Pohick Creek Watershed Management Plan

Watershed Advisory Group Meeting #1: Orientation
December 9, 2008

Fairfax County Department of Public Works and Environmental Services

Presented by Watershed Planning & Assessment Branch, Stormwater Management

Welcome and Introductions

Agenda

1. Welcome and Self-Introductions
2. Introduction and Expectations for WAG Meetings
3. Introduction to Watershed Planning Process and Presentation of Policy Issue
4. Timeframe of Watershed Plan and WAG Processes
5. Q&A/Discussion

BREAK

6. Presentation of WMP Goals and Objectives
7. Next Steps
8. Q&A/Discussion
9. Meeting Adjournment

Introduction and Expectations for WAG Meetings

Beth Offenbacker, Waterford Inc.

Public Involvement Process

- Introductory and Issues Scoping Forum
  - Solicit input on issues
  - 45 day comment period
- Watershed Advisory Group (WAG)
  - Approximately 20 individuals
  - Representing 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)

WAG Responsibilities

1. Advise the project team on the draft and final watershed plan
2. Share information about the watershed plan and process with constituency group(s)
3. Conduct outreach to raise awareness
4. Attend WAG meetings & public workshops

***Estimated time commitment**: <8 hours per month*

WAG Member Roles

1. Advisor on community outreach
2. Liaison to constituency groups
3. Advisor on key watershed issues
4. Make suggestions on public education materials
5. Offer ideas and recommendations
6. Serve as “brain trust” for watershed plan

WAG Ground Rules

- One person represents each organization
- The group will operate through a ‘consensus’ based process
- All meetings of the WAG are open to the public to observe
- Comments are offered as individuals and are exploratory
- Meeting notes will not attribute comments to specific individuals
- Show your respect for group members by listening and taking everyone's ideas seriously

WAG Ground Rules

- Expect, respect, and accept different interests, perspectives, and opinions
- Participate actively - share all relevant information, ideas, and concerns
- Keep the discussion focused on the task or issue at hand. You can help keep the discussion focused by only one person talking at a time, and avoiding side conversations and interruptions
- Be fully present, please turn off or put on vibrate your cell phones, Blackberries, and WiFi, and do not multi-task.

Watershed Program Background, Purpose & Policy Recommendation Process

Fred Rose, Fairfax County

Why Develop Watershed Plans?

- Current Watershed Master Plan is over 25 years old
  - Conditions have changed – over 80% built-out
  - Need for identification of new capital projects
  - Need for identify opportunities for non-structural measures
- Community demands improved stream conditions – Quality of Life Issues
- Need for increased community collaboration and outreach
- Keep pace with changing Regulatory Requirements
  - Meeting the state's commitment of the Chesapeake Bay 2000 Agreement, 2/3 of watershed to have plans developed by 2010
  - NPDES/MS4 permit requirements
  - Development and implementation of TMDLs for impaired water bodies
- Identify needed Policy, ordinance and PFM requirement changes
  - Regional ponds versus onsite controls
  - Impacts of infill development

Early History

- Comprehensive watershed master plans were completed in late 1970's
- These plans primarily addressed conditions at the time:
  - Flooding
  - Stream erosion
  - Predicted the impact of the 2000 built condition as Future Basin Plans

Early History

- The Occoquan “down-zoned” case in 1982 resulted in preservation of low density development (1 dwelling per 5 acres) for significant areas in the Occoquan watershed within the county
- Best Management Practices (BMPs) were adopted in PFM for Occoquan area – 50% removal of phosphorus (P) required
- The Regional Pond Plan was developed and approved by the Board 1989 – approximately 150 facilities were sited mainly in western parts of county
- Pro-Rata Share program adopted in 1991 – to provide funding for capital improvements for drainage problems on watershed basis. Regional ponds are included as projects funded by pro-rata.

The Last Decade

- Chesapeake Bay Preservation Act was adopted in 1993:
  - led to county's Chesapeake Bay Preservation Ordinance featuring Resource Protection Areas (RPA)
  - PFM requirement for BMPs for all areas outside the Occoquan watershed to achieve 40% P removal for new developments, 10% for redevelopment
- Application and receipt of first VPDES/MS4 Permit in 1997
- Failed attempt to adopt a Stormwater Utility in 1998
- Implementation of a Stream Protection Strategy (SPS) started in 1998

The Last Decade

- SPS Baseline Study completed in 2000, published January 2001 concluded that over 70% of streams were degraded, some key recommendations were:
  - Develop more detailed watershed plans for protection and restoration of streams
  - Continue annual monitoring to determine trends
  - Support ongoing federal, state and other county environmental initiatives
  - Establish working partnerships with residents to support environmental stewardship efforts

Watershed Planning Program Timeline

- Series of stakeholder meetings held between 2000-2001 to jump-start the development of watershed plans
- Options were decided on regarding the county-wide stream physical assessment (SPA) June 2001- CH2MHill was selected to conduct county-wide SPA
- Renewal of MS4 Permit in January 2002 - led to significant increases in program requirements including need to develop watershed plans
- County-wide modeling standards and guidelines for Public Involvement (PI) were developed between 2002 and 2003

Watershed Planning Program Timeline

- 1st Watershed plan commenced for Little Hunting Creek in March 2003
- 2nd watershed plan for Popes Head Creek commenced in July 2003 – 3 others followed:
  - Cameron Run
  - Cub Run/Bull Run
  - Difficult Run
- 6th watershed plan for Middle Potomac Basins commenced in October 2004
- 1st watershed plan, Little Hunting Creek was adopted by Board Feb. 2005

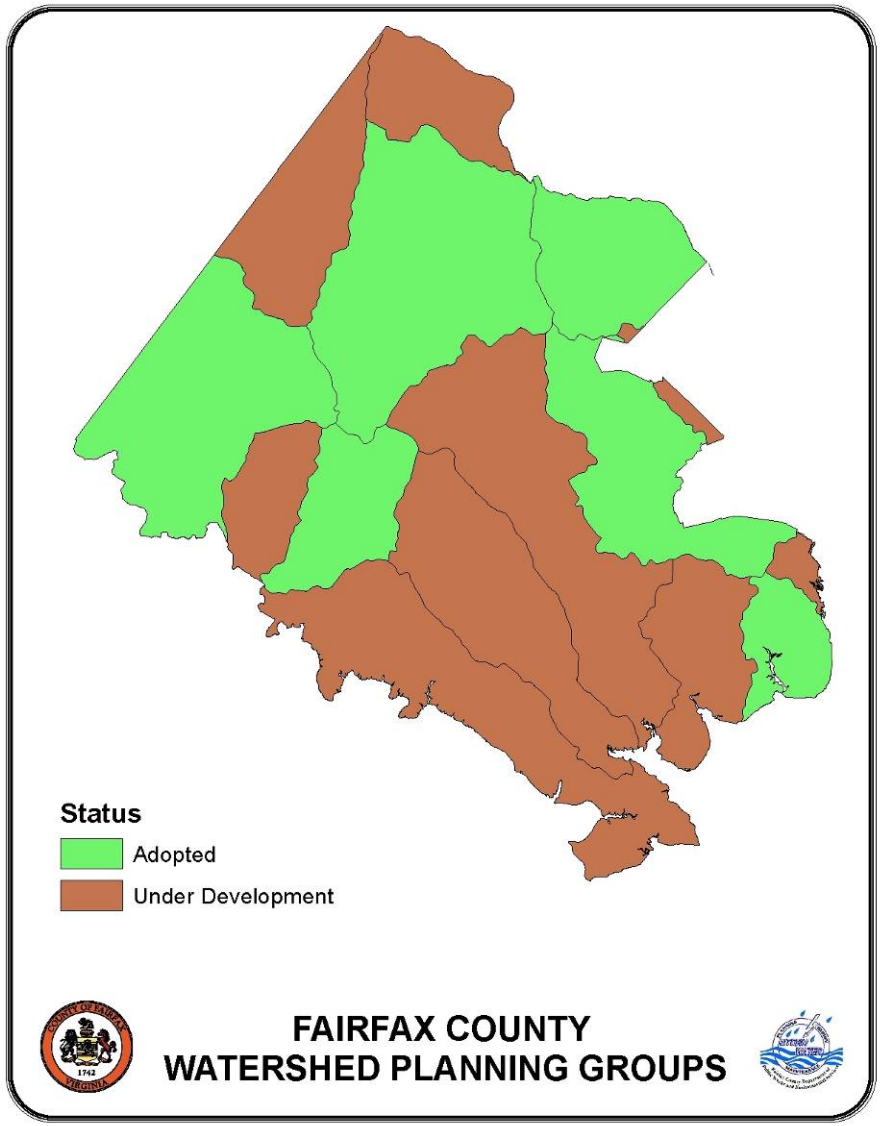
Watershed Planning Program Timeline

- Stormwater Needs Assessment study and advisory committee activities were conducted between May 2004 – March 2005
- Watershed planning program evaluation by CBI completed in July 2005 – resulted in streamlining of PI process for future plans
- April 2005 Board adopted one-penny real estate tax revenue dedication for stormwater programs including implementation of watershed plan projects – average $20M/year for last 4 years

Watershed Planning Program Timeline

- 2nd round (7 plans/19watersheds) commenced with Tetra Tech overall watershed modeling work in Dec 2006
- 2nd round plans are being done concurrently rather than sequentially
- Middle Potomac plan adopted by Board May 2008
- To date, plans are completed for approximately 50% of county land area – 6 plans/11 watersheds

Watershed Planning



Watershed Planning Program Timeline

- Watershed Consultants for 2nd round have completed existing condition watershed characterization leading to workbooks and the Issues Scoping Forums
- Development underway of a Watershed Data Management System to house data from all plans
- A county-wide prioritization system being developed to aid implementation through annual budget process

Policy Recommendations Process

~300 policy recommendations were taken from the six completed watershed management plans and broken into eight categories.

BMP/LIDs	Interagency Coordination	Enforcement and Inspection	Land-Use Policies
Outreach and Education	PFM Modifications	Watershed Improvements	Other

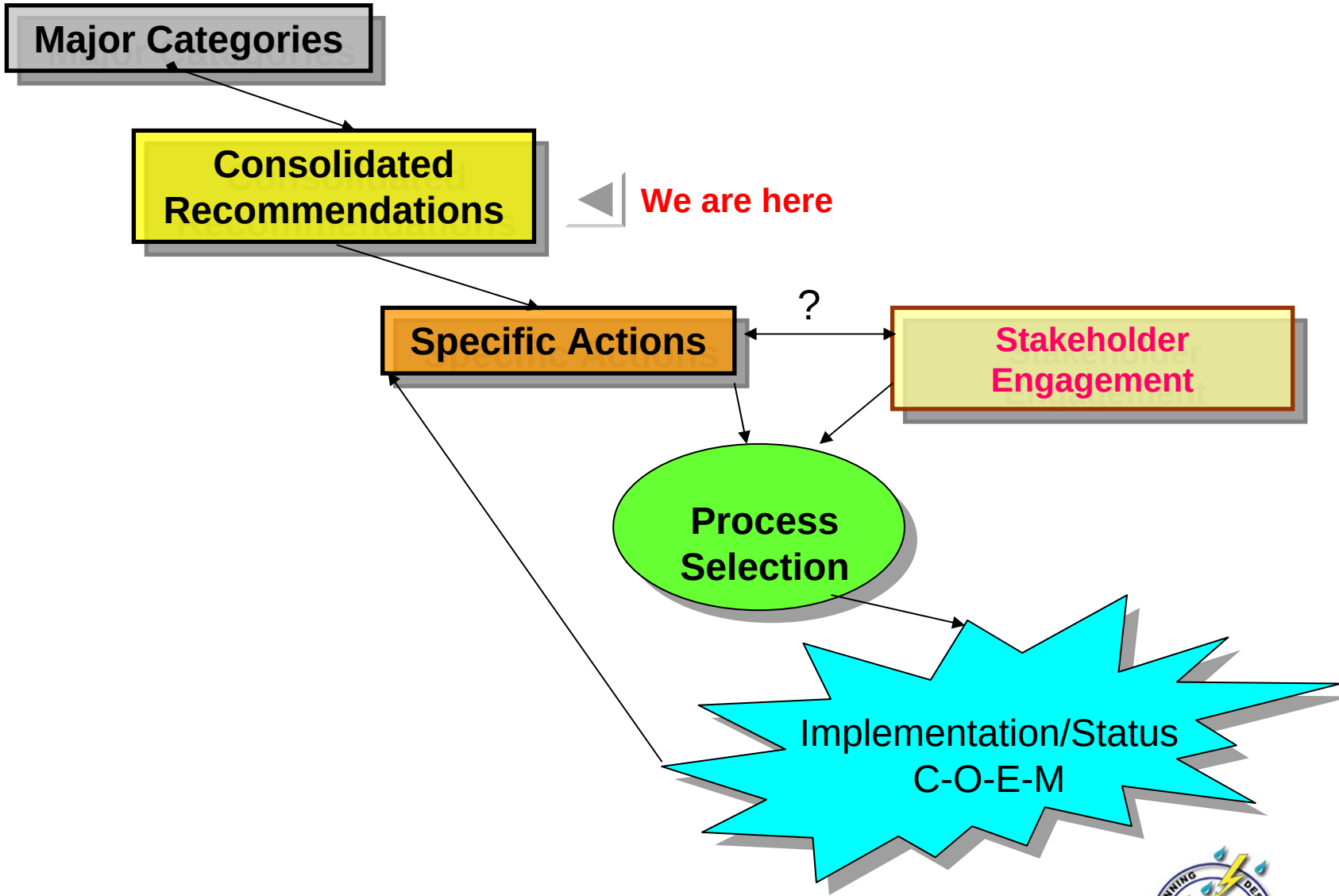
The recommendation list from each category were further consolidated into general themes

Consolidated Recommendations Example

Originally 28 BMP/LID recommendations – consolidated into 8

Recommendation	Action	Process	Status
Study BMP effectiveness	Implemented	NA	Monitor
Require developers to use LID to max extent possible	TBD	TBD	Ongoing
Require public facilities to use LID to max extent possible	TBD	TBD	Ongoing
Install BMPs to reduce the amount of N and P in facilities that do not have WQ controls	TBD	TBD	Ongoing
Allow LID on private lots	TBD	TBD	Ongoing
Update LID list in PFM	TBD	TBD	Ongoing
Standardize STW credits for innovative design	TBD	TBD	Ongoing
Retrofit existing STW facilities	Implemented	NA	Monitor

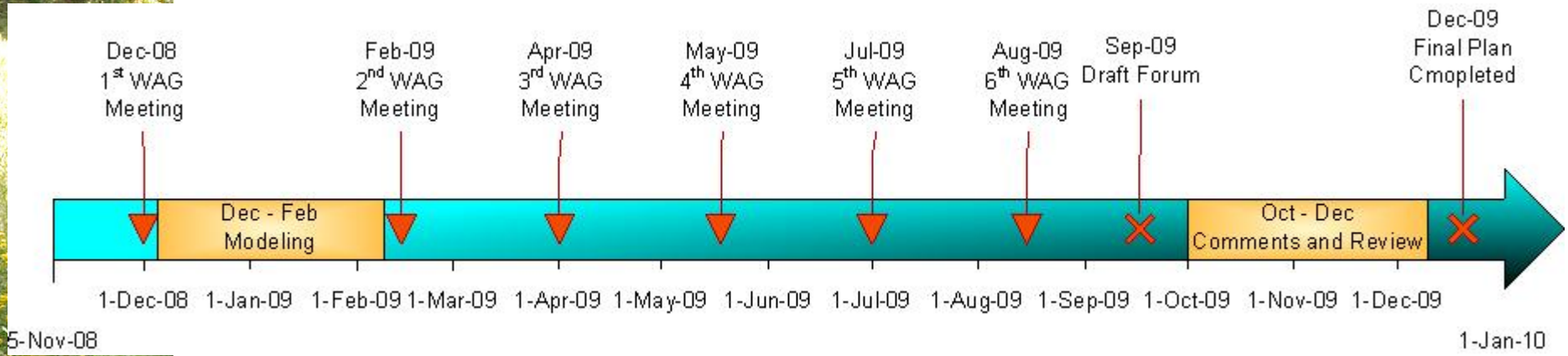
Policy Recommendations Process



Timeframe of Watershed Plan and WAG Involvement Processes

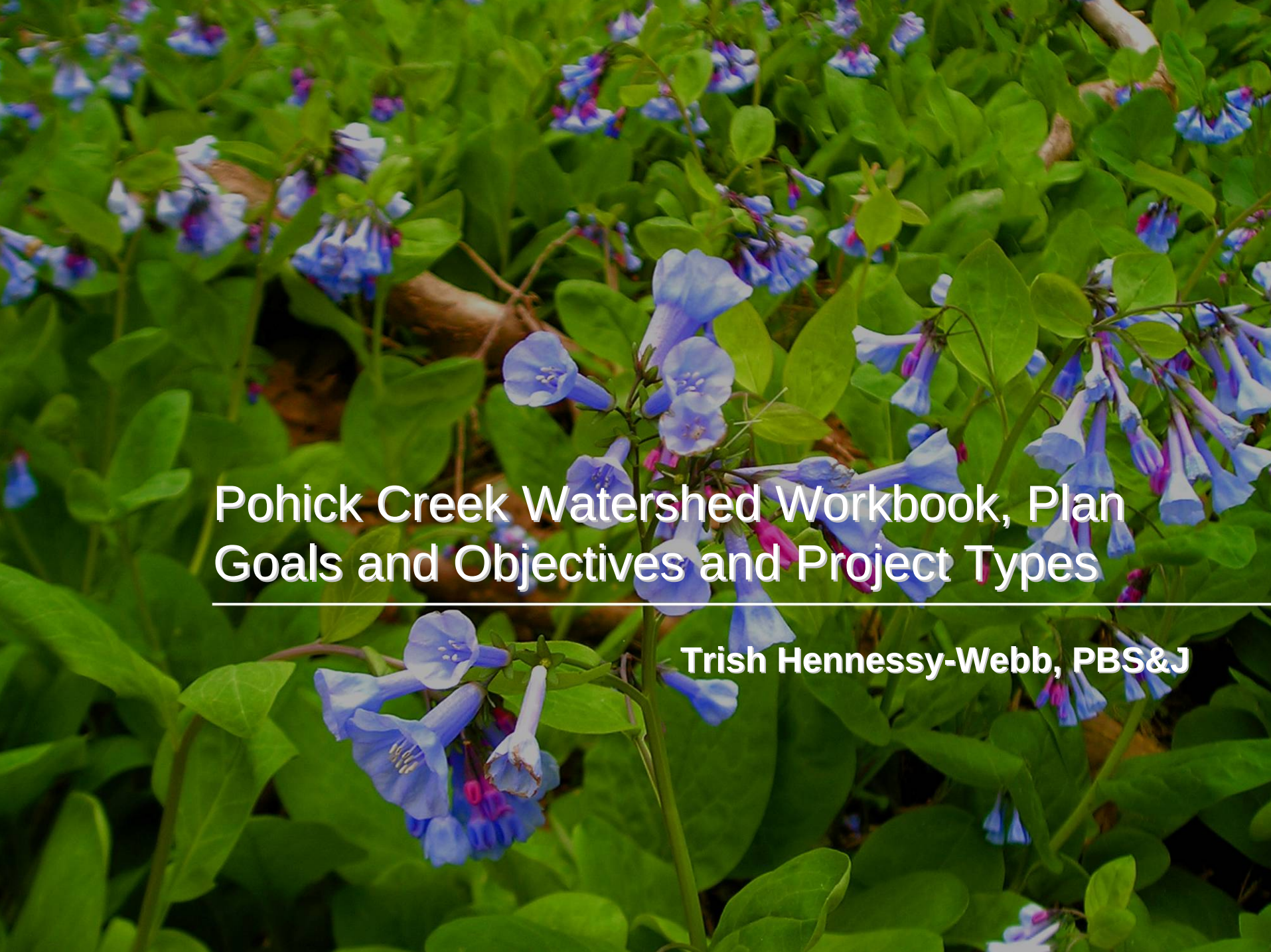
Shannon Curtis, Fairfax County

General Timeline



1. WAG #1: Orientation to process
2. WAG #2: Review Project Types and Restoration Strategies
3. WAG #3: Prioritize & Evaluate Proposed Projects
4. WAG #4: Prioritize & Evaluate Proposed Projects (cont'd)
5. WAG #5: Prioritize & Evaluate Proposed Projects (cont'd)
6. WAG #6: Review Draft Plan & Comment
7. Draft Plan Public Forum/ Public Comment period (30 days)
8. Finalize Plan and Submit to BOS for Adoption

Questions & Answers - Discussion



Pohick Creek Watershed Workbook, Plan Goals and Objectives and Project Types

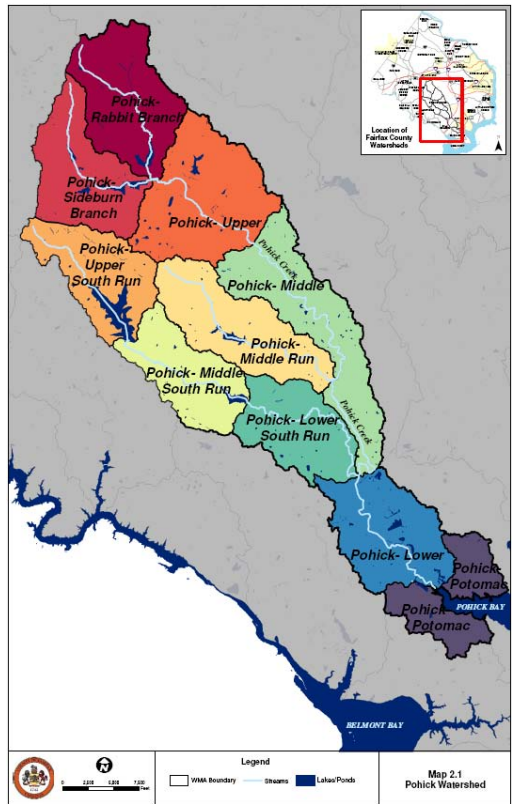
Trish Hennessy-Webb, PBS&J

Pohick Creek
Watershed Management Plan

- Brief overview of Pohick Creek Watershed
- Description of Pohick Creek Draft Workbook
- Status of Watershed Management Plan
- Countywide Goals & Objectives
- Types of Projects found in a Watershed Management Plan
- Timeline for Implementation of Watershed Management Plan

Pohick Creek Watershed - Quick Facts

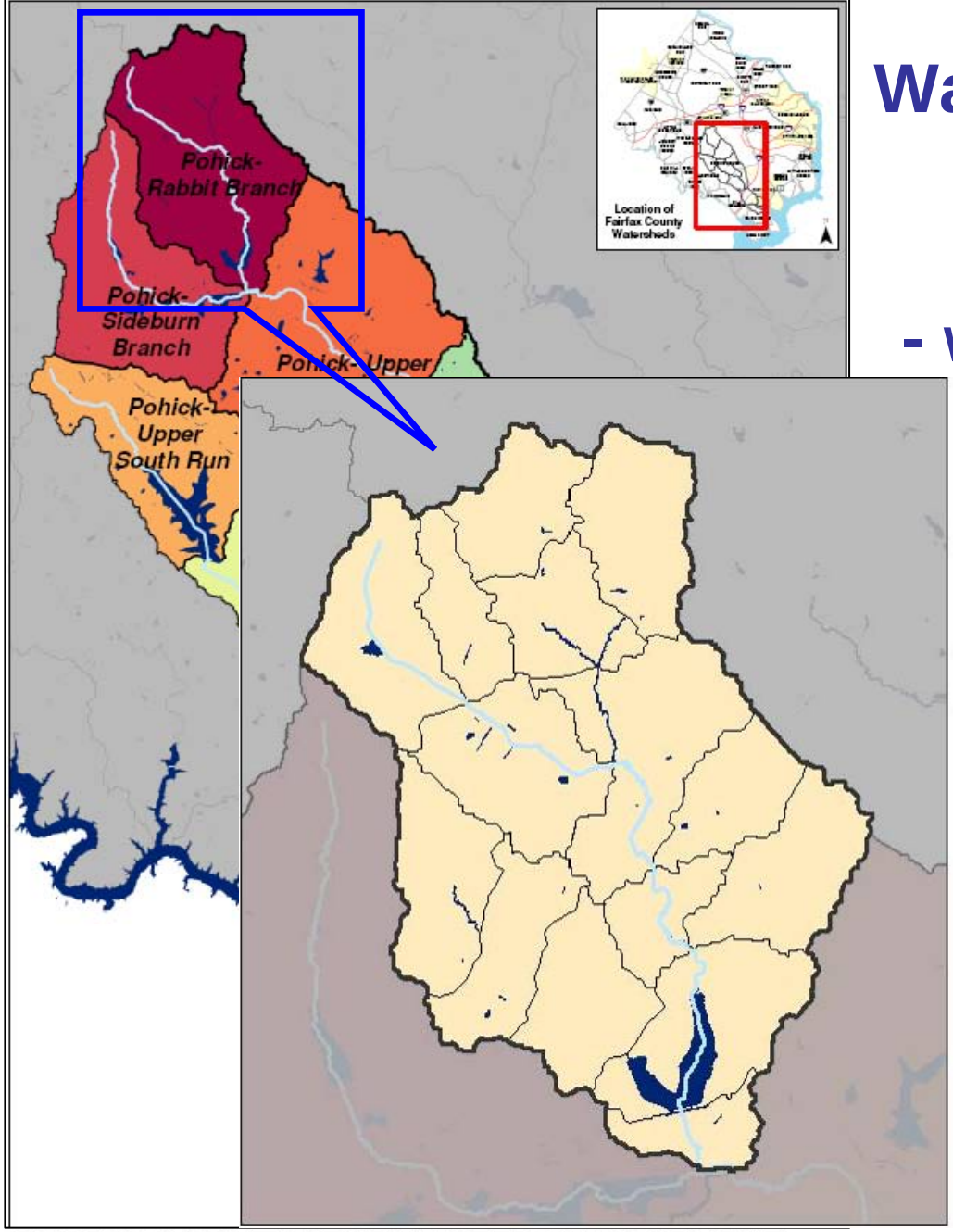
- Pohick Creek – 36 mi^2 (9%)
  - One of the largest watersheds
  - Majority land is forested or field/pasture
  - Single family detached
  - Some commercial/industrial
- 180 miles of streams
  - 13 named tributaries
    - Pohick Creek
    - Middle Run
    - South Run
  - Multiple Regional Ponds
  - 10 Watershed Management Areas
  - >135 Subwatersheds
- Unique Features
  - 6 Flood Control Impoundments (PL-566)
  - City of Fairfax
  - Fort Belvoir
  - Laurel Hill (formally Lorton Correctional Facility)



Watershed Planning Study Units:

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

- Subwatershed
(100-300 acres)

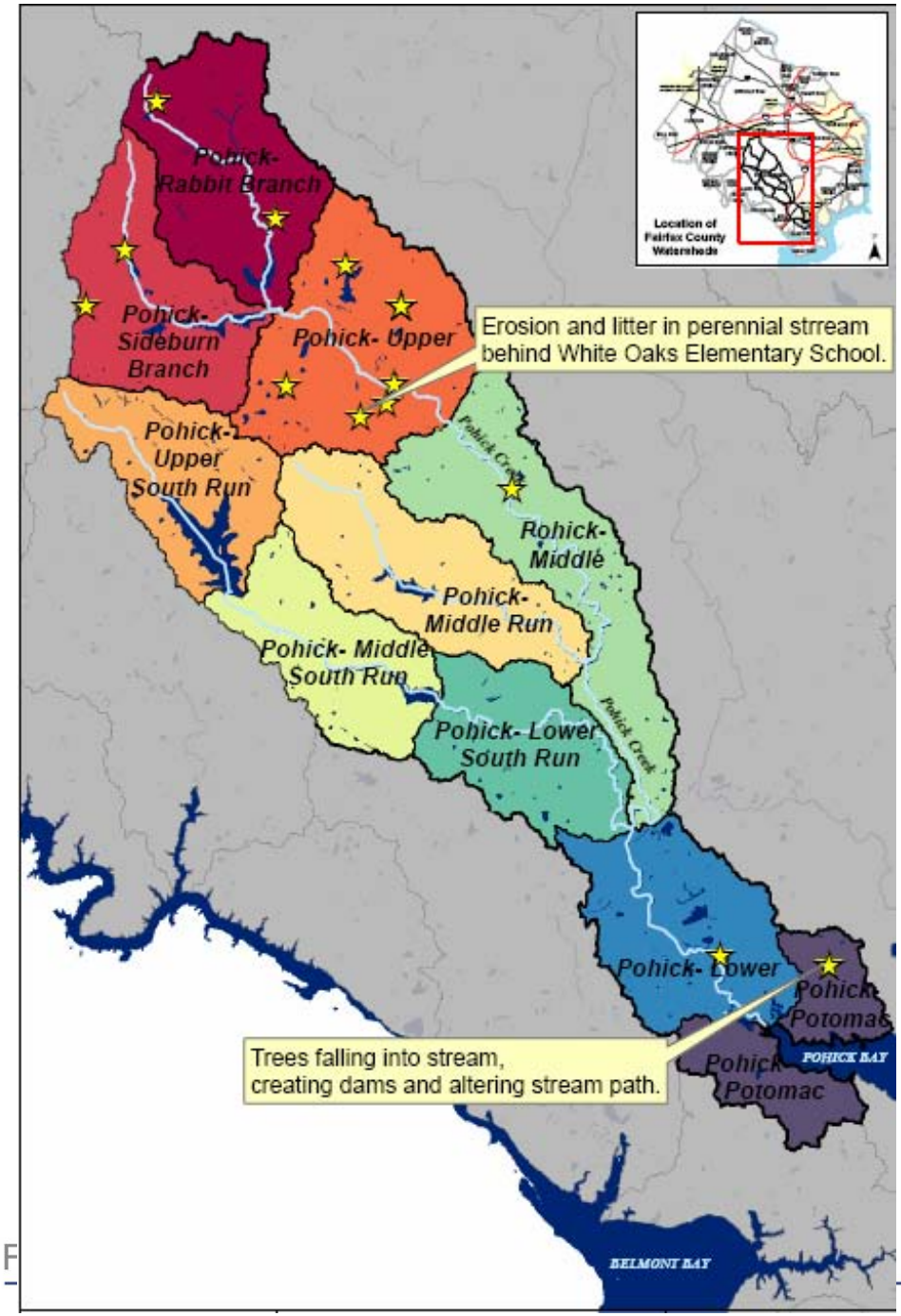


Watershed Workbook Layout

- Chapter 1: Overall Pohick Creek:
  - Review /Synthesis of Previous Studies and Data Compilation
    - Reports: Fairfax County Stream Protection Strategy Baseline Study
    - GIS Data: Land Use
    - Regulatory Requirements: Chesapeake Bay Program
- Chapter 2: Characterization
  - Detailed Watershed Management Area characterization
    - *Current Conditions*
    - *Land Use*
    - *Stormwater Infrastructure*
    - *Stream Conditions*
    - *Computer Modeling*
    - *Subwatershed Ranking / Prioritization*
- *Chapter 3 Restoration Strategies (future)*
  - *Development of Candidate Projects*

Watershed Management Plan Status

- Public meeting held October 15, 2008
  - Presented Draft Workbook to audience
  - Breakout Groups – public input/comments
- Draft workbook posted to County Website
  - http://www.fairfaxcounty.gov/dpwes/watersheds/pohickcreek.htm
- Public Comment Period closed Nov 29, 2008
- Next Steps:
  - Identification of Pohick Creek watershed Workbook Advisory Group (WAG) members
  - Discussion of County Goals & Objectives
  - Restoration Strategies presented & developed
  - Project evaluations/prioritizations



Public Comments

Types Captured:

- Flooding/ Erosion
- Impoundments
- Indicators
- Stream Degradation
- Trash
- Modeling
- Land Use
- Nutrient Management
- Workbook Content

Countywide Watershed Planning Goals & Objectives

Purpose: To provide a systematic means of planning management implementation that will achieve goals & objectives *countywide*

Goals:

1. Improve & 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

Objectives:

- Hydrology
- Habitat
- Stream Water Quality
- Drinking Water Quality
- Stewardship

Types of Projects Found in a Watershed Management Plan

- ID candidate projects that will meet county objectives
- **Structural:**
  - Retrofits
    - Rehabilitation of existing SWM to enhance the water quantity/quality treatment, natural habitat and aesthetics
    - Use of shallow wetlands, increase groundwater infiltration
    - Culvert retrofits for undersized pipes
  - Source Controls
    - New Ponds
    - Regional Pond Alternatives
  - Stabilization
    - Stream restoration projects
  - Low Impact Development (LID)
    - Bio-retention basin (rain garden)
    - Green Roof
    - Permeable pavers
    - Grassy swales

Regional Pond Alternatives

Projects to retrofit areas lacking adequate SWM – in lieu of large regional pond

- Conversion of existing quantity controls to water quality BMPs

- New structures including ponds, wetlands, LIDs, and outfall treatments

SWM Retrofits

- Conversion of existing STW management facilities to improve water quantity and quality controls
- New structures including ponds, wetlands, culvert retrofits, and outfall treatments

Stream Restoration

In-stream projects, including channel stabilization and channel restoration

Culvert Retrofits

Projects designed to reduce the frequency of flooding of culverts and bridges

- Raising the roadbed
- Rebuilding culvert
- Replacing damaged culverts
- Rebuilding bridges to carry larger flows

Low Impact Development (LID) Techniques

Green Rooftops

Filterra Box

Parking lot biofilter

Rain Barrel

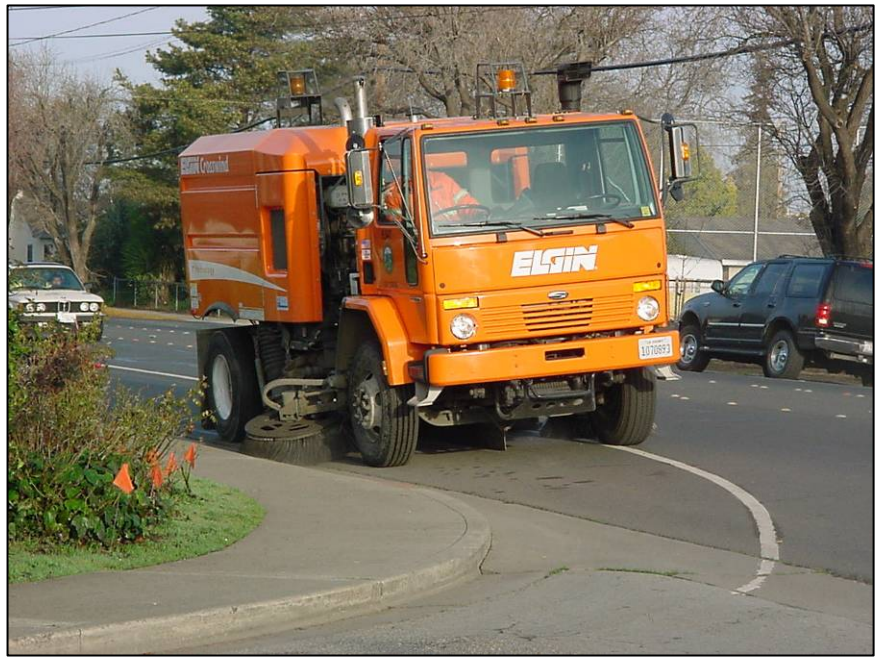
Downspout filtration

Porous pavers

Types of Projects Found in a Watershed Management Plan

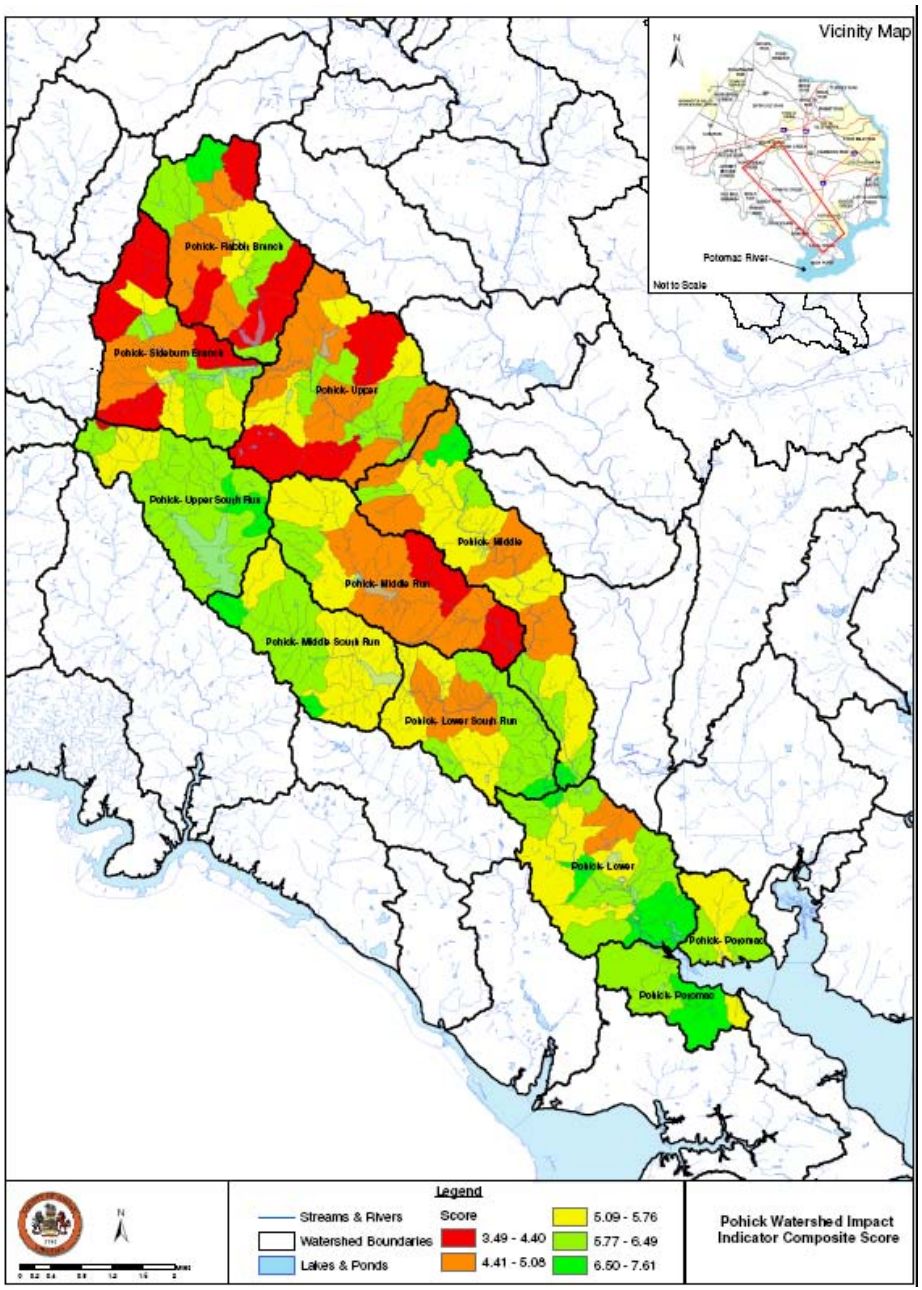
- ID candidate projects that will meet county objectives
- **Non-Structural:**
  - Planting/restoring stream buffers (riparian vegetation)
  - Public Education
    - Individuals: lawn care fertilizing, car washing
    - Residents: rainwater harvesting and low impact activities
    - Business: turf management practices for golf courses
  - Street Sweeping
    - Trash Removal
  - Recommend activities for non-profit & community groups
    - “Friends of” groups
    - Litter pick ups, buffer plantings, storm drain stenciling, etc..
  - Reduce and disconnect impervious surfaces

Non-structural Projects



Non-structural Projects

Adopt A Stream
DCR
Partially funded by the Litter Control and Recycling Fund



Sub-watershed Ranking

Tied to Co. goals and objectives

- **Impact**: diagnostic measures of environmental conditions
- **Source**: quantifies the presence of stressors or pollutant sources
- **Programmatic**: reports the location or benefits of SWM facilities or programs

Process for Project Development

Three-Step Iterative Process:

1. Identify candidate restoration strategies (projects)
   - PC watershed team, public comments, WAG members
2. Screen initial project list
   - WAG Members
3. Further evaluate and rank projects into categories of implementation (WAG members and PC watershed team):
   - 10 Year implementation projects
     - Field visit
     - 10% project design which will provide a conceptual scope of the project
     - Project Feasibility analysis performed
   - 25 Year implementation projects
     - Long term projects unable to complete within 10 yr program
   - Immediate
     - Projects the County will not be including in the Plan but can be performed by outreach programs and various organizations

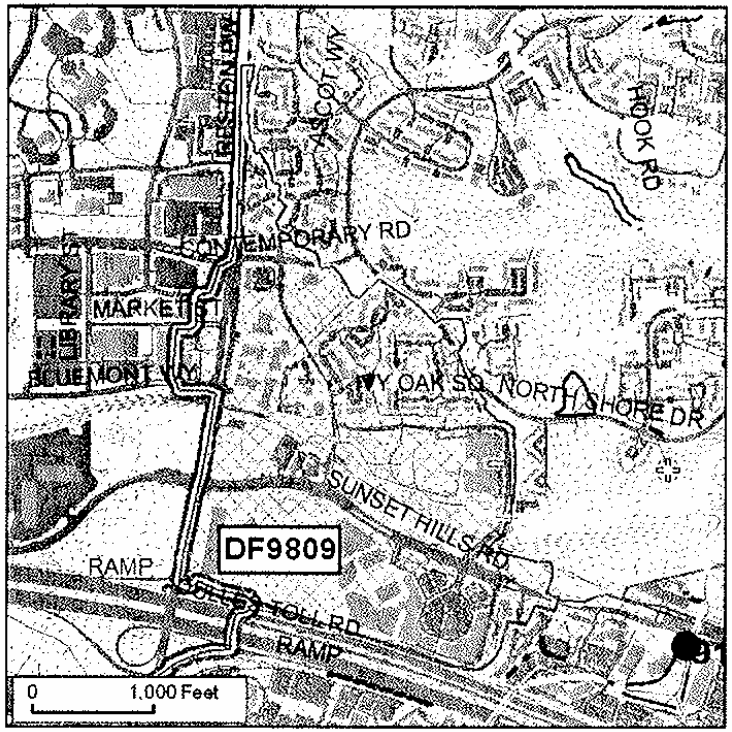
Example of Project Concept Plan

Project Number: DF91135
Catchment Code: DFDG9901
Candidate Site: C135

Project Type: Pond Retrofit
Project Size: +/- 3.5 acres

Project Location: This project is located upstream of Reston Parkway.

Project Description: This project would consist of retrofitting the existing pond located between Water Pointe Lane and the Reston Parkway. It will not only increase the storage, but it will also increase the amount of treatment on the stream.



Potential Project Benefits:

Peak Flow	This project could result in a significant reduction to the peak discharge.
Water Quality	Reduction of pollutants can be expected through the vegetative plantings and the settling of pollutants.

Potential Project Constraints:

Environmental	No environmental constraints are anticipated.
Property Ownership	This project appears to be on public property.
Facility Access	Access to this area is very good by way of public roads.
Design / Construction	No design or construction problems are anticipated for this project.

Next Steps

Beth Offenbacker, Waterford Inc.

Next Steps for WAG

- Are you interested in serving on the WAG?
- Role of WAG alternates
- Letter of invitation to serve on the WAG
- WAG meeting #2 – February 2009

Questions & Answers - Discussion

Meeting Adjourned

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