

Integrating Monitoring Programs across scales: MS4, Regional, Watershed, and National

A discussion to guide monitoring improvements among
responsible agencies.

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National Pollutant Discharge Elimination System (NPDES)

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Stormwater Discharges From Municipal Separate Storm Sewer Systems (MS4s)

OVERVIEW

Polluted stormwater runoff is commonly transported through Municipal Separate Storm Sewer Systems (MS4s), from which it is often discharged untreated into local waterbodies. To prevent harmful pollutants from being washed or dumped into an MS4, operators must obtain a NPDES permit and develop a stormwater management program.



- Phase I, issued in 1990, requires *medium* and *large* cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges.
- Phase II, issued in 1999, requires regulated small MS4s in [urbanized areas](#), as well as small MS4s outside the urbanized areas that are designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges.

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Basic Information

Municipal MS4s

Construction Activities
-Construction General
Permit eNOI

Industrial Activities
-Multi-Sector General
Permit eNOI

Road-Related MS4s

Menu of BMPs

Green Infrastructure

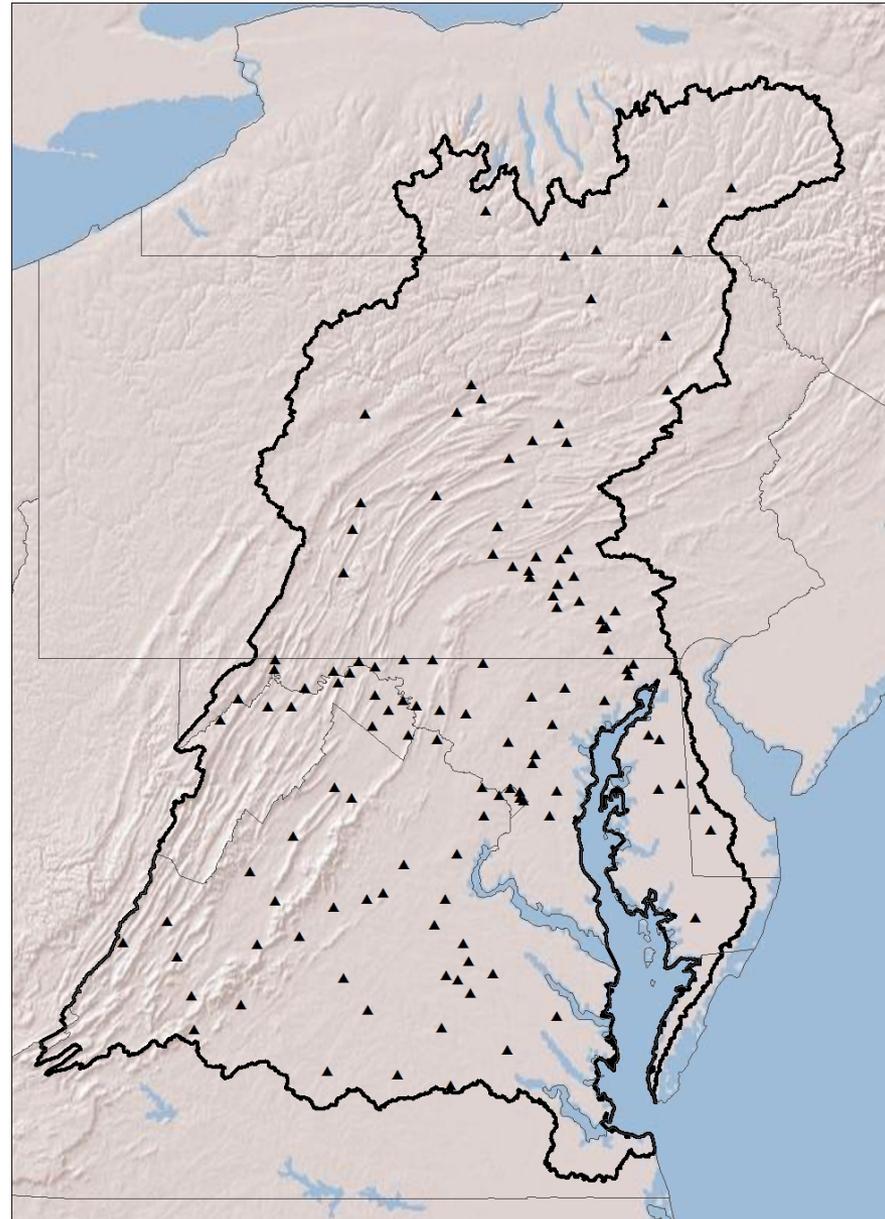
Integrated Municipal
Plans

Stormwater Home

<http://cfpub.epa.gov/npdes/stormwater/munic.cfm>

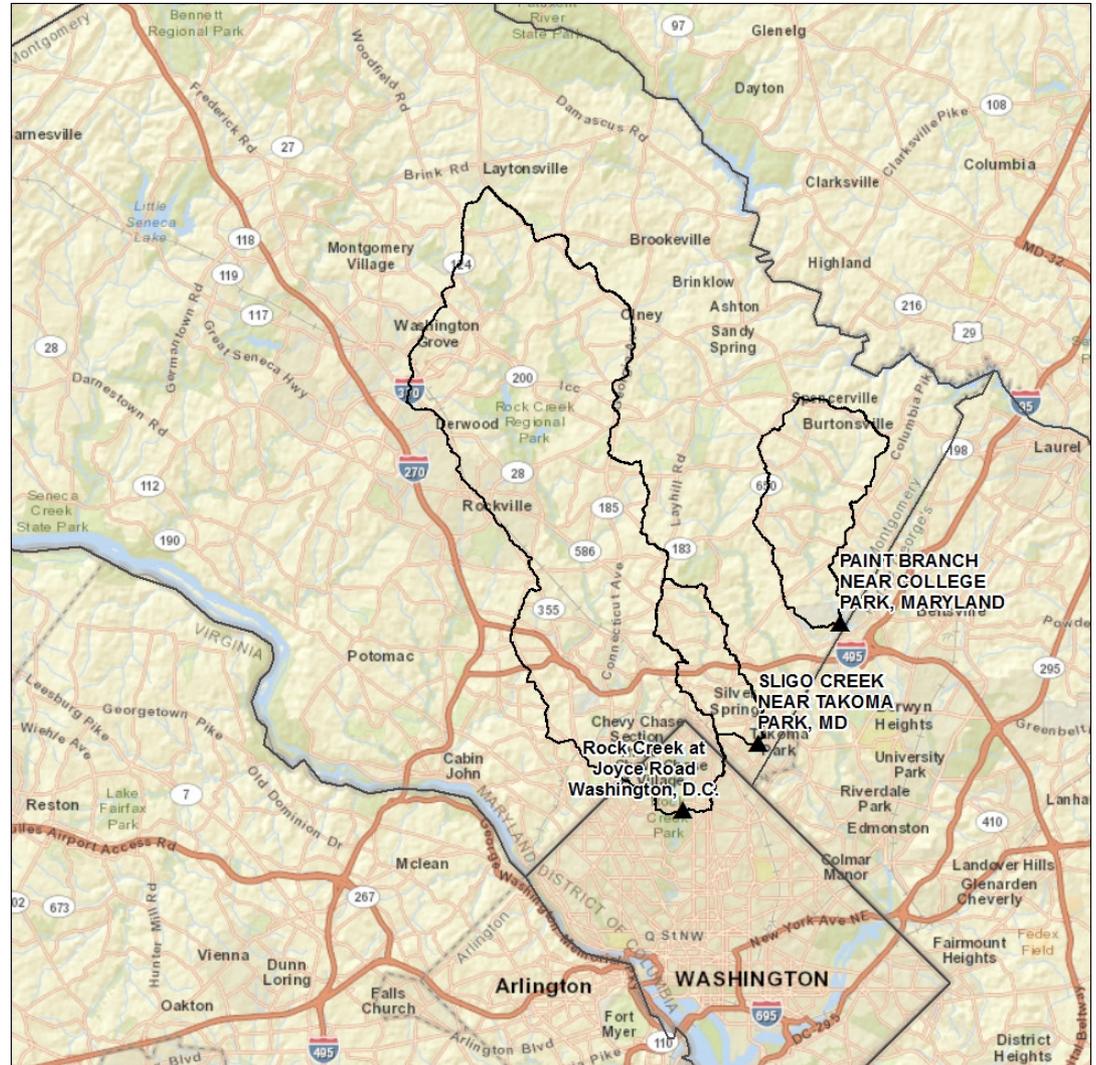
Chesapeake Bay Nontidal Network

- 100 + sites across 64,000 watershed
- Coordinated implementation within the Nontidal workgroup.
 - EPA, USGS, D.C. DE, MD, WV, VA, NY, SRBC, ICPRB
- Consistent sampling approach
 - Monthly
 - Targeted storms (8+)
 - Nitrogen Phosphorus, and Suspended Sediment
 - Isokinetic Sampling
 - Selected stations with continuous water quality measures
- Coordinated analysis and Reporting– Annually
 - Loads
 - Trends
 - Website
 - Results incorporated into CBP WSM



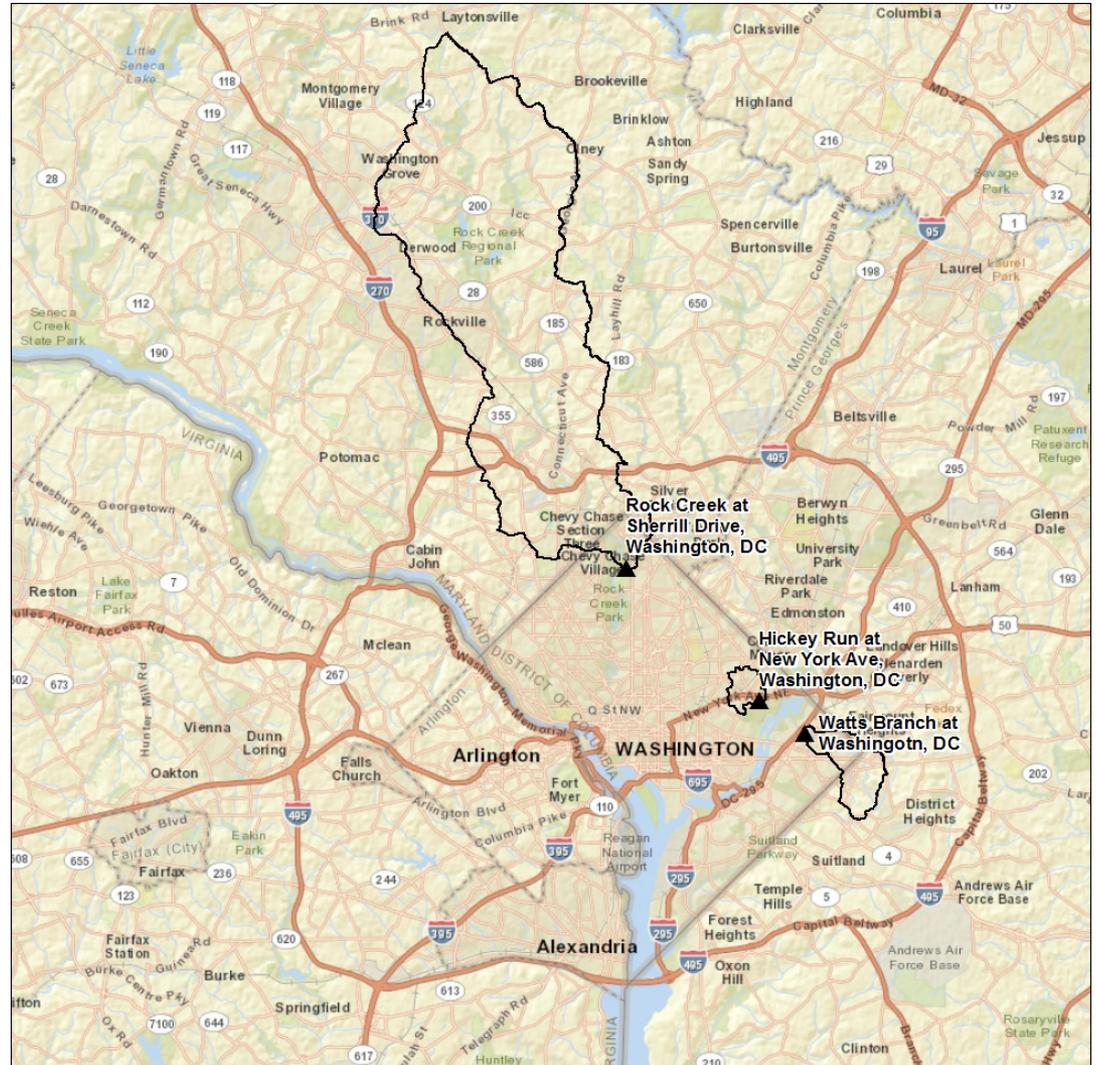
Montgomery County

- Rock Creek
- Paint Branch
- Sligo Creek



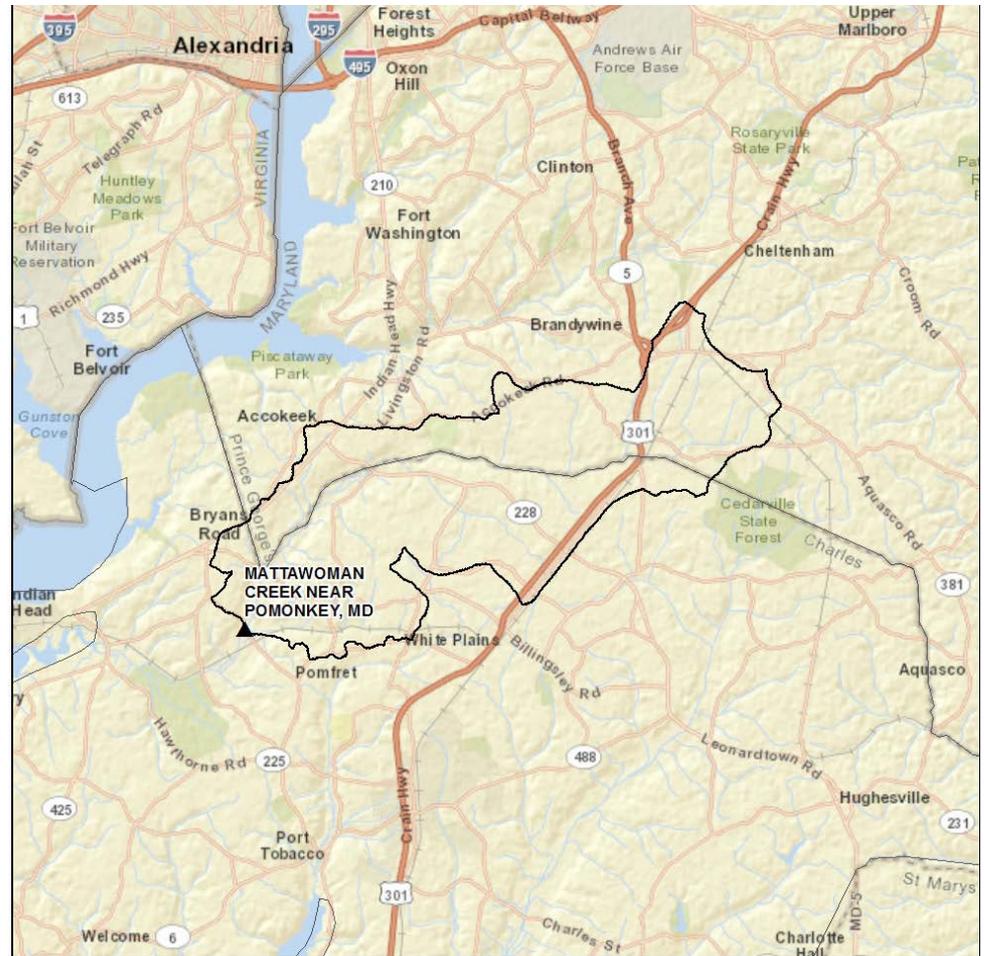
Washington D.C. nontidal network stations

- Hickey Run
- Watts Branch
- Rock Creek (Storm Supplement)



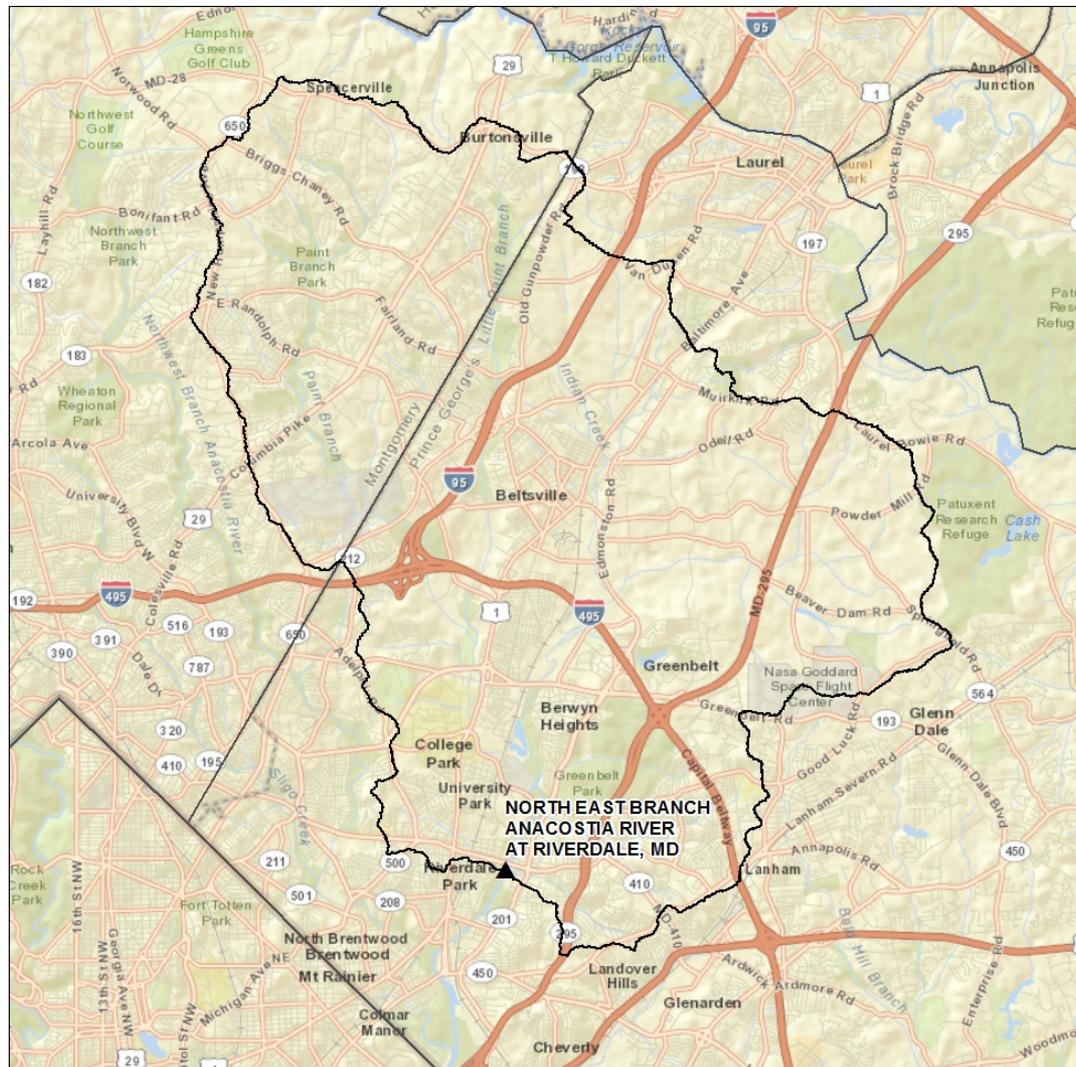
Charles County

- Mattawoman Creek



Prince Georges County

- Northeast Branch Anacostia
- Northwest Branch Anacostia (sampled by MD-DNR)

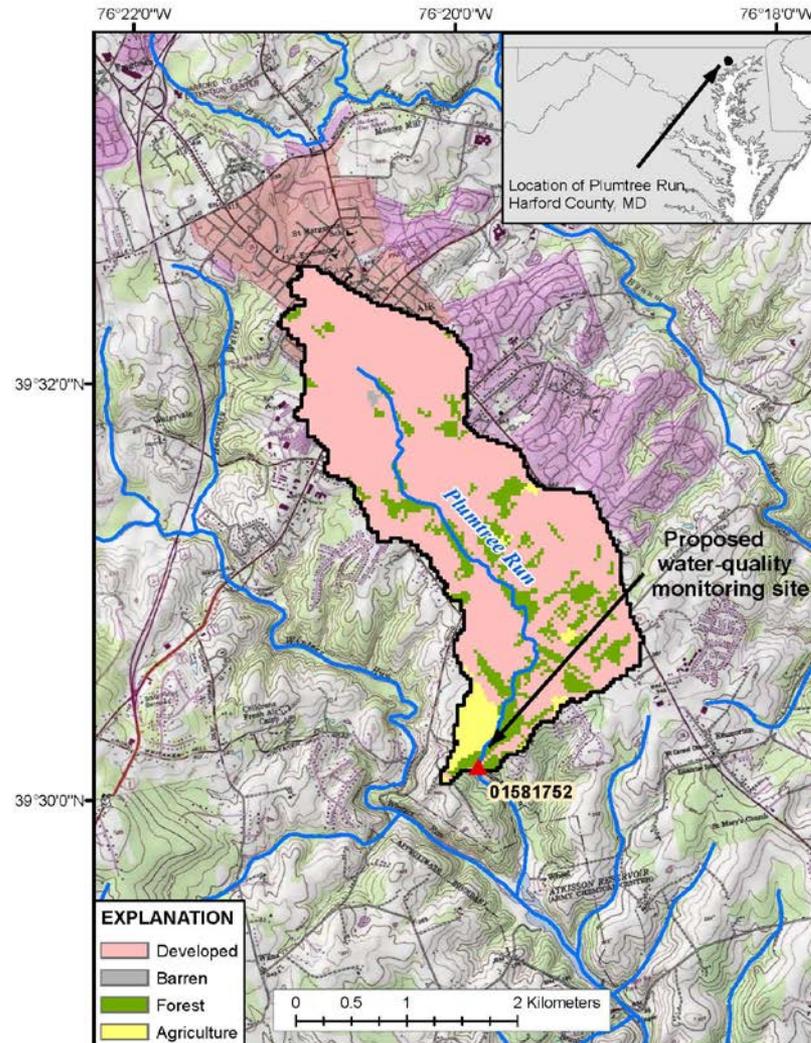


Other Programs

- Fairfax County – USGS cooperative study
- Occoquan monitoring stations
- Municipal, and County MS4 targeted monitoring
- State and local ambient networks
- TMDL monitoring
- MBSS
- USGS National Water-Quality Assessment Program (NAWQA)
- Many More....

Harford County

- Plumtree Run
- Designed to serve as base for MS4
- Nontidal network protocols
- Supplemental approaches
 - Continuous water quality
 - Automatic sampler
 - Additional parameters
 - Bacteria
- Benefits
 - Data serve multiple purposes
 - Analysis by Chesapeake Network team
 - Comparison with sites across the region
 - Data are used!



Some discussion points

1. This collection of high-quality stations, (gages, continuous WQ, routine and storm sampling) may be more of an asset when treated as a network
2. There may be value in consistent approaches to MS4 monitoring across jurisdictional boundaries.
3. Single high-quality longer term stations may be more cost effective than distributed monitoring by project.
4. Networks like Chesapeake Bay Nontidal can benefit from strategic MS4 monitoring.
5. Municipalities can benefit from being part of a larger network.
6. Funds are tight everywhere, perhaps there are savings and better grant opportunities through collaborating.
7. We can't monitor everywhere all the time, but strategic discussions across jurisdictions may identify those MS4 watersheds that will benefit from a collaborative approach.
8. With the Chesapeake Bay TMDL and other TMDLs in place, high-quality monitoring data will be useful