

Ecosystem Services Market: Funding Mechanisms: Empowering Producers & Industry

Growing resilience in our nation's soil

Steve Rowe, CEO - Newtrient
ACES conference
December 2018



ESM Program

MISSION

To advance ecosystem service markets that incentivize farmers and ranchers to improve soil health systems that benefit society



Market discovery

- ◆ Beginning in March 2018 ESM team outreach to 30+ corporations including Cargill, Valero Energy, McDonald's, Danone, Walmart, Noble Energy, Bayer, Nestle, Target, Coke, Syngenta, Miller Coors, Organic Valley and others





News Releases from Headquarters › Water (OW)

EPA and USDA Encourage Use of Market-based and Other Collaborative Approaches to Address Excess Nutrients

Trump Administration tackles nutrient issues in water resources across the country
12/04/2018

WASHINGTON – **Today, the U.S. Environmental Protection Agency (EPA) and U.S. Department of Agriculture (USDA) issued a letter to state co-regulators that encourages increased engagement and a reinvigoration of state, tribal, and federal efforts to reduce excess nutrients in waterways, with a focus on market-based and other collaborative approaches.**

Economic Assessment



Economic Assess
for Ecosystem S
Market Credits
Agricultural Wo
Lands

- Informa conducted an ***Economic Assessment for Ecosystem Service Market Credits from Agricultural Working Lands***
- to inform the potential total **aggregated volume supply** and value of ecosystem services provided from privately owned, working agricultural lands and **potential demand** for these services.
- Economic assessments were calculated in terms of potential ecosystem service credit types for **greenhouse gas emission (GHG)** reductions and improvements in **water quality** by production system, nationally and by region



Economic Assessment

Carbon Market

- The report estimates the total potential demand in the Ag addressable market of **190 million tons** including Scope 1 and 2 emission goals and only Scope 3 domestic emission goals.
- If all Scope 3 goals are included (domestic and international), total demand could be as high as **288 million tons CO₂e**.

Agribusiness Consulting
Agribusiness Intelligence | Informa



Economic Assessment
for Ecosystem Service
Market Credits from
Agricultural Working
Lands

Economic Assessment

Water Quality Market

- For nitrogen the total potential credit **demand for ESM water quality credits is 1.73 billion pounds** in impaired waterways (watersheds with nutrient impaired waters).
- Informa estimates the potential **demand of ESM water quality credits for phosphorous to be 3.09 billion pounds** in impaired waterways (watersheds with nutrient impaired waters).
- Collectively, demand outstrips supply

Economic Assessment - \$13.9 billion

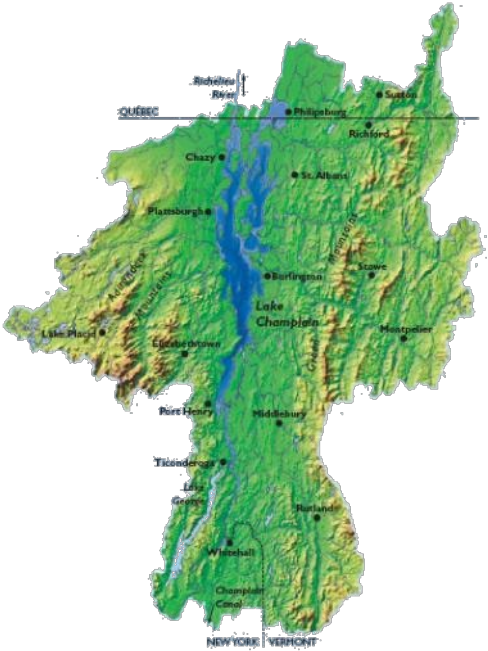
Total Volume and Value of Carbon and Water Quality Market

- A combined market does exist
- A stacked system will work
- Benefits to Agriculture and Society are evident

Credit Type	Demand	
	Volume	Value (\$bil)
Carbon (vol in MMt Co2e)	190	5.2
Water Quality (vol in bil pounds)		
Nitrogen	1.58	4.8
Phosphorous	0.8	3.9
Total		13.9

Regulatory Driven Solutions

Lake Champlain Stormwater Reductions – Phosphorus



STORMWATER REDUCTIONS lbs/yr	MUNICIPALITIES' REDUCTION COST = \$2,500/ lb/yr	AGRICULTURE'S REDUCTION COST = \$100/ lb/yr
54,000 lbs	\$135 MM	\$5.4 MM

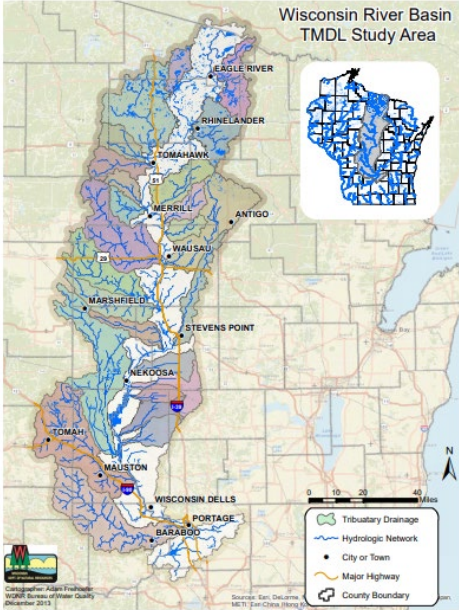
NEED

CURRENT REDUCTION COST

AG SOLUTIONS COST

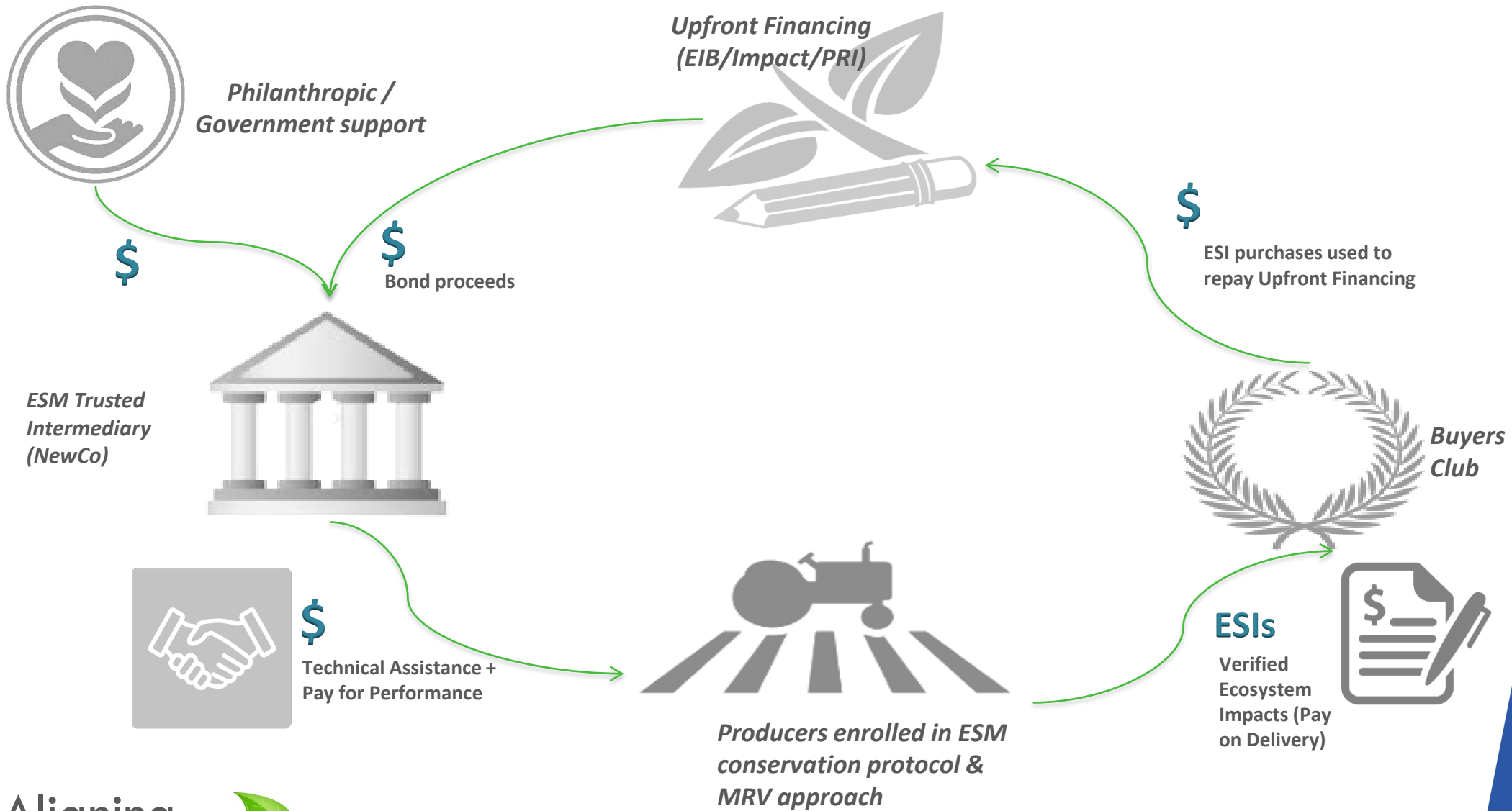
Regulatory Driven Solutions

WI River Basin Storm/Wastewater Reduction – Phosphorus



STORMWATER/ WASTEWATER REDUCTIONS (lbs/yr)	MUNICIPALITIES' REDUCTION COST = \$1,000/ lb/yr	AGRICULTURE'S REDUCTION COST = \$100/ lb/yr
71,000 lbs	\$71 MM	\$7 MM
<i>NEED</i>	<i>CURRENT REDUCTION COST</i>	<i>AG SOLUTIONS COST</i>

G2M: Financing flows



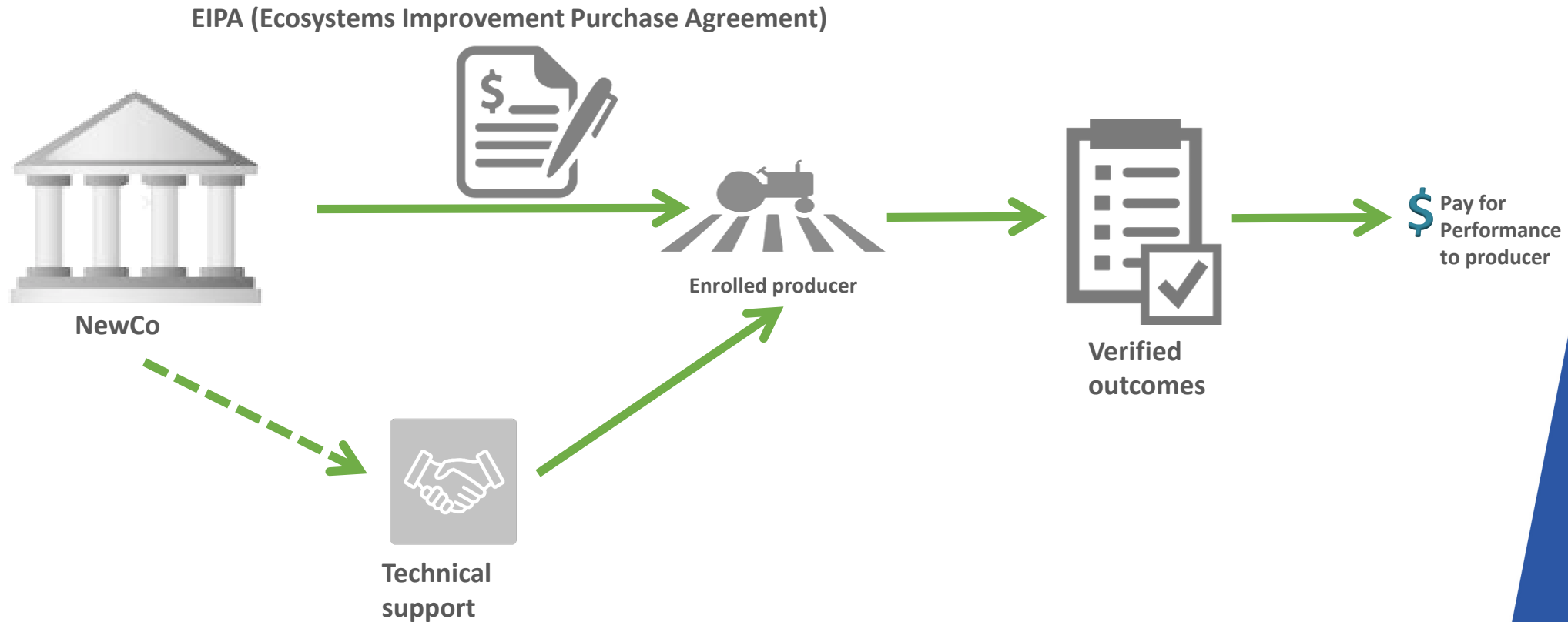
Aligning
Incentives



ESM G2M: Financing

Producer financing

- ◆ Nominal upfront payment upon enrollment to cover practice adoption + more significant Pay for Performance payment based on verified outcomes



Corporate Commitments

Club Provisions

- Member corporations pledge to off-take a percentage or volume of ecosystem services (either a la carte, or blended) at fixed “strike” price
- Members can elect to invest in carbon insets or offsets and water quality and quantity credits
- Purchase of ecosystem services is structured as a pay-on-delivery agreement
- Pledge commitment is set to five years (renewable)



Thank you.

“The land must continue to provide for our food, clothing and shelter long after the oil is gone.” Lloyd Noble, *Samuel Roberts Noble Foundation* founded in 1945 for the sole purpose of soil reparation

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