



Potomac River Basin, WV Nutrient Trading Program

Stakeholder Meeting
July 30, 2009
Moorefield, WV

*Project Funded by a Natural Resources Conservation Service
Conservation Innovation Grant*

Outline

- Background
- Process
- Program Guidance
- Program infrastructure
- Next Steps

WV Potomac Trading Program

An NRCS-funded project to establish water quality trading between point source and non-point source (PS-NPS and/or PS-PS) community.

Goals to:

1. More cost effectively reduce point and non-point source nutrient and sediment loadings to the Potomac basin and Chesapeake Bay; and
2. allow increased & more sustainable economic activity in the region.

Why Water Quality Trading?

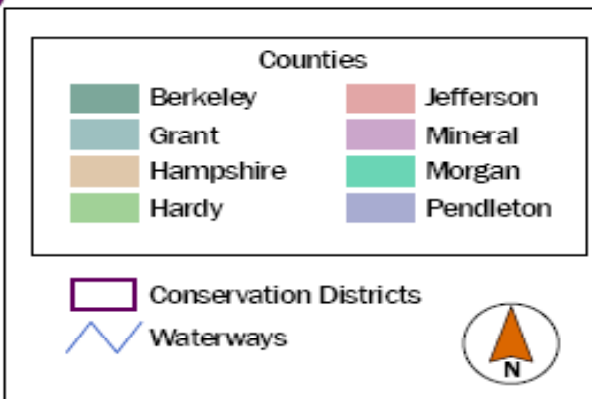
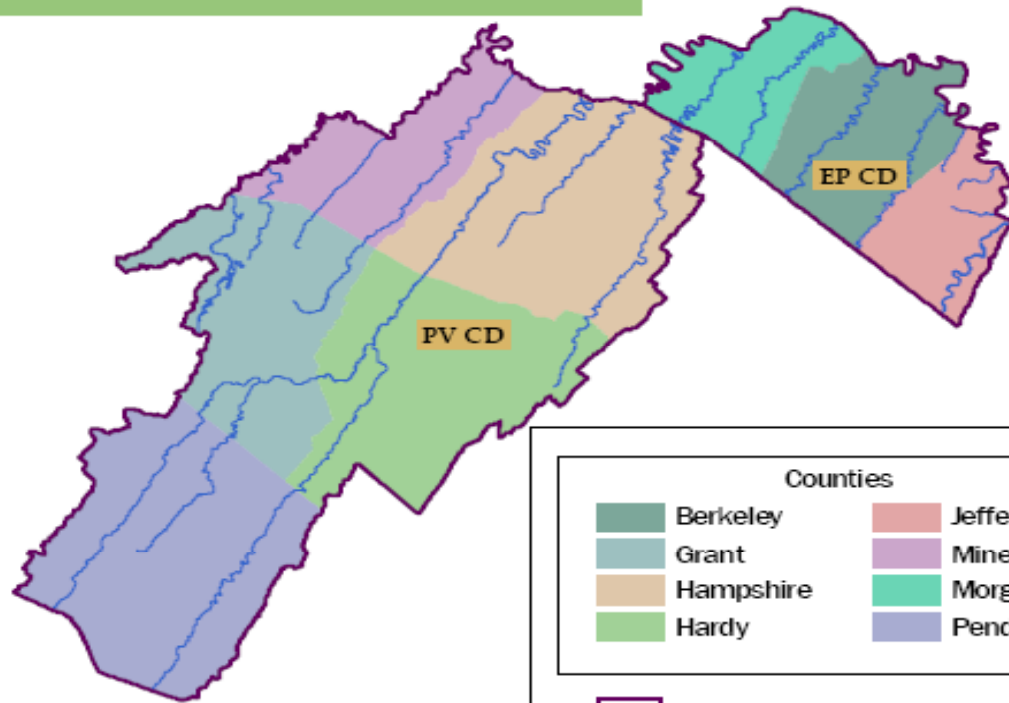
- More flexible and cost-effective means to meet regulatory requirements; NPDES permitted facilities with **high costs** of pollution reduction **can purchase** pollution reductions (**credits**) from others with **lower costs** of reducing pollution.
 - Works within existing statutory & regulatory framework;
 - Generates add'l environmental benefits:
 - reduced erosion - farmland preservation - habitat quality - GHG reductions – source water protection.

Program Context-Drivers

- Chesapeake Bay Cap Load Allocations
 - WV Trib Strategy Implementation Commitment to reduce:
 - 33% N = 4.7 million lbs
 - 35% P = 370,000 lbs
 - 6% sediment = 320,000 tons
- New (*expensive*) requirement on point sources (Sec D offsets)
- Impending TMDL (2010)
- Impending nutrient water quality criteria
- Potential regulation of non-point sources

Trading Project Scale

**Counties and Conservation Districts
WV Potomac Basin**





Implications for WV's wastewater facilities

- Targeted facilities (> 50,000 gpd) must achieve loading limits based on **5 mg/l TN** and **.5 mg/l TP**
- All new and expanding N & P loads must be **offset 100%**.
- Insignificant facilities are currently exempt
- Industrials will be treated case by case

Development Process

- Convened Steering Committee
- Learn from other trading programs
- Ensure Compliance with EPA Trading Policy, CWA and WV Code
- Integrate flexibility and equity



Project Partners/Steering Committee

- USDA NRCS
- WV Department Of Agriculture
- WV Conservation Agency/Districts
- WV Farm Bureau
- Farm Service Agency
- WVU Extension
- WV Department of Environmental Protection
- World Resources Institute (Nutrient Net)
- Freshwater Institute/Conservation Fund (Point Source Innovation Working Group)
- Trout Unlimited
- Point source and Urban/Mixed Open

EPA Trading Policy

- Trading programs must be consistent with CWA
- Credits are generated only by reductions made above and beyond what is required by law
- No adverse localized impacts (hot spots)
- Net reduction or *at least* no net increase in loadings
- Public participation and transparency
- *Accountability, compliance, and enforcement* mechanisms for all reductions are essential

WQ Trading Programs Guiding WV

- 9 statewide programs, nearly 40 watershed programs
- Bay programs- PA, VA and MD
- USDA/EPA Partnership to facilitate WQ credit trading & a Bay pilot project

Lessons from other programs

- Program is essentially an enhanced BMP program
- Internalize program complexities
- Engage communications, policy and local government folks
- Communication as important as sound science
- Producer involvement (facilitate meetings, sell program and conduct inspections)
- No stakeholder has veto power
- Retain flexibility for adaption
- Participants' confidence (trust) in program is key

WV Trading Project Approach

- Integrate trading program into the existing funding, procedures, staffing and infrastructure of the WV BMP cost-share program;
- Provide high level state leadership with local implementation;
- Develop a stakeholder-driven credit market.

Project Status

- NRCS grant awarded February 2007
- Stakeholder Steering Committee
- Engaged Ag Sector
- *NutrientNet* developed for Potomac basin
- Draft guidance developed
- Continuing to solicit stakeholder input
- Designing program infrastructure and seeking funding



Draft Trading Guidance

Guidance v/s Regulation

- CWA provides authority for trading
- Guidance provides flexibility
- Structured in large part on PA and MD guidance v/s VA, OH statute & regs
- 2 components- statewide and Potomac specific

Program Principles

- Credits must be real and verifiable
- Based on best available science
- Transparent to all stakeholders
- Must be adaptive to market conditions
- Must be enforceable through NPDES permits

Fundamentals

- Nitrogen and Phosphorus
- Units = delivered pounds/year
- Credits must be used in year generated but contracts can extend for project life
- Credits verified annually
- Trades among PS, NPS, aggregators/brokers
- Within WV Potomac basin (for now)
- Trades cannot violate CWA

Credit Generation

- Eligibility- *must first meet baseline*
- Baseline
 - PS- compliance with nutrient allocation or management requirements for MS4s
 - NPS- nutrient management plan + compliance with land use specific 2005 EOS loading (performance based)

Ag Baseline

**Table 1. Agriculture Land Use Baselines (N and P=lb/acre;
sediment=ton/ac)**

| <i>Land Use</i> | <i>Total Nitrogen</i> | <i>Total Phosphorus</i> | <i>Sediment</i> |
|-----------------|-----------------------|-------------------------|-----------------|
| Hay | 7.7 | 0.7 | 0.2 |
| Cropland | 22.9 | 2.9 | 0.9 |
| Manure | 323 | 39 | N/A |
| Pasture | 7.0 | 0.8 | 0.2 |

Credit Calculation

- Point sources- measured reduction from NPDES Nutrient allocation
- AG Nonpoint sources- Nutrient Net
<http://www.nutrientnet.org/about.cfm>
 - Standardizes NPS reductions
 - Reduced transaction costs
 - Provides transparency

Credit Calculation (con't)

- Nutrient credit calculation

Lbs/yr reduced x EOS x DF

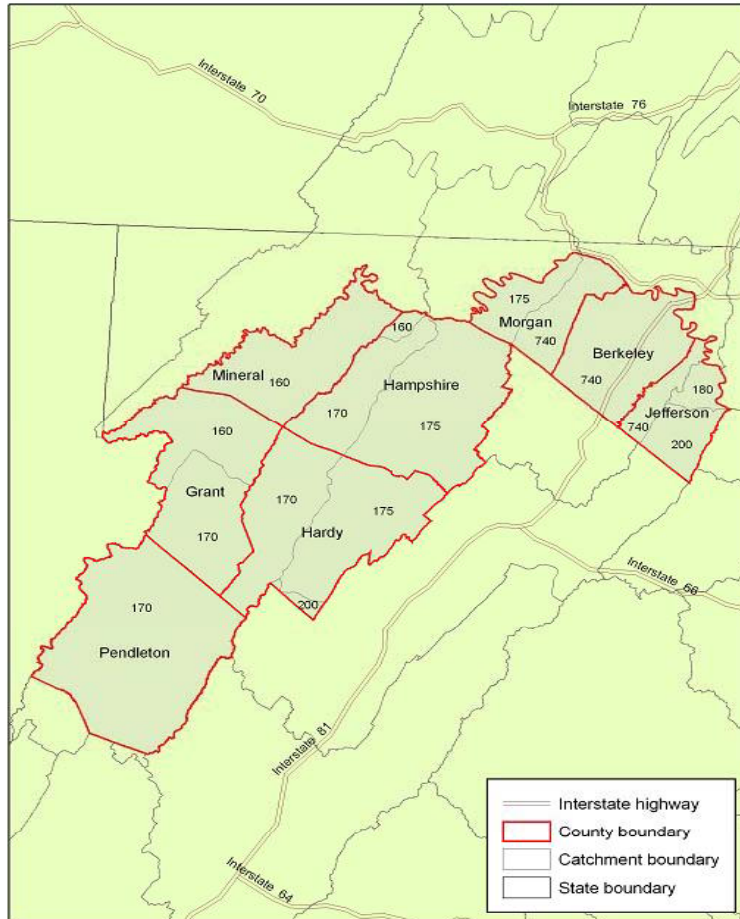
where:

EOS= Edge of Segment Factor and

DF= Delivery Factor

Segment Delivery Factors

West Virginia Counties and Subwatershed Segments
Within the Potomac Watershed



| <i>Watershed Segment</i> | <i>Delivery Factors</i> | | |
|--------------------------|-------------------------|----------|-----------------|
| | <i>N</i> | <i>P</i> | <i>Sediment</i> |
| 160 | 0.59 | 0.77 | 1 |
| 170 | 0.56 | 0.77 | 1 |
| 175 | 0.70 | 0.77 | 1 |
| 180 | 0.83 | 0.77 | 1 |
| 200 | 0.66 | 0.77 | 1 |
| 740 | 0.74 | 0.77 | 1 |



Trading Ratios (discount factors)

- Reserve (risk) ratio- portion of each credit held in credit reserve
 - PS= 0.1 lb
 - NPS= 0.2 lb
- Uncertainty ratio-
 - PS= 0
 - NPS= 0 for measured or CBP approved BMPs; case by case for others

Pt to Pt= 1.1:1 and Pt to NPS= 1.2:1

Program Infrastructure

Infrastructure, Operation & Management (CD/third party)

- ✓ Record keeping
- ✓ Certifications
- ✓ Agreements/MOUs/contracts
- ✓ Monitoring/inspections
- ✓ Track reductions
- ✓ Issue RFPs, review proposals, calculate credits
- ✓ Maintain website
- ✓ Bank (credits and \$)

NPDES Permitted Point to Point Credit Trading

NPDES Permittee X discharging above allowable allocation; or needs offsets to expand or for new discharge.

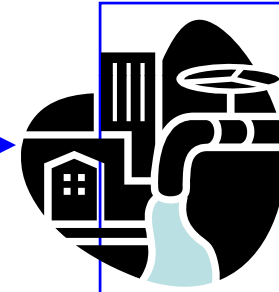


OPTION A: buy credits from another pt source.
Approved, registered, monitored by WVDEP.

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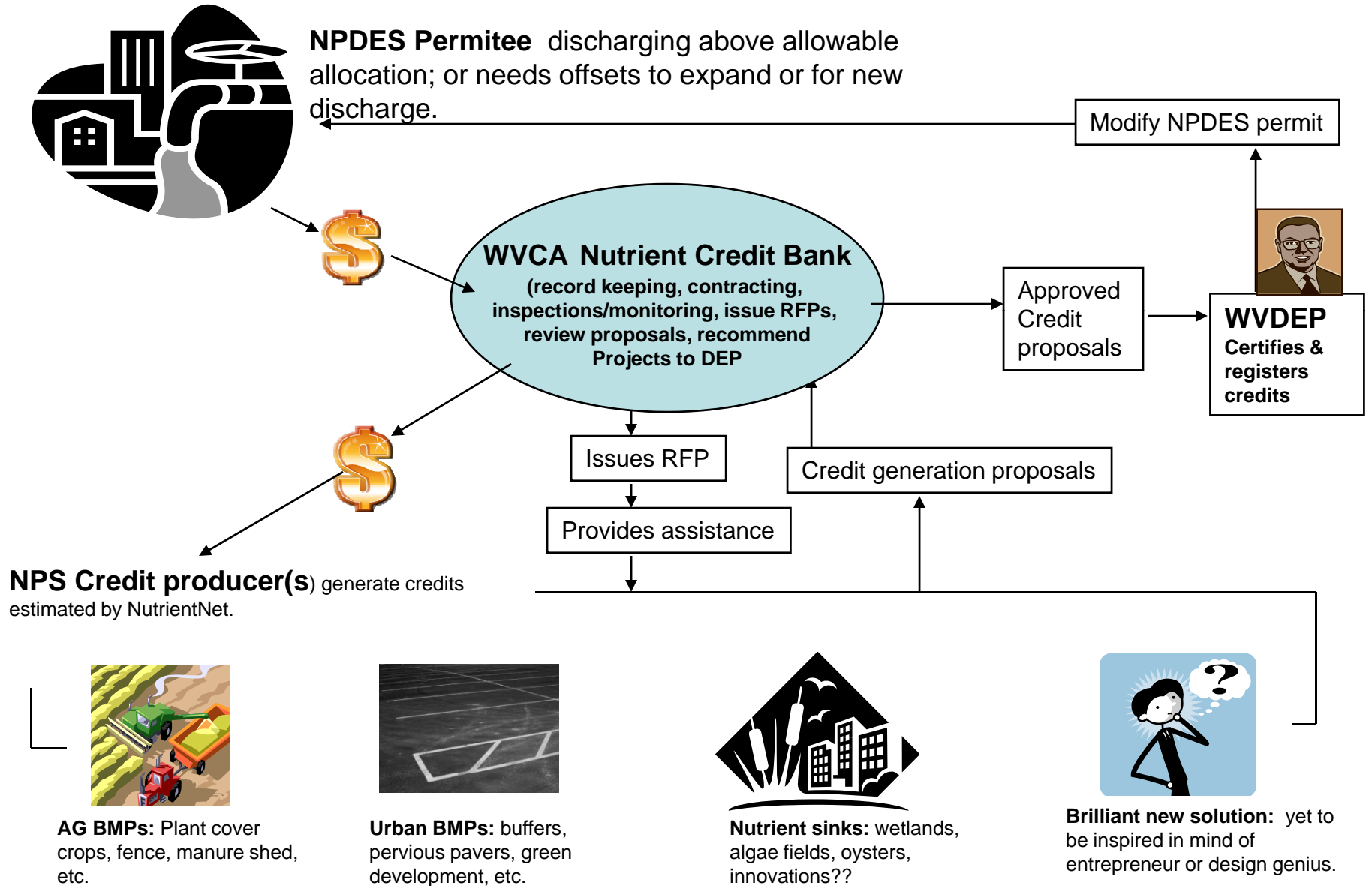
WVDEP agent certifies credits and modifies permits

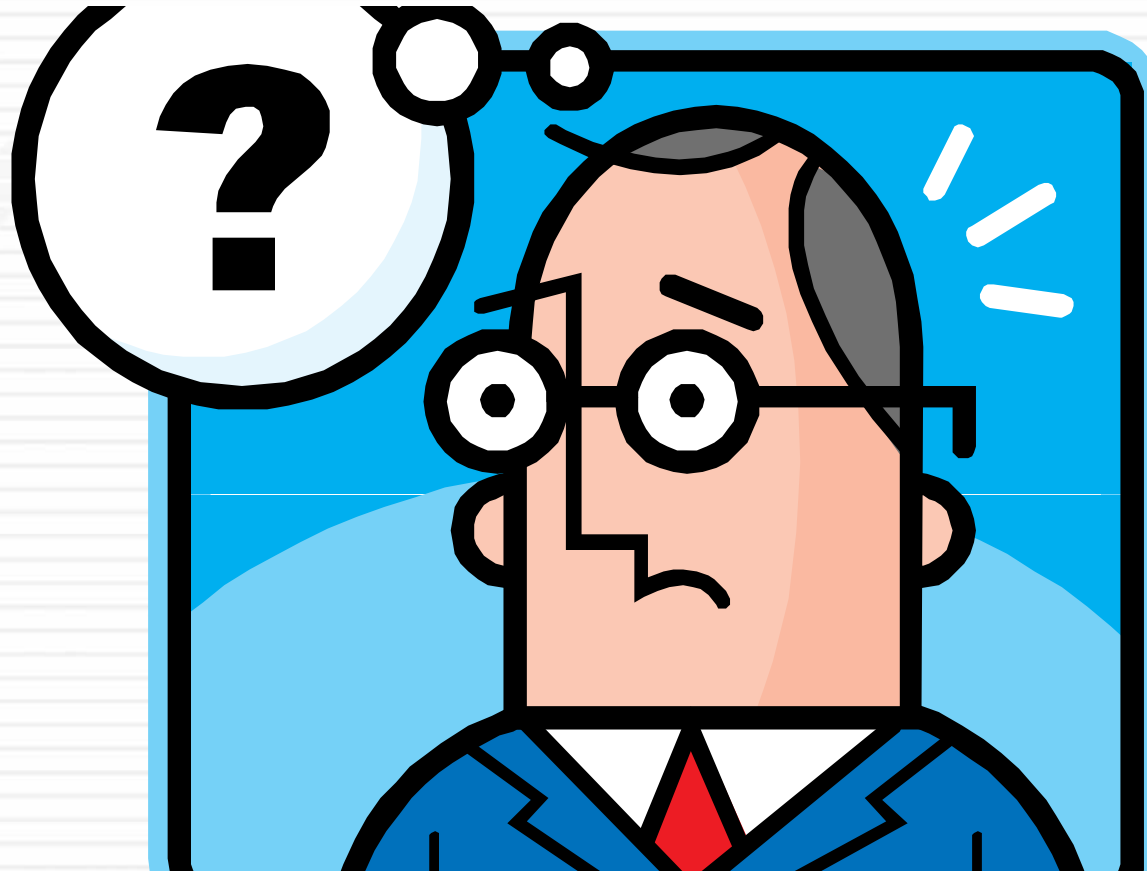


Op A. NPDES Permittee Y has credits to sell because of discharging under permit allocation by operating under design flow or installing technology above that required.

Option B: Take septic system/insignificant discharger off-line

NPDES Permitted facility to Non-Point Source Trade





Questions/Comments



Thank You

Project website:

<http://wwri.nrcce.wvu.edu/programs/pwqb/index.cfm>