Upper Little Patuxent River Watershed Management Plan

PUBLIC MEETING NO. 1

June 3, 2008

KCI TECHNOLOGIES

HC

US Army Corps of Engineers
Baltimore District

Meeting Outline

- Welcome and Introductions
- Watersheds 101
- Overview of the Upper Little Patuxent Watershed Conditions
- Restoration Toolbox
- Open Forum

Watershed Management Goals

To restore, enhance and protect the Upper Little Patuxent River Watershed's natural resources.

- Impervious Surface Treatment (10 percent)
- Water Quality
- Aquatic Habitat
- Forest Habitat, riparian
- Public Participation

General Strategies

- Reduce negative impact of impervious surfaces
- Reduce levels of pollutants in waterways
- Reduce streambank erosion
- Increase forest area and connectivity of riparian habitats
- Increase public awareness and positive behaviors
- Protect private property

Watershed Management Approach

- Systematically study all Howard County watersheds
- Identify problem areas and the source of the problem
- Prioritize initiatives to address watershed issues (structural and non-structural)
- Acquire funding to perform projects (capital funds, grant funds)
- Educate the “public” on ways to improve the watershed they live, work, and play in.

Why the Upper Little Patuxent River Watershed?

- Little Patuxent Watershed Restoration Action Strategy (WRAS), 2002
- Howard County Watershed Prioritization, 2004
- Centennial and Wilde Lakes Watershed Restoration Plan, 2005
- Upper Little Patuxent Watershed Management Plan, (under development, 2008-2009)
- Columbia Association Watershed Study (Pending)

Why the Upper Little Patuxent River Watershed?

- Howard County Watershed Prioritization (2004)
- Watershed Restoration Action Strategy (**WRAS**) for entire Little Patuxent watershed
  - Bioassessment (2001)
  - Stream Corridor Assessment (2001)
  - Characterization (2001)
- MD Biological Stream Survey (1997, 2000)
- Howard County Biomonitoring (2001, 2006)
- Volunteer Monitoring Data (1992 - 2005)
- Font Hill Tributary Annual Monitoring (1996 - 2005)

Why the Upper Little Patuxent River Watershed?

- ULP rated as high priority watershed, high impervious
- Countywide bioassessment ratings (averages)

Year	Macroinvertebrates	Habitat
2001	Poor	Non-supporting
2006	Very Poor	Partially supporting

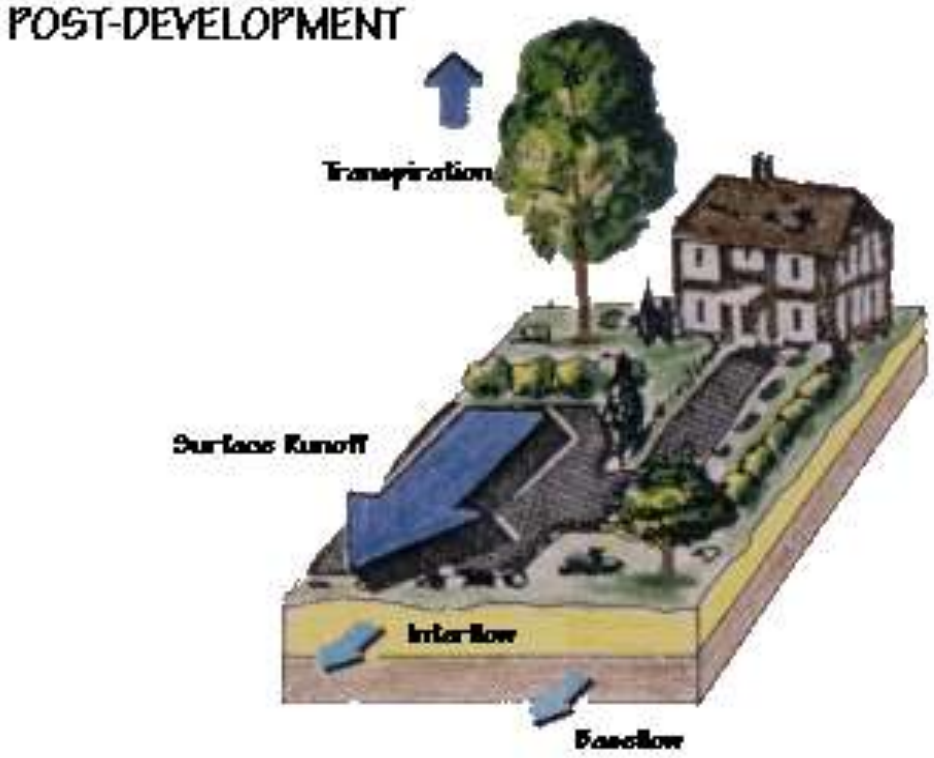
- Segments on Maryland 303(d) list for biological, cadmium, nutrients, sediment
- Headwaters of the Little Patuxent

Watersheds

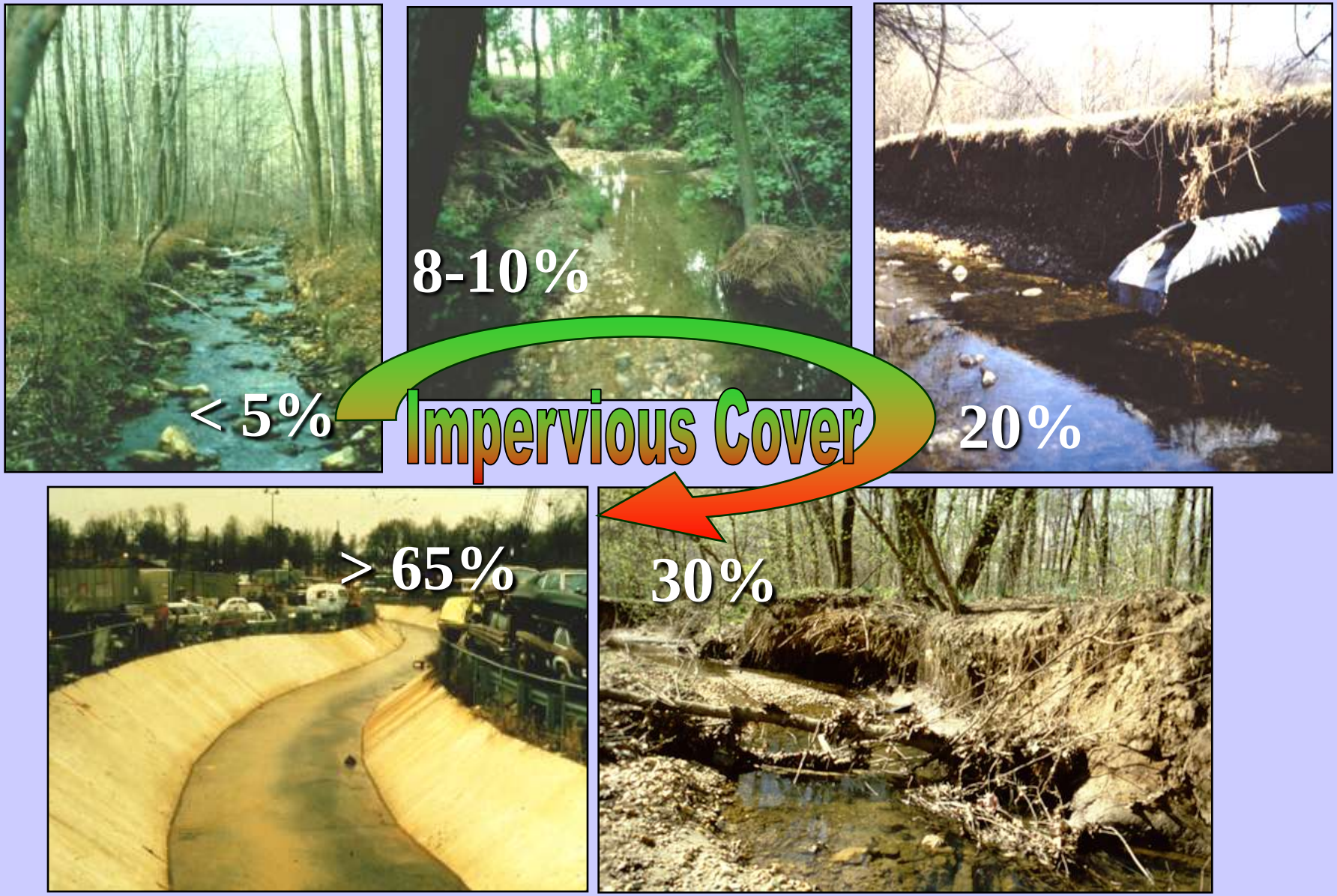
101

What is a Watershed?

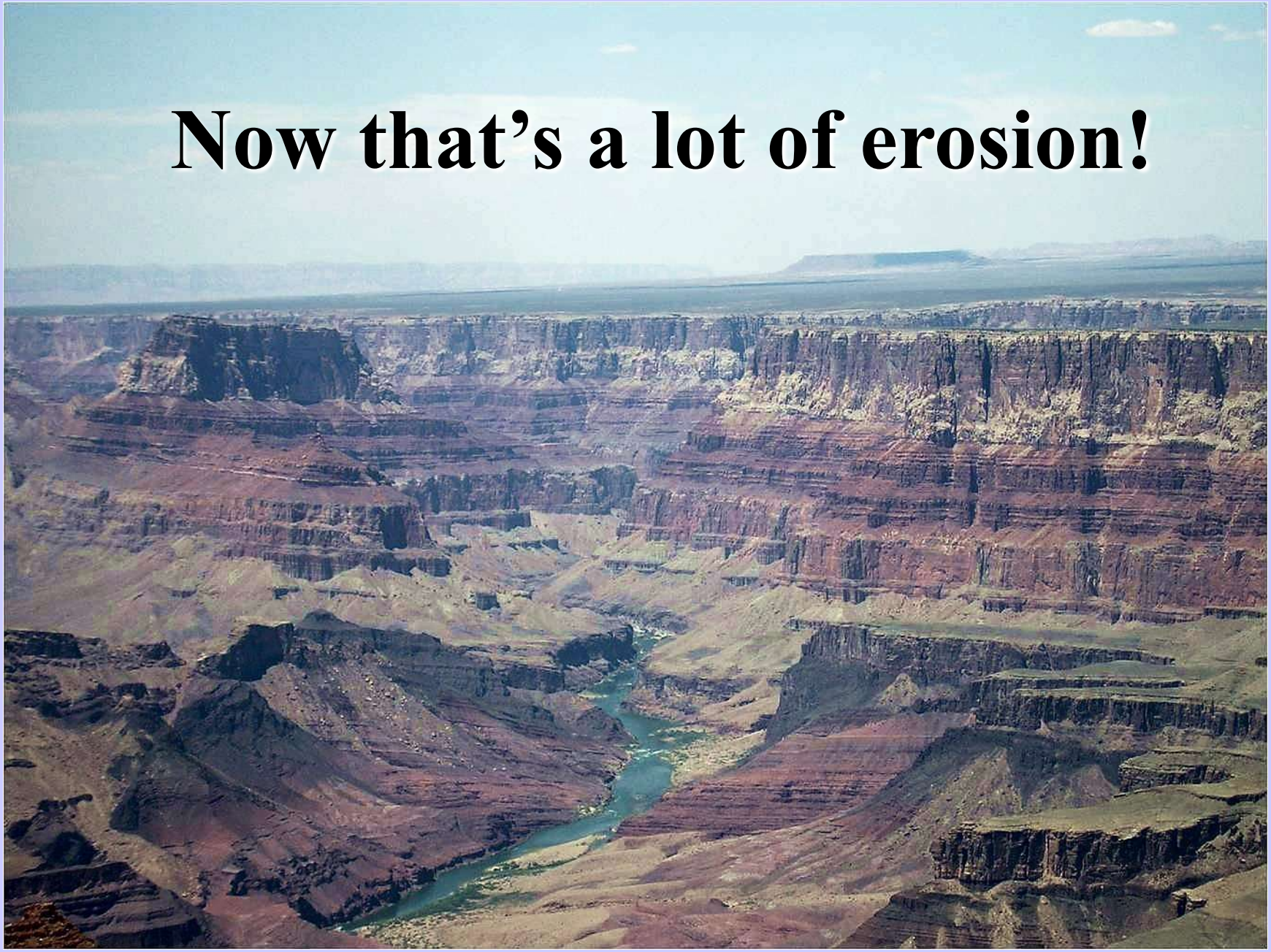
WATER BALANCE



Geomorphological Impacts



Now that's a lot of erosion!



Impervious Cover Influences Water Quality

Pollutants build up on impervious surfaces and wash off into the stream system when it rains

Center for Watershed Protection

Harmful Pollutants in Runoff

Bacteria

Nutrients

Pesticides

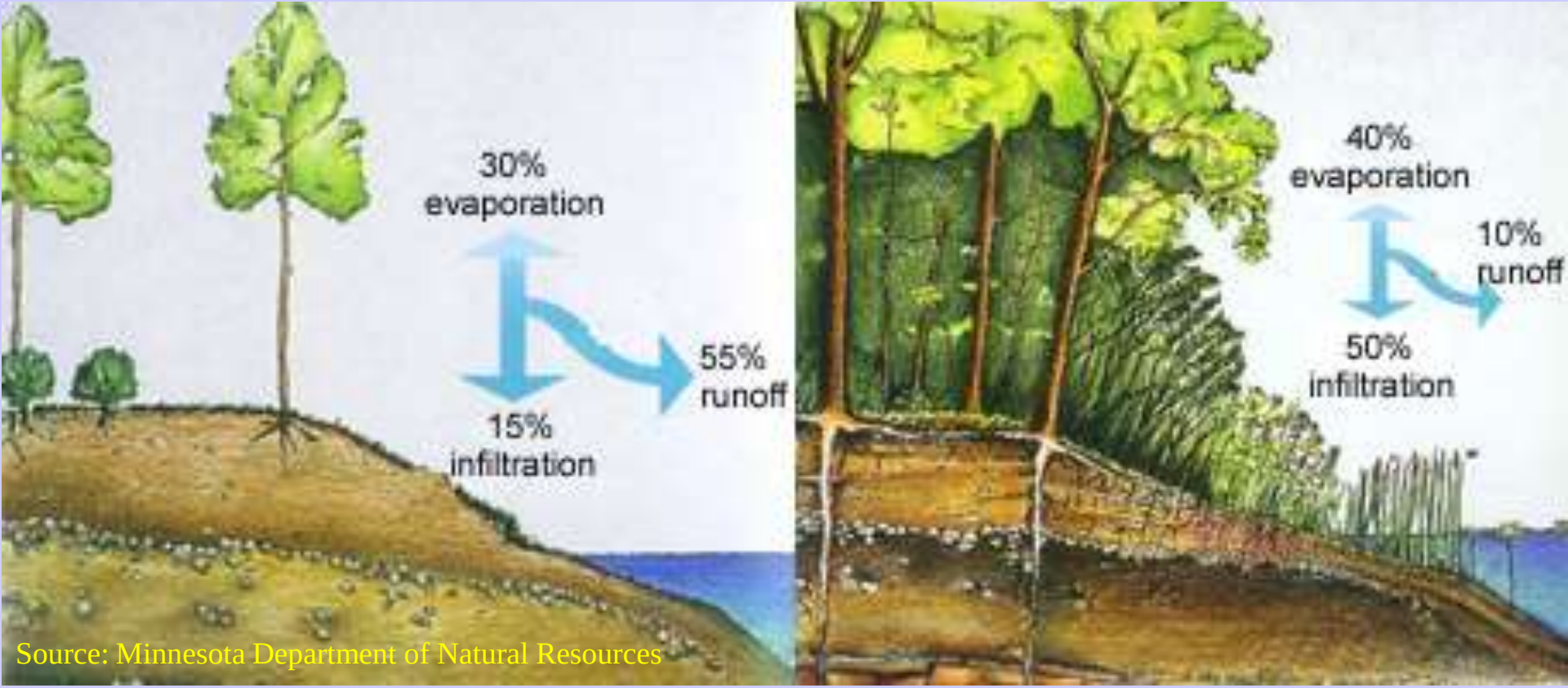
Oil & Grease

Muddy Water

Heavy Metals

(e.g. Zinc, Copper, Lead)

Center for Watershed Protection



Water quickly runs off a shoreline cleared of natural vegetation, washing nutrients and pesticides into the water. A natural shoreline holds rainfall, which soaks into the soil; less water, soil and chemicals run into the lake or river. Shoreline and aquatic plants anchor shoreline areas, helping to protect them from erosion due to runoff and waves (Source:MN DNR)

Watershed Study Overview

- Phase I – completed November 2007
  - Compilation and synthesis of previous studies and GIS data
  - Delineate watershed and subwatersheds
  - Identify data gaps
  - Scope Phase II

Watershed Study Overview

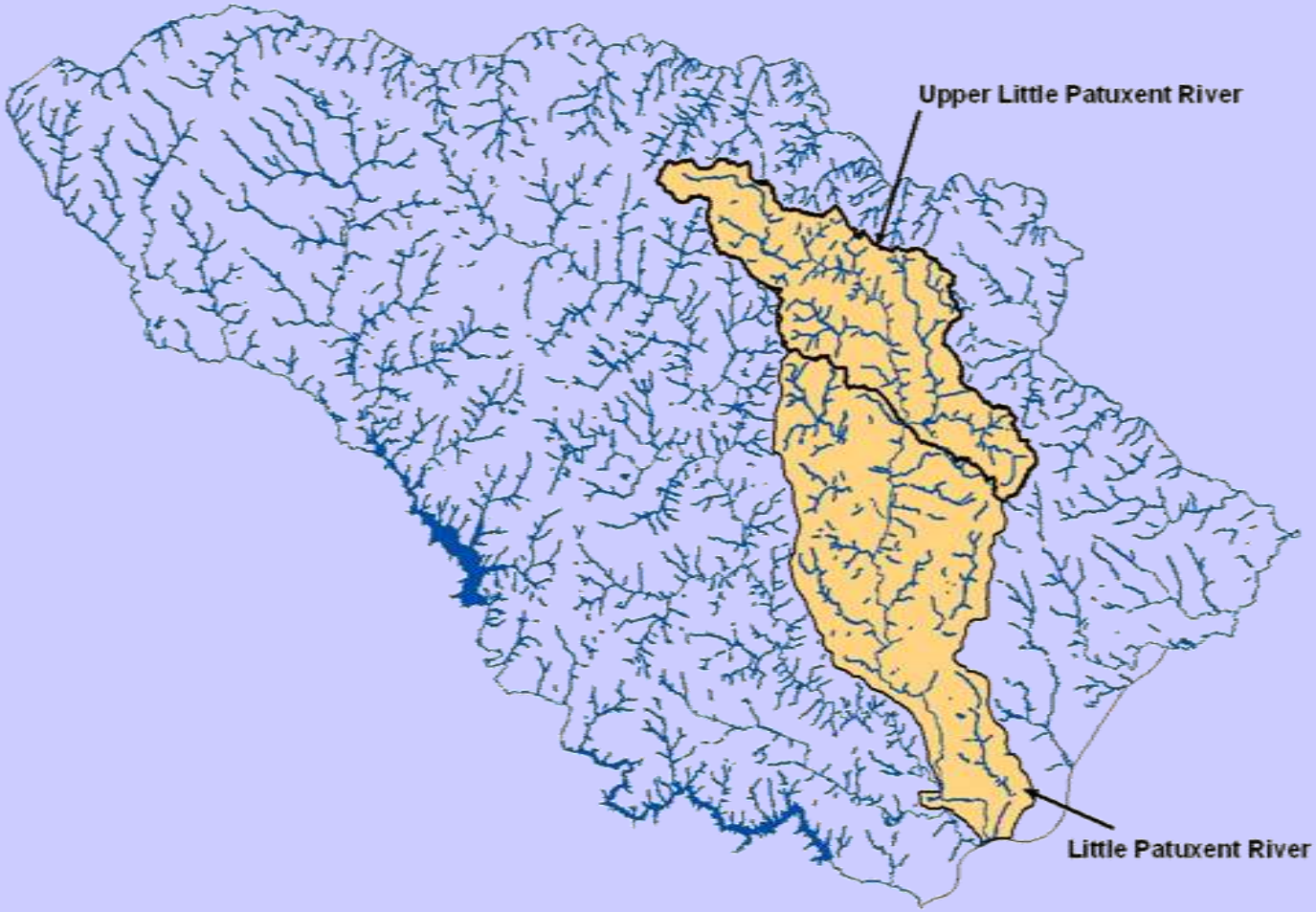
- Phase II – scheduled for completion early 2009
  - Conditions Assessment
    - Stream Corridor Assessment (SCA)
    - Pollutant loading estimates
    - Problem area prioritization
  - **Community Meeting #1**
  - Develop watershed management strategy
  - Develop concept plans and cost estimates for restoration and protection strategies
  - Implementation plan
  - Community Meeting #2 – Review of Draft Plan (Winter 2008)
  - Final Report

Upper Little Patuxent River Watershed Conditions

- Overview – Watershed and Subwatersheds
- Land Use
- Imperviousness
- Stormwater - Best Management Practices (BMPs)
- Pollutant Loading
- Stream Corridor Assessment
- Priority Areas for management strategies

Watershed Overview

Watershed Overview

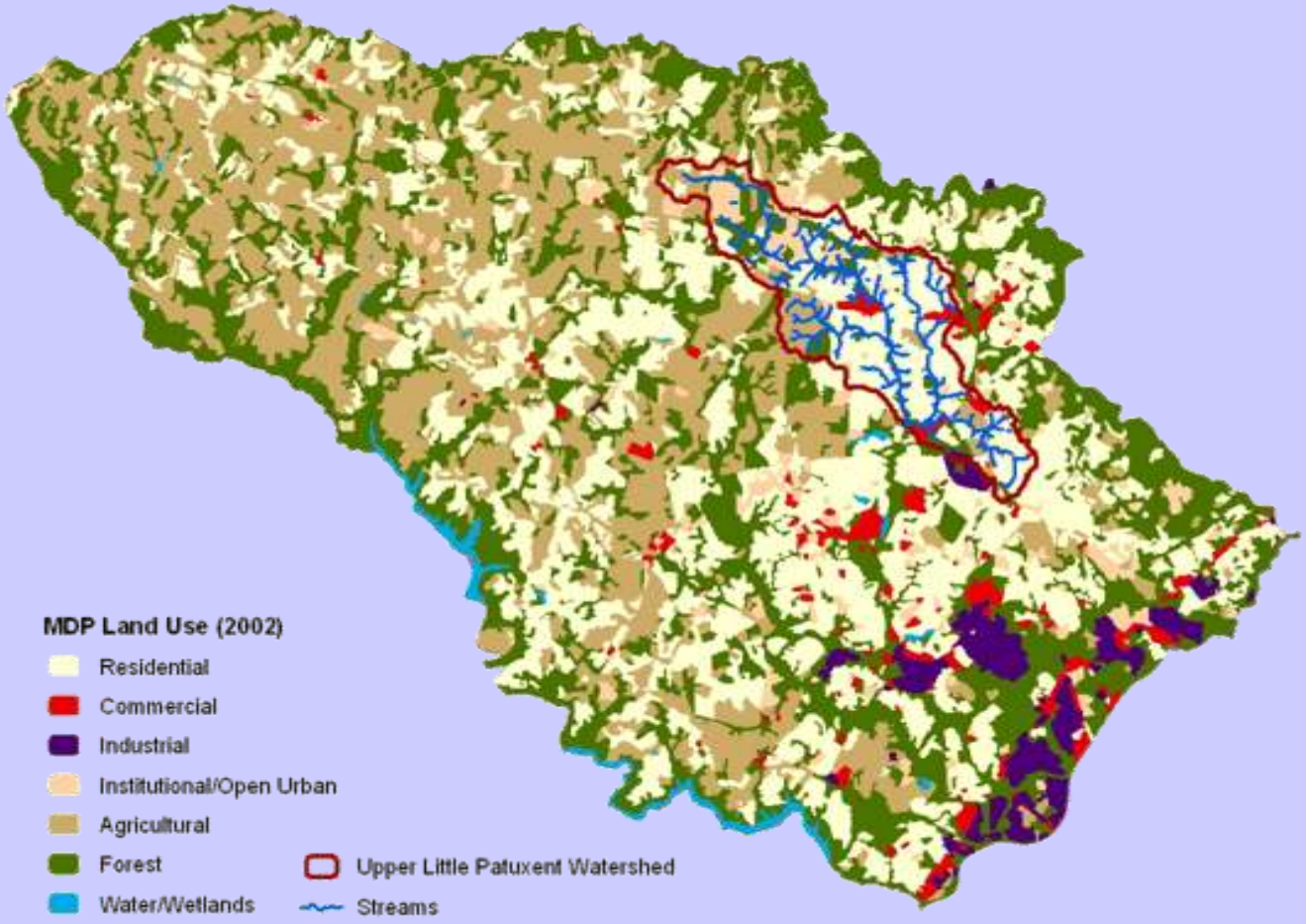


Watershed Overview

- 17.3 square miles
- 44 miles of streams
- Major Roadways
  - Interstate 70 / US Route 40 / MD Route 144 / US Route 29 / MD Route 100
- Major Landmarks
  - Ellicott City, Carroll Farm, Turf Valley, Alpha Ridge

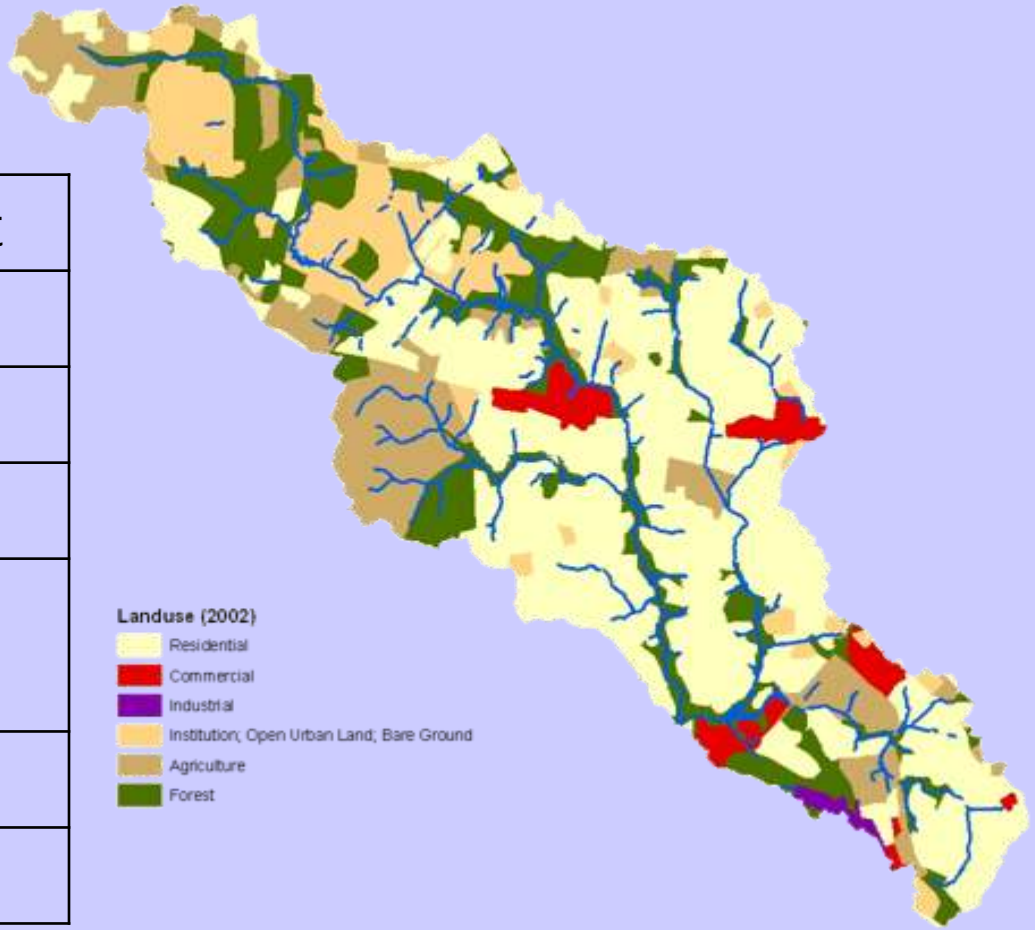
Subwatershed Overview

Land Use

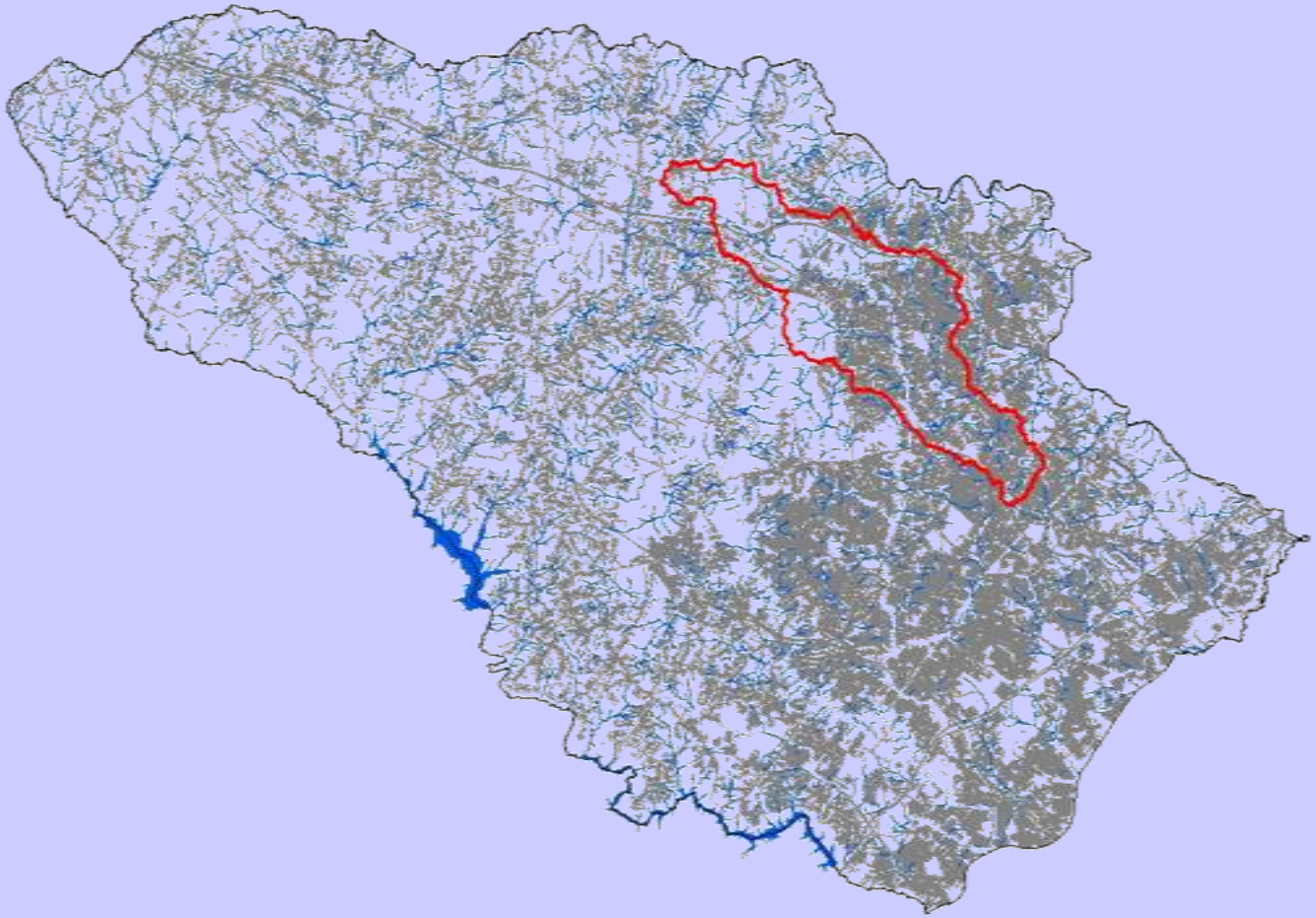

MDP Land Use (2002)
Residential
Commercial
Industrial
Institutional/Open Urban
Agricultural
Forest
Water/Wetlands
Upper Little Patuxent Watershed
Streams

Land Use

Use	Percent
Residential	50
Commercial	4
Industrial	0.5
Institution, Open Urban	12
Agriculture	15
Forest	20



Imperviousness



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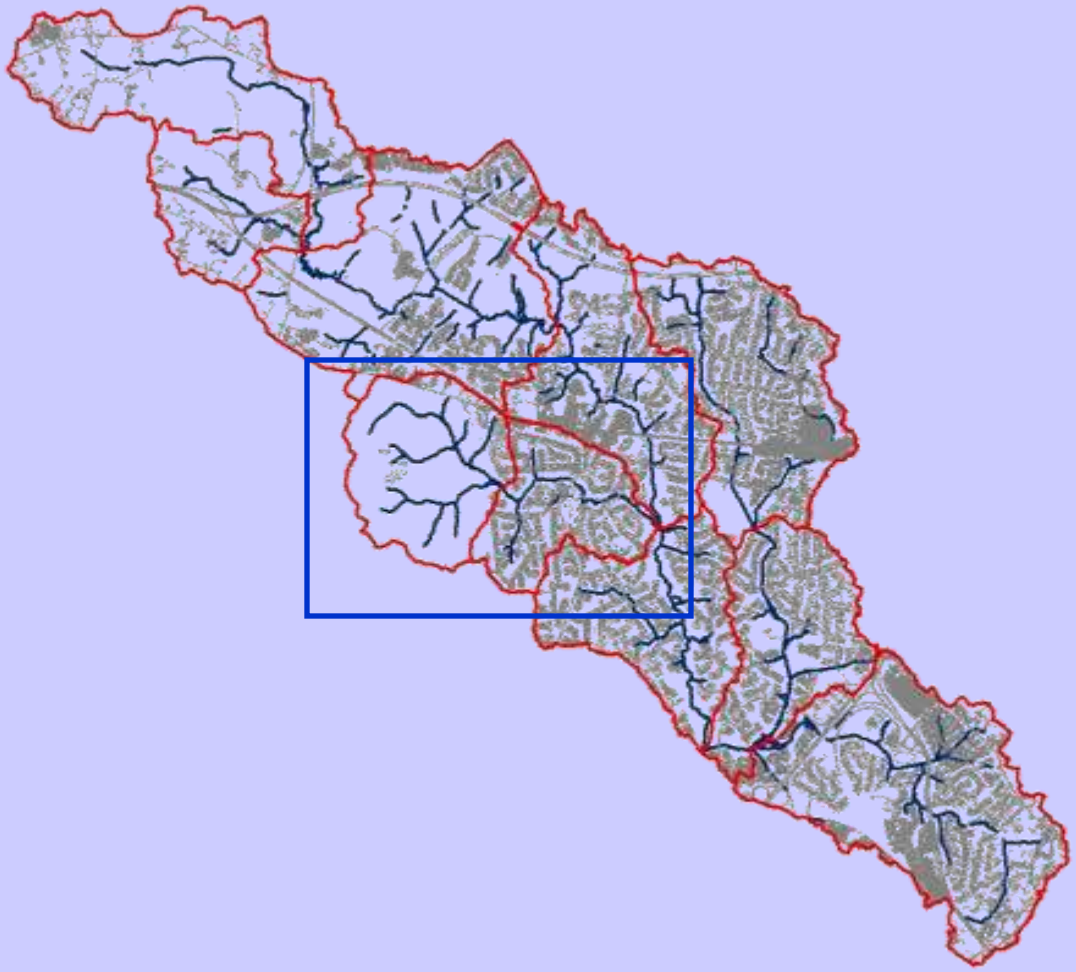

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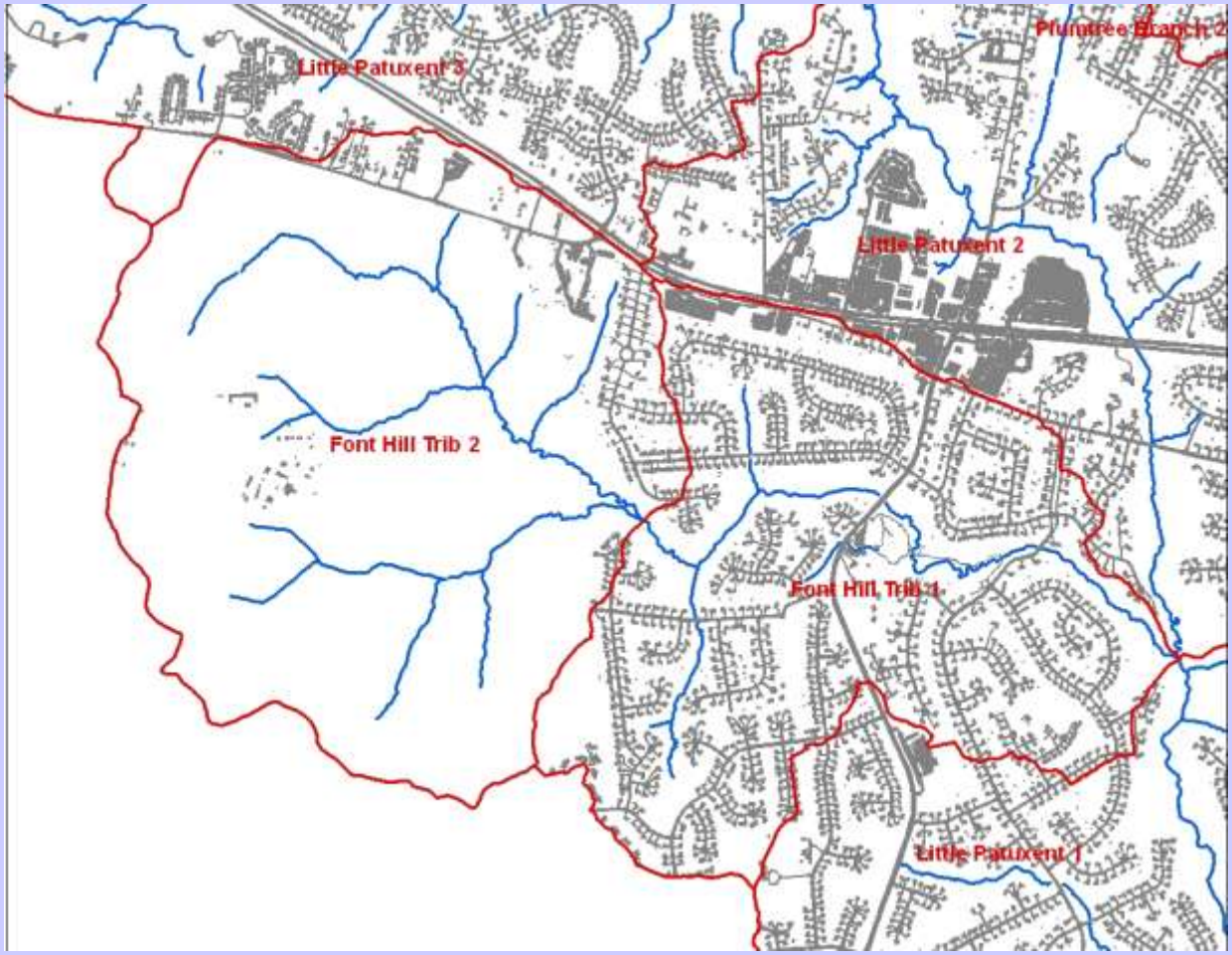
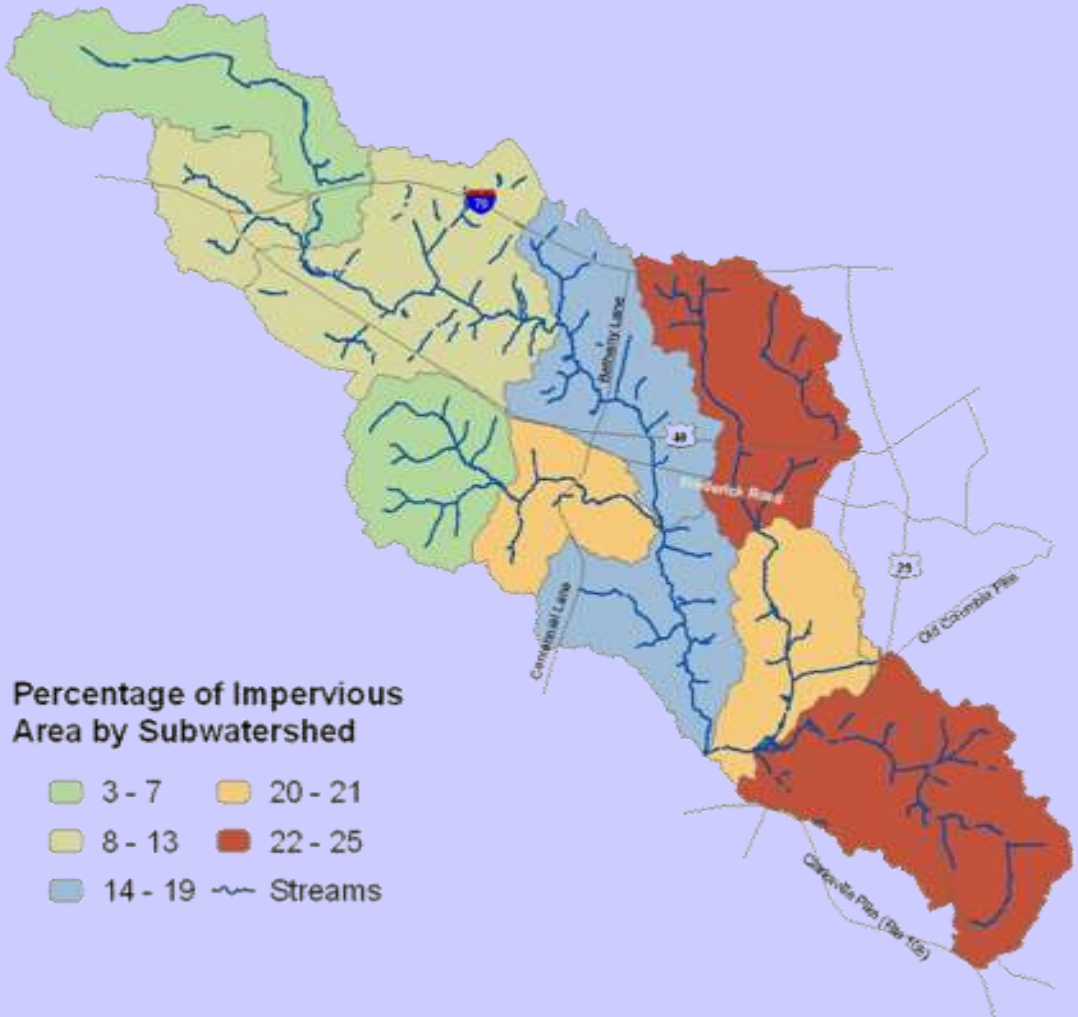


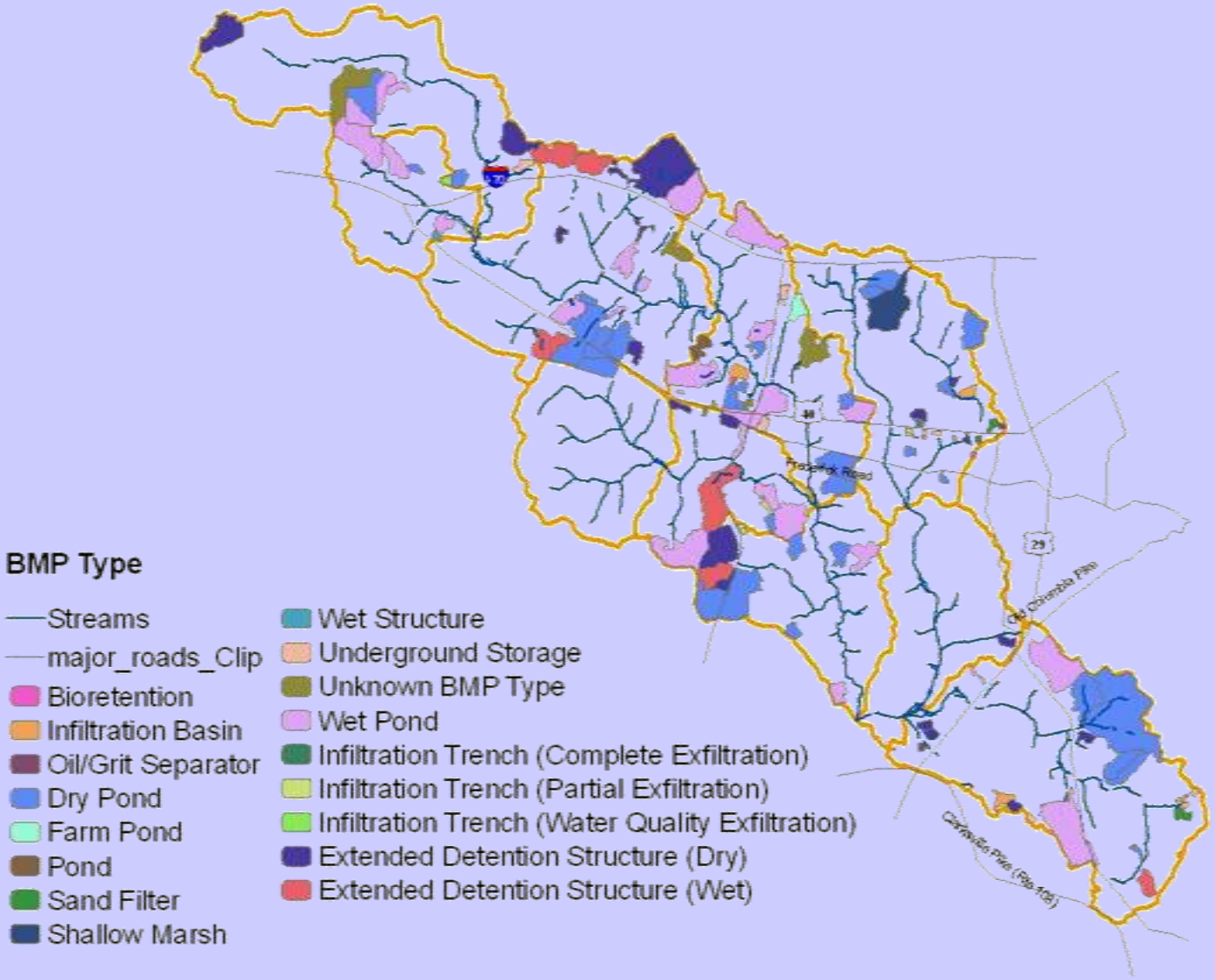
Imperviousness

	Total Area (sq miles)	Impervious Area (sq miles)	Impervious Percent
County	253	28.6	11
ULP	17.3	2.84	16
Percent of County	6.8	9.9	na

Imperviousness



Stormwater BMPs



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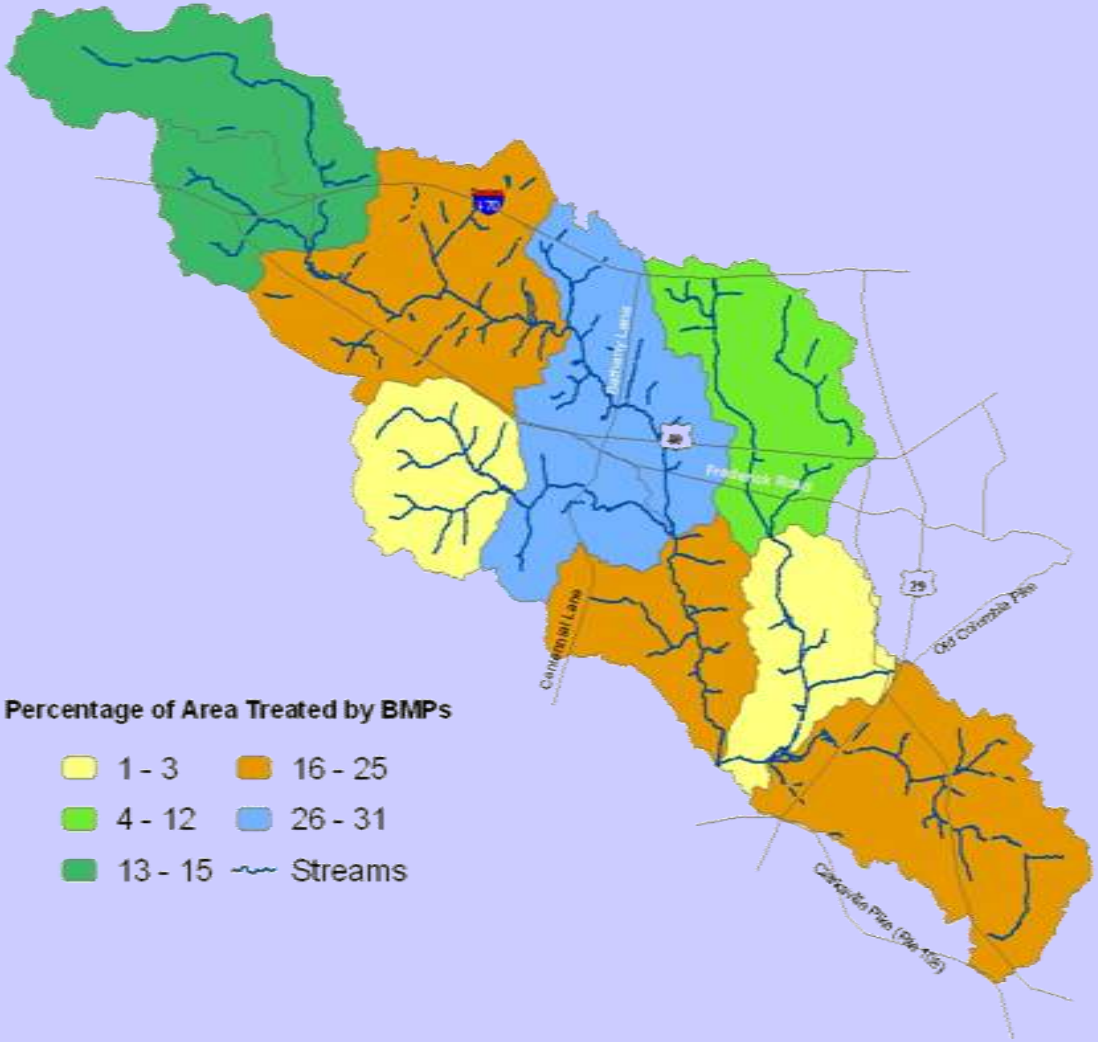

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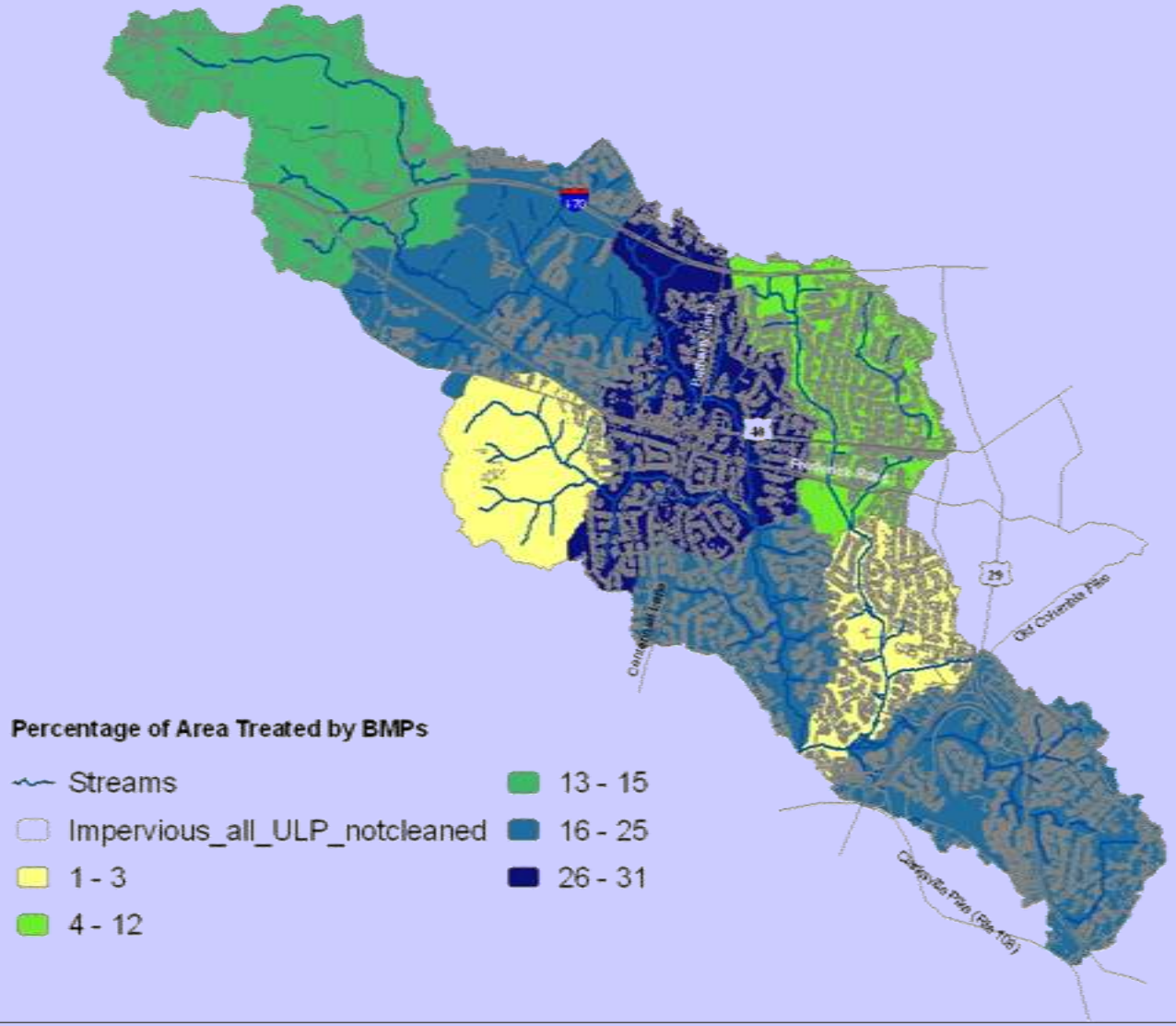

Pollutant Loading - Results

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Stream Corridor Assessment

- Teams walked 44 miles
- Identified
  - Channel Alteration
  - Erosion Site
  - Inadequate Buffer
  - Pipe Outfall
  - Exposed Pipe
  - Fish Barrier
  - Trash Dumping
  - Construction
  - Unusual Condition
  - Representative Site
- Scored 1-5 for Severity, Correctibility and Access

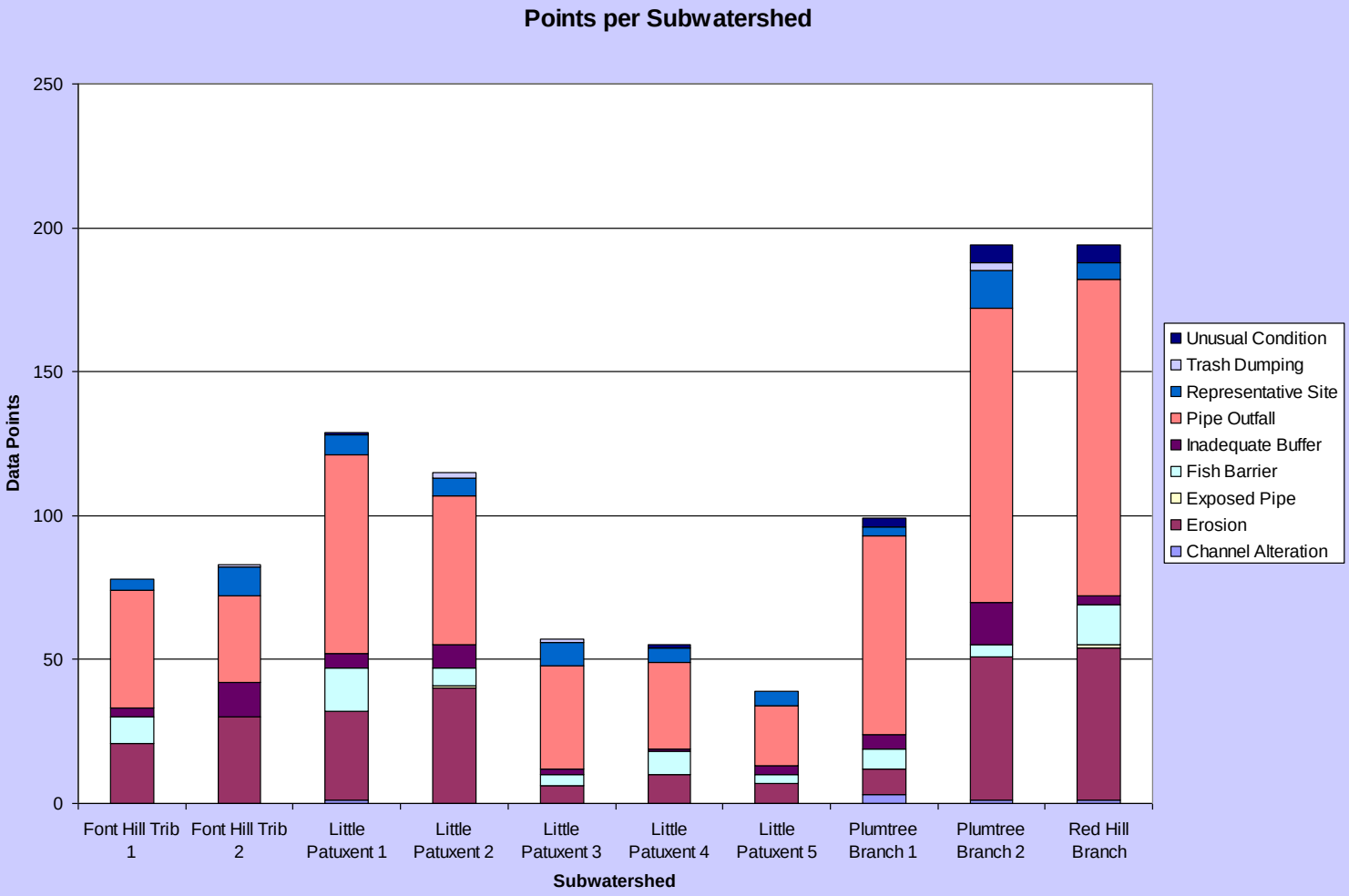



Stream Corridor Assessment

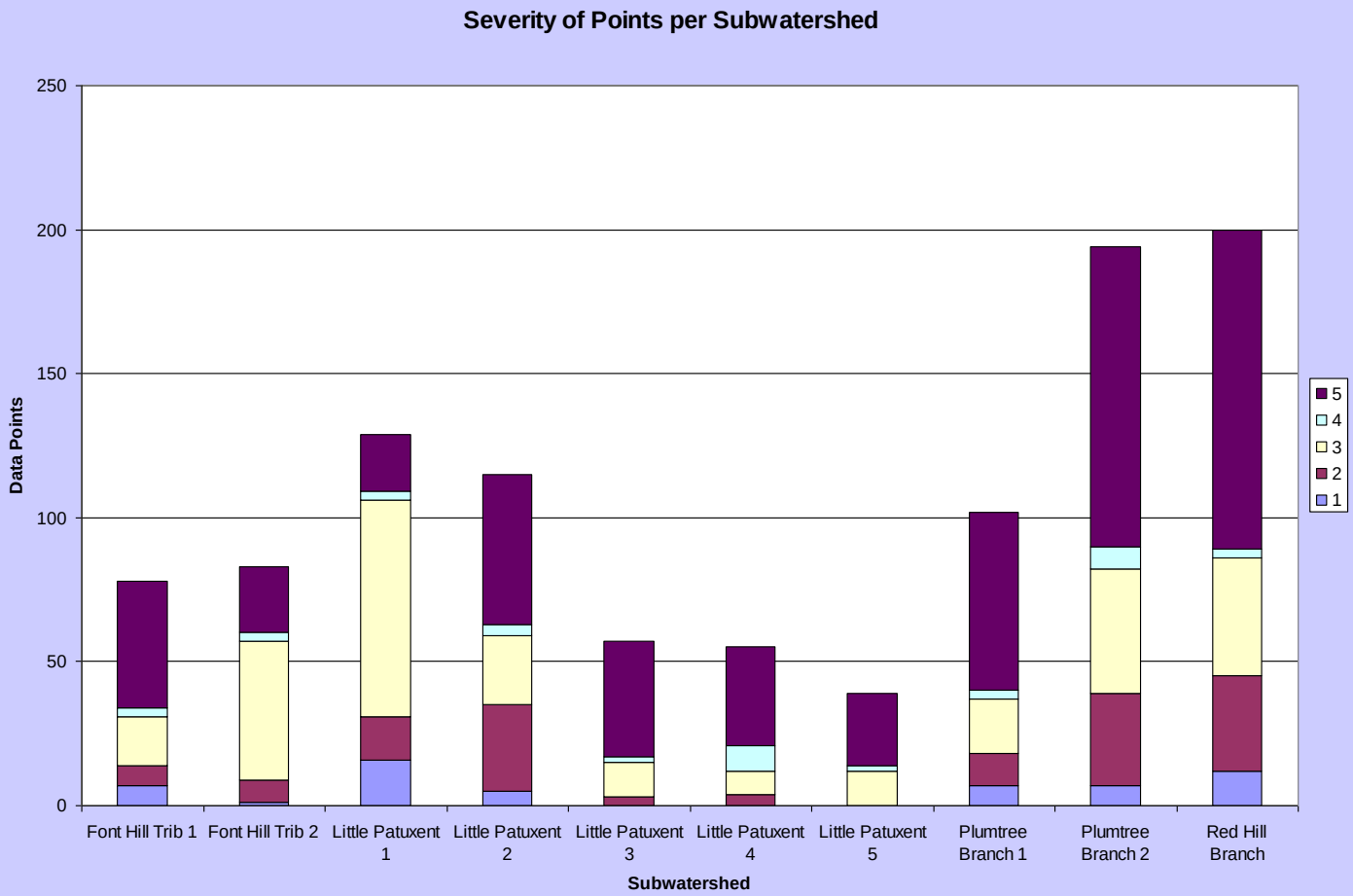
- 1049 points
- 24 points per mile

- Pipe Outfalls 571 (54 percent)
  - One outfall or culvert every 406 feet of stream
- Erosion Site 257 (25 percent)

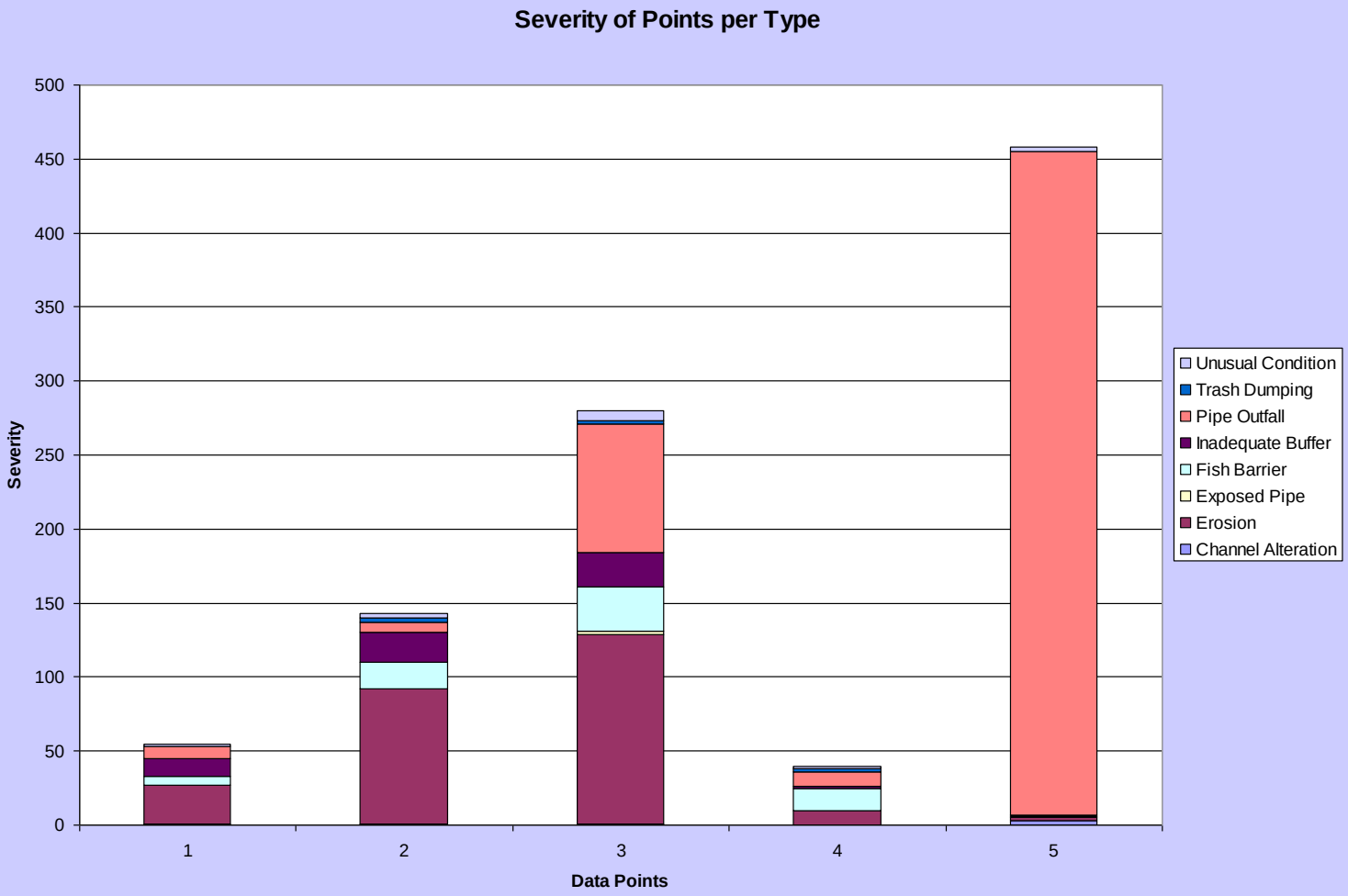
Stream Corridor Assessment



Stream Corridor Assessment



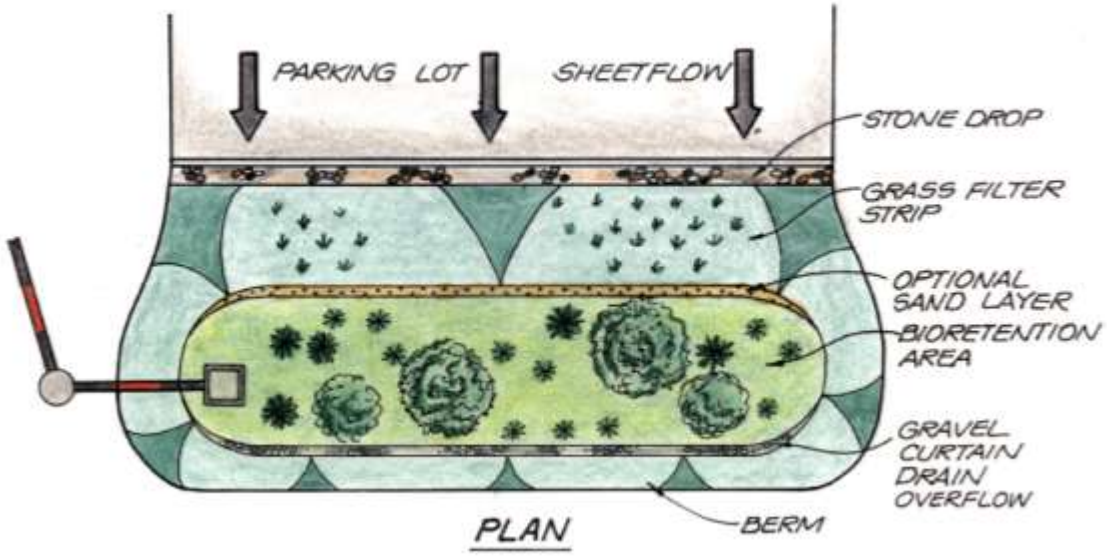
Stream Corridor Assessment



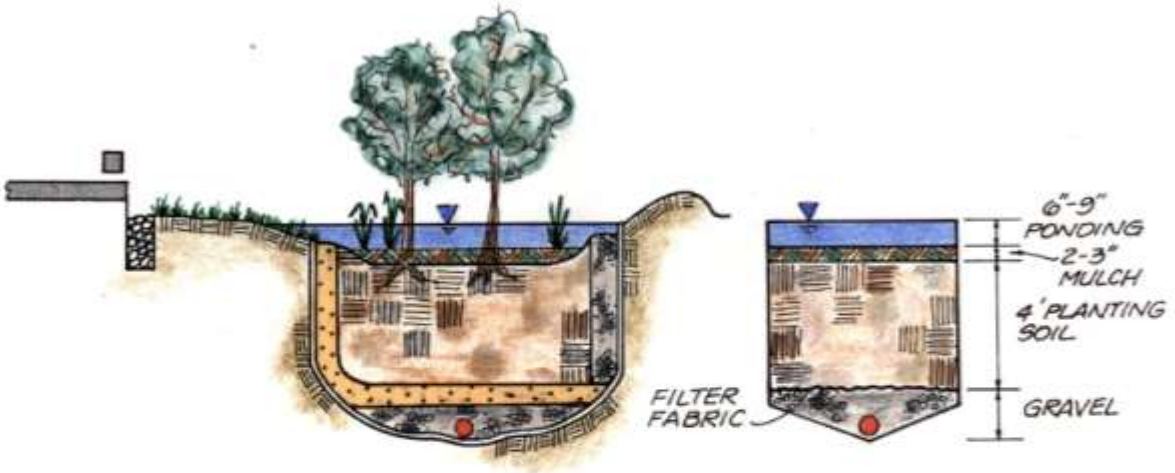
Priorities and Next Steps

- Candidate Sites
  - Most severe and correctible SCA data points
  - Concentrations of untreated impervious
  - Buffer enhancement that connect habitats
- Develop Detailed Strategies and Concept Plans
  - Cost, benefits, constraints
- Implementation Plan
  - Rank the strategies and concepts
  - Schedule
  - Monitoring approach
  - Identify funding sources

Restoration Toolbox



PLAN



PROFILE

TYPICAL SECTION

BIORETENTION FILTER

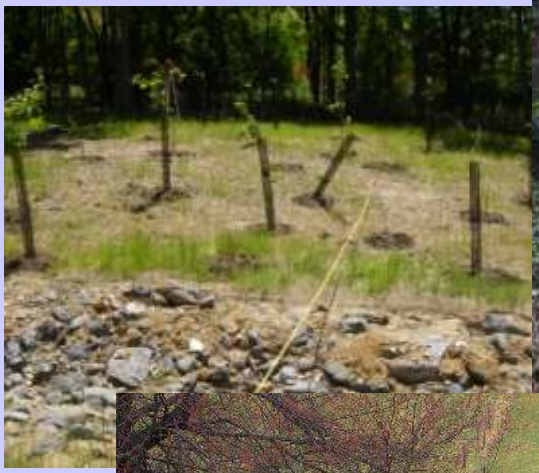
Bioretention Facility

Sand Filter

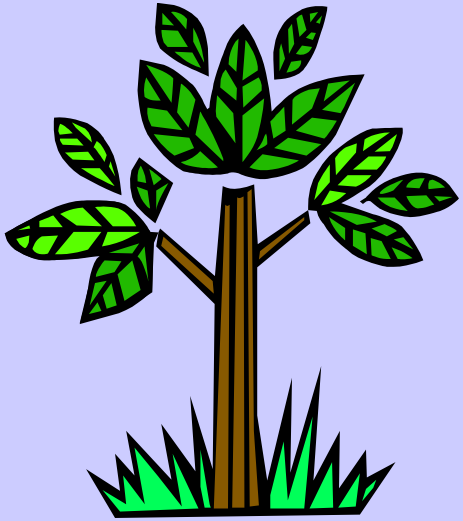
Retrofit Existing Pond

Stream Restoration

Riparian Buffer Enhancement



What can homeowners do to improve the water quality in the Upper Little Patuxent River watershed?



Everyday Things

- Pick up after your pet
- Reduce the amount of fertilizer you use
- Reduce runoff from your yard
  - Disconnect your downspouts
  - Reduce turf area
- Remember that anything that runs off your driveway or lawn ends up in the creek
  - Oil leaks
  - Pesticides
- Plant a tree
- Reduce, Reuse and Recycle!!

Poor Pooch Poop Scoopers

41% of people own dogs

Of dog walkers, 41% admit they rarely or never clean up

Of these, 44% would not clean up even with a fine, complaints, collection or disposal methods

However, 63% agreed that pet wastes contribute to water quality problems


Attention
Dog Guardians
Pick up after your dogs. Thank you.
Attention Dogs
Grrrrr, bark, woof.
Good dog.
District of North Vancouver.
Bylaw 5981-11(i)

Frequent Fertilizers

- Nutrient runoff from lawns can cause eutrophication in streams, lakes & estuaries
- 52% of people who fertilize OVER-fertilize
- People who over-fertilize put on more nutrients than farmers do to grow our food
- Turf grass is single largest crop by area in the Chesapeake Bay Basin

WHEN YOU'RE FERTILIZING THE LAWN, REMEMBER YOU'RE NOT JUST FERTILIZING THE LAWN.

WATER QUALITY CONSORTIUM

You fertilize the lawn. Then it rains. The rain washes the fertilizer along the curb, into the storm drain, and directly into our lakes, streams and Puget Sound. This causes algae to grow, which uses up oxygen that fish need to survive. So if you fertilize, please follow directions and use sparingly.

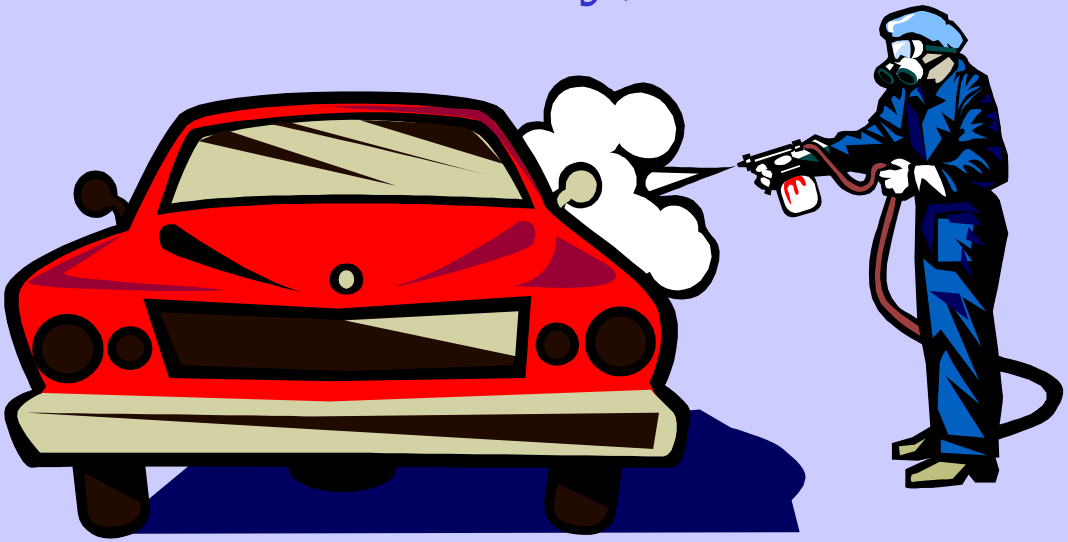
A cooperative venture between the department of Ecology, King County and the cities of Seattle and Tacoma.

Chronic Car Washers

55-70% of households wash their own cars

60% are “chronic car washers” who wash their car at least once a month

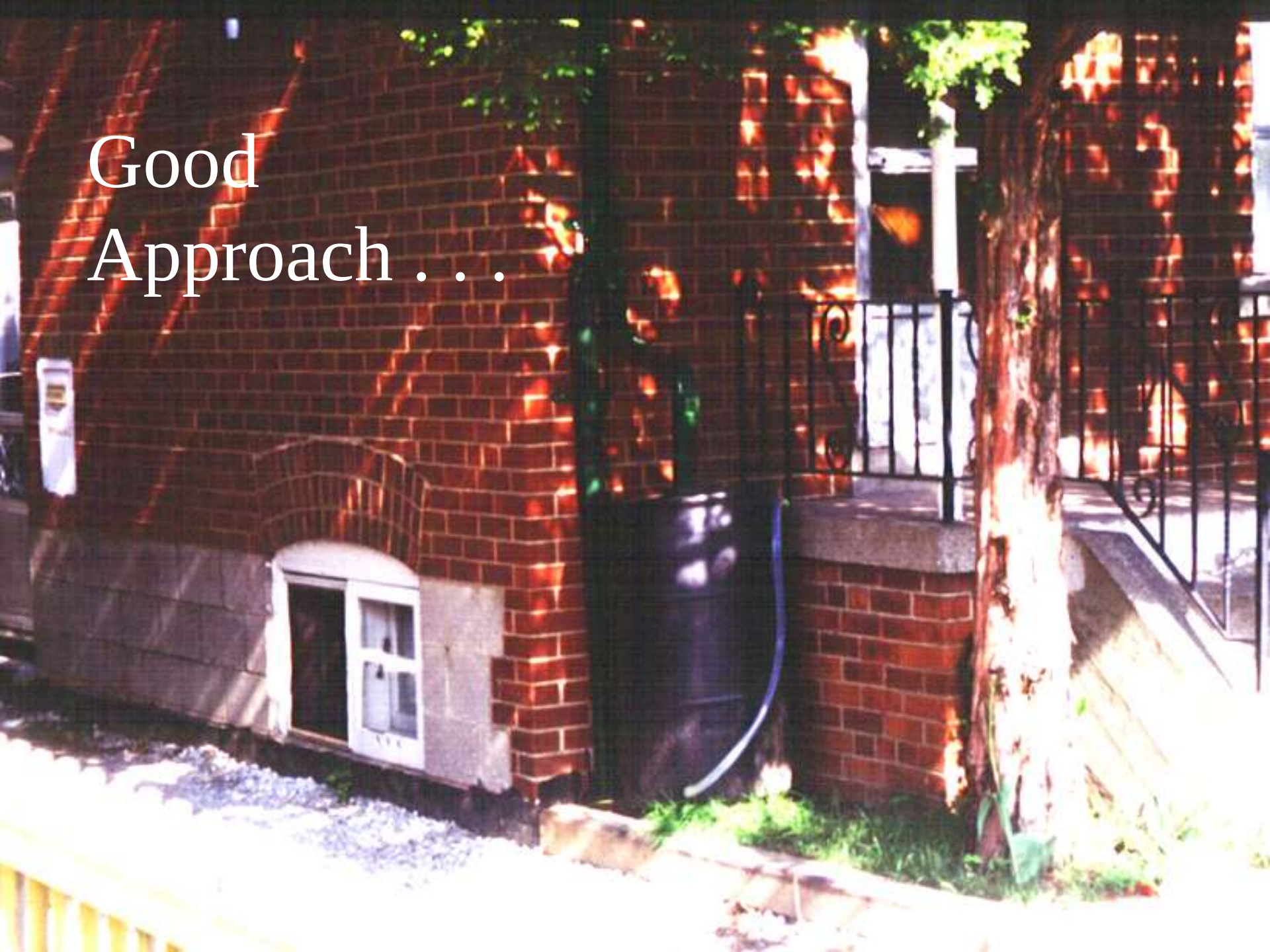
70-90% report that their wash water drains directly to the street and eventually, the storm drain



Volume Reduction

- There are both simple and complex ways to reduce runoff from your yard
  - downspout disconnection
  - rainbarrels
  - rain gardens
  - lawn conversion

Bad Approach . . .


Good
Approach . . .

Overfertilization?
Too much turf?


Photo: LID Center


Lack of
riparian buffer.

Summary

- County has completed the initial assessment phase of the ULPR study. There is still more work to be done and we will report back again Winter 2008.
- Water quality improvements can be derived from large and small efforts.

- **YOU** can make a difference!