

AC9178 - Pond Retrofit



Address: Near the intersection of Monarch Lane and Happy Heart Lane, Next to 3351 Monarch Lane

Location: Prosperity Heights

Land Owner: Private - Residential

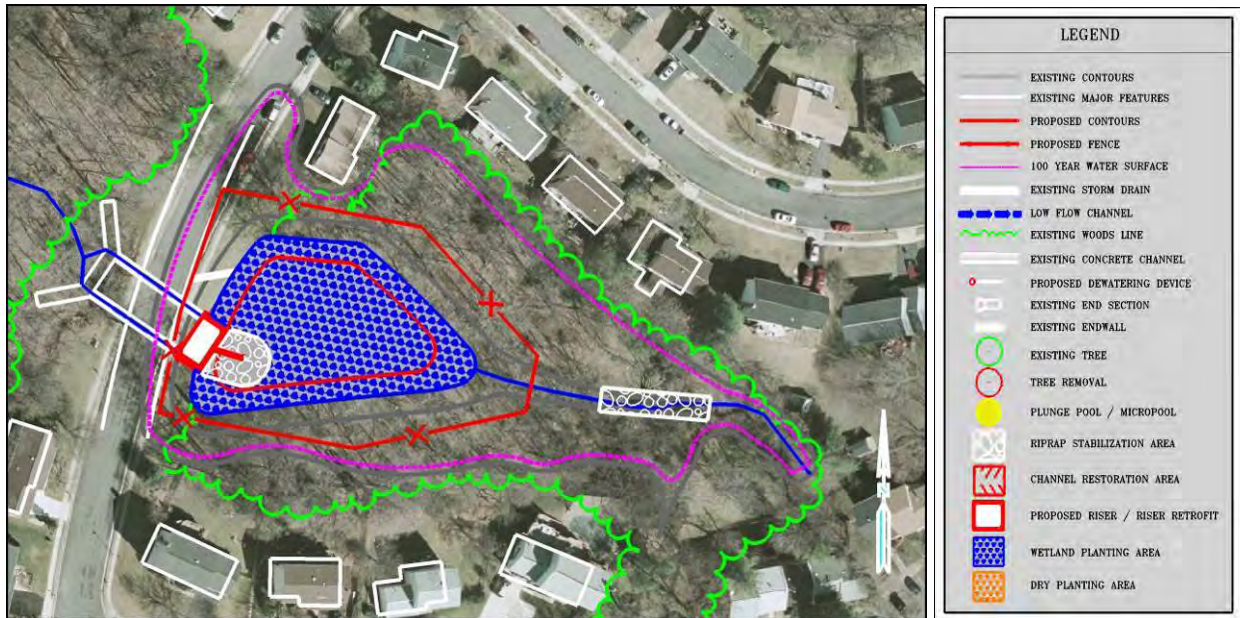
PIN: 0591 27 D

Control Type: Water Quality and Quantity

Drainage Area: 25.79 acres

Receiving Waters: Unknown tributary of Accotink Creek

Description: This facility is an existing dry pond (0169DP) treating the runoff from a residential area in the Prosperity Heights neighborhood. The proposed retrofit will convert the pond to a wetland facility. This project will consist of a removing the existing headwall and replacing with a new riser structure including a new dewatering system, and riprap stabilization.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility would meet the water quality treatment requirement for the contributing drainage area via extended detention of the one-half inch, 48 hour storm, as well as peak flow management of the 2-year peak runoff volume. Retrofitting this facility would promote the removal of suspended solids and floatables through extended detention. These proposed improvements will also help prevent future downstream channel erosion. It is estimated that an annual total of 7,360 lbs of sediment, 60 lbs of total nitrogen and 16 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Coordination with residents and HOA will be necessary to retrofit this facility since it is located on private land. Environmental permitting issues are expected due to the in-stream location and the presence of wetlands in this facility. Some tree removal along the sides of the facility and modifications to an existing stream channel that flows to this facility will be necessary. In-stream construction will require base flow diversion. Existing utility conflicts are not anticipated. Access to this facility is very good as it is located directly off of Monarch Lane.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.5	AC	\$8,500.00	\$4,250
New Riser	1	LS	\$8,000.00	\$8,000
Embedded Dewatering Pipe	1	EA	\$500.00	\$500
Rip Rap Stabilization	160	SY	\$100.00	\$16,000
Grading and Excavation	3941	CY	\$35.00	\$137,935
Remove Existing Headwall	1	EA	\$300.00	\$300
Soil Borings	1	LS	\$8,500.00	\$8,500
			Initial Project Costs	\$175,485
Plantings	1	LS	5% of Project	\$8,774
Ancillary Items	1	LS	5% of Project	\$8,774
Erosion and Sediment Control	1	LS	10% of Project	\$17,549
			Base Construction Costs	\$210,582
			Mobilization (5%)	\$10,529
			Subtotal 1	\$221,111
			Contingency (25%)	\$55,278
			Subtotal 2	\$276,389
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$124,375
			Estimated Project Cost	\$401,000



Site Photo: Existing Facility Overview



Site Photo: Existing Facility Inflow and Control Structure

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