

Chesapeake Bay Riparian Forest Buffer Outcomes Fund

Aug 28, 2023



ENVIRONMENTAL POLICY
INNOVATION
CENTER

Agenda

1. Pay for Success
2. Overview of proposed fund
3. Buyers, outreach, agreements and contracting
4. Q&A

Benefits of RFBs

In addition to nutrient reduction...

- Wildlife habitat (coldwater fish, migratory birds)
- Drinking water protection
- Carbon
- Flood resilience
- Property values
- Other Chesapeake Bay Program Management Strategies

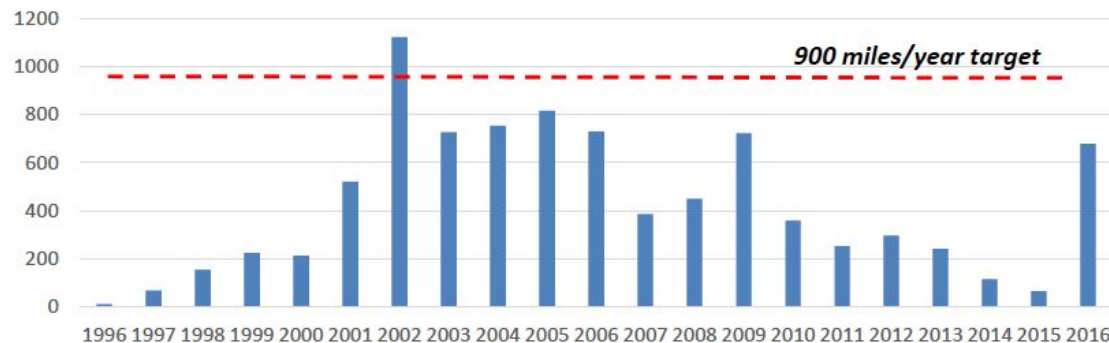
Drivers

- TMDL & WIP Goals
- MS4 Permits
- Voluntary Efforts
- MD CFA/CWCA
- PA CWPP
- & Others!

WIP III Goals and Progress by State for Riparian Forest Buffers (acres)

	DE	MD	NY	PA	VA	WV
Cumulative total (acres)	143	17,193	2,822	11,659	3,538	2,820
WIP III goal	692	19,821	8,743	96,971	58,375	5,898
Progress	21%	87%	32%	12%	6%	48%
Acres needed to reach goal	549	2,628	5,921	85,312	54,837	3,078

Miles of Riparian Forest Buffers Planted in the Chesapeake Bay Watershed, 1996-2016



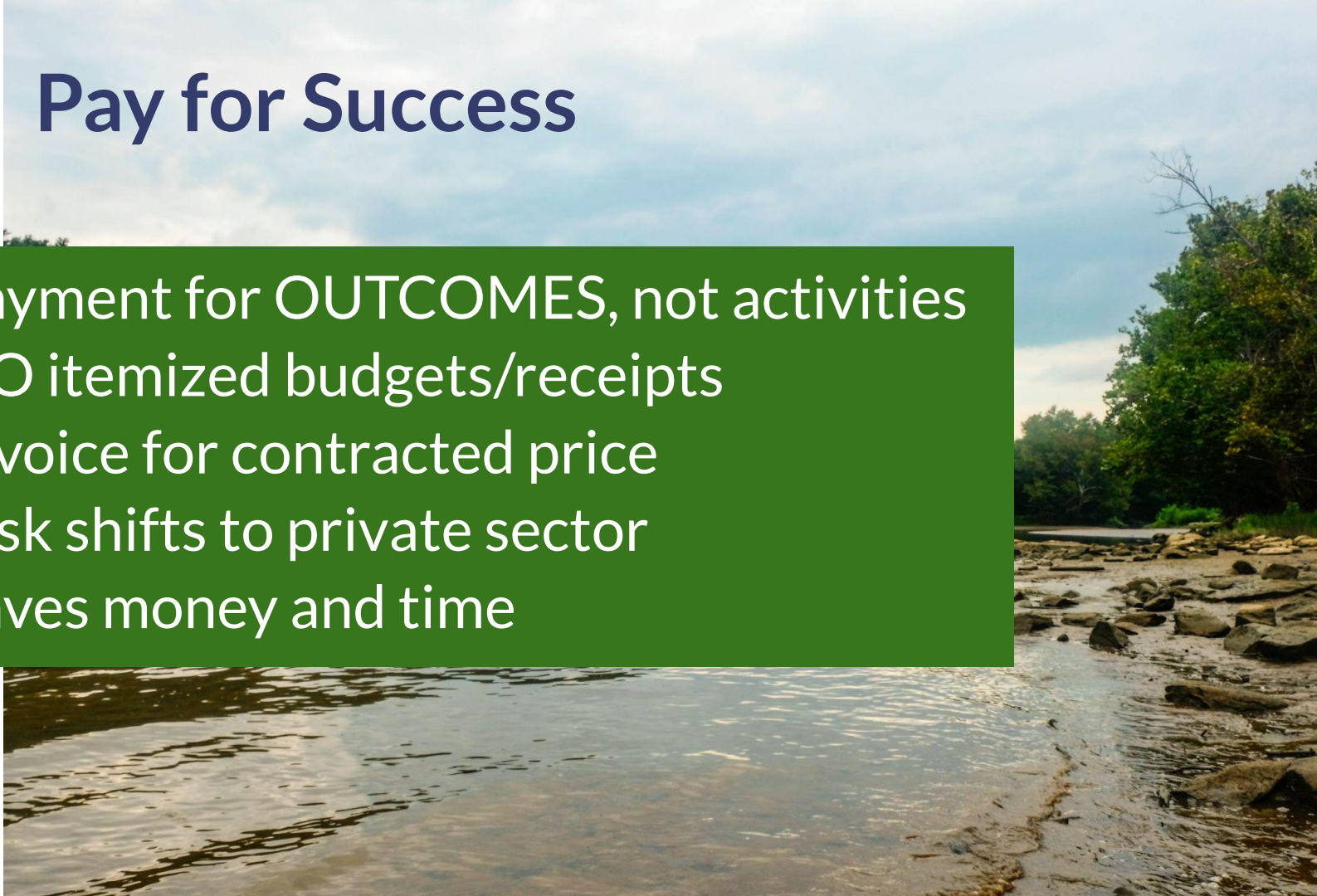
Sources:

Table: CAST Model

Graph: [CBP riparian forest buffer Management Strategy](#)

Pay for Success

- Payment for OUTCOMES, not activities
- NO itemized budgets/receipts
- Invoice for contracted price
- Risk shifts to private sector
- Saves money and time



Maryland's Clean Water Commerce Program

1. Request for proposals
2. Entities bid \$/lb N
 - a. Based on model
 - b. Include co-benefits
3. State selects projects
4. Verification
5. Payment
6. Cleaner water



FY19 Applications Received / Projects Selected

FY19 Proposals Received:

Applicant	Nitrogen (\$/Lb/yr)	Phosphorus (\$/Lb/yr)	Sediment (\$/Ton/yr)	Evaluation Results
HGS, LLC (a RES company)	\$105.12	\$144.34	\$552.80	Selected
OptiRTC, Inc.	\$265.00	\$1,535.00	\$1,995.00	Not Selected

- 2 proposals received; both non-point source
- Selected the HGS, LLC project.
- Up to \$4,409,300 in grant funding for HGS, LLC to restore 6,236 linear feet of degraded stream channel.
- HGS is providing 20 years of monitoring and maintenance activities and all restoration areas are projected in perpetuity by deed restrictions
- MDE provides annual payments for the purchase of verified annual reductions of nitrogen, phosphorous, and sediment based on the agreed upon unit prices.

Reduction Type	Estimated Units/Year		Delivery Factor	Unit/Year Delivered	Price per Unit/Year	Total Price/Year
Nitrogen	1,626.00	Lbs/yr	0.43	699.18	\$105.12	\$73,497.80
Phosphorus	749.00	Lbs/yr	0.68	509.32	\$144.34	\$73,515.25
Sediment	129.00	Tons/yr	1.03	132.87	\$552.80	\$73,450.54

Total Annual Price	\$220,463.59
Practice Useful Life (years)	20
Total Over 20 Years	\$4,409,271.73



Maryland
Department of
the Environment

Winters Run Stream Restoration



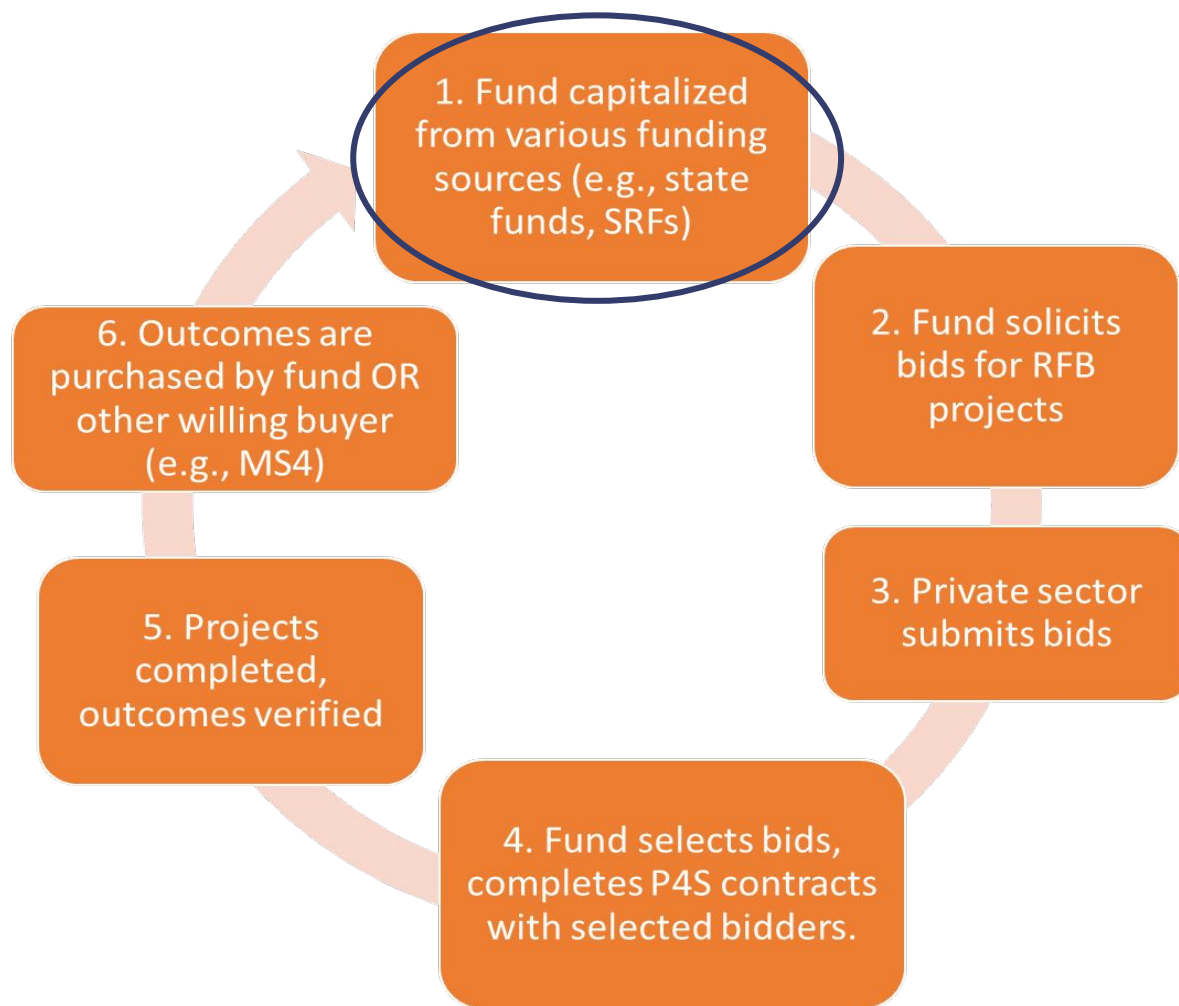


Scoring and Selecting \$21M of Outcomes

Clean Water Commerce Act FY2023 Solicitation

Primary Category	Applicant Name	Project Name	Environmental Practice	Term (Yrs)	Nitrogen Reduction	Total Points	Amount Requested	Total Funding	Comments
Agriculture	ShoreRivers, LLC	Carter	Stream Restoration/Wetland Creation	20	\$ 16.31	100	\$8,280,000	\$8,280,000	MDE Funded - \$7M in "agricultural" carve out plus \$1.28M of "general" funding
Agriculture	ShoreRivers, LLC	Lowe Farm DWM	Drainage Water Mgmt (NRCS 554)	10	\$ 44.38	100	\$395,503	\$395,503	MDE Funded - "general" funding
Agriculture	Ecotone, LLC	Talisman Living Shoreline	Shoreline Mgmt	20	\$ 29.45	99	\$3,949,245	\$3,949,245	MDE Funded - "general" funding
Agriculture	Conservation Innovation Fund	AGgrow	Alternate Crop	10	\$ 19.38	88	\$5,172,520	\$1,375,251	MDE - partial funding - "non-ag landscape"
Agriculture	The Mill	The Mill	DAS Advanced Nitrogen Mgmt	10	\$ 19.50	85	\$5,000,000		
Other	Washington Suburban Sanitary Comm	Piscataway WRRF	Nutrient Reduction Process	10	\$ 44.50	80	\$8,330,400		
Agriculture	ShoreRivers, LLC	RHHome DWM	Drainage Water Mgmt (NRCS 554)	10	\$ 47.51	75	\$116,831	\$116,831	EPIC Funded - "agricultural"
Agriculture	Farm Creek Oyster Co, LLC	Farm Creek	Oyster Aquaculture	15	\$ 30.00	70	\$89,349	\$89,349	EPIC Funded - "agricultural"
Other	Washington Suburban Sanitary Comm	Western Branch WRRF	Nutrient Reduction Process	10	\$ 44.50	64	\$3,194,880		
Other	Washington Suburban Sanitary Comm	Seneca WRRF	Nutrient Reduction Process	10	\$ 44.50	64	\$2,089,410		
Other	Washington Suburban Sanitary Comm	Parkway WRRF	Nutrient Reduction Process	10	\$ 44.50	63	\$4,392,860		
Other	Washington Suburban Sanitary Comm	Damascus WRRF	Nutrient Reduction Process	10	\$ 44.50	61	\$161,050		
Agriculture	ShoreRivers, LLC	Ellwanger DWM	Drainage Water Mgmt (NRCS 554)	10	\$ 55.28	60	\$131,943	\$131,943	EPIC Funded - "agricultural"
Agriculture	ShoreRivers, LLC	Turner Farm DWM	Drainage Water Mgmt (NRCS 554)	10	\$ 56.43	60	\$422,267	\$422,267	MDA Funded - "agricultural"
Other	Anne Arundel County	Cox Creek WRF	Nutrient Reduction Process	10	\$ 50.00	55	\$8,750,000		
Other	Anne Arundel County	Mayo Pumping Station	Nutrient Reduction Process	10	\$ 50.00	55	\$3,646,000		
Agriculture	Madhouse Oysters, LLC	Madhouse Oysters	Oyster Aquaculture	20	\$ 52.00	50	\$375,355	\$373,355	EPIC Funded - "agricultural"
Non-Ag LS	City of Rockville	Potomac Woods Pond	SWM Facility Retrofit	10	\$ 63.50	44	\$84,231	\$84,231	MDE Funded - "non-ag landscape"
Non-Ag LS	City of Rockville	Aintree Pond	SWM Facility Retrofit	10	\$ 63.50	43	\$109,948	\$109,948	MDE Funded - "non-ag landscape"
Non-Ag LS	City of Rockville	College Gardens	SWM Facility Retrofit	10	\$ 63.50	43	\$107,184	\$107,184	MDE Funded - "non-ag landscape"
Non-Ag LS	Ecosystem Planning & Restoration	UT South River	Stream Restoration	10	\$ 96.85	37	\$1,398,538	\$1,398,538	MDE Funded - "non-ag landscape"
Non-Ag LS	Robert Carpenter	Cooks Point	Living Shoreline Restoration	11	\$ 190.46	36	\$2,910,405	\$300,100	MDE - partial funding - "non-ag landscape"
Agriculture	HGC, LLC	Lower Cedar Point	Living Shoreline	12	\$ 1,400.05	37	\$6,666,492		
Agriculture	HGC, LLC	Long Green Creek	Stream & Wetland Restoration	10	\$ 815.00	36	\$4,572,476		
Agriculture	HGC, LLC	Carroll Creek	Stream & Wetland Restoration	12	\$ 1,575.20	35	\$2,137,864		
Agriculture	JMT (for Easterseals-Camp Fairlee)	Campe Fairlee	Wetland Restoration/Reforestation	10	\$ 715.00	35	\$3,911,050		
Agriculture	Agricultural Restoration Services, LLC	Meadow View Farms	Denitrifying Bioreactor	20	\$ 90.00	35	\$2,340,000		

Chesapeake Bay Riparian Forest Buffer Outcomes Fund



Funding

Local

- Bonds
- FCA fee-in-lieu
- MS4 funds

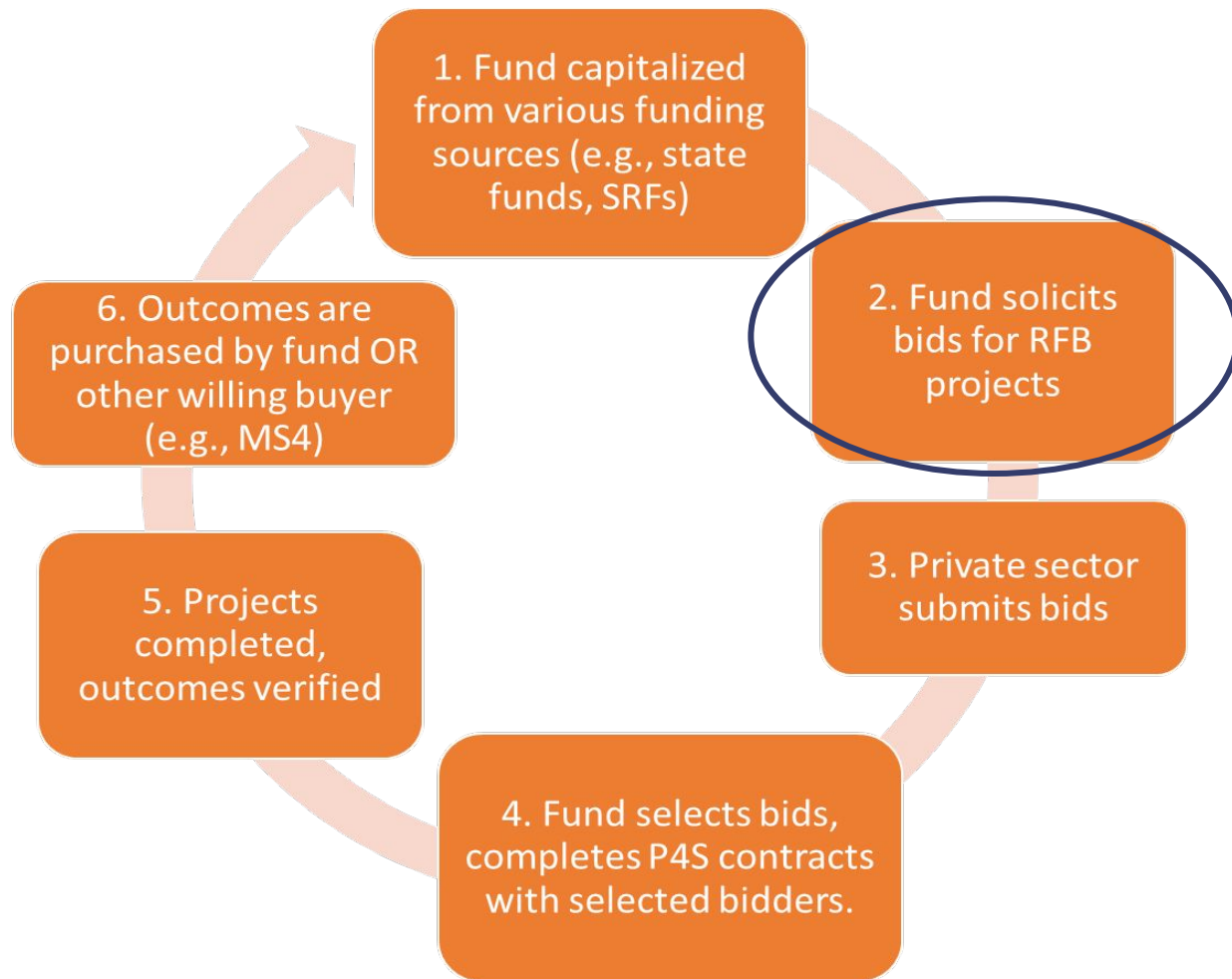
State

- Chesapeake & Atlantic Coastal Bays Trust Fund
- State ARPA funds
- State of MD Reforestation Fund
- Clean Water Commerce Act
- Bay Restoration Fund
- Clean Streams Fund

Private Foundations

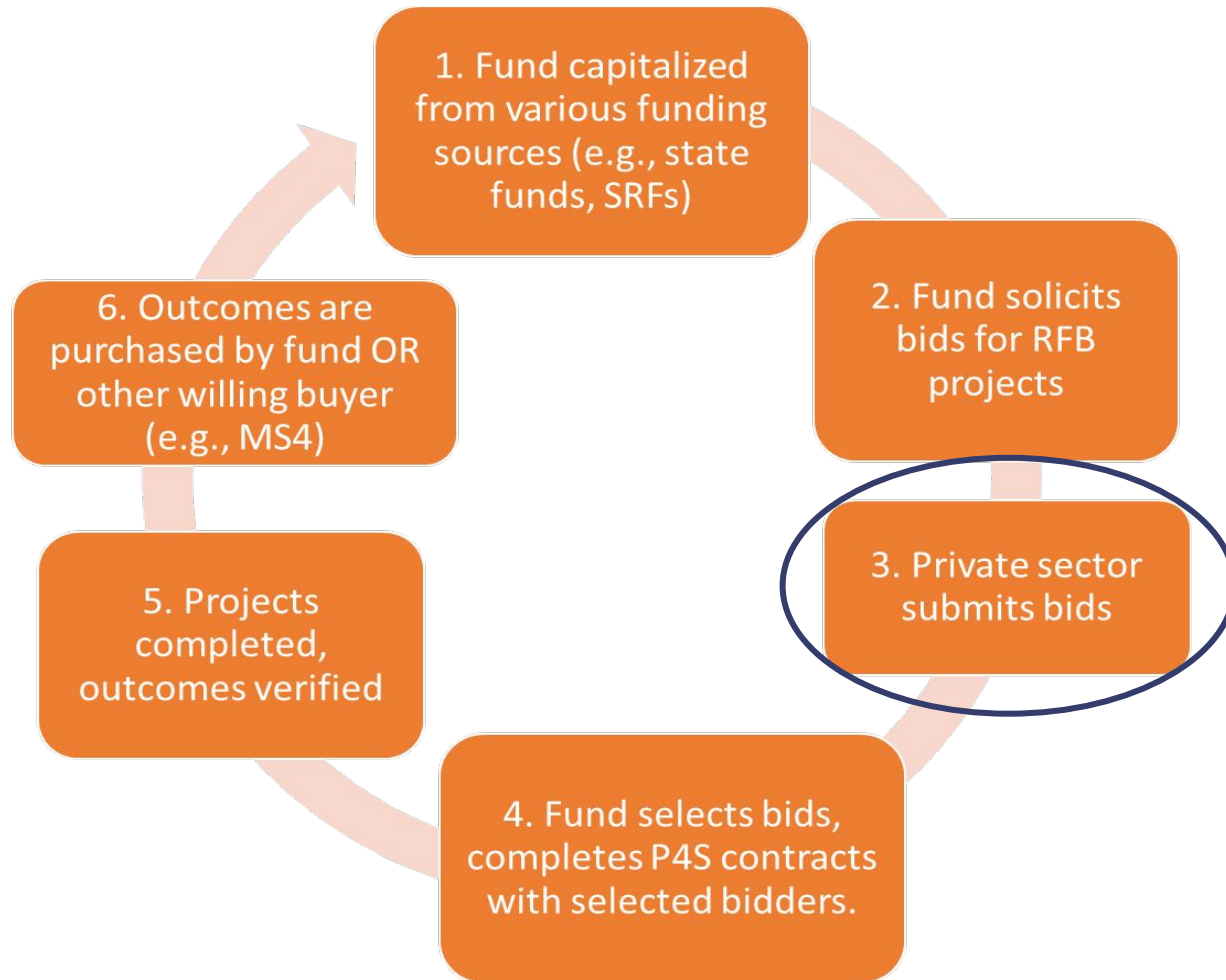
Federal

- IJJA
- IRA
- EPA programs
- Greenhouse Gas Reduction Fund (EPA)
- NFWF
- Chesapeake Watershed Investments for Landscape Defense (Chesapeake WILD)
- RCPP
- SRF (via states)
- FEMA grants

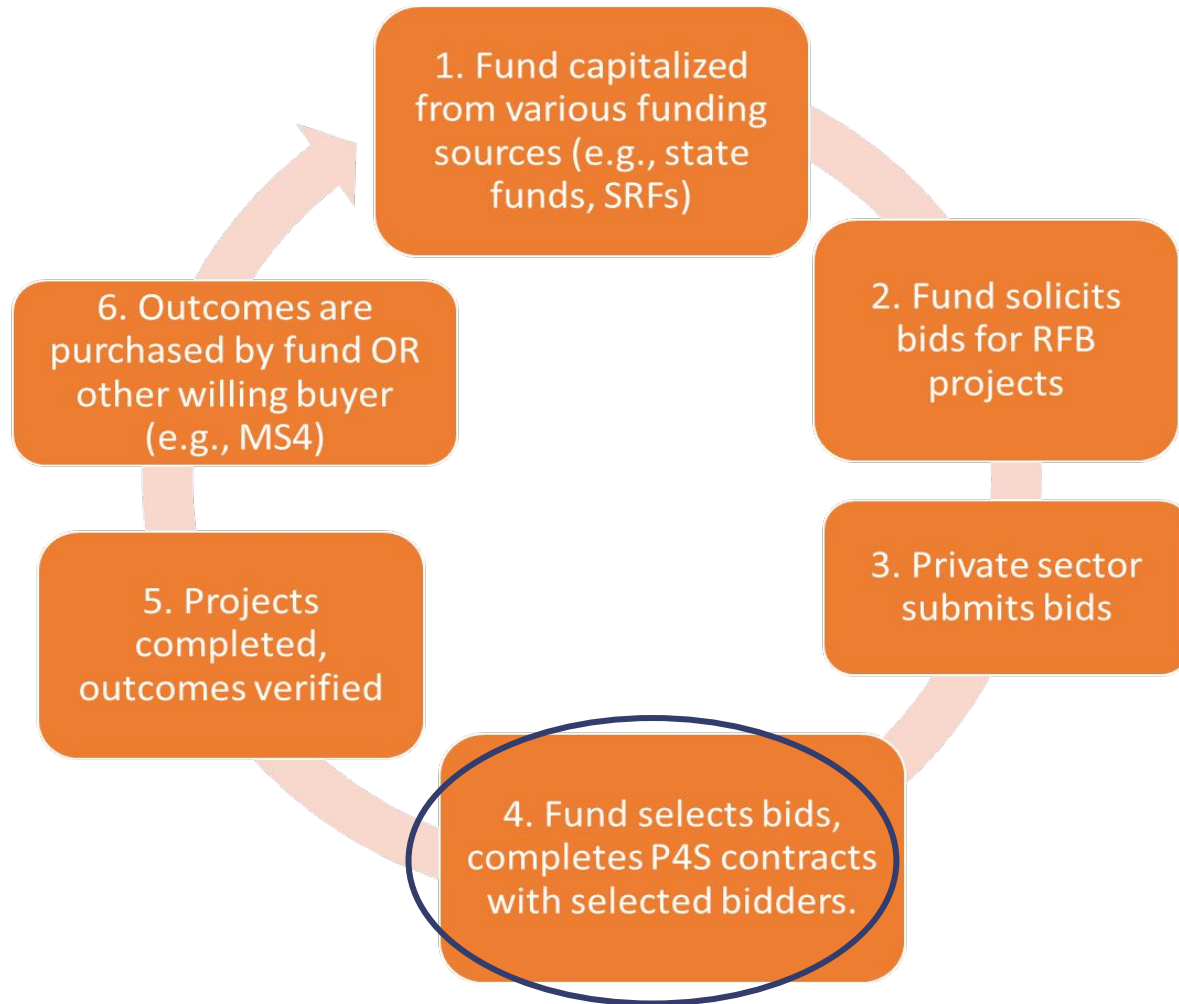


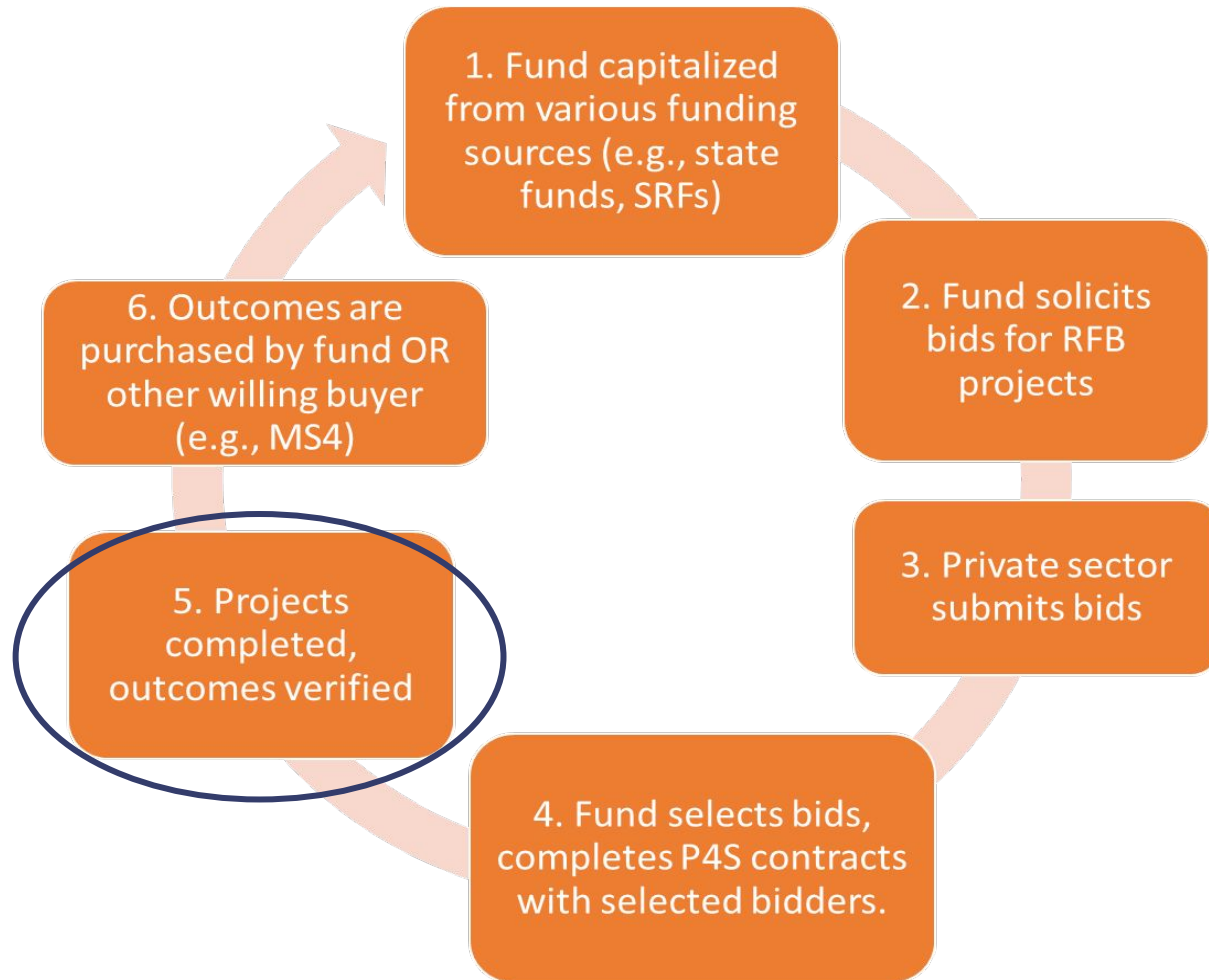
Outcome Definition & Standard

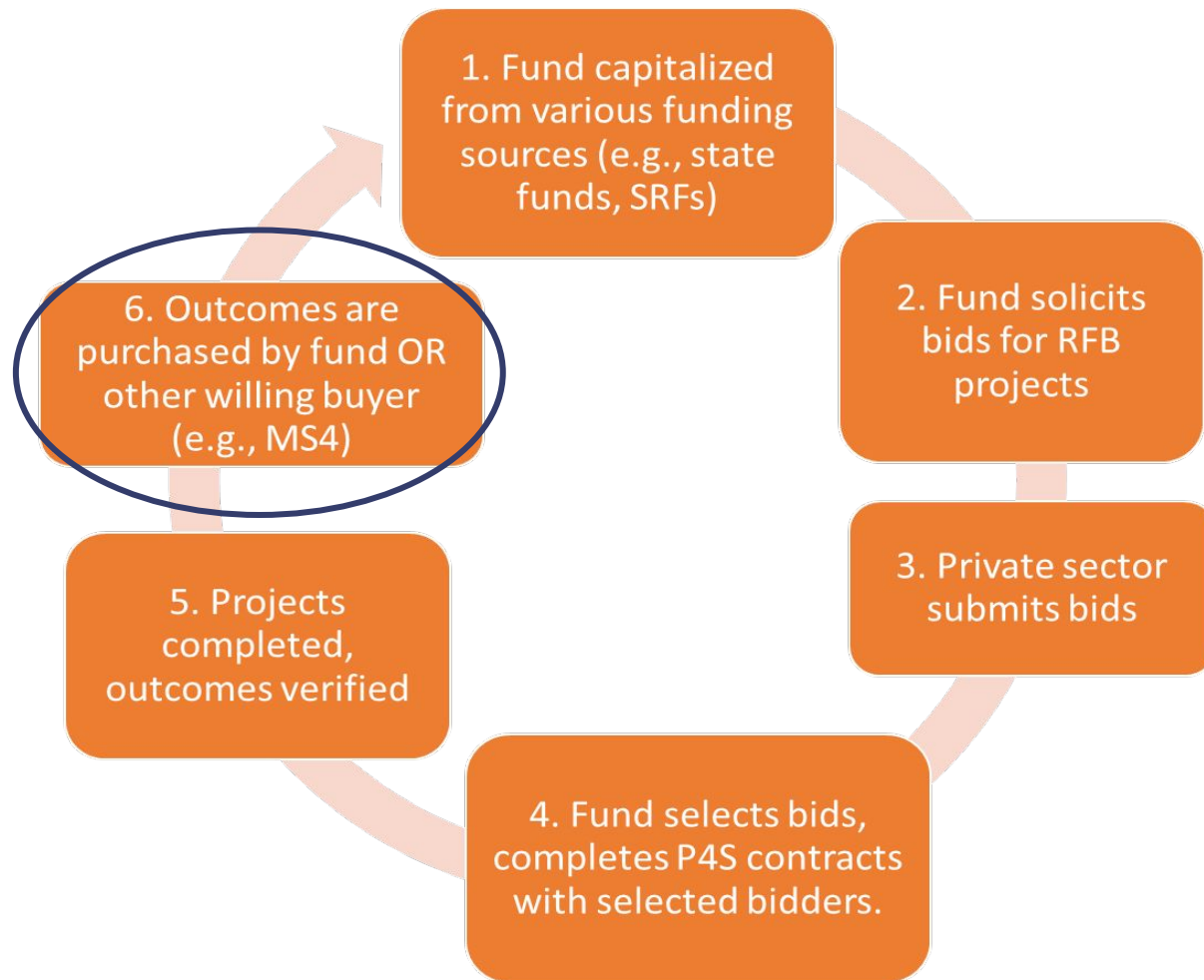
- Outcome = ***Acres of riparian forest buffer established***
- Chesapeake Bay Program Guide - what “counts” toward Bay Program goals
 - Rural: A-12. Forest Buffers and Grass Buffers
 - Urban: D-7: Urban Tree Planting BMPs
- Recommended **buffer width of 100 feet, 35-foot minimum buffer.**
- Verification of outcomes should follow the [Chesapeake Bay Program Forestry Workgroup’s BMP Verification Guidance](#).



Solicitation Scoring Criteria		Max Points (out of 100)
Cost Effectiveness		50
Bidder Qualifications		20
Co-Benefits	Environmental Justice <ul style="list-style-type: none">80+ Socioeconomic Score on MDE EJ Tracking ToolUSDA: historically underserved landowner	10
	Climate change <ul style="list-style-type: none">flood control and mitigation; disaster resilience	10
	Water quality <ul style="list-style-type: none">prioritize impaired waterways	10







Fund Management

National / regional:

- Chesapeake Conservancy
- NFWF
- Private investment company
- U of MD Environmental Finance Center

MD-focused:

- MARBIDCO (MD Agricultural & Resource-Based Industry Development Corporation)
- MDE
- MDA

Buyers' Options

Direct Contract with Bidder

Transfer Contract from Fund

Direct Purchase from Fund

Timing

Day 0

Day 0 -> end Yr 5

After final payment (yr 5)

Risk to Buyer

Highest

Variable

Lowest

Level of effort

Highest

Variable

Lowest

Payments

All payments to project developer

Pro rata based on contracted schedule

Single payment to fund

Who Earns \$.01

Project developer

Project developer and Fund

Fund

Buyers' Options

**Direct Contract with
Bidder**

**Transfer Contract from
Fund**

**Direct Purchase from
Fund**

Timing

Day 0

Day 0 -> end Yr 5

After final payment (yr 5)

Risk to Buyer

Highest

Variable

Lowest

Level of effort

Highest

Variable

Lowest

Payments

All payments to
project developer

Pro rata based on
contracted schedule

Single payment to fund

Who Earns \$.01

Project developer

Project developer and
Fund

Fund

Buyers' Options

**Direct Contract with
Bidder**

**Transfer Contract from
Fund**

**Direct Purchase from
Fund**

Timing

Day 0

Day 0 -> end Yr 5

After final payment (yr 5)

Risk to Buyer

Highest

Variable

Lowest

Level of effort

Highest

Variable

Lowest

Payments

All payments to
project developer

Pro rata based on
contracted schedule

Single payment to fund

Who Earns \$.01

Project developer

Project developer and
Fund

Fund

Fund Outreach



To Bidders:

- Direct email
- Meeting presentations
- Member associations

To Landowners:

- Most done by bidders
- Trade associations
- County farm bureaus
- Grain Producers Assn
- NRCS
- UMD Extension

Sample Agreement

Contracts issued under this fund will utilize the **Full Delivery approach** where the contractor takes responsibility for all elements of the project from design to maintenance. Payment is contingent on the contractor delivering verified acres of riparian forest buffers established.

At the end of each phase, verification of the outcome will be assessed.

Phase	Activity	Payment
I	Planting	30%
II	After 1-2 years of maintenance	30%
III	After 3-5 years of maintenance	40%

Price Assumptions

	Full delivery price/ac established (including bidder margin)	Acres needed (60% rural, 30% suburban, 10% urban)	Total
Rural/ag - 15 year contract	\$12,000	788	\$9,460,800
Rural/ag - w/ easement	\$20,000	788	\$15,768,000
Suburban - 15 year contract	\$20,000	394	\$7,884,000
Suburban - w/ easement	\$86,327	394	\$34,030,103
Urban - 15 year contract	\$45,000	131	\$5,913,000
Urban - w/ easement	\$86,327	131	\$11,343,368
Total needed to meet MD WIP goal (2,628 acres)			\$84,399,271

Prototype

- Identify buyers and requirements
- Refine scoring criteria
- Assess challenges
- Adapt program before scaling up
- Urban/suburban/rural
- Howard, Carroll, Harford, Baltimore

Questions/Discussion

1. What do you think of the outcome, “acres of riparian forest buffer established?”
2. Are there challenges to RFB implementation that this outcomes model does not yet address?
3. Is there anything missing for meeting regulatory requirements?
4. Are there elements of the fund concept that you would suggest changing?

Thank you

For follow up, email Phoebe Higgins: phiggins@policyinnovation.org

