

Whetstone Run Stormwater Management Facility Retrofits



- *Meadowvale Pond A*
- *Meadowvale Pond B*

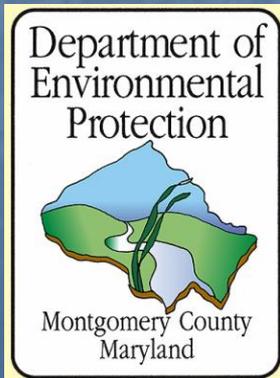
MCDEP - Craig Carson

MCDEP - Doug Marshall

MCDEP - Bhaskar Patel

CPJ - Jeff Blass, P.E.

CPJ - Ahmed Maregn, P.E.



CPJ
Associates

December 20, 2011

Agenda

- ❑ **Introduce Project Team - DEP**
- ❑ **Project Overview – DEP**
- ❑ **Projects Background – CPJ**
- ❑ **Projects Goals – CPJ**
- ❑ **Stormwater Projects - CPJ**
 - ❑ Meadowvale Pond A
 - ❑ Meadowvale Pond B
- ❑ **Schedule – CPJ**
- ❑ **Questions**

Project Overview

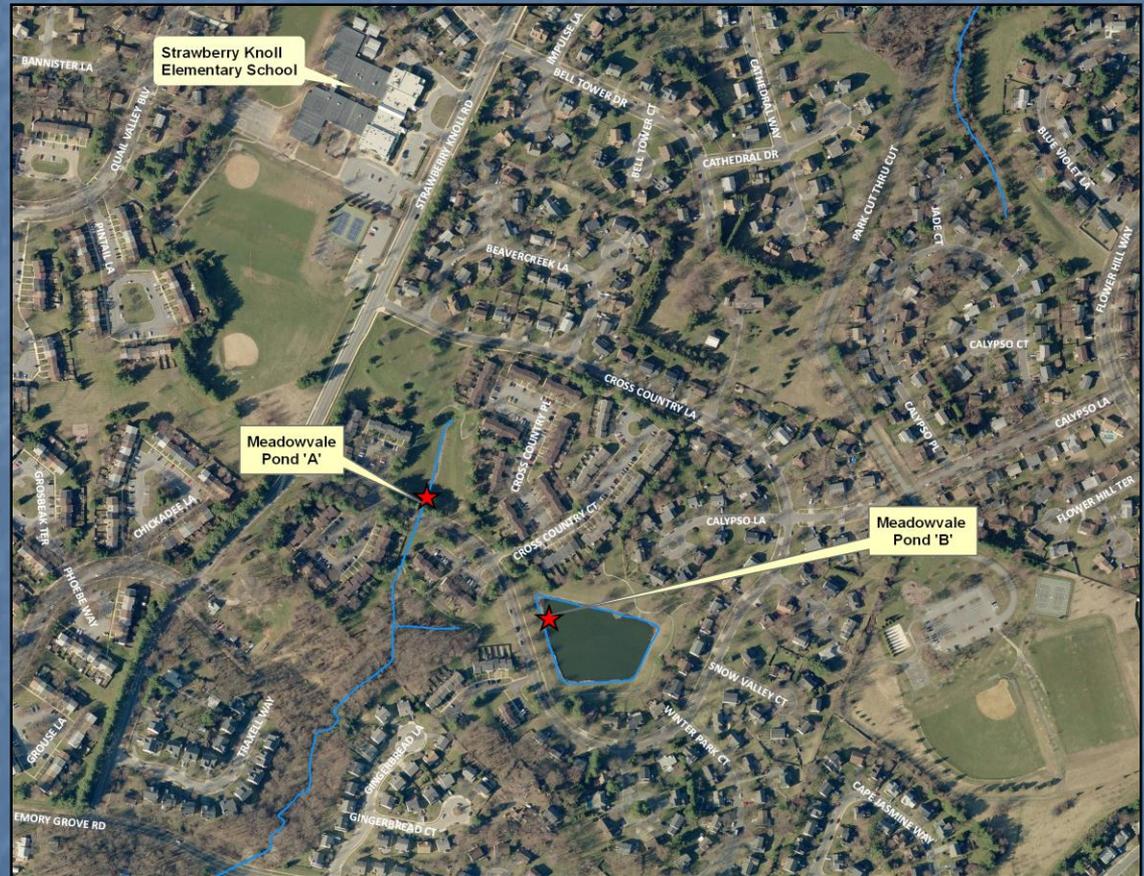
Whetstone Run Watershed

Meadowvale Pond A

- Constructed in Early 1980's
- Drainage Area = 36.1 Acres
- Impervious Area = 25%

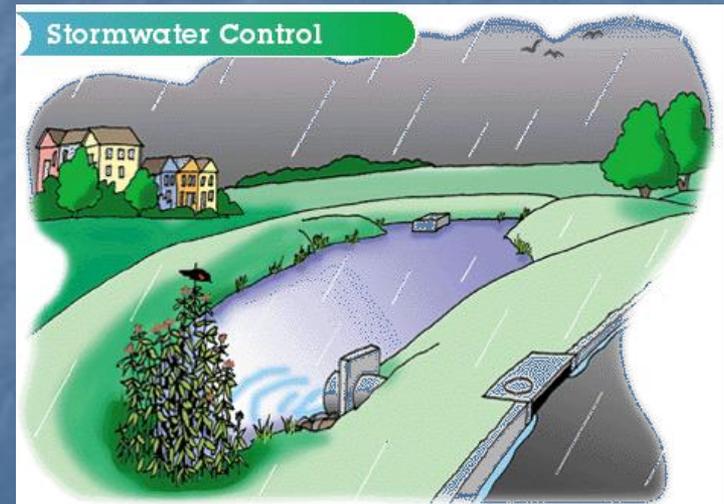
Meadowvale Pond B

- Constructed in Early 1980's
- Drainage Area = 56.8 Acres
- Impervious Area = 21%



DEP Stormwater Maintenance Program

- **Funded Through Water Quality Protection Charge**
 - \$70.50/yr. for Single Family Home
 - \$23.27/yr for Town Homes
- **All Stormwater Ponds Are Inspected Every Three Years**
 - More Frequent Inspection And Maintenance Performed on As-Need Basis
- **DEP Responsible For Maintaining Functionality Of Stormwater Facility**
- **Owner Is Responsible For Aesthetic Up-Keep Of Stormwater Facility**
 - Grass Cutting
 - Trash Clean-up
 - Etc.



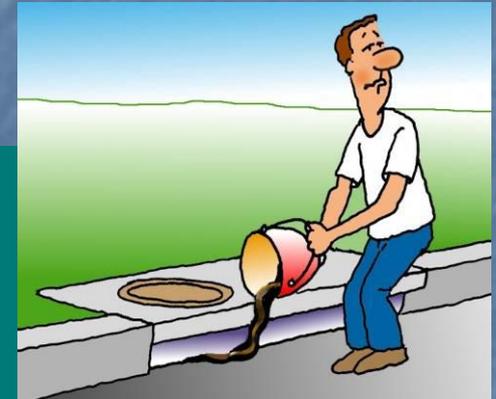
Regulatory Requirements

- Federal Clean Water Act
- National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit
- Issued by State for five year period
 - **Third Round – Issued 2/16/2010**

What Does it Mean?

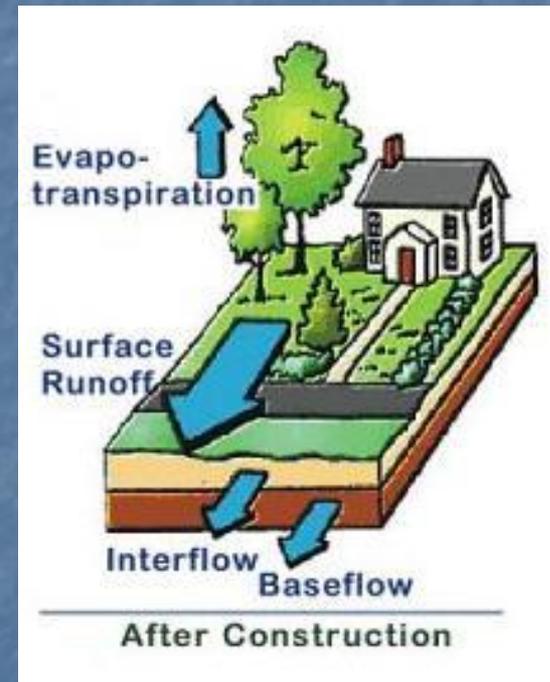
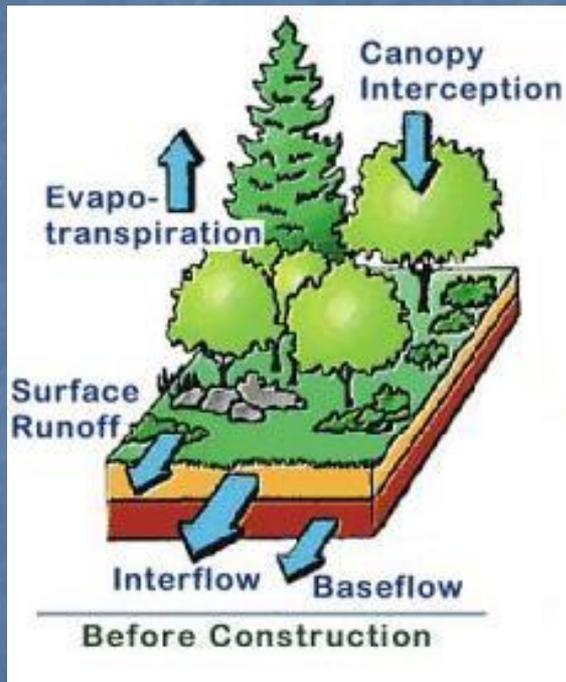
County is responsible for:

- What goes into our stormwater pipes
- What comes out of them
- What flows into the streams



Most Storm drains flow directly to streams

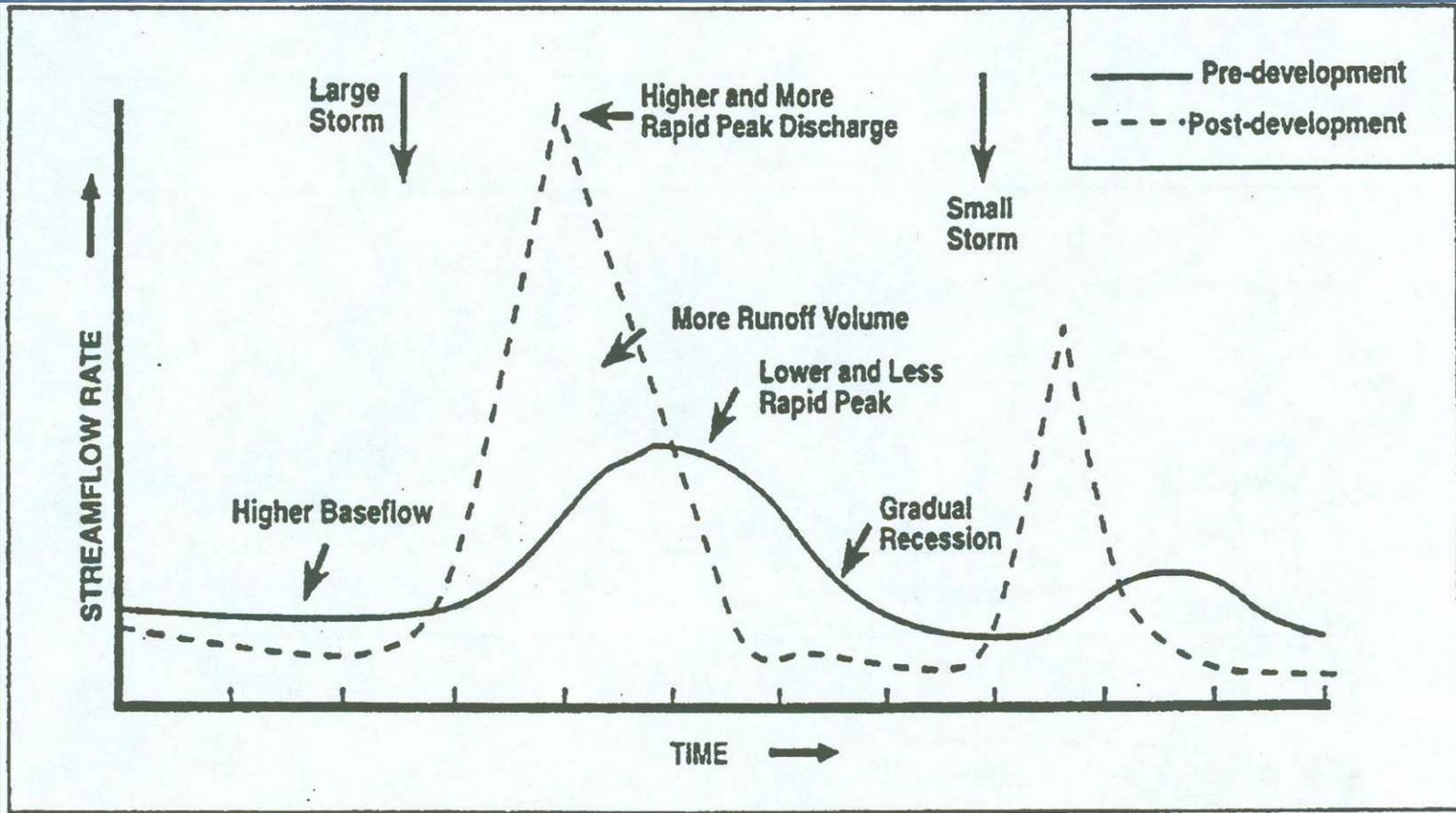
Water Balance at Undeveloped and Developed Sites



Effects of Urban Runoff

- Increase in Pollutants
 - Nutrients
 - Sediment
 - Bacteria
- Increase in frequency and magnitude of storm flows
- Stream Channel Erosion and Degradation

Change in Discharge Rate Following Development



Overall Project Goals

- Project Governing Approach
 - MDE
 - Unified approach to stormwater management throughout the entire state
- Project SWM Goals
 - Reduce pollutants
 - Reduce channel erosion
 - Safely pass extreme floods
- Project SWM Metrics
 - Channel Protection Volume (CPv)
 - Water Quality Volume (WQv)

Stormwater Management (SWM) Facilities (1 of 2)

- Wet Pond
 - Permanent Pool (WQv)
 - Additional storage can meet CPv requirements
- Dry Pond
 - No permanent pool
 - Can only meet CPv requirements



Stormwater Management (SWM) Facilities (2 of 2)

- Stormwater Wetlands
 - Shallow wetland areas to treat stormwater runoff
 - Partial WQv
 - Additional storage can meet CPv requirements



Stormwater Management Retrofits

Upgrading facilities designed under old standards to meet current stormwater management and pond safety standards to the MAXIMUM EXTENT PRACTICABLE (MEP)

Meadowvale Pond A (MCDEP Asset #10802)

- Located north of Cross Country Lane between Strawberry Knoll Rd and Cross Country Ct.
- Retrofit
 - Replace riser
 - Re-grade & dredge out sediment to get more storage volume
 - Landscape with native plants
 - Facility may remain dry or converted to wet pond depending on option selected



Meadowvale Pond B (MCDEP Asset #11393)

- Located east of Cross Country Lane between Cross Country Ct & Amber Meadow Ct
- Retrofit
 - Replace riser structure
 - Plant additional native wetland vegetation
 - Re-align part of side walk to stay out of floodplain
 - Repair the 36" culvert pipe
 - Dredge sediment depending on design option selected
 - Facility will remain a wet pond



Project Benefits

- Most retrofit options will provide significant or complete stormwater management treatment for either water quality or channel protection.
- Facilities will be brought up to current safety standards
- Facilities will have increased aesthetic appeal
- Stormwater management treatment will go towards helping Montgomery County meet goal of treating 20% of previously untreated impervious areas in the County.

Project Schedule

- Inspection and Site Identification by DEP
- June/July 2011 Survey and Map Site
- Aug. – Oct. 2011 Develop Conceptual Designs
- **Nov./Dec. 2011** **Public Outreach**
- Dec.'11/Jan. '12 Submit SWM Concept Application
- Feb.-May 2012 Prepare Construction Plans
- June/July 2012 Obtain approvals and permits from regulatory agencies
- Aug.-Oct. 2012 Construct Retrofit

Questions?