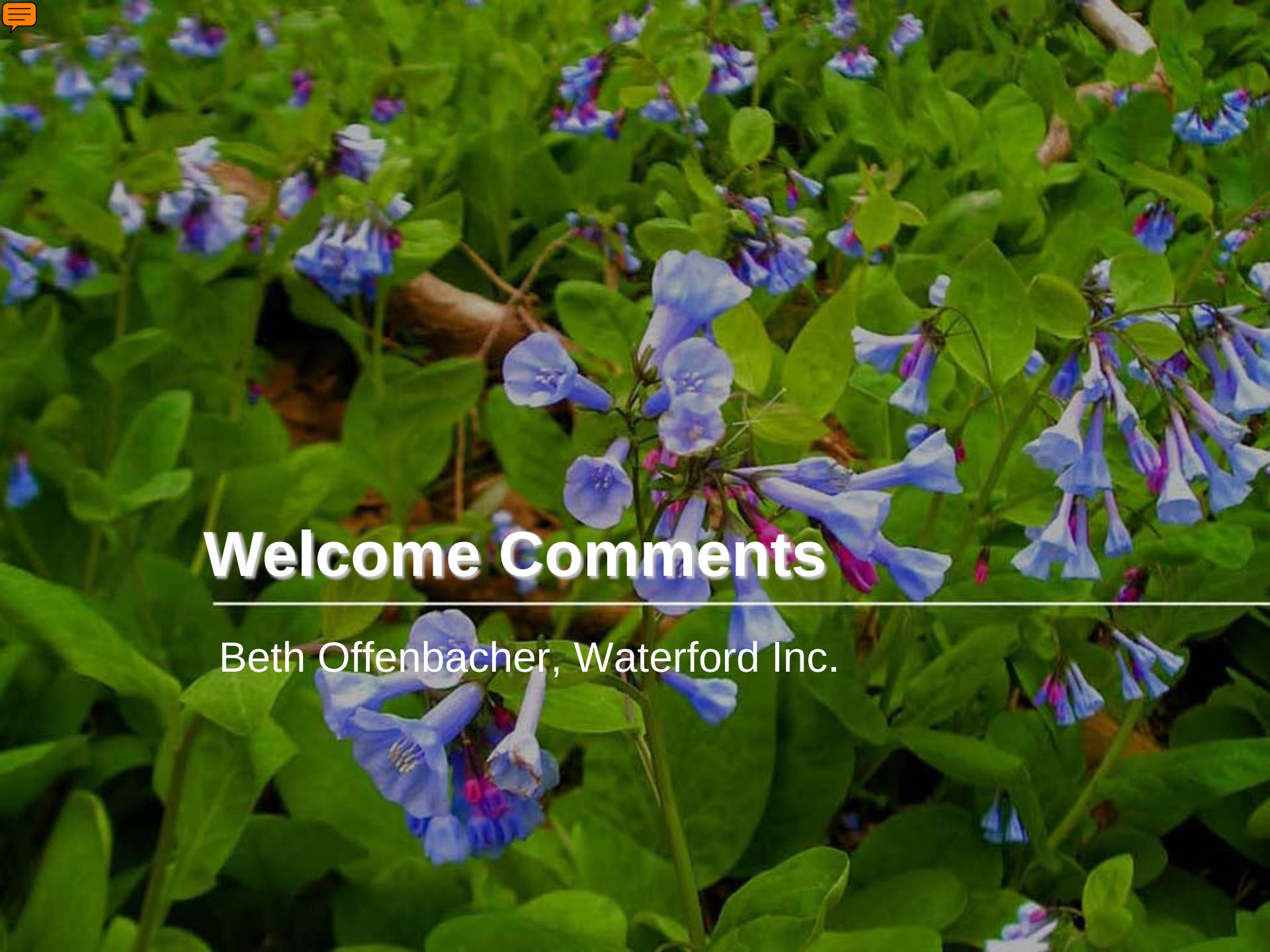
Pohick Creek Watershed Management Plan

Draft Plan Forum
July 27, 2010

Fairfax County Department of Public Works and Environmental Services

Presented by Watershed Planning & Assessment Branch, Stormwater Management



Welcome Comments

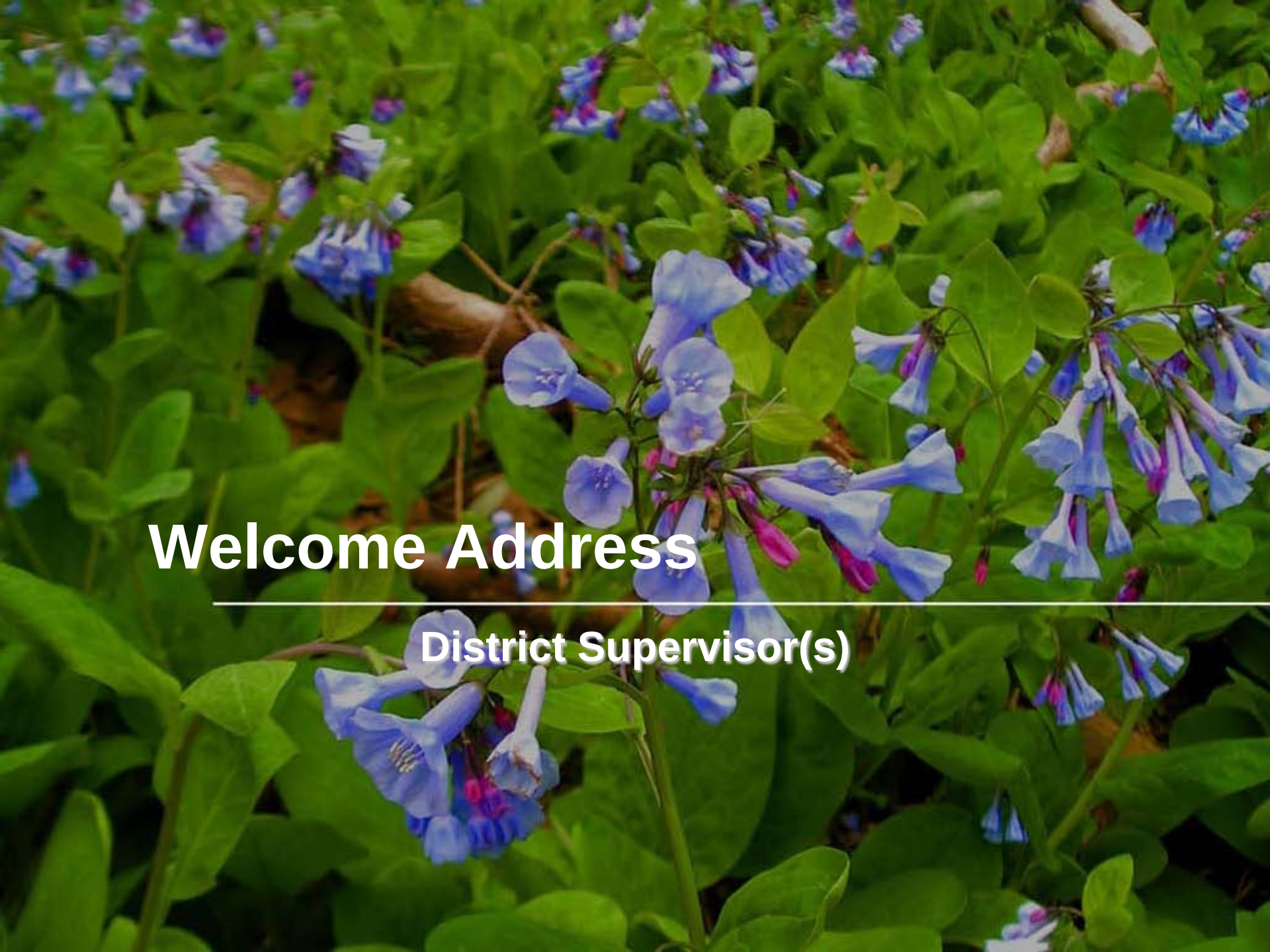
Beth Offenbacher, Waterford Inc.

Agenda

- Welcome
- Watershed Planning in Fairfax County
- Address by the District Supervisor(s)
- Watershed Primer
- Watershed Management Plan Overview
- Plan Comment Period and Timeline
- Breakout Sessions
- Adjourn

Watershed Planning in Fairfax County

Fred Rose, Fairfax County

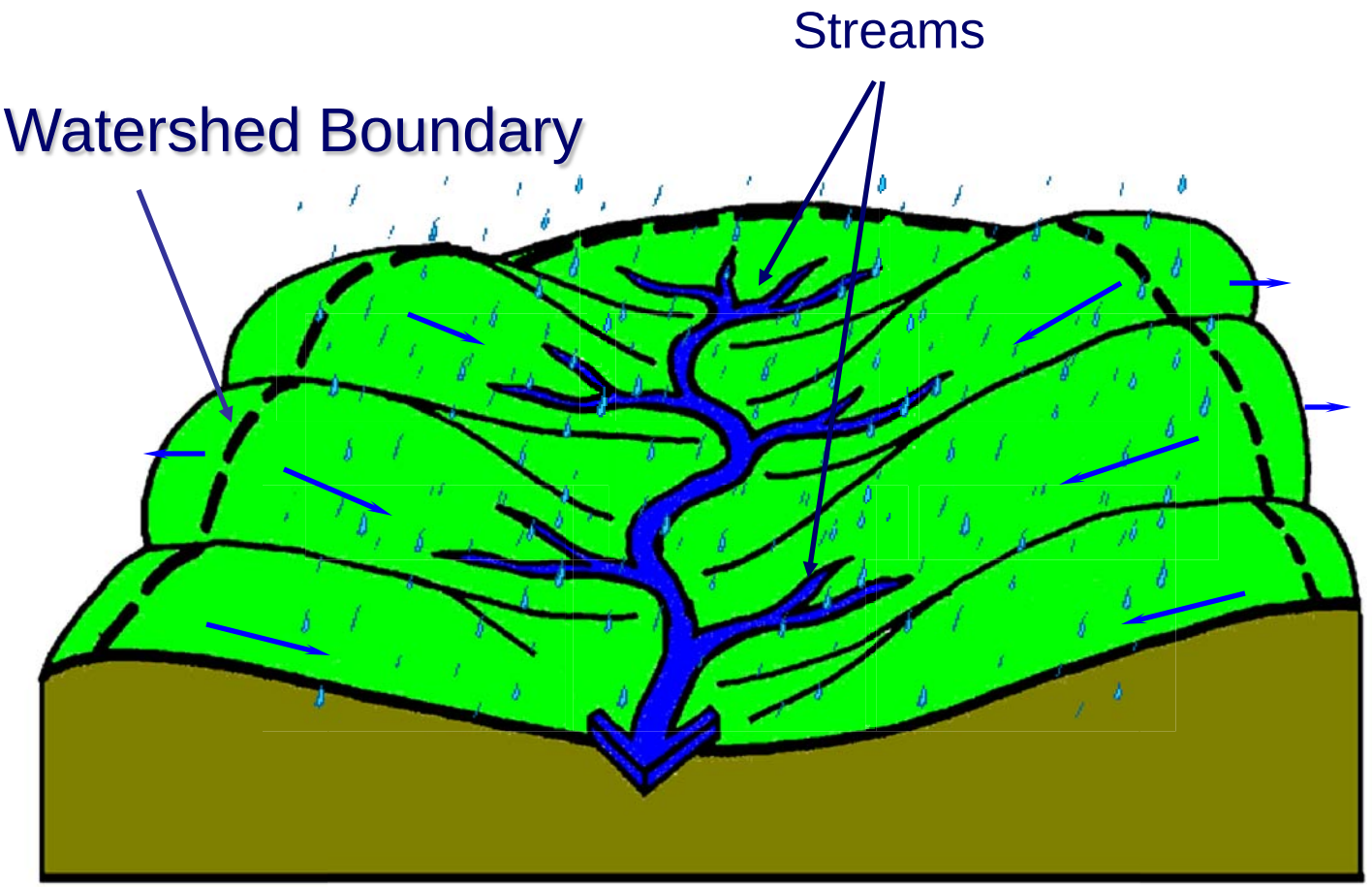


Welcome Address

District Supervisor(s)


Watershed Primer
An Introduction

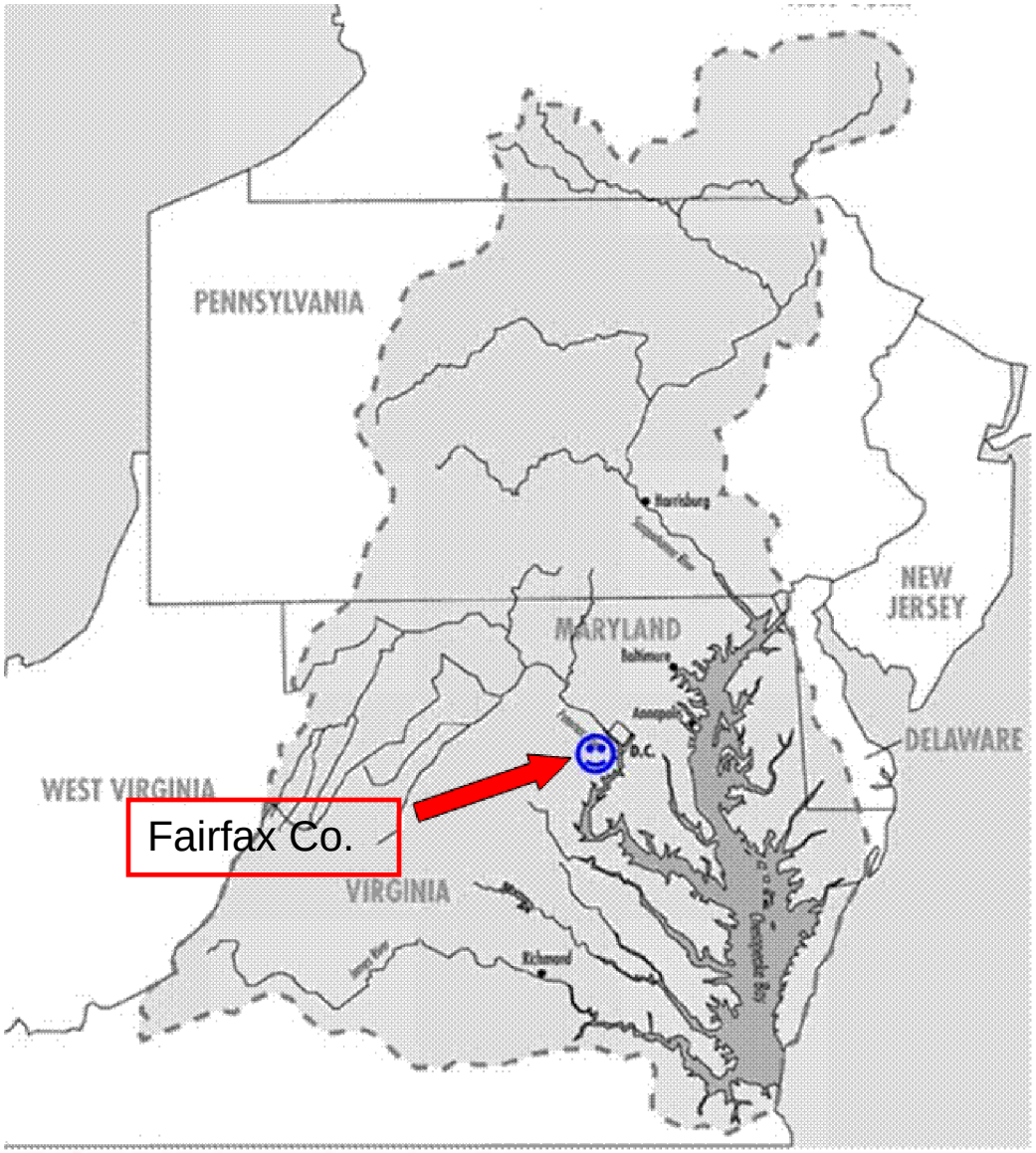
What is a Watershed?



What is a Watershed?

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

Chesapeake Bay Watershed

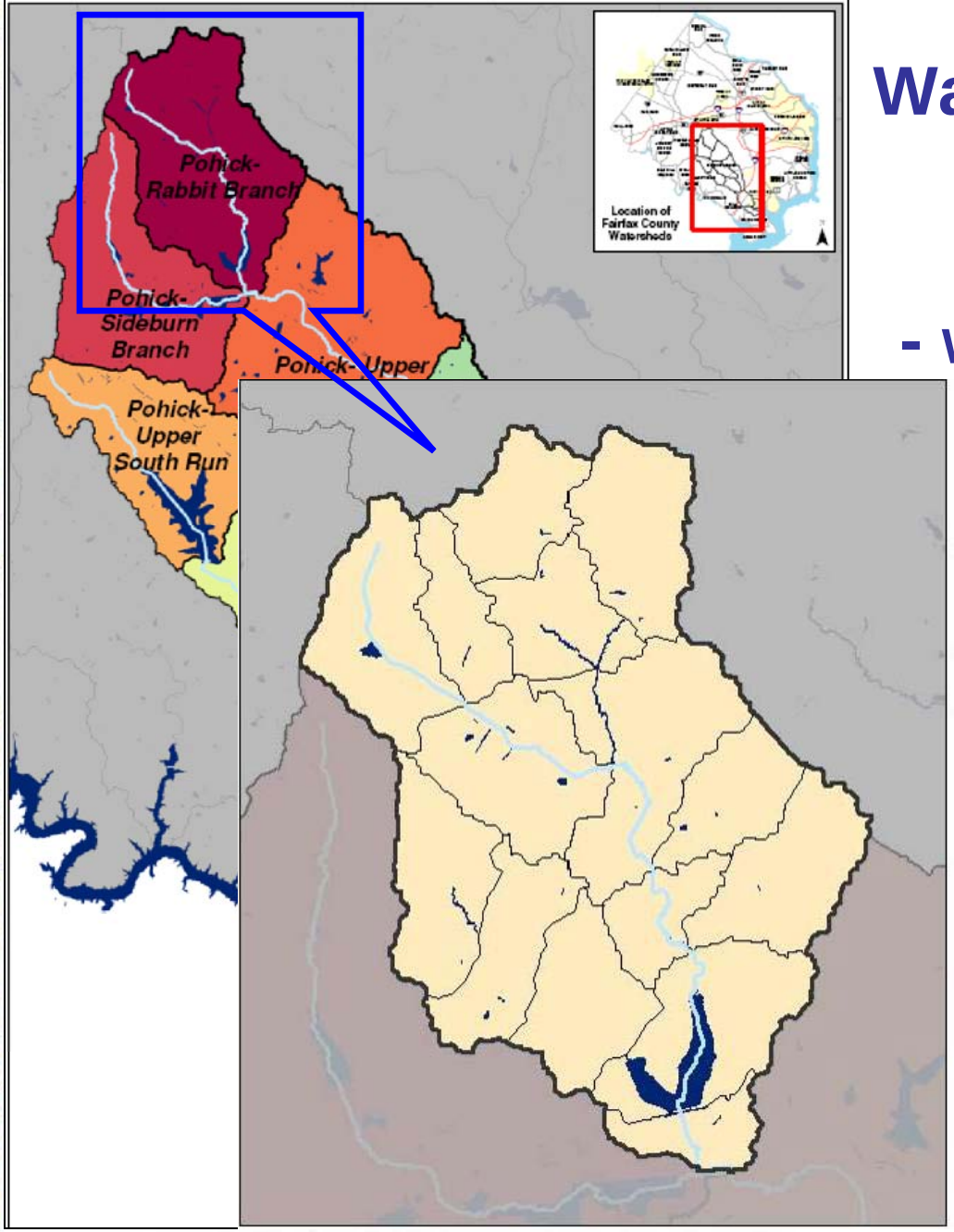


Fairfax County Watersheds

Watershed Planning Study Units:

- Watershed Management Area (WMA)
  (3-5 square mi)

- Subwatershed
  (100-300 acres)

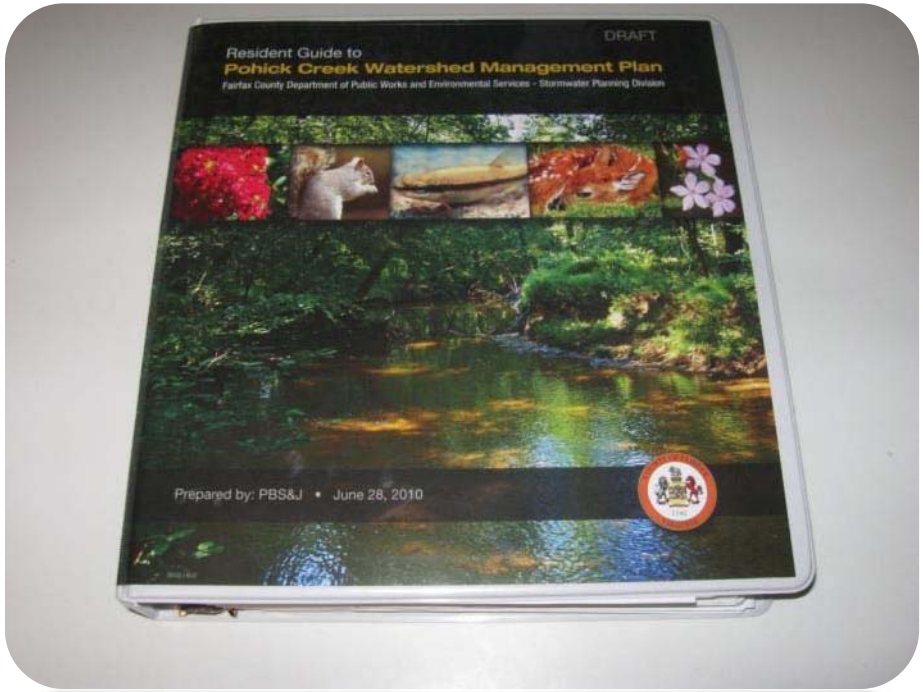


Stormwater Management

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

What Is a Watershed Management Plan?



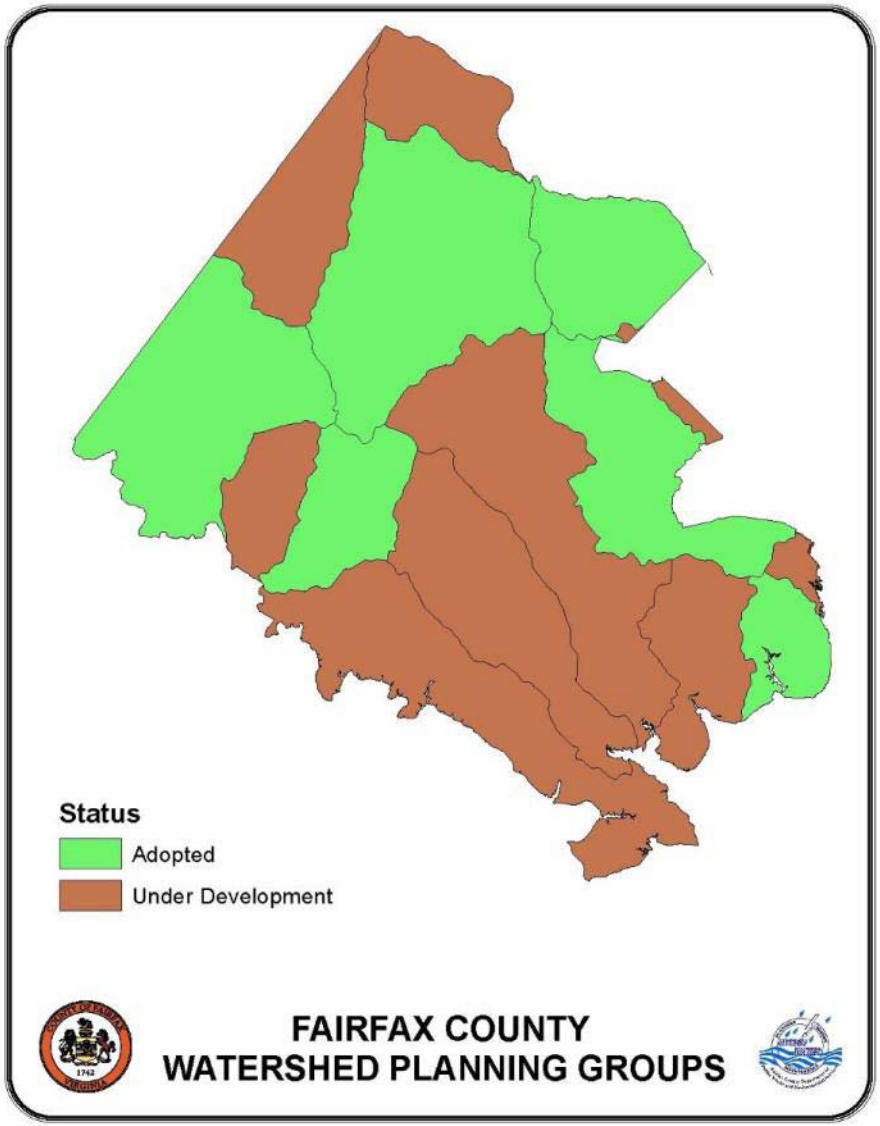
A Watershed Management Plan is a way for the county to assess the health and well being of our environment at a subwatershed scale.

The plans contain a 25-year list of proposed improvement projects.

Why create watershed plans?

Healthy watersheds, healthier communities

Watershed Planning



The Pohick Creek Watershed Management Plan

An Overview

Development of the Draft Plan

Watershed characterization

↓

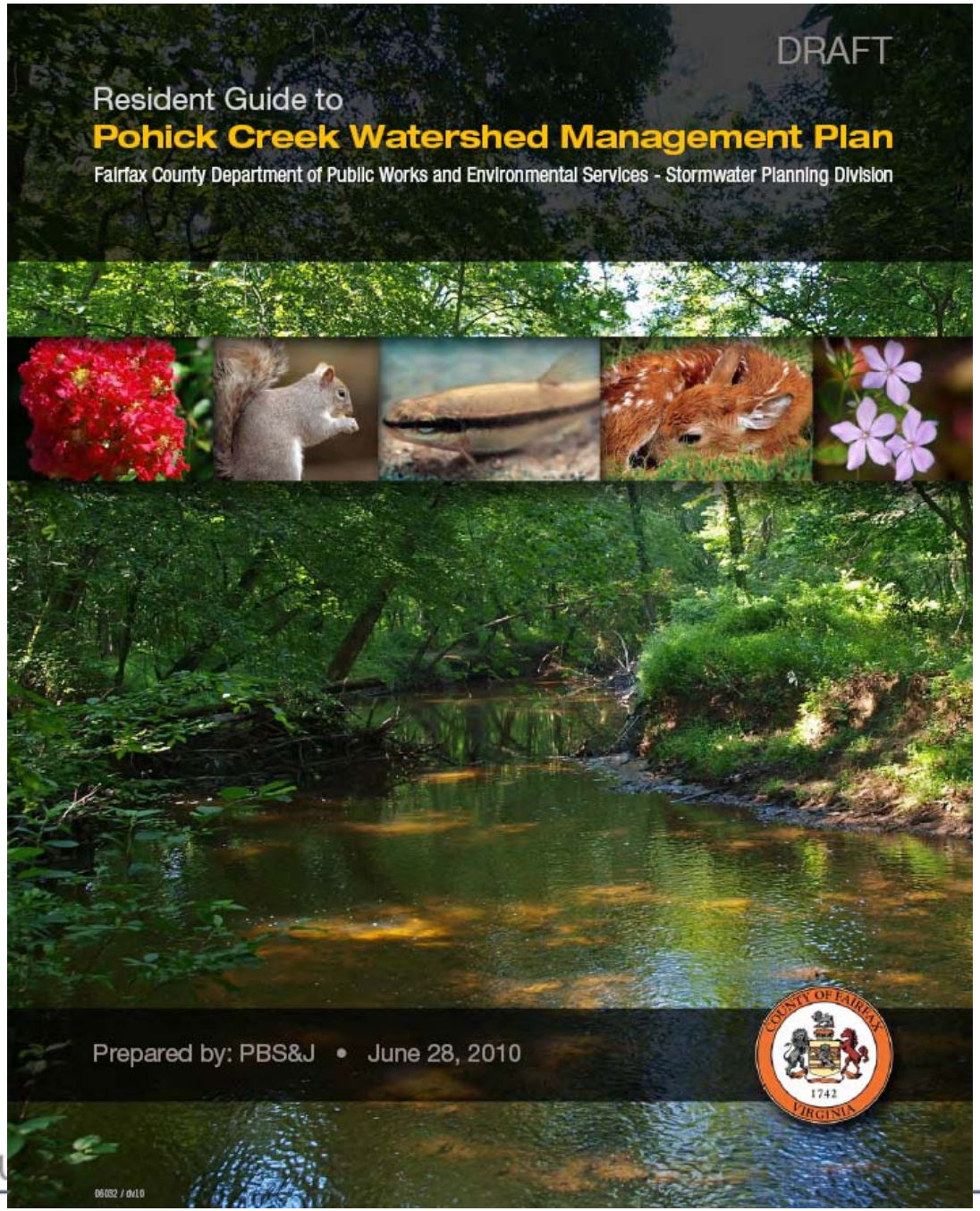
Project identification

↓

Project ranking

↓

Development of draft plan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Resident Guide to
Pohick Creek Watershed Management Plan
Fairfax County Department of Public Works and Environmental Services - Stormwater Planning Division
Prepared by: PBS&J • June 28, 2010
COUNTY OF FAIRFAX
1742
VIRGINIA
06032 / dv10

Section 1

1.0 Introduction

1.1 Introduction to Watersheds

A watershed is an area of land that drains all of its water to a specific lake or river. As rainwater and melting snow run downhill, they carry sediment and other materials into our streams, lakes, wetlands and groundwater.

Figure 1-1: Diagram of a watershed

The boundary of a watershed is defined by the watershed divide, which is the ridge of highest elevation surrounding a given stream or network of streams. A drop of rainwater falling outside of this boundary will enter a different watershed and will flow to a different body of water.

Streams and rivers may flow through many different types of land use in their paths to the ocean. In the above illustration from the U.S. Environmental Protection Agency, water flows from agricultural lands to residential areas to industrial zones as it moves downstream. Each land use presents unique impacts and challenges on water quality.

Figure 1-2: The Chesapeake Bay watershed

The size of a watershed can be subjective; it depends on the scale that is being considered.

The image to the left depicts the extent of the Chesapeake Bay watershed, "the big picture" that is linked to our local concerns. This watershed covers 64, 000 square miles and crosses into six states: New York, Pennsylvania, Delaware, West Virginia, Maryland, Virginia and the District of Columbia.

One of the watersheds that comprise the Chesapeake Bay watershed is the Potomac River watershed. Fairfax County, as shown on the map, occupies approximately 400 square miles of the Potomac River watershed. This area contains 30 smaller watersheds. Think of watersheds as being "nested" within each successively larger one.

Each watershed in Fairfax County was

Section 3: Watershed Characterization

- Review of existing data
- Field reconnaissance
- Modeling

Existing Studies/Data

- Stream Physical Assessment (SPA)
- Stream Protection Strategy (SPS)
- GIS Data

Field Reconnaissance

Water Quality Modeling

Spreadsheet

Tool for

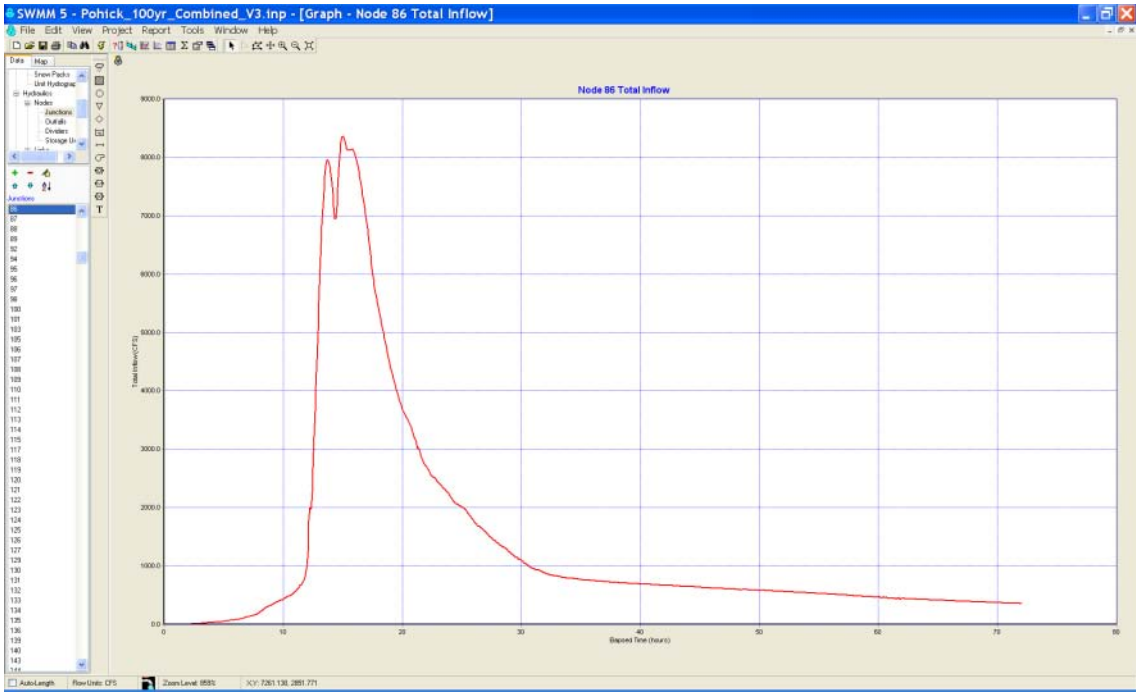
Estimating

Pollutant

Load

Water Quantity Modeling - Hydrology

Storm
Water
Management
Model



Water Quantity Modeling - Hydraulics

Hydrologic

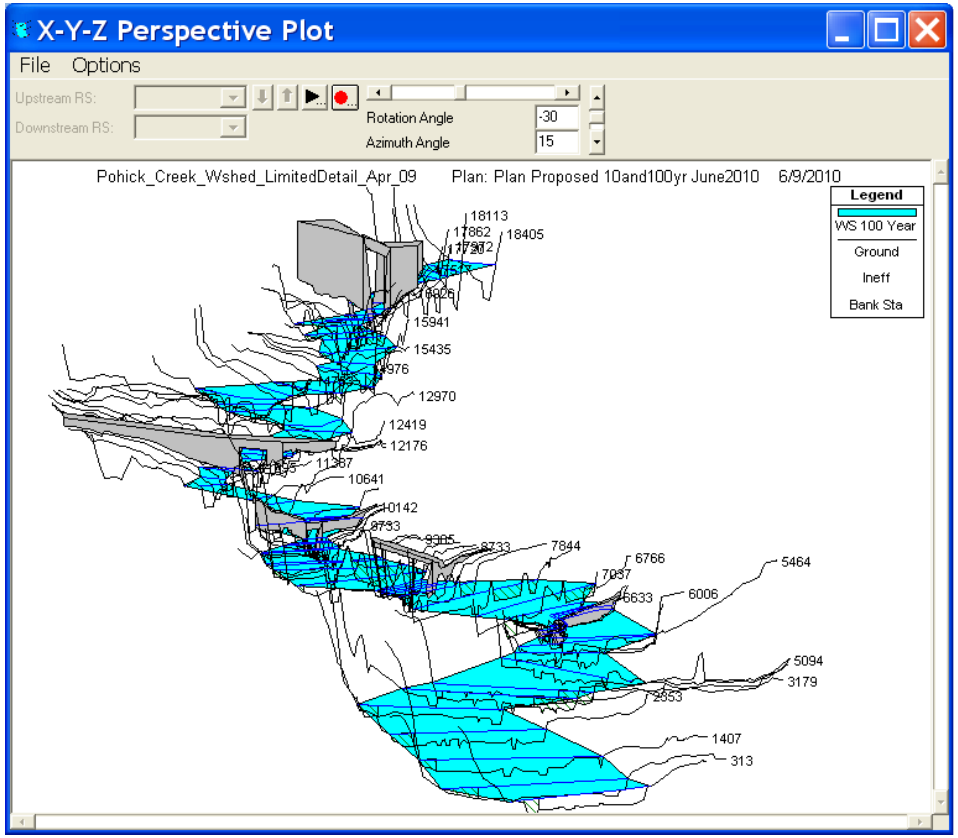
Engineering

Center

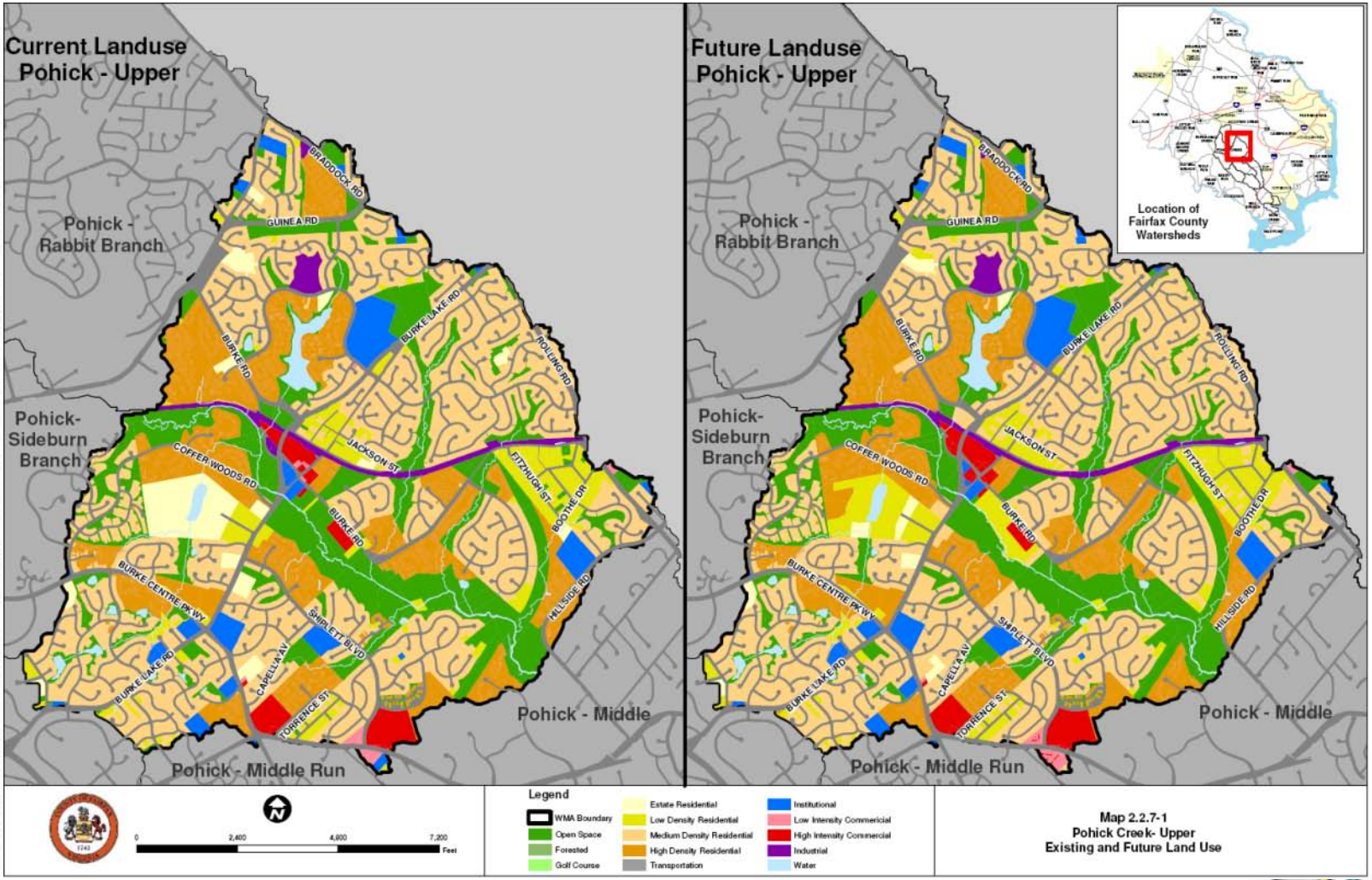
River

Analysis

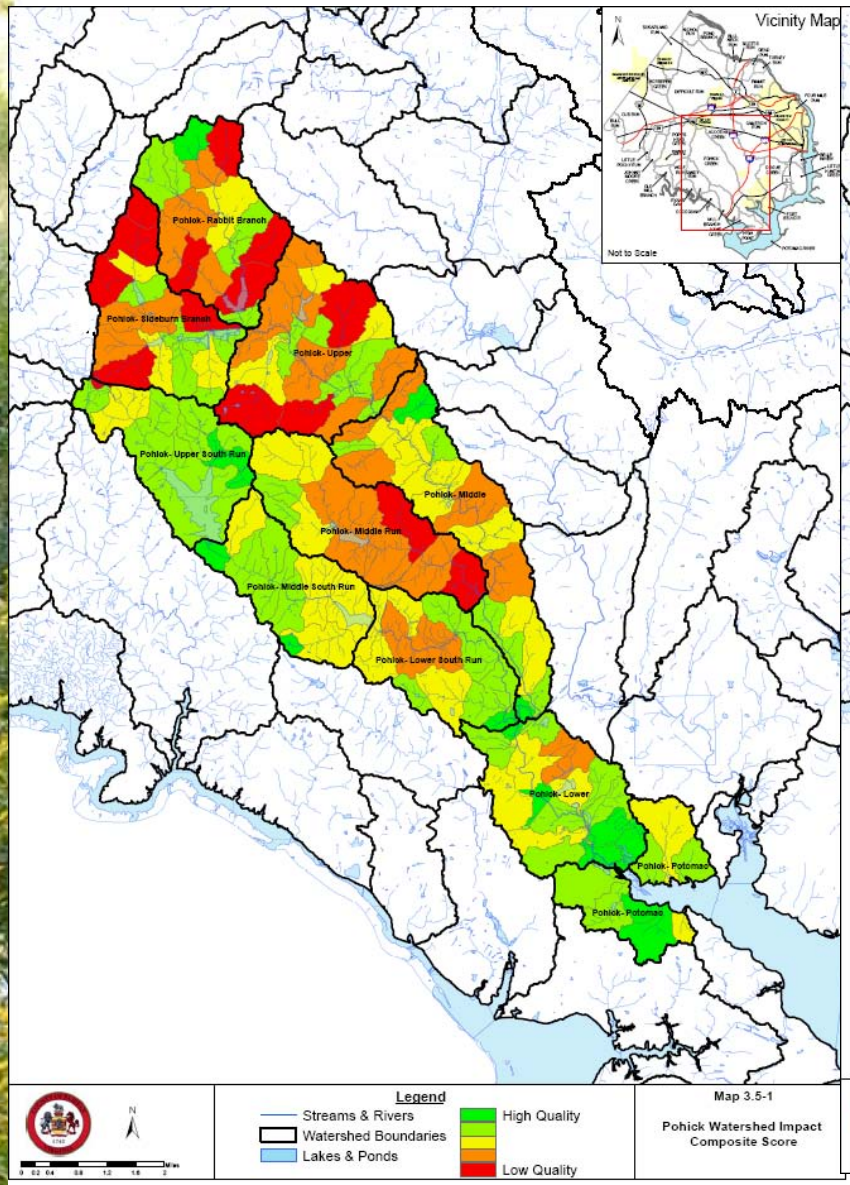
System

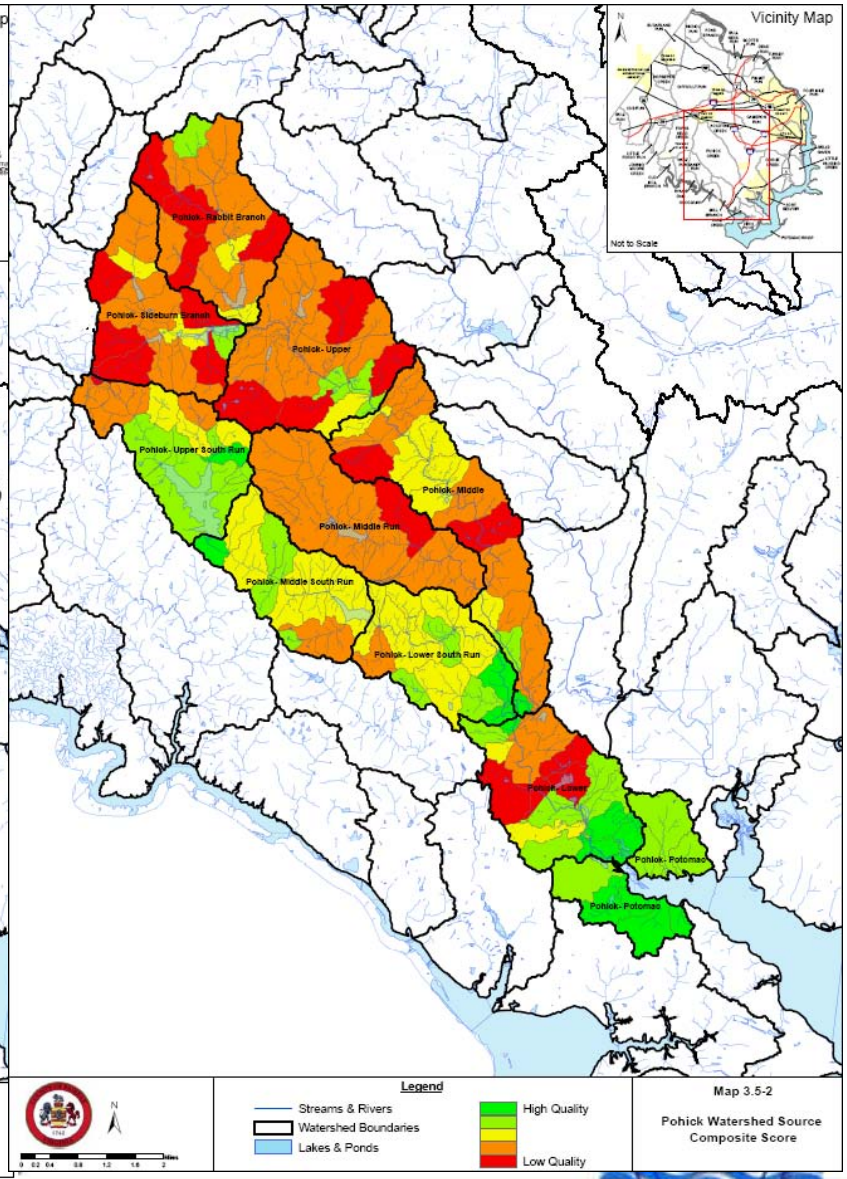


Modeling Scenarios



Subwatershed Ranking





Section 4

Figure 4-3: Parking lot pervious pavement

Figure 4-4: Parking lot bioretention filter

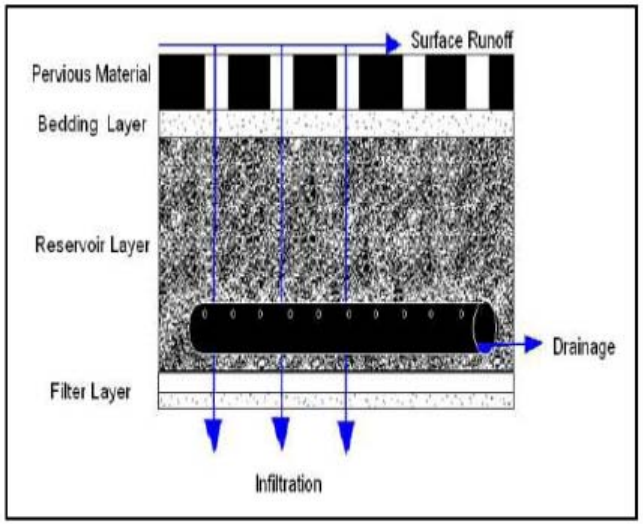


Figure 4-6: Pervious pavement section

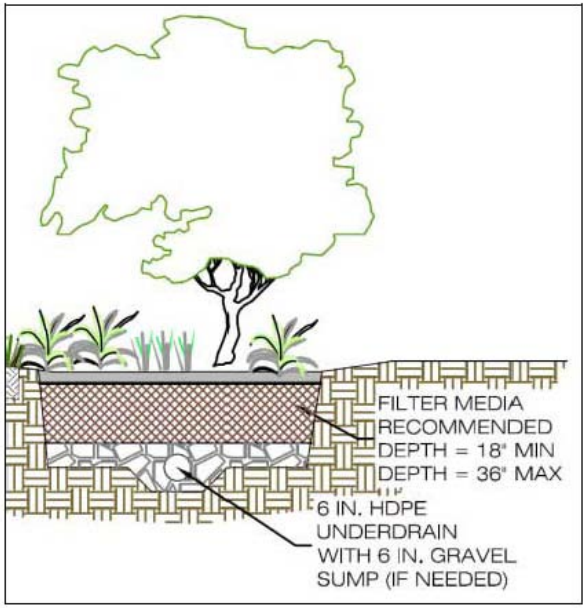
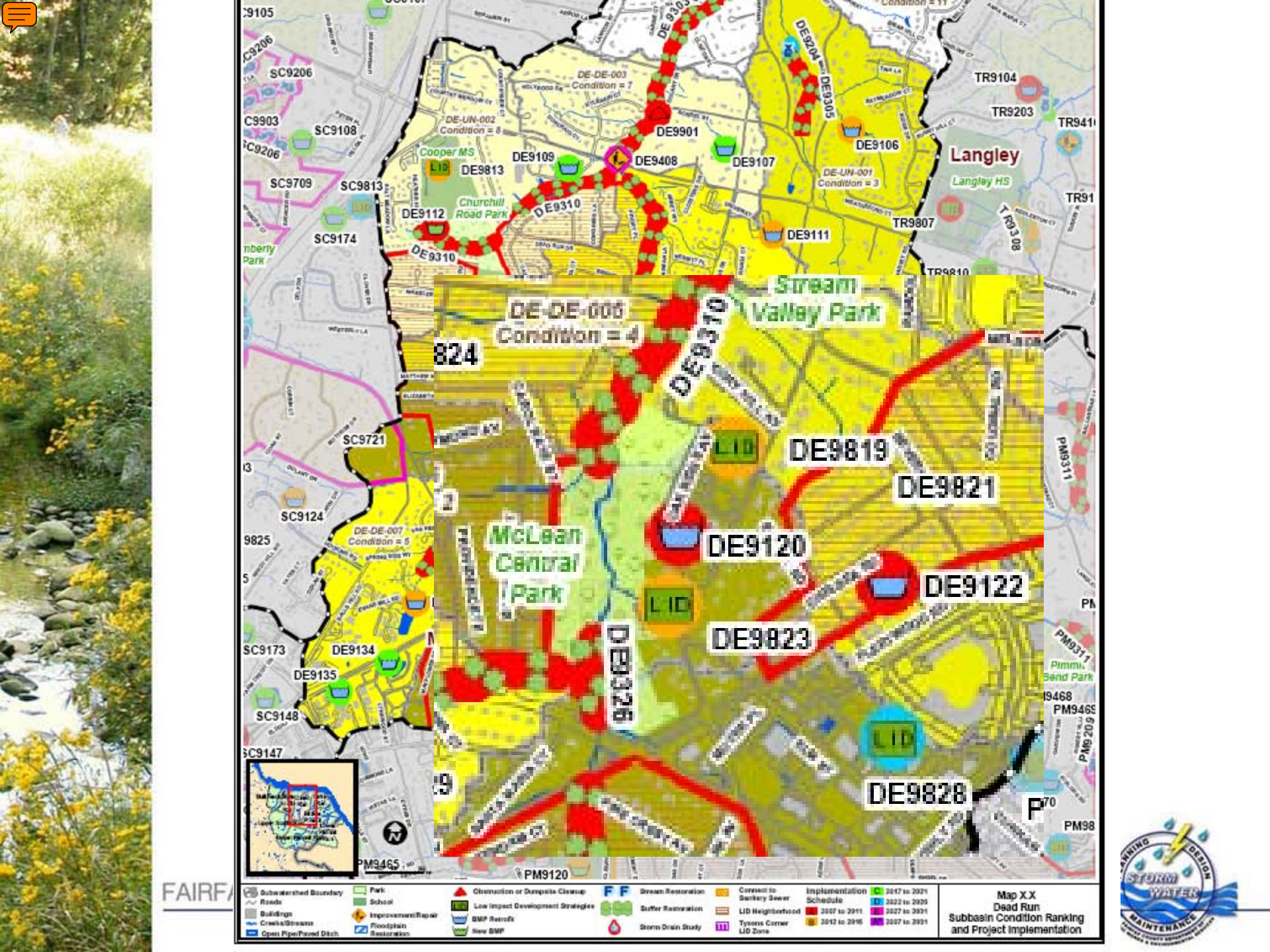
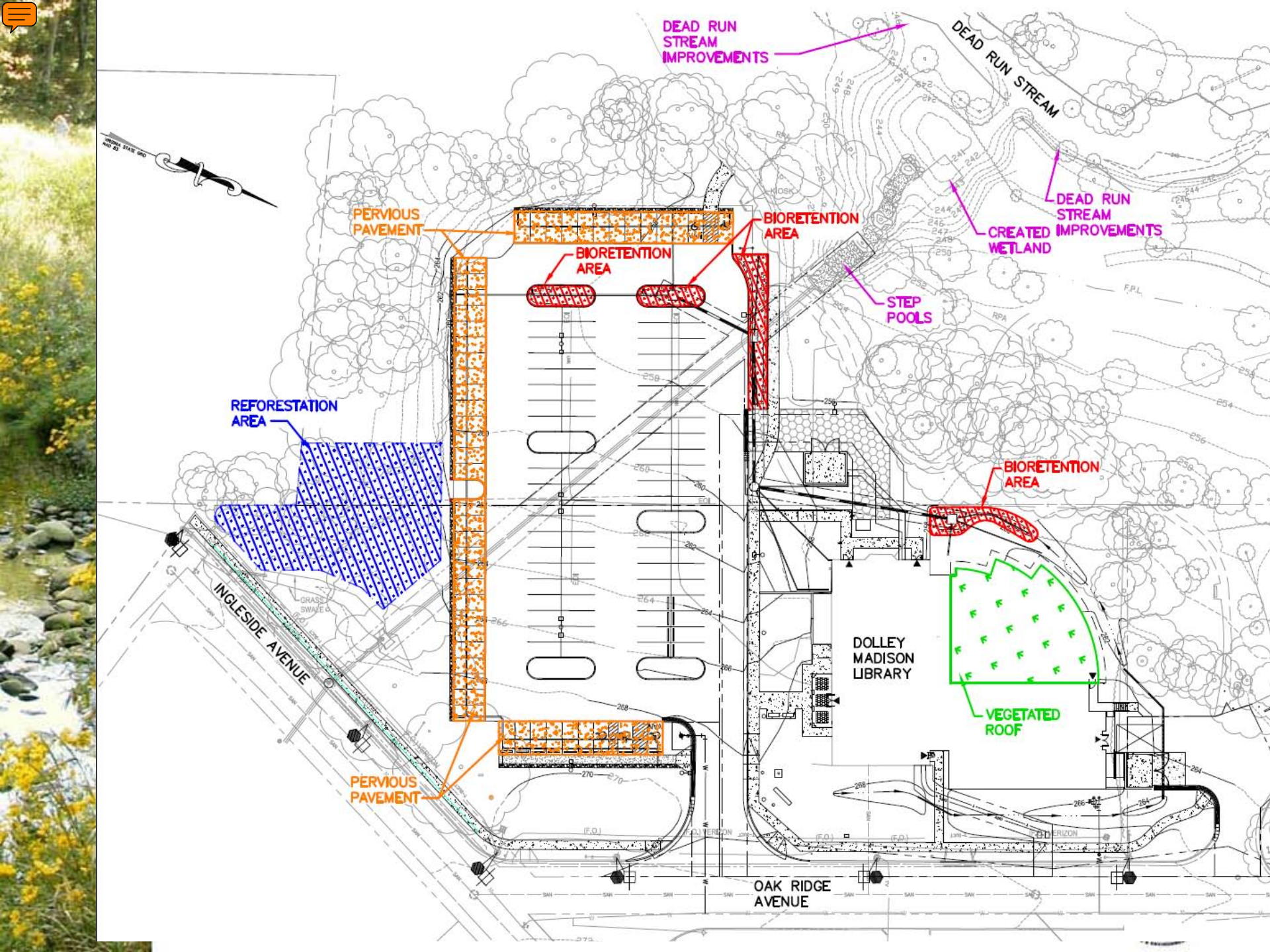


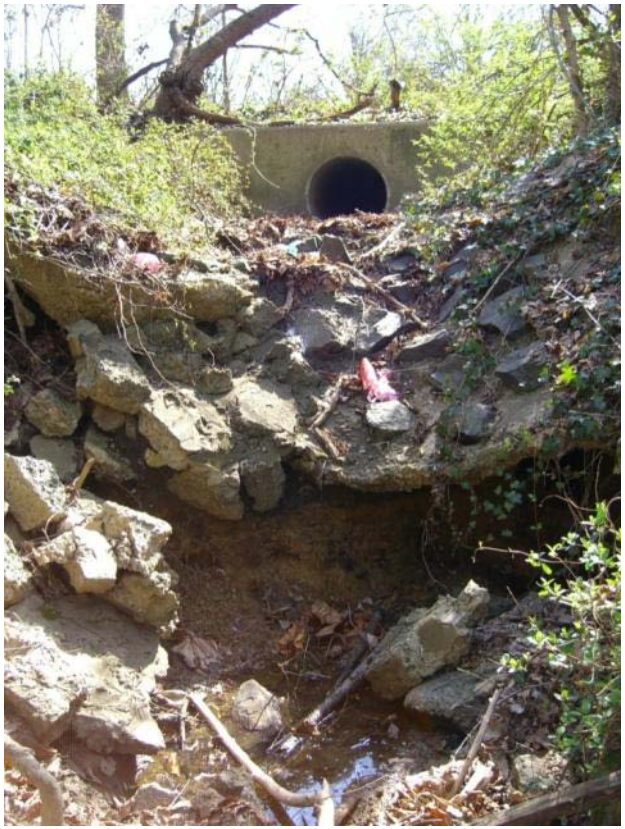
Figure 4-5: Bioretention section


DE-DE-006
Condition = 4
Stream Valley Park
McLean Central Park
LID
DE9819
DE9821
DE9120
DE9122
DE9823
DE9828
DE9326
DE9310
DE9901
DE9408
DE9109
DE9107
DE9106
DE9111
DE9112
DE9813
DE9134
DE9135
Langley
Langley HS
Cooper MS
Churchill Road Park
DE-DE-003
Condition = 7
DE-UN-002
Condition = 8
DE-UN-001
Condition = 3
DE-DE-007
Condition = 5
SC9206
SC9108
SC9709
SC9813
SC9174
SC9721
SC9124
SC9173
SC9148
SC9147
TR9104
TR9203
TR9807
PM9120
PM9465
PM9311
PM9469
Subwatershed Boundary
Roads
Buildings
Creeks/Streams
Open Pipe/Paved Ditch
Park
School
Improvement/Repair
Floodplain Restoration
Obstruction or Dumpsite Cleanup
Low Impact Development Strategies
BMP Retrofit
New BMP
Stream Restoration
Buffer Restoration
Storm Drain Study
Connect to Sanitary Sewer
LID Neighborhood
Tysons Corner LID Zone
Implementation Schedule
2007 to 2011
2012 to 2016
2017 to 2021
2022 to 2026
2027 to 2031
2007 to 2031
Map X.X
Dead Run
Subbasin Condition Ranking
and Project Implementation


DEAD RUN STREAM IMPROVEMENTS
DEAD RUN STREAM
DEAD RUN STREAM IMPROVEMENTS
CREATED WETLAND
STEP POOLS
PERVIOUS PAVEMENT
BIORETENTION AREA
BIORETENTION AREA
BIORETENTION AREA
REFORESTATION AREA
INGLESIDE AVENUE
DOLLEY MADISON LIBRARY
VEGETATED ROOF
PERVIOUS PAVEMENT
OAK RIDGE AVENUE

Dead Run: Outfall improvement

Before



Dead Run: Outfall improvement

After

Benefits

- Reduce erosion
- Decrease velocity
- Nutrient removal

Dead Run: Stream Restoration

Before

Dead Run: Stream Restoration

After

Benefits

- Reduced erosion
- Improved nutrient removal
- Restore riparian habitat

Stormwater Pond Retrofit

Benefits

- Existing facility
- Increase detention time
- Improve water quality

After

Before

1- Remove and replace storm structure.
2- Removed deposited silt.
3- Install stone rip-rap.
4- Landscaping.
5- Restoration.

Stormwater Pond Retrofit

Before

After

- 1- Remove existing riser structure
- 2- Remove deposited silt
- 3- Install new structure
- 4- Re-grade, stabilize, seed and straw mulch
- 5- Landscaping

Stormwater Pond Retrofit

Before

- New Access Road for Maintenance Using Porous Pavement
- Increase Pond Capacity
- Improve Water Quality and Protect Functions of Pond
- Replace Failed Principal Spillway Pipe and Riser Structure

After

LID Bioretention/Bioswale

Benefits

- Reduce directly connected impervious areas
- Improve nutrient removal

BMP/LID Inlet Inserts

USHydroTech inlet inserts

Non-structural Projects

BMP/LID Rain Barrel

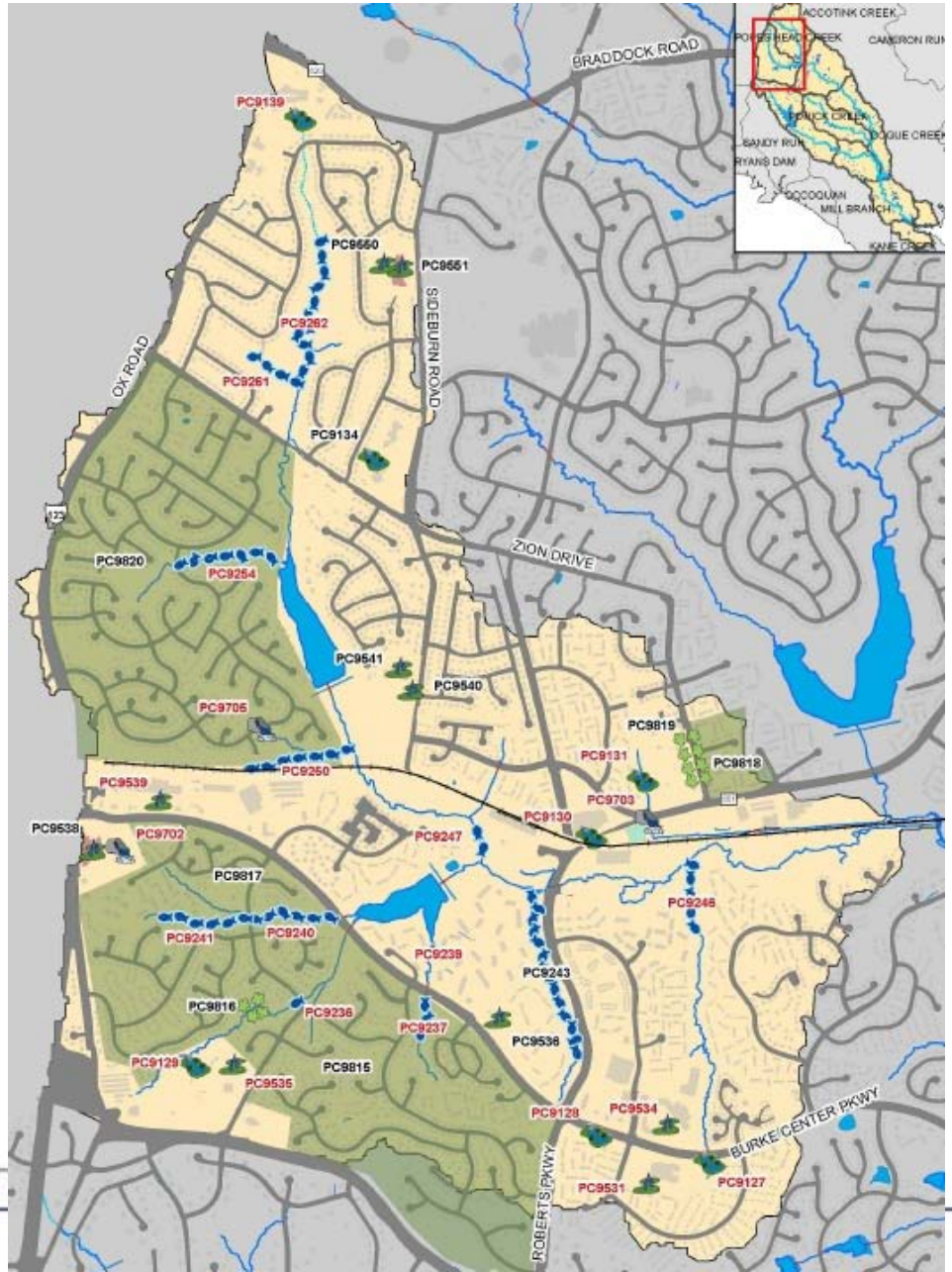
Street Sweeping

Non-structural Projects

Buffer Restoration

Dumpsite/Obstruction Removal

Section 5


BRADDOCK ROAD
PC9139
PC9660
PC9661
PC9262
PC9261
PC9134
OX ROAD
SIDEBURN ROAD
ZION DRIVE
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PC9254
PC9541
PC9540
PC9705
PC9819
PC9131
PC9818
PC9539
PC9250
PC9703
PC9130
PC9538
PC9702
PC9247
PC9817
PC9246
PC9241
PC9240
PC9239
PC9243
PC9816
PC9236
PC9237
PC9538
PC9129
PC9536
PC9815
PC9128
PC9534
BURKE CENTER PKWY
ROBERTS PKWY
PC9531
PC9127

Section 5: Fact Sheets

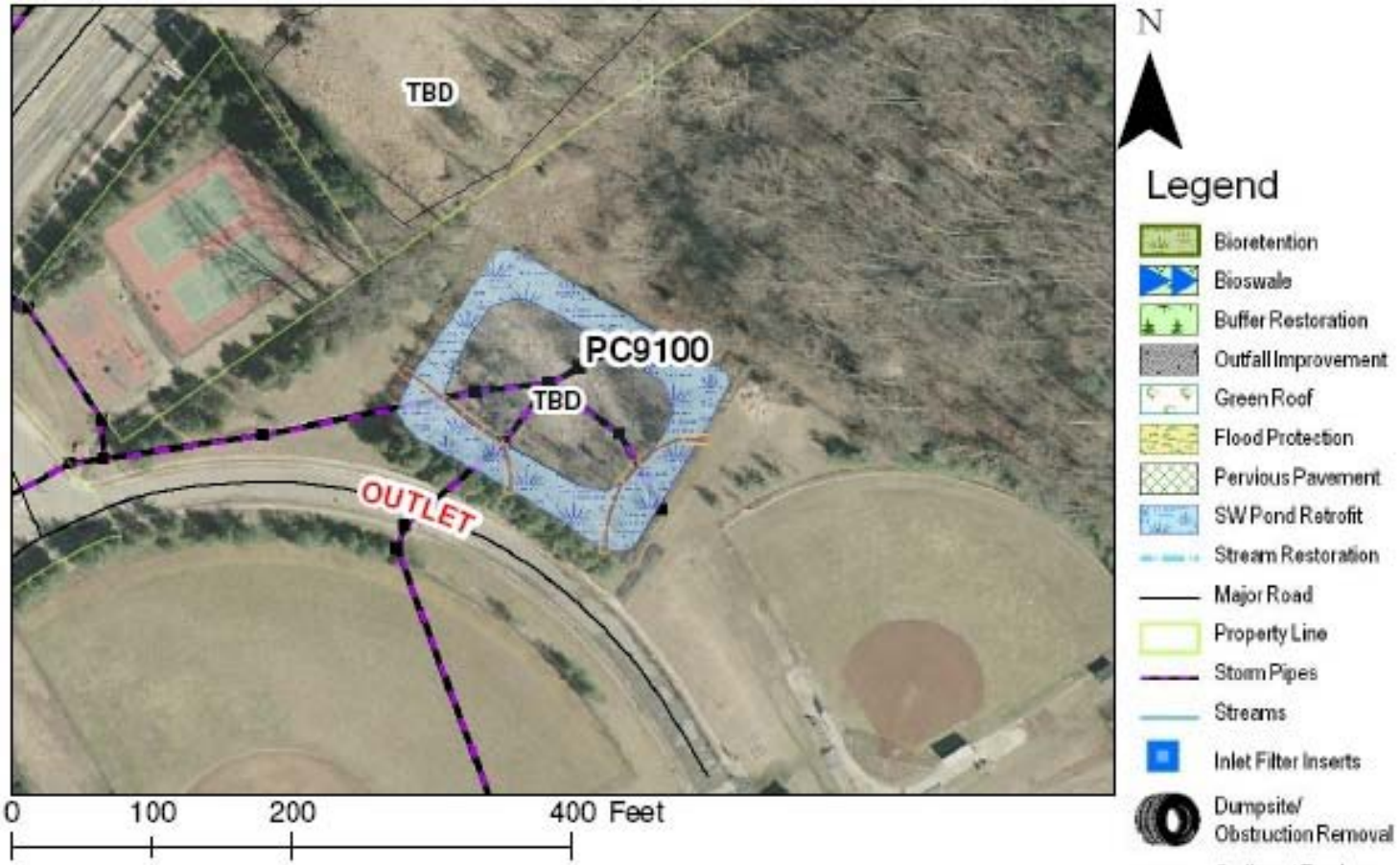
Pohick Creek Watershed
Lower Pohick Watershed Management Area

PC9100 Stormwater Pond Retrofit

Address: 9515 Richmond Highway, Lorton, Virginia
Location: Lorton Athletic Fields
Land Owner: Public/Local – Fairfax County Government
PIN: 1074 01 0031
Control Type: Water quality and quantity control
Drainage Area: 11.50 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond to create an extended detention dry pond with sediment forebays at the Lorton Athletic Fields near Richmond Highway in Lorton. Two forebays will be created around the inlet areas and the pond can be expanded on all sides, especially to the northeast. The pond's detention time will be increased by modifiying the existing discharge structure and increasing the pond's storage. The primary indicators are pollutants, phosphorus, nitrogen and total suspended solids. The pond collects runoff through a closed system from on-site fields and tennis courts, Richmond Highway, and dense residential developments south of the site.

Section 5: Fact Sheets



Section 5: Fact Sheets

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.35	AC	$8,500	$2,975
Grading and Excavation	2260	CY	$35	$79,100
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	60	CY	$50	$3,000
Outflow Pipe	100	LF	$125	$12,500
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	280	CY	$40	$11,200
Plantings	1	LS	5%	$6,439
Ancillary Items	1	LS	5%	$6,439
Erosion and Sediment Control	1	LS	10%	$12,878

Base Construction Cost	$154,530
Mobilization (5%)	$7,727
Subtotal 1	$162,257
Contingency (25%)	$40,564
Subtotal 2	$202,821
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$91,269
Total	$294,090
Estimated Project Cost	$300,000

Draft WMP

- Section 6: Benefits of Plan Implementation
- Section 7: Glossary/Acronyms
- Section 8: Bibliography

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Technical Appendices to
Pohick Creek Watershed Management Plan

Fairfax County Department of Public Works and Environmental Services - Stormwater Planning Division

Appendices

- Appendix A

  Draft Watershed Workbook

- Appendix B

  Restoration Strategies Tech Memo, Project Ranking Tech Memo, Master Project List

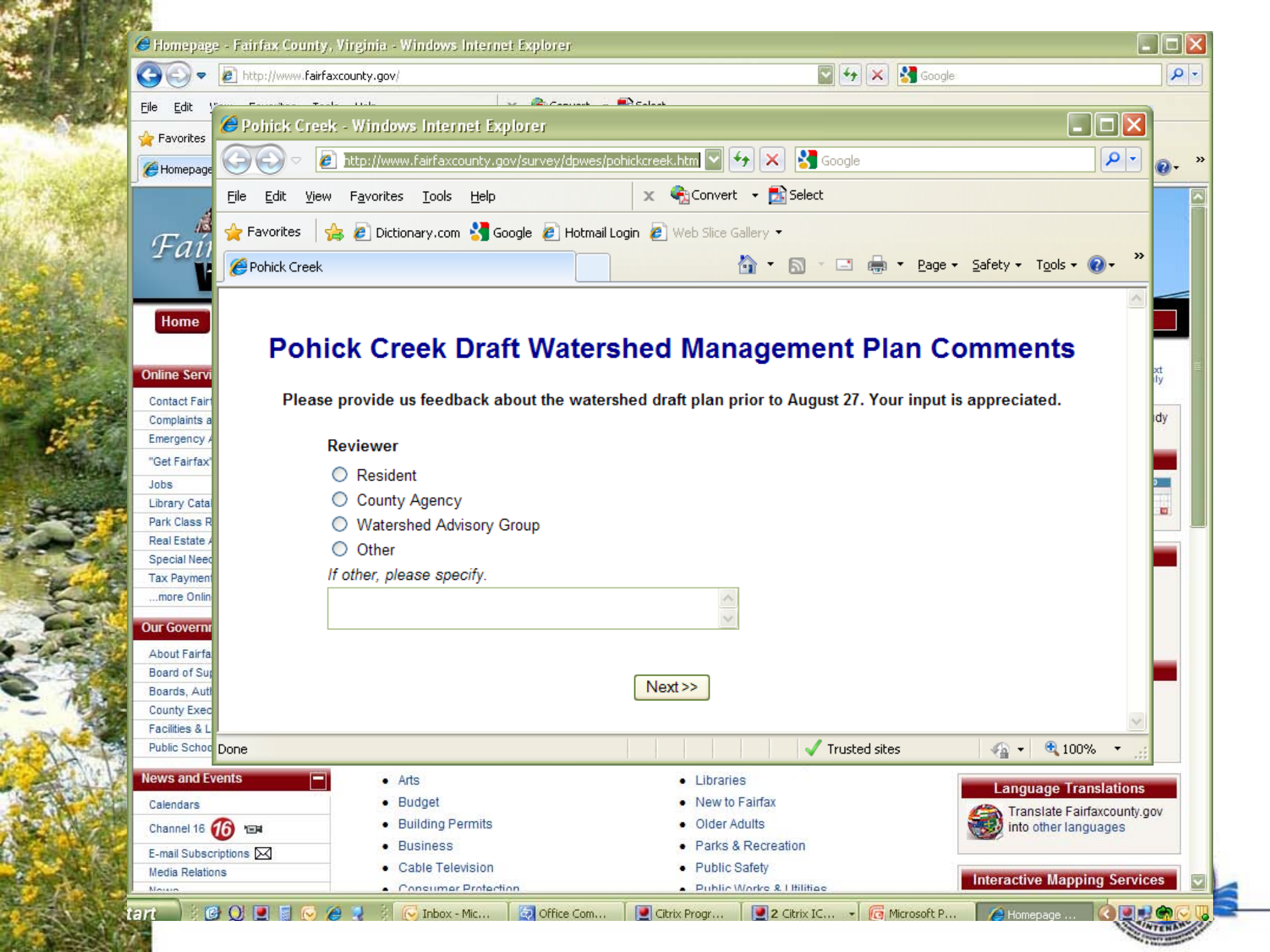
- Appendix C

  Summary of Public Involvement

Comment Period and Timeline

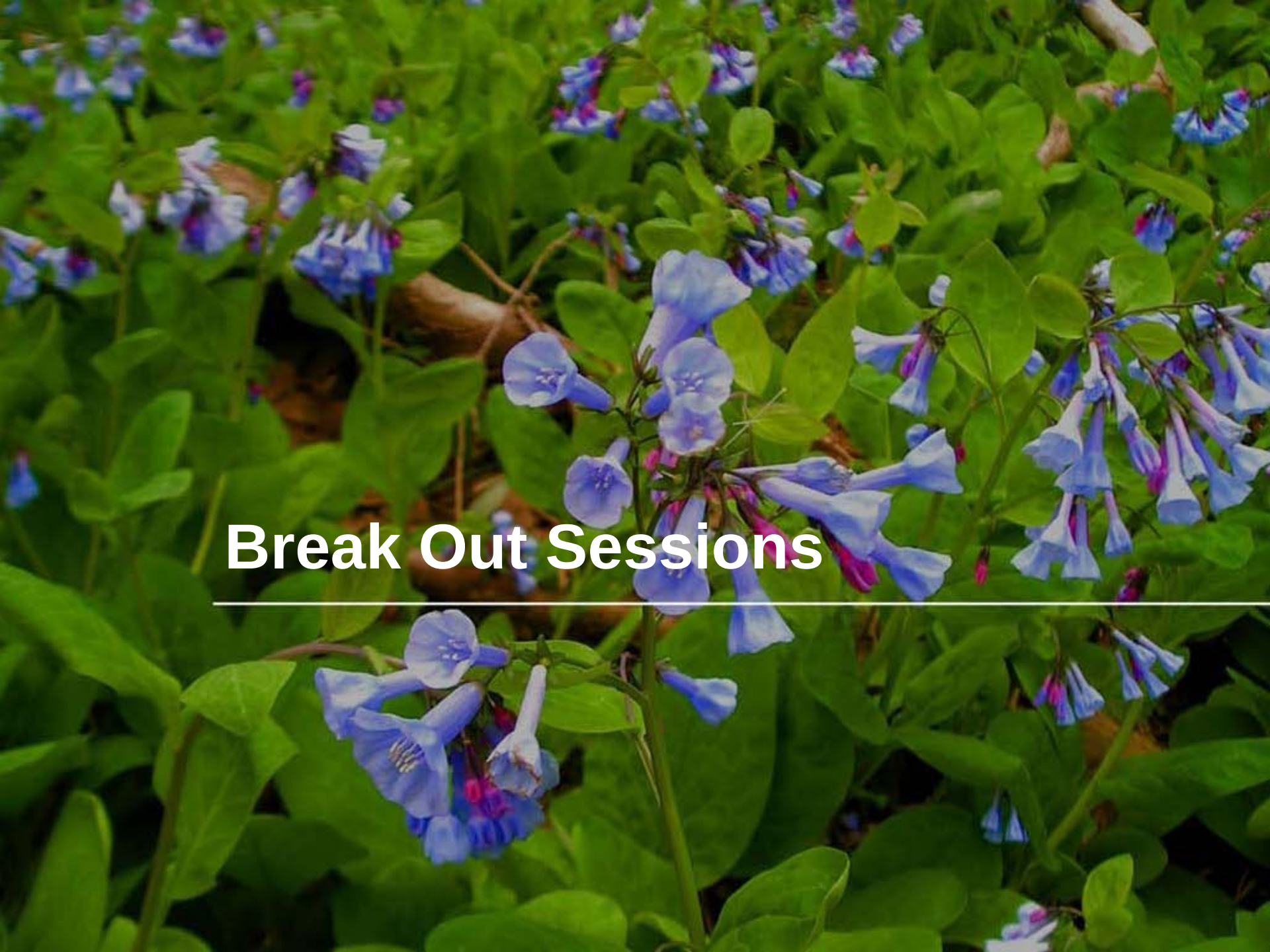
How to Provide Comments

- Tonight – in breakout groups
- Online - http://www.fairfaxcounty.gov/dpwes/watersheds/pohickcreek_docs.htm
- E-mail – watersheds@fairfaxcounty.gov
- Phone - 703-324-5500, TTY 711
- Fax - 703-802-5955
- Mail - Stormwater Planning Division
  12000 Government Center Parkway,
  Suite 449
  Fairfax, VA 22035


Homepage - Fairfax County, Virginia - Windows Internet Explorer
http://www.fairfaxcounty.gov/
Pohick Creek - Windows Internet Explorer
http://www.fairfaxcounty.gov/survey/dpwes/pohickcreek.htm
File Edit View Favorites Tools Help
Convert
Select
Favorites
Dictionary.com
Google
Hotmail Login
Web Slice Gallery
Pohick Creek
Page
Safety
Tools
Pohick Creek Draft Watershed Management Plan Comments
Please provide us feedback about the watershed draft plan prior to August 27. Your input is appreciated.
Reviewer
Resident
County Agency
Watershed Advisory Group
Other
If other, please specify.
Next >>
Done
Trusted sites
100%
Home
Online Servi
Our Governm
News and Events
Calendars
Channel 16
E-mail Subscriptions
Media Relations
Arts
Budget
Building Permits
Business
Cable Television
Libraries
New to Fairfax
Older Adults
Parks & Recreation
Public Safety
Language Translations
Translate Fairfaxcounty.gov into other languages
Interactive Mapping Services

Timeline

- ✓ 30 Day Review and Comment period (ends 8/27)
  - ✓ By general public, county agencies, external organizations
- ✓ Evaluate and Incorporate Comments into Plan
- ✓ Finalize Plan
- ✓ Prepare for presentation to the County's Board of Supervisors
- ✓ Submit for Adoption (late 2010)



Break Out Sessions

Policy and Action Recommendations

- The first six plans had >300 policy and action recommendations
- The full list can be found at: www.fairfaxcounty.gov/dpwes/watersheds/wspolicyrec.htm
- Round 2 plans do not have any p/a recommendations
- P/A recommendations are being dealt with concurrently to completing final WMPs

Recommendations may be divided into eight categories:

1. BMP/LID
2. Coordination
3. Enforcement and Inspections
4. Land-Use Policies
5. Outreach and Education
6. PFM
7. Watershed Improvements
8. Other