

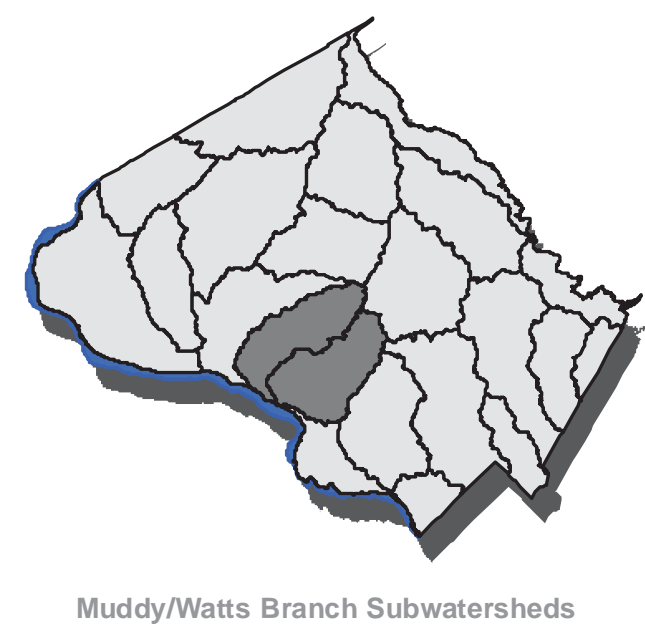
MUDDY BRANCH AND WATTS BRANCH SUBWATERSHEDS MONTGOMERY COUNTY, MD



Muddy Branch and Watts Branch Subwatersheds Existing Conditions

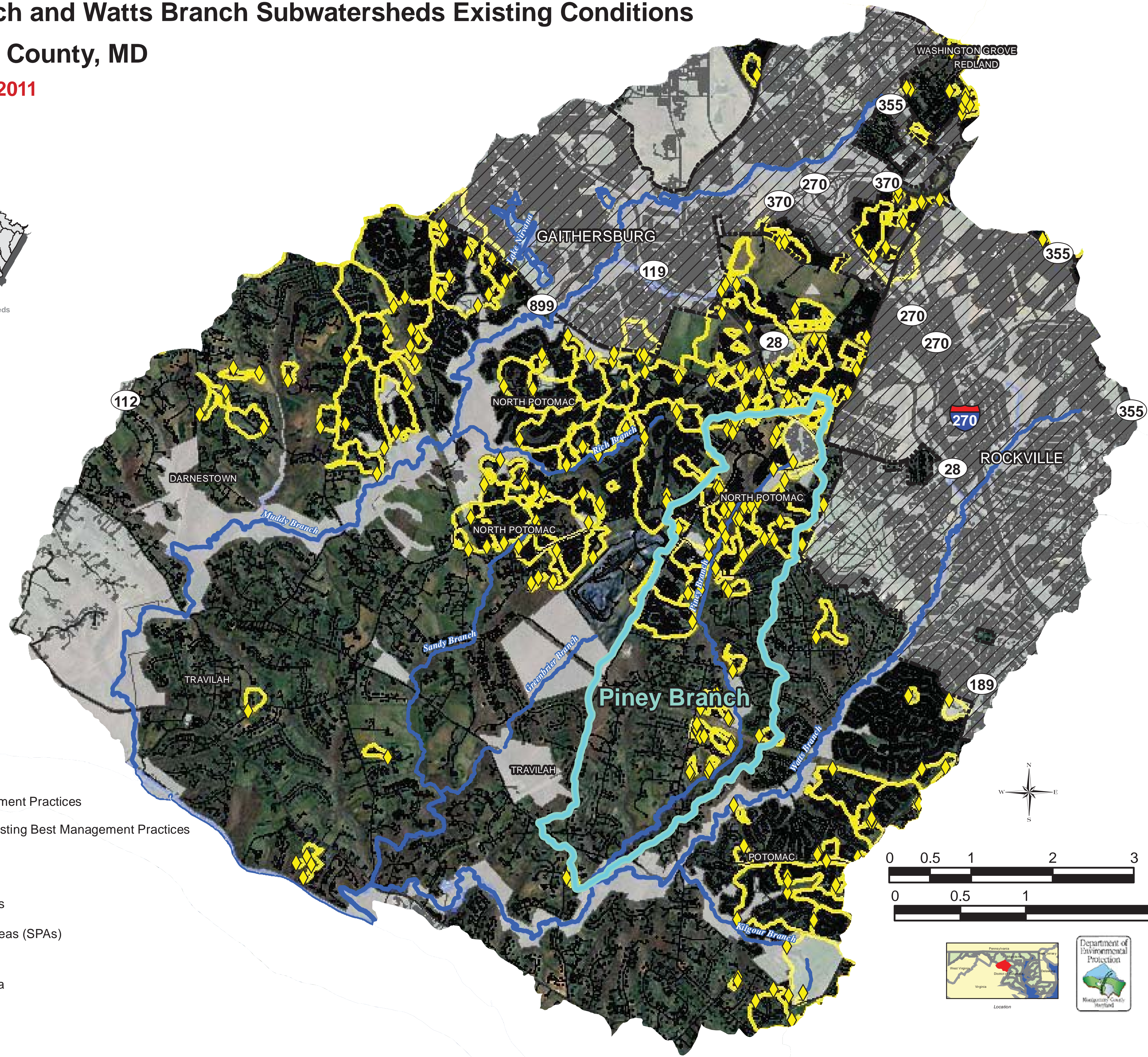
Montgomery County, MD

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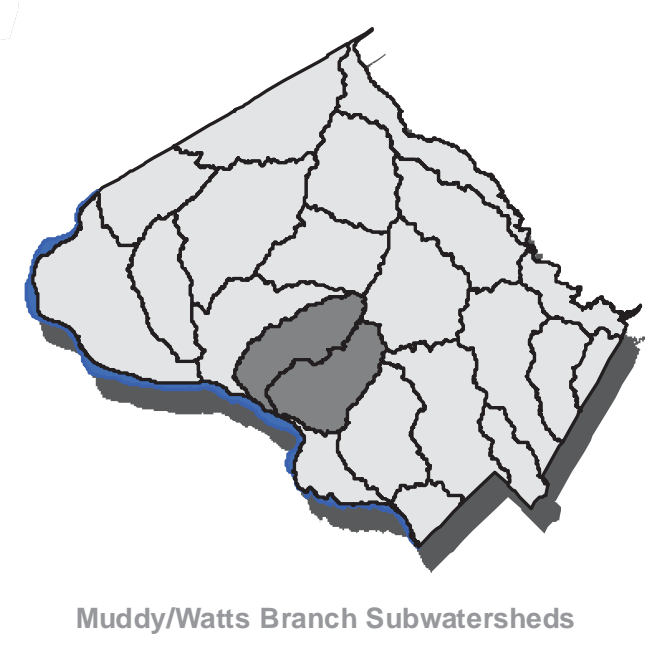
- Existing Best Management Practices
- Drainage Areas to Existing Best Management Practices
- Impervious Surfaces
- Streams
- Major Water Features
- Special Protection Areas (SPAs)
- Municipalities
- Non-MS4 Permit Area
- MS4 Permit Area



Muddy Branch and Watts Branch Subwatersheds High and Low Priority Projects

Montgomery County, MD

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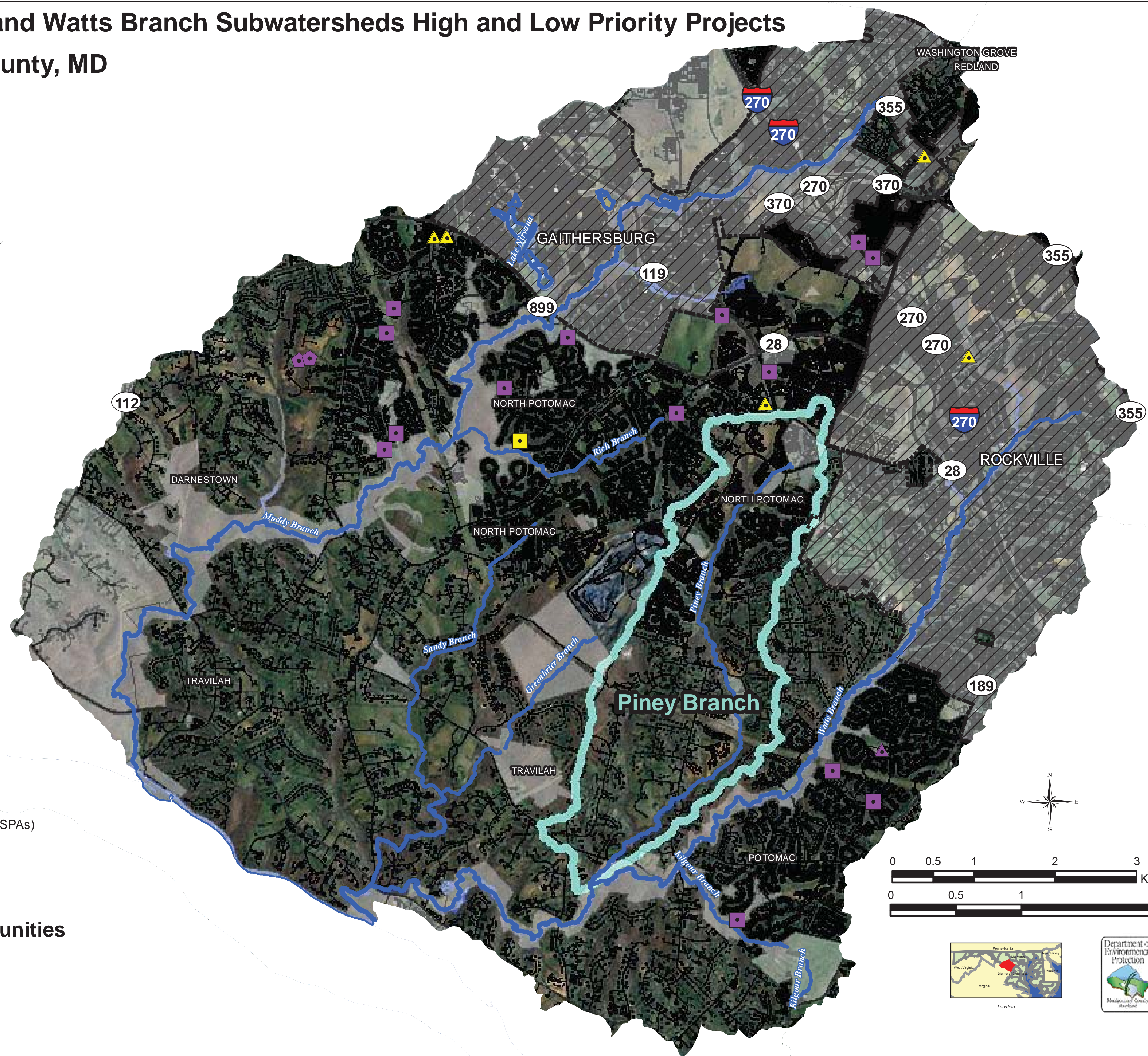


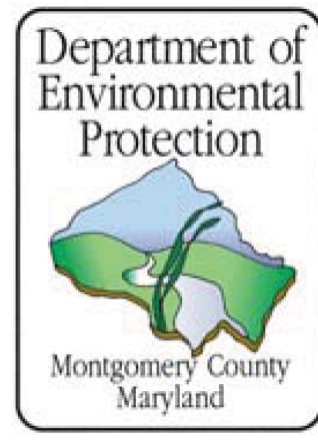
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- Impervious Surfaces
- Streams
- Major Water Features
- Special Protection Areas (SPAs)
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- Non-MS4 Permit Area
- MS4 Permit Area

Restoration Opportunities

- Project Priority**
- ESD, High Priority
- ESD, Low Priority
- Pond, High Priority
- Retrofit, High Priority
- Retrofit, Low Priority





Implementation Strategy Summary

During the first permit cycle (through 2015), a priority was placed on full implementation of complete, high and low priority projects. Fewer opportunities exist overall compared to the Anacostia and Rock Creek Watersheds. No other strategies were pursued as there are no existing TMDLs in the Muddy Branch and Watts Branch subwatersheds. In future permit cycles, previously identified stream restoration projects are implemented for pollutant load reduction.

Key Acronyms

ESD – Environmental Site Design
MS4 – Municipal Separate Storm Sewer System
TMDL – Total Maximum Daily Load
USACE – U.S. Army Corps of Engineers
WLA – Waste Load Allocation

**Summary of Implementation Plan Schedule for the 2015 Fiscal Period
with expected level of ESD and pollutant load reductions**

Strategies	% Completed in Permit Cycle	IC Treated (acres)	ESD (% IC)	Cost (Million \$)	ESD (% Cost)	% Reduction from Baseline				
						TN	TP	TSS	Bacteria	Trash
<i>Completed and High Priority Projects</i>	100.0%	211	1%	\$4	8%	6.0%	6.0%	6.0%	0.0%	6.0%
<i>Low Priority Projects</i>	100.0%	26	33%	\$2	84%	0.2%	0.3%	1.2%	0.0%	0.2%
<i>Other Potential Projects</i>	0.0%	-	0%	\$0	0	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Public ESD Retrofits</i>	0.0%	-	100%	\$0	100%	-	-	-	-	-
<i>Private ESD Retrofits</i>	0.0%	-	100%	\$0	100%	-	-	-	-	-
<i>Riparian Reforestation</i>	0.0%	-	0%	\$0	0%	-	-	-	-	-
<i>Stream Restoration</i>	0.0%	-	0%	\$0	0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Programmatic Practices</i>	100.0%	-	0%	\$0	0%	-	-	-	-	-
Subtotal	100.0%	237	4.3%	\$6	31.6%	6.2%	6.3%	7.2%	0.0%	6.2%

 Pollutants with TMDLs

IC: Impervious Cover
ESD: Environmental Site Design
TN: Total Nitrogen
TP: Total Phosphorus
TSS: Total suspended solids

Summary of Implementation Plan schedule with expected MS4 permit area WLA compliance endpoints

	2015	2017	2020	2025	2030	Permit/ TMDL Targets
Impervious Area Treated (acres)	237	237	237	237	237	
% of Impervious Area Treated by ESD	4%	4%	4%	4%	4%	
Impervious Area Treatment Cost (Million \$)	6	8	19	25	31	
% of Cost for ESD	32%	27%	11%	8%	7%	None
Nitrogen (% Reduction)	6%	7%	15%	18%	22%	
Phosphorus (% Reduction)	6%	7%	10%	12%	13%	
Sediment (% Reduction)	7%	8%	14%	17%	20%	
Bacteria (% Reduction)	0%	0%	0%	0%	0%	
Trash (% Reduction)	6%	6%	6%	6%	6%	

 TMDL Target NOT Met

 TMDL Target Met