Game Preserve

Stormwater Management Retrofit Projects

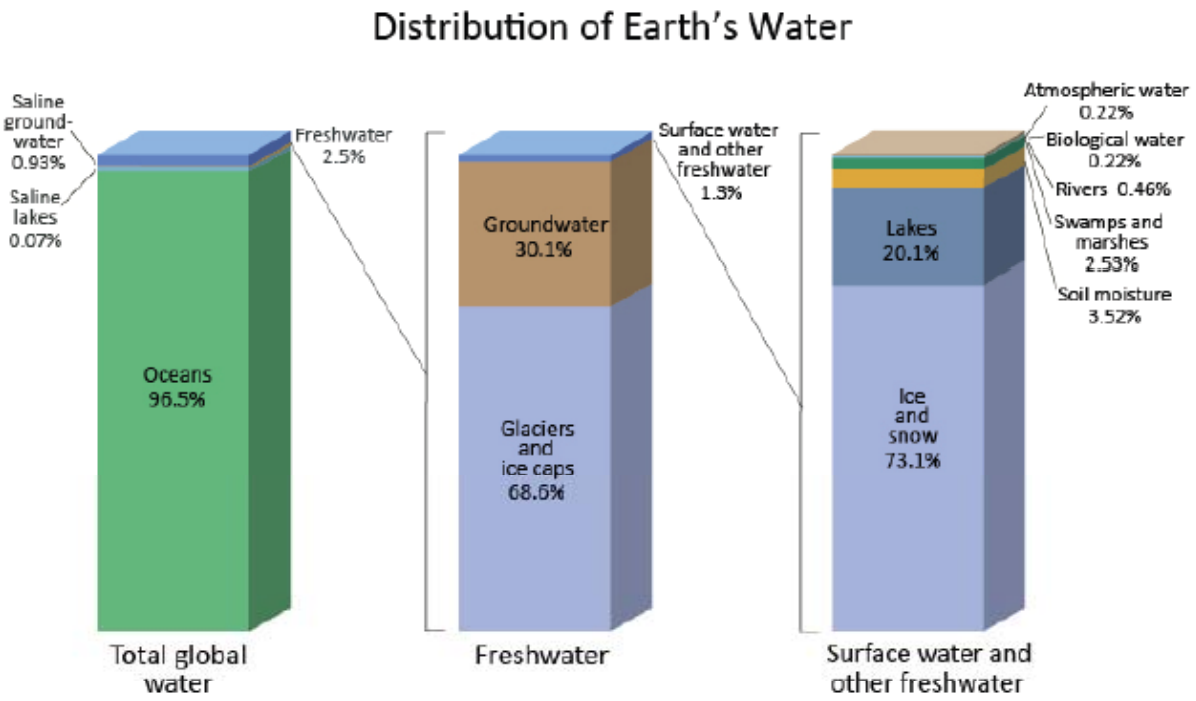
January 7, 2014 Public Meeting

Montgomery County Department of Environmental Protection
Watershed Management Division

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
- Asset #10826
- Asset #10886
- Objectives for Stormwater Management Retrofits
- Project Schedule
- What to Expect During Construction

Sources of Water

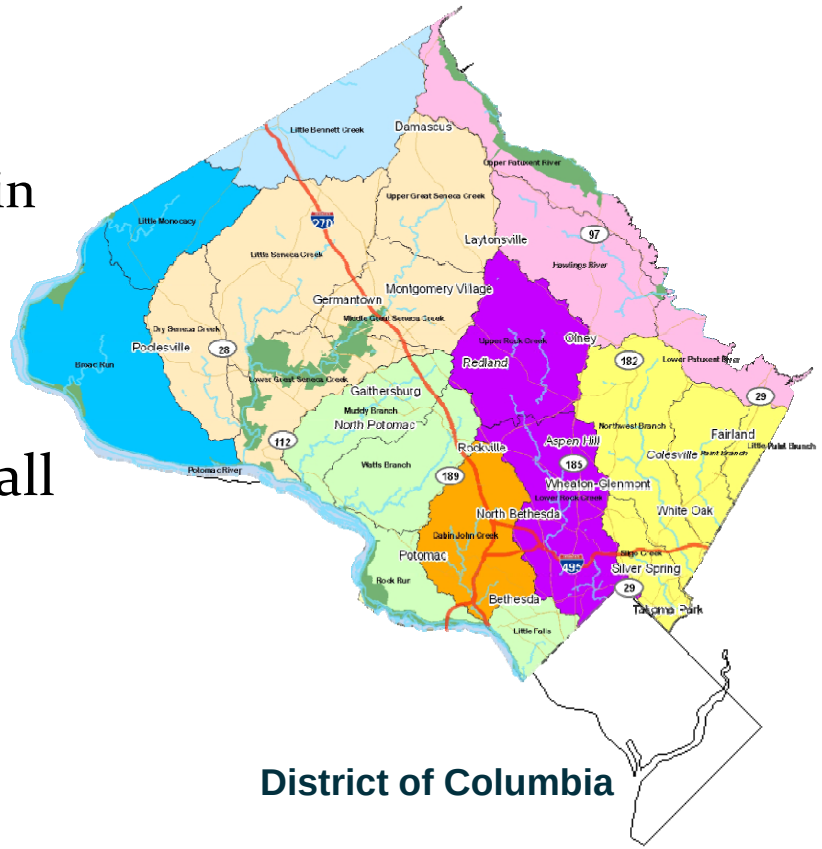


Source: Igor Shiklomanov's chapter "World fresh water resources" in Peter H. Gleick (editor), 1993, Water in Crisis: A Guide to the World's Fresh Water Resources.

- 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?

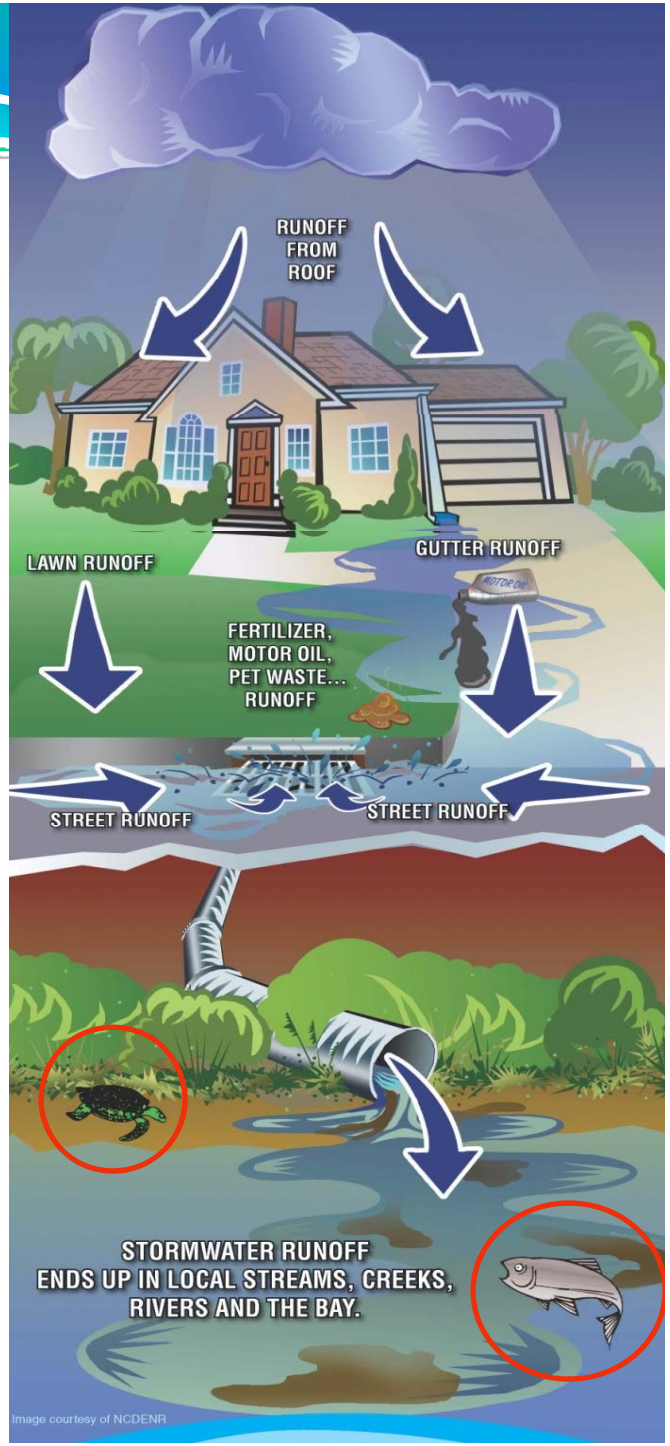
- A **watershed** is an area from which the water above and below ground drains to the same place.

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

What is Runoff?

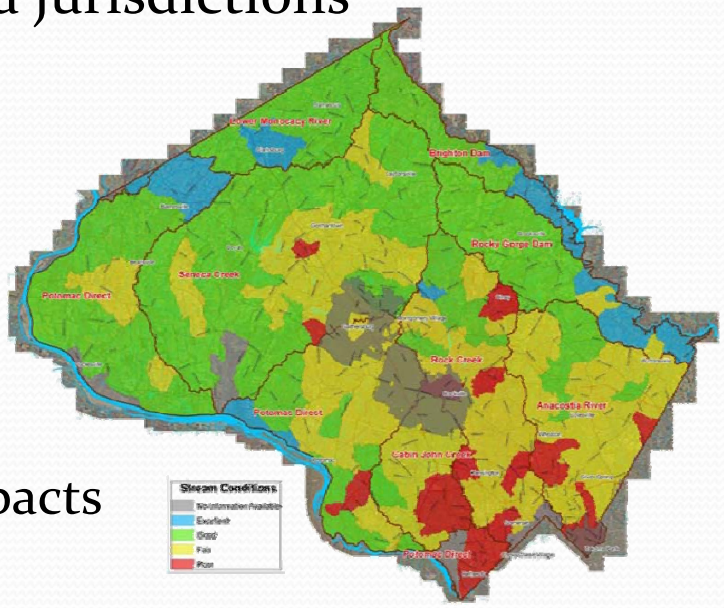
- Water that does not soak into the ground becomes surface runoff. This runoff flows over hard surfaces like rooftops, driveways and parking lots collecting potential contaminants and flows:
  - Directly into streams
  - Into storm drain pipes, eventually leading to streams
  - Into stormwater management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

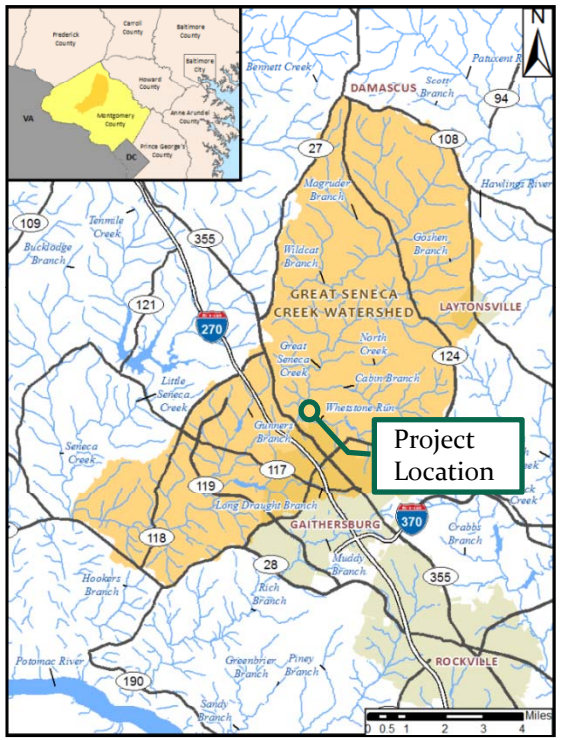
- Montgomery County is responsible for:
  - What goes into our storm drain pipes
  - What comes out of them
  - What flows into the streams
- Requires additional stormwater management for **20 percent** of impervious surfaces (4,292 acres = 6.7 square miles). That's about three times the size of Takoma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

That's equivalent to 3,307 football fields!

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 Locations



- Within the Great Seneca Creek Watershed
- Ponds located off of Game Preserve Road

Asset # 10826 Stormwater Management Retrofit

Existing Pond

Access Location

Replacing Principal Spillway Pipe & Stabilizing Outfall

Creating Permanent Pool at Inflow to Pond

Department of Environmental Protection

Montgomery County Maryland

Asset # 10886 Stormwater Management Retrofit

Existing Pond

Access Location

Replacing Principal Spillway Pipe & Stabilizing Outfall

Creating Permanent Pool at inflow to pond

Department of Environmental Protection

Montgomery County Maryland

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:
  - Replacing the spillway pipe and riser with more durable material
  - Stabilizing the pond outlet to reduce erosion potential
  - 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 (ac-ft)	Provided (ac-ft)	Required (ac-ft)	Provided (ac-ft)
10826	10.62	3.37	0.30	0.06	0.41	0.24
10886	9.40	1.93	0.18	0.09	0.36	0.17

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Project Schedule

Public Meeting 1-7-14

Concept Plan Submittal

Final Design Submittal

Plan Approval & Permits Issued

Construction (Spring 2015)

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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