Seneca Park and Plum Gar

Stormwater Management Retrofit Projects

Department of Environmental Protection
Montgomery County Maryland

January 14, 2014 Public Meeting

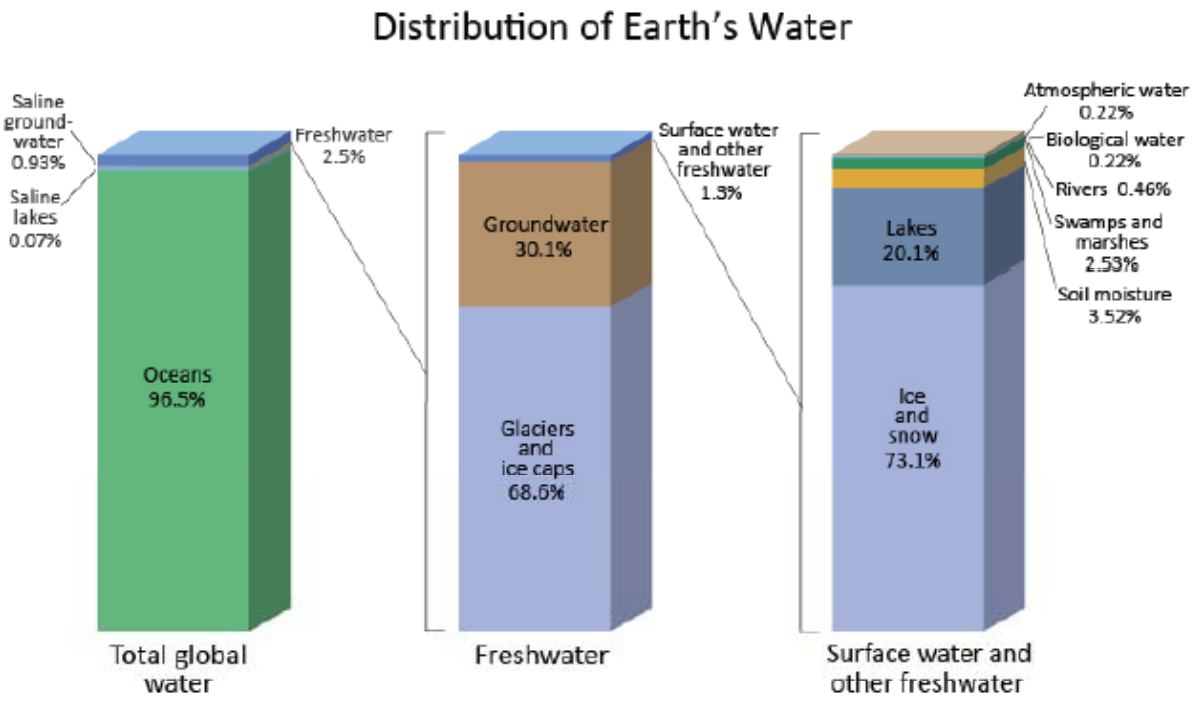
Montgomery County Department of Environmental Protection
Watershed Management Division

McCormick Taylor
Engineers & Planners Since 1946

Today's Agenda

- Introductions
  - **Michael Lichty– Senior Engineer, Montgomery County DEP**
  - **Darian Copiz – Watershed Planner, Montgomery County DEP**
  - **Amy Hribar– Project Engineer, McCormick Taylor, Inc.**
- Background Information
- The MS4 Permit and the County's Efforts to comply
- Project Selection
- Project Locations
- Stormwater Facility Retrofit Techniques
- Objectives for Stormwater Management Retrofits
- Seneca Park and Plumgar 2 Regional Ponds
- Project Schedule
- What to Expect During Construction

Sources of Water

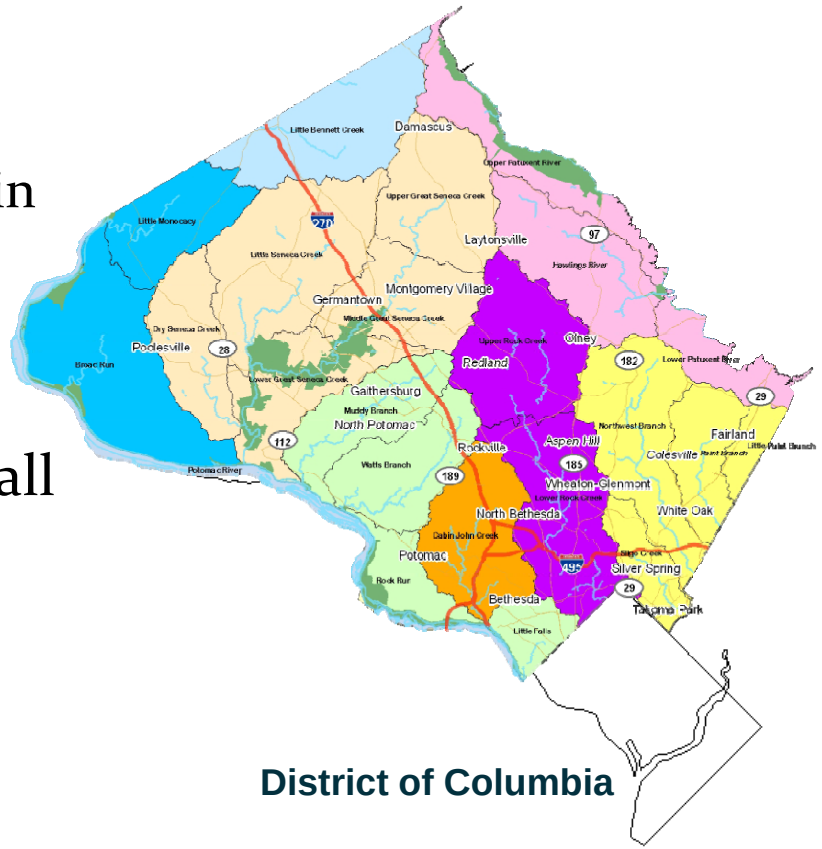


Source: Igor Shiklomanov's chapter "World fresh water resources" in Peter H. Gleick (editor), 1993, Water in Crisis: A Guide to the World's Fresh Water Resources.

- About 97% is salt water
- About 2% is frozen
- Only 1% is available for drinking water
  - 95% from groundwater across the Country
  - 32% from groundwater, 68% from surface water in Maryland
    - Potential for greater impacts from runoff in Maryland

Montgomery County, MD

- 500 sq. miles
- 1,000,000 people
  - Second only to Baltimore City within Maryland in average people per square mile
  - 184 languages spoken
- About 12% impervious surface overall
  - About the size of Washington DC
- Over 1,500 miles of streams
- Two major river basins:
  - Potomac
  - Patuxent
- Eight local watersheds



Impervious: Not allowing water to soak through the ground.

What is a Watershed?

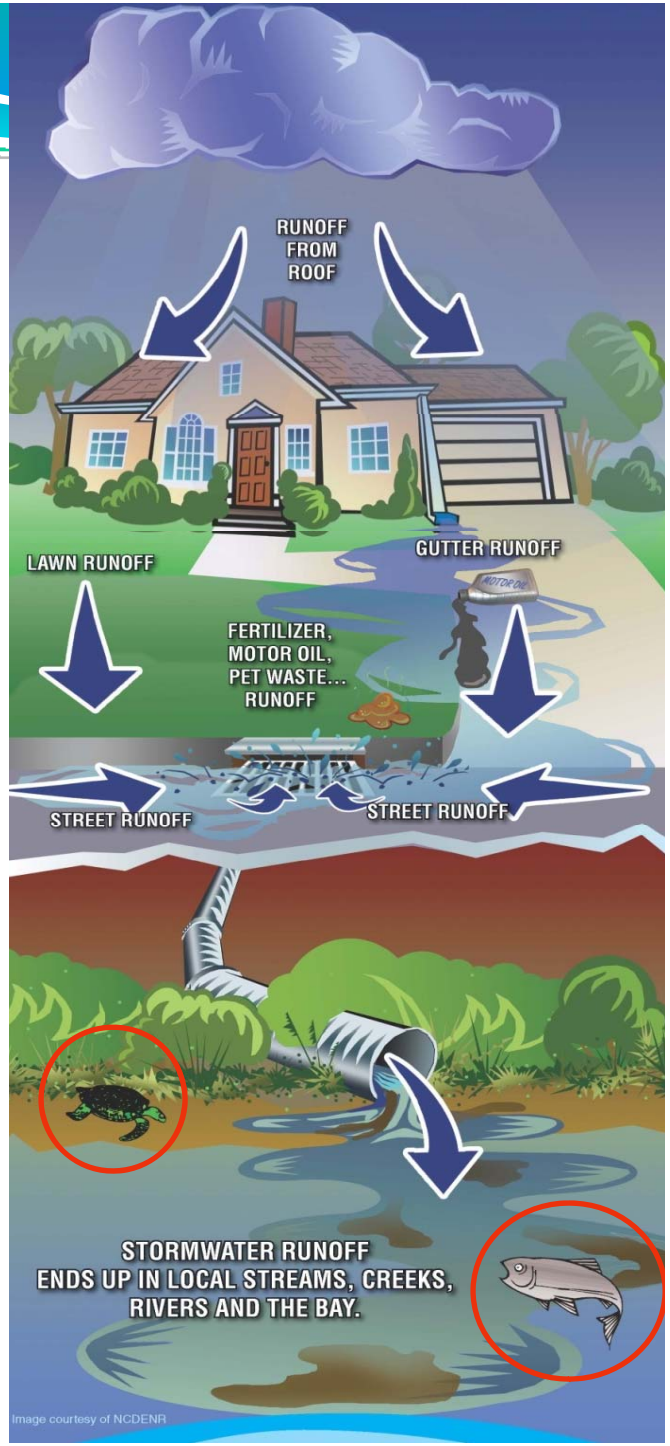
- A **watershed** is an area from which the water above and below ground drains to the same place.

- Different scales of watersheds:
  - Chesapeake Bay
  - Eight local watersheds
  - Neighborhood (to a storm drain)

What is Runoff?

- Water that does not soak into the ground becomes surface runoff. This runoff flows over hard surfaces like rooftops, driveways and parking lots collecting potential contaminants and flows:
  - Directly into streams
  - Into storm drain pipes, eventually leading to streams
  - Into stormwater management facilities, then streams

<u>Two Major Issues:</u>
Volume/Timing of Runoff
Water Quality



What is Montgomery County doing to protect our Streams?

- Must meet regulatory requirements
  - Federal Clean Water Act permit program
  - **MS4** = **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem
- Applies to all large and medium Maryland jurisdictions
- County programs
  - Restore our streams and watersheds
    - Add runoff management
  - Meet water quality protection goals
    - Reduce pollutants getting into our streams
  - Educate and engage all stakeholders
    - Individual actions make a difference
  - Focus on watersheds showing greatest impacts

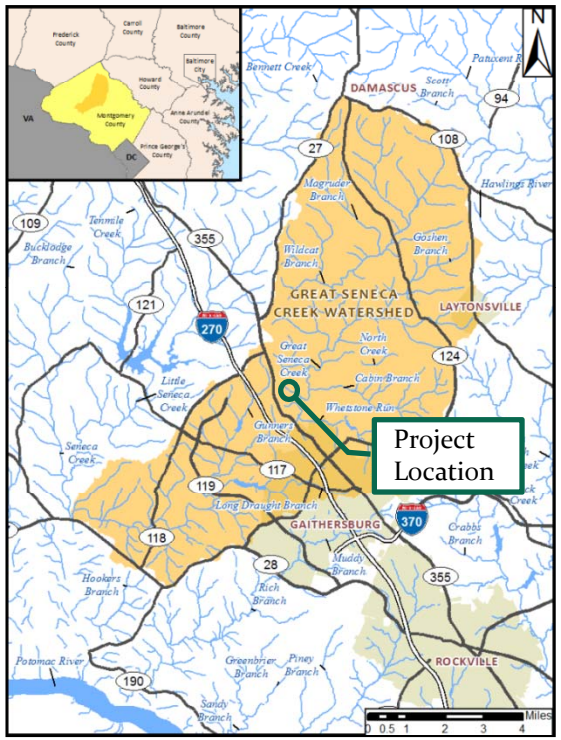
What is the MS_4 permit?

- Montgomery County is responsible for:
  - What goes into our storm drain pipes
  - What comes out of them
  - What flows into the streams
- Requires additional stormwater management for **20 percent** of impervious surfaces (4,292 acres = 6.7 square miles). That's about three times the size of Takoma Park.

Project Selection

- Ponds constructed in early 1980s
- Located in a key watersheds (Great Seneca Creek) for pond retrofits
- Ponds are at or near the end of service life
- Retrofit for current safety and design standards
- Opportunity for water quality treatment and ecological benefits

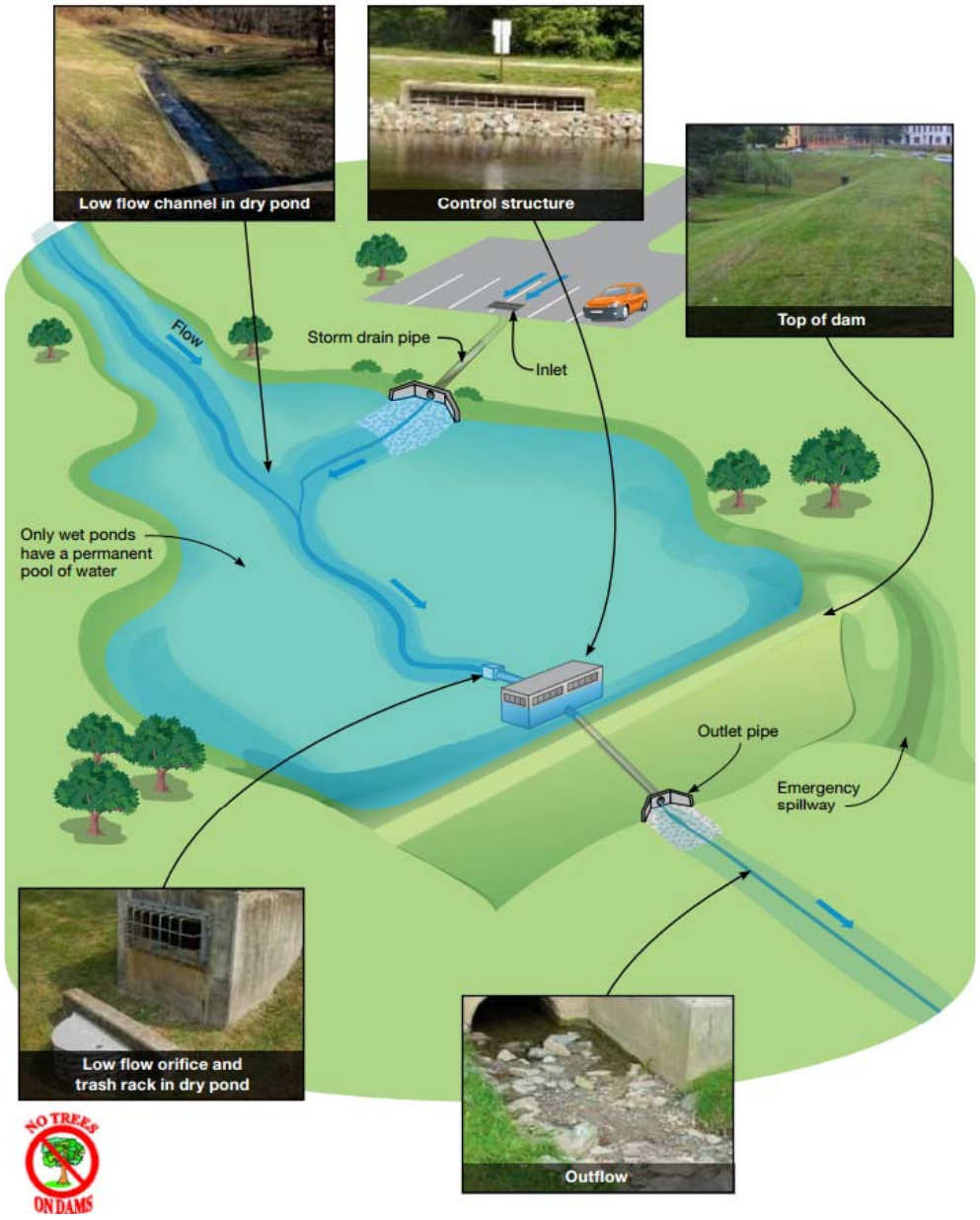
Project Location



- Within the Great Seneca Creek Watershed
- Ponds located off of Black Forest Way (11119) and Winding Brook Lane (11200)

Stormwater Retrofit Techniques

- Improvements to the pond will utilize:
  - Increasing the volume of the pond
  - Modifying the riser
  - Adding a permanent pool
  - Provide Channel Protection downstream



2012 - Montgomery County, Maryland, Department of Environmental Protection

Seneca Park Stormwater Management Retrofit

Existing Pond

Access Location

Creating Permanent Pool at Inflow to Pond

Modify Riser

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Plumgar 2 Regional Stormwater Management Retrofit

Existing Pond

Access Location

Modifying Riser &
Low Flow Opening

Enhancing Permanent Pool
at Inflow to Pond

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Objectives for Stormwater Management Retrofits

- Environmental Benefits:
  - Adding a permanent pool (2' depth) to provide 20 to 50% of Water Quality storage
  - Provide 47 to 59% of Channel Protection Volume to reduce downstream channel erosion
  - Improving Landscaping
- Structural Benefits:
  - Modifying the existing pond risers
  - Bringing the ponds up to current design and safety standards

Asset #	Total Drainage Area (acres)	Impervious Area (acres)	Water Quality Volume (WQv)		Channel Protection Volume (CPv)	
			Required (cubic ft)	Provided (cubic ft)	Required (cubic ft)	Provided (cubic ft)
11119	17.63	6.53	24,394	8,276	28,750	28,750
11200	81.29	19.80	79,279	79,279	147,668	147,668

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Project Schedule

Public Meeting (January 14, 2014)

Concept Plan Submittal (January 2014)

Final Design Submittal (May 2014)

Plan Approval & Permits Issued (November 2014)

Construction (February 2015)

*MDE stream closure dates between March 1 to June 15

What to Expect During Construction

- Duration will be approximately 5 to 6 months
- Only minor impacts to local traffic are anticipated
- Each work site will be lined with orange construction fence for safety
- The Montgomery County Noise Ordinance will be followed for all construction activities
- Work hours during construction are 7 am to 4 pm
- The contractor is responsible to comply with MDE sediment and erosion control guidelines and minimize disturbance

Questions?

For more information:

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