



2nd Virginia Marine Debris Summit

Making the Stormwater Connection: MS4 Floatables Monitoring

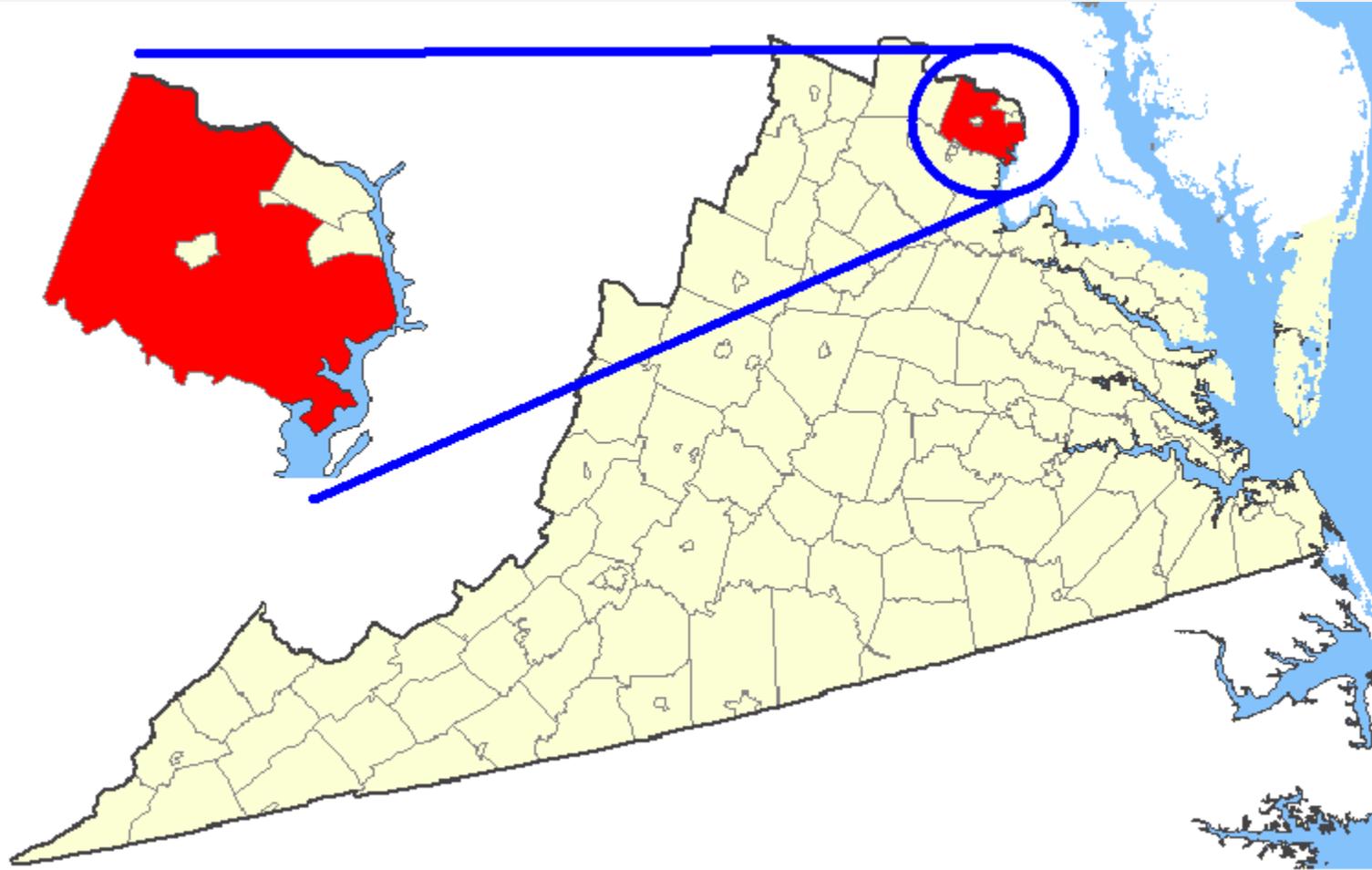
Fairfax County, VA

Department of Public Works and Environmental Services
Working for You!

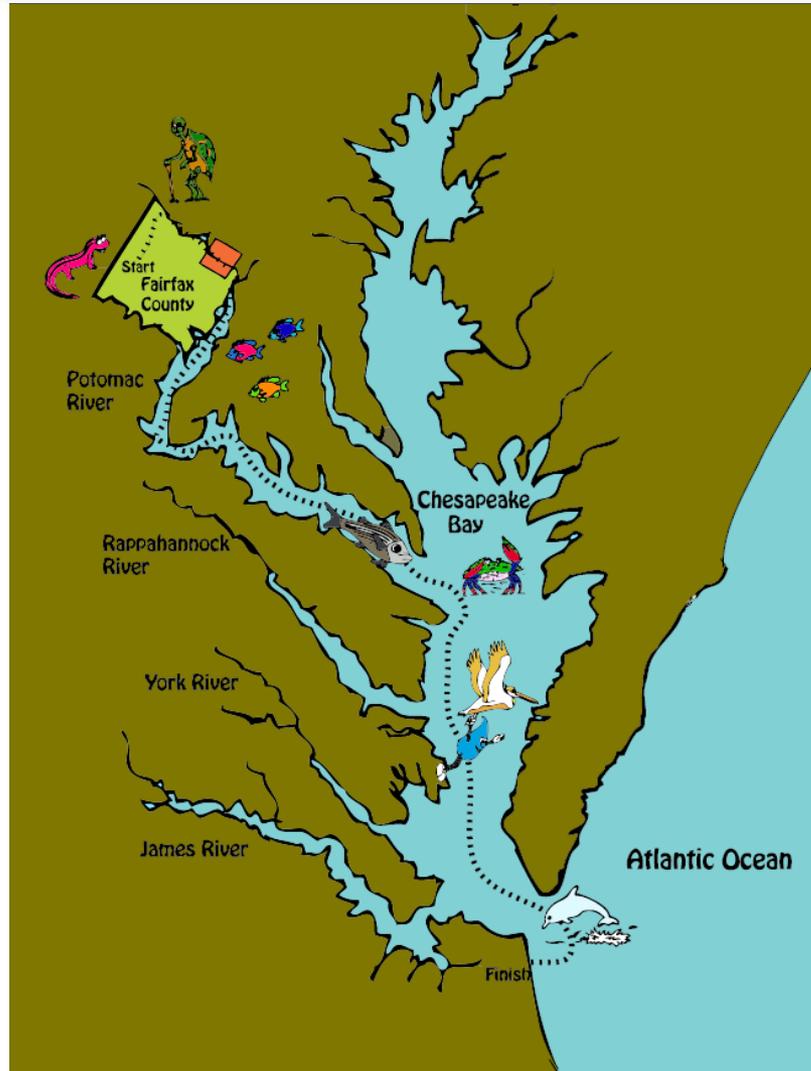


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Fairfax County, Virginia



"We All Live Downstream"



Fairfax County MS4 Permit

- Municipal Separate Storm Sewer System = “MS4”
- Sanitary sewers separate from storm drain network (no CSOs)
- Effective date of new MS4 permit (Phase I): April 1, 2015 (no foolin’!)
- Permit is issued to Fairfax County and provisions apply to all county government agencies (FCPS has their own permit)
- Permit covers the jurisdictional land area of Fairfax County, excluding the Towns of Clifton, Vienna, and Herndon; the Cities of Fairfax and Falls Church; Fort Belvoir; Dulles International Airport; and the VDOT road system
- Stormwater Planning Division (SWPD) of DPWES:
 - Oversees MS4 program planning process
 - Coordinates & tracks permit compliance (within Stormwater and with outside partners – other government agencies, non-government agencies and private organizations)
 - Assembles, develops and submits annual report to DEQ

Floatables Requirements

- Monitoring requirement: *“No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within Fairfax County. The permittee will implement the floatables monitoring program as follows:*
 - *a) Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.*
 - *b) Monitoring shall be conducted once per quarter after program implementation.*
 - *c) The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.”*
- Floatables also folded in to IDDE/IHRR requirements: *“The permittee shall continue to implement a program to reduce the discharge of floatables (e.g. litter and other human-generated solid refuse) in accordance with Part 1.C.3.”*
- Outreach/Education requirements

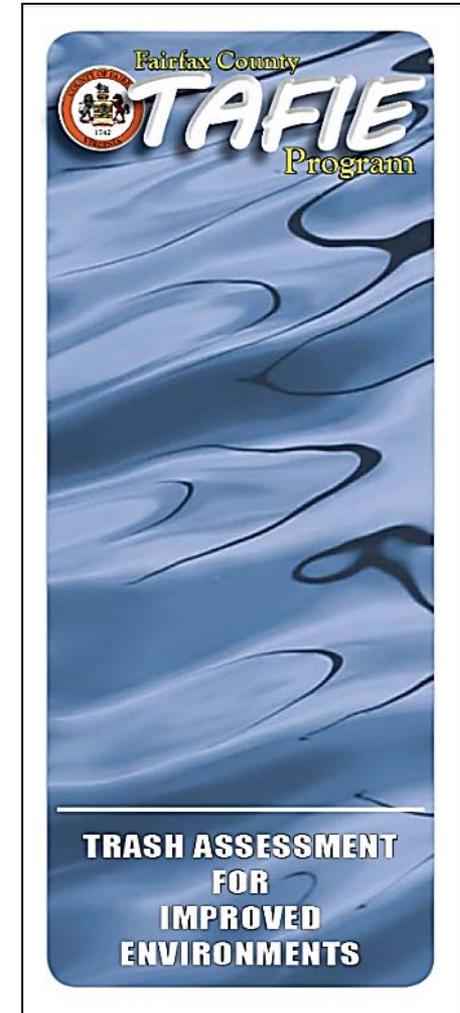


Floatables Monitoring Timeline

- Annual Report for FY16 (July '15 – June '16), due October 1, 2016: Update on the development of the floatables monitoring program.
- By March 31, 2017: Finalize monitoring protocols for the floatables monitoring program
- During FY17 Second Quarter (April '17 – June '17): Conduct first quarter of floatables monitoring
- Annual Report for FY17 (July '16 – June '17), due October 1, 2017: Monitoring protocols for the floatables program (permit language does not require we report first quarter monitoring results until FY18 report)
- Beginning with the Annual Report due October 1, 2018, each Annual Report shall include:
 - a list of sites monitored
 - a summary of the monitoring protocols used
 - a summary of the monitoring results (counts) and analyses

Trash Assessment for Improved Environments (TAFIE)

- Originally developed by multiagency “Trash Team” (SWPD, Solid Waste, CFC, NVSWCD) in 2012
- Comparable with regional stream cleanup protocols (Adopt-a-Stream, PWC, Internat’l Coastal Cleanup)
- Counts + rapid assessment of “trashiness”
- Trash items grouped into categories (plastic, glass, metal etc.) with items of particular concern highlighted based on BPJ/observation in field (e.g. plastic beverage bottles, six-pack rings, cigarette butts)
- Original goal: survey and count floatables pre- and post-cleanup
- However, picking up floatables not part of new permit’s monitoring requirements



"Citizen Scientists"

- Looking for schools with a stream on or adjacent to grounds containing an MS4 outfall
- Schools agree to do a visual assessment of trash four times a year using TAFIE:
 - Identify stream reach
 - Lat, long, co watershed
 - 100-foot stream reach + 10 feet from top of bank on both sides
 - Participants walk the reach (MAY NOT enter stream channel)
 - Tally & categorize trash
- Count data will be used for permit compliance
- Obvious outreach/education benefits!



"Citizen Scientists"

- Focusing on 5th graders to enhance the school system's Fields of Science study unit
- Some interest in combining with 4th grade Virginia Watersheds study unit
- High school? (Maybe)
- Scouts? (Maybe)



End of Pipe Trash Traps



Bandalong Trash Trap

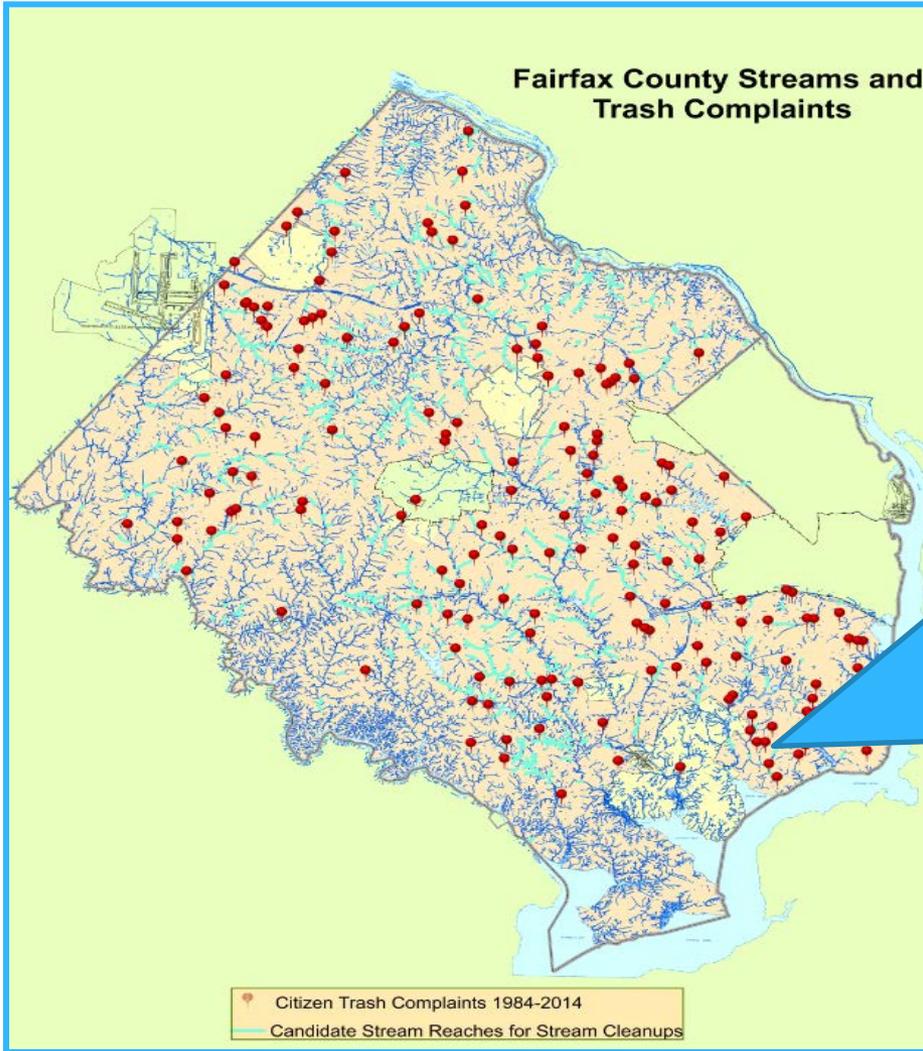


Pilot Studies

End of Pipe

- Reached out to partner organizations and stakeholders for known trashy sites. Also received political pressure for Union Mills Pond and Accotink Creek sites
- Used model to predict additional trashy sites
- When scoping, assessed sites for:
 - Access (this was the biggest one)
 - Safety
 - Amount of trash (needed something we knew would be trashy in the future)
 - Tidal? y/n (Tidal sites excluded)
 - Near homes (sites within eyeshot of homes were rejected)
 - Desktop scoping for upstream drainage area and impervious (bigger drainage and impervious =better candidate)
 - Appropriate outfall type? (circular)
 - Appropriate channel type upstream? (must be closed channel, pipe installed at daylight to avoid clogging by upstream organics)

Identifying Trash Hot Spots



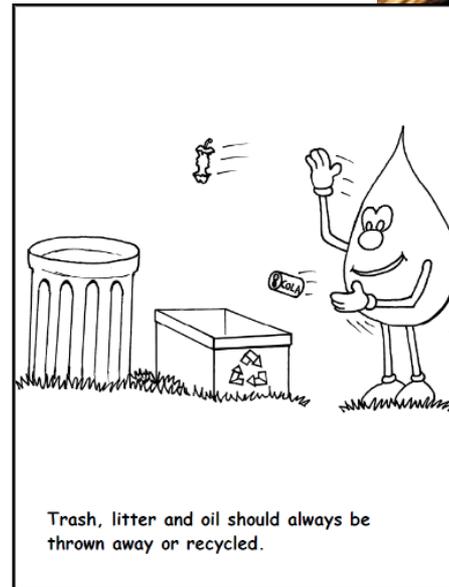
Pilot Studies

Bandalong

- Political pressure to install in Little Hunting, but also likely best location due to channel size and amount of trash
- Similar requirements as end-of-pipe, but open channel upstream permitted
- Must be wide/deep enough to accept bandalong
- Easement access for maintenance required
- Good floodplain access to prevent upstream flooding after installation

Outreach

- Stream litter page
www.fairfaxcounty.gov/dpwes/stormwater/streamlitter.htm
- Channel 16 videos, podcasts
- Fact sheets
- MWEES
- Partnerships with organizations that conduct volunteer stream cleanups (CFC, NVSWCD, AFF, CVW)
- Lots more!



Additional Information

For additional information, please contact

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