



WORLD
RESOURCES
INSTITUTE

COMPARISON OF CHESAPEAKE BAY NUTRIENT TRADING POLICIES

CBP Trading and Offsets Workgroup · December 16, 2015

SARA WALKER

IMAGE: KEVIN MILLICAN AND DJOF

OUTLINE

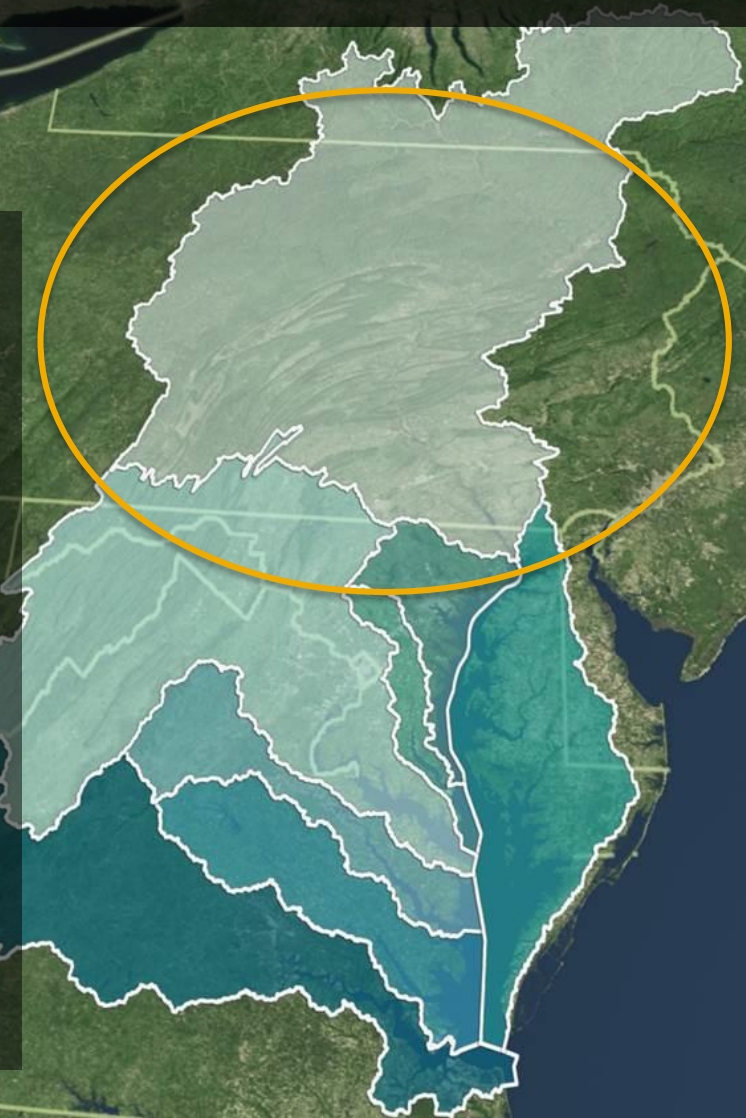
- Purpose of analysis
- Overview of current state programs
- Comparison of policies
- Opportunities for improving consistency and effectiveness

VIRGINIA

- Nutrient trading law signed in 2005
 - To provide flexibility for point sources to meet compliance schedules and cost-effectively meet upcoming loading caps
- Additional legislation expanded program in 2012 to authorize MS4s, other sectors to trade
- Trading for P also allowed to offset post-construction requirements

PENNSYLVANIA

- Nutrient trading policies and guidance issued in 2006
 - To meet regulatory obligations and offset new loads
- Trading regulations passed in 2010
- Trading program under revision
- Trading options for MS4s and development stormwater are under consideration



MARYLAND

- PS-PS and PS-NPS programs established in 2008
 - To maintain point source loading caps under Tributary Strategies
- Currently developing Aligning for Growth policy
- Cross-sector trading policy statement released in 2015

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PROGRAM ELEMENTS FOR COMPARISON

- 1) General trading rules
- 2) Rules for purchasing credits
- 3) Rules for generating credits
- 4) Rules for verification, certification, and registration

1) GENERAL TRADING RULES

Eligible Pollutants

Trading Area

Definition of a Credit/Offset

Life of a Credit/Offset

Market Structure and Price-Setting Mechanism

Agricultural Credit Estimation Method

Trading Ratios

AGRICULTURAL CREDIT ESTIMATION METHOD

Maryland	Pennsylvania	Virginia
Chesapeake Bay Nutrient Trading Tool	Spreadsheet tool	Lookup tables

AGRICULTURAL PROJECT WORKSHEETS

CROP CATEGORY

47 4. Nitrogen Application¹

James Basin BMPs: Single BMP

BMP	West of I-95		East of I-95	
	TN	TP	TN	TP
Early Planted Cover Crops	0.54	0	0.91	0
15% Nitrogen Reduction on Corn	1.75	0	3.70	0
Continuous No-Till	1.05	0.49	1.13	0.19

61 g. Total Available Nitrogen- Application #2:

0.00 lbs/ac

0.00 lbs/ac

Google

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Click here to see typical manure values.

TRADING RATIOS

	Maryland	Pennsylvania	Virginia
Delivery Ratio	Chesapeake Bay Watershed Model		
Reserve Ratio		10%	
Retirement Ratio	5% for PS 10% for NPS		5% for NPS*
Uncertainty Ratio	≥ 10%, in some cases	TBD*	2:1 for NPS

* Draft or proposed policy or regulation

2) PURCHASING CREDITS

Scenarios for Purchases

Eligibility Standard to Purchase

Minimum Term for Credits/Offsets

Sectors:

wastewater, municipal stormwater, development stormwater,
CAFOs, septic

3) GENERATING CREDITS

Eligibility Standard to Generate

Eligible Practices

Restrictions on Credit/Offset Generation

Sectors:

agriculture, other nonpoint sources, wastewater,
municipal stormwater, development stormwater, septic

COMPARISON OF ALLOWABLE TRADING SCENARIOS

		Who can buy?				
		Wastewater	Municipal Stormwater	Development Stormwater	CAFO	Septic
When can trading occur?	Who can sell?					
To Comply	Point sources	VA, PA	VA		VA	
	Nonpoint sources	PA	VA		VA	
To Maintain/ Offset	Point sources	VA, MD, PA	VA	VA	VA	
	Nonpoint sources	VA, MD, PA	VA	VA	VA	



COMPARISON OF ALLOWABLE TRADING SCENARIOS: *PROPOSED*

		Who can buy?				
		Wastewater	Municipal Stormwater	Development Stormwater	CAFO	Septic
When can trading occur?	Who can sell?					
To Comply	Point sources	VA, PA	VA		VA	
	Nonpoint sources	PA	VA, MD*		VA	MD*
To Maintain/ Offset	Point sources	VA, MD, PA	VA	VA, MD*	VA	
	Nonpoint sources	VA, MD, PA	VA	VA, MD*	VA	

* Draft or proposed policy or regulation

AGRICULTURE'S ELIGIBILITY STANDARD

Maryland	Pennsylvania	Virginia
Meet a per-acre annual loading rate (e.g., lbs TN/acre) calculated from the Bay or local TMDL, whichever is more restrictive	(1) Implement a 100-foot manure setback, (2) implement a 35-foot vegetative buffer, or (3) reduce the farm's total nutrient balance by additional 20%	Implement, as applicable: 1) Soil conservation plan 2) Nutrient management plan 3) Cereal cover crops 4) Fencing 5) Riparian buffers
Performance-based	Practice-based	Practice-based
EPA: TMDL	EPA: TMDL	EPA: TMDL

AGRICULTURE'S ELIGIBILITY STANDARD: *PROPOSED*

Maryland	Pennsylvania	Virginia
Meet a per-acre annual loading rate (e.g., lbs TN/acre) calculated from the Bay or local TMDL, whichever is more restrictive	Performance-based, defined by a modeling tool calibrated to be in compliance with expectations of the TMDL*	Resource Management Plan, or applicable practices similar to previous eligibility standard*
Performance-based EPA: TMDL	Performance-based* EPA: TMDL*	Practice-based EPA: TMDL

* Proposed

4) VERIFICATION, CERTIFICATION, AND REGISTRATION

Agency responsible for credit/offset certification

Project approval/certification

Credit issuance

Project verification

Registration and tracking

PROJECT APPROVAL & CERTIFICATION

	Maryland	Pennsylvania	Virginia
Administrative review	yes	yes	yes
Onsite inspection prior to certification	yes	no	yes
Certification before implementation	yes	yes	no
Credit issuance before implementation	yes	no	no

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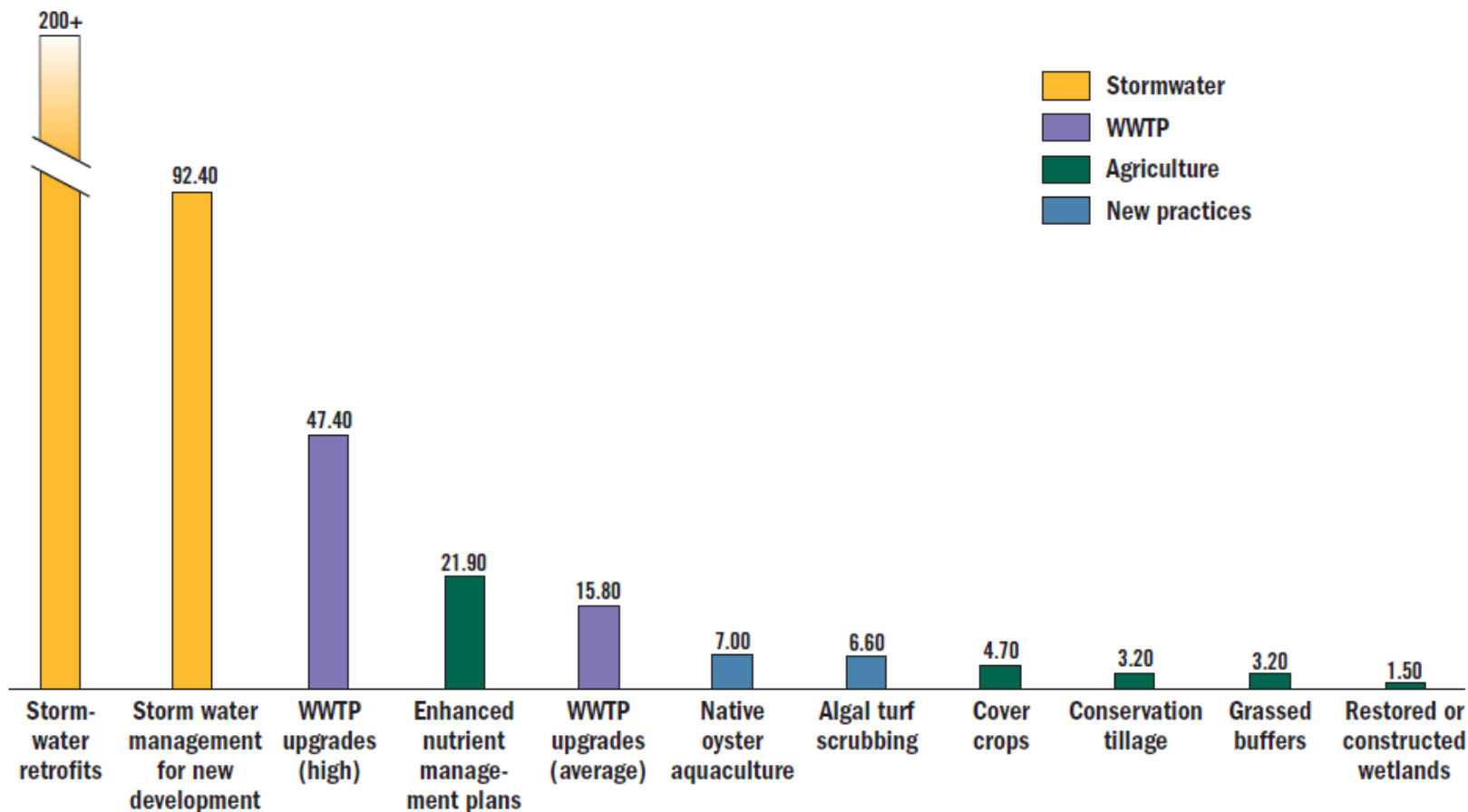
CREATE CONSISTENT, MINIMUMS STANDARDS

- Trading ratios
- Agricultural credit estimation method
- Seller eligibility requirements
- Project approval process

ENGAGE ADDITIONAL SECTORS

Nitrogen reduction costs differ among sectors, creating economic opportunities for trading

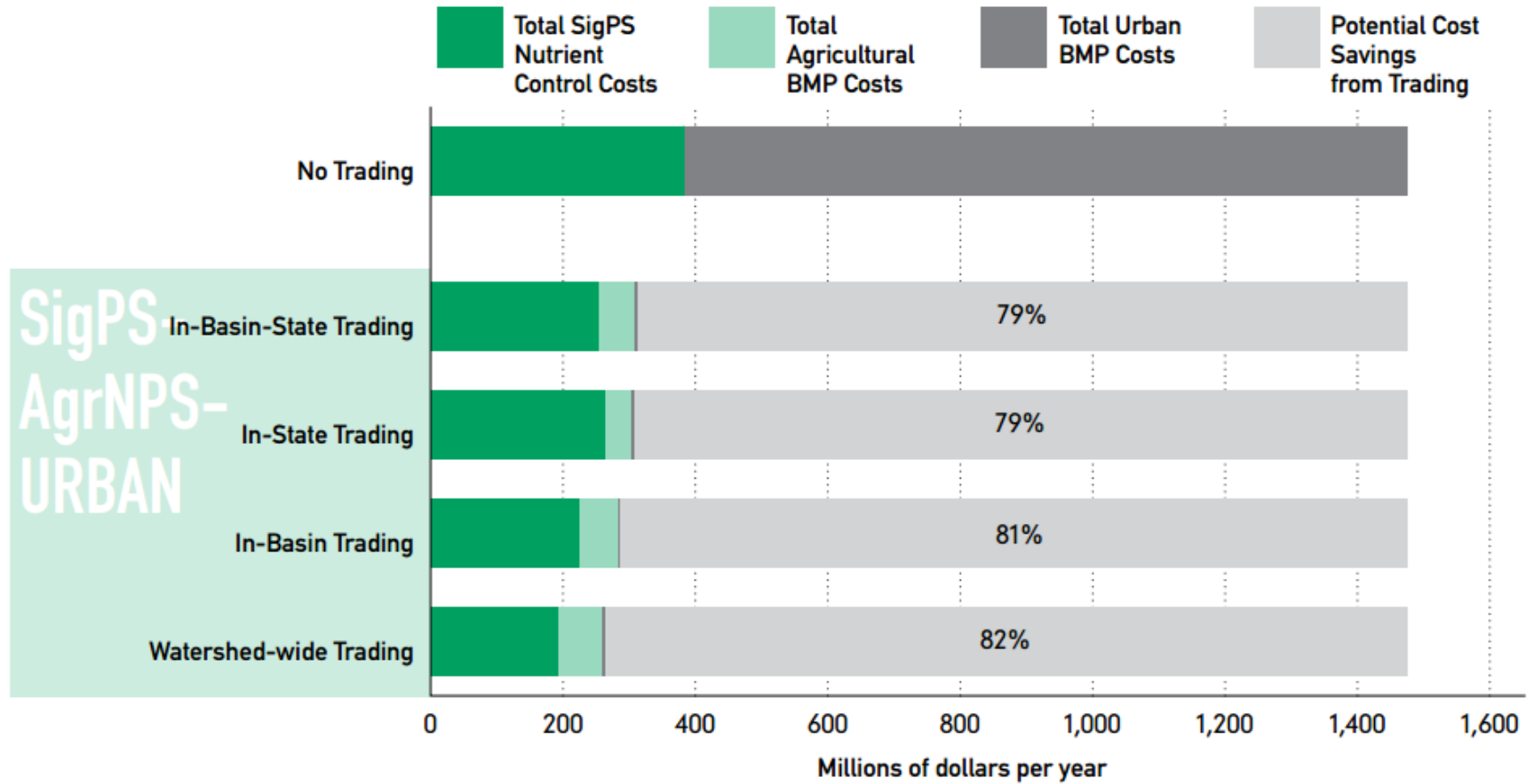
Dollars per pound of annual nitrogen reduction



ALLOW STORMWATER TRADING

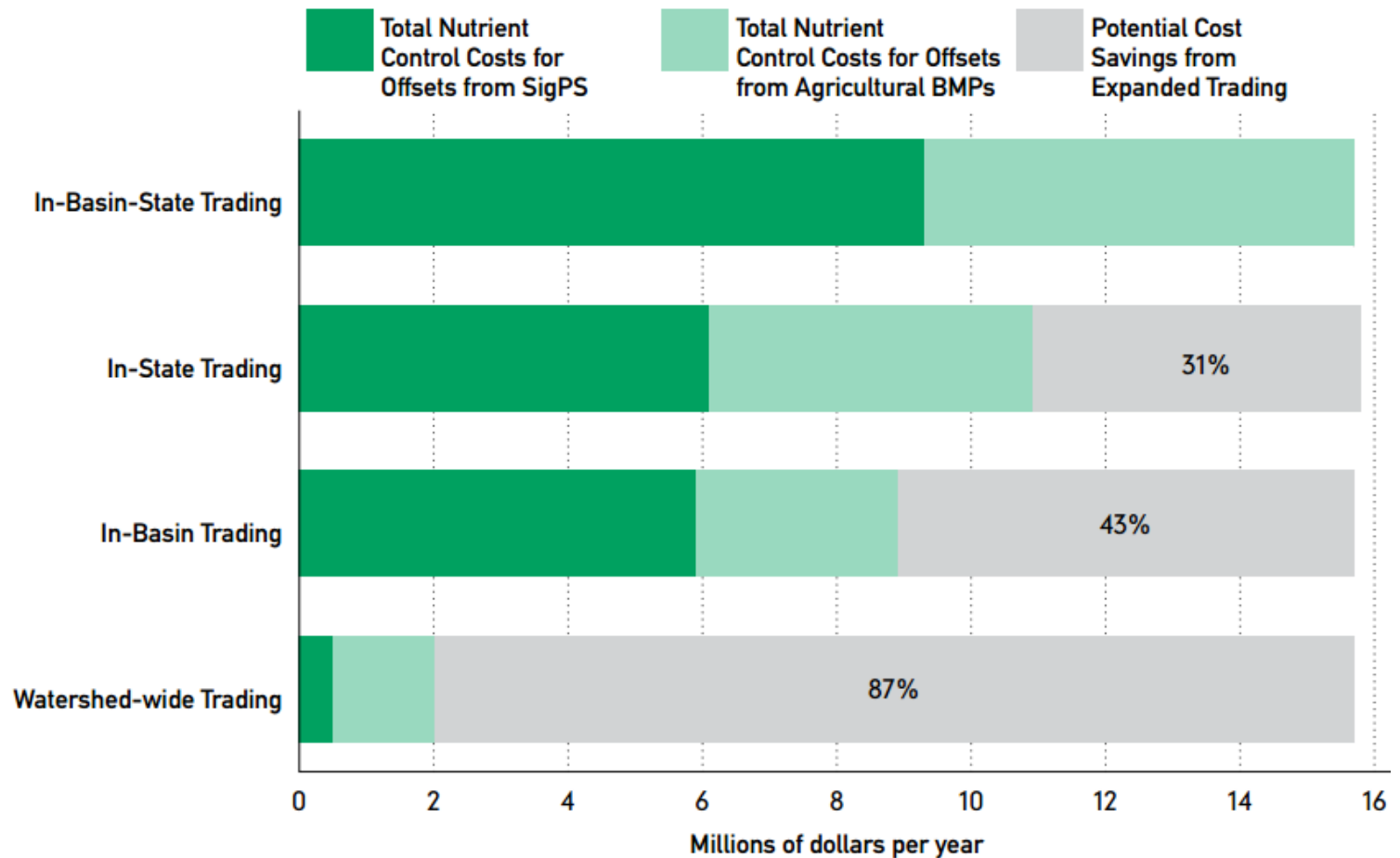
Costs of Achieving SigPS and Regulated Urban Stormwater Load

Reduction Targets and Potential Cost Savings from Nutrient Trading (In-Basin-State Trading)



ALLOW INTERSTATE TRADING

Costs of Nutrient Controls to Offset Loads from New SigPS Capacity



ALLOW INTERSTATE TRADING

- Options for Operationalizing:
 - Require uniformity among programs
 - Employ set of minimum standards
 - Use crosswalk between programs

THANK YOU!

Sara Walker

swalker@wri.org

202-729-7824

WRI.org

*With support from USDA's
Office of Environmental
Markets*

Full report:

*[www.usda.gov/oce/
environmental_markets/
chesapeake.htm](http://www.usda.gov/oce/environmental_markets/chesapeake.htm)*

