Cinnamon Woods

Stormwater Management and Stream Restoration Project

July 18, 2013 Public Meeting

Montgomery County Department of Environmental Protection
Watershed Management Division

Department of Environmental Protection
Montgomery County Maryland

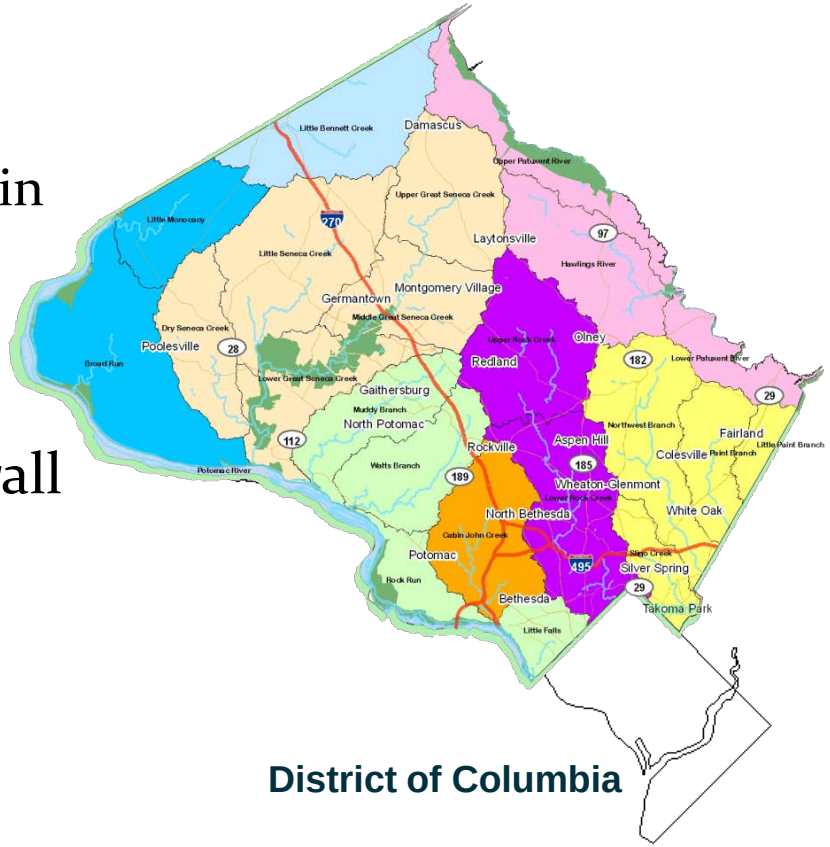
CPJ Associates

Today's Agenda

- Introductions
  - **Doug Marshall – Watershed Planner; Montgomery County DEP**
  - **Phil Jones – Project Engineer; Biohabitats**
  - **Jeff Blass – Project Designer; Charles P. Johnson Engineering**
- Background Information – Why County is Doing This
- Cinnamon Woods Stormwater Management Overview
- Project Objectives
- Project Costs and Benefits
- Design and Permitting Timeline
- What to Expect During Construction

Montgomery County, MD

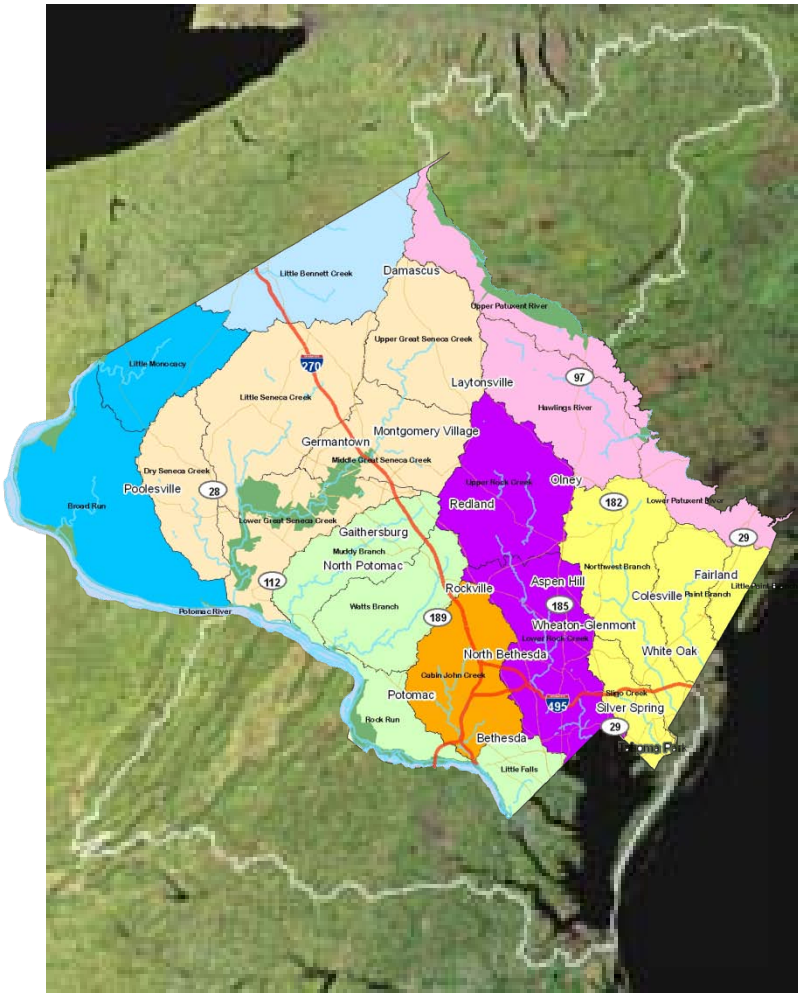
- 500 sq. miles
- 1,000,000 people
  - Second only to Baltimore City within Maryland in average people per square mile
  - 184 languages spoken
- About 12% impervious surface overall
  - About the size of Washington DC
- Two major river basins:
  - Potomac
  - Patuxent
- Eight local *watersheds*
- Over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



Impervious: Not allowing water to soak through the ground.

What is a Watershed?

- A ***watershed*** is a land area from which precipitation drains to the same water body.
- Different scales of watersheds:
  - Chesapeake Bay
  - Eight local watersheds
  - Neighborhood (to a storm drain)

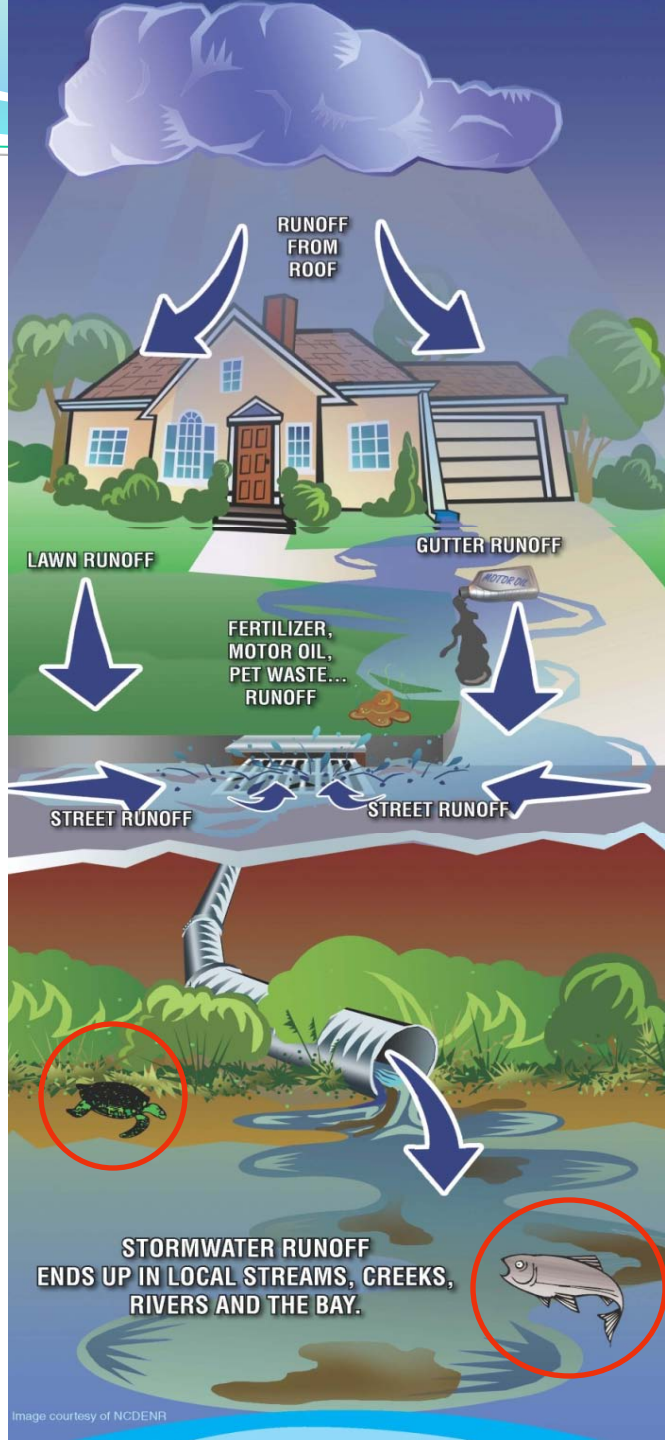


What is Runoff?

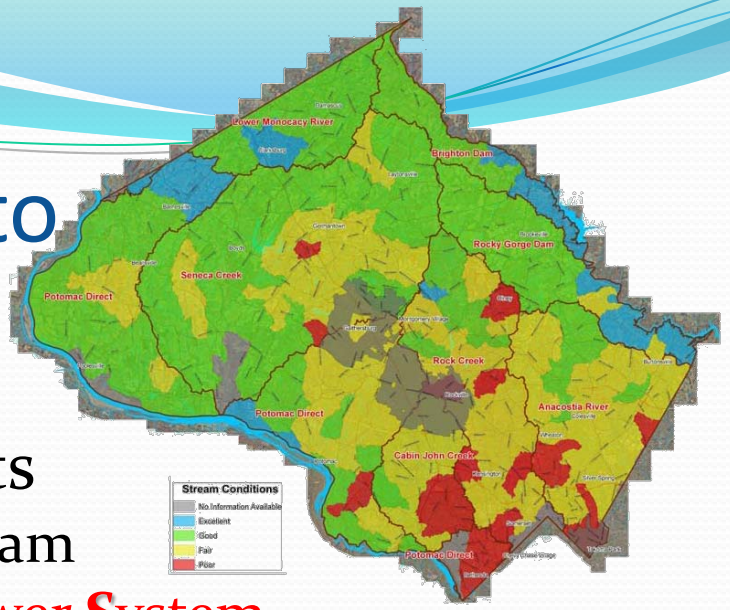
Water that does not soak into the ground becomes surface runoff. This runoff flows over hard surfaces like rooftops, driveways and parking lots collecting potential contaminants and flows:

- **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

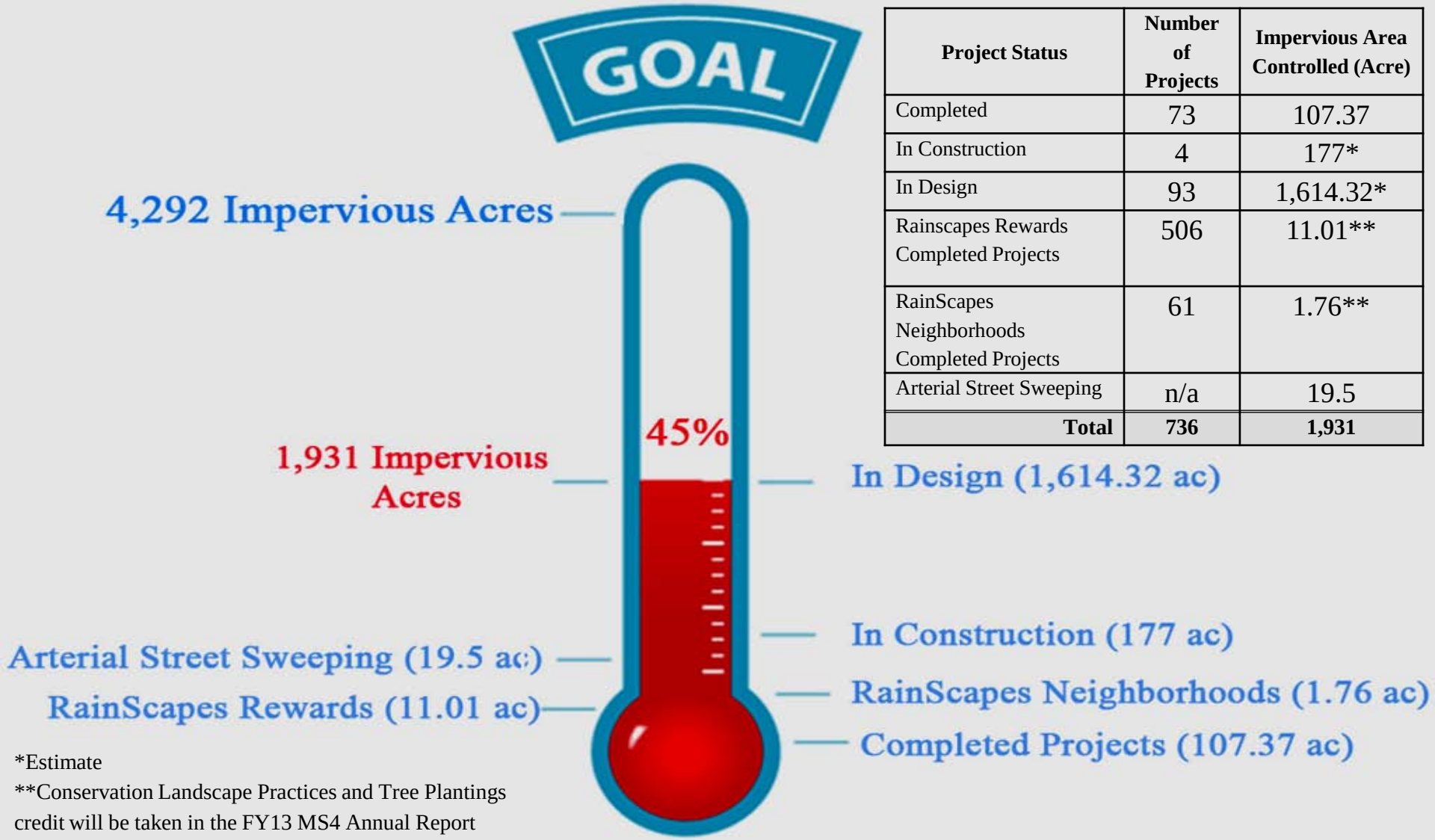


What is the County doing to protect our Streams?



- 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 for **20% of existing impervious area** in the county or **4,292 acres**
  - 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

Reporting MS4 Permit Progress (FY10-FY12)



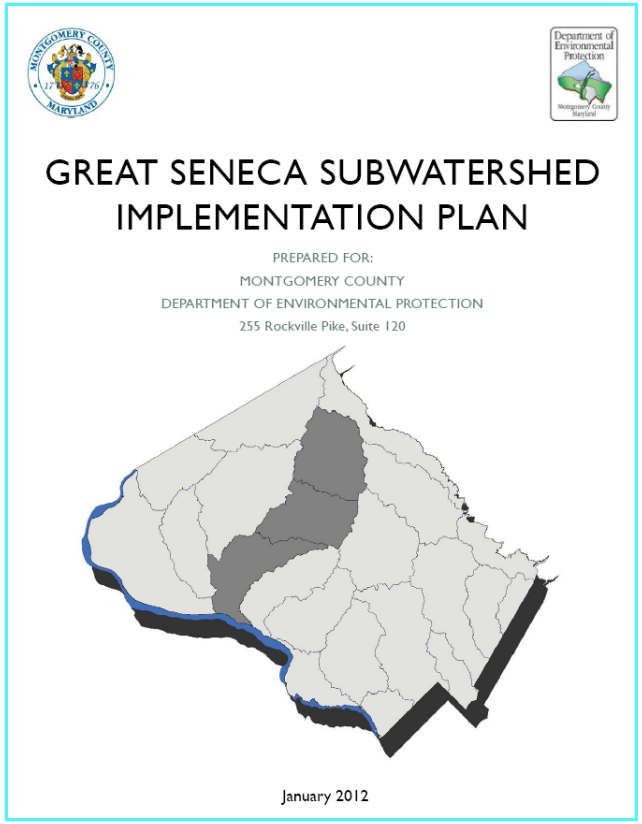
Project Status	Number of Projects	Impervious Area Controlled (Acre)
Completed	73	107.37
In Construction	4	177*
In Design	93	1,614.32*
Rainscapes Rewards Completed Projects	506	11.01**
RainScapes Neighborhoods Completed Projects	61	1.76**
Arterial Street Sweeping	n/a	19.5
Total	**736**	**1,931**

*Estimate

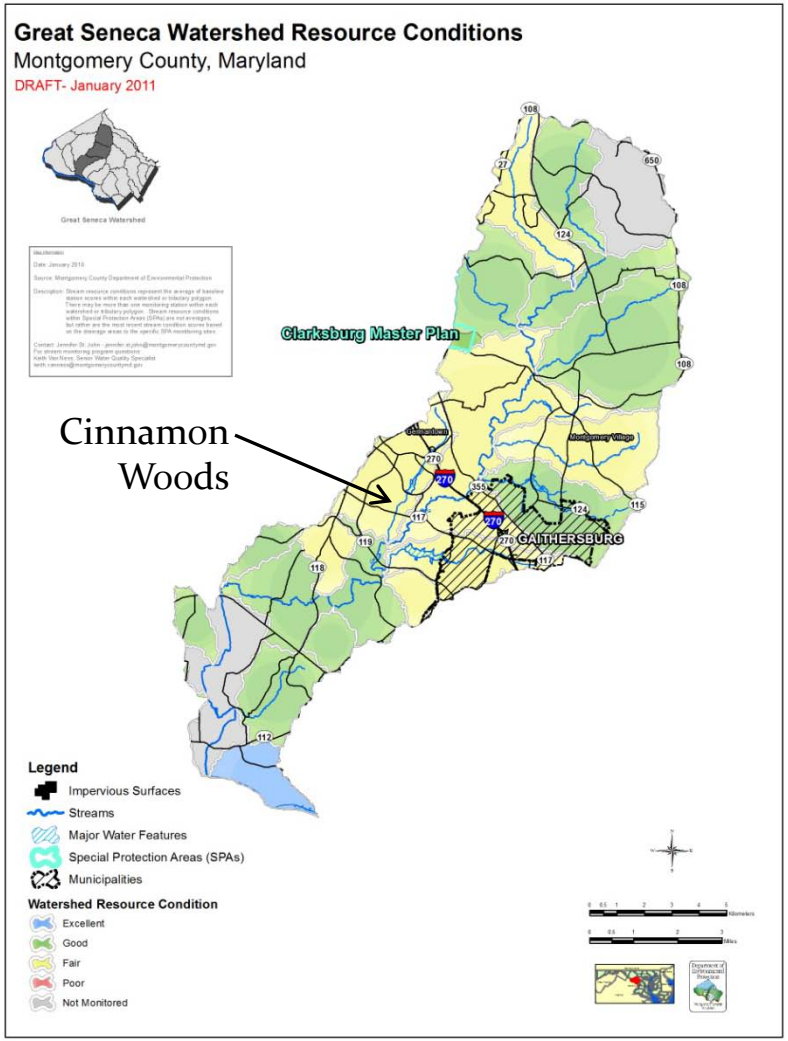
**Conservation Landscape Practices and Tree Plantings credit will be taken in the FY13 MS4 Annual Report

Project Selection

- Ponds constructed in 1970s
- Ponds are at or near the end of service life
- Meet current safety and design standards
- Located in a key watershed (Seneca) for pond retrofit
- Opportunity for water quality treatment and ecological benefits



Project Location



Cinnamon Woods

Project Objectives

- STORMWATER MANAGEMENT
  - Add permanent pool for water quality where feasible
- STREAM PROTECTION
  - Modify outlet works to better regulate pond discharge and protect Gunners Branch
- MAINTENANCE
  - Replace existing risers with water-tight structures
  - Replace dam embankment or install impervious liner
  - Install internal drain in downstream embankments
- AESTHETICS/ENVIRONMENT
  - Landscape the pond to improve aquatic habitat and aesthetics
  - Augment existing environmental features such as forest and wetlands where possible

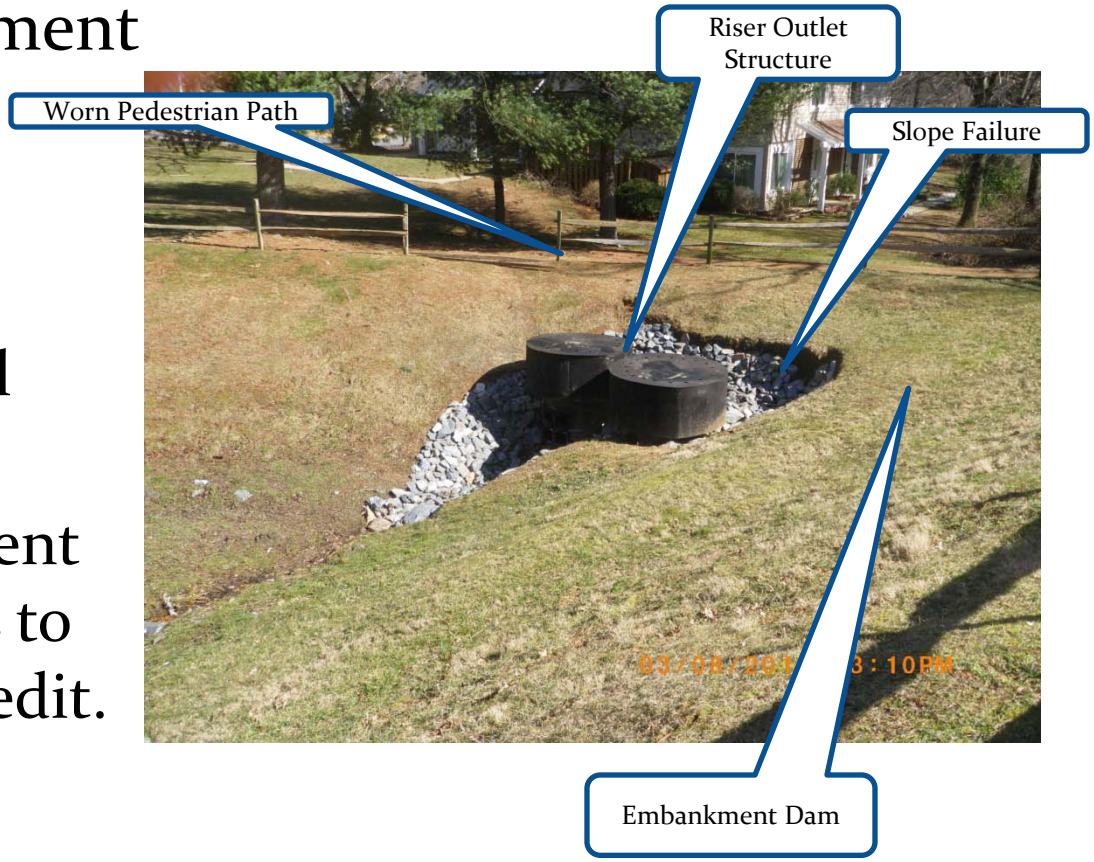
Stormwater Pond Drainage Areas

- Pond 11161
  - 28.2 Acres
  - 34% Impervious
- Pond 10985
  - 18.7 Acres
  - 31% Impervious
- Pond 11156
  - 9.2 Acres
  - 30% Impervious

Pond 11161

Pond 11161

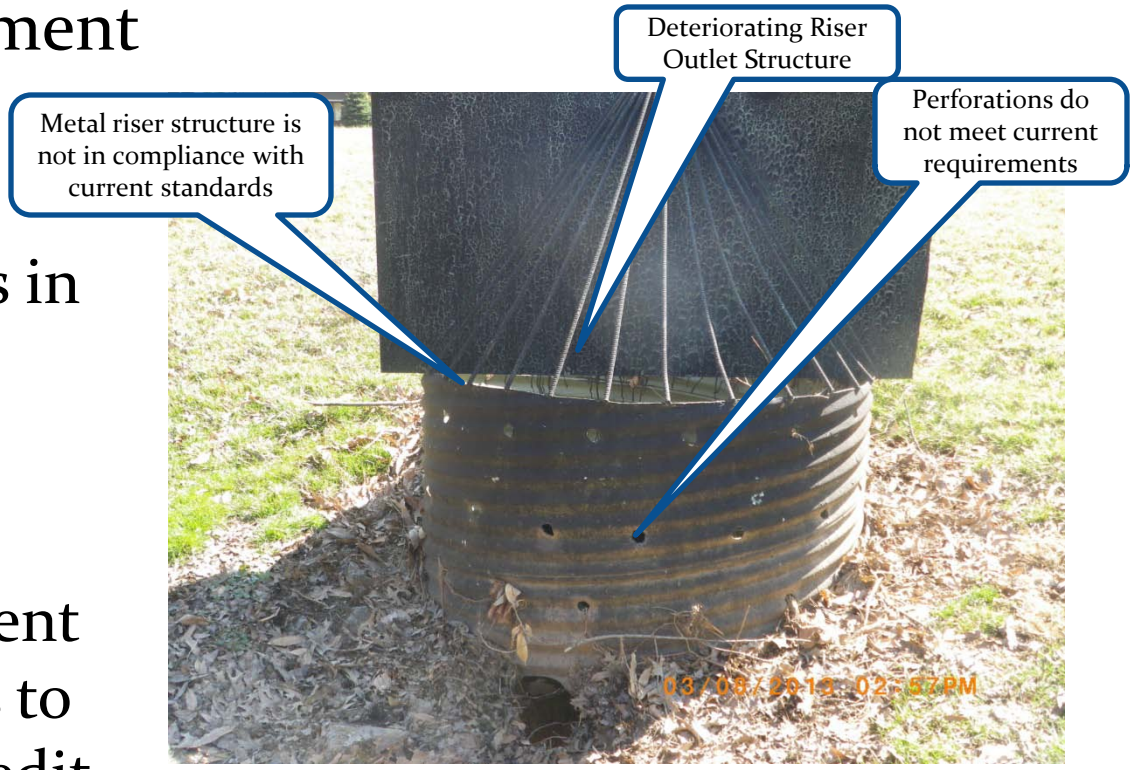
- Stormwater Management Dry Pond
  - 8’ High Earth Embankment Dam
  - Adjacent residential properties
  - Does not meet current SWM requirements to achieve any MS4 credit.
  - Major Safety Issues



Pond 10985

Pond 10985

- Stormwater Management Dry Ponds
  - Twin 8’ High Earth Embankment Dams in series
  - Large Recreational property
  - Does not meet current SWM requirements to achieve any MS4 credit.

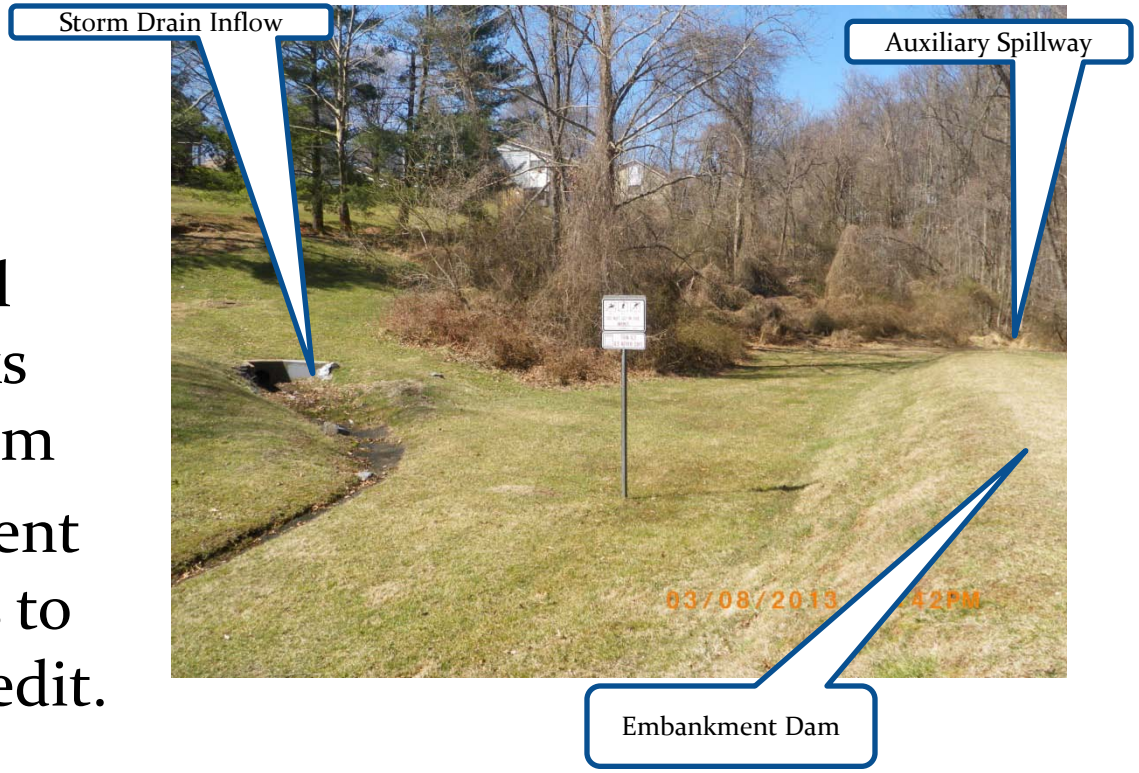


Pond 11156


Pond Site
Proposed Pond Access
M-NCPPC Access Road
Red Pepper Ct

Pond 11156

- Stormwater Management Dry Pond
  - 6’ High Earth Embankment Dam
  - Adjacent residential properties and Parks Property downstream
  - Does not meet current SWM requirements to achieve any MS4 credit.



Project Objectives - SWM

- All ponds
  - 24-hour detention for stream channel protection
- Pond 11161
  - Landscaped facility bottom
- Pond 10985
  - Permanent pool
- Pond 11156
  - Wetland bottom
  - Augment existing wetland on Park property

Project Objectives - Streams

- Stream protection
  - Modify outlet works to better regulate pond discharge and protect Gunners Branch
  - Achieve partial to full channel protection volume requirement (depending on pond)
  - Couple with Stream Restoration below Pond 11161

Project Objectives - Maintenance

- Maintenance
  - Replace existing risers with water-tight structures
  - Replace dam embankment or install impervious liner
  - Install internal drain in downstream embankments

Project Objectives - Aesthetics

- Landscape all facilities with native vegetation to improve aquatic habitat and aesthetics
- Re-align path at Pond 10985 to incorporate retrofit and maintain safety.

Project Costs

- **Financial** – estimated cost of $1.5M financed through MCDEP CIP Program using funds generated through the Water Quality Protection Charge
- **Recreational** – temporary construction impacts to pedestrian paths on top of embankments at Ponds 11161 and 10985.
- **Forest** – tree clearing for to comply with state dam safety laws along the downstream toe of the dam.
- **Traffic** – construction traffic enter and exit roadways Monday – Friday, 7AM to 4PM
- **Neighborhood** – construction traffic and noise will typically occur Monday – Friday, 7AM to 4PM

Project Benefits

- **Water** – improved water quality and stream water temperature through better management of runoff
- **Environmental** – reduced downstream discharge allows for natural self-repair of stream channel. Increased aquatic and riparian habitat through landscaping and reforestation.
- **Recreational** – increased aesthetic appeal of ponds
- **Maintenance** – safer operating structure that will require minimal structural maintenance in future.

Estimated Design and Permitting Timeline (Pond 11161)

- **Design** – May 2013 – December 2013
- **Approvals –** December 2013
- **Permits** – December 2013
- **Bidding** – January 2014
- **Construction** – February – April 2014

Estimated Design and Permitting Timeline (Ponds 10985 and 11156)

- **Design** – June 2013 – March 2014
- **Approvals** – March 2014
- **Permits** – March 2014
- **Bidding** – March 2014 – May 2014
- **Construction** – Summer 2014

What to expect during construction

- **Duration**
  - Approximately 3 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 will be required to comply with Montgomery County Sediment Control Permit and not track dirt onto roads

Questions?

For more information:

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