Meeting Stormwater Reduction Goals

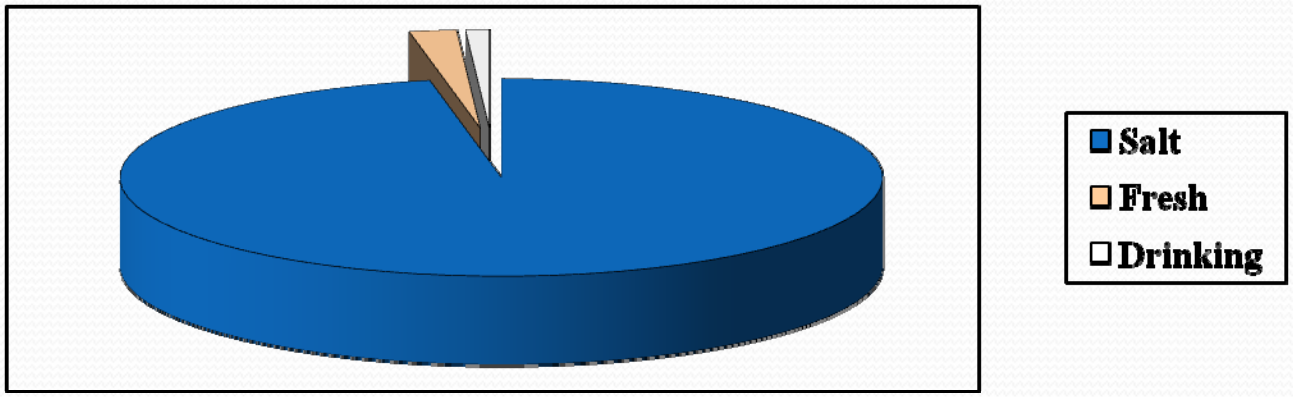
Ballinger Drive Stormwater Management Pond

Montgomery County Department of Environmental Protection
Watershed Management Division

Today's Agenda

- Sources of Water on Earth
- Montgomery County background
- What is a Watershed & Runoff?
- Intro to Stormwater
- Ballinger SWM Pond Overview
- Project Objectives
- Project Costs and Benefits
- Design and Permitting Timeline
- What to Expect During Construction

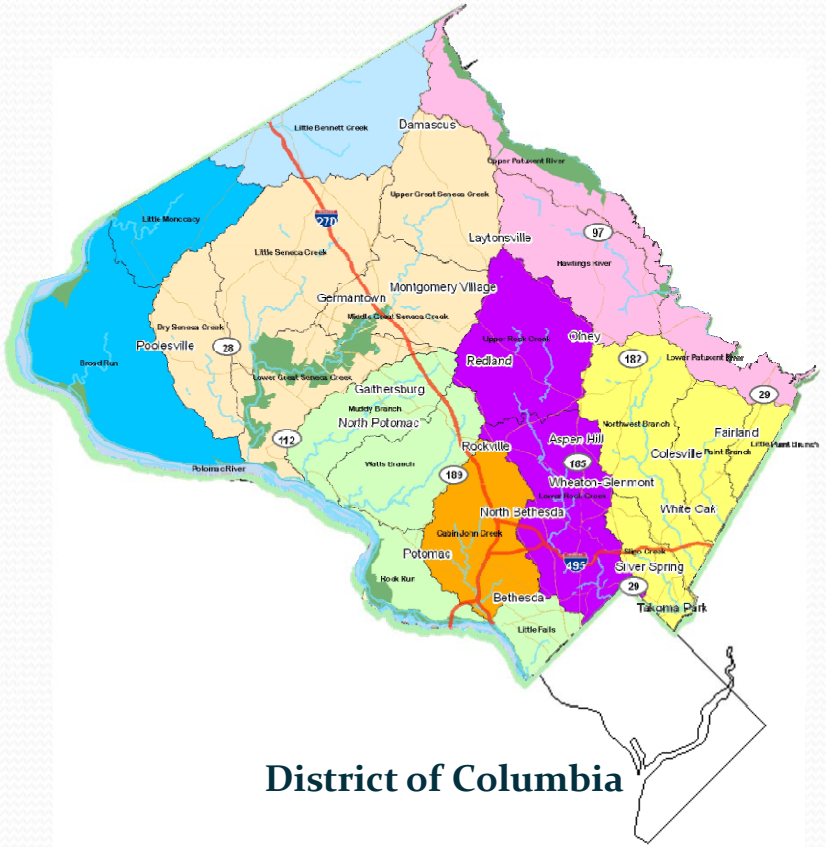
Sources of Water



- 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
- 970,000 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?

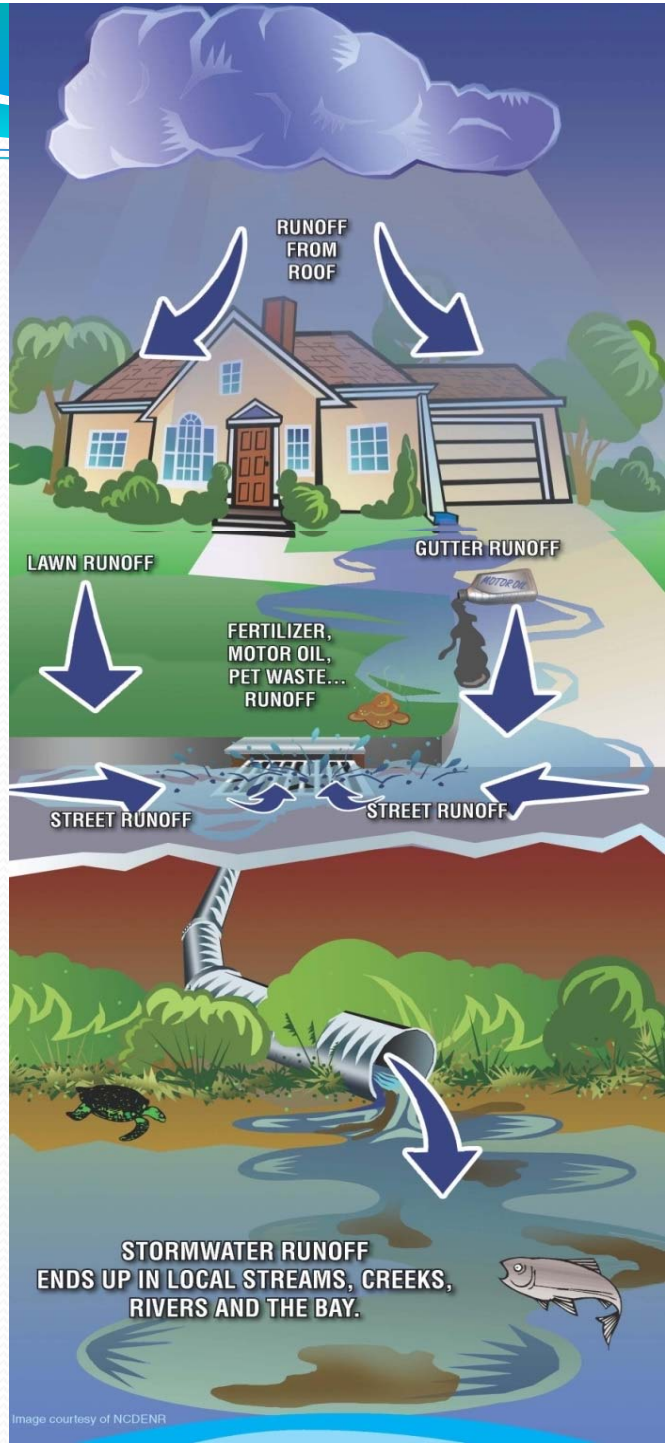
- A ***watershed*** is an area from which the water above and below ground drains to the same place.
- Different scales of watersheds:
  - Chesapeake Bay
  - Eight local watersheds
  - Neighborhood (to a storm drain)

What is Runoff?

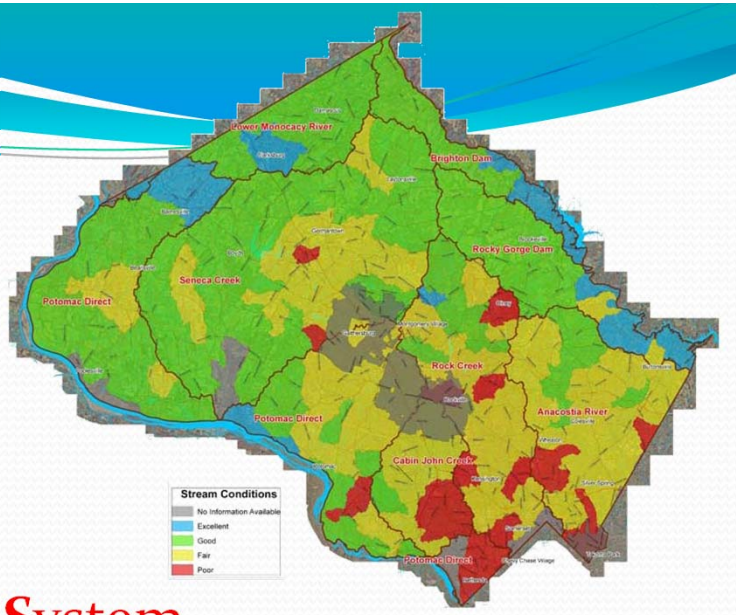
Water that does not soak into the ground becomes surface runoff. This runoff flows over hard surfaces like rooftops, driveways and parking lots collecting potential contaminants and flows:

- **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 the County doing to protect our Streams?

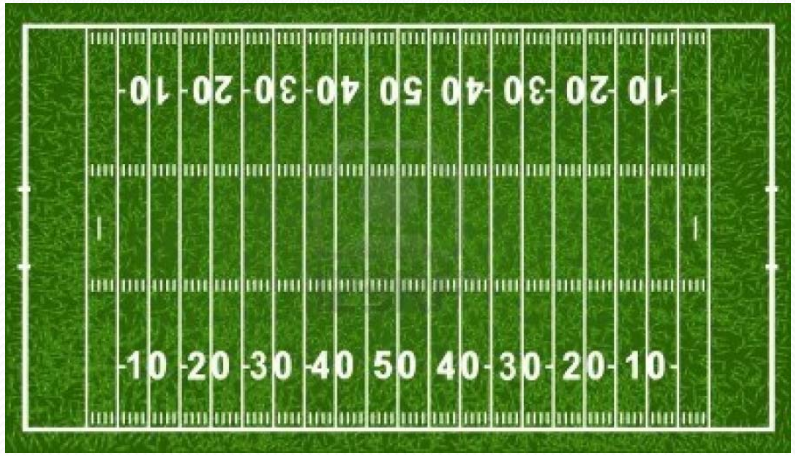


- Must meet regulatory requirements
  - Federal Clean Water Act permit program
  - **MS4** = **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem
- Applies to all large and medium Maryland jurisdictions
- County programs
  - Restore our streams and watersheds
    - Add runoff management
  - Meet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

MS4 permit, what is it?

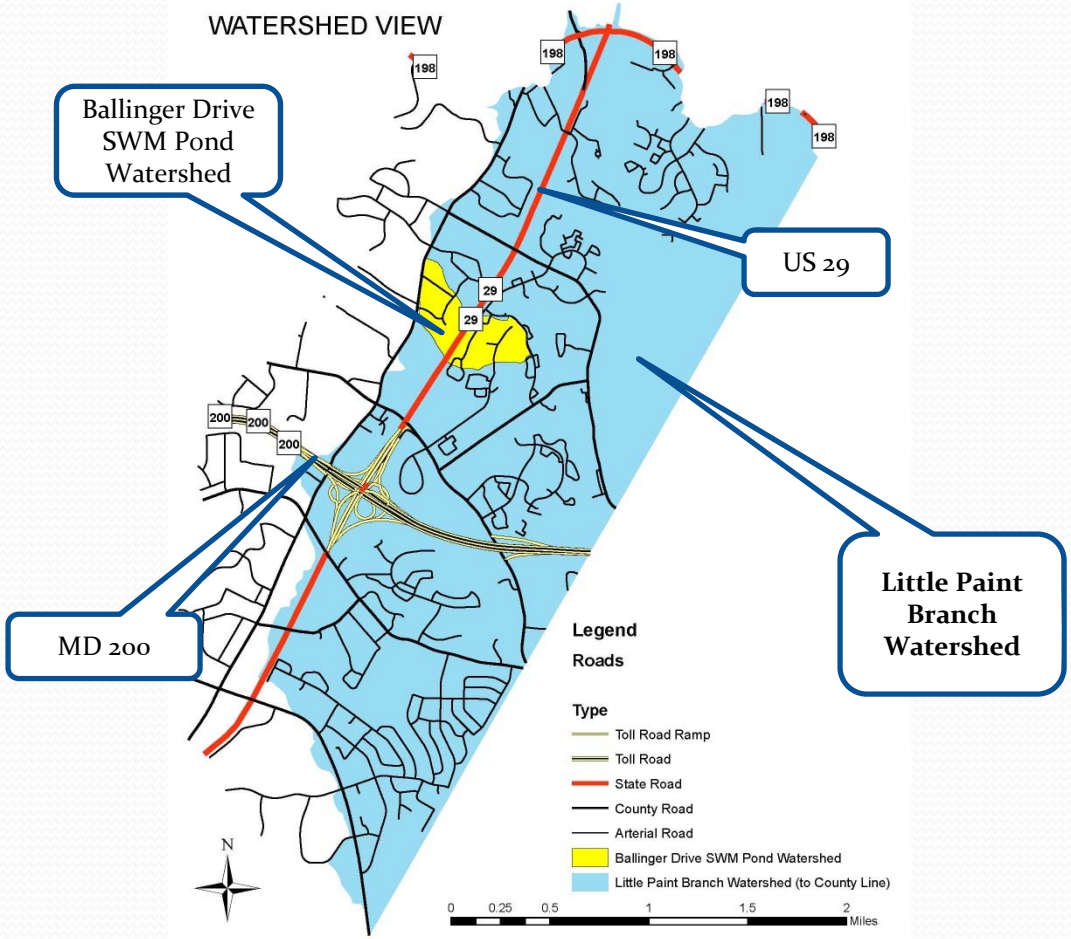
- Montgomery County is responsible for:
  - What goes into our storm drain pipes
  - What comes out of them
  - What flows into the streams
- Requires additional stormwater management for **20 percent** of impervious surfaces (4,292 acres = 6.7 square miles). That's about three times the size of Takoma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

  That's equivalent to 3,307 football fields!



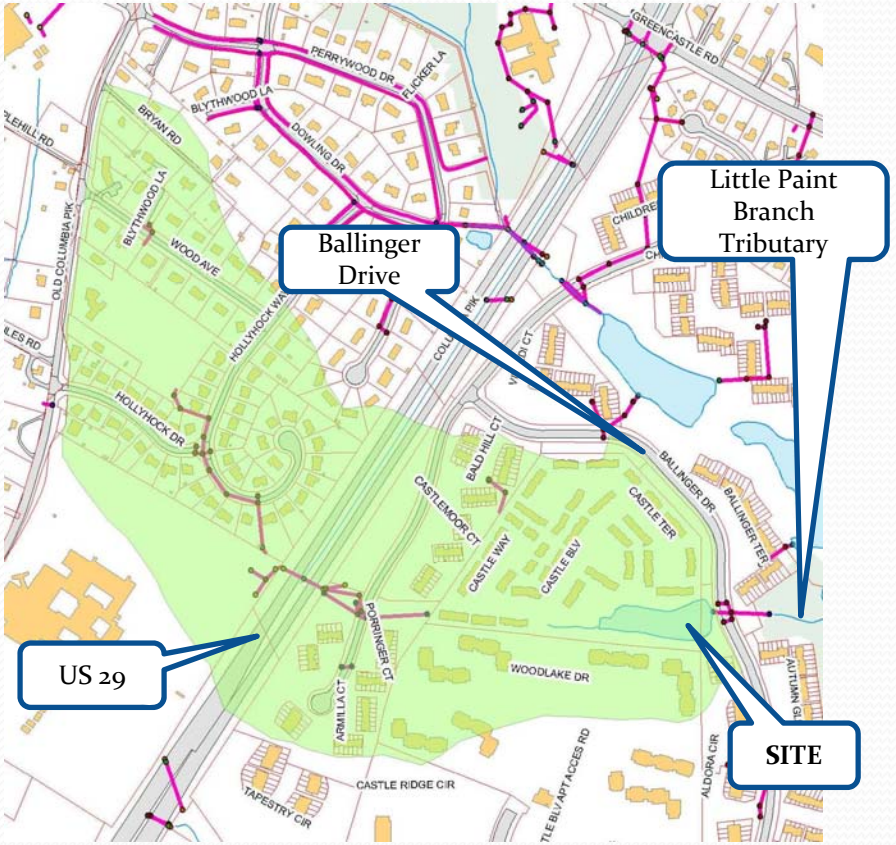
Ballinger Drive SWM Pond

- Located on Ballinger Drive between Wexhall Road and Robey Road
- Little Paint Branch Watershed



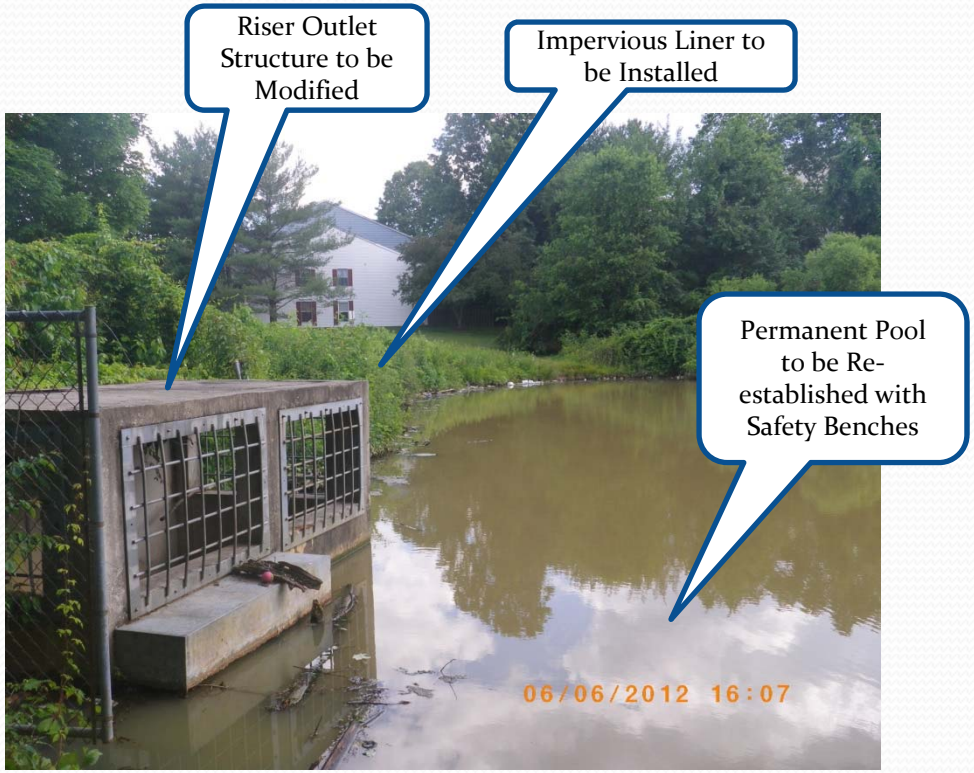
Ballinger Drive SWM Pond

- Watershed Area – 100 Acres
- Drains residential areas west and east of US-29
  - 43 Impervious Acres
  - Discharges into a tributary to the Little Paint Branch



Ballinger Drive SWM Pond

- Stormwater Management Wet Pond
  - 17’ high earth embankment dam
  - 13’ deep pool
  - Ballinger Drive functions as dam embankment
  - Does not meet all current SWM requirements to achieve MS4 credit.

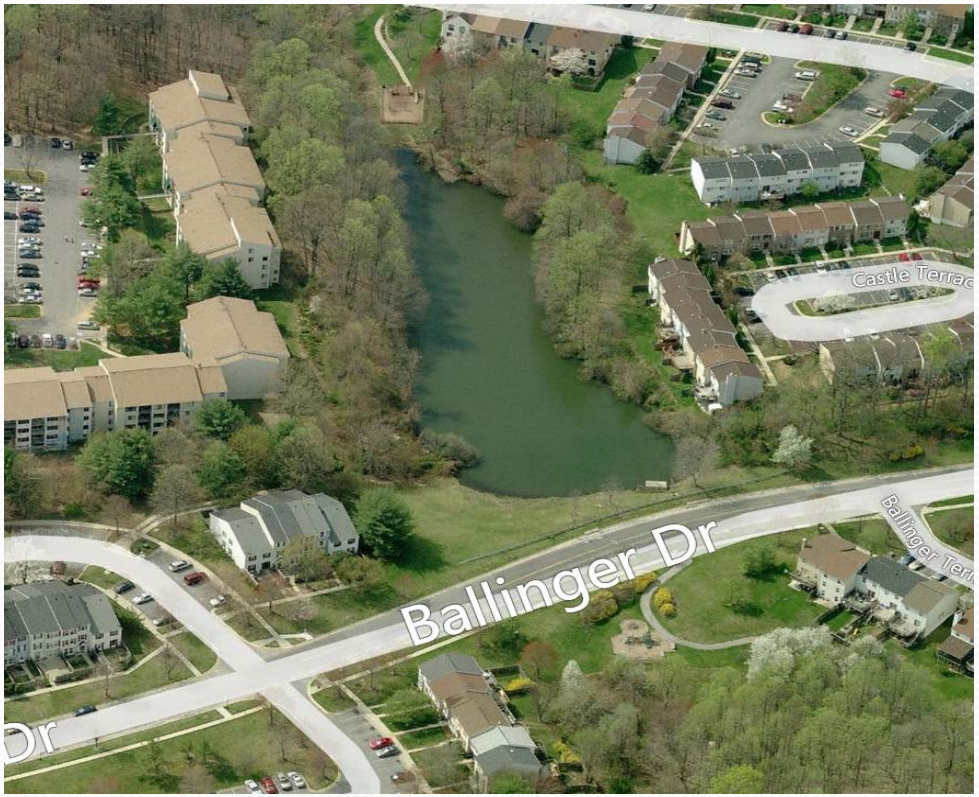


Project Objectives

- SWM
  - Maintain enough permanent pool depth and volume for water quality while safety accommodating required rainfall events
- STREAMS
  - Modify outlet works to better regulate pond discharge and protect Little Paint Branch
- MAINTENACE
  - Modify existing riser to accommodate new SWM and safety requirements
  - Install impervious liner on dam embankment
  - Permanently and completely abandon failed pool drain
  - Install forebay at upper end of the pond
  - Install a safety/maintenance bench around entire pond
- AESTHETICS/ENVIRONMENT
  - Landscape the pond to improve aquatic habitat and aesthetics

Project Objectives - SWM

- SWM
  - Maintain enough permanent pool depth and volume for water quality while safety accommodating required rainfall events
  - 9.5 feet (at deepest point)
  - Achieve 100% of MS4 water quality requirement



Project Objectives - Streams

- Streams
  - Modify outlet works to better regulate pond discharge and protect Little Paint Branch
  - Reduce discharges to streams by ~25%

Project Objectives - Maintenance

- Maintenance
  - Modify existing riser to accommodate new SWM and safety requirements
  - Install impervious liner on dam embankment
  - Permanently and completely abandon failed pool drain
  - Install forebay at upper end of the pond
  - Install a safety/maintenance bench around entire pond
  - Install internal drain in downstream embankment

Project Objectives - Aesthetics

- Maintenance
  - Landscape the pond to improve aquatic habitat and aesthetics

Project Costs

- **Financial** – estimated cost of $400,000 financed through MCDEP CIP Program using funds generated through the Water Quality Protection Charge
- **Traffic** – temporary construction impacts to traffic flow on Ballinger Drive
- **Forest** – tree clearing for safety benches. Reforestation will occur to the maximum extent possible.
- **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 pond
- **Maintenance** – safer operating structure that will require minimal structural maintenance in future.

Design and Permitting Timeline

- **Design** – July 2013 – April 2014
- **Approvals –** April 2014
- **Permits** – May 2014
- **Bidding** – May 2014 – June 2014
- **Construction** – Summer 2014 – Winter 2014

What to expect during construction

- **Duration**
  - Approximately 3-6 months (weather dependent)
- **Construction Hours**
  - Monday through Friday, 7AM – 4PM
- **Safety**
  - Open sides of site will be fenced with orange construction safety fence
- **Traffic**
  - Entrance to site from Ballinger Drive
- **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?