Little Rocky Run
Johnny Moore Creek
Watershed Management Plan

Watershed Advisory Group #1
December 1, 2008

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

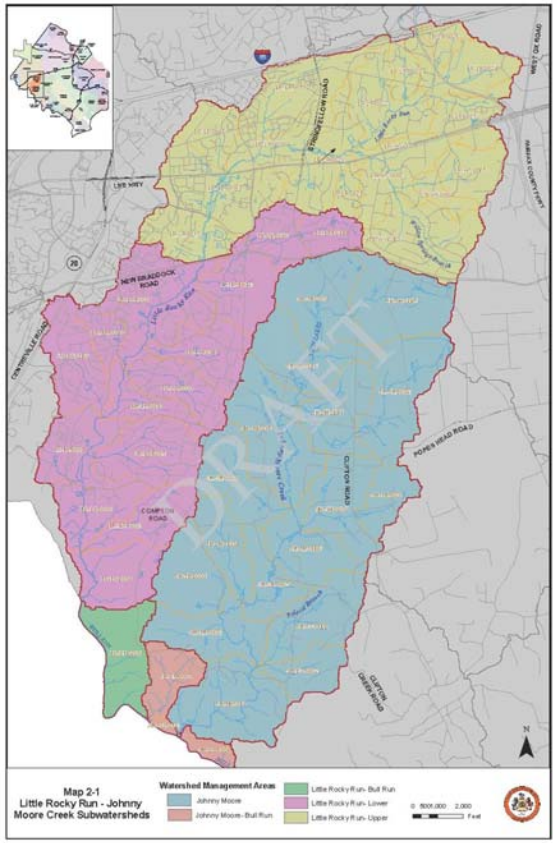
Watershed Workbook

Draft Watershed Workbook Summary

- Drafts of Chapters 1 and 2 Available
- Chapter 1 – Compilation of Overall Watershed Condition Data
  - Summary of previous studies related to the watersheds performed by the County and others
- Chapter 2 – Subwatershed Characterization
  - Detailed look at the condition of the watershed management areas

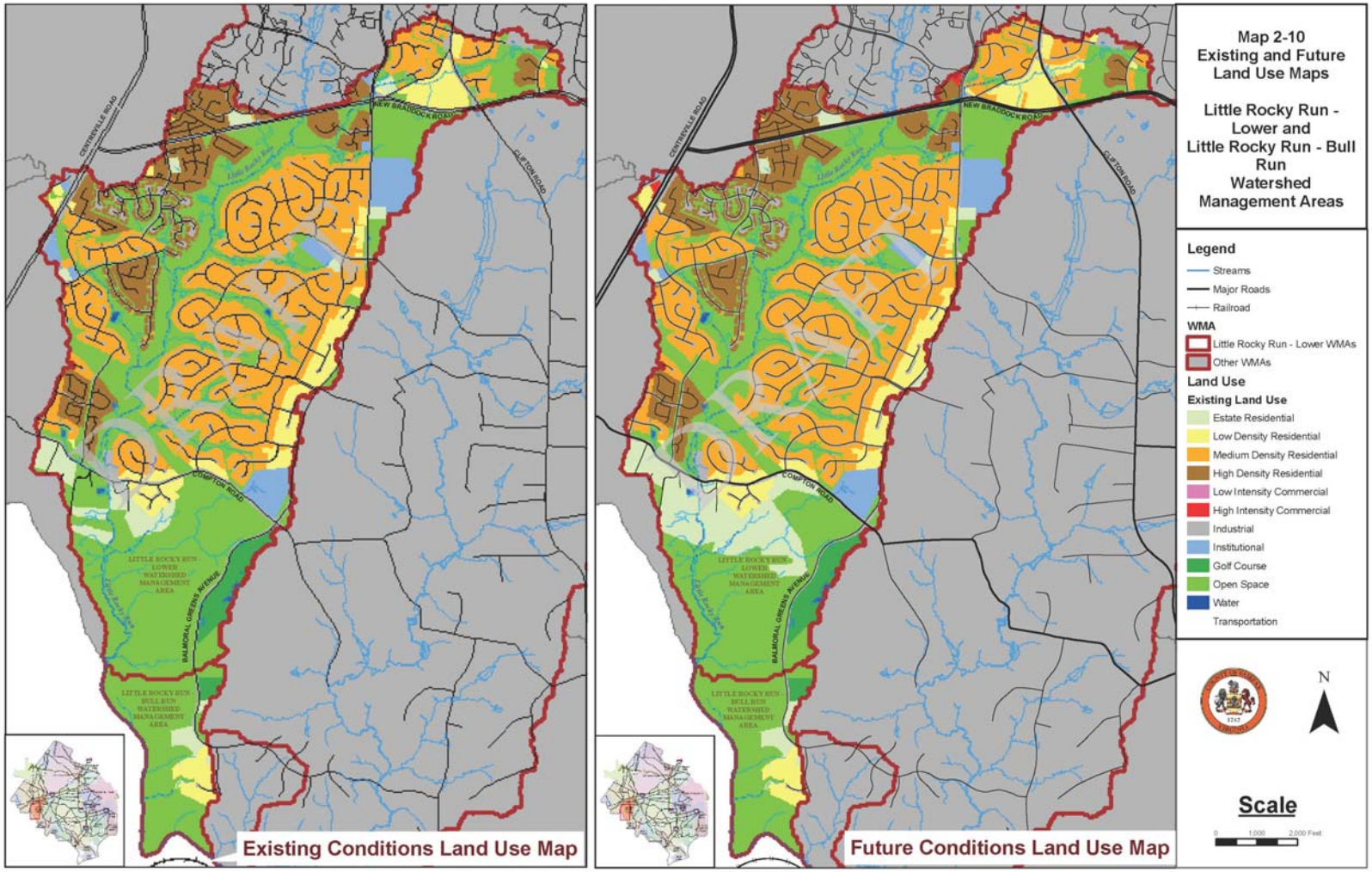
Chapter 2 – Subwatershed Characterization

- Watersheds divided into Watershed Management Areas (WMAs)
- WMAs further divided into subwatersheds
- Data Provided on:
  - Existing and Future Land Use
  - Stormwater Infrastructure
  - Stream Condition
  - Field Reconnaissance
  - Modeling Results
  - Subwatershed Ranking



Chapter 2 – Subwatershed Characterization

Existing and Future Conditions Land Use



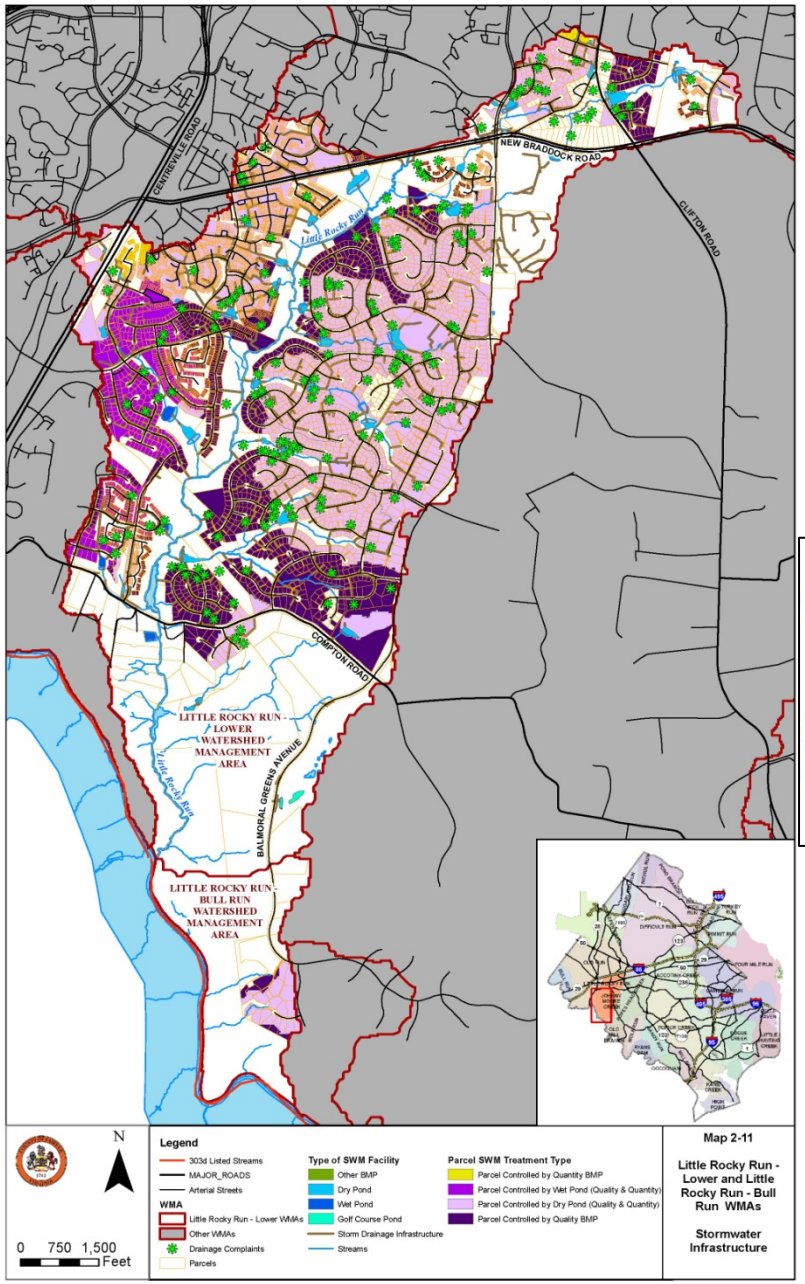
Chapter 2 – Subwatershed Characterization

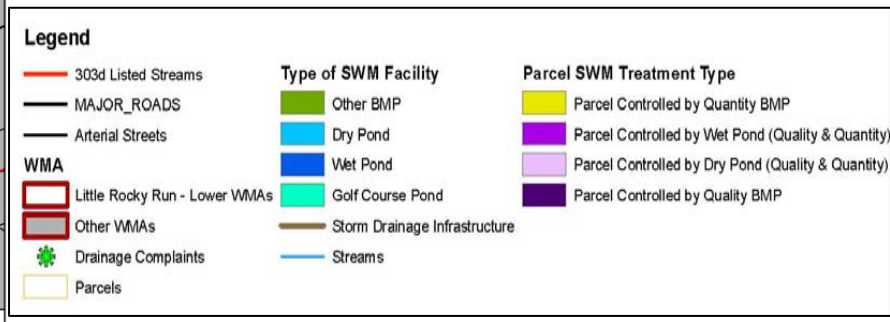
Stormwater Infrastructure

- Location of stormwater management facilities
- Parcels with stormwater management control
  - Quantity
  - Quality
  - Quantity and Quality
- Complaints – from County's database
- Storm sewer system – from County StormNet

Chapter 2: Subwatershed Characterization

Stormwater Infrastructure





Chapter 2 – Subwatershed Characterization
Stream Condition

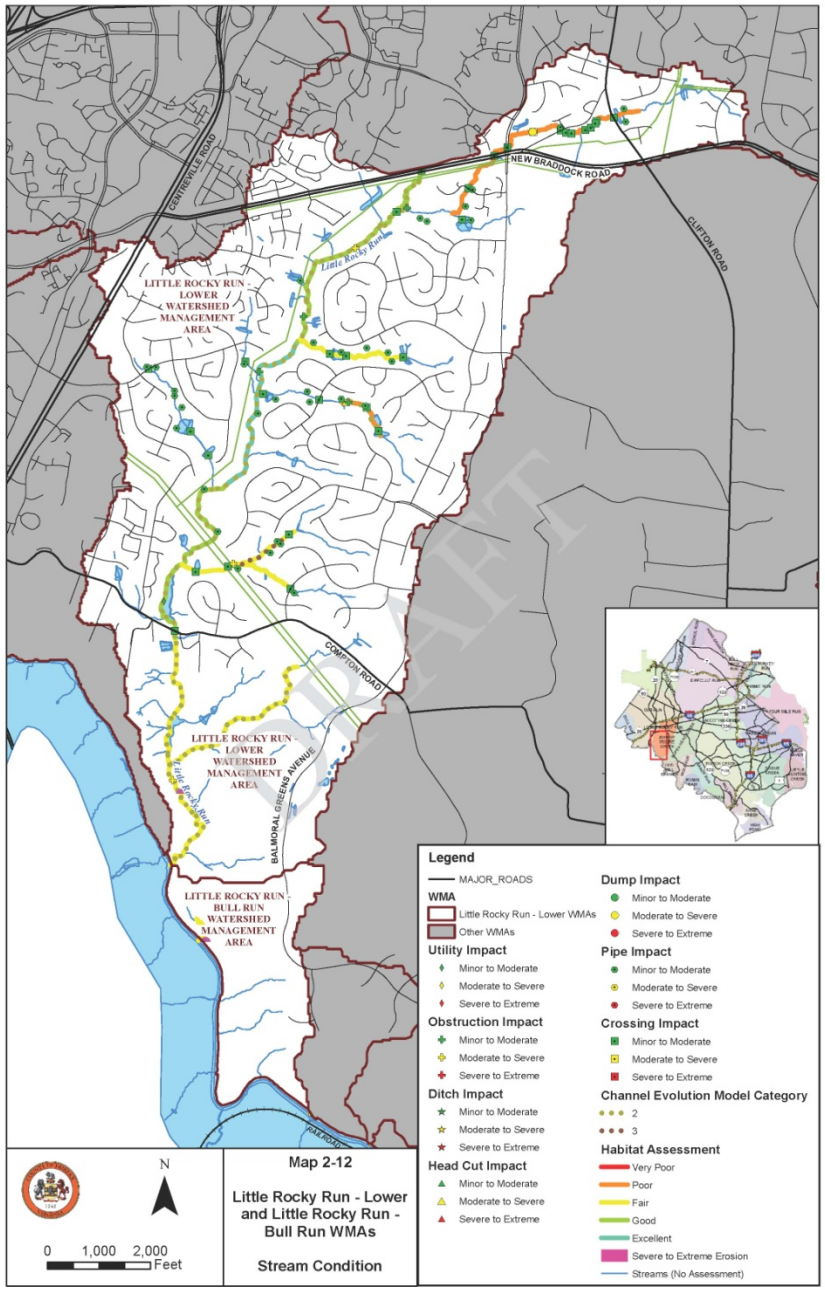
- From 2005 Stream Physical Assessment
- Impact Areas:

  - Utility
  - Dump
  - Obstruction
  - Pipe
  - Ditch
  - Crossing
  - Head Cut

- Erosion Areas
- Channel Evolution Model Types
- Habitat Assessment

Chapter 2: Subwatershed Characterization

Stream Condition



Chapter 2 – Subwatershed Characterization
Field Reconnaissance

- Problem areas revisited in June 2008 to verify and document conditions and stormwater controls

Erosion on small tributary near Cedar Ridge Drive in the Johnny Moore Creek WMA

Erosion and head cut on ditch in Little Rocky Run subdivision

Headcut on tributary to Little Rocky Run

Chapter 2 – Subwatershed Characterization

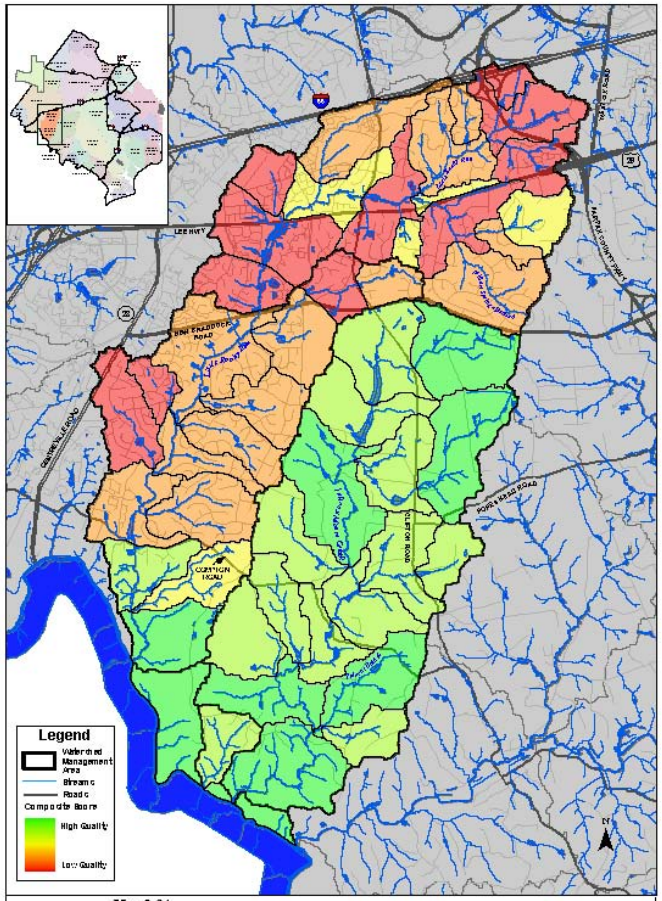
Subwatershed Ranking

- Countywide watershed planning 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.
- Watershed Planning Objectives
  1. Hydrology
  2. Habitat
  3. Stream Water Quality
  4. Drinking Water Quality
  5. Stewardship

Chapter 2 – Subwatershed Characterization

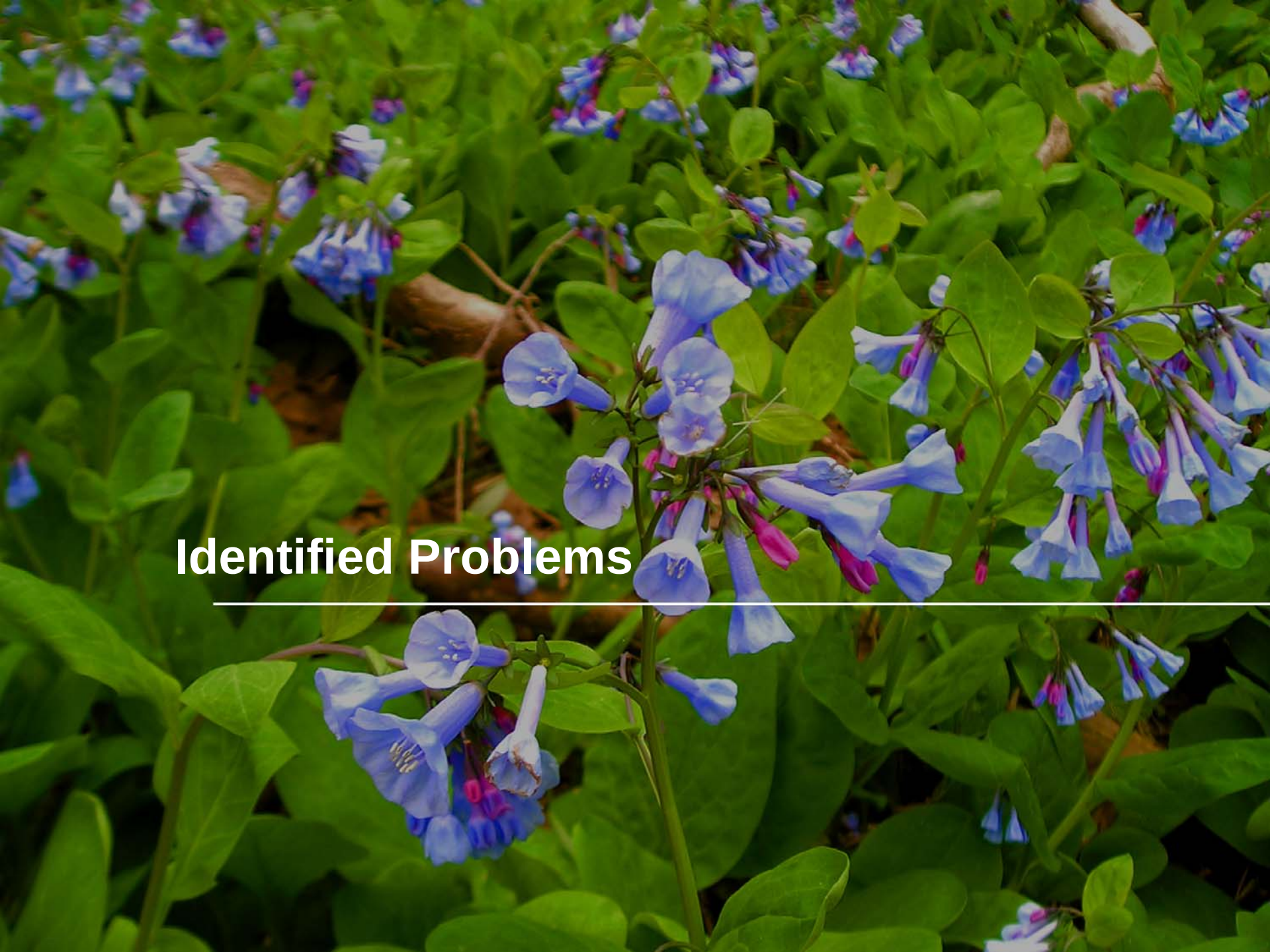
Subwatershed Ranking

Source Composite Score



Watershed Workbook Summary

- Provides compilation of existing data to identify needed projects and problem areas in the watershed
- Characterization provides a tool to compare conditions across the County and to prioritize future projects



Identified Problems

Identified Problems

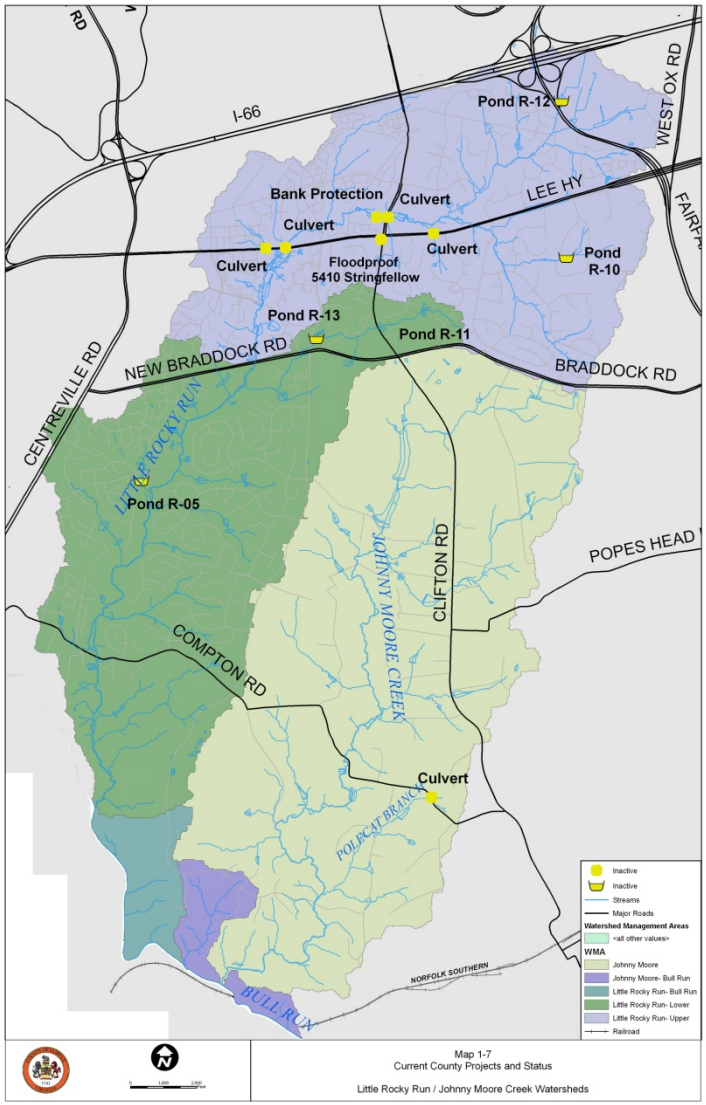
- From the Stream Protection Strategy Study Baseline Study, 2001
  - Macro-invertebrate (Benthic) Scores were low: Poor to Fair in Little Rocky Run, Good and Poor in Johnny Moore Creek
  - Sampling Conducted in 2004 was also very poor to poor for benthics
- From the Stream Physical Assessment, 2005
  - Habitat Assessment: Little Rocky Run,19% poor, 62% fair
  - Habitat Assessment: Johnny Moore Creek, 1% very poor, 15% poor and 60% fair
  - The assessment shows that stream bank stability and buffers are a concern on many of the stream reaches

Identified Problems

- Benthic TMDL Development for Bull Run
- Bacteria TMDLs for Popes Head Creek, Broad Run, Kettle Run, South Run, Little Bull Run, Bull Run and the Occoquan River
- These reports will impact the Little Rocky Run and Johnny Moore Creek watersheds because both streams flow into an impaired segment of Bull Run

Identified Problems

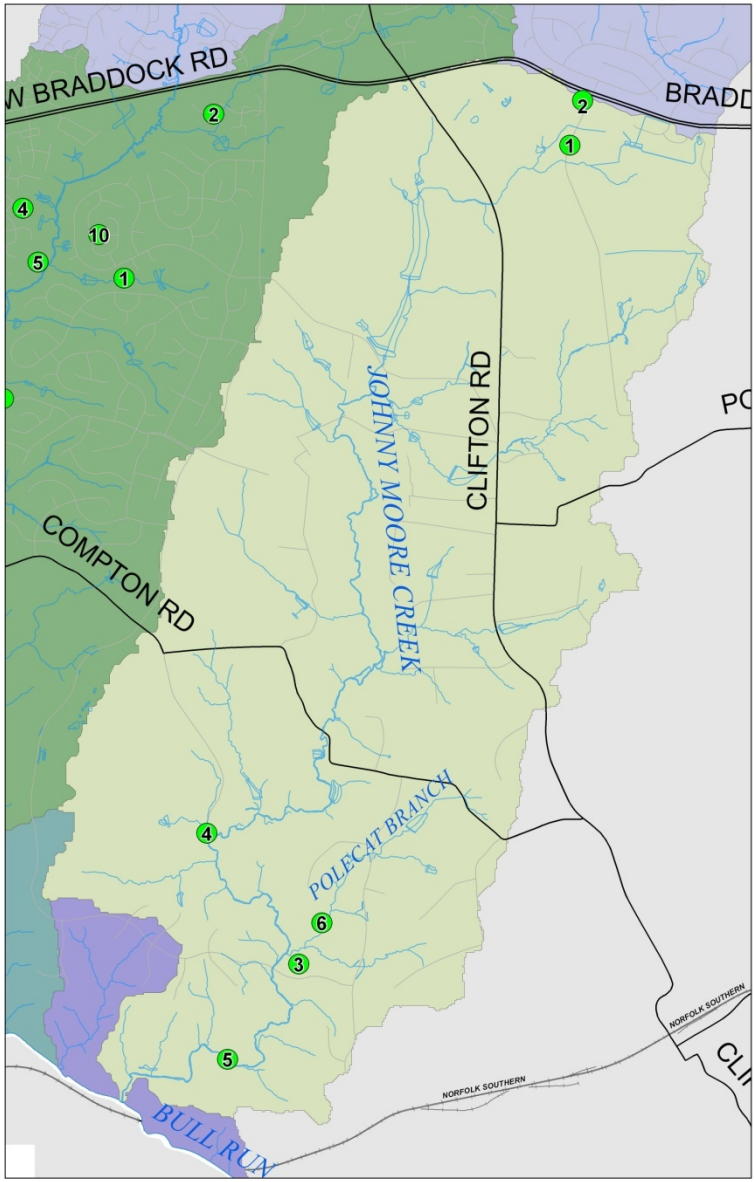
- Inactive Projects from the Proposed Drainage Plan, The Occoquan Watersheds, 1979 and the County's Regional Stormwater Management Plan, 1989



Identified Problems

Johnny Moore Issues from Scoping Forum – October 1, 2008

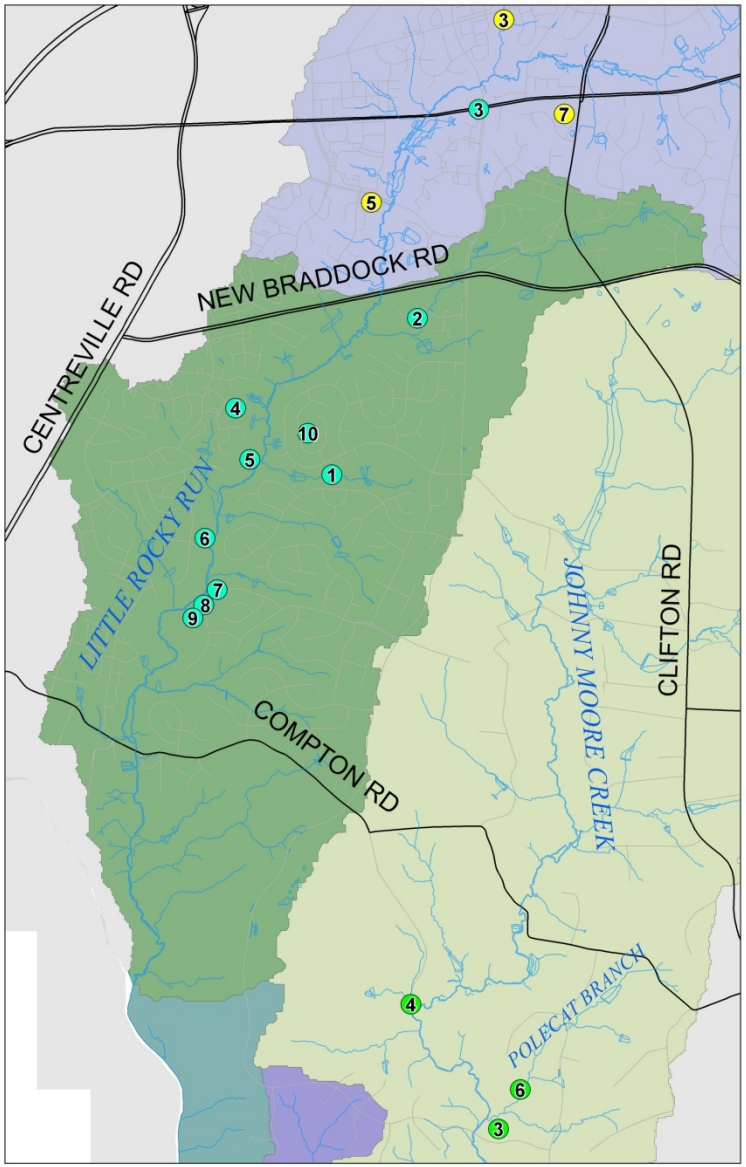
1. Impacts from lack of water and sewer connections
2. Ditch covered by asphalt, sedimentation/erosion, water quality testing
3. Increased erosion
4. Stream erosion/flooding
5. Stream bank erosion
6. Increased erosion



Identified Problems

Little Rocky Run - Lower Issues from Scoping Forum – October 1, 2008

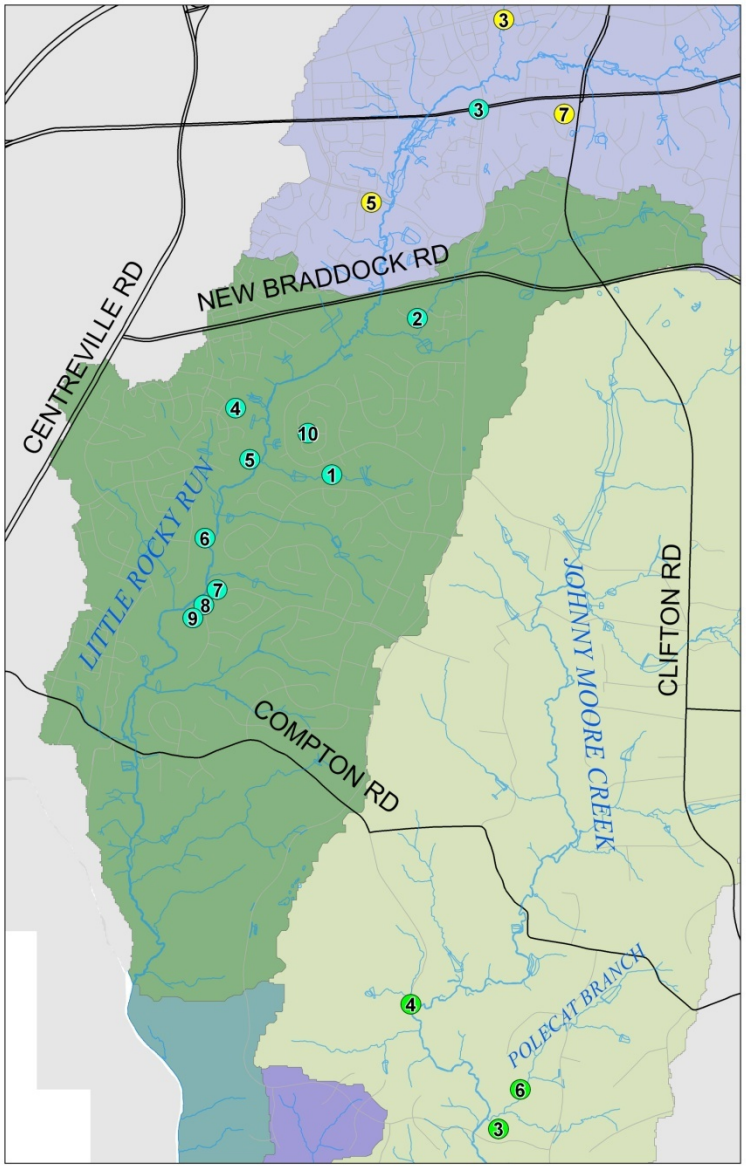
1. Erosion control needed
2. Solid waste and trash dumping
3. Construction along Route 29 corridor
4. Maintenance/overhaul of dry ponds needed
5. Downcutting and channelizing
6. RPA violations in backyards



Identified Problems

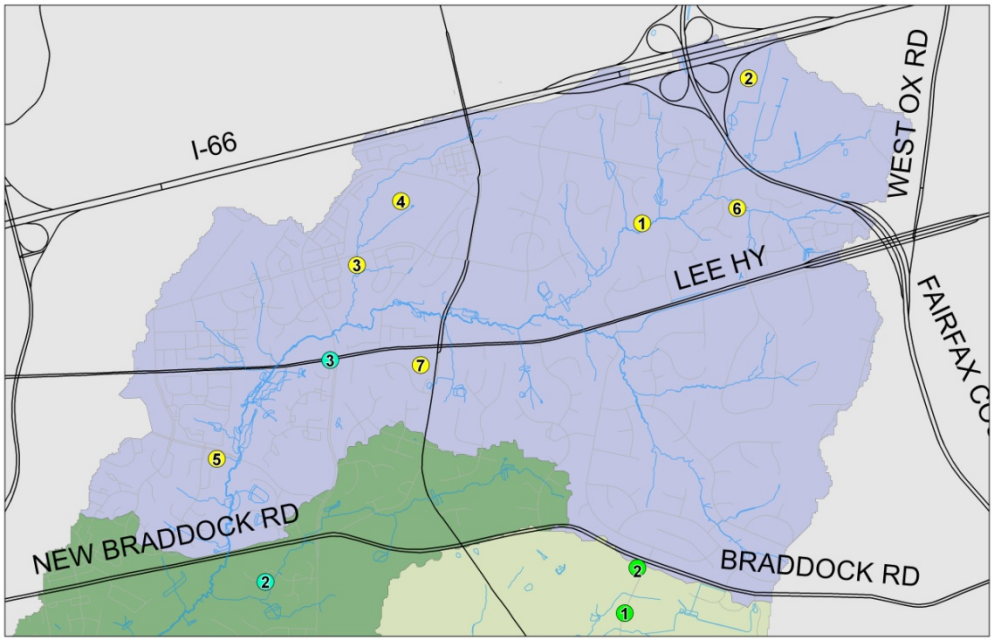
Little Rocky Run - Lower Issues from Scoping Forum – October 1, 2008

7. Need access to natural resources along Little Rocky Run
8. Bridges and trails as a solution to #7
9. Paving options for trails
10. Drainage stormwater inlet sits at highest point on land – Stonehunt Court



Identified Problems

Little Rocky Run - Upper Issues from Scoping Forum – October 1, 2008



1. Undercutting banks
2. Dump and bus lot may be impacting water quality – monitoring suggested
3. Retention pond – unsightly and smelly – doesn't drain well
4. Change land use map to reflect elementary school
5. Culvert eroding stream bed and causing flooding
6. Heavy water runoff from subdivision – ponds may be inadequate

Identified Problems

Other Recommendations

- Moratorium on building new impervious surfaces
- Continued monitoring of the landfill on Ox Road
- Purchase miscellaneous properties to protect and enhance the Little Rocky Run watershed
- Rigorous enforcement of the RPA
- Repair the channelized portion of Little Rocky Run in the vicinity of 642 Springhouse Circle
- Regular chemical/biological monitoring of Little Rocky Run
- Homeowners, HOAs and Fairfax County should kill beavers only in exceptional circumstances
- Leave the land at the intersection of Union Mill Road and Braddock Road undeveloped

Identified Problems

Other Minor Recommendations

- Place cable barriers at the power cuts on Compton Road and Bay Valley Lane – prevent access for illegal dumpers and ATVs
- Clean the debris from the woods along Little Rocky Run beside the Bent Tree Apartment complex
- Build a “soft” trail on the east side of Little Rocky Road from New Braddock Road to Compton Road
- Make HOAs responsible for keeping the stormwater ponds clean with penalties if they don’t
- Have the property management firm responsible for the parking lot at 5652 Pickwick Road keep the lot clean and install gutter guards
- More volunteers needed for VDOT’s Adopt-a-Highway program

Project Examples

Project Examples

- Structural
  - Stormwater Pond Retrofits
  - Low Impact Development Retrofits
  - Stream Restoration/Streambank Stabilization
  - Stream Buffer Restoration
  - Road Crossing Projects
  - Obstruction Removal
- Nonstructural
  - Public Education
  - Volunteer Opportunities
  - Ordinance Enforcement

Project Examples
Stormwater Pond Retrofit

- Modification of Existing Facility to increase pollutant removal efficiency and/or to decrease stormwater runoff

Mason District Park Pond Retrofit

Project Examples
Low Impact Development (LID) Retrofit

- Runoff managed in small features such as rain gardens, filter strips, vegetated buffers, grassed swales and rain barrels located near the source of the impact.

Providence District Supervisor's Office LID Retrofit

Project Examples
Stream Restoration/Stabilization

- Use of natural stream design techniques to stabilize the stream channel to reduce erosion and degradation

Kingstowne Stream Restoration Project

Project Examples
Stream Buffer Restoration

- Planting native vegetation next to streams to improve habitat, stabilize stream banks and filter pollutants

Project Examples
Road Crossing Projects

- Retrofit culverts to include stormwater treatment/ modify or replace road crossings that are under-designed or failing

Project Examples
Obstructions

- Remove dumpsites and obstructions from stream corridor

Debris near Clifton Rd and Cedar Ridge Dr.

Obstruction on tributary to Little Rocky Run

Discussion: Other Issues not Identified?

Next Steps

- AMEC will review any new watershed issues raised
- AMEC will develop engineering solutions to the identified problems and create a management plan
- Next meeting in early spring 2009 to review the proposed solutions

Thank you for attending!