

Old Farm Creek Tributary Stream Restoration Project



Public Meeting
April 29th, 2015

Montgomery County Department of Environmental Protection
Watershed Management Division



Introductions

- ❖ **Radhika Wijetunge**

Senior Planner, Montgomery County DEP

- ❖ **Meghan Gloyd, P.E.**

Project Manager, Montgomery County DEP/JV

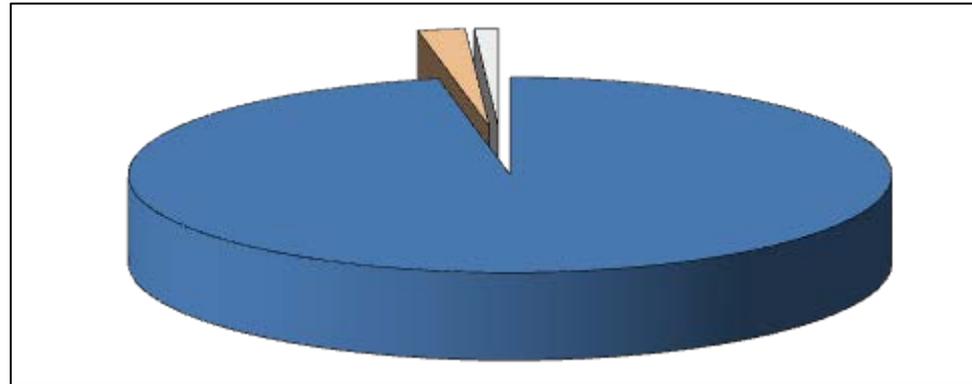
- ❖ **Greg Fox, P.E.**

Project Designer, A. Morton Thomas

Today's Agenda

- Background Information – Why County is Doing This
- Stormwater Management Overview
- Project Background
- Project Goals
- Stream Restoration Approach
- Project Construction Activity
- Project Schedule and Costs

Sources of Water

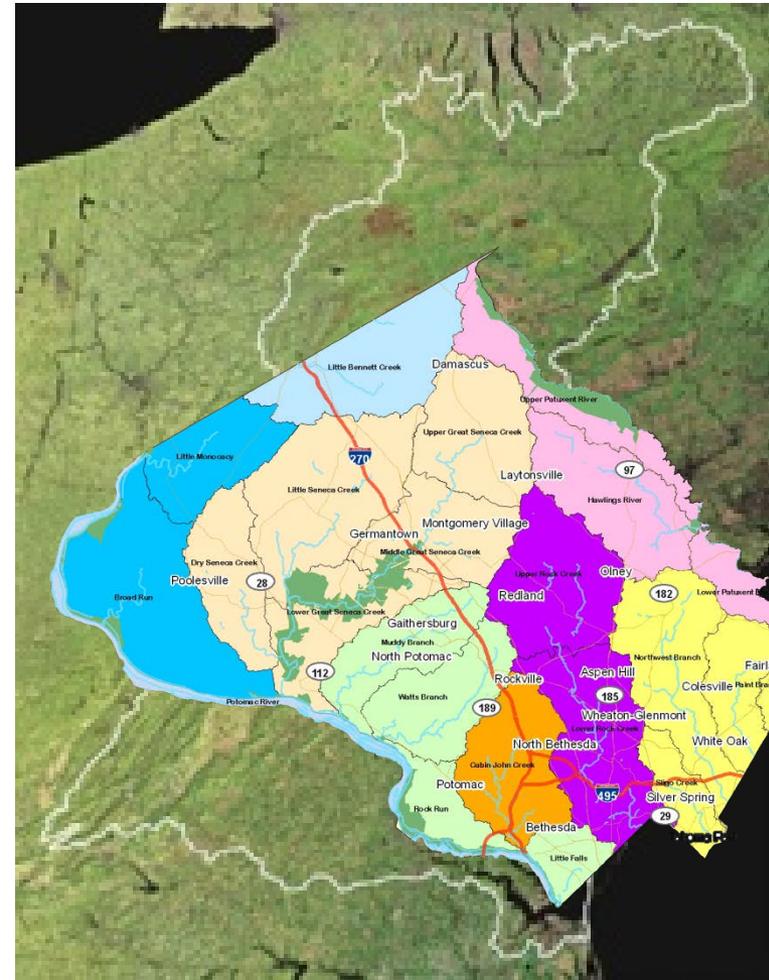


- About 97% is salt water
- About 2% is frozen
- Only 1% is available for drinking water
 - Country – 95% from groundwater
 - Maryland – 32% from groundwater, 68% from surface water

Potential for greater impacts from runoff in Maryland

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)

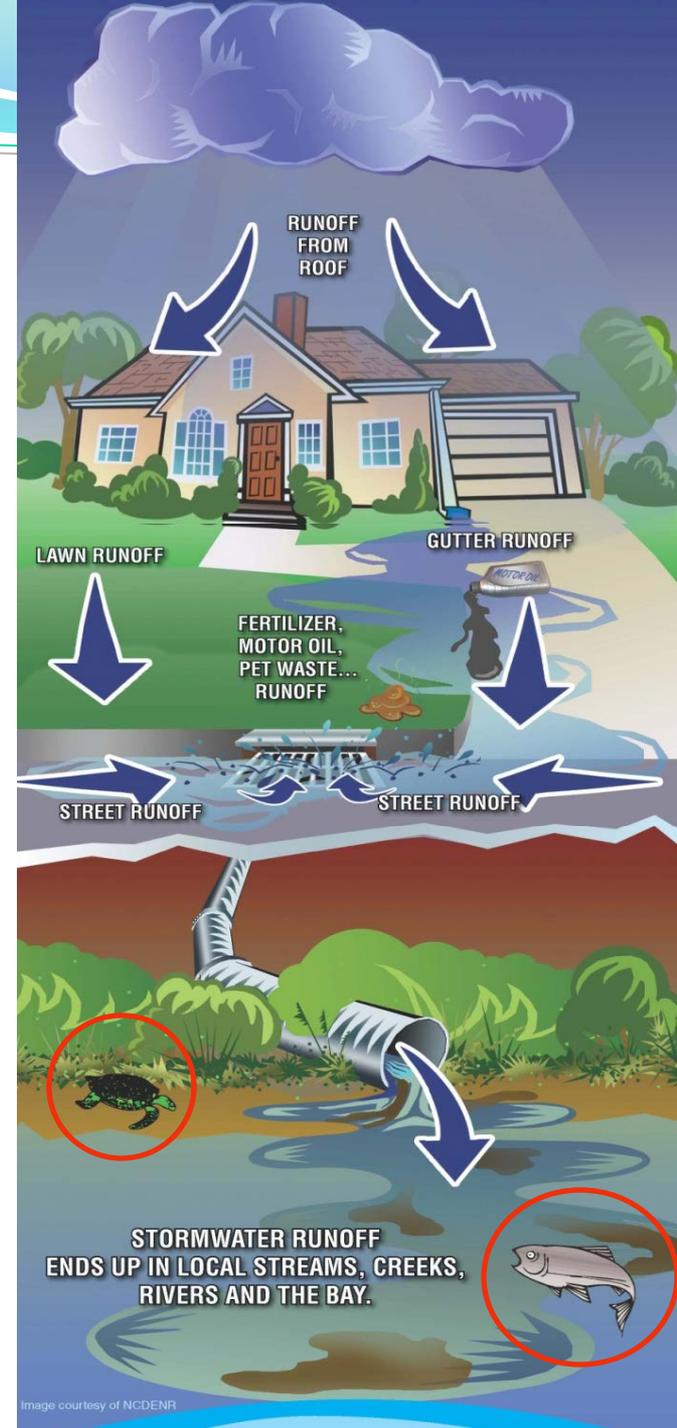


What is Runoff?

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



Watershed 101

Impervious Impacts to Streams



Stream in a Watershed with 8% impervious cover.



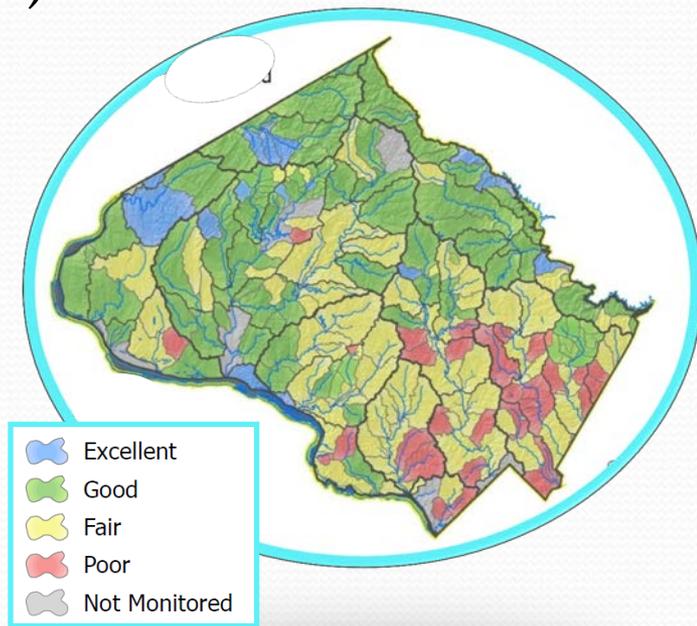
Stream in a Watershed with 20% Impervious Cover



Stream in a Watershed with 30% impervious Cover.

What is the County Doing to Protect our Streams?

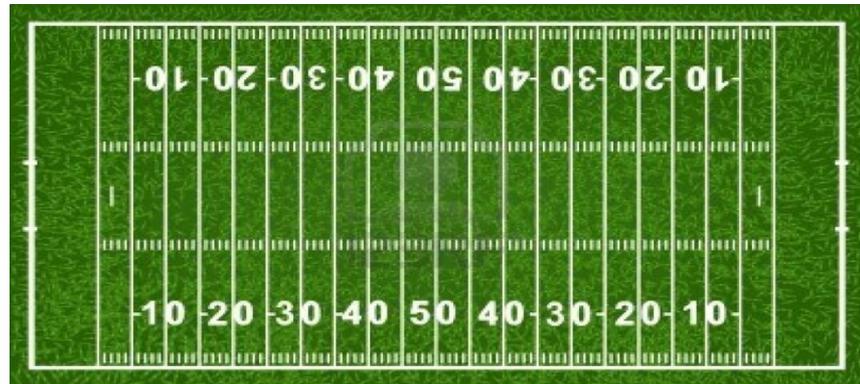
- Must meet regulatory requirements
 - Federal Clean Water Act permit program
 - **MS4** = **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem
- Applies to all large and medium Maryland jurisdictions
- County programs
 - Restore our streams and watersheds
 - Add runoff management
 - Meet water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



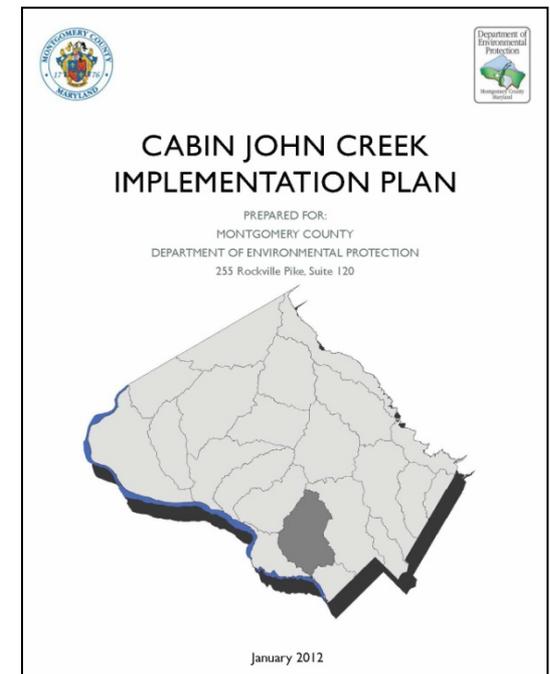
Watershed Management Division

- Stormwater Permit Coordination
 - Reporting, Monitoring, and Watershed Outreach
- Stormwater Management Facilities
 - Inspections and Maintenance
- Watershed Restoration
 - Stormwater Retrofits and Stream Restoration
 - RainScapes
- Construction Management
 - Oversees project construction
 - Administers contracts and procurement



Project Selection

- Constructed in early 1980s
- Located in a key watershed (Cabin John Creek) for stream restoration
- Erosion of banks threatening utilities and natural resources
- History of previous repairs
- Opportunity for water quality and ecological improvements



Project Drainage Area



Current Stream Condition



Current Stream Condition



Current Stream Condition



Current Stream Condition



Current Stream Condition



Current Stream Condition



Current Stream Condition



Current Stream Condition



Project Goals

- Minimize disturbance to existing mature trees
- Improve aquatic & fish habitat
- Improve water quality
- Bed and bank stabilization
- Reforest stream banks



Stream Restoration Approach

- In-Stream Structures (Cross Vane, Step Pool)
 - Channel bed grade control
 - Reduce bank velocity and erosion
 - Maintain Channel Capacity
 - Dissipate excess energy
- Habitat enhancement
 - Riffle/pool system for aquatic habitat and fish passage
 - Riparian cover – shading and avian habitat
 - Diverse and native plant communities, forested wetlands
- Pollutant Reduction
 - Erosion prevention & Sediment trapping
 - Phosphorus removal in stream/wetland interaction
 - Reduce Nitrate in deep pools

Stream Restoration Design



Riffle/Pool Sequence



Step Pool System



Cross Vane



J-Hook



Toe Protection / Soil Lift



Imbricated Stone Wall



Plunge Pool System



Reforestation Planting Zones



Live Staking



Planting



Reforestation

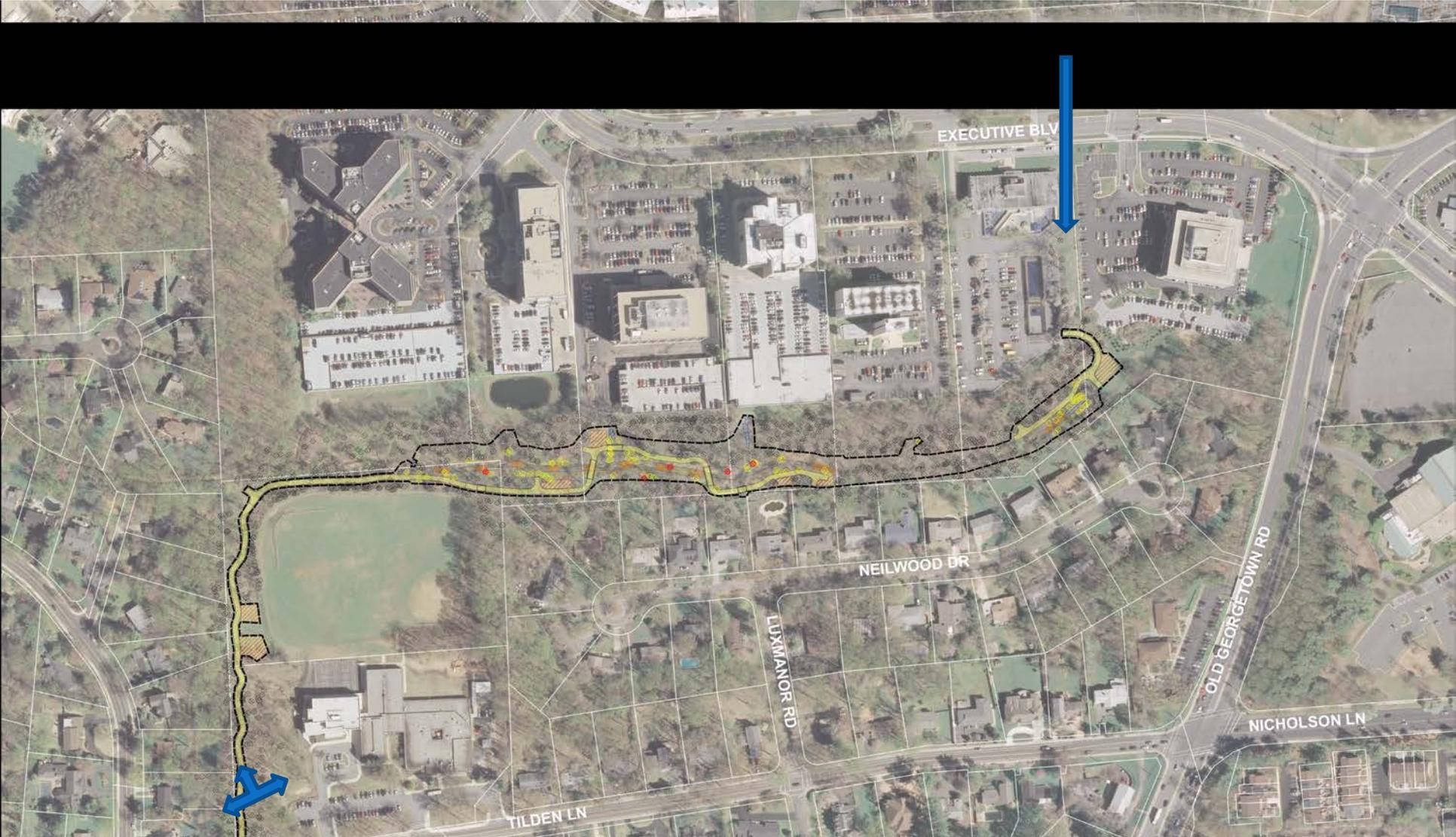


Restoration Monitoring

- County monitoring to evaluate whether project goals are achieved
 - Salamanders
 - Aquatic insects
 - Fish

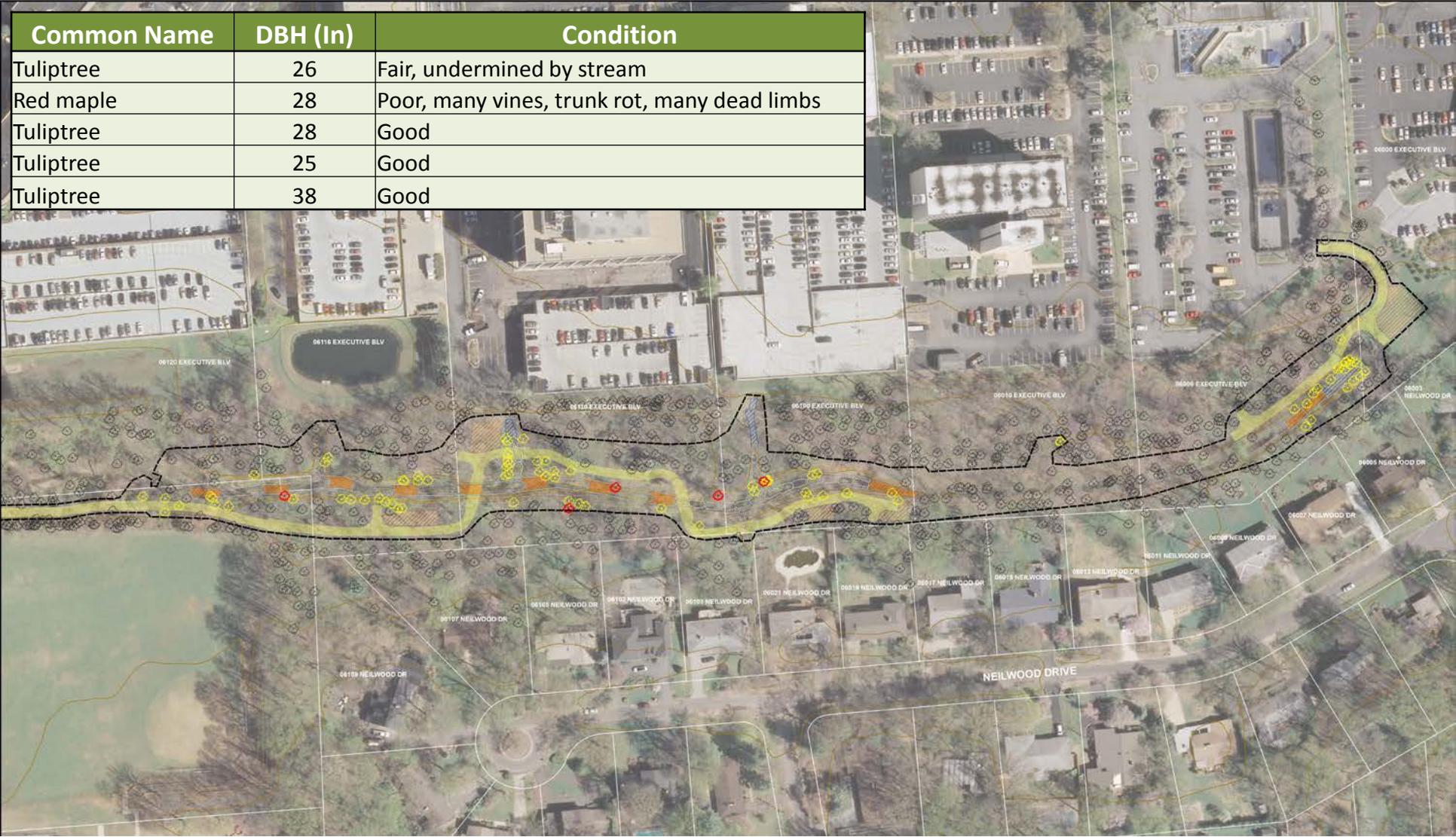


Construction Access



Tree Impacts

Common Name	DBH (In)	Condition
Tuliptree	26	Fair, undermined by stream
Red maple	28	Poor, many vines, trunk rot, many dead limbs
Tuliptree	28	Good
Tuliptree	25	Good
Tuliptree	38	Good



What to Expect During Construction

- **Duration**
 - Approximately 7 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 is required to comply with Montgomery County Sediment Control Permit and not track dirt onto roads

Schedule and Cost

- **Design** – Spring 2014 – Summer 2015
- **Construction** – Fall 2015 – Spring 2016 (Estimated)
- **Financial** – estimated \$800k financed by MCDEP CIP Program using funds generated through the Water Quality Protection Charge and grant funding



Questions?

For more information:

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