

Anne Arundel County's Bureau of Watershed Protection and Restoration: Where We've Been and Where We're Going

Center for Watershed Protection Coastal & Island Symposium
November 10, 2022



www.aarivers.org



The County's Regulatory Mandates



MS4 Permit

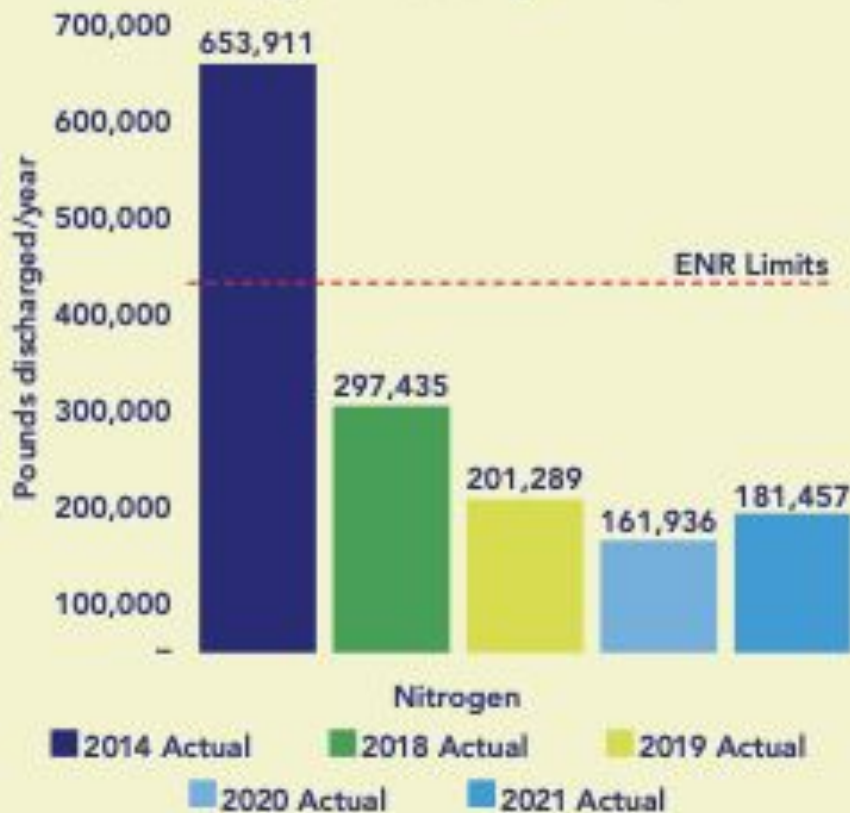
- Municipal Separate Storm Sewer System (MS4) Permit (issued by MDE).
- 5-year cycle, previous permit issued in February 2014 and administratively extended through early November 2021.
- Required treatment of 20% of the untreated impervious area in the county during the permit cycle. (4,996 acres)
- Used TN/TP/TSS credits generated at the County's WWTPs to achieve permit compliance. Burned off nutrient trade in fall 2020
- Current permit, issued on November 5, 2021 requires the treatment of another 2,998 acres.
- A key component of the Chesapeake Bay TMDL

Current Status of BWPR-Funded Projects

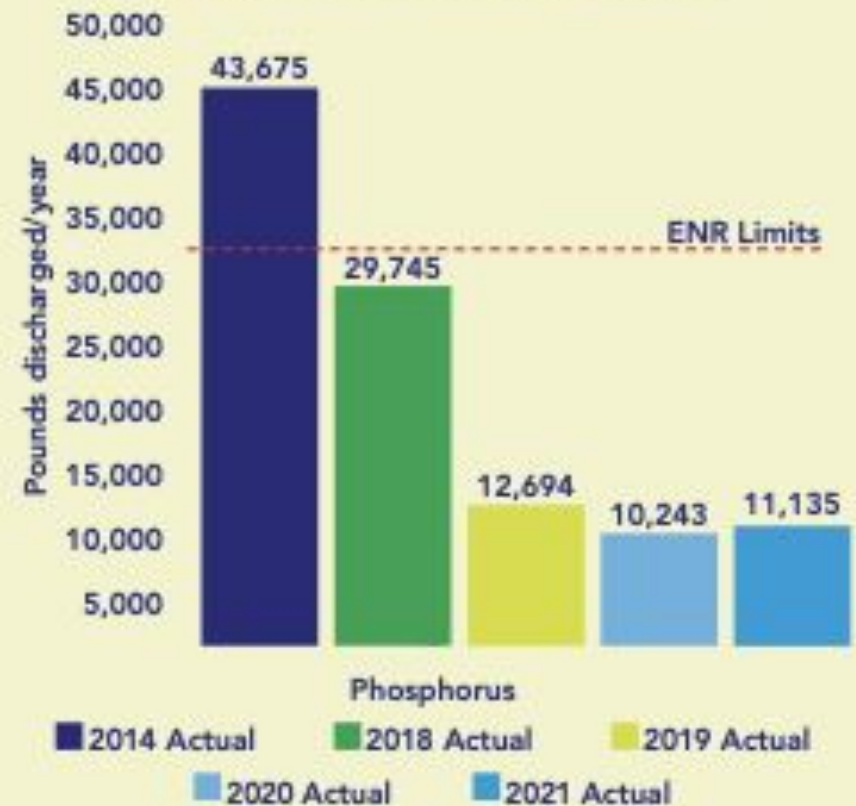
- 1,090+ Culvert & Storm Drain projects completed. (\$8M/year)
- 140+ Water Quality Improvement Projects completed thus far in permit term.
- Over 6,300 impervious acres treated.
- ~90 additional projects underway.
- Over \$250M authorized for clean water projects. New round of project initiation in FY23.
- Includes stormwater retrofits, outfall restoration, as well as stream and wetland restoration.

Aggregate County WWTP Discharges

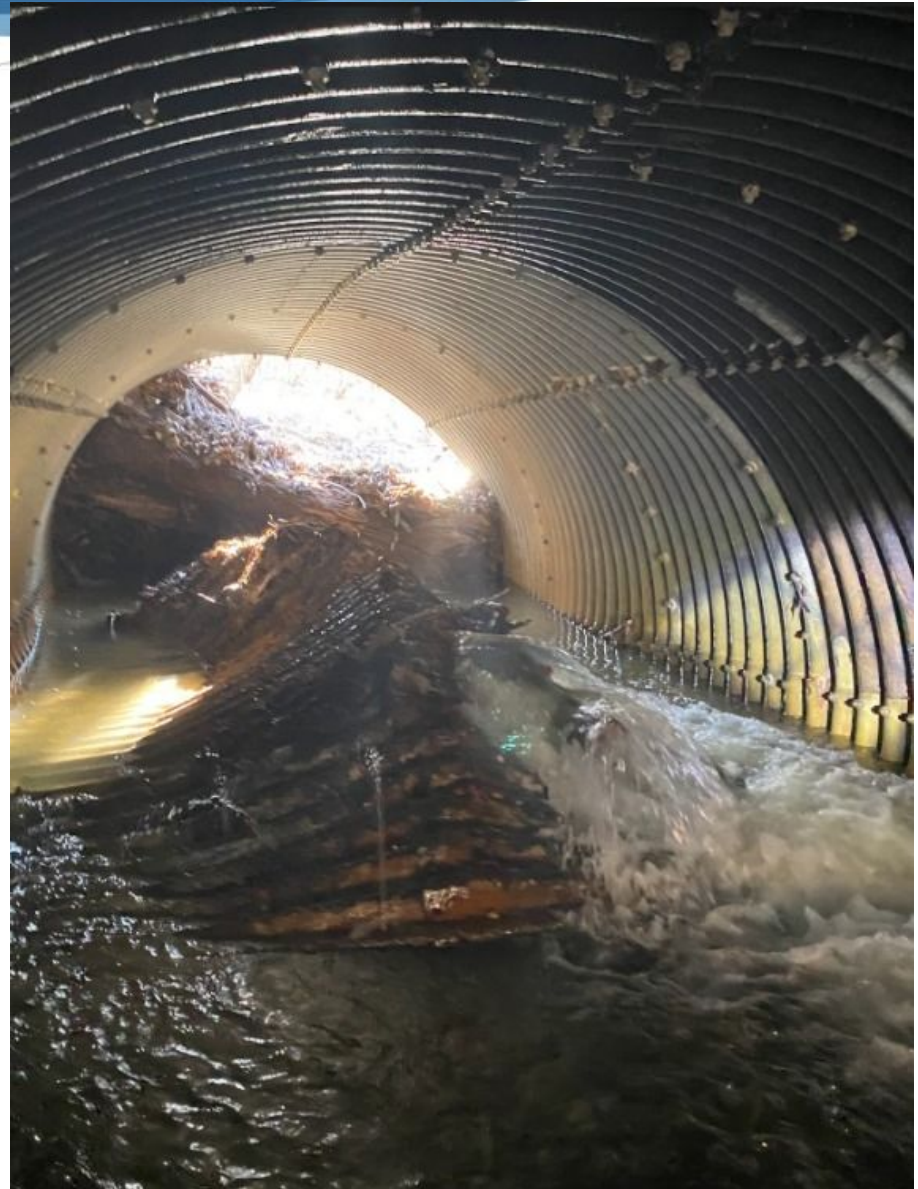
Anne Arundel County Permitted Nitrogen Discharge Limits



Anne Arundel County Permitted Phosphorus Discharge Limits



SANDS ROAD - BEFORE (PATUXENT WATERSHED)



SANDS ROAD - AFTER



STORMWATER POND RETROFIT - COUNTY OFFICE COMPLEX



DRY POND RETROFIT - SEVERN WATERSHED









DAIRY FARM OUTFALL - BEFORE



DAIRY FARM OUTFALL - AFTER





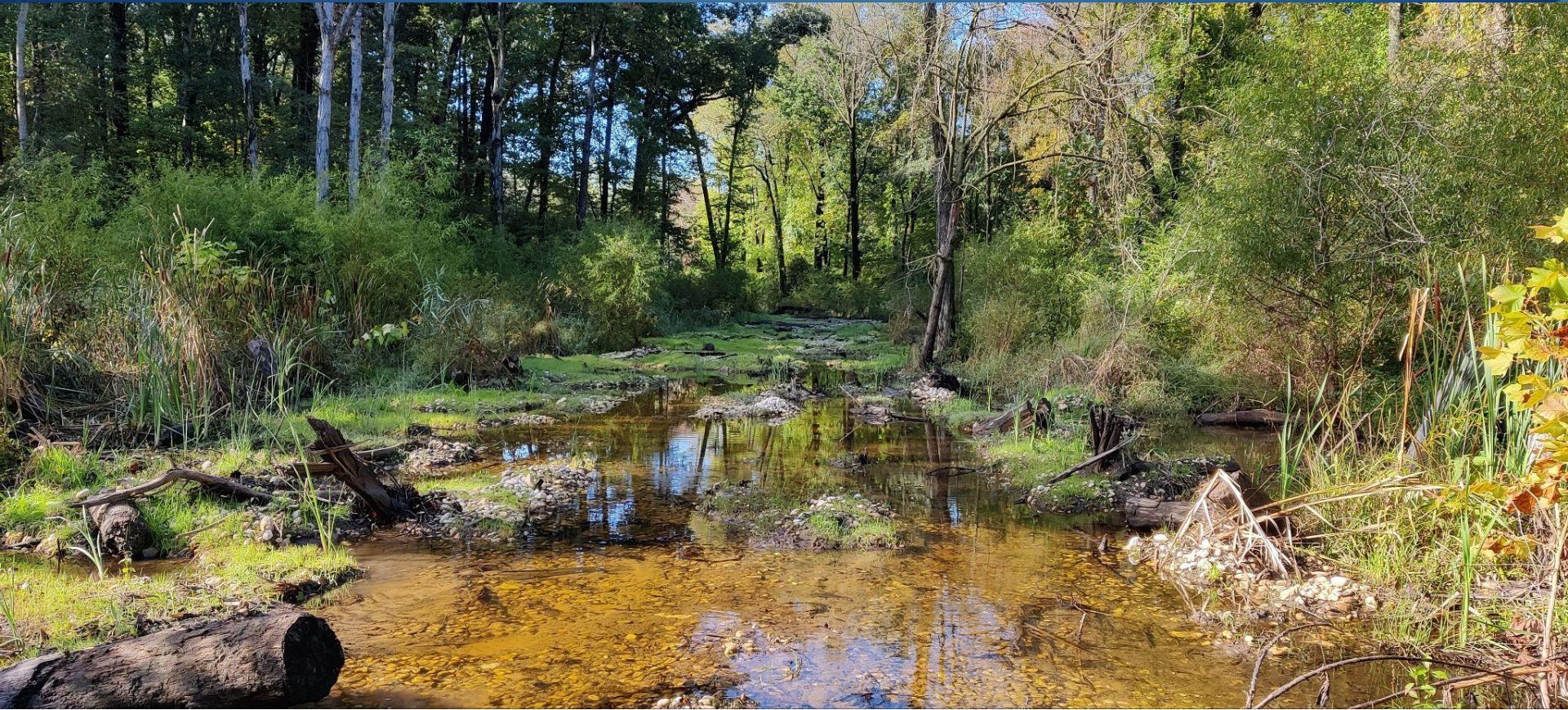
CAT BRANCH - BEFORE (EXPOSED SEWER LINE)



CAT BRANCH - AFTER











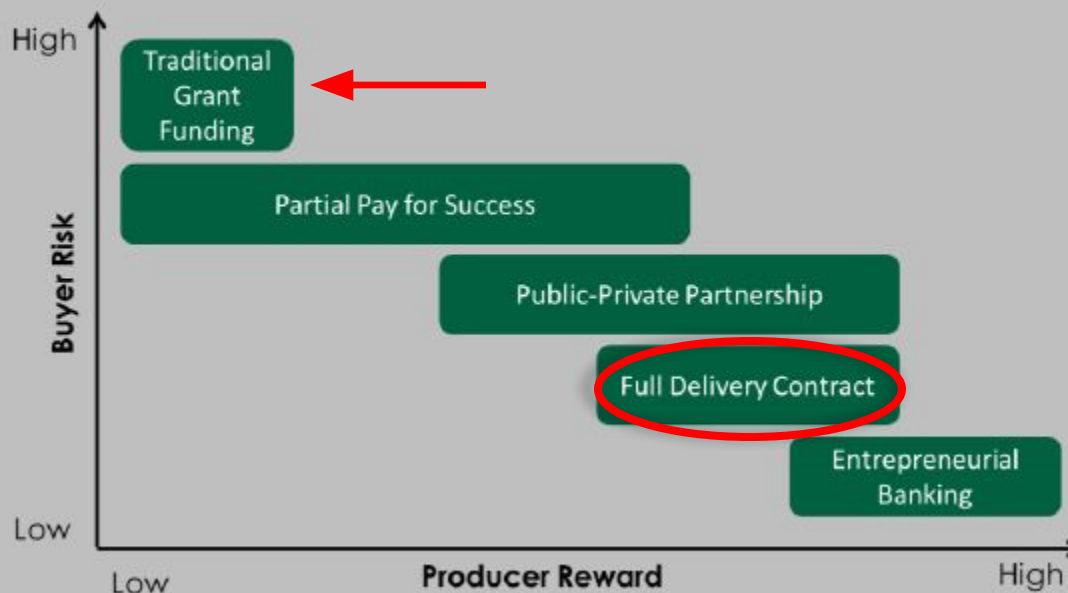




Unleashing Environmental Markets

PAY FOR PERFORMANCE CONTRACT MECHANISMS FOR STORMWATER MANAGEMENT

PAY FOR SUCCESS STRATEGY RISK-REWARD SPECTRUM



FISHING CREEK FARMS LIVING SHORELINE



Before Construction – December 2018



Immediately After Construction – October 2020



KYLE POINT LIVING SHORELINE



HOLLY BEACH FARM LIVING SHORELINE



I97 - SEPTIC TO SEWER



HERITAGE HARBOR STREAM



Costs Per Acre Treated

Practice	Cost per Acre Treated
Bioretention retrofits	~\$200k
Stormwater pond retrofits	~\$75k
Stream restoration	~\$50k
Full Delivery award, Cycle 1	~\$16k
Full Delivery award, Cycle 2	~\$15k
Full Delivery award, Cycle 3	~\$21k
Full Delivery award, Cycle 4	~\$26k
Full Delivery award, Cycle 5	~\$12k
Full Delivery award, Cycle 6	~\$9k

Treated acres provided through the Full Delivery award:

Cycle 1: ~131 for \$2.1M

Cycle 2: ~113 for \$1.7M

Cycle 3: ~255 for \$5.4M

Cycle 4: ~115 for \$3M

Cycle 5: ~137 for \$1.6M

Cycle 6: ~219 for \$2M



Image via Delaware Sea Grant

Anne Arundel County Watershed Restoration Grant Program Projects – FY20



Ulmstead Community Park Rain Garden
Awardee: Ulmstead CIA



Loch Haven Living Shoreline
Awardee: Loch Haven Civic Association



Broad Creek Park Stream Restoration
Awardee: Arundel Rivers Federation



Beards Creek/Annapolis Landing Stream Restoration
Awardee: Arundel Rivers Federation



West Severna Park Living Shoreline
Awardee: Severn River Association



St. Dixon/Central Sod Farm Restoration
Awardee: Severn Riverkeeper



Broad Creek/Camp Woodlands Restoration
Awardee: Arundel Rivers Federation



ULMSTEAD BIORETENTION



ST. DIXON FARM RSC









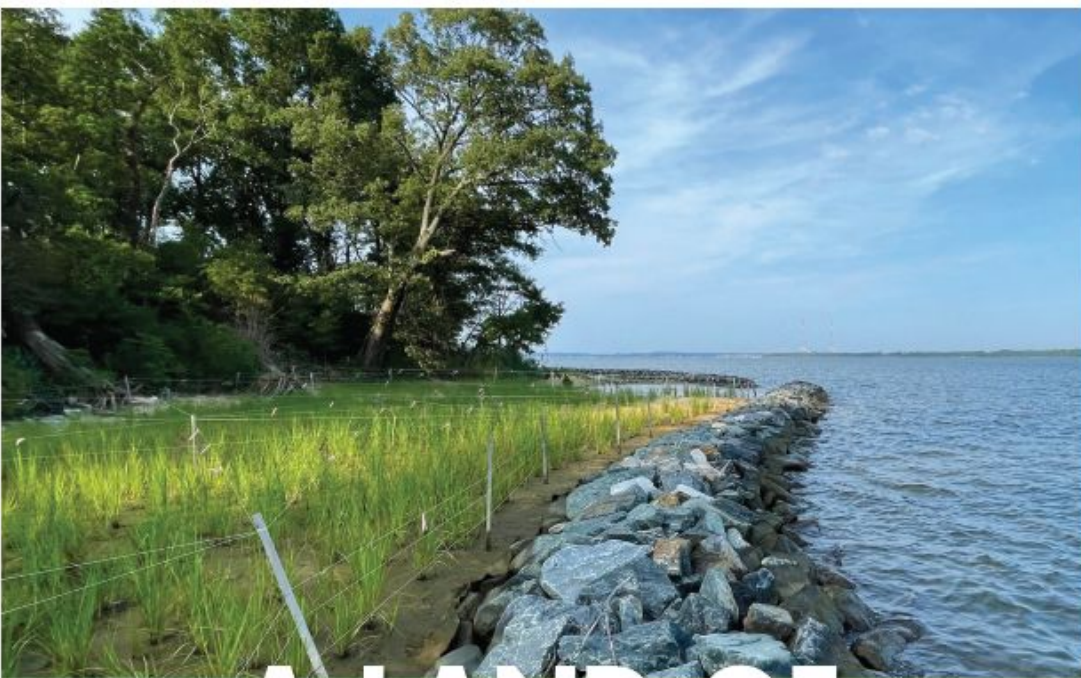


Floodprone Property Acquisition Program



(Photo courtesy Capital Gazette)





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Anne Arundel County
Bureau of Watershed
Protection
& Restoration

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FY 2022 REPORT



DPW & YOU

— Making a difference, together —



Questions?

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