

Montgomery Manor Stormwater Pond

Facts About Pond Upgrades

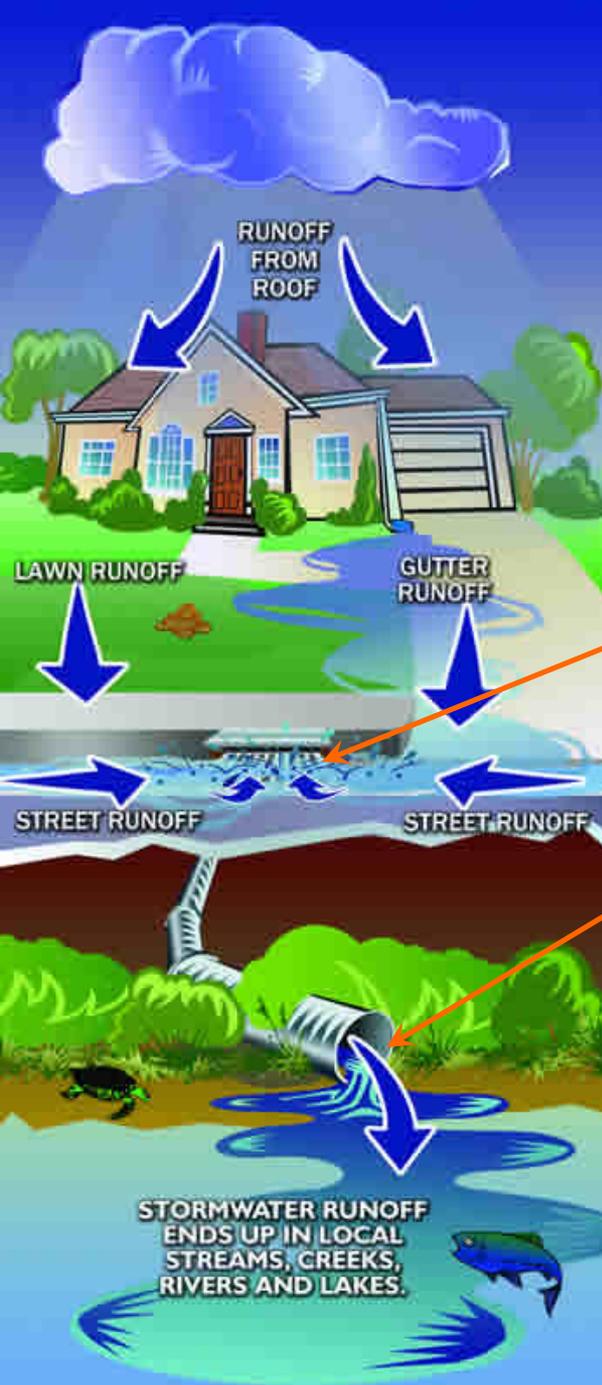
The Connection Between the Sky and the Stream

Where does the rain go?

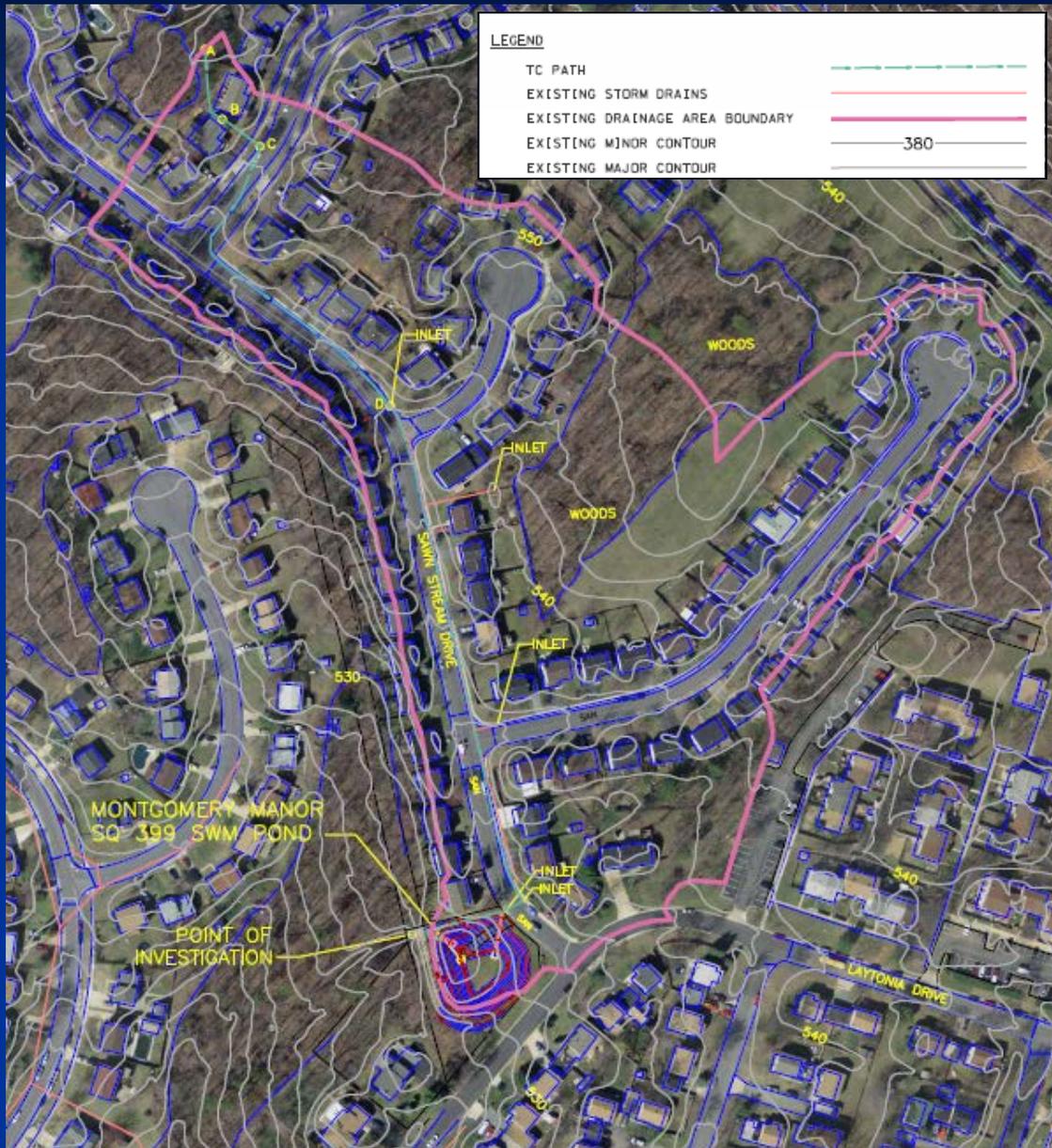
Rain, or stormwater runoff, typically enters into a stormdrain

Pollutants that are washed into the stormdrain will empty *DIRECTLY* into a stream or a pond

Ultimately affecting the health of your stream and the Chesapeake Bay *INSTANTLY!*



How much of the Drainage Area gets to this pond?



- The area outlined in pink all drains into this pond.
- Drainage Area = 13.7 acres
- Impervious Surfaces = 5 acres (Rooftops, driveways, roads, etc.)

Driving Force to Upgrade Stormwater Facilities

- Montgomery County's Compliance with the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit
- Three Major Requirements:
 - Watershed restoration via runoff management and impervious cover treatment
 - Assigned wasteload allocations (WLA) for EPA-approved Total Maximum Daily Loads (TMDLs)
 - None assigned yet but reduction in total nitrogen (TN), total phosphorous (TP), and total suspended solids (TSS) are inevitable.
 - Trash and litter management to meet the commitments of the Potomac River Watershed Trash Treaty

Why County Considering Montgomery Manor Stormwater Pond?

- One of the State Mandates within the County's Municipal Separate Storm Sewer (MS4) Permit*
 - Capture 20% of the uncontrolled impervious within Montgomery County
 - State has determined that all Pond facilities built prior to 1986 receive no credit toward the MS4 permit
 - Montgomery Manor Pond design was approved in 1981
 - Proposed upgrades will allow for less future County money for structural repairs.

*See Maryland Department of the Environment Website for County's issued permit

Two types of designs for Ponds

- Channel Protection Volume (CPV)
 - Designing a pond to capture 2.6 inches of rain (a 1-year storm event)
 - Storing and slowly releasing this rain event for 12 to 24 hours
 - Main Objective for this Design: Provide the greatest impact to reduce downstream erosion
- Water Quality Volume (WQV)
 - Capturing and filtering out the pollutants during a 1 inch rain event, and is based on impervious area
 - Main Objective for this Design: Reduce nutrients from entering the stream
- Ideal Situation
 - Design a facility that does both with the land area being the only limiting factor

Examples of the Proposed Pond Design



In Construction



1 Year After Construction



Example: 5 Years After Construction



Example: 5 Years After Construction

Questions Regarding Mosquitoes

To keep the mosquito population under control, various mosquito predators are introduced into the stormwater facility

Mosquito Predators

- Non-Biting Midge
- Diving Beetle
- Damselfly Larvae
- Backswimmers
- Water Scorpion
- Dragonfly Nymph
- Phantom Midge
- Water Strider
- Swallows, Adult Dragonflies, Frogs



What You can do to Minimize Mosquito Breeding Grounds

In 2003, the County's Department of Environmental Protection conducted a study to examine whether stormwater facilities were potentially breeding grounds for mosquitoes. The study found that the majority of the breeding grounds were not located within stormwater ponds.

Eliminate Mosquito Breeding Grounds

- remove or empty all sources of standing water around the house and yard including :
 - clean roof gutters and down-spout screens
 - children's toys (including plastic wading pools)
 - discard used tires
 - wheelbarrows
 - garbage can lids
 - eliminate standing water on flat roofs
- fix dripping outdoor water faucets
- eliminate puddles from window air-conditioners
- flush birdbaths and the bottom of potted plant holder trays twice a week

******Mosquitoes can breed in as little as one teaspoon of water that is at least one-quarter inch deep and stands for a week.***

Summary

- Department of Environmental Protection (DEP) objective in retrofit is:
 - Maximize pond area because it is harder to find opportunities in developed residential areas.
 - DEP understands the impacts to the community must be considered in choosing retrofit options
 - DEP will take HOA boards thoughts and concerns into great consideration.
 - Balance the impacts to the community, level of stormwater control, and environmental disturbance.
 - DEP wants the facility to be an amenity to the community.