Pueblo Road

Stormwater Management Pond Maintenance

September 28, 2016 Public Meeting

Montgomery County Department of Environmental Protection
Watershed Management Division

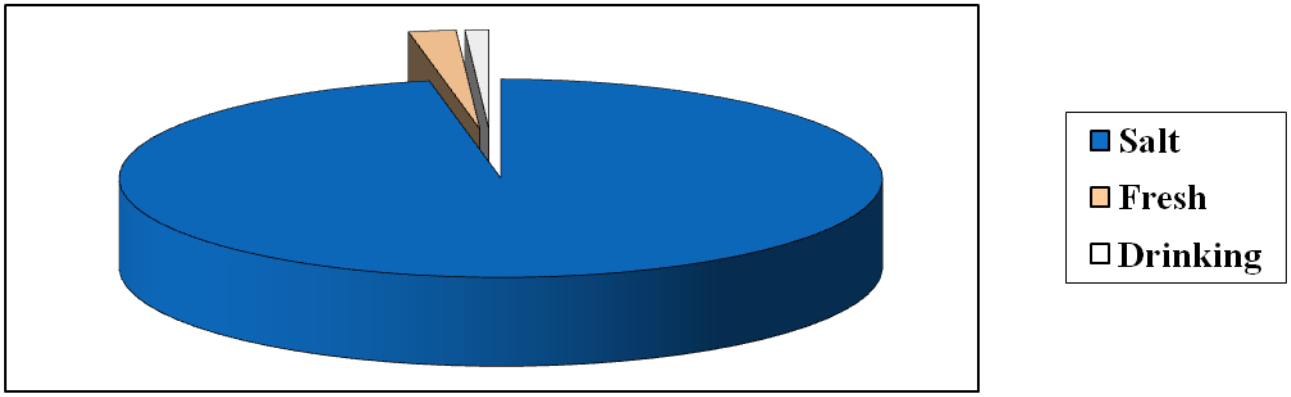
DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

CPJ Associates

Today's Agenda

- Introductions
  - Montgomery County Department of Environmental Protection Representatives
  - Maryland – National Capital Park and Planning Commission Representatives
  - Charles P. Johnson & Associates, Inc.
- Background Information
  - Sources of Water on Earth
  - Montgomery County Background
  - What is a Watershed & Runoff?
  - Intro to Stormwater
  - What the County is Doing to Protect Our Streams
- Project Selection
- Existing Facilities
- Project Objectives
- Project Details and Benefits
- Construction Timeline
- What to Expect During Construction

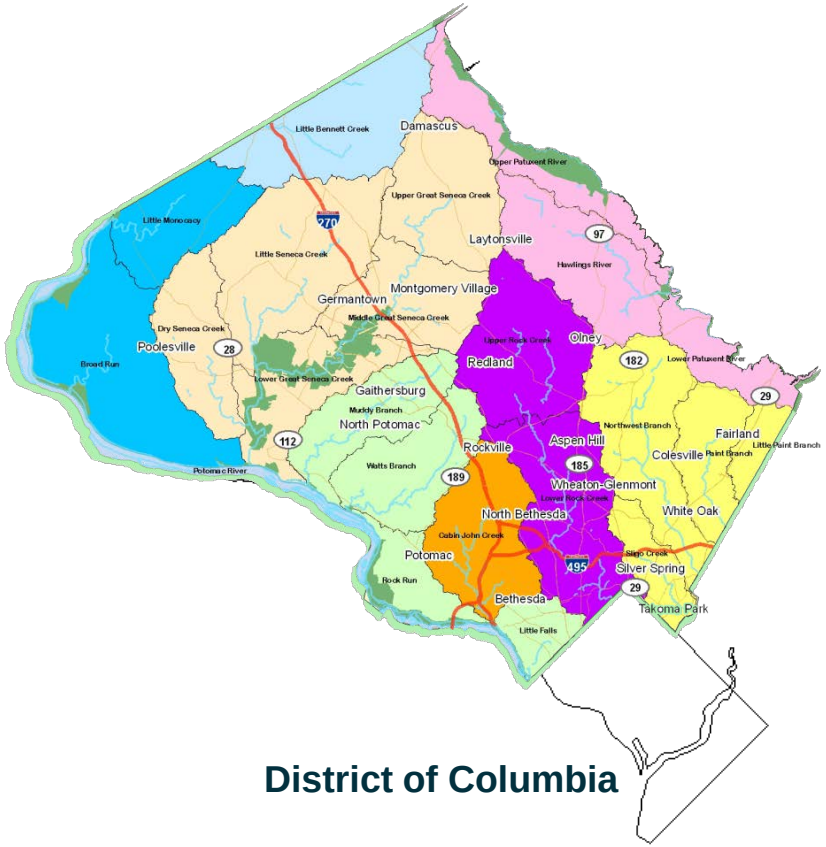
Sources of Water



- About 97% is salt water
- About 2% is fresh
- 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

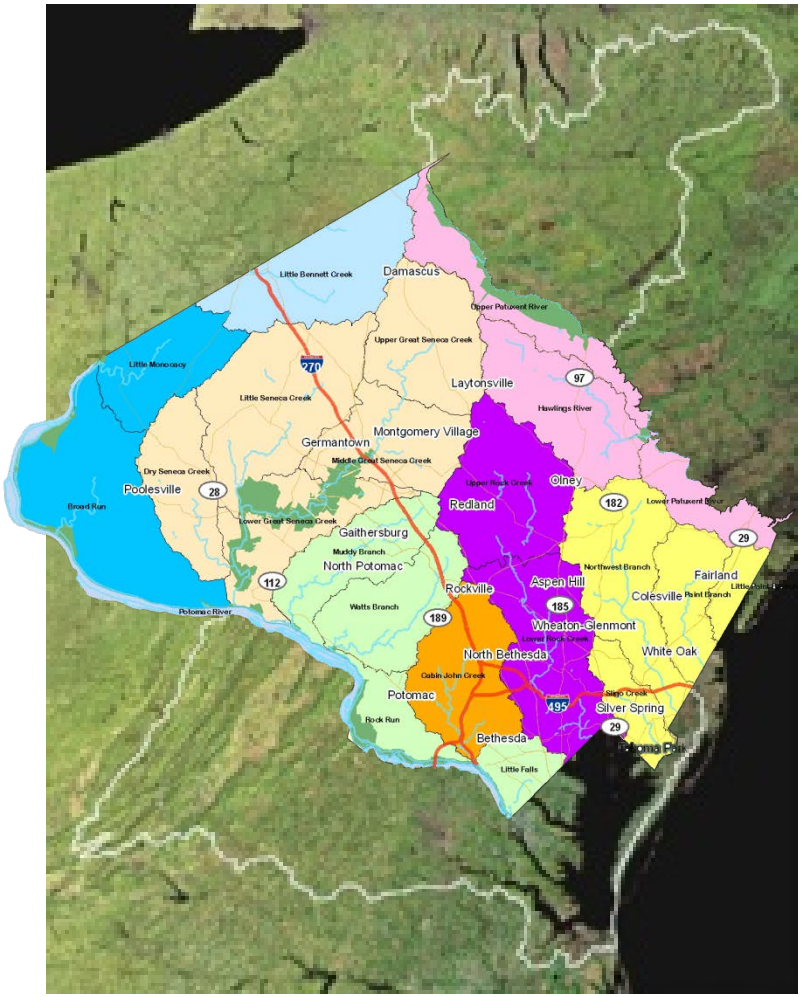
- 970,000 people
  - Second only to Baltimore City within Maryland in average people per square mile
- 500 sq. miles
- About 12% impervious surface overall
  - About the size of Washington DC
- Over 1,500 miles of streams
- Two major river basins:
  - Potomac
  - Patuxent
- Eight local *watersheds*



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)

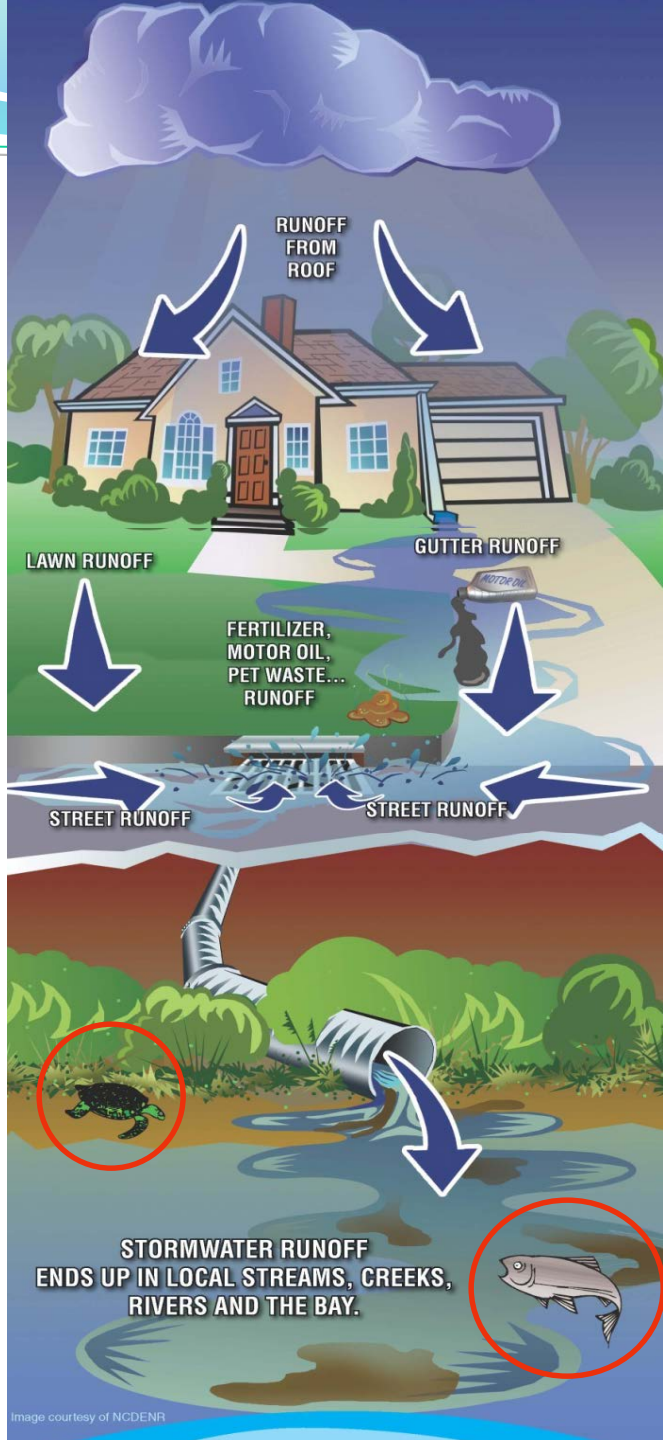


What is Runoff?

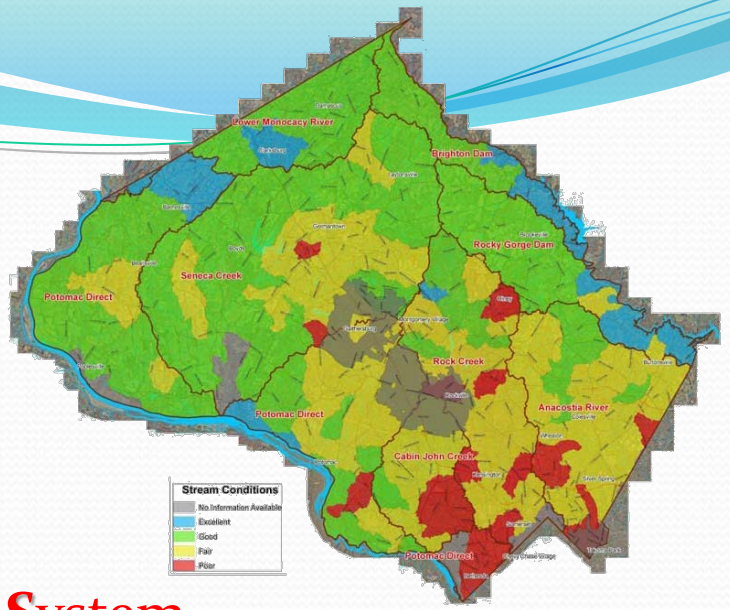
Water that does not soak into the ground becomes surface runoff. This runoff flows over hard surfaces like rooftops, driveways and parking lots collecting potential contaminants and flows:

- **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



What is the County doing to protect our Streams?



- Must meet regulatory requirements
  - Federal Clean Water Act permit program
  - **MS4 = Municipal Separate Storm Sewer System**
- 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 (3,777 acres = 6 square miles).

Resources

- Specific Project Information

  http://www.montgomerycountymd.gov/DEP/water/major-stormwater-project.html#puebloroadpond

- Environmental Information for County Residents

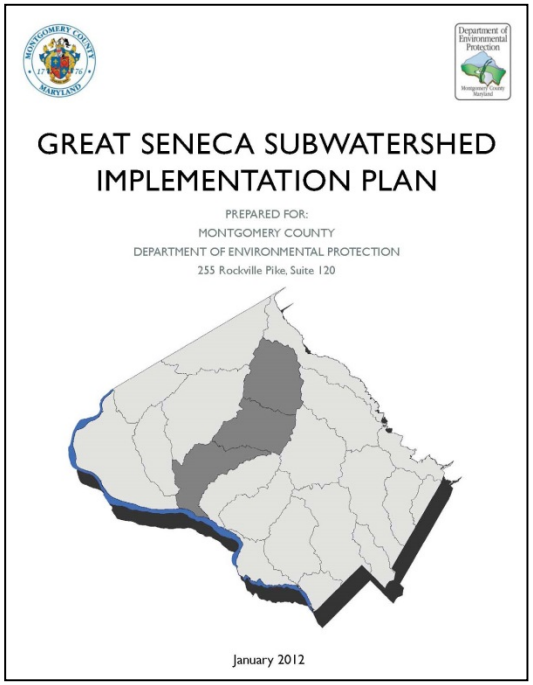
  www.montgomerycountymd.gov/DEP

- Living a Green Life: My Green Montgomery

  http://montgomerycountymd.mygreenmontgomery.org/

Project Selection

- Located in key watersheds (Great Seneca Creek) for pond retrofits
- Ponds constructed in early 1980s
- Ponds are at or near the end of service life
- Meet current safety and design standards
- Opportunity for water quality treatment and ecological benefits



Project Location

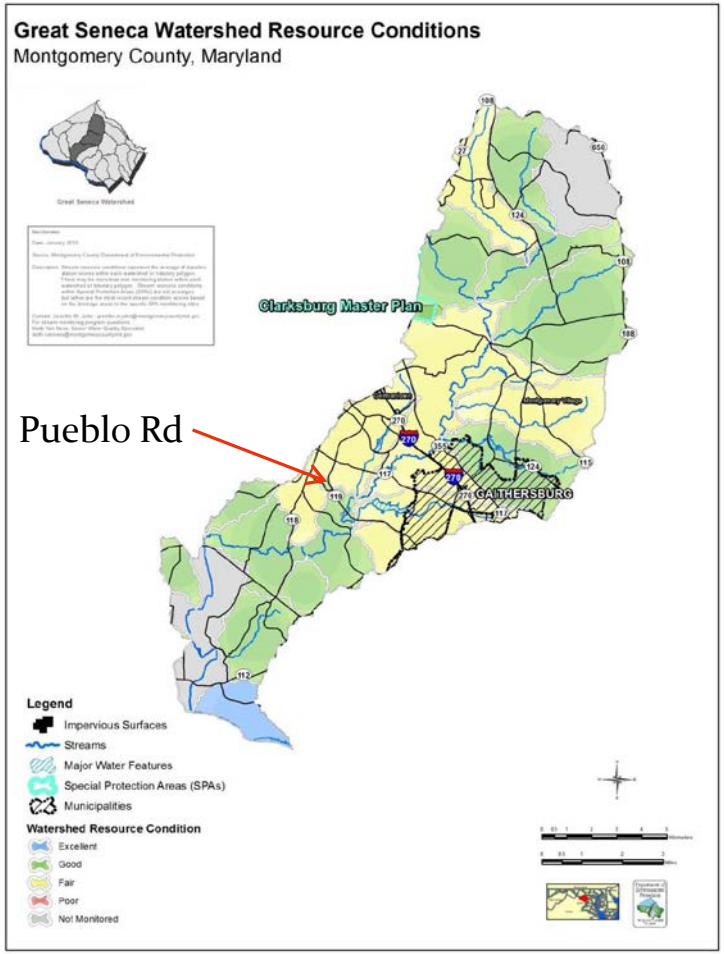
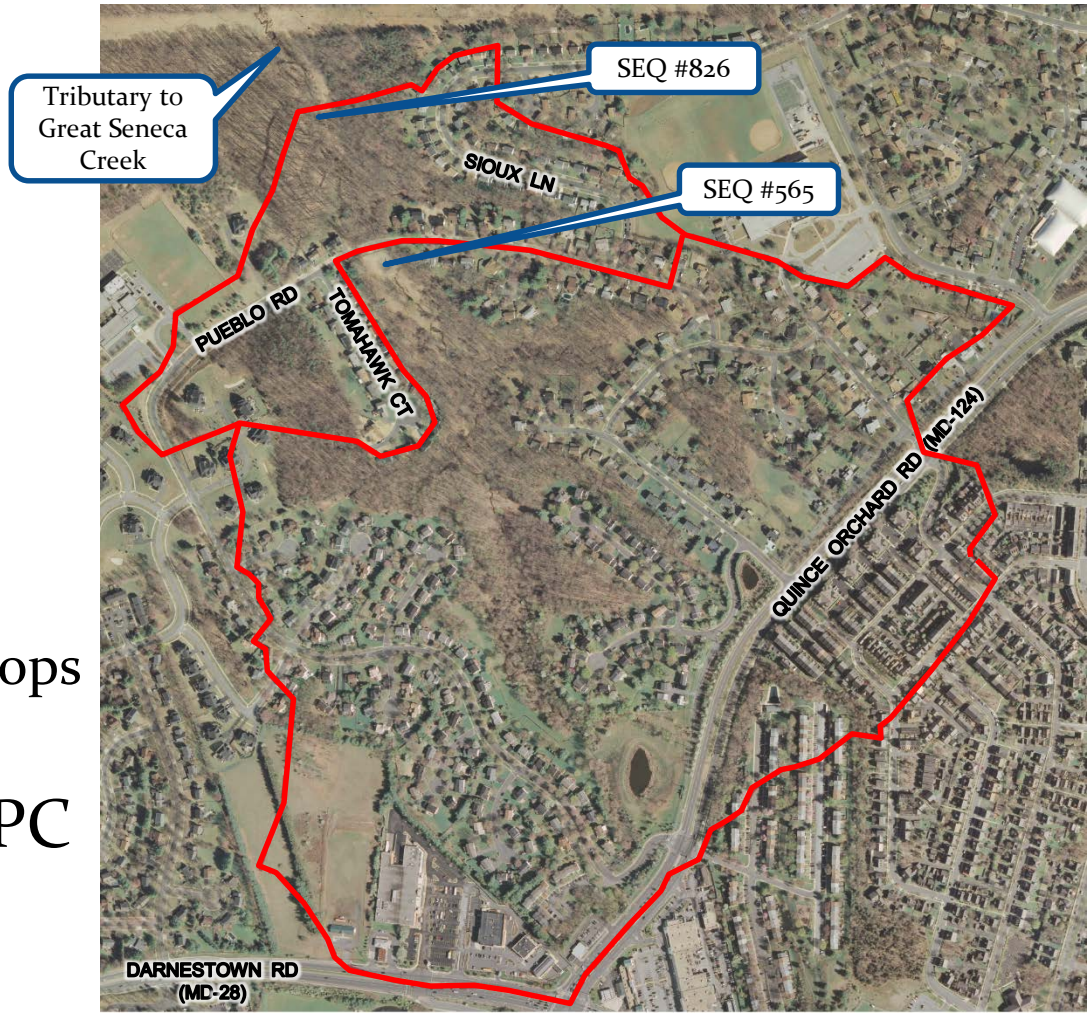


Figure 2: Stream Resource Conditions for the Great Seneca subwatershed

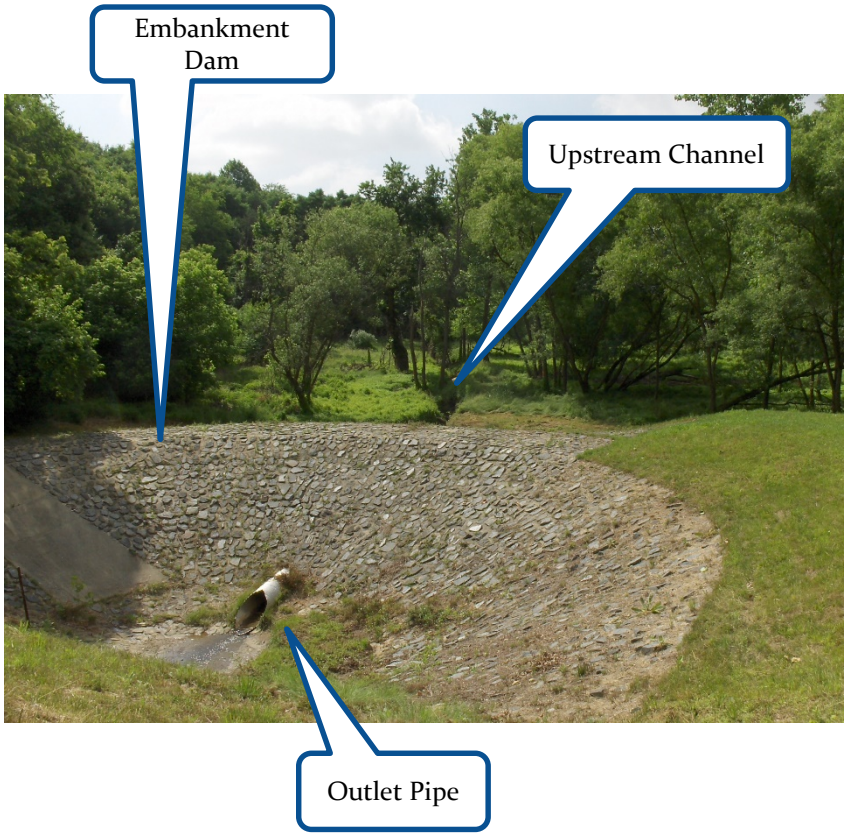
Pueblo Road
Stormwater Management Ponds

- Pond SEQ #565
  - 181.5 Acres
- Pond SEQ #826
  - 225.1 Acres Total
  - 26% Impervious
    - Equivalent to 59 Acres of paved surfaces and rooftops
- Both ponds are located on M-NCPPC property



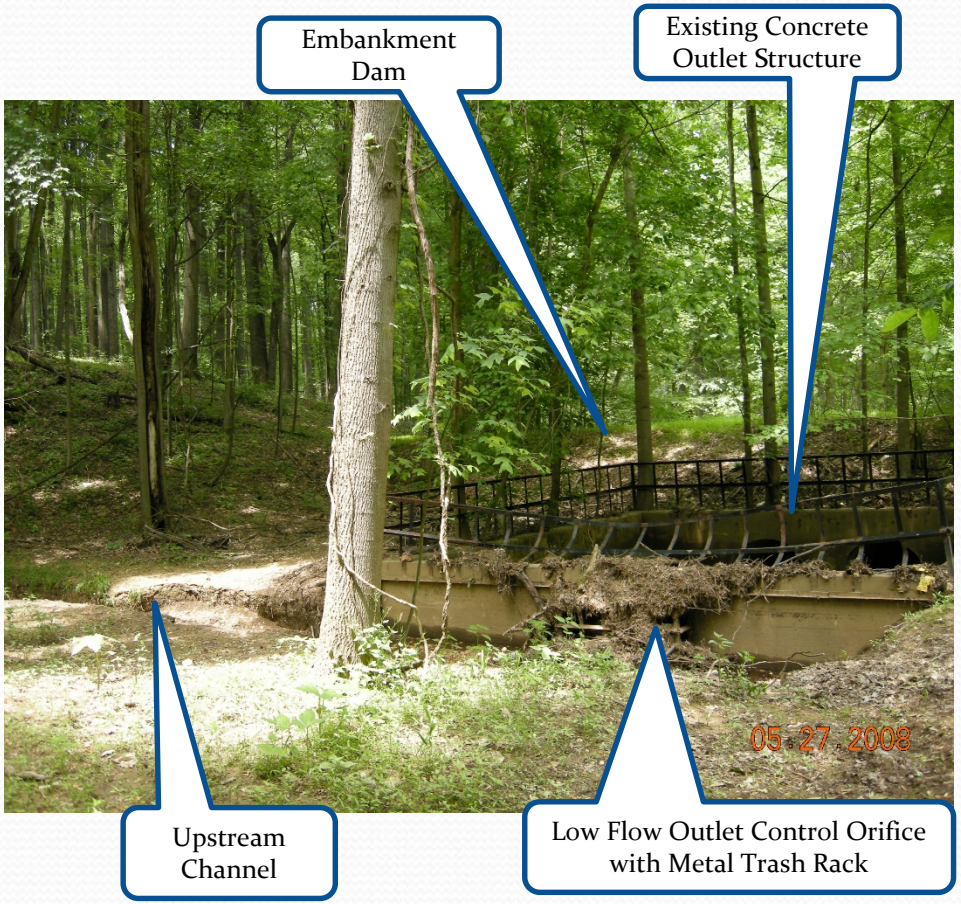
Pond SEQ #565

- Stormwater Management Dry Pond
  - Earth Embankment Dam lined with grouted riprap
  - Adjacent residential properties
  - Acts as forebay to downstream facility
  - MCDEP & M-NCPPC share maintenance responsibility



Pond SEQ #826

- Stormwater Management Dry Pond
  - Earth Embankment Dam with emergency spillway
  - Twin 54” metal spillway pipes and concrete riser for flow control
  - Facility has never been maintained due to lack of maintenance access
  - Does not meet current SWM requirements or safety standards.



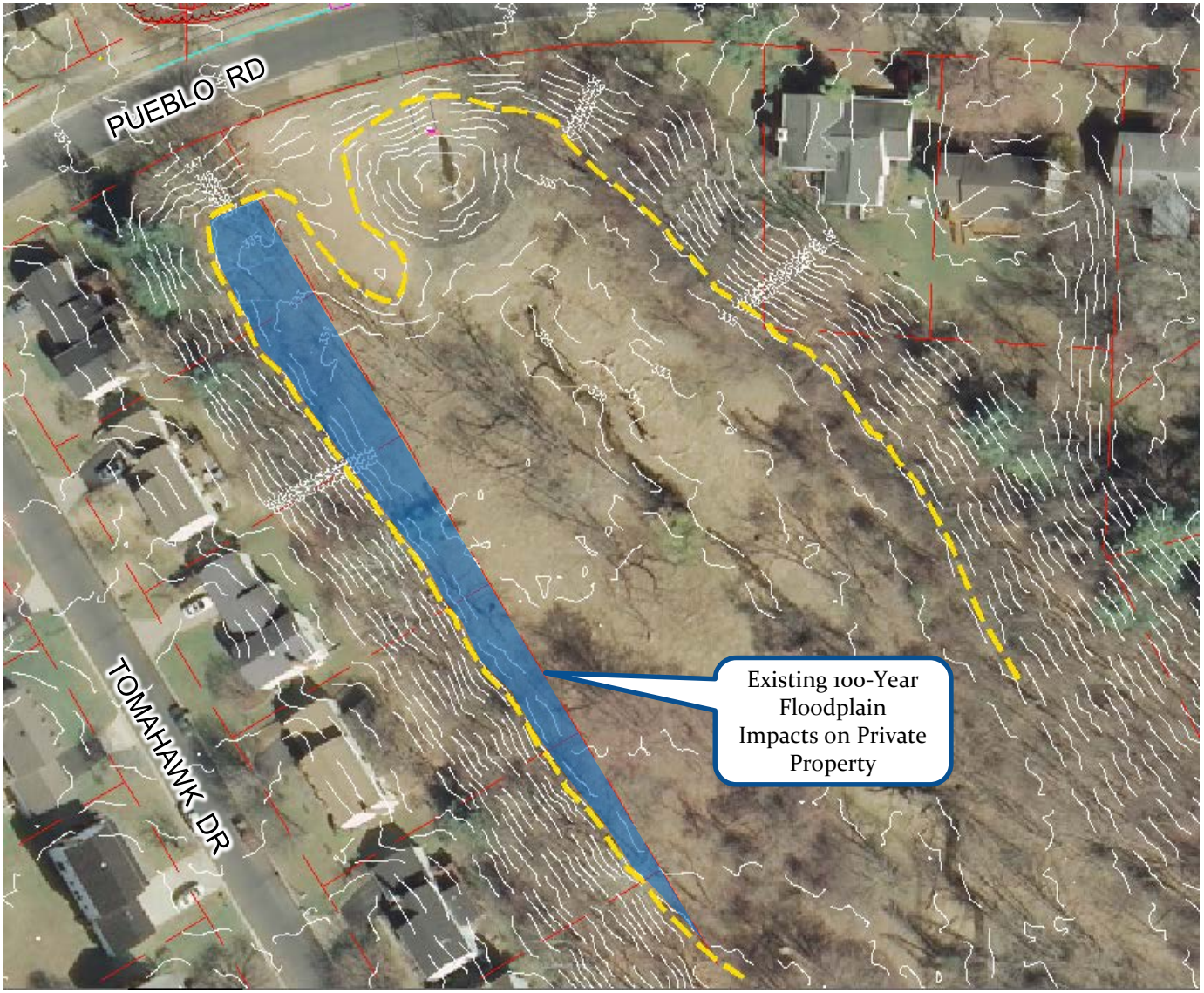
Project Objectives

- MAINTENANCE AND REPAIR
  - Replace existing control structure with concrete weir wall
  - Replace dam embankment and install impervious core
  - Install internal drain in downstream embankment
  - Provide permanent maintenance access route
- STORMWATER MANAGEMENT/STREAM PROTECTION
  - Reconstruct facility to meet current safety and water quantity standards to protect Great Seneca Creek
- AESTHETICS/ENVIRONMENT
  - Reforestation at both ponds to improve riparian habitat and aesthetics
  - Augment existing environmental features such as forest and wetlands where possible

Pond SEQ #565

- Dry Pond to remain
- Acts as forebay to downstream facility
- MCDEP & M-NCPPC share maintenance responsibility

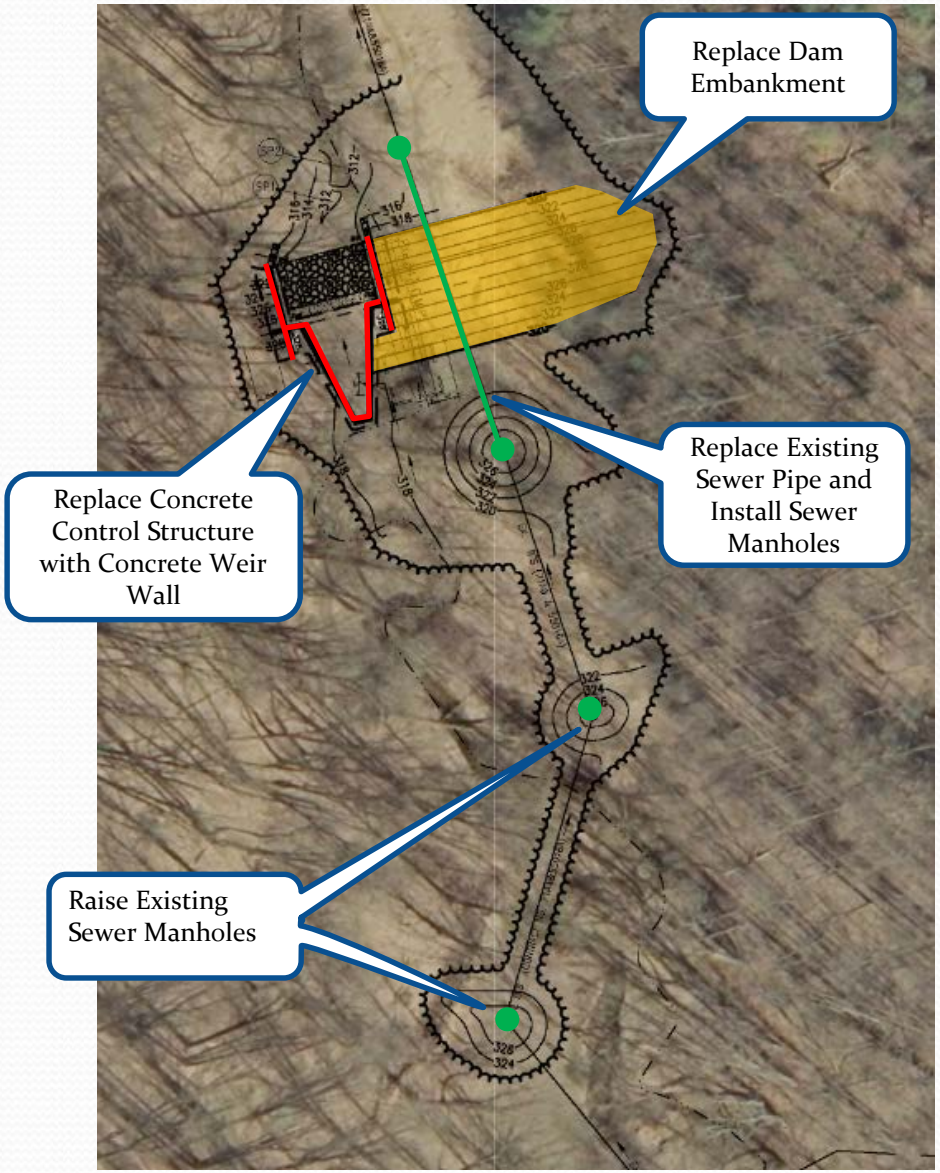
Pond SEQ #565 - Floodplain



- Existing floodplain will not change
- Impacts on private property

Pond SEQ #826

- Concrete Weir Wall
  - Capture more “peak-flow” runoff from impervious surfaces within the stormwater pond. Referred to as Channel Protection Volume (CPv).
  - Retrofitted facility captures 80% of CPv for entire drainage area.
- Replace dam embankment
  - Install impervious core
  - Install internal drain in downstream embankment to prevent seepage
- Sewer main modifications

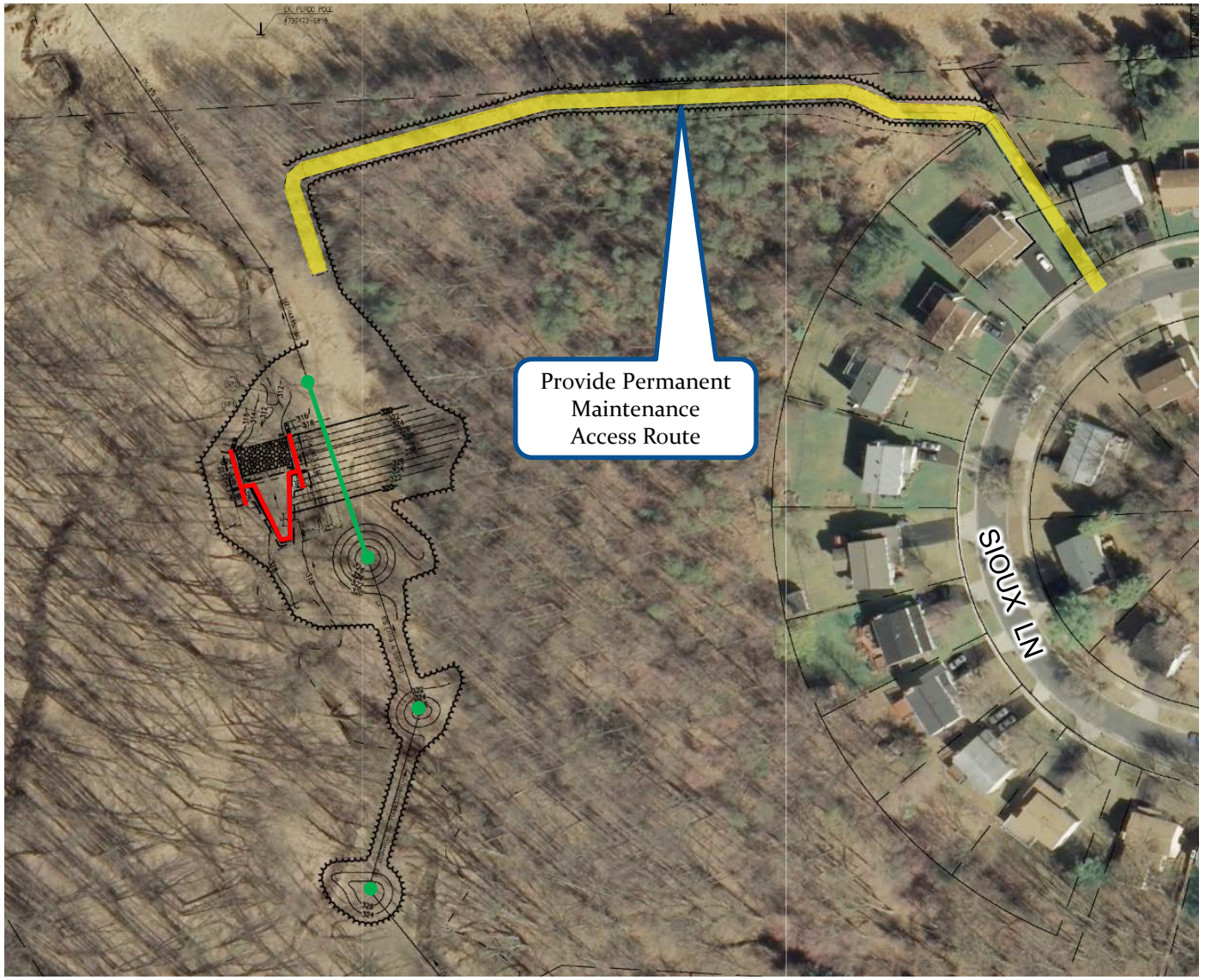


Project Objectives - Maintenance

- Proposed improvements will allow for future maintenance.
- MCDEP & M-NCPPC share maintenance responsibility
- Provide permanent maintenance access route

Example of a concrete weir wall

Pond SEQ #826 - Access

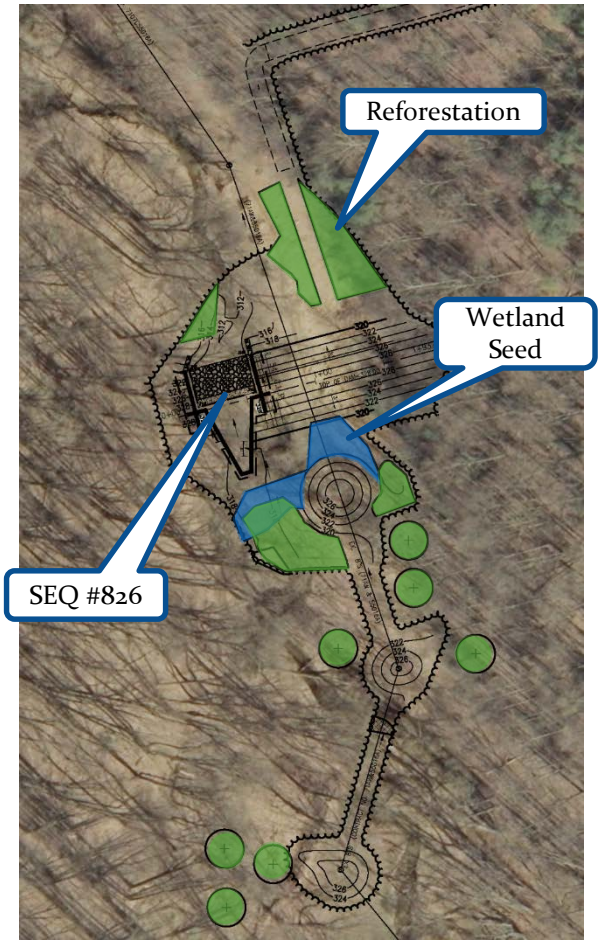


Pond SEQ #826 - Access

- Access between 16556 and 16560 Sioux Lane
- Entirely on M-NCPPC property
  - NO encroachment on private property
- Provide driveway apron for future inspection and maintenance access.

Project Objectives - Aesthetics

- Reforestation with native trees and shrubs to improve riparian habitat and aesthetics
  - Species suitable for floodplain areas
- Augment existing environmental features such as forest and wetlands where possible



Project Details

- **Financial** – estimated cost of $1.5M financed through MCDEP CIP Program using funds generated through the Water Quality Protection Charge
- **Forest** – tree clearing to provide construction and maintenance access
- **Traffic** – construction traffic enter and exit roadways Monday – Friday, 7AM to 4PM

Project Benefits

- **Water** – improved stream water temperature through better management of runoff
- **Environmental** – reduced downstream discharge allows for natural self-repair of stream channel. Increased riparian habitat through landscaping and reforestation.
- **Maintenance** – retrofitted facility will meet current safety requirements. MCDEP and M-NCPPC will share maintenance responsibilities. Permanent access route for routine inspection and maintenance.

Estimated Construction Timeline

- **Permits** – Plans are at regulatory agencies for approval and permit issuance
- **Construction**
  - MCDEP Construction Group will manage the project throughout construction
  - Start in Late Fall 2016 pending permit issuance
  - Anticipated work stoppage during Winter and resume in Spring 2017
  - Stream Closure Period from March 1st through June 15th
  - Approximate construction duration of 8 months

What to expect during construction

- **Construction Hours**
  - Monday through Friday, 7AM – 4PM
- **Safety**
  - At entrance on Sioux Road: Residents may encounter trucks entering and exiting. Blaze orange safety fence will designate construction area.
  - Forest area separates 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 location will help alleviate majority of 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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