

Statewide Credit for Urban Nutrient Management in the CBP Watershed Model



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Northern Virginia Regional Commission
CBP USWG Chair

2013 UNM Expert Panel Recommendations

- Established definition for urban nutrient management BMP
- Revised reduction efficiencies
- Established several state-wide credits:
 - Phosphorus in all states
 - Nitrogen in Maryland only) based on state legislation or industry practice
- All statewide credits subject to verification (“in three years”) based on state fertilizer sales data.

Recommendations of the Expert Panel to Define Removal Rates for Urban Nutrient Management

CBP APPROVED FINAL REPORT

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Approved by Urban Stormwater Work Group: 2/9/2013
Approved by Watershed Technical Work Group: 3/4/2013
Approved by Water Quality Goal Implementation Team: 3/11/2013



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Fertilizer Data Use in Watershed Model

- Phase 5.3.2 -- all pervious acres receive uniform fertilizer input :
 - For P, 1.3 lbs/acre/year
 - For N, 43 pounds/acre/year
- Expert Panel report provided for automatic reductions:
 - States with phosphorus legislation (MD, NY and VA) receive 0.39 lbs/acre of phosphorus (70 % reduction per UNMEP report)
 - States without such legislation (DC, DE, PA and WV) receive 0.5 lbs/acre of phosphorus (60 % reduction per UNMEP report)
- By 2016, states must show fertilizer sales/use statistics that substantiate these reductions in phosphorus applications.
- Under Version 6, applications of N and P fertilizer should be based on state fertilizer sales/acres in turf.

Communication with States

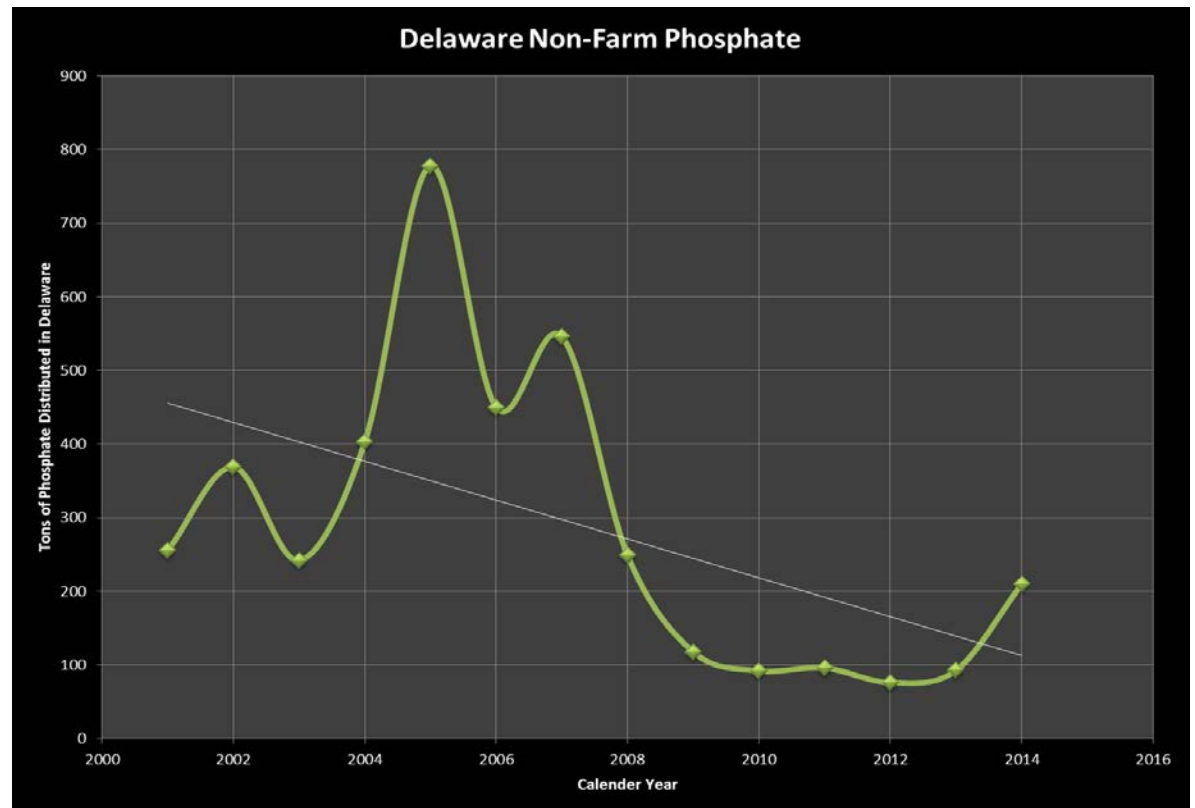
- July, 2014: Joint USWG/LUWG Work Session: Discussion of the 6 key issues: Does it make sense to split pervious land based on fertilizer washoff risk or fertilization status?
- August, 2014 – Joint USWG/ WTWG and State Fertilizer Contacts Call
- September, 2014: Agenda - Process for Improving Non-Farm Fertilizer Statistics
- October, 2014: Agenda - Process for Improving Non-Farm Fertilizer Statistics
- March, 2015 – Email Request to State Fertilizer Contacts for Update
- May, 2015: Agenda Items -
 - Update on 2014 Progress Runs for the Urban Sector and Effect of Fertilizer Law on P Reductions
 - Potential Template for Developing Reliable Non-Farm Fertilizer Statistics
- September, 2015: Agenda Item - Agriculture Fertilizer Statistics
- October, 2015: Agenda Item - Fertilizer Credit Update

Data Provided by States

- Despite persistent data requests very little data provided by the States.

Delaware
70 – 75 % Reduction
2001- 2014

Data from Dan Woodall, DDA,
presented at September 2015 CBP
USWG meeting



What Does the Other Sales Data Show

- Additional data mined from other sources;
- Different levels of reduction depending on which data set is used;
- Different levels of reduction depending on what year you use for a baseline;
- Data have gaps and/or hard-to-explain fluctuations

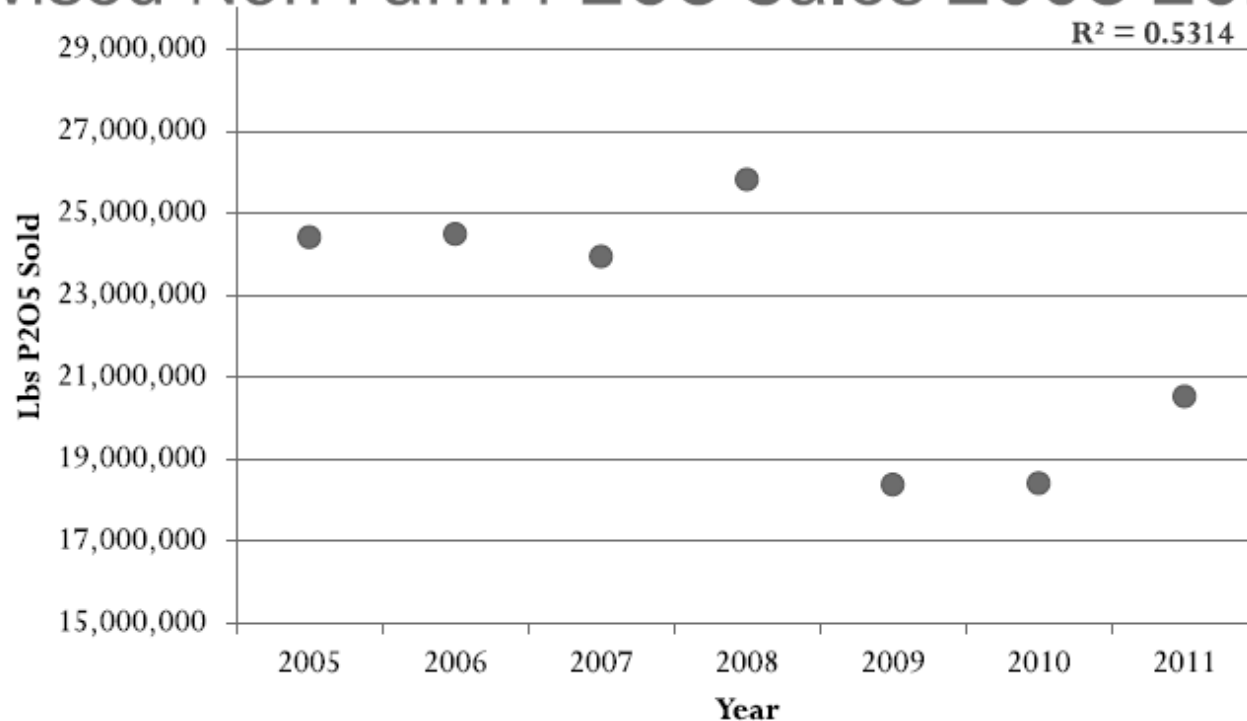


55- 85 % Reduction 2006 - 2010

Industry Reported Change in P Fertilizer Sales in the Bay States, 2006 to 2010 ¹			
State ²	2006	2010	Percent reduction
	Millions of Pounds	Millions of Pounds	
Pennsylvania	1.41	0.26	82 %
Maryland	0.68	0.10	85 %
Virginia	0.60	0.22	63 %
Delaware	0.09	0.04	55 %
West Virginia	0.07	0.02	71 %
Total	2.85	0.655	77%
¹ annual sales data reported by Scotts (2011) for non-farm fertilizer sales by state. Scott's currently has a 60% market share, and has committed to a full phase out of P in its fertilizer products by January 1, 2013. Analysis performed by Gary Felton, 2012. ² Note that the statistics on P sales are provided for each state as a whole, and NOT the fraction of the state located within the Bay watershed			

25 % Reduction 2005-2011

Revised Non-Farm P2O5 Sales 2005-2011



Good News: There is a statistically significant decreasing trend in non-farm fertilizer sales (at least in reporting).

Bad News: The bad news is that this represents a 25% decrease, not a 60 or 70% decrease.

Data from Matt Johnston, CBP data analyst, presented at May 2015 CBP USWG meeting -- derived from AAPFCO non-farm fertilizer sales data

Where Do We Go From Here?

Expert Panel concluded that more accurate non-farm fertilizer sales data that accounts for actual N and P content of fertilizer being sold is essential to verify any state-wide credits.....and needed for Phase 6

- Automatic fertilizer credits have accounted for significant Progress reductions.
- Very little confidence in data provided to date to justify:
 - state-wide credits (Delaware aside)
 - trends since 2005 or
 - to set per acre application rates for the Phase 6 Model.
- Bay states are still working to implement non-farm fertilizer sales tracking.
- Three year deadline has expired and decisions required for remaining Phase 5 runs and Phase 6

Additional Fallout Questions to be Discussed

- USWG considering several rate options
 - Will return to WQGIT in March with recommendations
- Additional Fallout Questions
 - Is it reasonable to have the same rate on every acre of turf from 1985 through 2015 as it currently is simulated – or-
 - Some sloped reduction post 2010 as P was phased out?
 - Should there be lower rates on some land uses and higher rates on others?