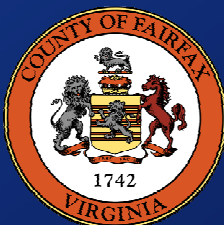


# Stormwater Planning Program and Projects Update

Jonathan Witt – Ecologist, Watershed Assessment Branch  
Matt Meyers – Chief, Watershed Projects Implementation Branch

Department of Public Works and Environmental Services  
*Working for You!*



A Fairfax County, VA, publication  
December 3, 2018

# Agenda

- Project Selection Overview
- Project Updates
  - Robinson Stormwater Pond Outfall (Robindale Drive)
  - Piney Run at Lake Werowance
  - Leigh Meadows and Towlston Pond Retrofits and Stream Restoration
- Stormwater Facility Maintenance
- Other Items

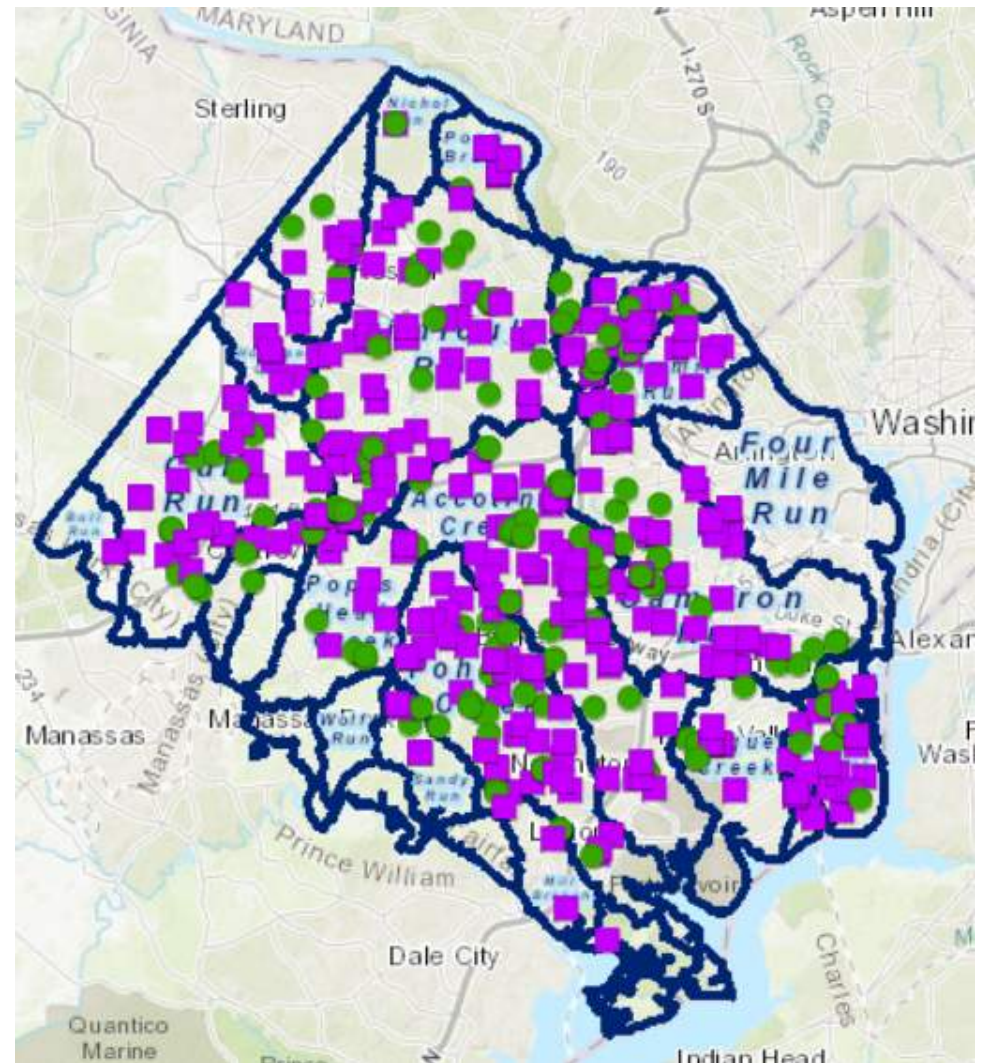


# Capital Projects: Online Resources

- Active and Completed Stormwater Project Map:  
<http://fairfaxcountygis.maps.arcgis.com/apps/webappviewer/index.html?id=784f4b5d018f4a50b951d7e10f1e6a32>
- Stormwater Improvement Projects by Watershed:  
<https://www.fairfaxcounty.gov/publicworks/stormwater/stormwater-improvement-projects>
- Stormwater Infrastructure:  
<https://fairfaxcountystw.maps.arcgis.com/apps/webappviewer/index.html?id=9c3ff2dc67734fccb61487b08c9197e4>
- Stormwater Home Page:  
<https://www.fairfaxcounty.gov/publicworks/stormwater>

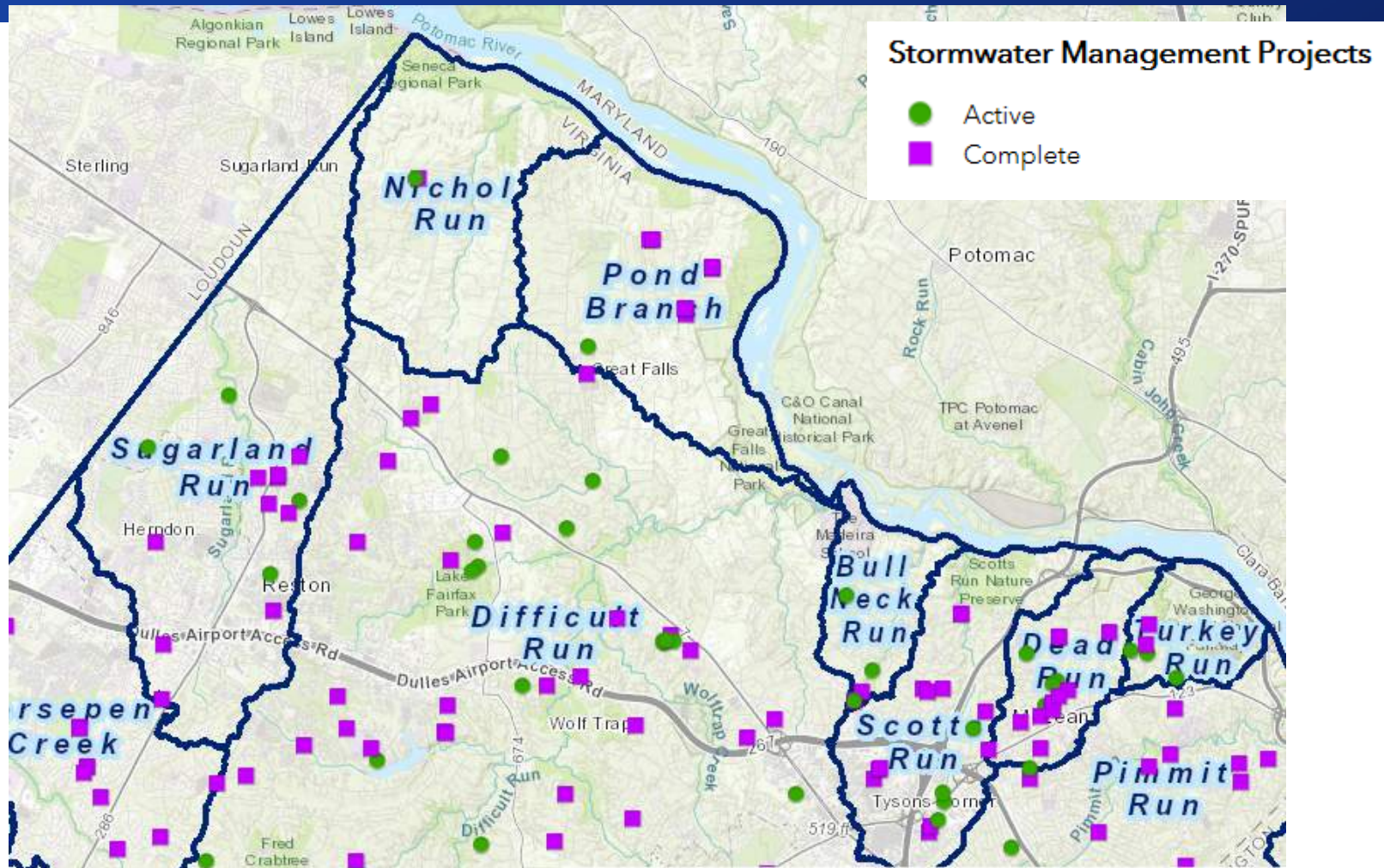
## Stormwater Management Projects

- Active
- Complete





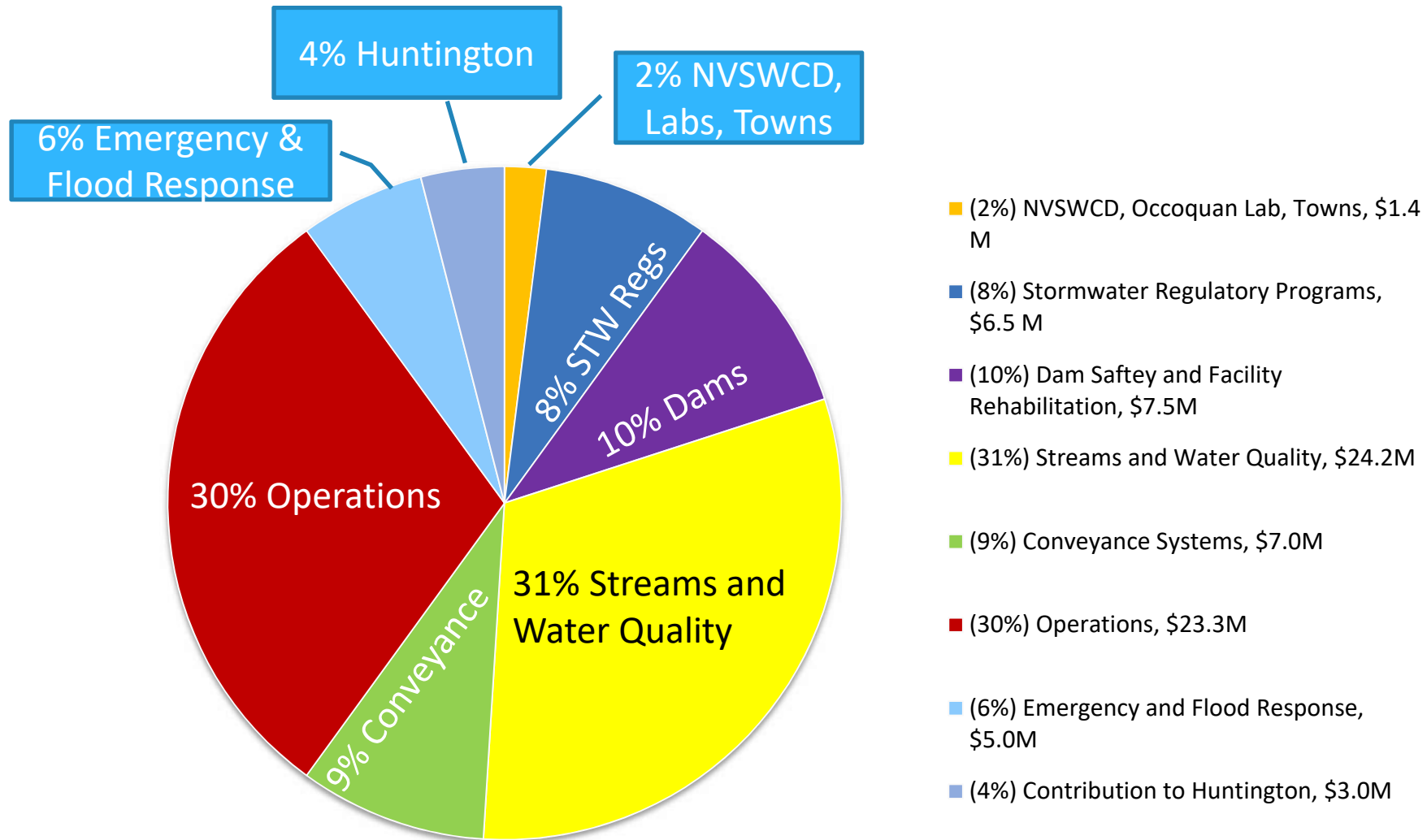
# Capital Projects: Online Resources



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# Watershed Management Plan Projects and Stormwater Update

## Fiscal Year 2019 Budget





How we are implementing projects: Funding Support

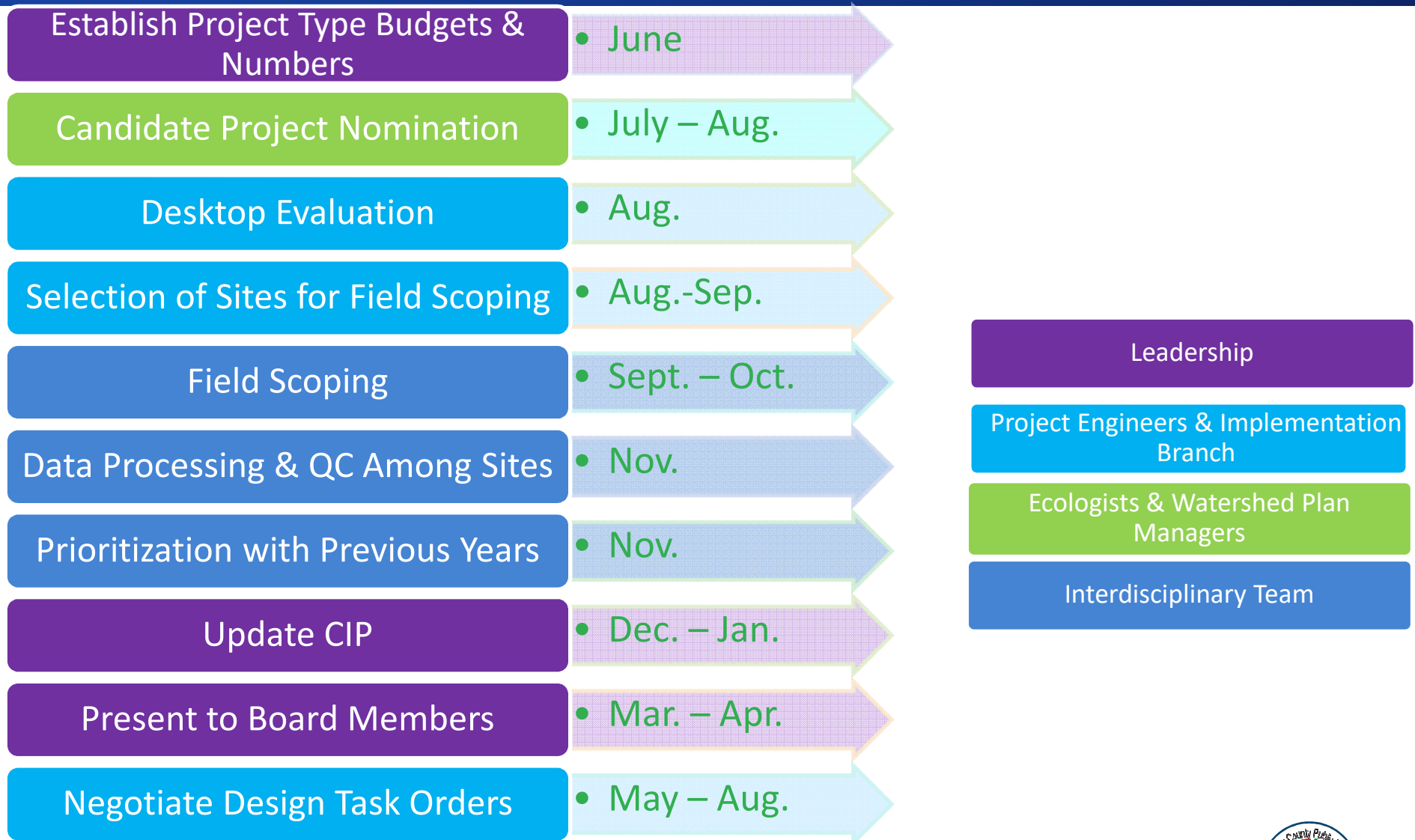
# Virginia DEQ: Stormwater Local Assistance Fund

- 17 Different Grants
- Amount of SLAF Grants: \$13.2 Million
- Length of Stream Channel Restored: 5.0 miles
- Three Stormwater Pond Retrofits

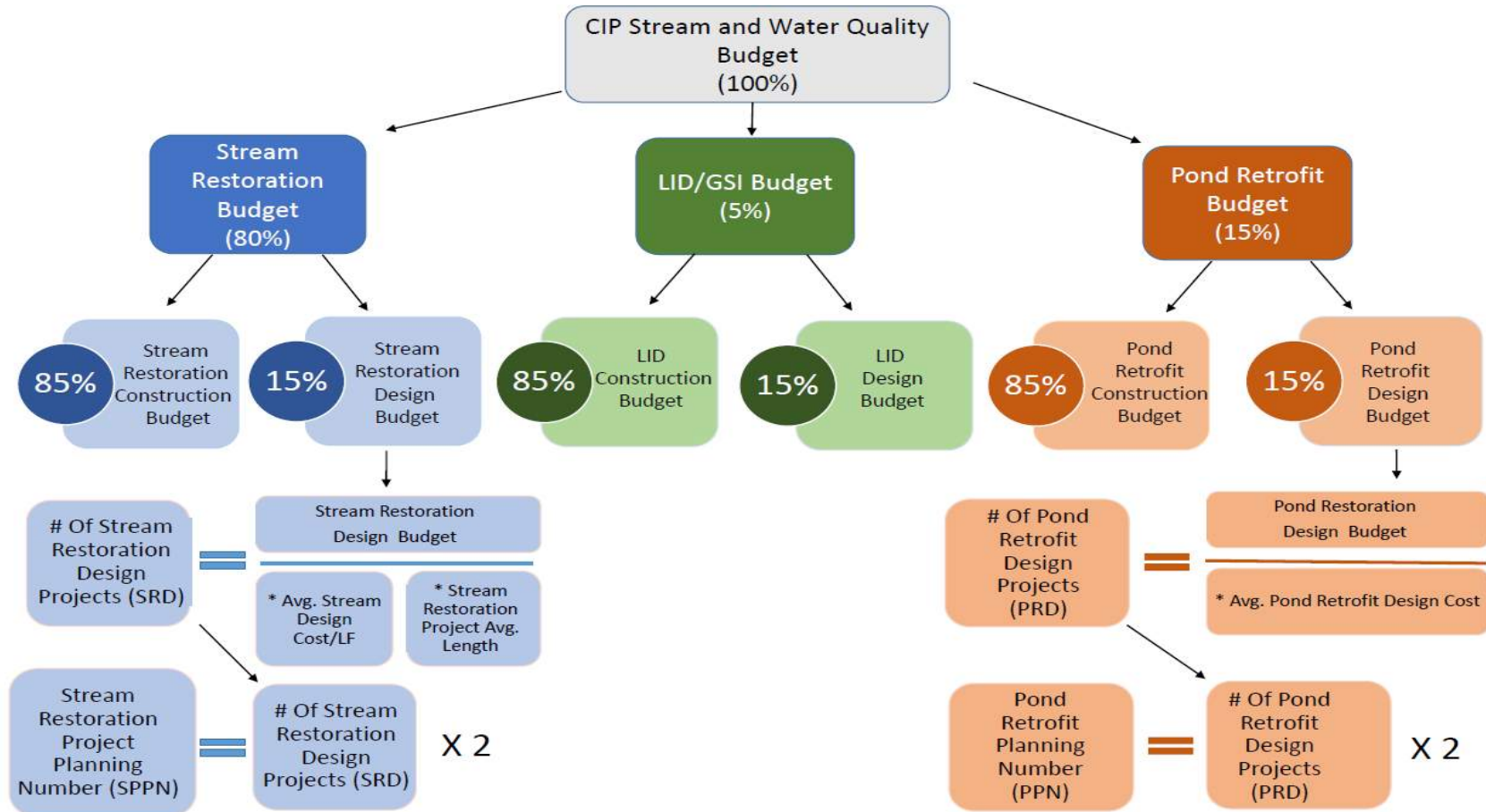
*Wakefield Park Stream Restoration Projects*



# Development of Stream Restoration and Water Quality CIP



# Capital Projects – Project Selection





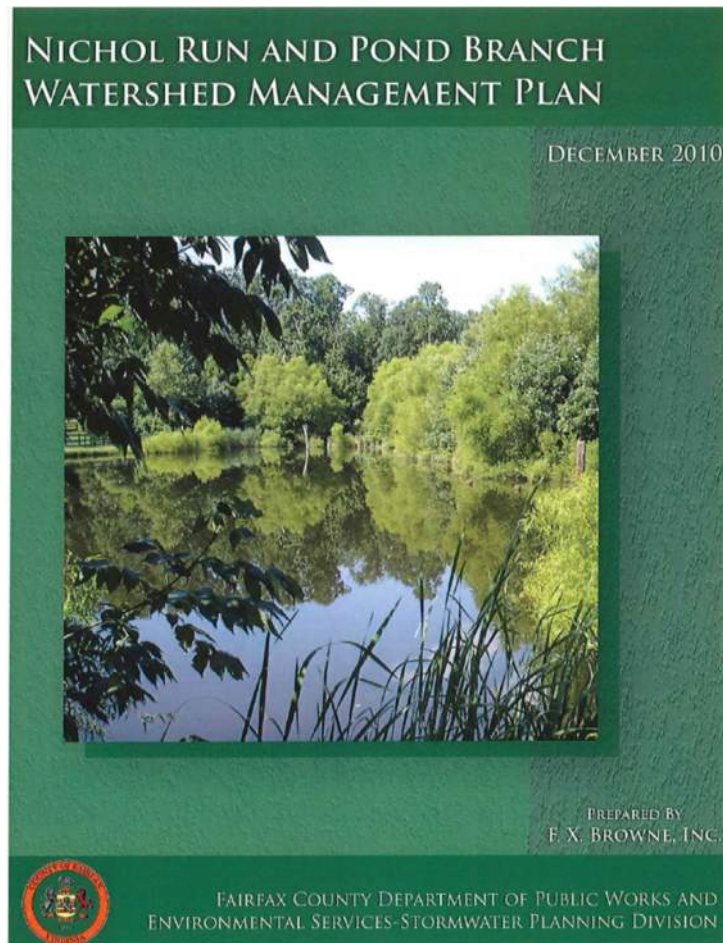
# Capital Projects – Project Selection

## Potential Project Source

- Watershed Management Plans (WMP)
- BOS requests
- MSMD requests (upstream of “trouble” ponds)
- Park Authority requests
- Wastewater requests
- Resident requests
- Town’s of Herndon and Vienna requests



# Watershed Management Plans



A Watershed Management Plan is a way for the county to assess the health and well being of our environment at a subwatershed scale.

The plans contain a *ranked* 25-year list of proposed projects.

<https://www.fairfaxcounty.gov/publicworks/stormwater/watersheds>



# Fairfax County Stormwater Planning

## How FC is Helping Our Watersheds

### Structural



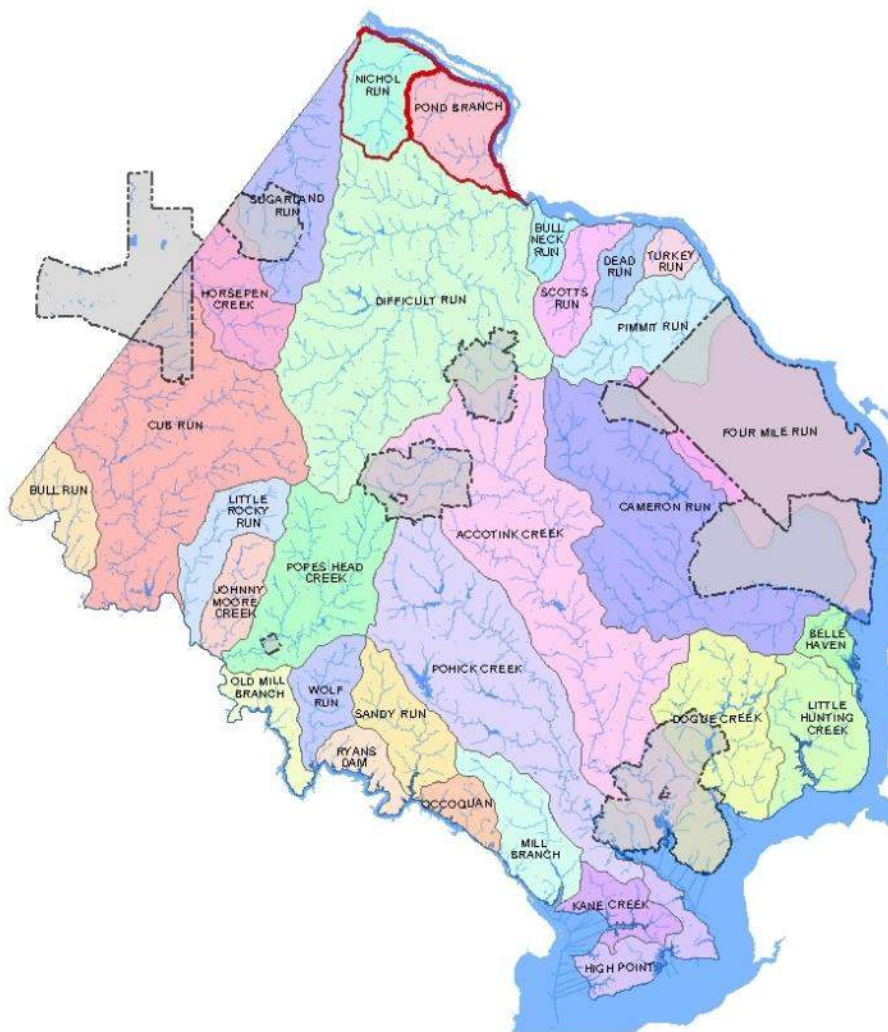
### Non-Structural



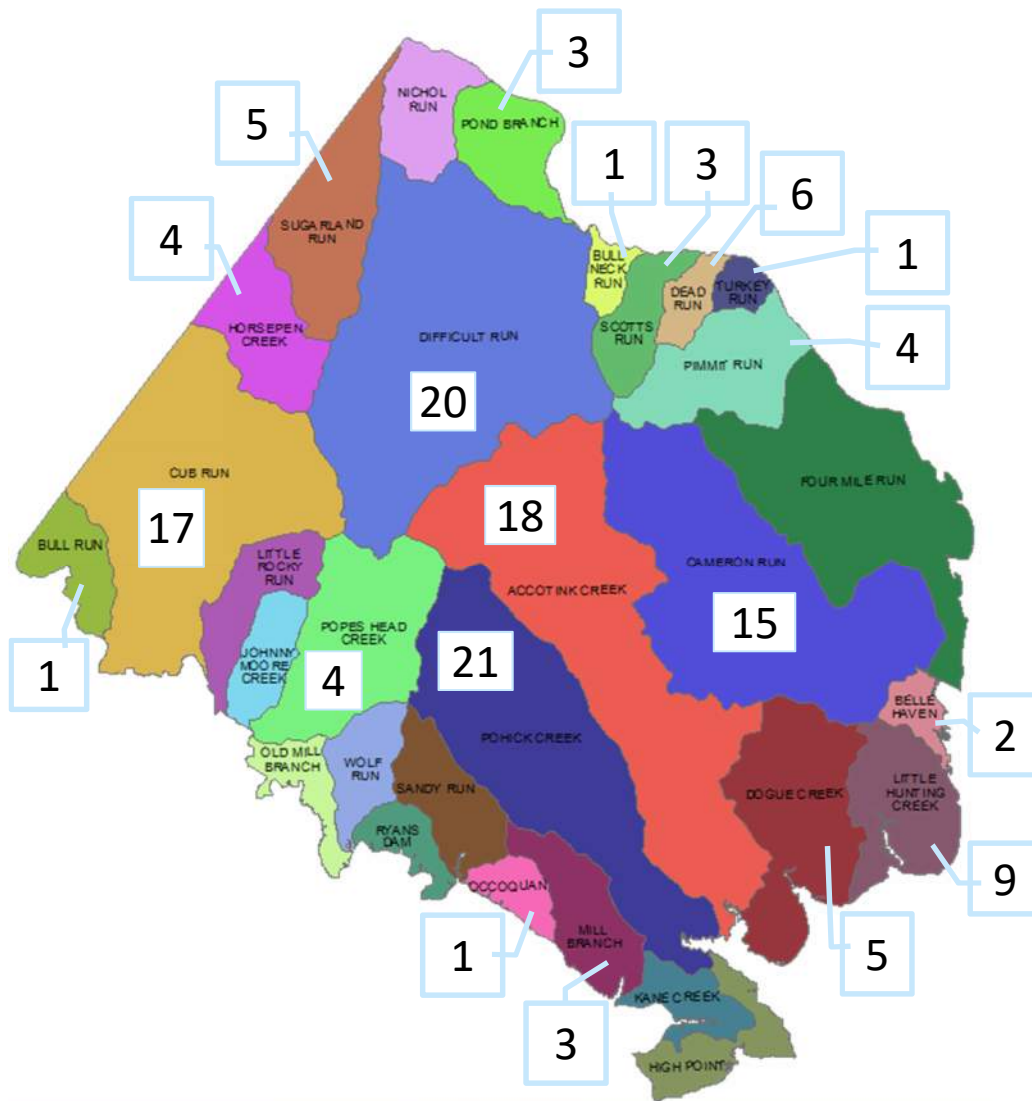


# Nichol Run & Pond Branch

- **Watershed Size**  
Nichol Run: 8.2 mi<sup>2</sup> , 4.4% Impervious
- Pond Branch: 8.4 mi<sup>2</sup> , 5.3% Impervious
- **Major Stream and Tributaries**  
7 WMAs: Potomac, Jefferson, Upper Nichol, Lower Nichol, Clark, Mine Run, Pond
- **Unique Features**  
All streams drain to the Potomac, relatively low impervious compared to the county



# Completed Water Quality Projects: FY2010 - FY2017



## Completed Water Quality Projects FY10-17

Number of Projects	127
Acres Treated	23,700 Ac
Linear Feet Treated	32,700 LF
Phosphorous Removed	5,800 lb/yr
Nitrogen Removed	27,800 lb/yr
Sediment Removed	1,135 ton/yr



# Watershed Management Plan Projects and Stormwater Update

## Projects in Design

26 Projects with a Total Project Estimate of \$ 102 million

### Stream and Outfall Restoration

- Accotink Tributary @ Danbury Forest (Braddock)
- Backlick Run @ BrenMar Dr. (Mason)
- Coon Branch at Annandale Park (Mason)
- Crook Branch at Mantua Elementary School (Providence)
- Dogue Creek at Greendale Golf Course (Lee)
- Flag Run at Elgar Street (Braddock)
- Hunting Creek at Fairchild (Mount Vernon)
- Leigh Meadows/Towlston Meadows (Dranesville)
- Old Courthouse Spring Branch Phase I (Hunter Mill)
- Paul Spring Branch - Seg 1 @ Hollin Hills (Mount Vernon)
- Peyton Run @ Longwood Knolls (Springfield)
- Pike Branch at Wilton Road (Lee)
- Piney Run @ Lake Wereowance (Dranesville)
- Popes Head Creek at Havener Rd. (Springfield)
- Scotts Run @ Old Meadow Road (Providence)
- Snakeden Branch Tributary at Lake Audubon (Hunter Mill)



Dogue Creek At Greendale Golf Course  
Lee District  
Dogue Creek WS



# Watershed Management Plan Projects and Stormwater Update

## Projects in Design

26 projects with a Total Project Estimate of \$ 102 million

### Pond Restoration

- Ben Franklin Park (Lee)
- Center Ridge PD6 Sec 12D (Sully)
- Government Center Pond (DF81) (Braddock)
- Gunston Corner Wet Pond (Mount Vernon)
- Kingstowne Dam Repair (Lee)
- Luther Jackson Middle School (Providence)
- Sully Basins (Sully)
- Sunset Hills Road (Hunter Mill)
- Willow Springs ES (Springfield)

Village Park  
Springfield District  
Pohick Creek WS



### Low Impact Design (LID)

- Nottoway Park Phase II (Providence)

# Watershed Management Plan Projects and Stormwater Update

## Projects Currently in Construction

16 with a Total Project Estimate of \$42 million

### Stream and Outfall Restoration

- Bullneck Run @ Springhill Rec Center (Dranesville)
- Dead Run Segment 2 & 3 (Dranesville)
- Difficult Run at Brittenford (Hunter Mill)
- Flatlick Phase III (Sully)
- Indian Run @ Columbia Road (Mason)
- Indian Run @ Indian Run Court (Mason)
- Lake Martin Tributary @ Foxwood HOA (Sully)
- Long Branch Tributary at Long Branch (Braddock)
- Pike Branch Tributary at Ridgeview Park (Springfield)
- Pohick Creek at Queen Victoria (Braddock)
- Pohick Creek @ Greentree Village Park (Springfield)
- Scotts Run Tributary at Windy Hill Road (Dranesville)



Bullneck @ Springhill Rec Center  
Dranesville District  
Difficult Run WS

### Pond Retrofit

- Centreville Green PD 1 and PD 2 (Sully)
- Herrity Pond Dredge (Braddock)
- Lorton Athl Fields @ Lower Potomac (Mount Vernon)

### Flood Mitigation - Hayfield (Lee)

# Watershed Management Plan Projects and Stormwater Update

## Projects Scheduled to begin Construction in FY 2019

8 with a Total Project Estimate of \$20 million

### Stream and Outfall Restoration

- Flag Run @ Elgar Street (Braddock)
- **Scotts Run @ Old Meadow Road (Providence)**
- Snakeden Branch Tributary at Lake Audobon (Hunter Mill)

### Pond Retrofit and Dam Rehabilitation

- Gunston Corner @ Laurel Prop Div PCL D (Mount Vernon)
- Luther Jackson Middle School (Providence)
- Sully Basins ( Sully)
- Willow Springs ES ( Springfield)

### Low Impact Development – retrofit

- Nottoway Park Phase II (Providence)



Paul Spring Branch – Seg 1 @ Hollin Hills  
Mount Vernon District  
Little Hunting Creek WS



# Watershed Management Plan Projects and Stormwater Update

## Dam Safety and Facility Rehabilitation

### Stormwater Facilities

- 2,100 Publically Owned SWM facilities
- 20 State Regulated Dams
- 4,500 Private SWM facilities

### Typical State Dam Safety Regulation Requirements (partial listing)

- Routine maintenance
  - Monthly mowing, valve exercises
- Annual inspections
- Inspections after major storm events
- Biannual inspections by a professional engineer (PE)
- Non-Routine maintenance
- Annual Emergency Action Plan (EAP) updates
- 6-year certification cycle (Virginia)
  - Operation and Maintenance Plan
  - Inundation area mapping

### Maintenance of County's flood warning system

- 20 state regulated dams, three FCPA dams, three low water crossings, one tide gate, and one pump station



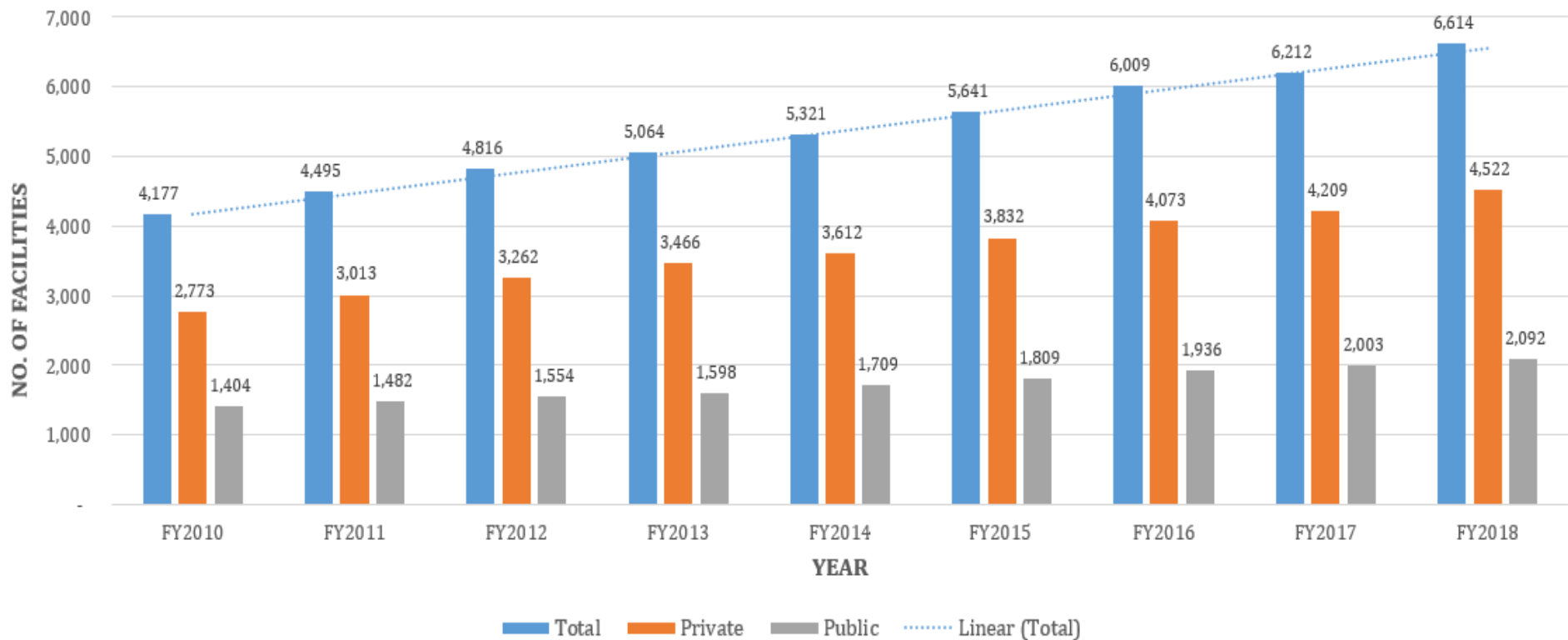
Langley Oaks Sec 1  
Dranesville District  
Turkey Run WS



# Watershed Management Plan Projects and Stormwater Update

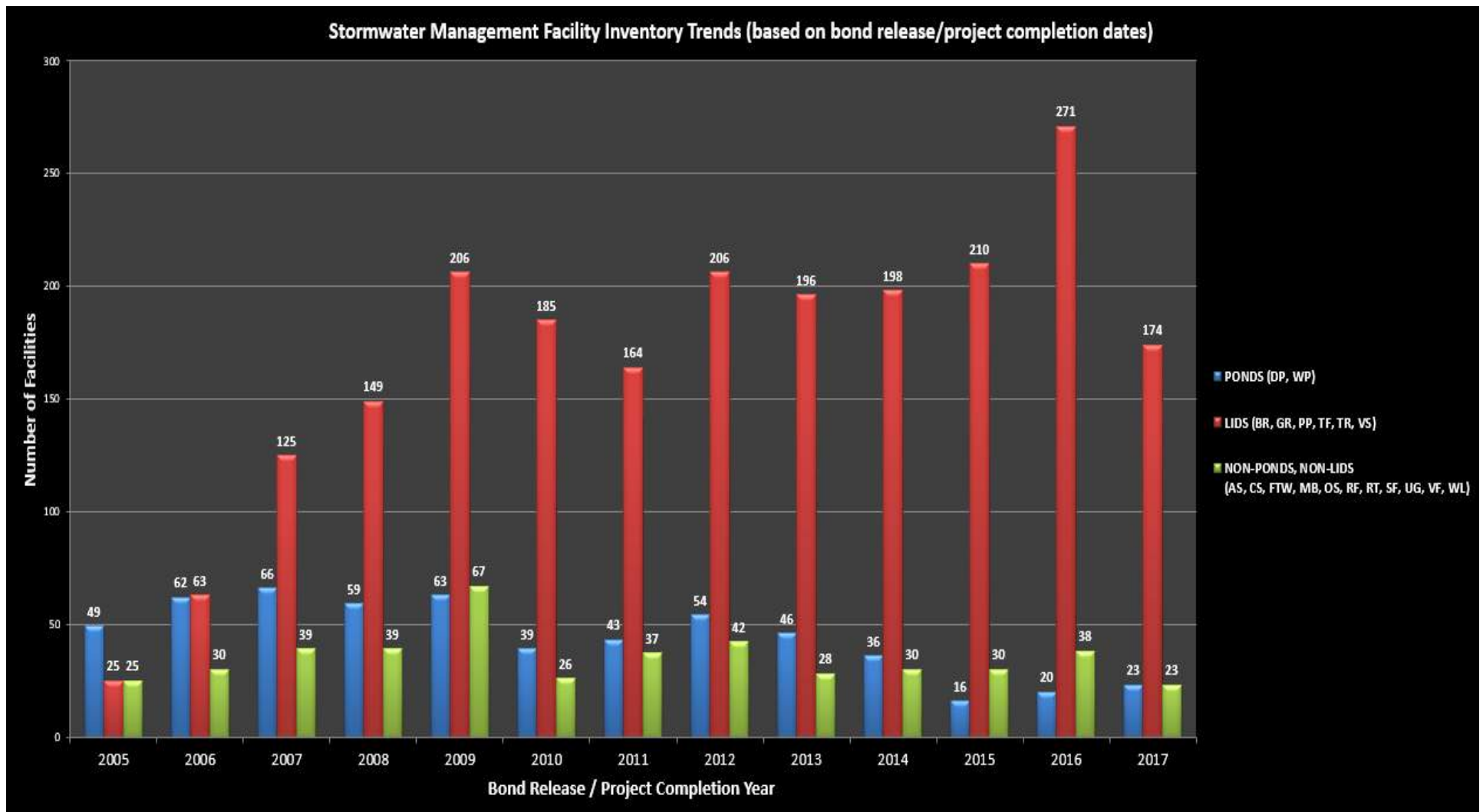
## Dam Safety and Facility Rehabilitation

Fairfax County Stormwater Management Facility Inventory  
(based on inventory date)



# Watershed Management Plan Projects and Stormwater Update

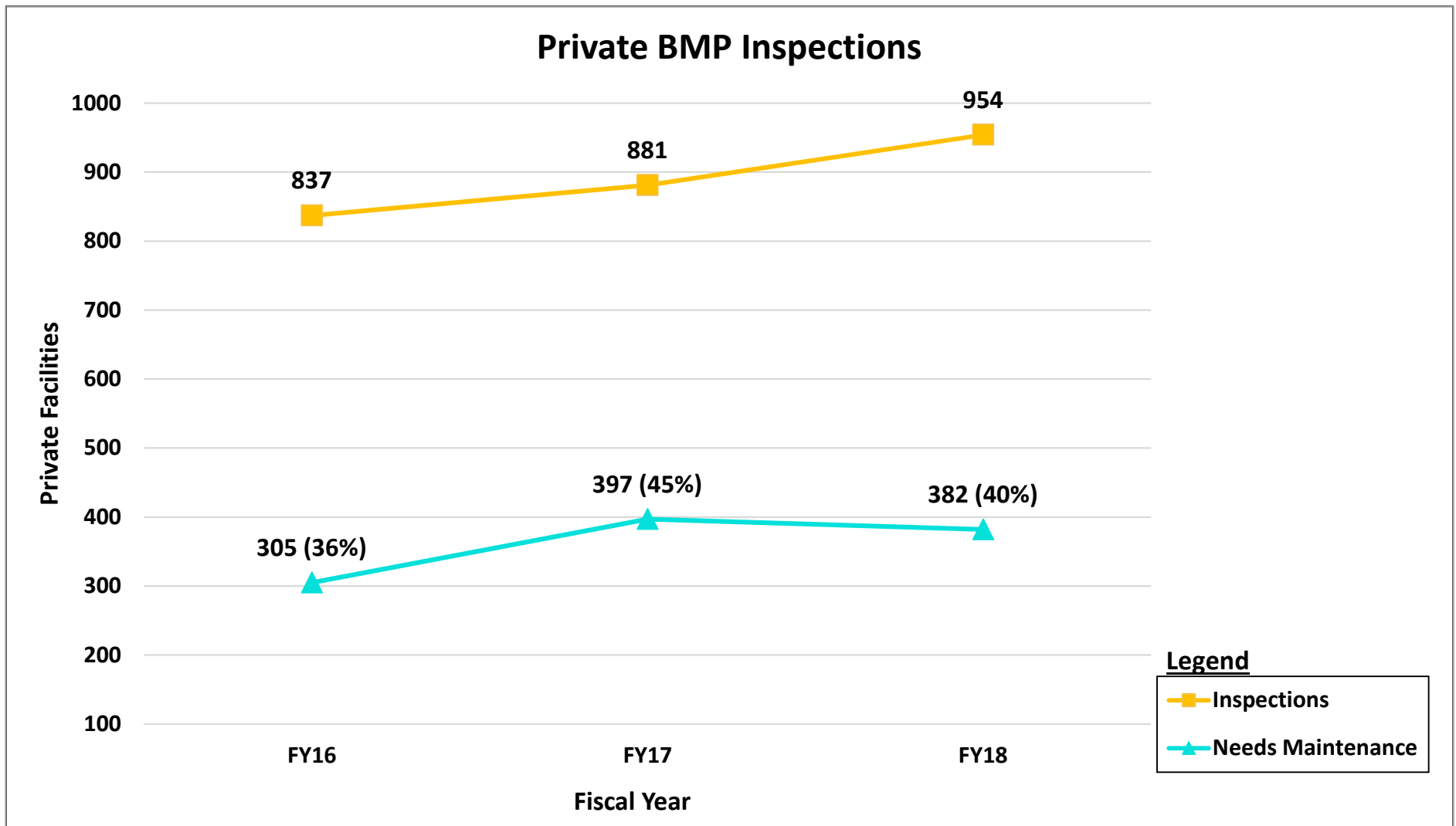
## Dam Safety and Facility Rehabilitation



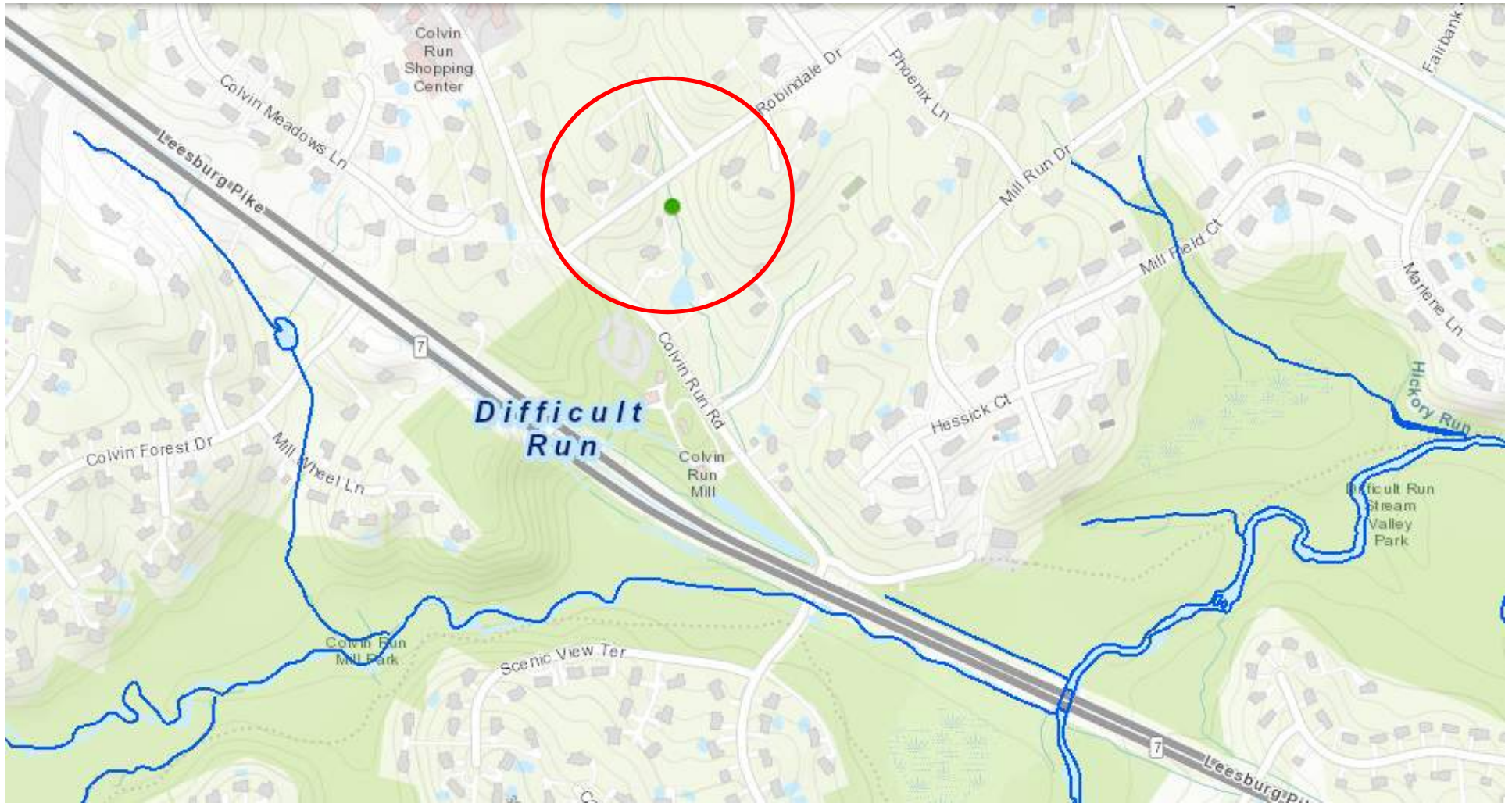


# Watershed Management Plan Projects and Stormwater Update

## Dam Safety and Facility Rehabilitation



# Robinson, PCL 19 @ 0723DP Outfall Improvement





# Robinson, PCL 19 @ 0723DP Outfall Improvement

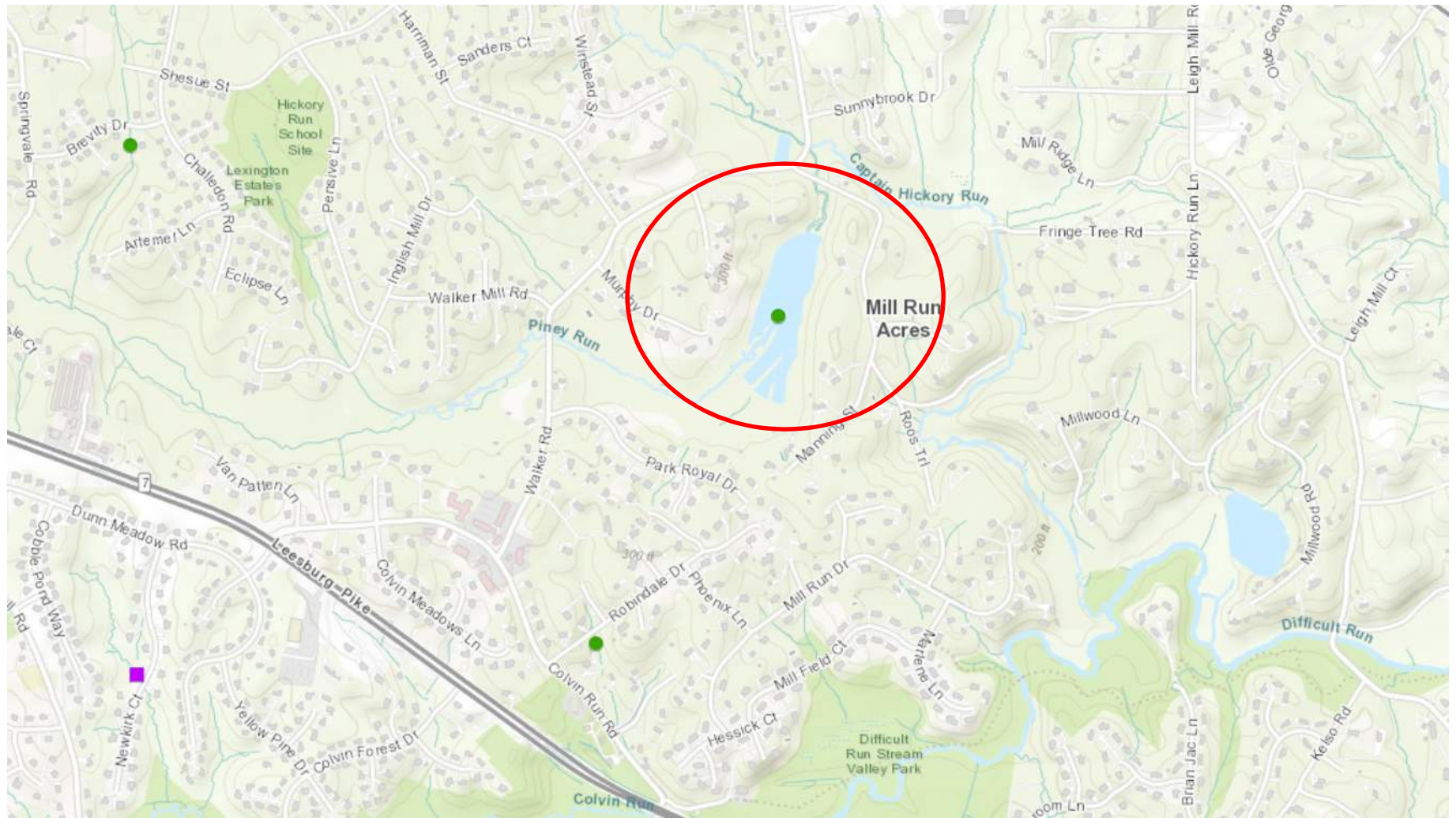


- 300 linear feet of outfall restoration
- Robindale Drive culvert rehabilitation (lining and pipe segment replacement)



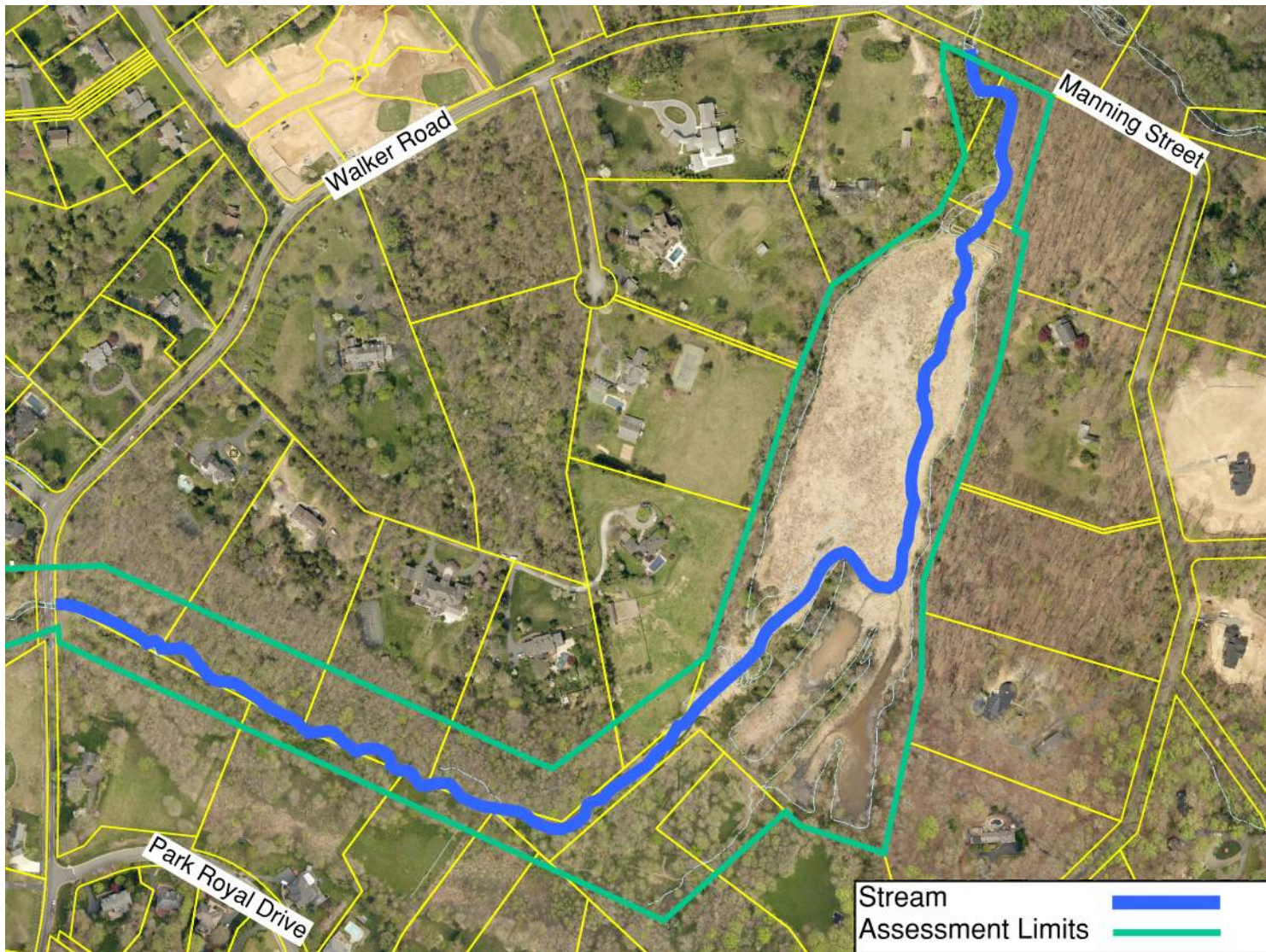


# Piney Run at Lake Werowance





# Piney Run at Lake Werowance Stream Restoration





# Piney Run at Lake Werowance





## Existing Conditions – Reach 2

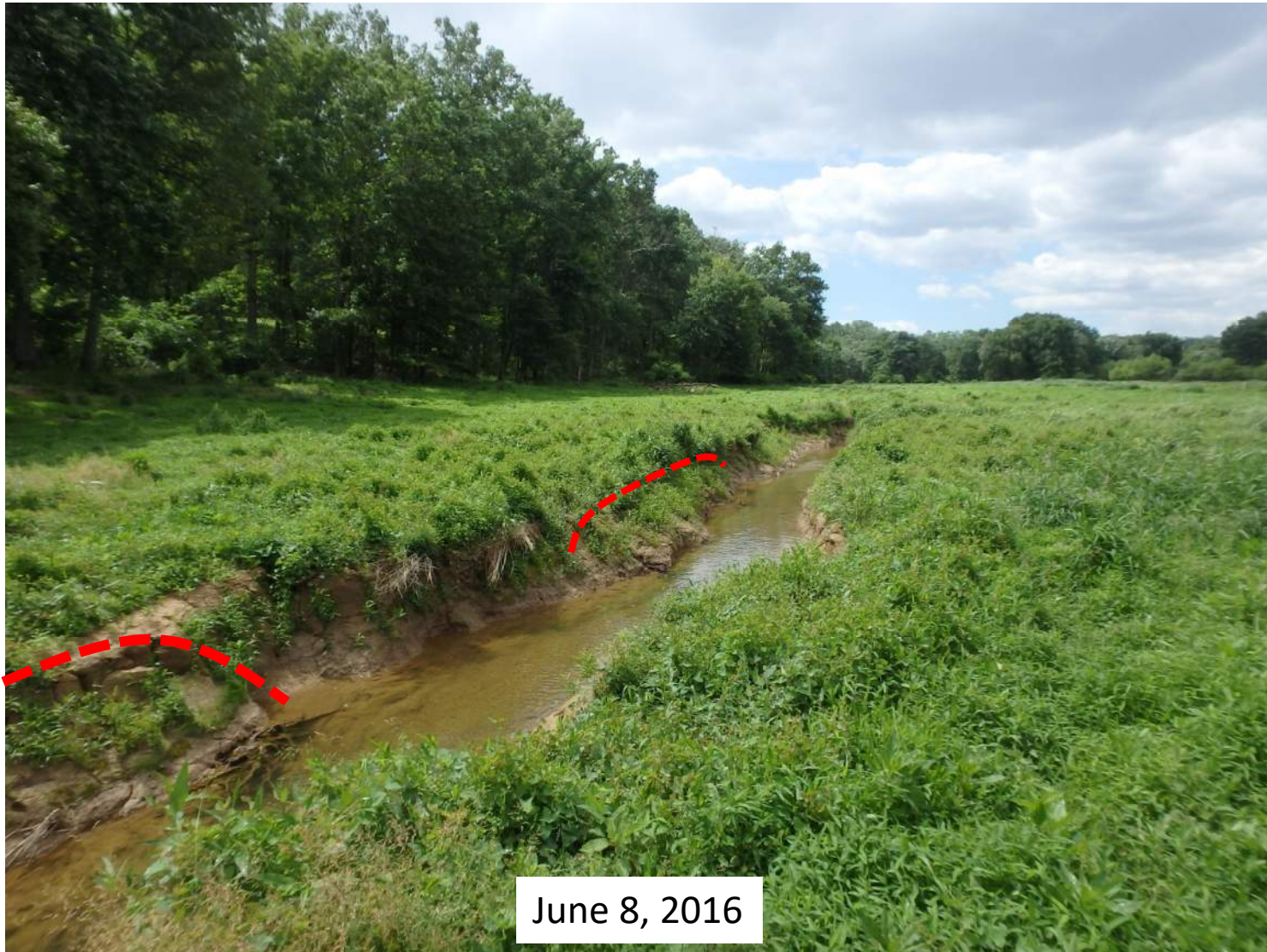


June 8, 2016





## Existing Conditions – Reach 2





## Existing Conditions – Start of Reach 3



June 8, 2016





# Concept Design

## LEGEND

	UNDISTURBED OPEN SPACE		PROPOSED HIGH MARSH		LIMITS OF DISTURBANCE
	PROPOSED WETLAND CELL		PROPOSED OPEN WATER FEATURE		
	PROPOSED STREAM RESTORATION		PROPOSED RIPARIAN BUFFER PLANTING		





**Proposed condition: conversion of old lake bed to interconnected stream and wetland system**

- Construct meandering stable stream system that provides hydrology to complex wetland network
- Construct network of functional floodplain wetlands and open water features throughout old lake bed

# Piney Run at Lake Werowance Stream Restoration

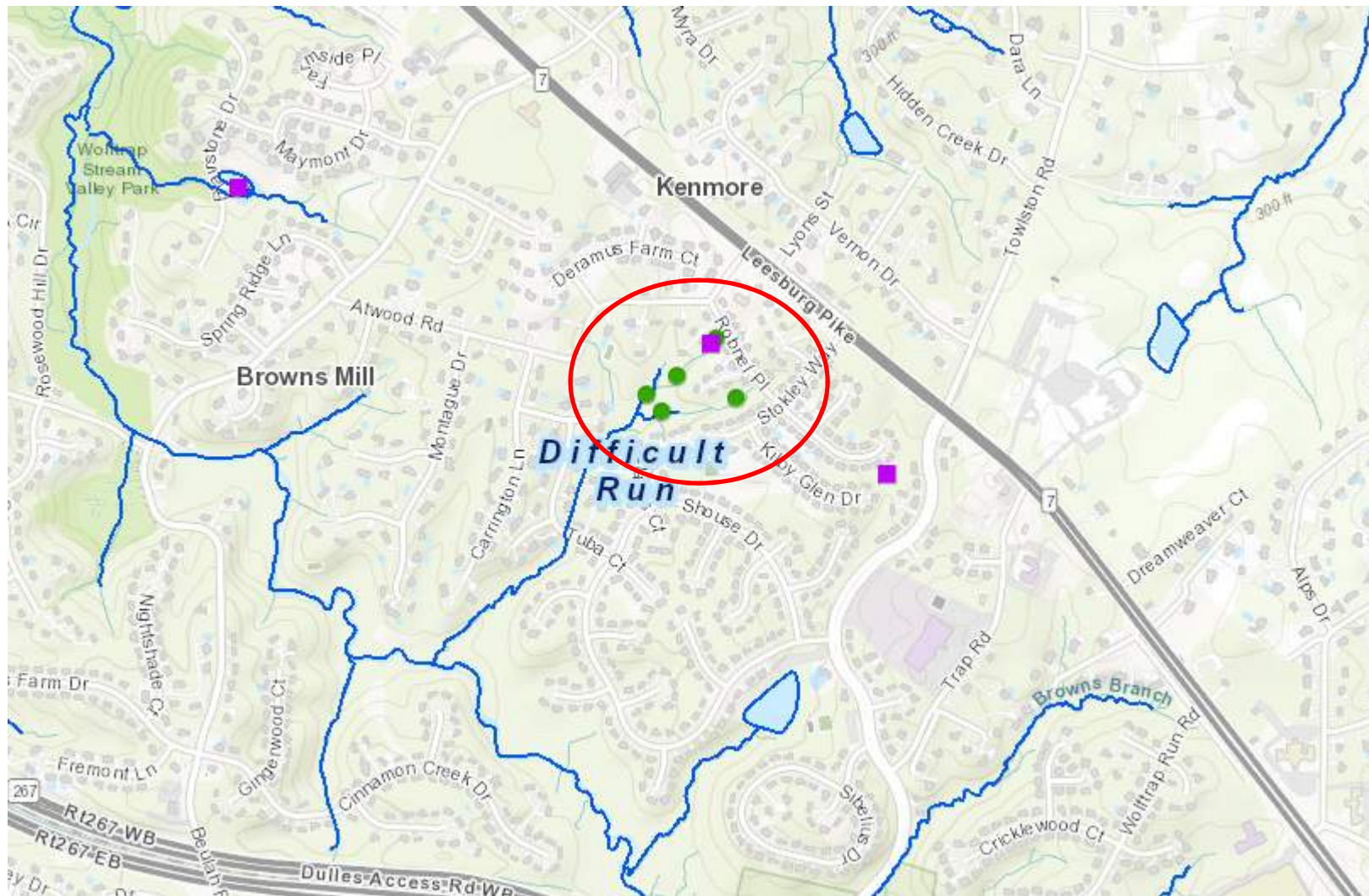
## Proposed Schedule:

- Pre-design Meeting – October 17, 2018
- Concept design – December 2018
- Coordination of Land Rights including easement acquisition prior to starting final design
- 65% Design
- Final Design
- Construction – Subject to future budgeting process



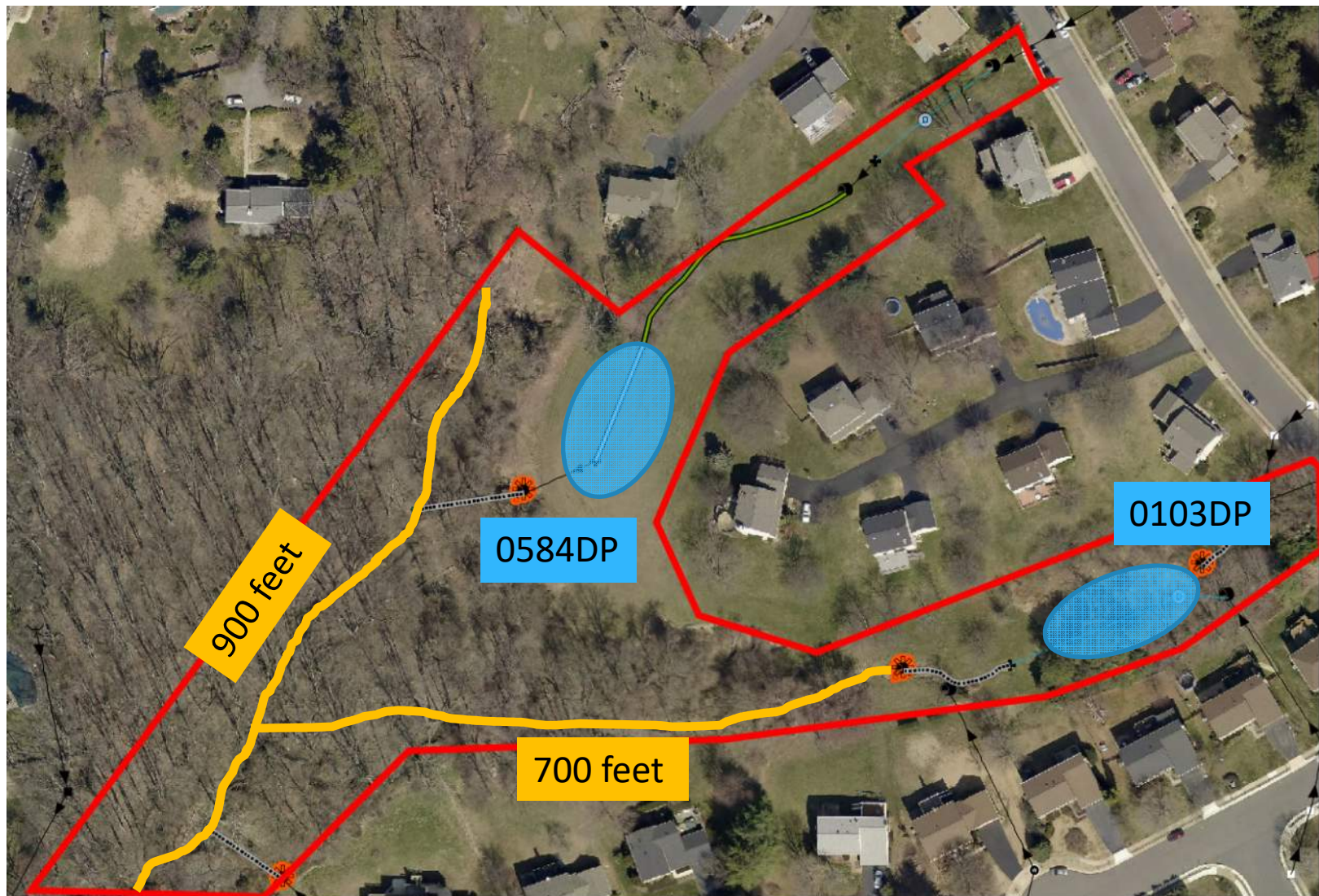


# Leigh Meadow and Towlston: Pond and Stream





# Leigh Meadow and Towlston: Pond and Stream



# Leigh Meadow and Towlston: Pond and Stream

- Retrofit two detention basins (0584DP and 0103DP).
  - 0584DP - Regenerative stormwater conveyance
  - 0103DP - Constructed wetlands
- Restore up to 1600 feet of stream on Leigh Meadow HOA and Towlston Meadow HOA properties.
  - Stabilize streambed and banks
    - Reduces sediment and nutrient inputs into stream system
  - Improve habitat
  - Maintain close coordination with stakeholders



# Leigh Meadow and Towlston: Pond and Stream

- Safety
- Protect existing infrastructure





# Existing Bank Conditions





# Existing Bank Conditions

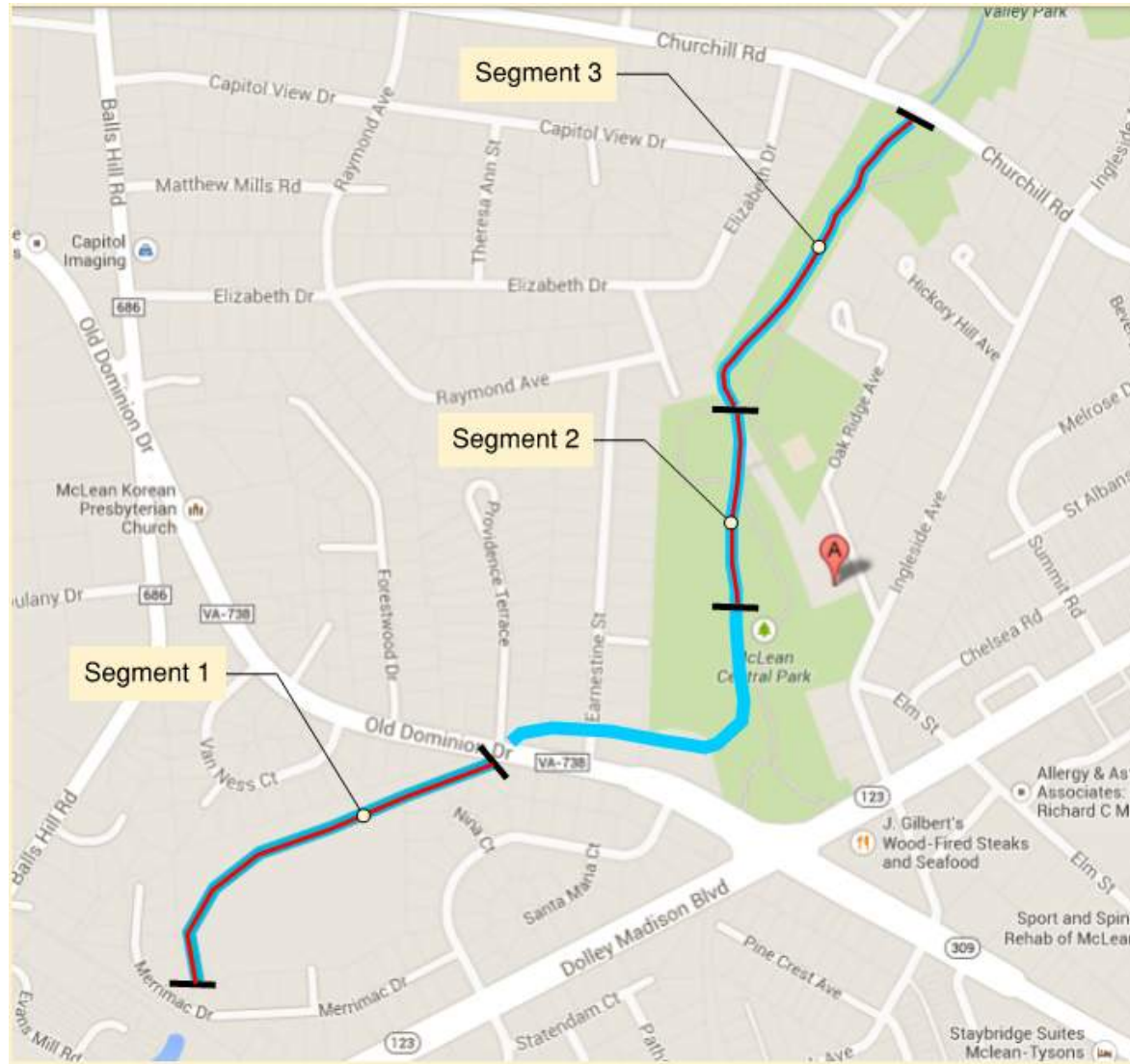


April 2015

June 2016



# Dead Run Stream Restoration in the Heart of McLean, VA





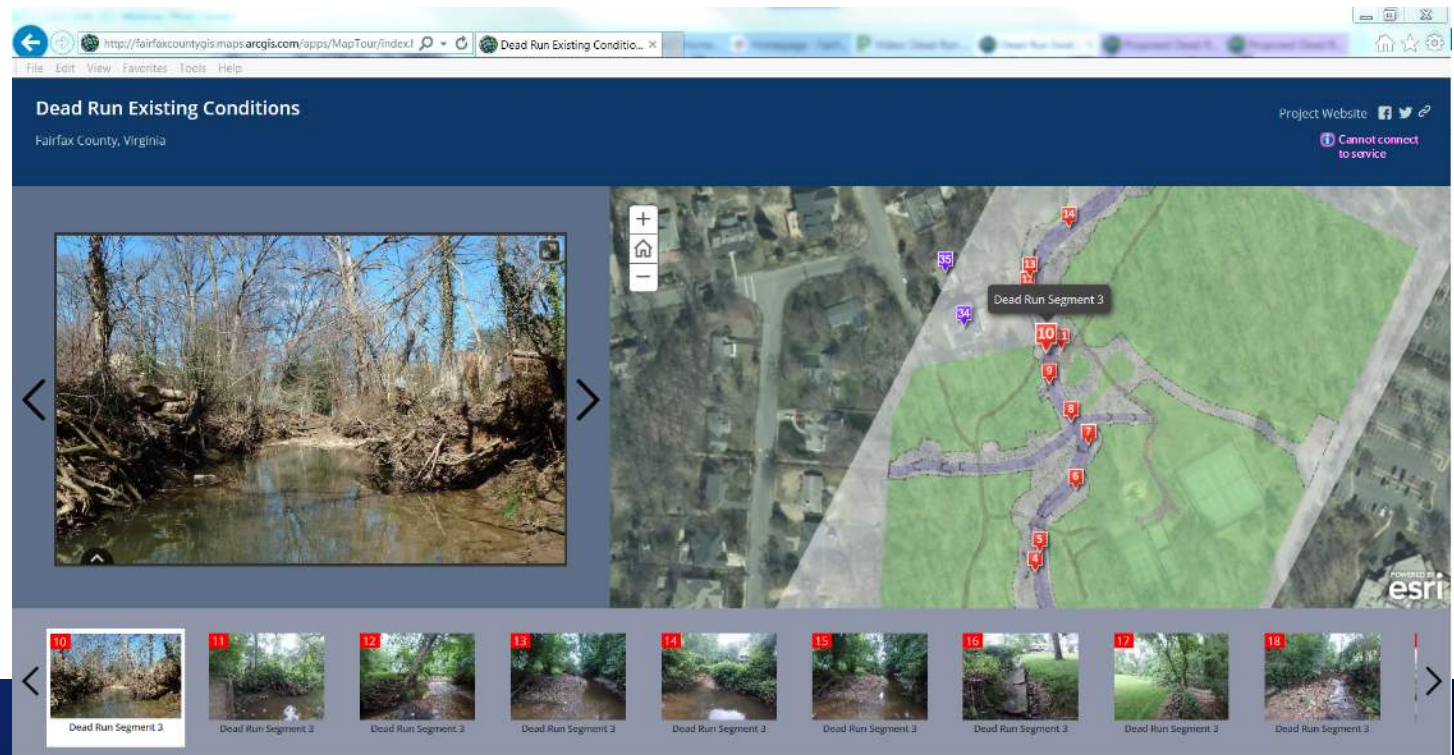
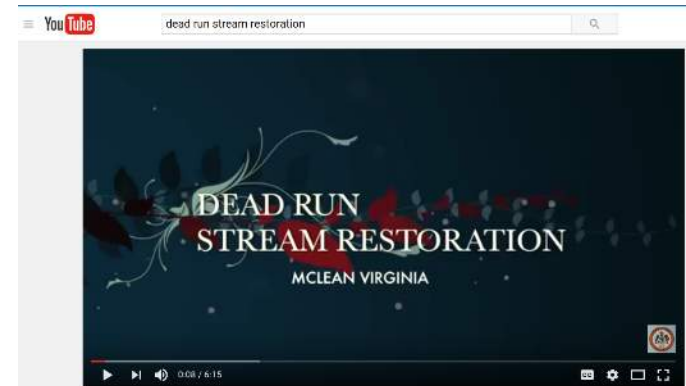
Dead Run Segment 2/3 Stream Restoration

# Restoration Renderings



# Dead Run Stream Restoration in the Heart of Mclean, VA

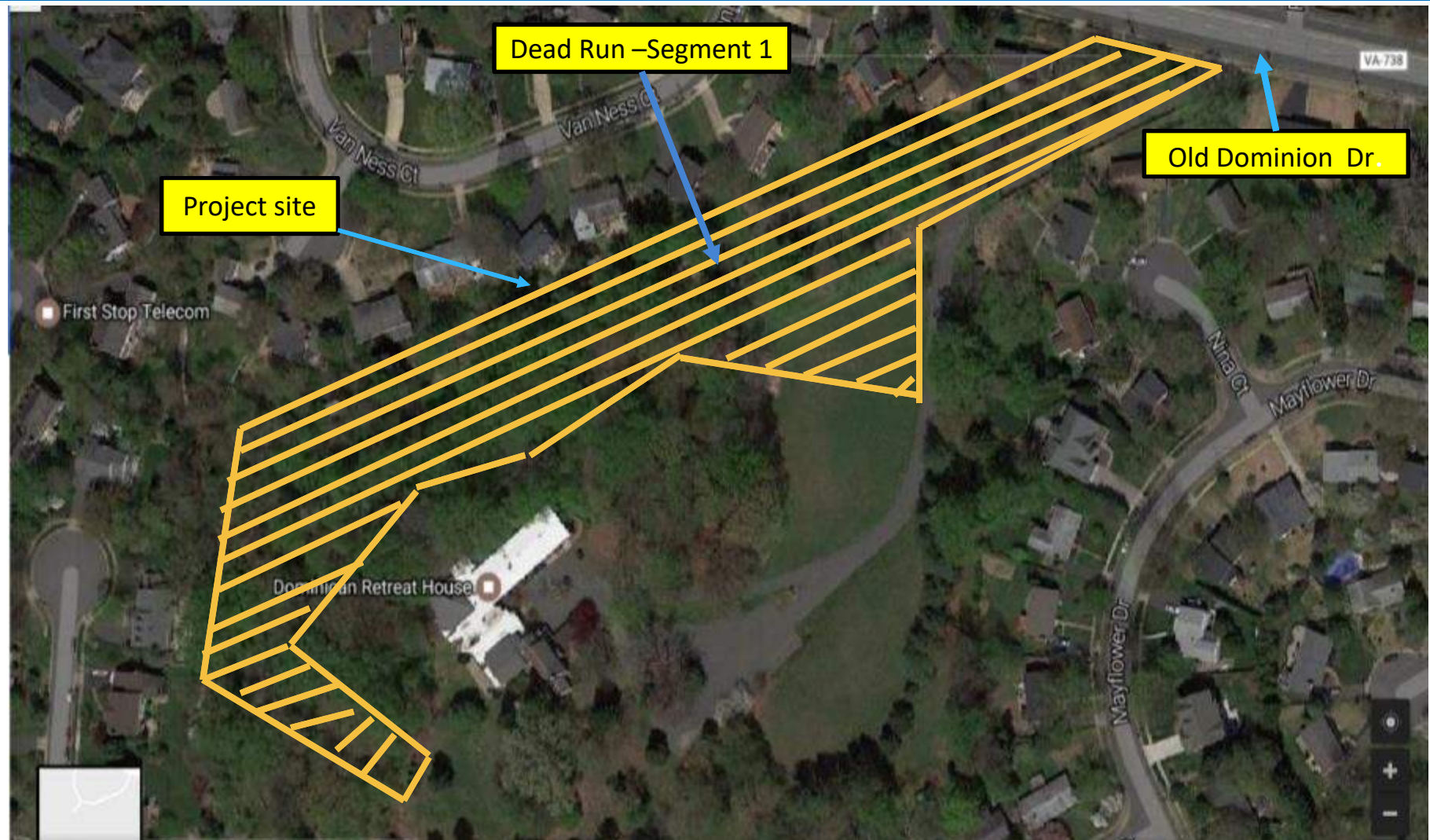
- [Story Maps – Virtual Stream Walks](#)
- [County Channel 16 Video on YouTube](#)
- [Project Web Page](#)
- “Palmer” Maps
- News Media
- [SlideShare](#)





# Dead Run at Dominican Retreat - Segment 1 Stream Restoration Project

## Tax Map No. 30-1





# Dead Run Segment 1 Photos



Before



After Grading  
(before tree and shrub planting)



# Dead Run Stream Restoration at Dominican Retreat



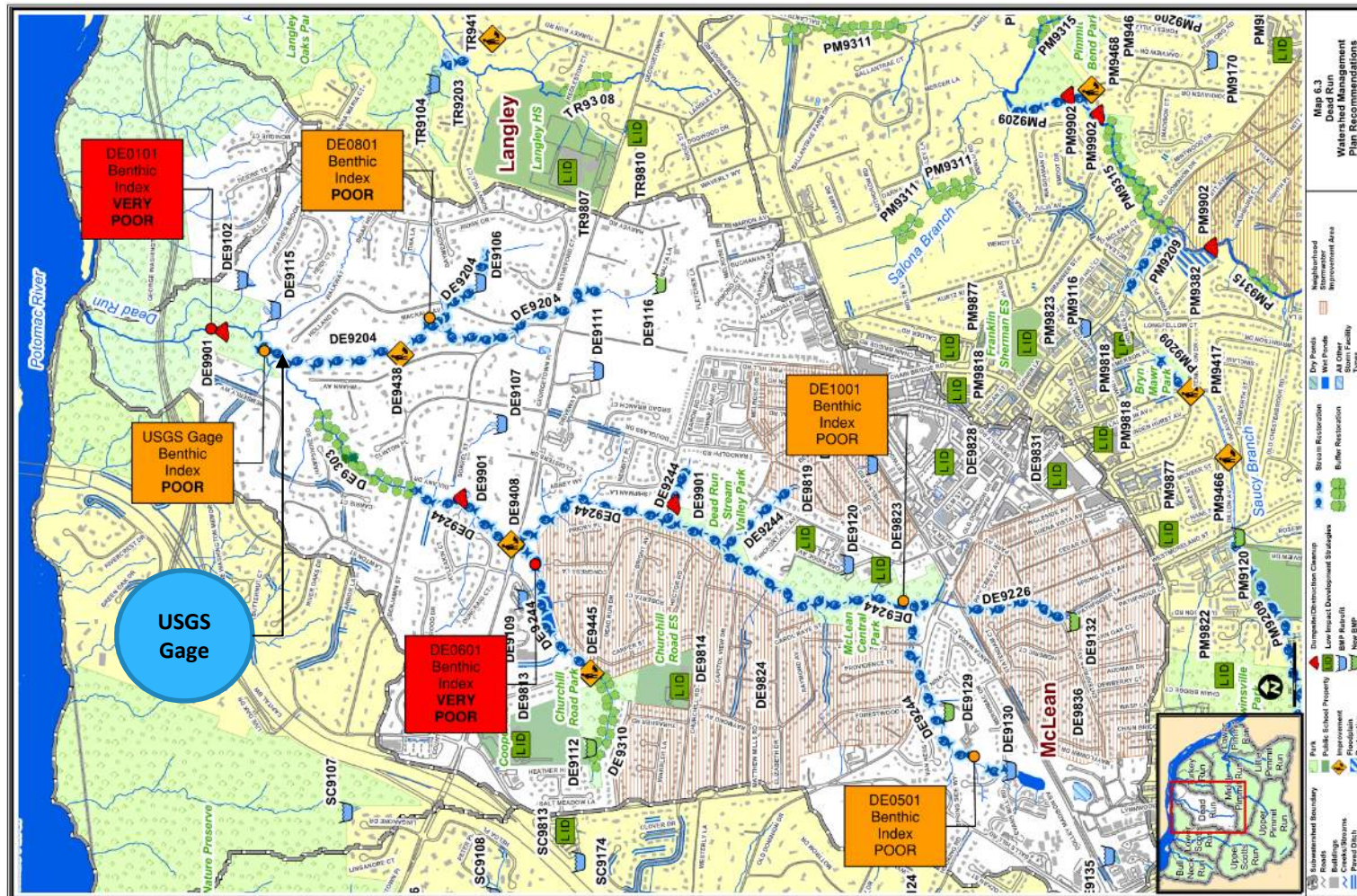
First Growing Season - 2018





# Monitoring Progress at the Local Watershed Scale

- Dead Run Watershed Plan Implementation





## Additional Information

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