

# Using Public Dollars to Leverage Private Implementation: Lessons from 5 Years of MS4 Program Management in Anne Arundel County

Anne Arundel County Department of Public Works  
CWEA Conference, December 11, 2019



[www.aarivers.org](http://www.aarivers.org)



# The County's Regulatory Mandates

## MS4 Permit

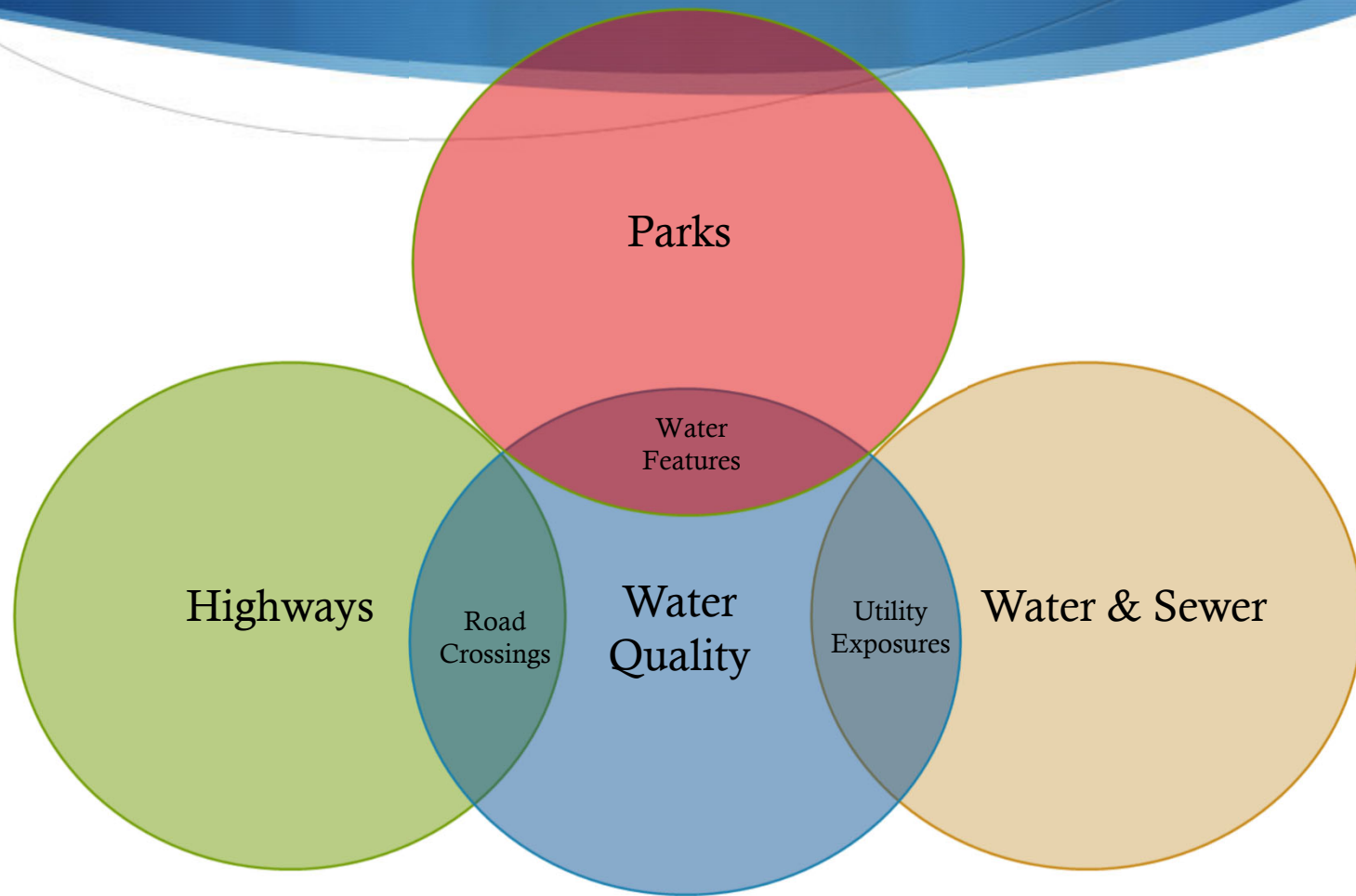


- ◆ Municipal Separate Storm Sewer System (MS4) Permit (issued by MDE).
- ◆ Issued to each county (and Baltimore City in the state) with a population over 100,000.
- ◆ 5-year cycle, newest permit issued in February 2014.
- ◆ Requires treatment of 20% of the untreated impervious area in the county during the permit cycle. (4,996 acres)



# Stretching Dollars Further

# Using Public Dollars to Leverage Public Implementation









A photograph of a stream with a stone-lined bank and a forest in the background. The stream flows from the background towards the foreground, with a stone-lined bank on the left and a dirt bank on the right. The water is clear and reflects the surrounding greenery. The background is a dense forest of trees.

# RUTLAND ROAD FISH PASSAGE

WINNER  
*MdQI*  
**2019**  
Green/Sustainability  
Environmental  
Award





















*Bedford Springs, PA*

# Anne Arundel County Restoration Grant Program

- Open to non-profit partners
- Administered through CBT ([www.cbtrust.org](http://www.cbtrust.org))
- Through 5 years, we have awarded approximately \$4.2 million in grants to local watershed organizations and leveraged approximately \$6.4 million in additional, outside dollars.



# Anne Arundel County Restoration Grant Program

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Cycle	Award Amount	Leverage	\$/Acre
1	\$444,108	\$572,428	\$14,125
2	\$900,000	\$1,135,000	\$41,000
3	\$1,000,000	\$645,301	\$16,900
4	\$671,000	\$862,294	\$12,900
5	\$1,117,528	\$3,089,548	\$9,391



Avalon Shores Fire Department Stormwater Wetland  
 Awardee: West/Rhode Riverkeeper



Camp Woodlands Pre-Treatment Retrofit  
 Awardee: South River Federation



Annapolis Harbour Center Stream Restoration  
 Awardee: South River Federation



Hillsmere Bioretention Expansion—Pool  
 Awardee: South River Federation



Hillsmere Bioretention Expansion—Kayak Launch  
 Awardee: South River Federation

## Anne Arundel County Watershed Restoration Grant Program Projects



Randell Road Stormwater Mitigation  
 Awardee: Round Bay Community Association



Bonaparte Road Bioswale and CPO  
 Awardee: Herald Harbor Citizens Association





**St. Anne's School of Annapolis Rain Garden**  
 Awardee: South River Federation



**Empowering Believers Church Rain Garden**  
 Awardee: Alliance for the Chesapeake Bay



**Broad Creek Stream Restoration**  
 Awardee: South River Federation



**Coventry Court Dry Channel RSC**  
 Awardee: Chesapeake Rivers Association



**Tri-State Marine Stormwater Retrofit**  
 Awardee: South River Federation

Anne Arundel County  
 Watershed Restoration Grant  
 Program Projects – FY16



**Killarney House—Beards Creek Community BMP**  
 Awardee: South River Federation



**Winchester on the Severn Dry Channel RSC**  
 Awardee: Chesapeake Rivers Association



[CBTrust.org](http://CBTrust.org) • [BayPlate.org](http://BayPlate.org)



## Volunteers Undertake Cattail Creek Restoration



The construction team led the Berrywood Community Association through biweekly progress reviews of the site.

PHOTO COURTESY OF BOB ROYER

Posted Friday, March 22, 2019 4:39 pm

# Reef balls find new role as part of Edgewater living shoreline



By RACHAEL PACELLA

CAPITAL GAZETTE | AUG 15, 2019 | 5:15 AM



Workers from the Resource Restoration Group place reef balls along the shore of Glebe Bay in Edgewater on August 14. (Rachael Pacella/Capital Gazette)

ADVE







AUDIO

# To restore a degraded stream, a Maryland project took a creative, low-carbon approach

The project revitalized a stream and forest near the Chesapeake that had been damaged by hogs.

01 : 30  
MIN SEC



A low-carbon approach to natural restoration: The project revitalized a stream and forest near the Chesapeake that had been damaged by hogs.

00:00:00

libsyn



Monday, June 17, 2019

## TOPICS

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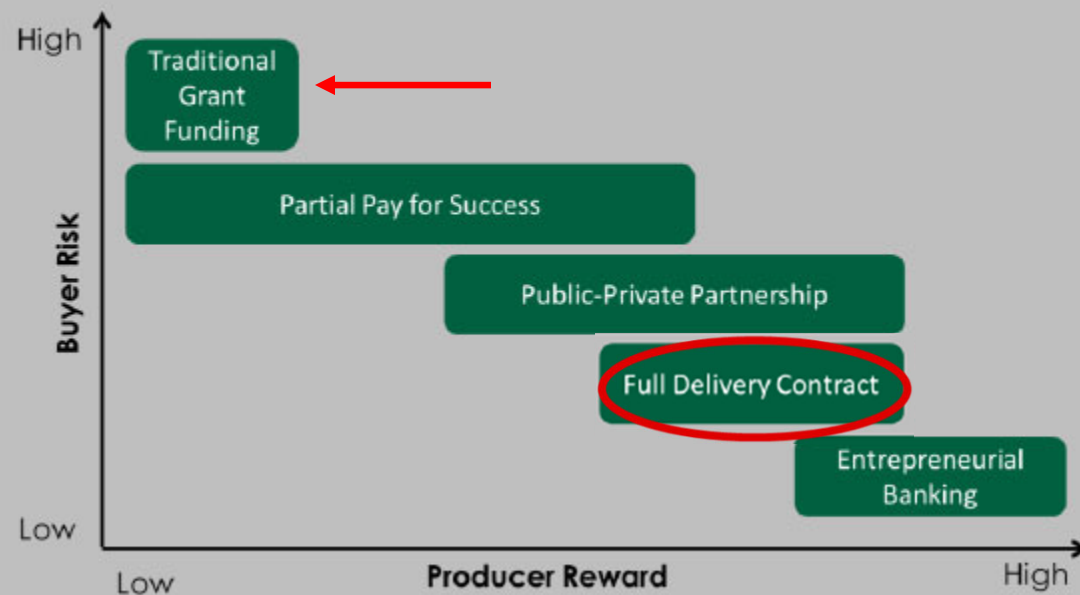
Damaged stream prior to restoration. (Photo: Courtesy of Biohabitats)



## TECHNICAL BRIEF

# PAY FOR PERFORMANCE CONTRACT MECHANISMS FOR STORMWATER MANAGEMENT

## PAY FOR SUCCESS STRATEGY RISK-REWARD SPECTRUM





# Full Delivery of Water Quality Improvements Contracting

- Created a \$5 million “pay for performance” project in the FY17 budget, placed an additional \$5 million in FY18. Received \$4 million in FY19. Rolled funding into FY20.
- Sought “turnkey,” permanently protected (e.g., perpetually eased, transferred to County ownership) practices that the County can count towards MS4/TMDL compliance.
- Thus far have locked in the treatment of ~500 impervious acres for \$10.9 million.
- 5 proposals just received for our 2019 solicitation.

# Costs Per Acre Treated

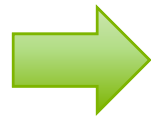
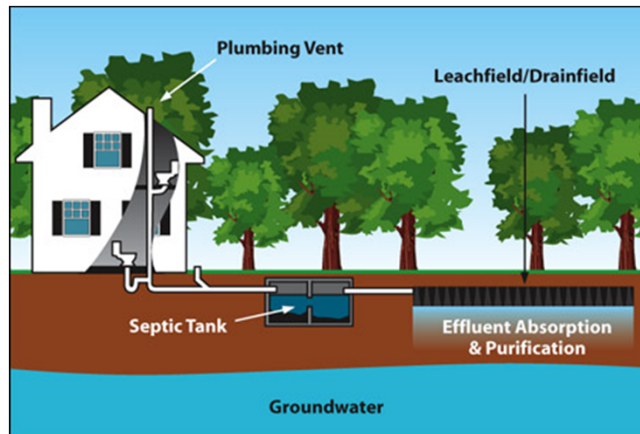
Practice	Cost per Acre Treated
Bioretention retrofits	~\$200k
Stormwater pond retrofits	~\$75k
Stream restoration	~\$50k
Full Delivery award, Cycle 1	~\$16k
Full Delivery award, Cycle 2	~\$15k
Full Delivery award, Cycle 3	~\$21k

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







# Lessons Learned So Far

- ◆ Clearly identify County and other partner projects in the pipeline as off limits to the solicitation.
- ◆ Landowners can be fickle.
- ◆ Make sure crediting rules are clear. Beware attempts to “game” crediting, such as proposing projects where they aren’t necessary.
- ◆ Discourage creative attempts to credit, at least in terms of determining a floor for crediting.
- ◆ A technical review component, with reviewers with technical training, is absolutely critical. Lots of risk to the awarding entity without it.
- ◆ Savvy bidders may re-calibrate previous proposals based on earlier terms of award.



# Pros of the Full Delivery Approach

- ◆ The ability to engage manageable components of a program at a time (as opposed to committing all program resources in a single direction at one point in time).
- ◆ Scalable based on success (or failure).
- ◆ Outsources virtually all risk to the bidder (loss of time is primary risk to solicitor).
- ◆ Appears to be a viable strategy to drive down costs, if credit generating activity is sufficiently broad.
- ◆ Shakes up markets which may have otherwise become complacent.

# Cons of the Full Delivery Approach

- ◆ Potential loss of design control.
- ◆ Crediting “looseness” can result in “lowest common denominator” work unless technical review is sufficiently rigorous.
- ◆ May take multiple iterations to identify a very refined solicitation (but you can learn from others!)



# Cycle 1 Spinoff (Solicitation in 2016)

## The Southern Maryland Chronicle

Southern Maryland's News Headquarters



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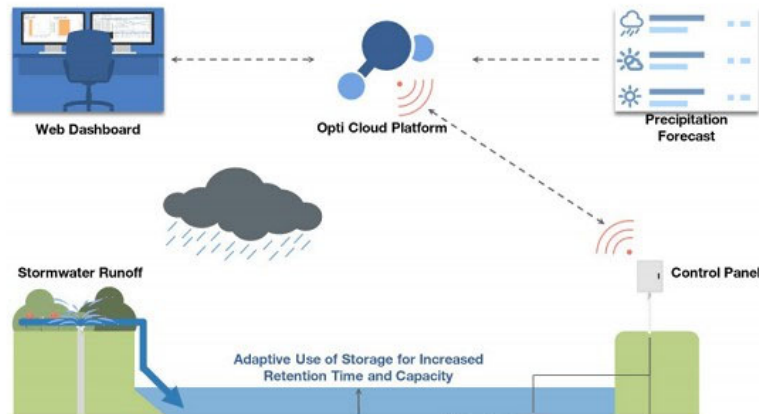
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### Maryland forges Public/Private partnership for Smart Ponds to help protect the Chesapeake Bay

📅 November 19, 2019

#### Latest News



#### SoMd Weat Monday, De 2019

📅 December 8, 2019

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# Cycle 1 Spinoff

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### Company's payoff comes when stream restoration work is proven effective

Unique financing approach has led to large-scale projects in northeastern MD

By Timothy B. Wheeler on October 10, 2019

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Like two kids playing in the mud, a pair of excavators carve a new channel for an eroding stream on a farm in Cecil County, MD. One hulking machine picks up a tree trunk, pivots and passes it across the gash in the ground. The other grabs it and deposits it in the bank.

Across the Chesapeake watershed, degraded streams are getting similar facelifts in an attempt to curb the flow of nutrients and sediment fouling the troubled Bay.

What's unusual about the Cecil County stream work is its scale — and its financing.

While most restoration projects tackle up to a few thousand feet of stream at a



Troy Anderson of Ecosystem Investment Partners visits a farm on Little Elk Creek in Cecil County, MD, where his company's stream restoration work was getting



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# Cycle 2 Spinoff



# What Does the Future Hold?



- Increased MS4 restoration requirements.
- Climate resilience adaptation, including infrastructure protection and retreat planning.
- New BMPs!?!
- Improved water quality!





*Photo by Jay P. Fleming*

# Questions?

Erik Michelsen

Administrator

Anne Arundel County Watershed  
Protection & Restoration Program

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[aarivers.org](http://aarivers.org)