
Nutrient Trading

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Cost-effective Reductions Using Market Tools – Nutrient Trading

- Compliance Plan calls for non-structural alternatives to infrastructure upgrade.
 - Uses cheapest solutions to achieve water quality goals in River and Bay, saves infrastructure dollars.
 - Our strategy is to allow regulated dischargers to purchase pounds of Nitrogen, Phosphorus from off-site locations within the watershed.
 - A credit is awarded for each pound of nutrients that will no longer be delivered to the bay where the reduction is beyond compliance requirements.
 - World Resources Institute built PA's on-line nutrient trading platform – PA NutrientNet.
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Nutrient Trading is not a new concept:

- Trading of emission reductions has been in place in air pollution programs since the early 1990's, in Pennsylvania and around the country, and is established by the Clean Air Act.
- Water Quality trading programs have also been established in other states as indicated in this picture.



Formula for Nutrient Trading:

- **DRIVEN** by regulation;
 - PA- nitrogen, phosphorus and sediment reduction goals for the Chesapeake Bay Watershed and downstream Water Quality Standards.
- **MOTIVATED** by economics;
 - PA- Cost per pound could range from \$1 for some agricultural practices, to \$8-30 for some treatment processes, to thousands for some stormwater controls.
- **GOVERNED** by local trading rules;
 - PA- The final Trading of Nutrient and Sediment Reduction Credits- Policy and Guideline was published in December 2006.
- **BUILT** on trust.
 - PA- Transparent system of credit proposal reviews, approvals and program actions.

But.....

TRADING MAY NOT BE VIABLE EVERYWHERE AND FOR EVERY SITUATION.

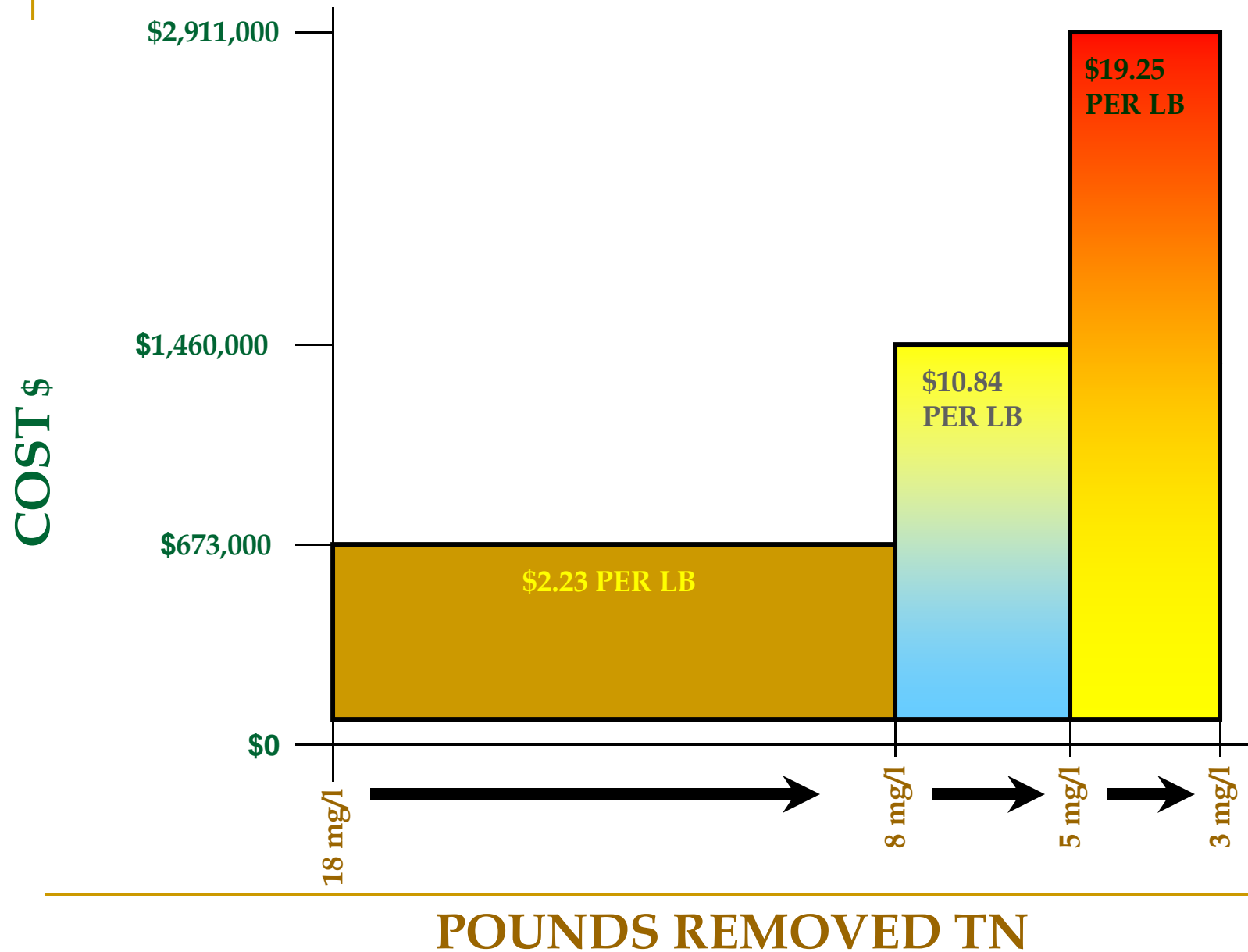
Pa's Nutrient Trading Program:

- Is a voluntary program;
 - Limited only by creativity, imagination and doing business as usual.
 - Provides flexibility for a PS to meet compliance obligations;
 - Can be temporary or permanent compliance solution.
 - Build All- Trade None; Build Some-Trade Some; Build None-Trade All
 - Lowers compliance costs;
 - Treatment levels vs. cost analysis vs. off-site alternatives
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Program Basics:

- Applicable for the Chesapeake Bay Watershed
 - Credit = Unit of Trade.
 - Expressed as mass/per unit time (lbs/yr).
 - Shelf life of one year (October-September).
 - HOWEVER, many BMP practices such as forested riparian buffers may generate credits for 10-20 years.
 - Generated and traded in the same watershed.
 - Must be certified, verified and registered prior to use for permit compliance.
 - Total phosphorous and/or total nitrogen reduction credits.
 - All trading must involve comparable credits (nitrogen for nitrogen).
 - Nitrogen and phosphorous reductions **TO THE BAY** beyond baseline and threshold requirements.
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COST ANALYSIS FOR 1 MGD TREATMENT PLANT:



Sample of Agricultural BMPS that generate credits:

- Cover Crops (early – planted 7 days prior to 1st frost)
 - Lifespan 1 year
 - Approximate N Credits – 9.3/acre
 - Approximate Cost - \$ 15/acre
 - Approximately - \$1.61/credit/acre

- Forest Riparian Buffer
 - Lifespan 10 to 15 years
 - Approximate N Credits – 63.3/acre
 - Approximate Cost - \$ 6.50 to 8.50/acre
 - Approximately - \$0.11 to 0.13/credit/acre

- Continuous No Till
 - Lifespan 1 year
 - Approximate N Credits – 3.1/acre
 - Approximate Cost - \$ 15/acre
 - Approximately - \$4.84/credit/acre

*The values are approximate and will vary depending on farm specifics and watershed location. These values were determined that conservation till was baseline and with the cost figures taken from the 2006 EQIP Cost Table.

Eligibility for Credit Generation:

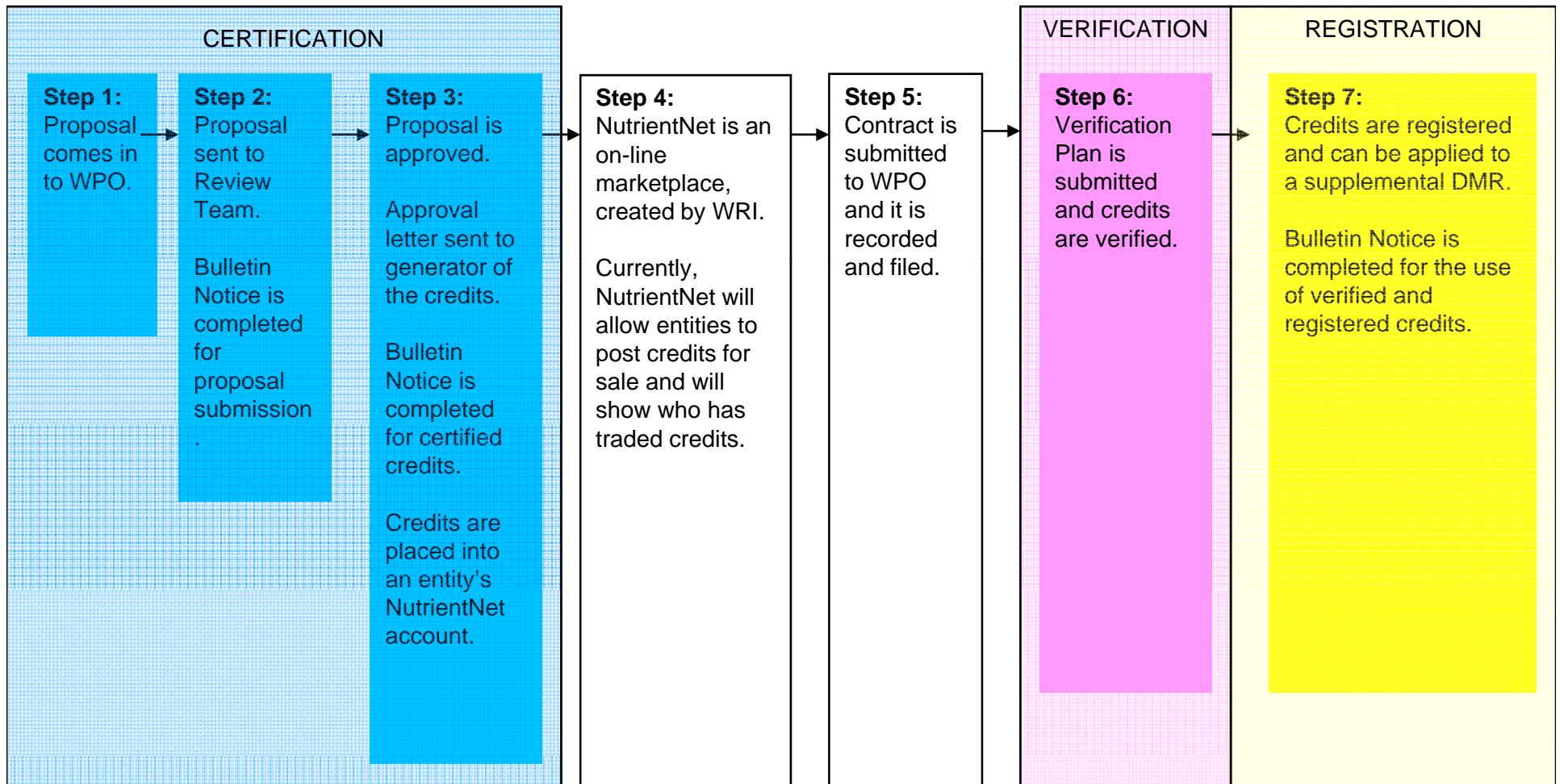
Point Source

- Discharge loading limit expressed in an NPDES Permit.

Nonpoint Source

- Must be in baseline compliance with applicable conservation and nutrient management requirements.
 - Must be beyond compliance, by either a 20% reduction in nutrients, 100' setback OR the establishment of a 35' buffer.
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Simple Nutrient Trading Process:



DEP Grants to County Conservation

Districts:

■ Grant Participants:

- Bedford, Berks, Chester, Cumberland, Dauphin, Lebanon, Mifflin, Potter, Somerset, and Union Conservation Districts

■ Local Trading Project

- Lancaster CD
- Cumberland CD

■ 7 Districts have received certification letters and have generated 53,275 Nitrogen Credits*.

■ Installed BMPs*:

- No-Till and Cover Crops - 2,480 Acres
- Manure Storage – 2 Structures
- Farm Lane Stabilization – 15,420 feet
- Mortality Composters – 3 composters
- Riparian Forest Buffers – 2.4 Acres
- Stream Bank Fencing w/ Off Stream Watering – 60 Acres protected
- Abandoned Mined Land Reclamation and Manure Export

* As of September 19,2008

Credits and Contracts:

- 61 proposals submitted for review with 36 approved for 777,010 nitrogen credits, 83,640 phosphorus credits and 35,593 sediment credits
 - Total since the release of the interim final policy in 2005 through 9-19-08.

 - 5 contracts completed
 - 3 for new development
 - 2 for existing WWTP facilities
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Is there/can there be a link between NT, Carbon Sequestration and Carbon Credits?

- Yes - ?
 - Maybe - ?
 - No - ?
 - Who decides - ?
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Where to go for more information?

PA DEP's Chesapeake Bay Website:

<http://www.dep.state.pa.us>

Keyword: "Chesapeake Bay"

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