

Project Number: BF9
Subwatershed: Little Patuxent 2

Project Type: Restore Buffer /
 Reforestation
Project Size: 0.06 acres

Project Location: Behind homes of cul-de-sac on Pine Bluffs Drive.



Project Description: As shown in the above photo, field crews noted eroding banks and inadequate buffers along this small stream during the Upper Little Patuxent stream walk. This channel does not show up as a perennial stream but appears to receive a large amount of untreated stormwater runoff as indicated by the stormdrains shown in the map. The area outlined in the photo above is a forest conservation site that was mowed after being planted. The area currently does not appear to be mowed, but homeowner education and enforcement would be necessary if the area is again planted. Use of volunteer assistance for site preparation, planting and necessary maintenance and monitoring of the site could help reduce overall project cost. The project would entail planting of native trees and shrubs to widen the existing buffer, thus providing stability to the eroding channel.

Project Benefits:

- Stabilization Additional trees and shrubs will help stabilize the stream bank.
- Habitat Additional habitat provided by this project would not be significant.
- Water Quality A more established buffer will provide shading effects to reduce water temperature and will trap runoff and pollutants such as fertilizers from the adjacent property.

Project Constraints:

- Environmental No environmental/permitting constraints are present.
- Property Ownership This property is county owned open space (the Bluffs at Pine Orchard natural resources open space).
- Facility Access Access from Pine Bluffs Drive.
- Design / Construction No major design or construction constraints are present. The design should incorporate native vegetation and a marked no-mow zone for understory development.

Proposed Project

Upper Little Patuxent Watershed

Project Number: BF9
Subwatershed: Little Patuxent 2

Project Type: Restore buffer / Reforestation
Project Size: 0.06 acres

Cost Detail:

ITEM	QTY	UNITS	UNIT COST	TOTAL (Volunteer Labor)	TOTAL (Without Volunteer Labor)
Riparian Buffer Replacement					
Plant Material (trees)	0.06	AC	\$3,750.00	\$225	\$225
Plant Material (shrubs)	0.06	AC	\$2,725.00	\$164	\$164
Mulch, Tree Shelter	41	PLANTS	\$6.00	\$245	\$245
Cost to Plant	41	PLANTS	\$6.00	\$0	\$245
Site Preparation (volunteer)		AC	\$0.00	\$0	\$0
Basic Site Maintenance and Monitoring (volunteer)		AC	\$0.00	\$0	\$0
Direct Construction Subtotal				\$634	\$879
Base Construction Cost				\$634	\$879
Mobilization (10% of Directs or \$1,000)				\$0	\$0
Subtotal				\$634	\$879
Contingency (30%)				\$190	\$264
Construction Subtotal				\$824	\$1,142
Env't'l Studies / Permitting (5% of Construction or \$1,000)				\$0	\$0
Landscape Design and Surveys (25% of Construction or \$5,000)				\$0	\$0
Total Capital Cost				\$824	\$1,142
Operations and Maintenance Costs					
Annual Maintenance	5	Percent		\$32	\$44
Discount Rate	5	Percent			
Expected Life	5	Years			
Net Present Value of Annual Costs				\$137	\$190
Life Cycle Cost				\$1,000	\$1,400

Cost Notes and Assumptions:

Project costs were derived for both volunteer and paid labor. In calculating costs for volunteer labor it is assumed that local volunteer organizations could accomplish the project with County assistance and oversight. Site preparation, planting and any necessary maintenance and monitoring would be conducted by volunteers.

Planting density is planned at 1 tree or shrub planted at 8 foot intervals for a total of 681 plants per acre.

Size and species of trees and shrub plant material is based on approved Howard County Recreation and Parks information and is typically a 3-4 foot plant. Use of more mature or more immature plant material would affect the planting density and cost per plant.

Cost of plant material is based on 2009 survey of local and regional wholesale native plant nurseries. Plant material (seedlings) may also be obtained from the Maryland Department of Natural Resources, State Forest Tree Nursery at a much reduced cost or through Howard County's Stream ReLeaf program at no cost.