Stoneybrook
Stream Restoration Project

Public Meeting Presentation
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Department of Environmental Protection
Montgomery County Maryland

Introductions

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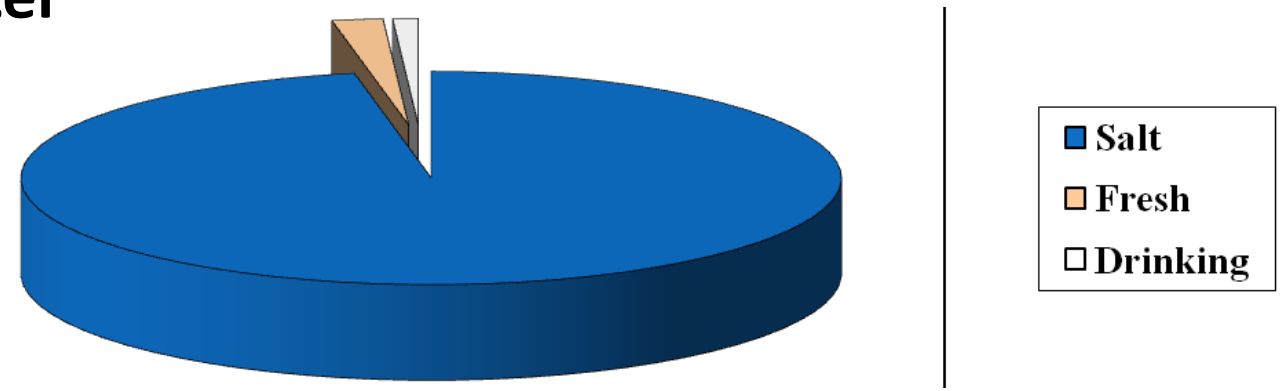
Today's Agenda

- Background Information – Why County is Doing This
- Stormwater Management Overview
- Project Background
- Project Goals
- Stream Restoration Approach
- Project Construction Activity
- Project Schedule and Costs

Watershed 101

- **Sources of Water**

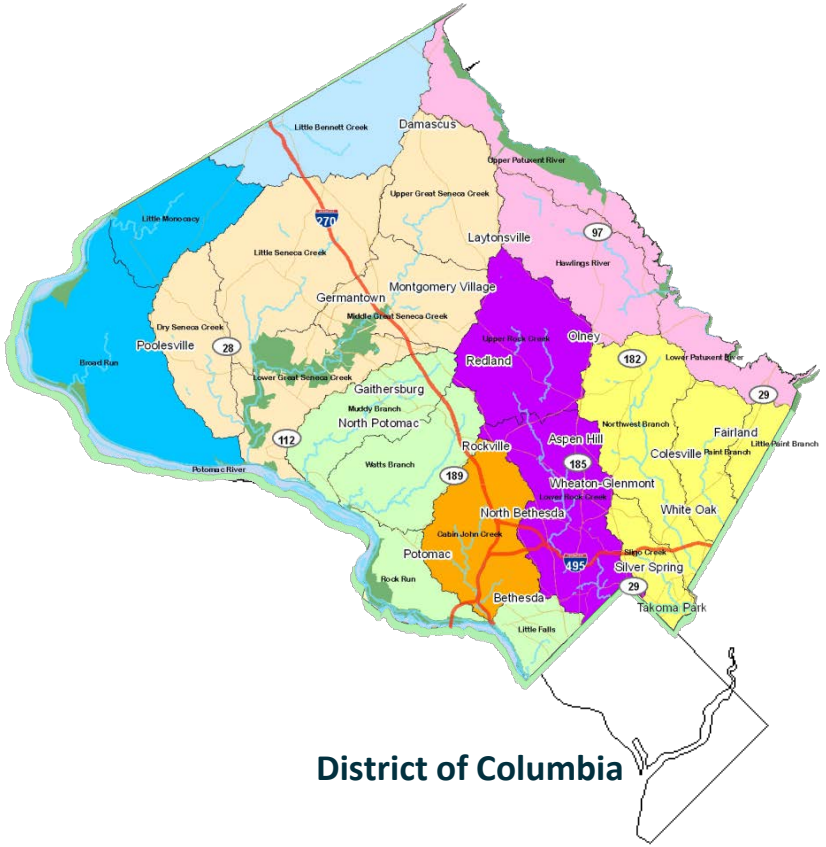


- About 97% is salt water
- About 2% is fresh
- Only 1% is available for drinking water
- Across the Country , most drinking water is from groundwater sources. In Maryland , most drinking water is from surface water

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?

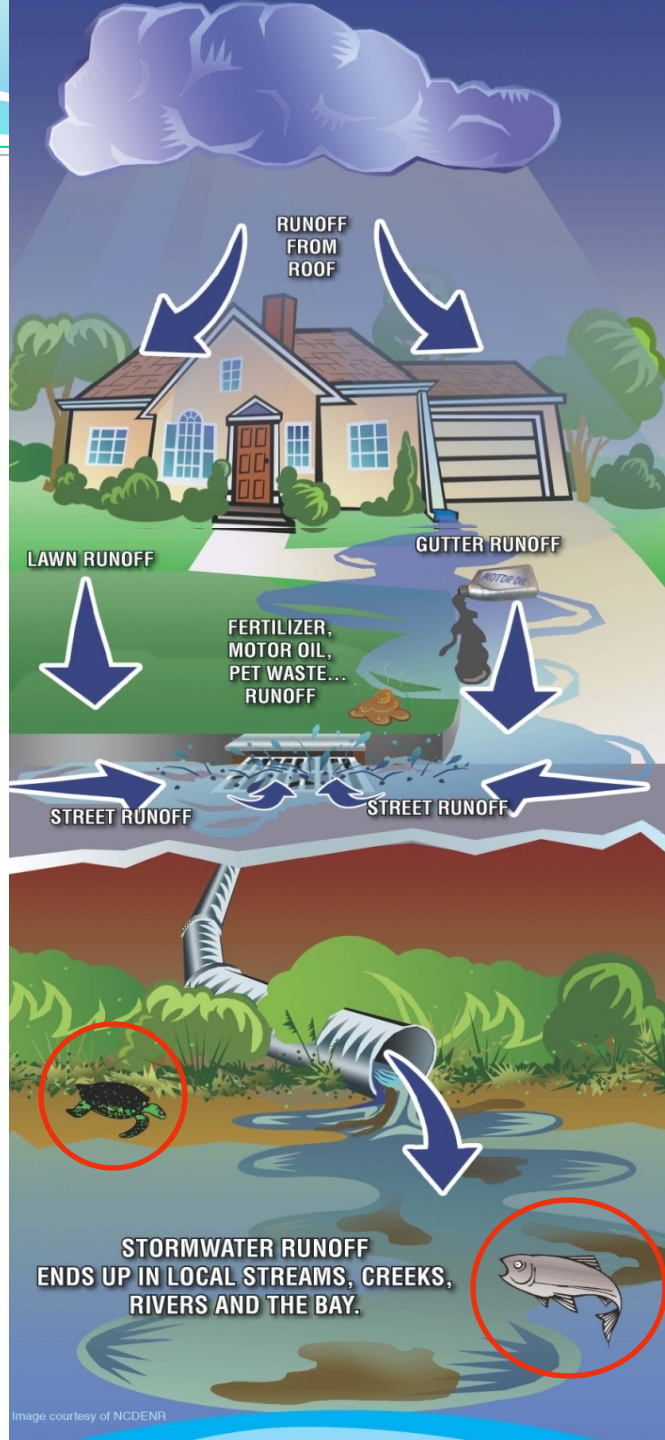
- A ***watershed*** is an area from which the water above and below ground drains to the same place.
- Different scales of watersheds:
  - Chesapeake Bay
  - Eight local watersheds
  - Neighborhood (to a storm drain)

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:

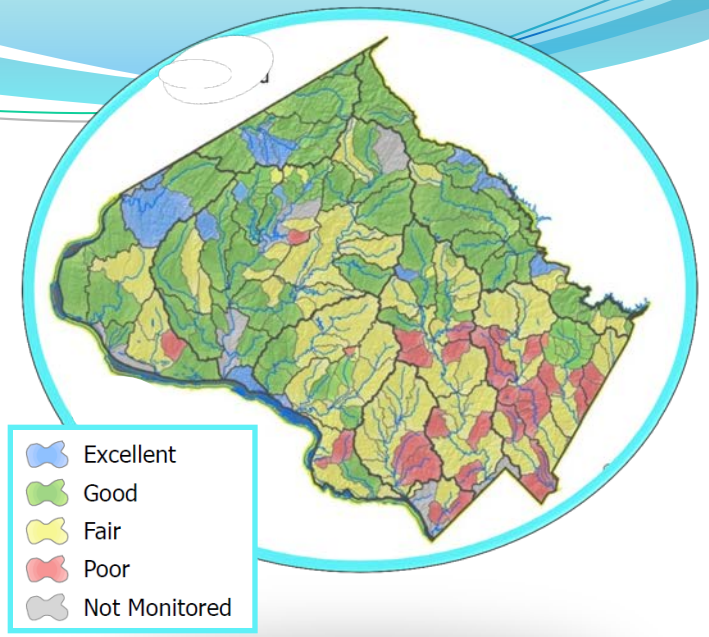
- **Directly into streams**
- **Into storm drain pipes, eventually leading to streams**
- **Into stormwater management facilities, then streams**

Two Major Issues:
Volume/Timing of Runoff
Water Quality



Watershed 101

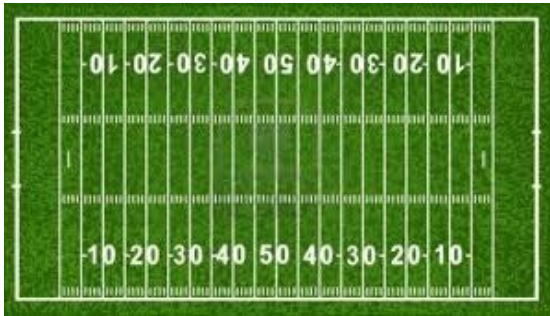
What is the County doing to protect our Streams?



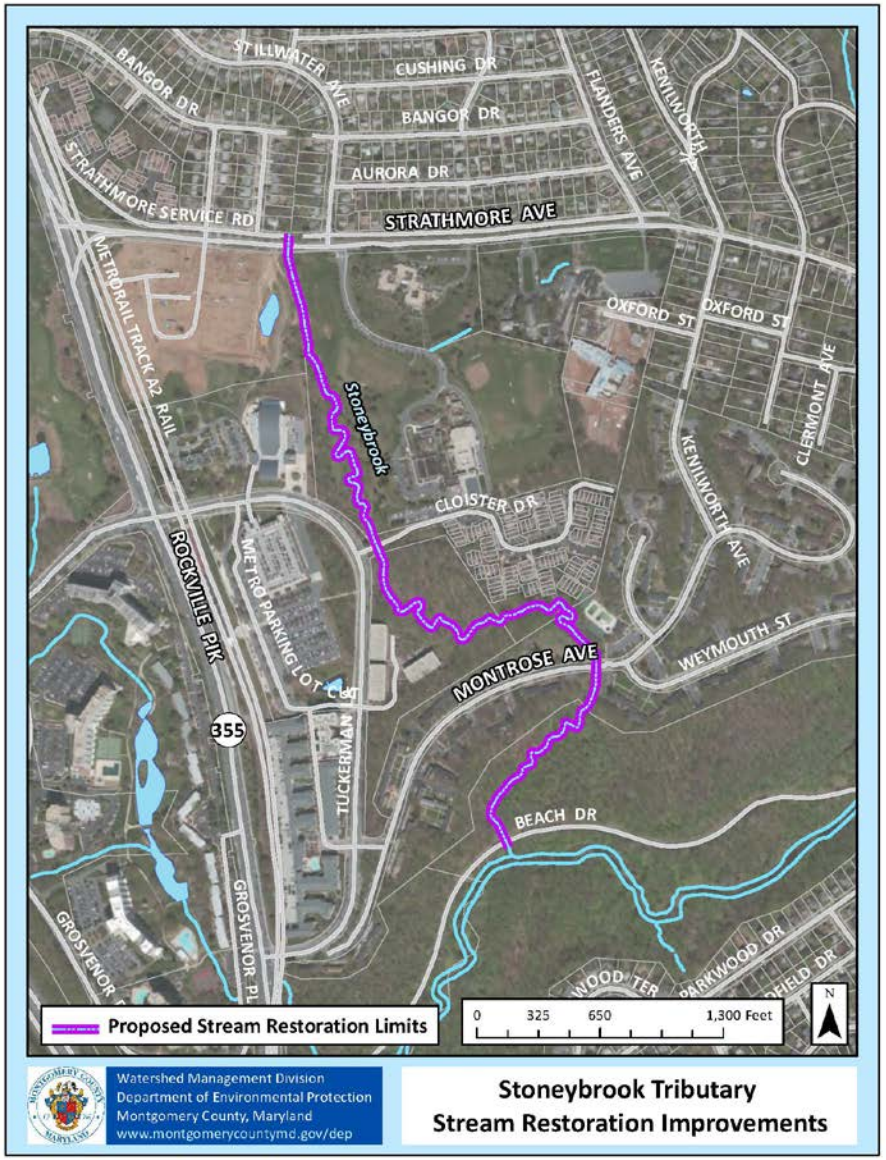
- Must meet regulatory requirements
  - Federal Clean Water Act permit program
  - **MS4** = **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem
- Applies to all large and medium Maryland jurisdictions
- County Programs
  - Restore our streams and watersheds
    - Add runoff management
  - Meet 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 County Doing to Protect our Streams?

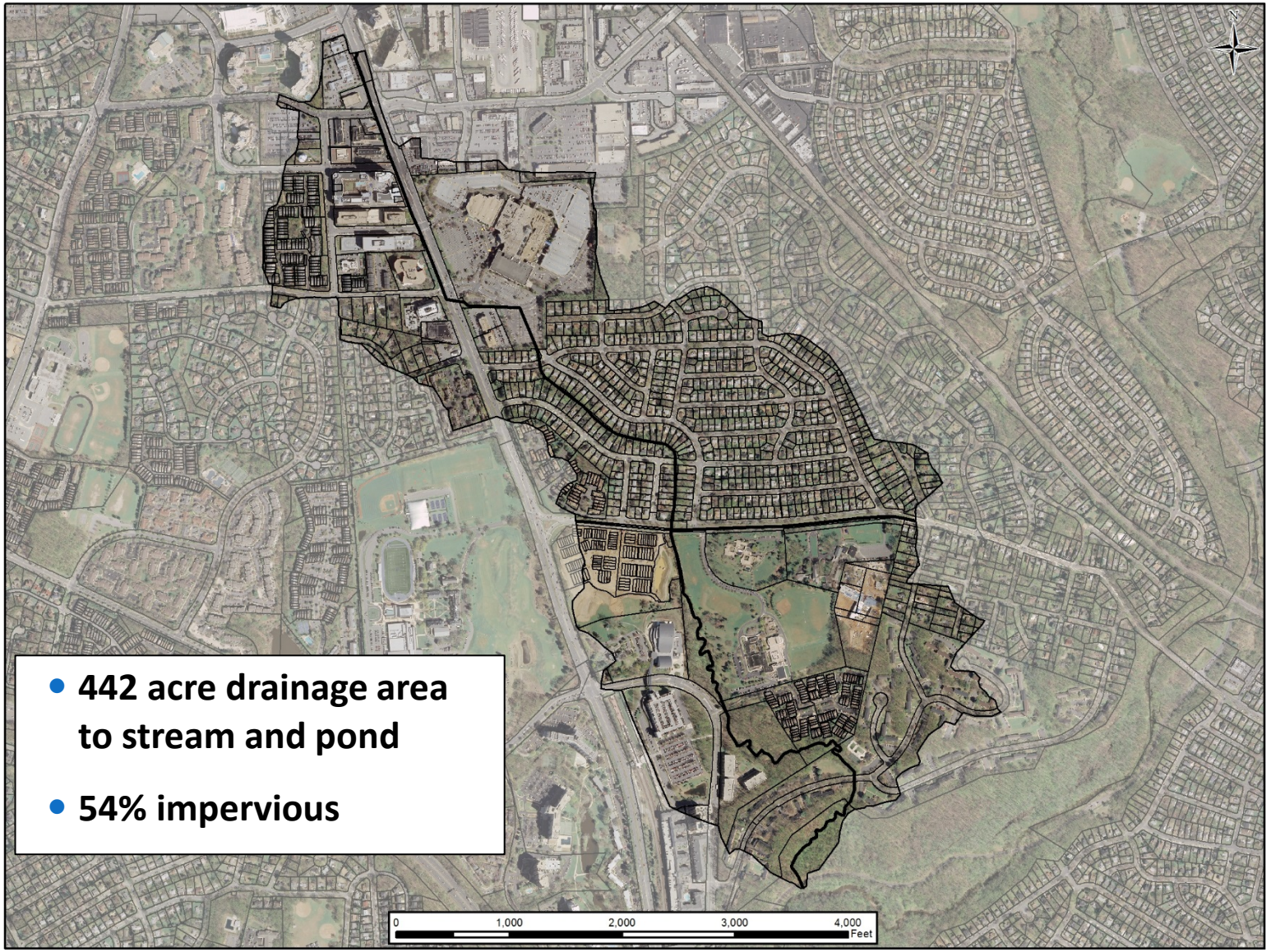
- Montgomery County is responsible for:
  - What goes into our storm drain pipes
  - What comes out of them
  - What flows into the streams
- DEP is adding stormwater management for 20 % of impervious surfaces (4,292 acres = 6.7 square miles…About three times the size of Takoma Park).
- **That's equivalent to 3,307 football fields!**
- Stream Restoration is a cost-effective option for watershed restoration and treating stormwater.



Project Location



Drainage Area



- 442 acre drainage area to stream and pond
- 54% impervious

Existing Conditions

Existing Conditions

Existing Conditions

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Existing Conditions

Goals of Stream Restoration

- Minimize disturbance to existing mature trees
- Improve aquatic & fish habitat
- Improve water quality
- Bed and bank stabilization
- Reforest stream banks
- Remove majority of the non-native invasive plants (vines/shrubs) within the stream corridor

Stream Restoration Approach

- Habitat enhancement
  - riffle/pool system
  - riparian cover – shading and avian habitat
  - diverse and native plant communities, floodplain forested wetlands, and vernal pools
- Stabilization channel bed and banks
  - raising channel invert and minimizing bank height
- Increase floodplain function
  - reconnecting to floodplain
  - sediment and nutrient trapping
  - hydrologic retention
  - groundwater recharge

Bankfull Bench

Riffle Habitat Feature

Riffle/Pool Sequence

Step Pool

Bank Roughness Feature

Rock Root Pack

Boulder/Log Boulder J-Hook

Boulder J-Hook

Log Boulder J-Hook

Imbricated Rock Wall

Stream Restoration Example

Stream Restoration Example

Stream Restoration - Reforestation

- Attractive, non-invasive native trees and shrubs will be planted along the entire stream corridor
- Proposing Planting Over:
  - 1,200 Shrubs
  - 500 Trees

What to Expect During Construction

- **Duration**
  - Approximately 7 months
- **Construction Hours**
  - Monday through Friday, 7AM – 4PM
- **Safety**
  - Open sides of site will be fenced with orange construction safety fence to separate construction from residents
- **Traffic**
  - Minor impacts to traffic from entering and exiting construction traffic and contractor parking during the day
- **Noise**
  - Contractor is required to comply with Montgomery County Noise Ordinance – site elevation will help alleviate noise pollution
- **Sediment**
  - Contractor is required to comply with Montgomery County Sediment Control Permit and not track dirt onto roads

Construction Access (Example)

During Construction

After Construction

Evaluating the Project Goals – Restoration Monitoring

- County monitoring to evaluate whether project goals are achieved
  - Salamanders
  - Aquatic insects
  - Fish

Schedule and Cost

Stoneybrook Stream Restoration Project

- Public meeting to discuss 30% designs 12/11/13
- 60% design – 3/28/14
- 60% public meeting and stream walk – 6/10/14 and Fall 2014
- 90% design – 1/21/15
- Permits issued – Spring/Summer 2015
- Construction –late Summer 2015 – Spring 2016

- Cost: estimated $2.2 million financed by MCDEP CIP Program using funds generated through the Water Quality Protection Charge and grant funding

Questions/Comments?

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www.montgomerycountymd.gov/watershedrestoration
Click on "Stream Restoration"