

Watershed Condition Summary for [Mill Creek](#)

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The following summary comes from this document:

“The Magothy River Watershed Restoration Strategy.” Prepared by the Anne Arundel County Office of Environmental & Cultural Resources in cooperation with the Magothy River Association and the Maryland Department of Natural Resources. July 2005. 146 pp, plus Appendixes. This excerpt is found on pp. 101 to 104 of this report.

Mill Creek Subwatershed

The Mill Creek subwatershed is located in the south central portion of the Magothy River watershed. It is roughly bounded on the south by Church Road, on the west by Ritchie Highway, and on the east by College Parkway. At 1082 acres, it is one of the largest single subwatersheds assessed during this study.

Land Use

As with most other subwatersheds in the Magothy River watershed, a majority of Mill Creek's land area (~60%) is devoted to Single Family Residential land use. Almost equal amounts of land use are allocated to Vacant Land and School categories. The School category represents the footprint of Anne Arundel Community College (AACC) in this subwatershed and is one of the largest percentages of land devoted to educational facilities in all the subwatersheds studied. Current imperviousness is estimated at 36%. Future imperviousness could be as great as 42% if full building-out of existing zoning conditions is realized.

Land Use	Acres	% of Area
Single Family Residential	653.8	60.4
Townhome	14.3	1.3
Retail	8.1	0.7
Office	6.4	0.6
Industrial	10.1	0.9
Utility/Roadway ROW	37.4	3.5
School	153.0	14.1
Recreational	19.6	1.8
Open Space	44.4	4.1
Vacant Land	135.6	12.5
Agriculture	0.0	0.0
Water	0.0	0.0
Total	1082.7	100.0

Natural Resources

Mill Creek is a third order stream at its confluence with the Magothy River. The stream network is approximately 3.8 miles long.

The NWI has identified approximately 17 acres of wetlands in the Mill Creek subwatershed. Most of these (~65%) are freshwater-forested wetlands that are inundated during the beginning of the growing season, but are typically dry by the end. Another 22 percent of the wetlands are freshwater ponded systems that are regularly drawn down. These are likely stormwater ponds or other created wetlands. The remaining wetland types are estuarine systems found near tidal waters or freshwater scrub-shrub systems. Only 8 acres of hydric soil was mapped during the recent County soil survey and no bogs are documented in the Mill Creek subwatershed.

Forest cover is fragmented. The largest blocks of forest are concentrated along the stream corridor in the reaches upstream of College Parkway. Other forested areas are intermixed with residential neighborhoods or concentrated in wetland areas near tidal waters.

Summary of Subwatershed Conditions

The assessment of Mill Creek subwatershed condition resulted in an overall score of poor. High levels of current and future imperviousness, fragmented forest cover, little current or proposed protected land, and high levels of floodplain development are some of the factors that explain the observed results. Conversely, buffer impacts observed were somewhat minimal as no projects of moderate severity or greater were observed. This was also true regarding levels of channel alteration.

Water quality conditions, as assessed during the Fall 2004 Synoptic Survey, were mixed in Mill Creek. Baseflow orthophosphate concentration was below the analytical detection limit. The

Metric Group	Metric Group Score	Condition Rating
Water Quality & Hydrology Conditions	38	Poor
Habitat & Living Resource Conditions	59	Fair
Landscape Conditions	97	Poor
Overall Condition Score	194	Poor

nitrate–nitrogen concentration was measured at 0.82 mg/L, which was also the median value observed. Nitrate-nitrogen loading rates, however, were in the upper 25% of all stations measured, at 2.93 lbs/ac/yr.

The Maryland Biological Stream Survey’s Streamwaders Program

sampled this subwatershed in 2002. Biological conditions were rated poor primarily due to the dominance of pollutant tolerant organisms. Very few sensitive taxa were observed.

The SCA identified eight environmental concerns of moderate severity or greater in the Mill Creek subwatershed which were split nearly equally between erosion sites and pipe outfalls. Seven potential projects were identified during the Tidal Shoreline Survey. Approximately 75% of the tidal shoreline was observed to have been altered to some degree.

Based on the general water quality and habitat conditions, the following general recommendations are made for the Mill Creek subwatershed:

- Investigate opportunities to retrofit existing stormwater management facilities with current technology.
- Investigate opportunities to coordinate with Anne Arundel Community College to perform stream and habitat improvement and monitoring activities in this subwatershed.

Specific restoration projects identified for the Mill Creek subwatershed are listed in Table 32. The locations of these projects are illustrated in Figure 24.

Table 32. Description and Ranking of Restoration Projects in Mill Creek Subwatershed (#105)

SCA Site Number	Project Type	Project Description	Subwatershed Priority Ranking	Notes
63905	PO	Concrete channel of unknown length	1	Possible drainage from Jones Station Road. Additional assessment needed for possible retrofit.
73103	ES	18 foot high, 100 foot long reach	2	Additional assessment needed to determine cause of instability.
73102	PO	48 in. concrete pipe on right bank	3	Likely drains AACC property. Additional assessment necessary for possible retrofit.

SCA Site Number	Project Type	Project Description	Subwatershed Priority Ranking	Notes
51902	PO	36 in. concrete pipe on right bank	4	Possible drainage from residential neighborhood. Additional assessment needed for possible retrofit.
74101	PO	36 in. concrete pipe on left bank	4	Possible drainage from residential neighborhood. Additional assessment necessary for possible retrofit.
84903	UC	Red flocculent	6	Unknown source. Additional assessment needed to determine project feasibility.
28902	ES	4 foot high, 3360 foot long reach	7	Unknown cause. Additional assessment needed to determine project necessity and feasibility.
63901	ES	3 foot high, 480 foot long reach	7	Additional assessment needed to determine project necessity and feasibility.
Projects listed below are from Tidal Shoreline Survey—all need additional investigation to determine feasibility and severity.				
84902	IB	442 feet of shoreline	1	Grass area with bulkheads.
93904	IB	620 feet of shoreline	2	Bulkhead and lawn area.
84906	SE	17 feet high, 50 feet long	3	Between two altered areas.
84905	AS	425 feet of shoreline	3	Wooden bulkhead and lawn area.
84908	AS	1860 feet of shoreline	3	Bulkhead and forest/shrub area.
94902	IB	800 feet of shoreline	6	Bulkhead and lawn area.
93903	AS	1135 feet of shoreline	7	Bulkhead and lawn area.

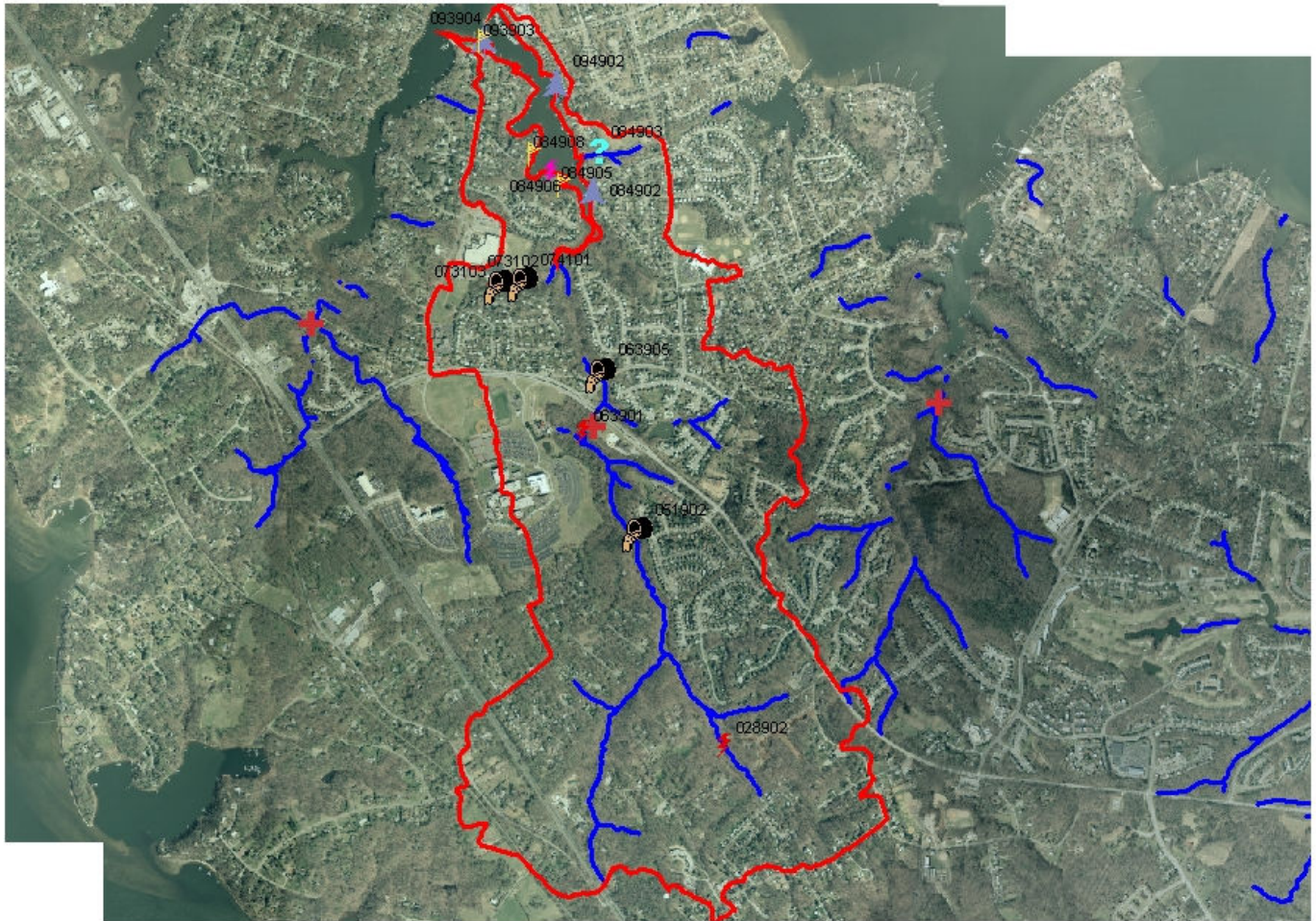


Figure 24. Overview of Mill Creek Subwatershed (#105) with Potential Restoration Project Locations