

Housekeeping and Logistics



PLEASE MUTE YOURSELF



ASK QUESTIONS FOR US IN
THE CHAT



SLIDES AND RECORDING
WILL BE AVAILABLE ON
OUR WEBSITE



Q/A WILL BE AT THE END



Pardon Our Dust

Rabbit's Branch at Collingham Drive Stream Restoration/Shanes Creek

Department of Public Works and Environmental Services
Working for You!



A Fairfax County, VA, publication
March 28, 2022

Community Meeting: Pardon Our Dust

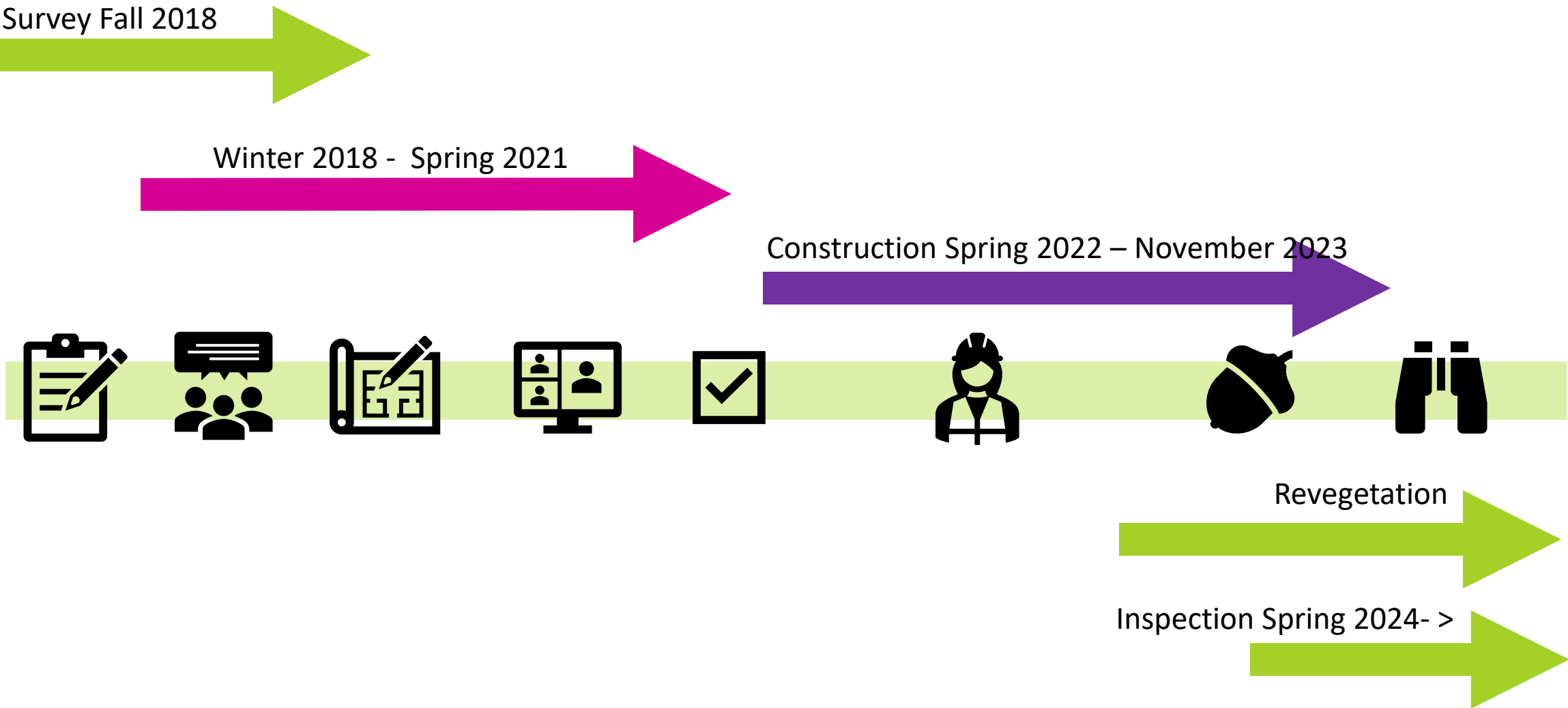
- Shanes Creek Project
 - Background
 - Key elements of the restoration plan
- Construction Timeline Summary
- What to Expect During Construction
 - Temporary infrastructure
 - Contractor requirements
 - County requirements
- Safety During Construction – No access during construction
- Q&A



Project Web Site:

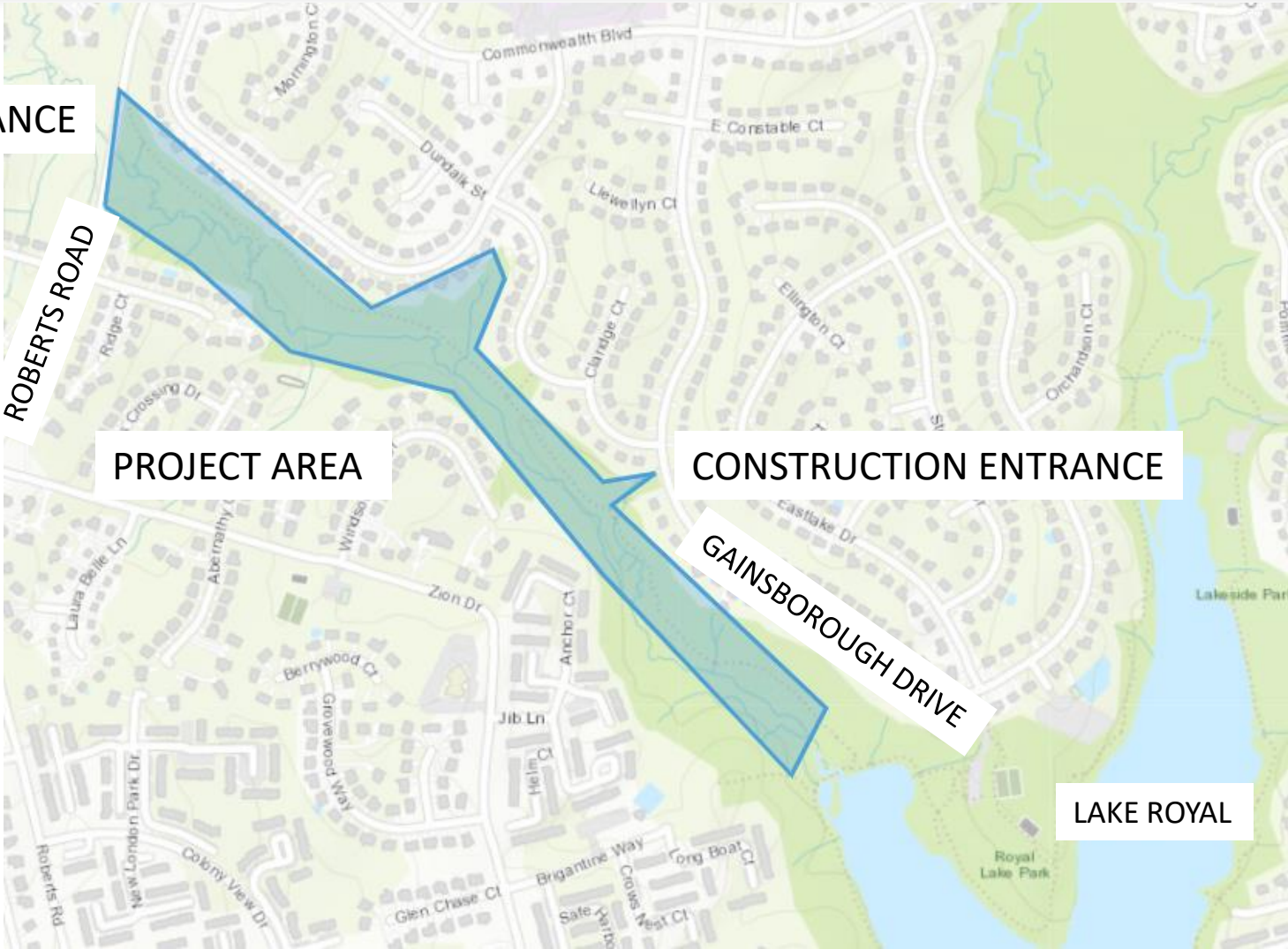
<https://www.fairfaxcounty.gov/publicworks/stormwater/plans-projects/rabbit-branch-tributary-restoration-project-collingham-drive#>

Project Background



Vicinity Map

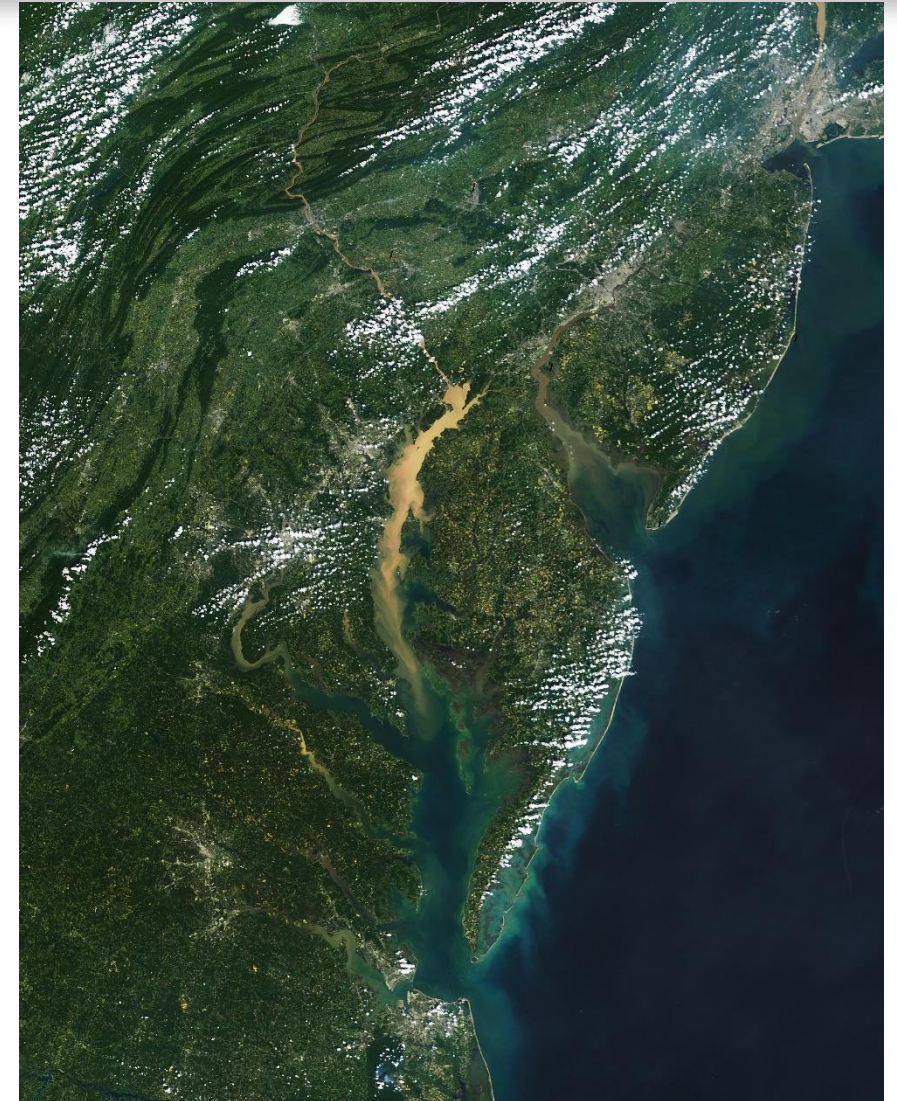
CONSTRUCTION ENTRANCE



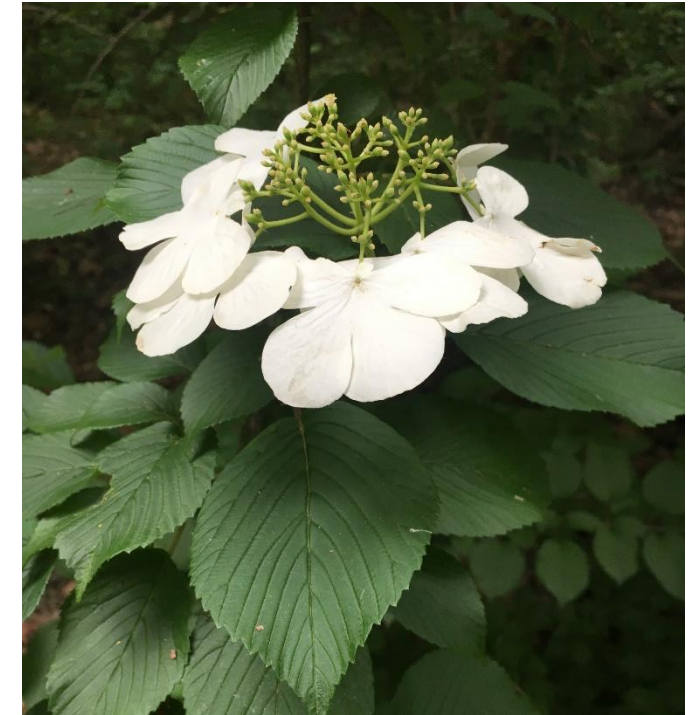
Stormwater Program Drivers

In response to The Clean Water Act of 1972...

- Municipal Separate Storm Sewer Permit (MS-4)
- Chesapeake Bay Total Maximum Daily Loads (TMDL)
 - Regulates amount of pollutants in waterways
- Other Local TMDLs = Local Stream Health
- Dam Safety Regulations
- Maintenance of Existing Facilities
- Public Safety/Emergency Response



Existing Stream Condition has active erosion and threatens infrastructure



Erosion and incision of stream bed causing tree loss and vulnerable infrastructure.
Invasive species interfere with natural recovery.

Watershed Condition

Watersheds/Drainage Areas

Shanes Creek - Pohick Creek

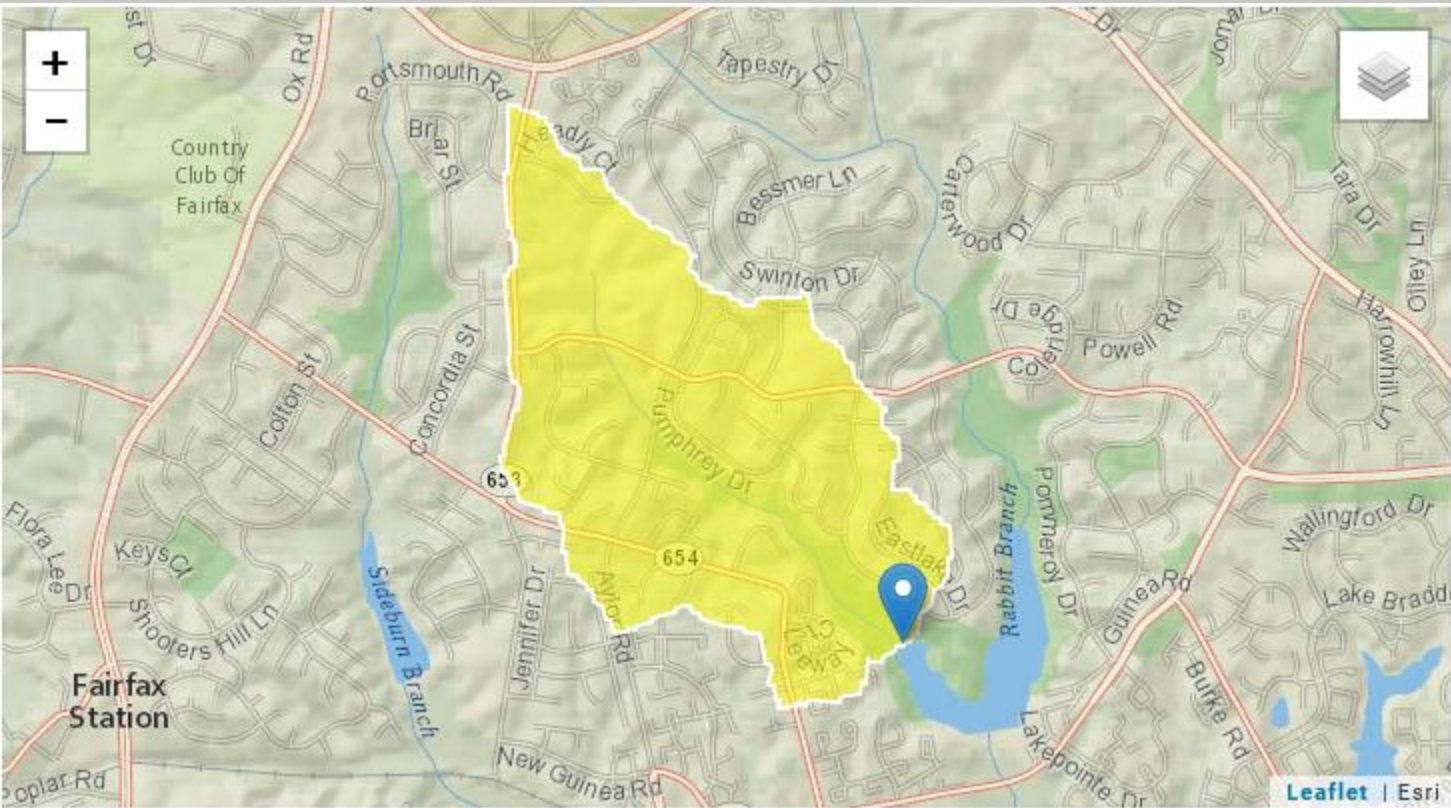
~ 0.8 square miles

~ 5600 linear feet of stream

~ 32% of land use in impervious category

*stream health begins to be impacted at 8-12% developed

1. WATERSHED ASSESSMENT		
An assessment of the overall watershed was based		
Overall Watershed Condition	Poor	
Category / Parameter / Measurement Method	Good	
1 Hydrology / Runoff / Watershed Impoundments	No impoundment upstream of project area	



StreamStats



Design Benefits

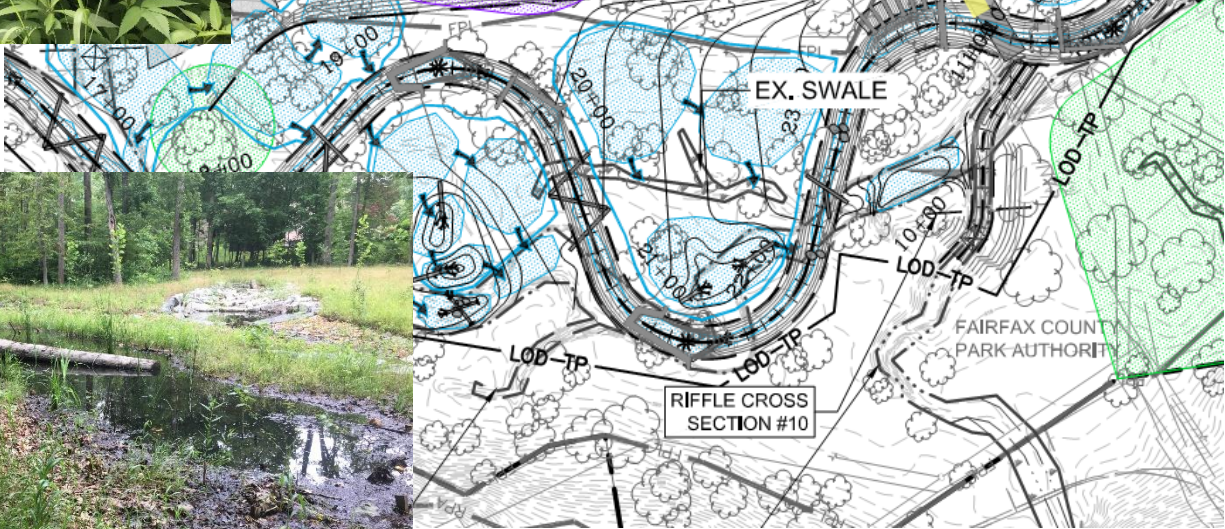
- 4,800 linear feet of stream will be restored using Natural Channel Design methodologies
- Pollutant reduction
 - 1,439 lbs/total phosphorus
 - 3,400 lbs/total nitrogen
 - 462.1 tons of total suspended sediment
- Protection of private property and public infrastructure
- Increased ecological diversity with native vegetation
- DEQ has awarded a SLAF grant to this project for these environmental benefits



Enhanced Floodplain Reconnection Area



Enhanced Floodplain Reconnection Area



Example Construction Schedule

Activity	Month																		Comments
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Notice to Proceed																			
Project Start Up																			
Site Preparation																			
Restoration																			
Site Planting																			
Project Completion																			
Construction Warranty																			+12 months
Vegetation Warranty																			+12 months

- Final schedule to be approved
 - Plantings occur seasonally, in spring, fall and/or winter (live stakes)
- Includes 1-year warranty on structures and vegetation
- Vegetation warranty starts when planting ends (may be delayed for season)



Expected Construction Timeline

- Notice to proceed issued to Meadville Land Service, LLC **March 21, 2022**
- The project is expected to continue for 600 calendar days (~18 months), planting can be delayed due to season
- Approximate substantial completion is **November 2023**
- Planting may occur as much as **6 months** after construction is complete.



<https://www.meadvillelandservice.com/>

Large Construction Equipment is Required



Track truck



Excavator

Temporary Infrastructure to Restore the Stream



Access road and tree protection area



Construction staging and stockpile



Construction tools and techniques



Tree Protection and snags



Coir stabilization



Stream pump around

Stream Structures and Bed Reinforcement

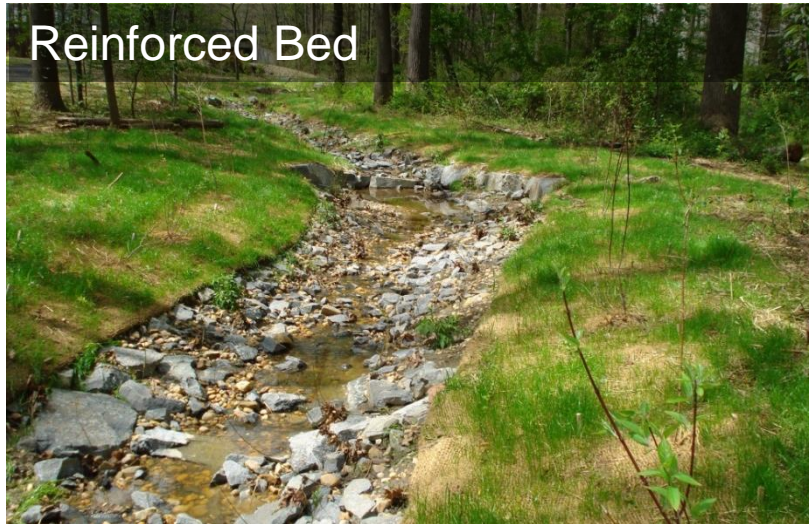
Step Pools



Cross Vanes



Reinforced Bed



Stream Reinforcement – Using Wood

Type I Woody Debris



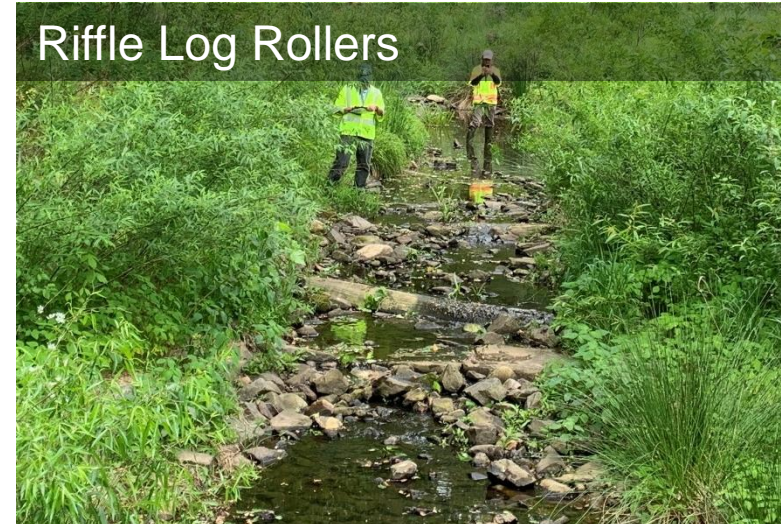
In-Stream Habitat Log Sill



Toe Wood



Riffle Log Rollers



Strategies for Successful Revegetation

- Final Phase of Construction
 - Stabilize with native seed
 - Plant native shrubs and trees
 - ~2,800 trees
 - ~14,000 shrubs
 - ~2,100 livestakes
 - Superclump planting strategy
 - Minimum 1-year warranty
 - Non-Native Invasive Plant Management
 - Establish zone so that natives can re-establish
- Minimum 3-year monitoring
 - For Native Vegetative Cover
 - Less than 20% Invasive
 - Zero % Highly Invasive



Construction – Who Will Be Onsite

- Meadville Land Services - Contractor
 - Project Manager
 - Superintendent
 - Foreperson
 - Crew
 - Subcontractors (planting)
- WSSI – Design Firm
 - Construction oversight
 - Design Engineer
- Fairfax County
 - Inspector
 - Code Enforcer
 - Construction Manager (Ram)
 - Project Manager (Meghan)



Expectations During Construction

- Contractor is required to comply with Fairfax County's Construction Safety Resolution
 - Contractor will maintain a safe, neat and clean work area
- Contractor is required to comply with the Fairfax County's Noise Ordinance
 - Work hours Monday-Friday 7:00am to 9:00pm
 - Work hours Saturday, Sunday and Federal Holidays 9:00am to 9:00pm
 - [CHAPTER 108.1. - Noise Ordinance. | Code of Ordinances | Fairfax County, VA | Municode Library](#)
- Trail between Roberts Road and Lake Royal will be subject to periodic closures.



Construction Realities

- What can't we do?
 - Give exact dates of for completion of any task
 - Dictate the contractor on how they will phase the construction work
 - Provide an alternative access route across the stream/ through the park
 - Safety concerns to direct pedestrian traffic across a stream and adjacent to construction work
 - Work outside the Limits of Disturbance
 - Exception, removal of hazard trees
- What can we do?
 - Coordinate with the contractor on project scheduling
 - Keep residents informed of the progress and scheduling
 - Updates to Supervisor's Office
 - Updates to project page on County website
 - Periodic email updates (provide contact info)
 - Provide signage of anticipated trail closure

SAFETY IS OUR TOP PRIORITY



Safety and Expectations During Construction

**Please stay outside the
construction limits at all times!**



Contact Information

Construction related issues:

Utilities Design and Construction Division

703-324-5111, TTY 711 or by email:

Ram Ghimire: ram.ghirmire@fairfaxcounty.gov

Questions on design:

Stormwater Planning Division

703-324-5500, TTY 711 or by email:

Meghan Fellows: meghan.fellows@fairfaxcounty.gov

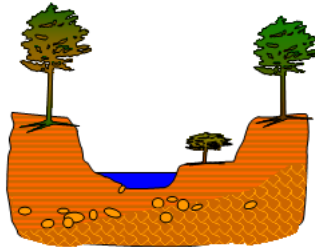
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Channel Evolution Model

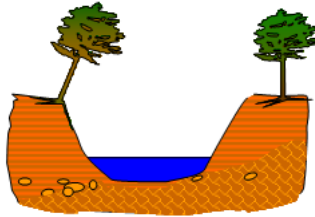
Stage I Pre-disturbance

- Bed and bank materials balanced with erosive forces
- Permanent woody vegetation near the water line
- Two-stage channel shape evident at about 1.8 year return interval



Stage II Disturbance

- Channel altered, hydrology or sediment inputs modified
- Removal of permanent woody vegetation near the water line
- Two-stage channel shape eliminated or no longer supported by flow conditions



Stage III Incision

- Downcutting liberates sediment
- Lost or perched bankfull floodplains
- "U" shaped channel
- Woody vegetation high on bank with many "surfer" trees

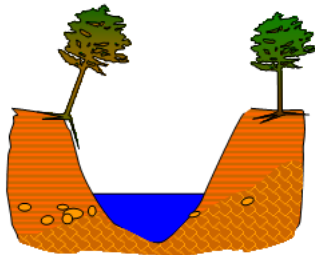
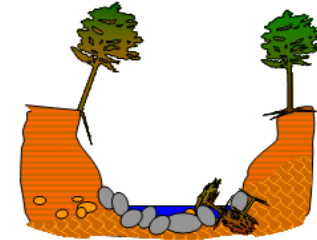


Figure 8-2
Channel Evolution Model (from Simon, 2001).

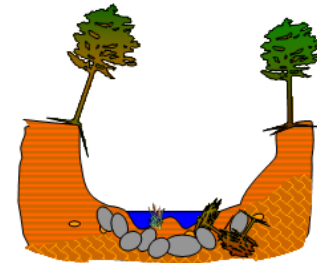
Stage IV Channel Widening

- Widespread bank failures as banks exceed critical height or were undercut by toe scour
- Channel adjusts to new flow regime
- Significant sediment loads generated; most significant erosion hazard in this phase
- Bank armoring generally ineffective



Stage V Deposition

- Deposition begins from liberated sediment
- Vegetation establishes near water line



Stage VI Recovery and Reconstruction

- Bankfull floodplains may be reconstructed from liberated sediment
- Woody vegetation establishes near water line
- Stability re-established

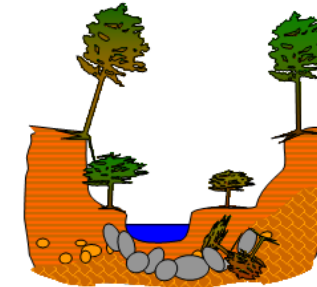


Figure 8-2
Channel Evolution Model (cont.).