

# Stormwater Planning Stream Restoration Program



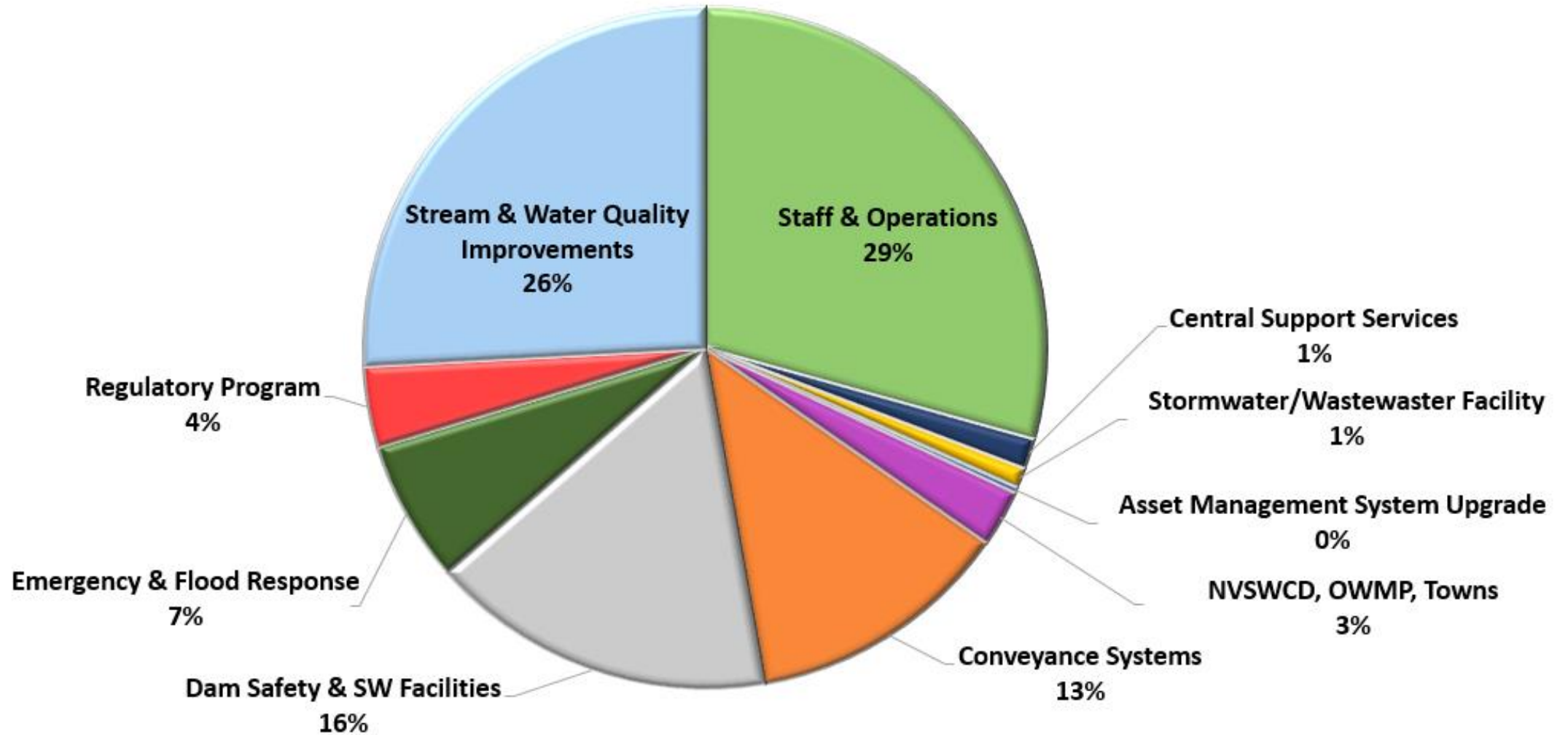
Department of Public Works and Environmental Services  
*Working for You!*



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# FY 2025 Advertised Stormwater Budget



# Funding Sources for Capital Improvement Projects

- Stormwater Service District
  - Tax is \$0.0325 per \$100 of assessed real estate value
- Grants to DPWES
  - Stormwater Local Assistance Fund (SLAF)
    - Water Quality Projects
    - Almost \$48M over 9 grants rounds
    - Over 15 miles of stream funded by SLAF
  - Community Flood Preparedness Fund (CFPF)
    - Flood Mitigation Projects
    - Over \$21M over two grant rounds
  - FEMA Flood Mitigation Assistance
    - 1 voluntary acquisition \$920k
- Pro Rata
  - Based on the stormwater impact of the development project

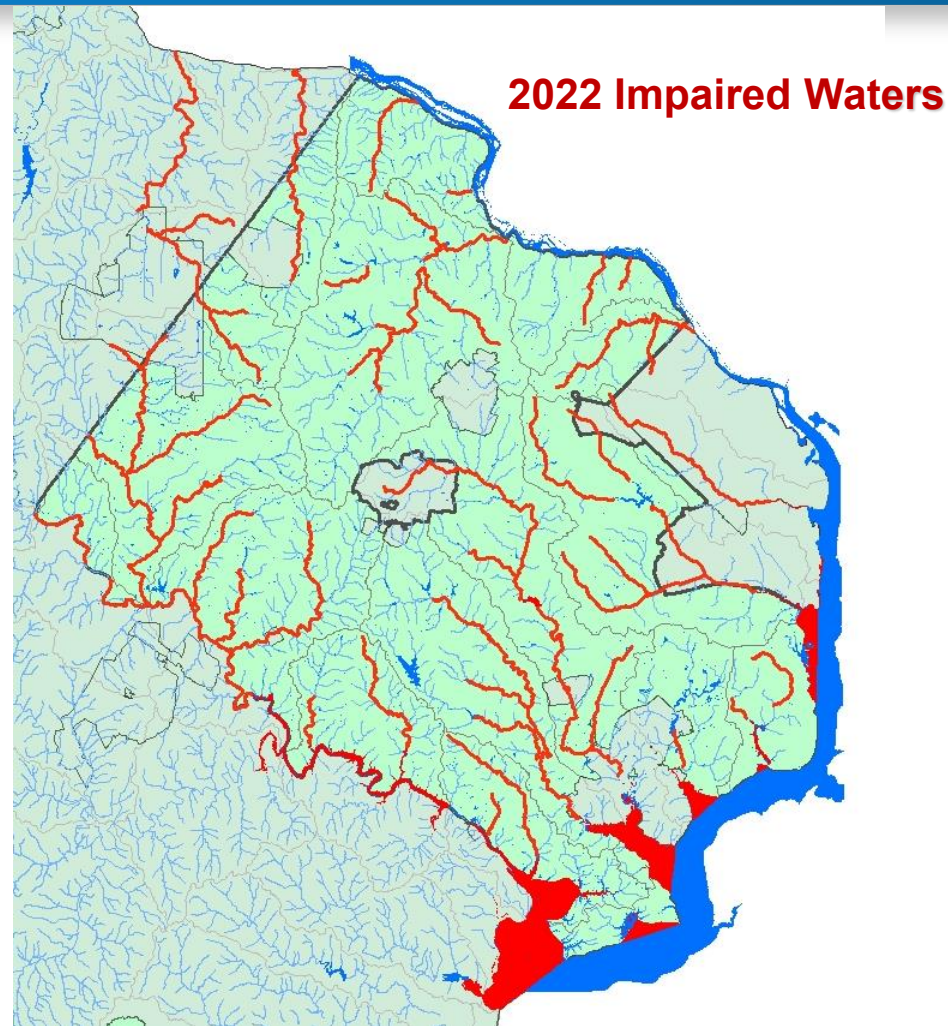


Tripps at Barrett Road



Schneider Branch Segment 1

# Impaired Waters



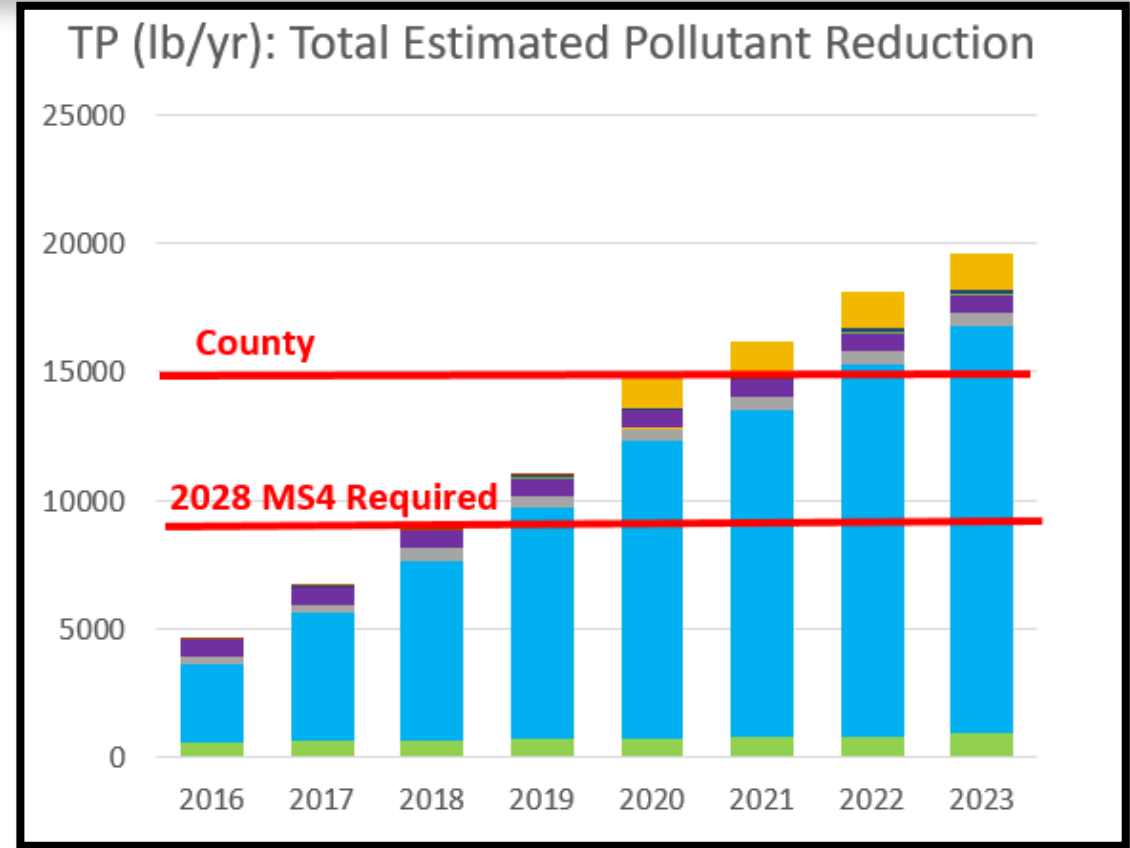
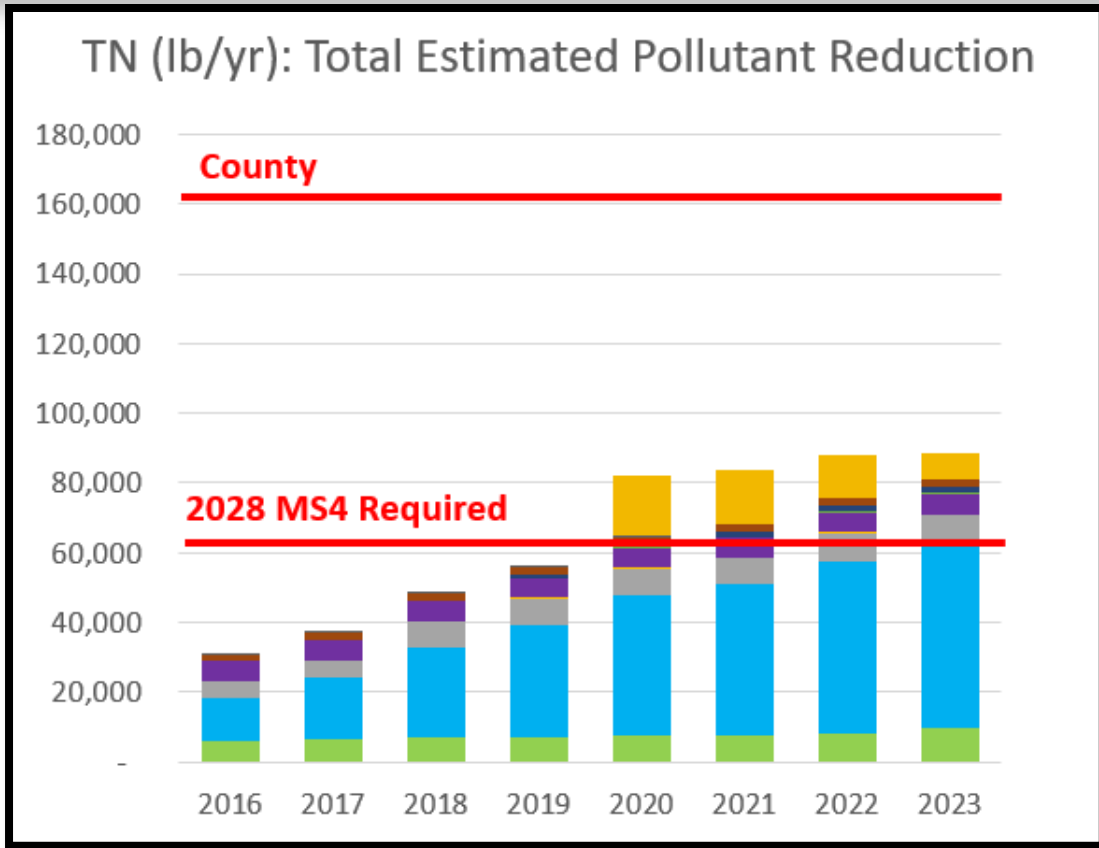
*DEQ Identifies additional impairments with increased time for monitoring, which increases our program's regulatory requirements*





# Progress Toward Bay TMDL

FY 2010 - FY 2023



- Off-Site Pollutant Reduction Credits
- Nutrient Management Plans
- Land Use
- Dredging
- Septic Conversions
- More Stringent Single Family Residential Standards
- Stream Restoration
- Structural
- Redevelopment
- 2006-2009 Facilities



# Why Stream Restoration?



- 900 miles of perennial Stream
- Stream Condition
  - 70-80% streams in **Fair to Very Poor** Biological Condition
  - Active Erosion
  - High levels of Impervious Surfaces, limited or inadequate stormwater control

## Issues

- Headcuts
- Channel Incision & Widening
- Tree loss
- Damaged or threatened infrastructure (including sanitary sewer)



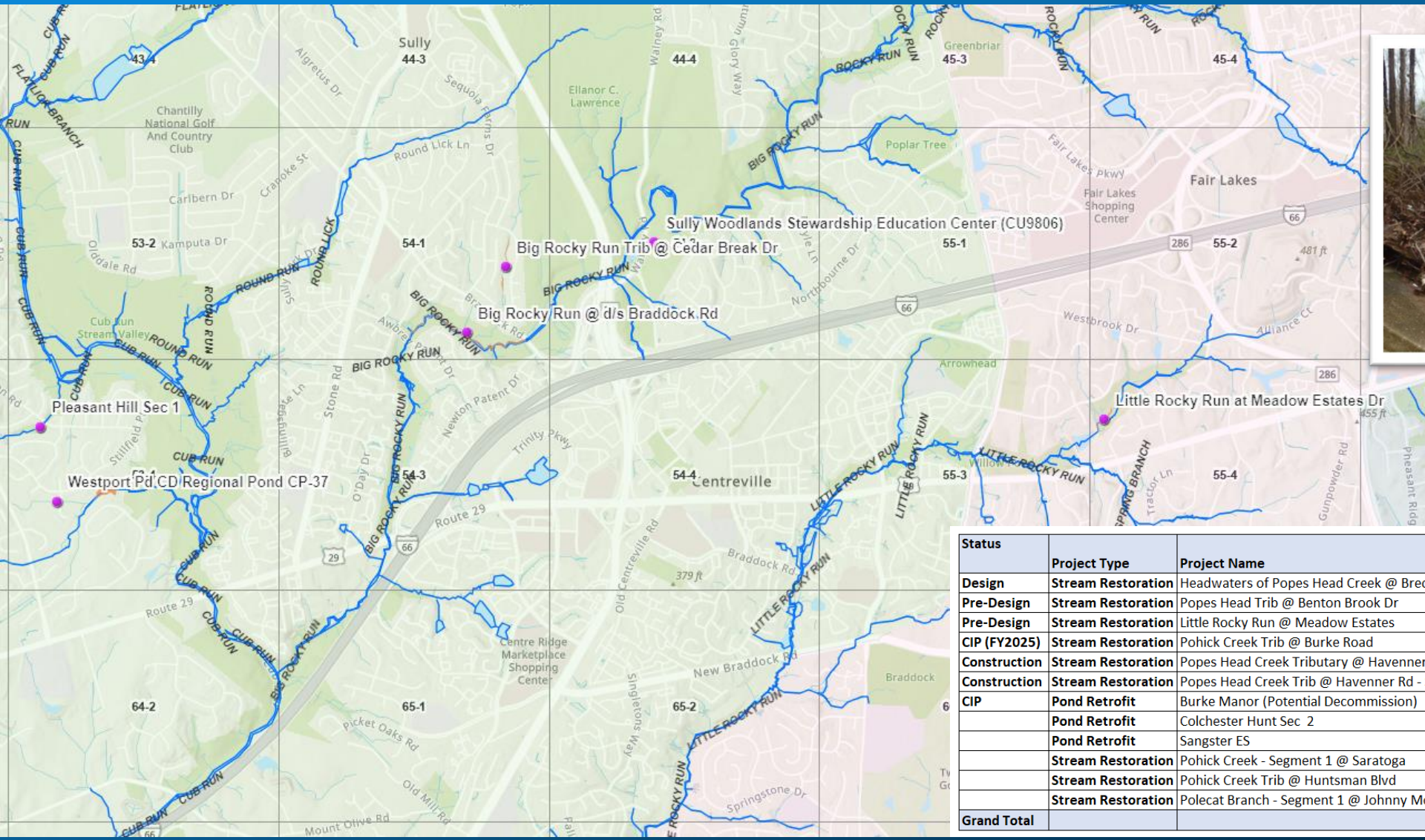
# Why Stream Restoration?



- Reconnect floodplain
  - Energy dissipation
  - Nutrient processing
  - Supports wetlands
  - Groundwater recharge
- Enhance instream habitat and complexity
  - Incorporate different flow regimes
  - Habitat features
- Restore native riparian buffer
  - Non-native invasive plant management
  - Width, density, and continuity of buffer
- Stabilize stream
  - Prevent continued erosion
  - Protect infrastructure
- Amenity



# FY2025 CIP Meetings with Supervisors



Status	Project Type	Project Name	PWMPLID	TPE	FY25 Total
Design	Stream Restoration	Headwaters of Popes Head Creek @ Brecon Ridge Subdiv	PH9271/PH9272	\$ 8,930,000	\$ -
Pre-Design	Stream Restoration	Popes Head Trib @ Benton Brook Dr	PH82-0007	\$ 1,918,200	\$ -
Pre-Design	Stream Restoration	Little Rocky Run @ Meadow Estates	LR9206	\$ 1,150,000	\$ -
CIP (FY2025)	Stream Restoration	Pohick Creek Trib @ Burke Road	PC9233	\$ 4,240,000	\$ 1,060,000
Construction	Stream Restoration	Popes Head Creek Tributary @ Havenner Rd	PH82-0001/PH9204	\$ 6,035,650	\$ -
Construction	Stream Restoration	Popes Head Creek Trib @ Havenner Rd - Seg 2	PH82-0004	\$ 1,683,282	\$ -
CIP	Pond Retrofit	Burke Manor (Potential Decommission)	PC81-0007/0017DP	\$ 750,000	\$ -
	Pond Retrofit	Colchester Hunt Sec 2	PH9130A/0019DP	\$ 525,000	\$ -
	Pond Retrofit	Sangster ES	PC9114/DP0619	\$ 470,000	\$ -
	Stream Restoration	Pohick Creek - Segment 1 @ Saratoga	PC9203	\$ 1,328,000	\$ -
	Stream Restoration	Pohick Creek Trib @ Huntsman Blvd	PC9225	\$ 3,840,000	\$ -
	Stream Restoration	Polecat Branch - Segment 1 @ Johnny Moore Park	JM9200	\$ 2,560,000	\$ -
<b>Grand Total</b>				<b>\$ 33,430,132</b>	<b>\$ 1,060,000</b>





# Streams and Water Quality - Projects in Design

30 Projects with a Total Project Estimate of \$ 140 Million

## Stream and Outfall Restoration

## Magisterial District

Accotink Creek Trib @ Carrleigh Pkwy (AC82-0015)	BRADDOCK
Long Branch Central Watershed @ Braddock Rd (AC82-0021/Multiple)	BRADDOCK
Dead Run @ Georgetown Pike (DE9244D1)	DRANESVILLE
Scotts Run @ Lewinsville Rd	DRANESVILLE
Barnyard Run @ Huntley Meadows Park - Phase A (DC9211)	FRANCONIA
Cameron Run Trib @ Clermont Park (CA82-0011) & Loft Ridge Upper Pond Reg (CA81-0002/1737DP)	FRANCONIA
Dogue Creek Tributary @ Greendale GC (DC9214)	FRANCONIA
Monterey Sec 3 (HC81-0003/0342DP)	HUNTER MILL
Old Courthouse Spring Branch - Phase II @ Ashgrove Historic Park (DF82-0006)	HUNTER MILL
Piney Branch Trib @ Freda	HUNTER MILL
Piney Trib @ Lamplighter Way (DF82-0032)	HUNTER MILL
Piney Trib @ Lamplighter Way (DF82-0032)	HUNTER MILL
Backlick Run @ Bren Mar Dr - Seg 2 (CA9205A)	MASON
Turkeycock Creek @ Bren Mar Park	MASON
Dogue Creek @ Old Mill Rd (DC9217)	MOUNT VERNON
Paul Spring Branch @ Sherwood Hall Ln (LH82-0004)	MOUNT VERNON
Quander Brook @ Belle Haven Park (BE9200)	MOUNT VERNON
South Branch Trib @ Fort Hunt Park (LH9204)	MOUNT VERNON
Long Branch North @ Arlington Blvd & Robin Ridge Ct (AC9235/AC9236)	PROVIDENCE
Long Branch North @ I-66 (AC9238)	PROVIDENCE
Rocky Branch Tributary @ Hickory Hollow Lane (DF82-0023/DF82-0021)	PROVIDENCE

## Pond Retrofit

## Magisterial District

Lafayette Village Sec 1 (AC9170/0314DP)	MASON
Holmes Run Village Sec 2 (AC9171/0106DP)	MASON
Cinnamon Ridge-Sec 2 Pond Improvement	PROVIDENCE



Backlick Run at Bren Mar Segment 2



Dogue Creek Trib at Greendale GC



# Streams and Water Quality - Projects in Construction

9 Projects with a Total Project Estimate of \$ 32 Million

## Stream and Outfall Restoration

## Magisterial District

Accotink Tributary @ Danbury Forest (AC82-0003)	BRADDOCK
Difficult Run Trib @ Fairfax County Government Center	BRADDOCK
Colvin Run Phase II @ Lake Fairfax Park (DF82-0009)	HUNTER MILL
Coon Branch @ Annandale Park (AC82-0002)	MASON
Turkeycock Ck @ Brookside Office Park	MASON
Rocky Br Trib @ Ashlawn Park (DF82-0083)	PROVIDENCE
Popes Head Creek Trib @ Havenner Rd Seg 2 (PH82-0004)	SPRINGFIELD
Popes Head Creek Tributary @ Havenner Rd (PH82-0001/PH9204)	SPRINGFIELD



Popes Head Creek Trib at Havenner

## Pond Retrofit

## Magisterial District

Ashburton Manors Sec 1 & 2 (Multiple)	SULLY
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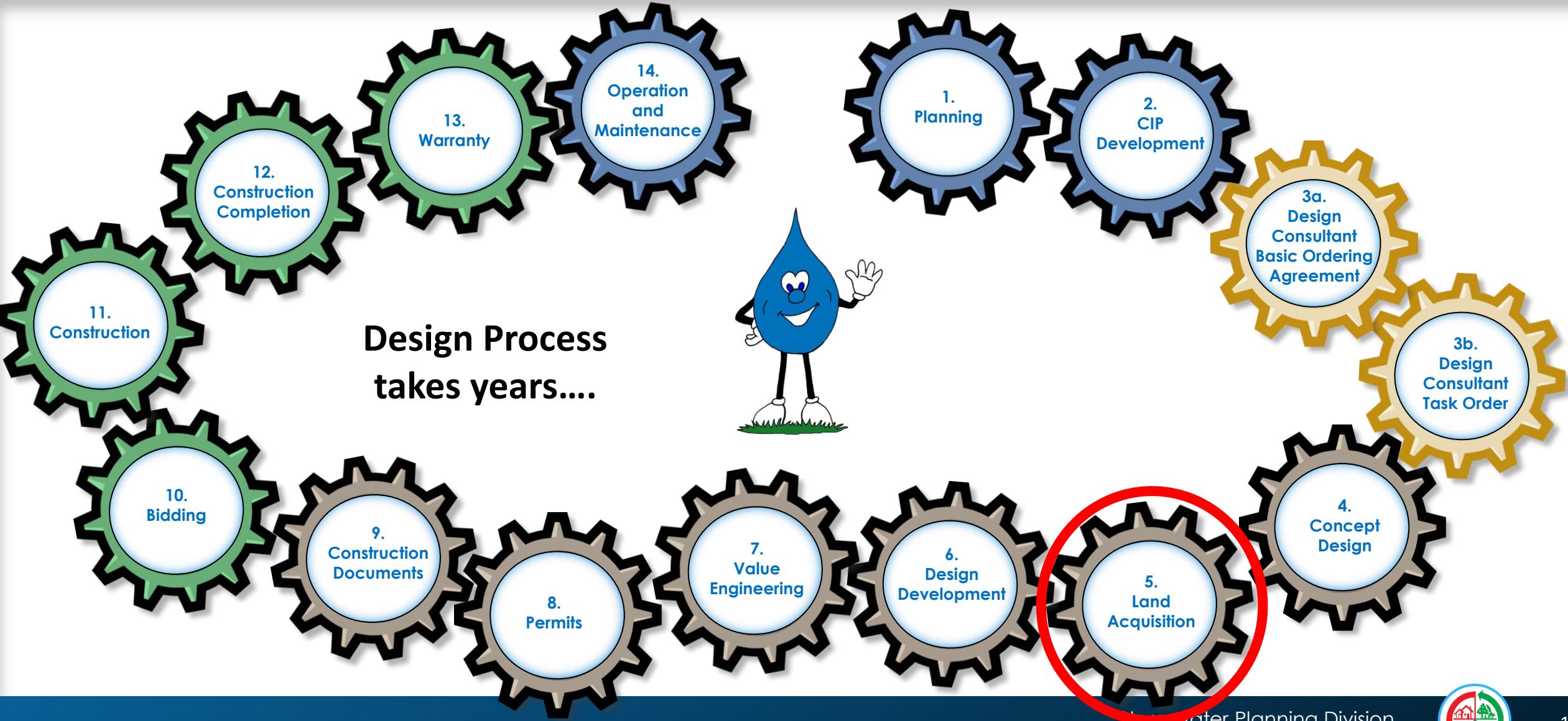


Rocky Br Trib at Ashlawn Park





# Stream Restoration Project Lifecycle



# Long Branch Watershed

- Proposed Projects
- Grouped by location
- Range from upstream to downstream
- Focused on outfalls and stream channels
- Include three (3) optional stormwater pond renovations





# Community Involvement and Info Sharing



## Interactions

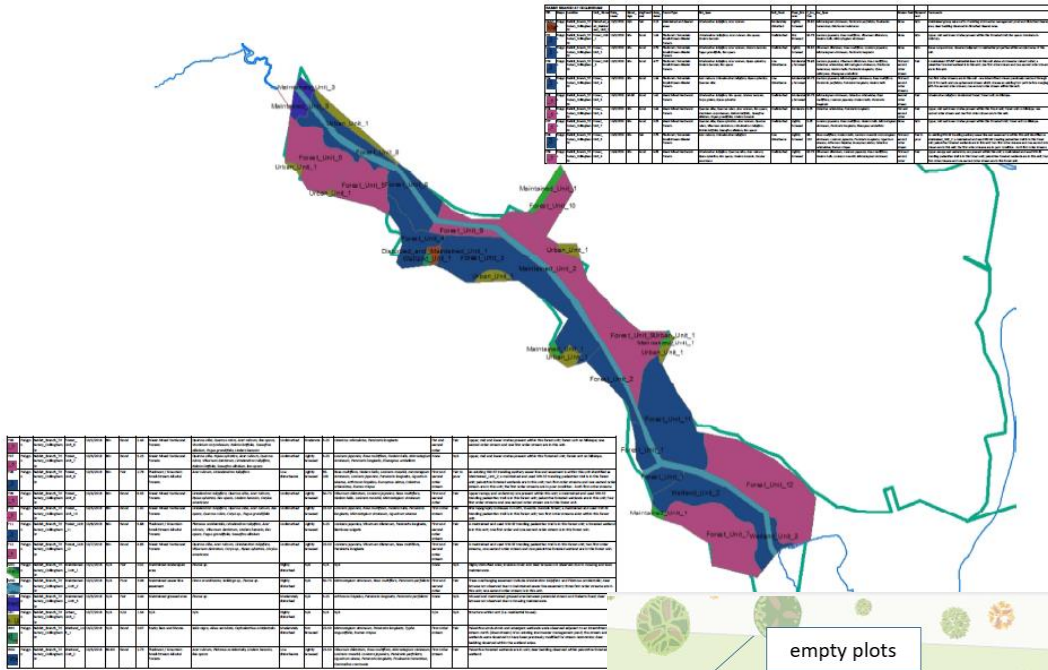
- Community Meetings
- Meeting with owners and stakeholders
  - Stream walks
  - Property walks
  - Discuss design plans

## Information Sharing

- Project Webpages
- GIS Story Maps, “Palmer” Maps
- Social Media
- News Media
- Channel 16 Video on YouTube
- Notification Letters



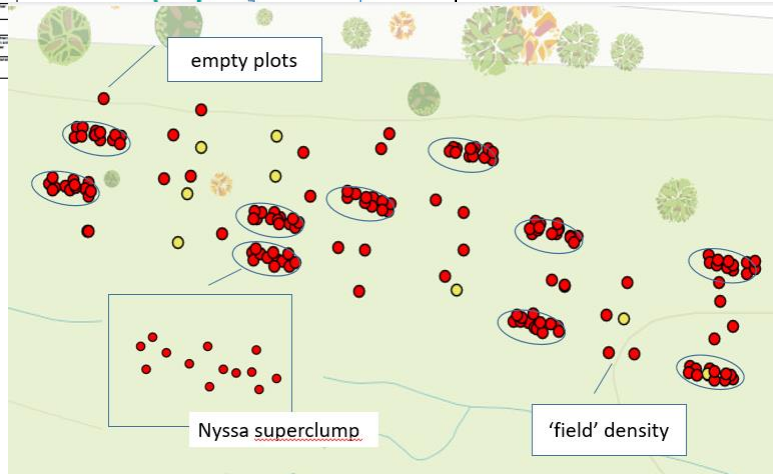
# Vegetation



DESCRIPTION: Herbaceous, annual vine. Leaves are alternate, triangular, light green, 1-3" inches wide and barbed underneath.



Mile-a-Minute Vine (*Persicaria perfoliata*)

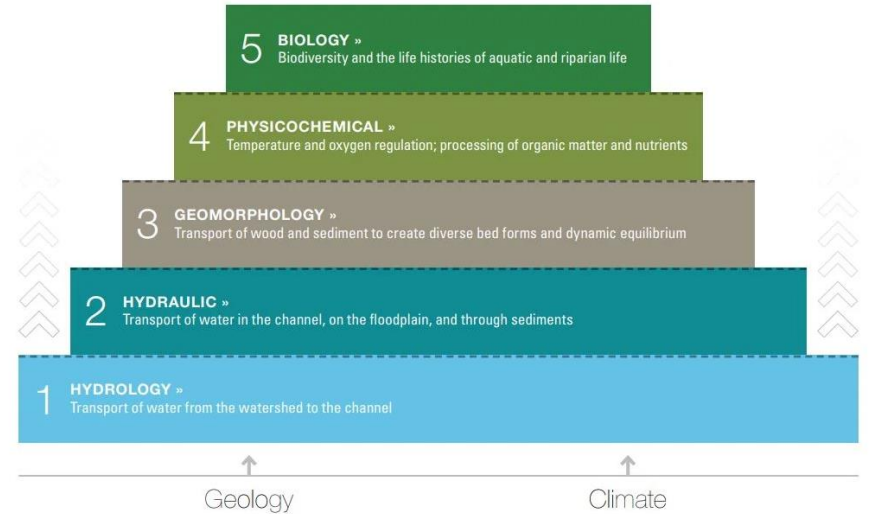
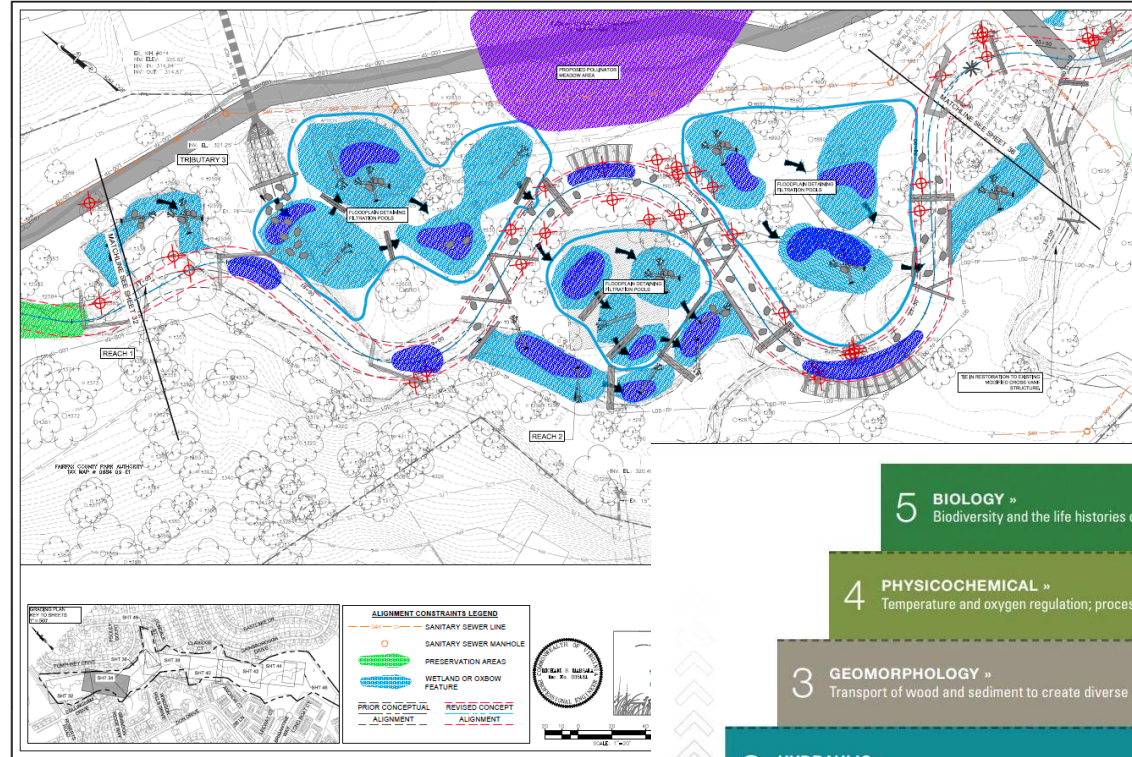




# Stormwater Planning Stream Restoration Program

## Functions Based Design

Schneider Branch Segment 1								
Level and Category	Parameter	Measurement Method	Pre-Restoration Condition			Proposed Condition		
			Rating	Overall by Level	Overall Reach	Rating	Overall by Level	Overall Reach
1 - Hydrology	Runoff	Flashiness	NF	FAR	FAR	FAR*	FAR*	FAR*
		Concentrated Flow	F			F		
2 - Hydraulics	Floodplain Connectivity	Bank Height Ratio	FAR	FAR		F	F	
		Entrenchment Ratio	FAR			F		
	Floodplain Drainage	FWS Rapid Assessment	F			F		
	Vertical Stability Extent	FWS Rapid Assessment	FAR			F		
3 - Geomorphology	Riparian Vegetation	FWS Rapid Assessment	FAR	FAR		F	F	
	Lateral Stability	Dominant Bank Erosion Rate	NF			F		
		Shelter for Fish	FAR			F		
	Bedform Diversity	Pool-to-pool Spacing	FAR			F		
		Pool Depth Variability	F		F			
		Bed Mobility	FAR		F			
4 - Physicochemical	Water Appearance and Nutrients	FWS Rapid Assessment	FAR	FAR*	FAR*			
	Detritus	FWS Rapid Assessment	FAR	FAR*	FAR*			
5 - Biology	Macro	Presence	Refer to FFXCO Data		FAR*	FAR*		
	Fish	Presence	Refer to FFXCO Data		FAR	FAR		
* - Partial Functional Uplift								
Channel Evolution	Rating	Comment						
	FAR	Existing Rosgen Classification either a highly incised C4 or a F4. Trending toward functioning- downcutting done, bedrock exposed. Significant widespread lateral adjustments. Most likely decades before equilibrium reached						
Constraints	Upstream outfall sets streambed elevation, downstream bridge culverts sets streambed elevation, adjacent and crossing utilities, existing constructed SWM							



Stream Function Pyramid  
Harman, 2012





# Post Restoration Condition Assessments

GENERAL SITE INFORMATION ASSET ID: Schneider Branch Stream Restoration (Segment 1 of Sully Road) PWMP#:

GENERAL SITE INFORMATION ASSET ID: Schneider Branch Stream Restoration (Segment 1 of Sully Road) PWMP#:

**Attachment 2**  
**PERIODICALLY UPDATED**

**Fairfax County Stormwater Scorecard Condition Assessment Method**

Inspections look at stability (vertical and lateral, riparian condition, and structure) of the restored stream reach. If a deficiency is noted, photos shall be taken and a work request may be issued for an additional assessment. Document with photos, all areas of low vegetation density. Confirm whether structures are stable and have not moved. Identify any significant erosion or flanking within the riparian corridor or the stream channel. Report minor problems for further investigation and or maintenance.

Inspection Date: 10/28/20 Inspector: Charles Smith  
 Site Name: Big Rocky Run Tributary (CU9206/CUBR028) StormNet ID #: \_\_\_\_\_

	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Reach 9	Reach 10
Are more than 20% of stream banks lacking vegetation?	<u>Y/N</u>	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Have any of the large rocks moved off of in-stream structures or banks?	<u>Y/N</u>	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Is there significant erosion around any in-stream structures?	<u>Y/N</u>	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Is there significant erosion of any stream banks?	<u>Y/N</u>	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Have any headcuts formed which are greater than 1 ft in height?	<u>Y/N</u>	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N

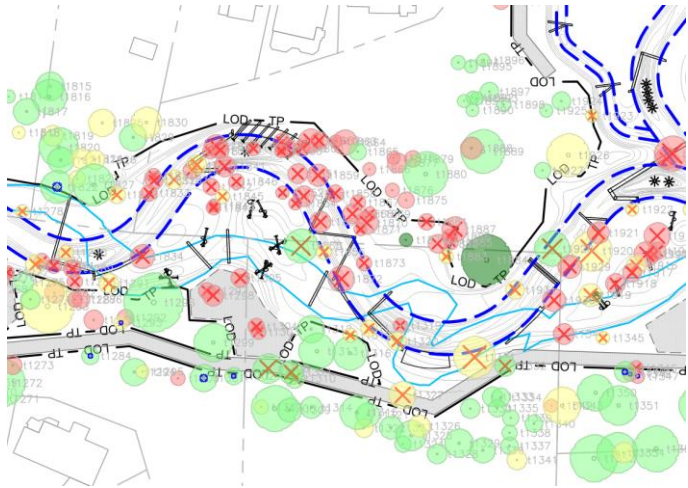




# Continuous Improvement



“Sticky Wood”



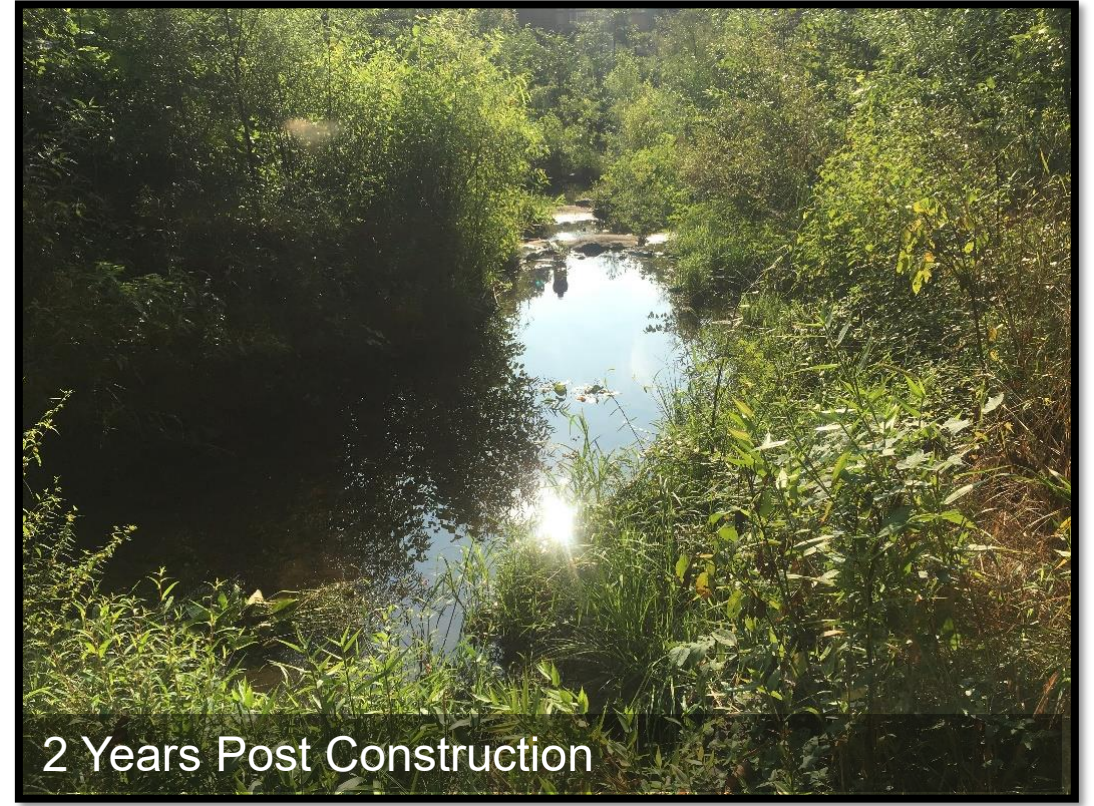


# Completed – Popes Head Creek Tributary at Havenner Rd





# Completed Restoration - Accotink Tributary at Daventry





# Completed Restoration - Flatlick Branch Segment 1





# Completed Restoration – Dead Run Segment 1



**For additional information, please contact**

**Joni Calmbacher**

**Stormwater Planning Division Director**

**703-324-2183**

**[Joni.Calmbacher@fairfaxcounty.gov](mailto:Joni.Calmbacher@fairfaxcounty.gov)**

*[www.fairfaxcounty.gov/publicworks](http://www.fairfaxcounty.gov/publicworks)*

