

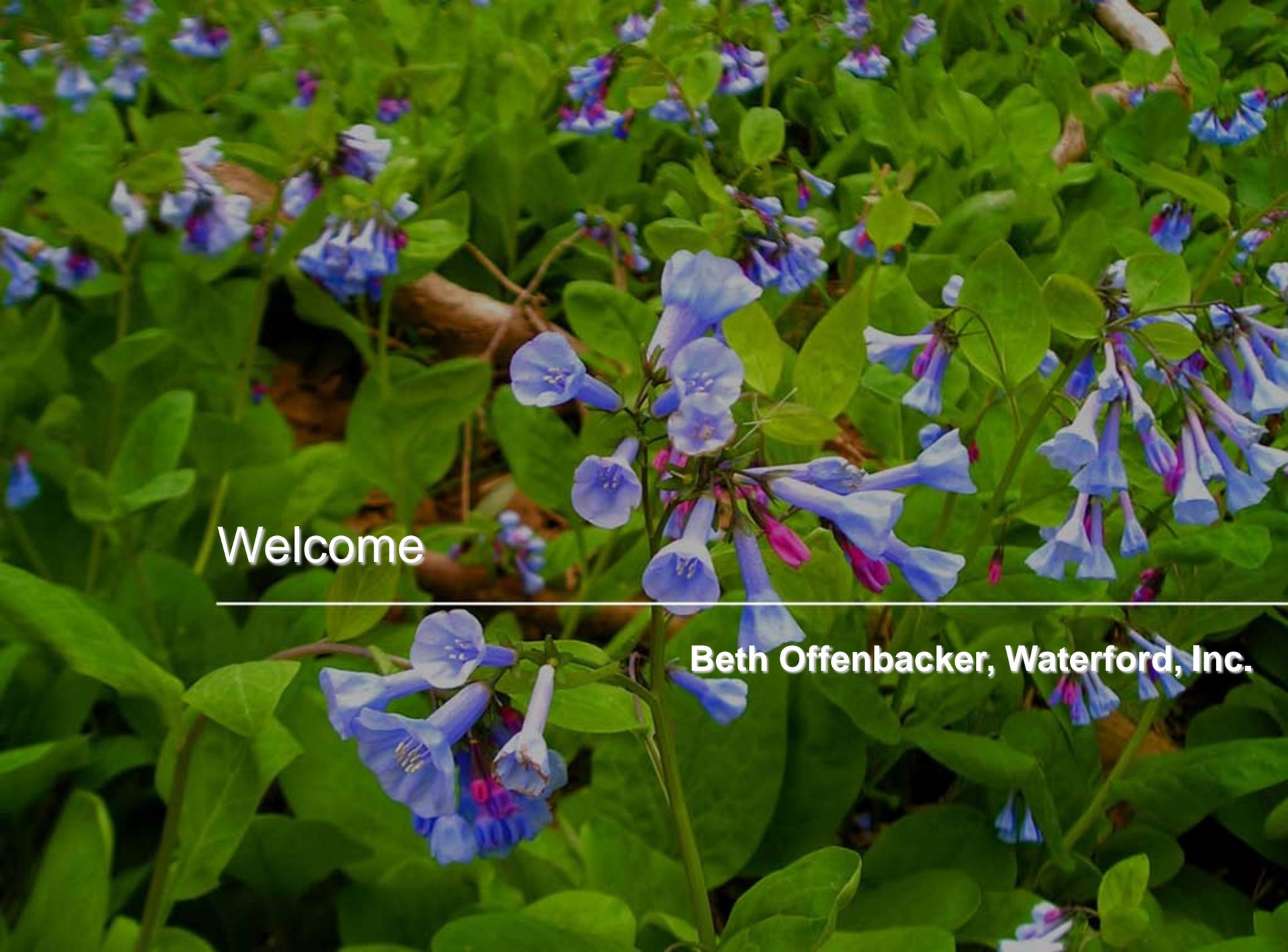
# Pohick Creek Watershed Management Plan

Watershed Advisory Group Meeting #6:  
July 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 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

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**Beth Offenbacher, Waterford, Inc.**

# Welcome and Meeting Agenda

1. Welcome and Review Agenda
2. Presentation of Draft Watershed Plan
3. Facilitated Discussion of Draft Plan
4. Next Steps: Public Forum on Tuesday, July 27
5. Wrap Up
6. Meeting Adjourns



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.

# Presentation of Draft Watershed Plan

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**Laura Chap, PBS&J**



# Development of Draft Plan

1. Watershed characterization
2. Project identification
3. Project ranking
4. Development of draft plan



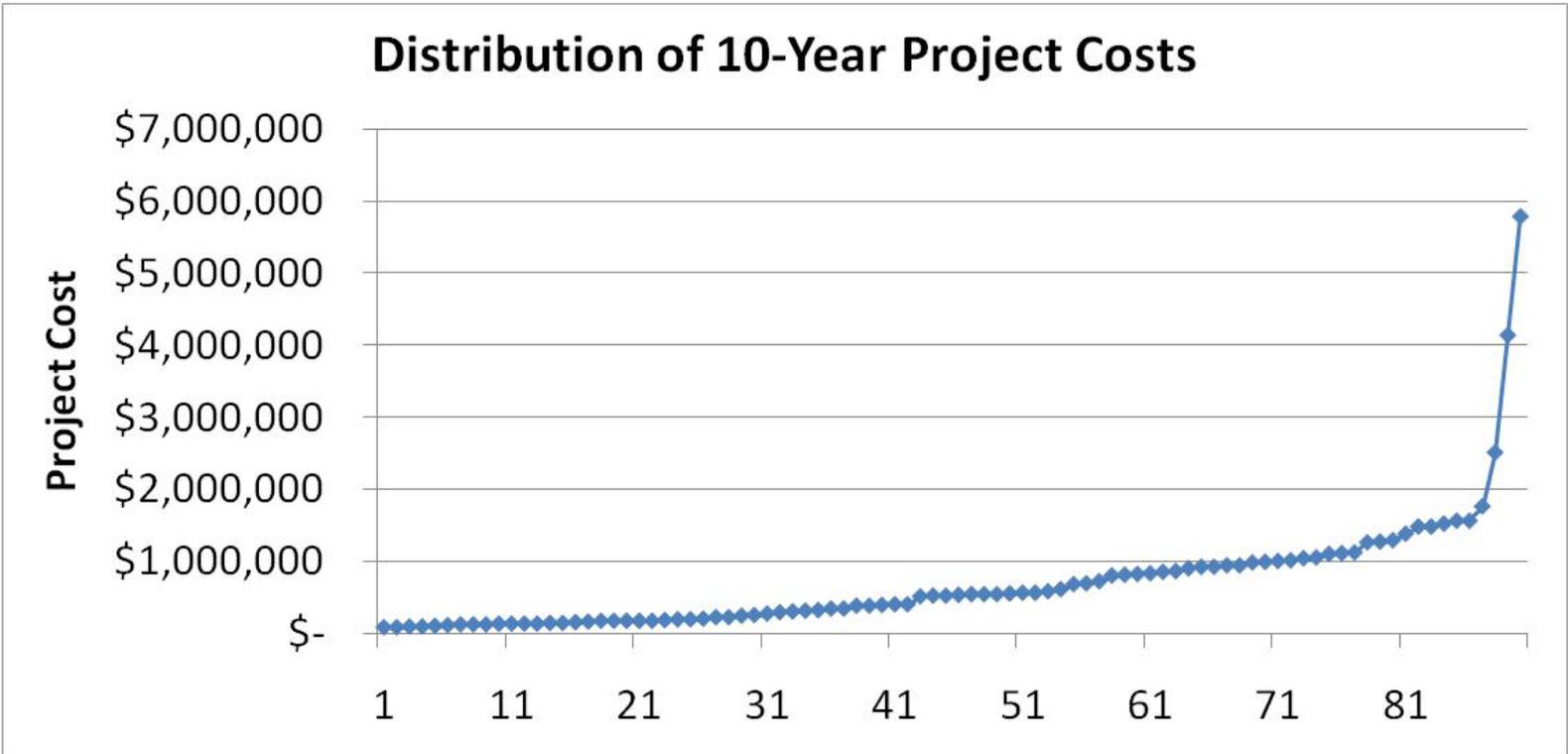
## Development of Draft Plan

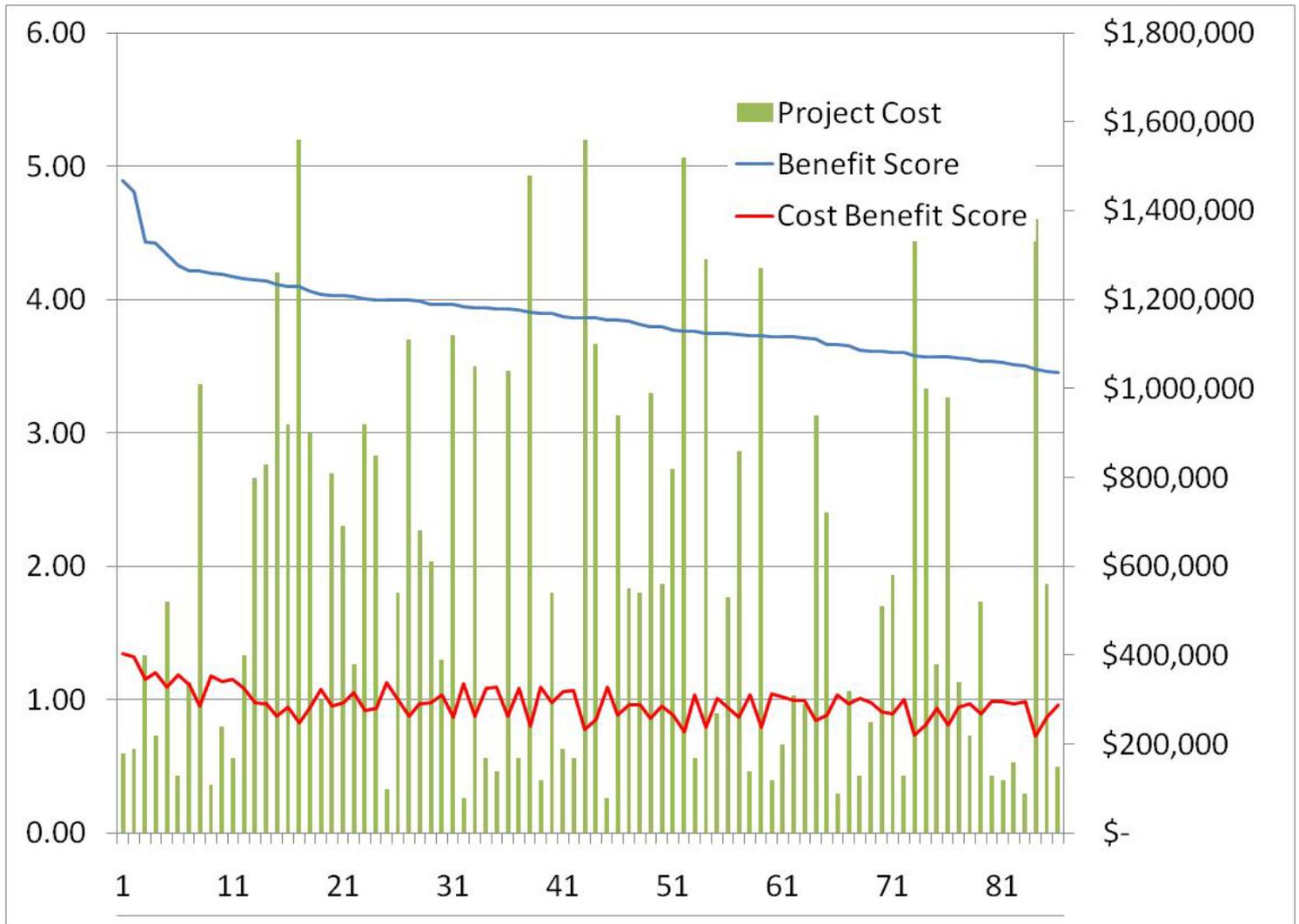
5. Review by public
6. Incorporation of changes
7. Final plan
8. Adoption by Board of Supervisors

# Update on Rankings

- Cost-benefit analysis (CBA)
- Additional modeling

# Cost-Benefit Analysis

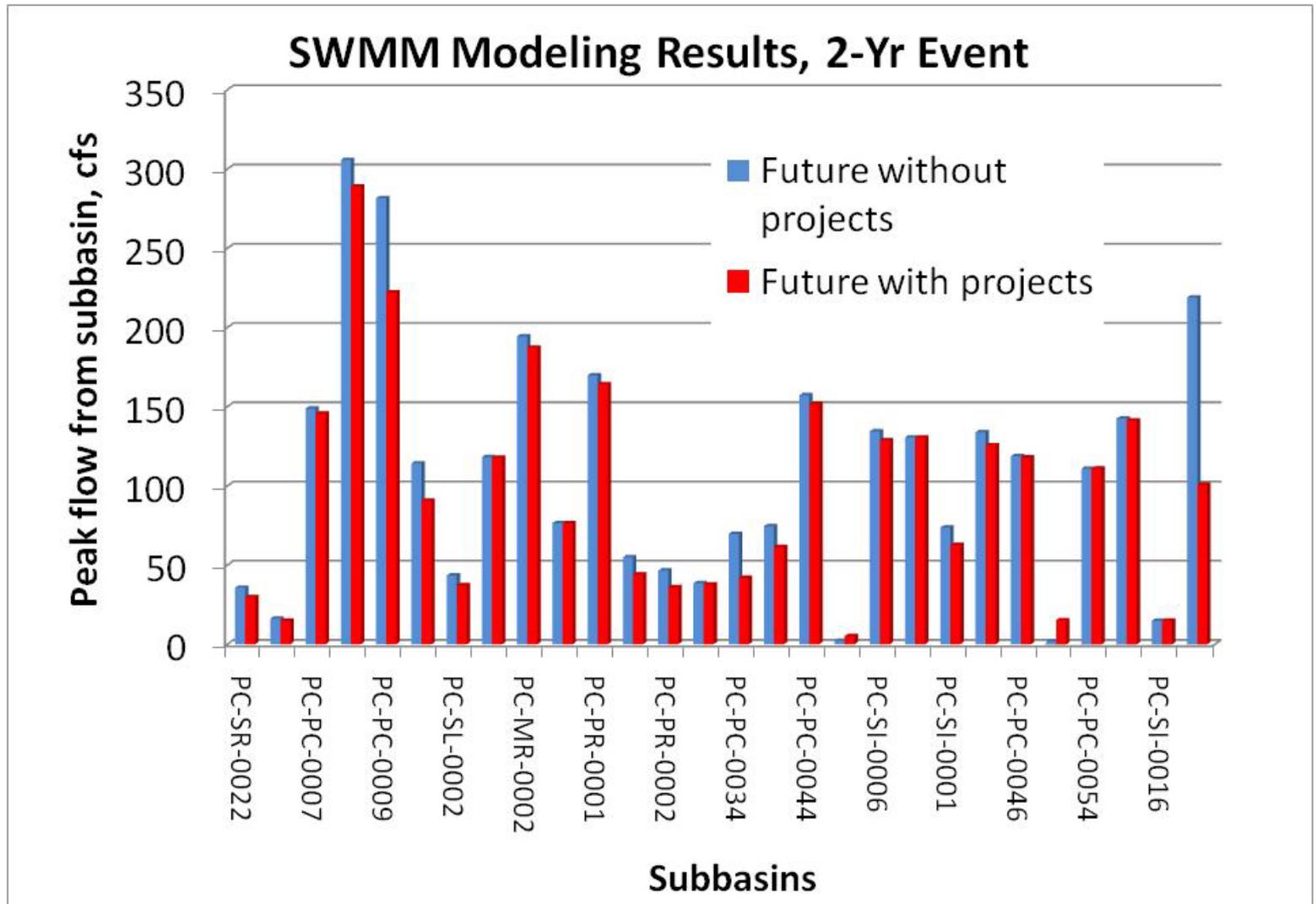






# Hydrologic Modeling

- 10-yr projects only
- 32 stormwater pond retrofits
- Modeled individually and combined





# Hydraulic Modeling

- Check the impacts of flow changes on stream elevations
- Impacts to structures, road crossings

# Hydraulic Modeling

100-yr:

Maximum increase = 0.1 ft

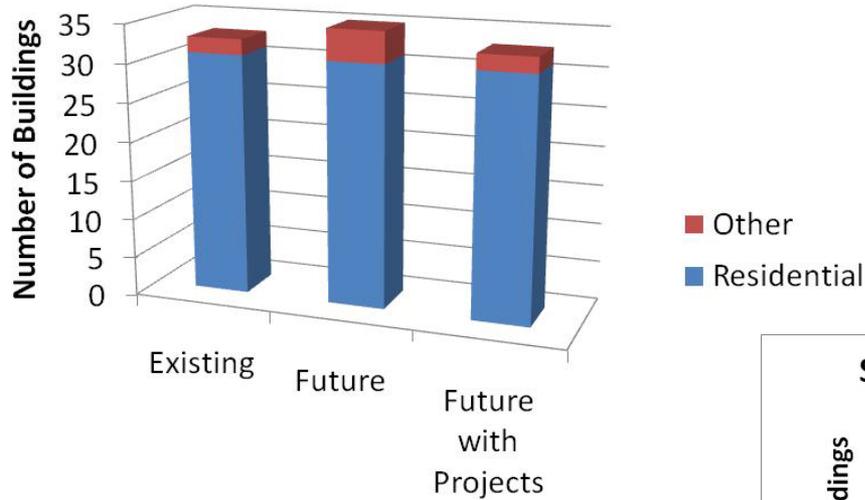
Maximum decrease = 0.3 ft

# Hydraulic Modeling

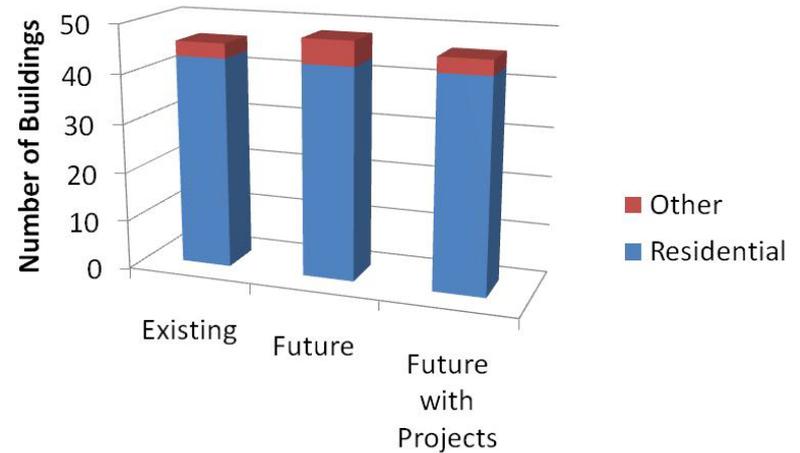
| Stream                 | Location Description  | Range of 10-Yr WSEL Increase |
|------------------------|---|------------------------------|
| South Run              | 600 ft upstream of Woods Fair Road to Barsky Court                                      | 0.1 - 0.4 ft                 |
| Sideburn Branch Trib 1 | Burke Center Regional Pond to confluence with Sideburn Branch                           | 0.1 - 1.4 ft                 |
| Rabbit Branch Trib 1   | Kings Park West Regional Pond to confluence with Rabbit Branch                          | 0.0 - 1.3 ft                 |
| Rabbit Branch          | 2000 ft downstream of Commonwealth Blvd to confluence of Trib 1                         | 0.2 - 0.4 ft                 |
| Pohick Creek           | 3000 ft downstream of Old Keene Mill Rd to 7000 ft downstream of Fairfax County Parkway | 0.1 - 0.4 ft                 |

# Hydraulic Modeling

## Structures in 100-Yr Floodplain

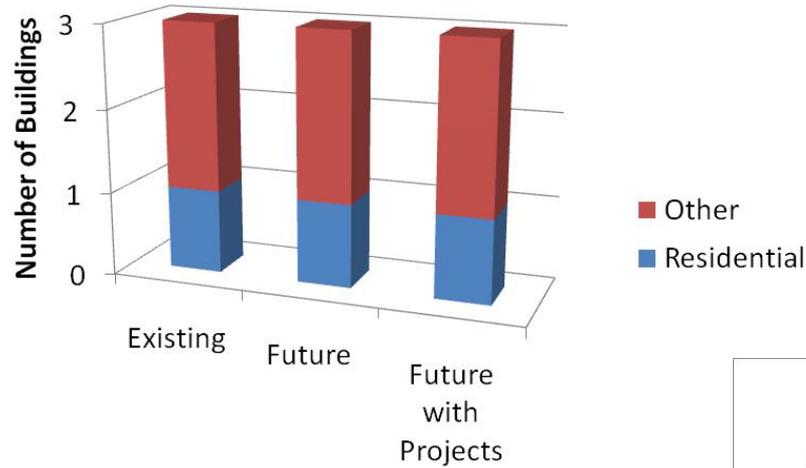


## Structures within 15 ft of 100-Yr Floodplain

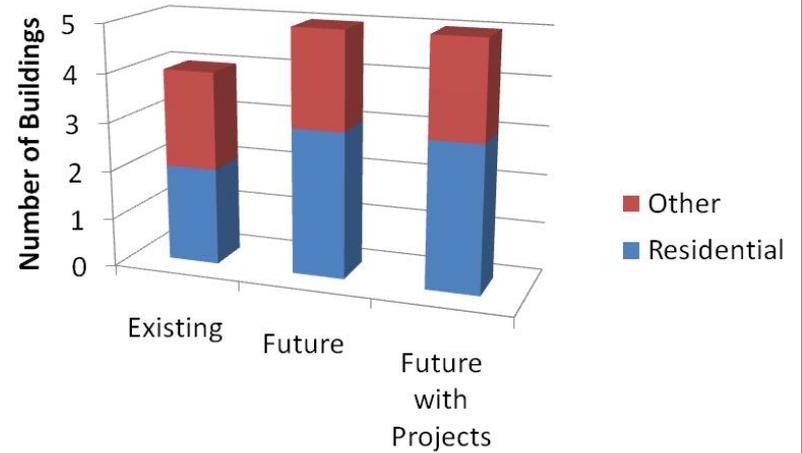


# Hydraulic Modeling

### Structures in 10-Yr Floodplain



### Structures within 15 ft of 10-Yr Floodplain



# Final (Draft) Rankings

- Contained in the WMP Appendices

*Technical Appendices, Appendix B: Technical Memo 3.4/3.5 Pohick Creek Ranking, Appendix J*

- Subject to review and comment

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Resident Guide to

# Pohick Creek Watershed Management Plan

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



FAIRF





# 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.

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 1-1: Diagram of a watershed

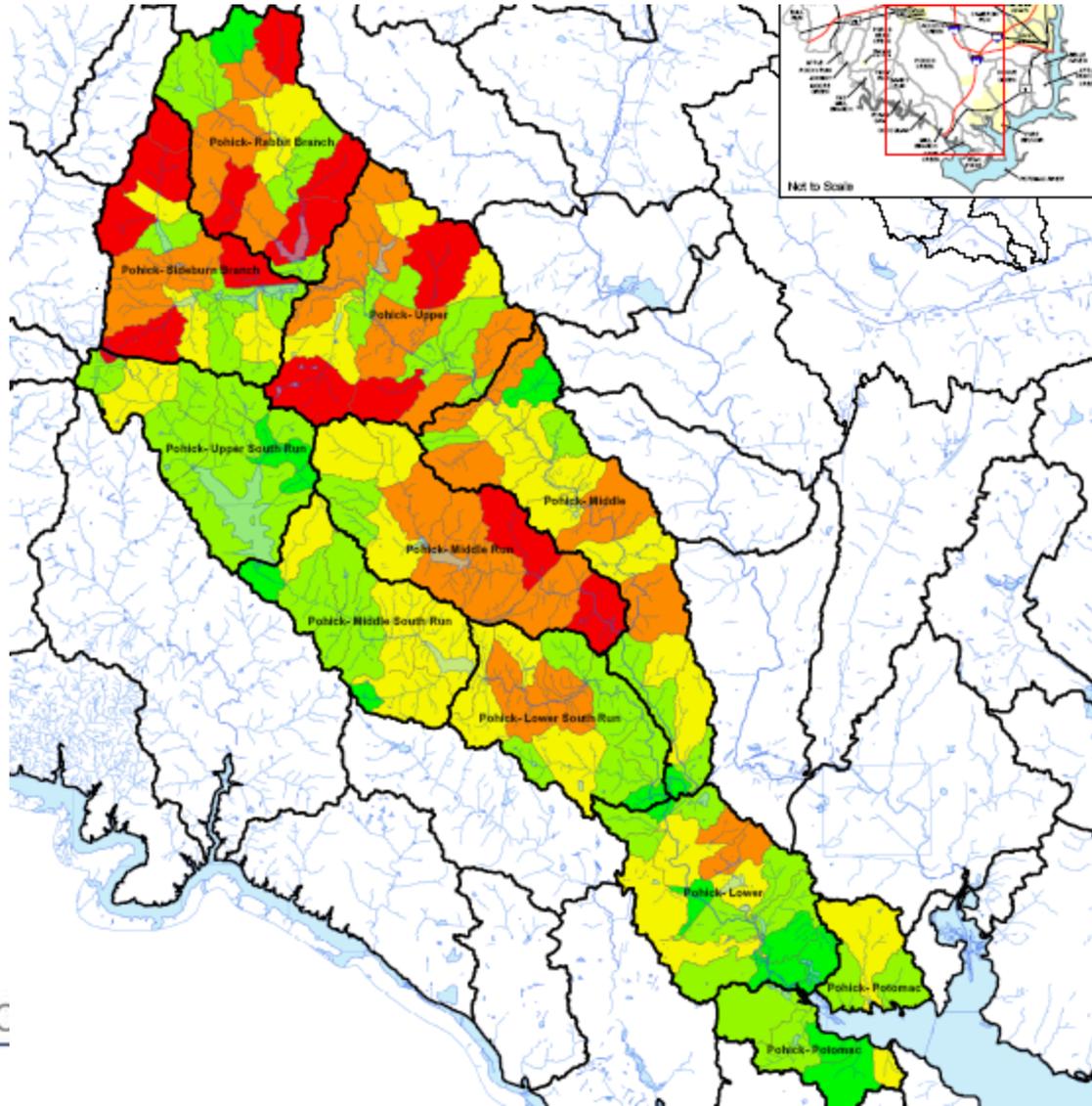
The size of a watershed can be subjective; it depends on the scale that is being considered.

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.





# Section 3



# Section 4



Figure 4-3: Parking lot pervious pavement



Figure 4-4: Parking lot bioretention filter



Figure 4-5: Bioretention section

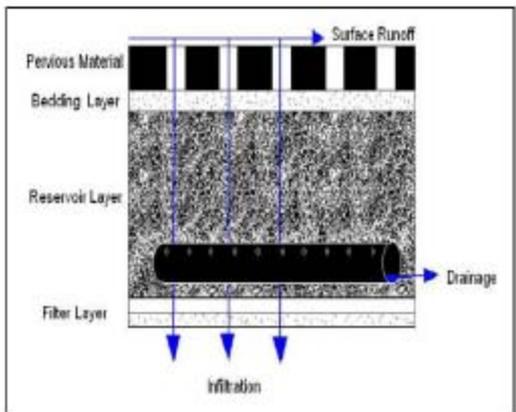
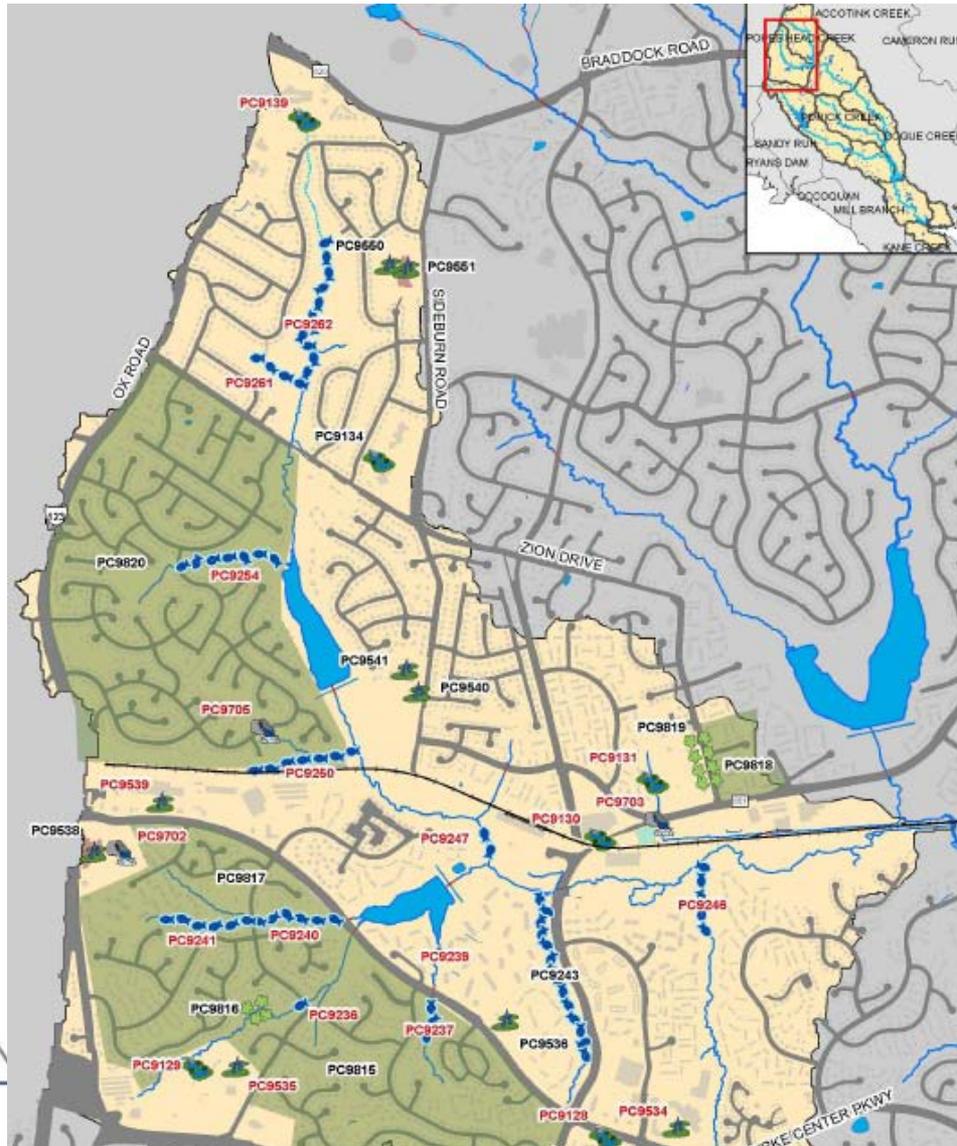


Figure 4-6: Pervious pavement section





# Section 5





## Section 5: Fact Sheets

Pohick Creek Watershed  
Lower Pohick Watershed Management Area

### PC9100 Stormwater Pond Retrofit



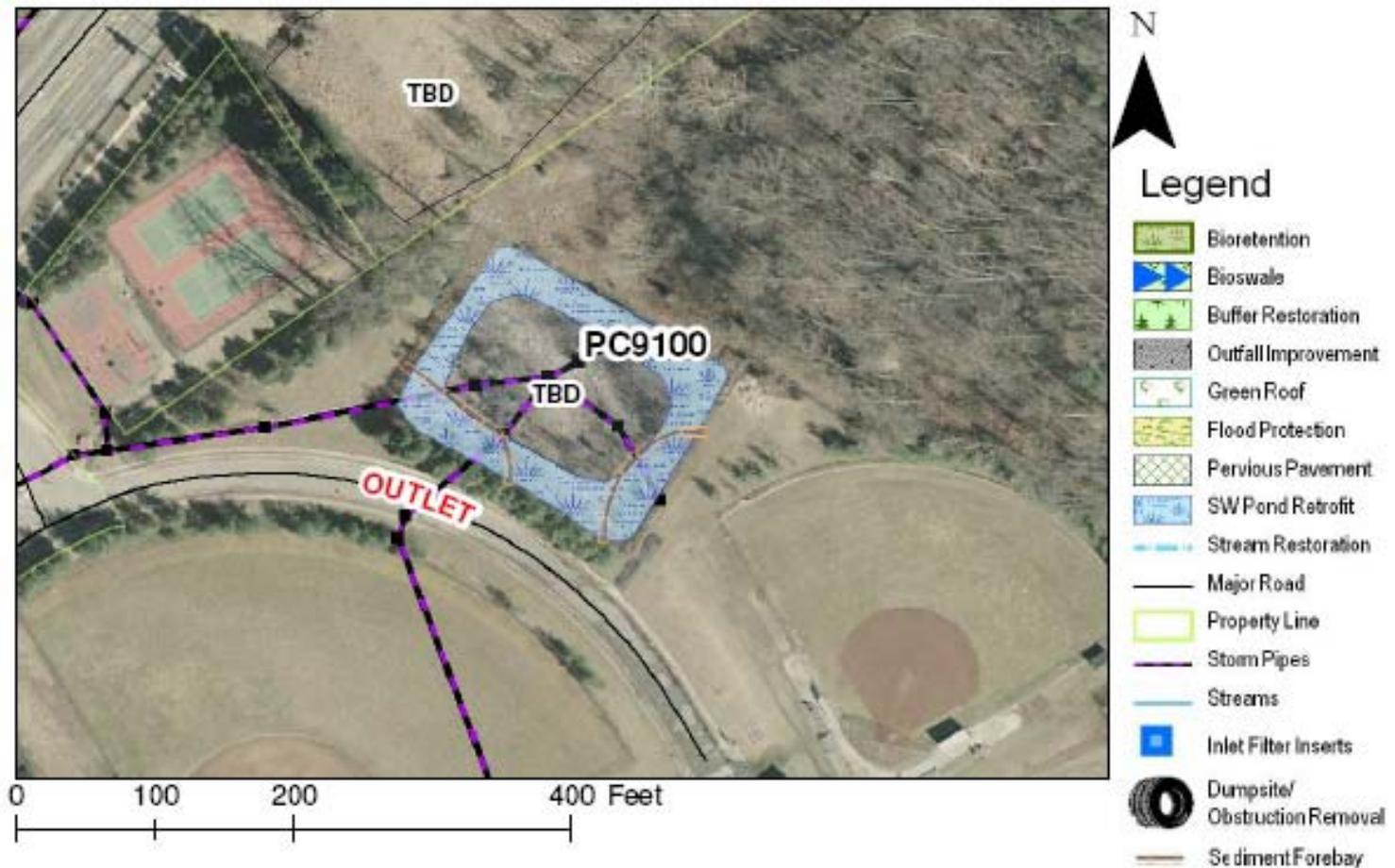
**Address:** 9515 Richmond Highway, Lorton, Virginia  
**Location:** Lorton Athletic Fields  
**Land Owner:** Public/Local – Fairfax County Government  
**PIN:** 1074 01 0031  
**Control Type:** Water quality and quantity control  
**Drainage Area:** 11.50 acres  
**Receiving Waters:** Tributary of Pohick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

0 1,000 2,000 Feet

**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 modifying 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 |                        |           |                   |         |            |           |                   |          |            |           |  |          |       |           |                        |           |
| <table border="1" style="margin-left: auto;"> <tr> <td>Base Construction Cost</td> <td>\$154,530</td> </tr> <tr> <td>Mobilization (5%)</td> <td>\$7,727</td> </tr> <tr> <td>Subtotal 1</td> <td>\$162,257</td> </tr> <tr> <td>Contingency (25%)</td> <td>\$40,564</td> </tr> <tr> <td>Subtotal 2</td> <td>\$202,821</td> </tr> <tr> <td>Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)</td> <td>\$91,269</td> </tr> <tr> <td>Total</td> <td>\$294,090</td> </tr> <tr> <td>Estimated Project Cost</td> <td>\$300,000</td> </tr> </table> |           |       |           |          | 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 |
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| Mobilization (5%)   | \$7,727   |       |           |          |                        |           |                   |         |            |           |                   |          |            |           |  |          |       |           |                        |           |
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| 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*

A close-up photograph of a dense field of blue and purple flowers, likely 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.

## Roundtable Discussion

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**Beth Offenbacher, Waterford Inc.**

A close-up photograph of a dense field of blue and purple flowers, likely 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.

**Next Steps**

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**Laura Chap, PBS&J**

# July 27 Draft Plan Forum

- **Meeting Agenda**
  - Presentation of Draft Watershed Plan
  - Public Involvement Process, Including WAG's Role
  - Stations
- **Comments**
  - At Workshop
  - Online Commenting
  - Revising the Draft Plan
- **Your Role as a WAG Member**
  - Before
    - Encourage Participation, Commenting
  - Attend the July 27 Workshop
  - After
    - Commenting