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

January 10, 2013

Chesapeake Bay Program
A Watershed Partnership

Outline of Presentation

- Brief review of panel recommendations
- Key comments received from Ag workgroup and MDA
- Focus on alternative outreach and verification
- Process for getting final approval

Comparison of Acres of Urban Pervious Areas and Anticipated Acres Under Urban Nutrient Management by 2025, For Each Bay State		
State	Urban Pervious Area [1]	Urban Nutrient Management [2]
	Acres	
Delaware	36,481	34,584
District of Columbia	17,206	42,240
Maryland	990,291	555,575
New York	170,716	170,654
Pennsylvania	1,052,558	311,154
Virginia	1,195,567	517,058
West Virginia	88,218	347
TOTAL	3,551,037	1,631,612

[1] Acres of Urban Pervious Area in Version 5.3.2 of Chesapeake Bay Watershed Model

[2] Acres under urban nutrient management in each state by 2025 as reported in the Phase 2 Watershed Implementation Plan submissions to EPA in 2012, as summarized in spreadsheet by Jeff Sweeney, EPA CBPO

[3]

Summary of Urban Nutrient Management Credits for Phosphorus and Nitrogen on Urban Pervious Land				
Nutrient	*Statewide with P fertilizer legislation*	*Statewide without P fertilizer legislation*	*Urban Nutrient Management (UNM)*	*Alternative Outreach Option*
TP	25%	20%	Low risk: 3% High risk: 10% Blended: 4.5%	Alternative: 0% Passive: 0%
TN	3% for every 10% decrease in N urban fertilizer input		Low risk: 6% High risk: 20% Blended: 9%	Alternative: 3% Passive: 0%

Justification of Core UNM Practices

- More than 40 studies support reduced risk of N export associated w/ individual lawn care practices
- Practices include both fertilization AND management of "lawn biomass"

Core UNM Practices for the Chesapeake Bay

1. Get *technical assistance* to develop an effective UNM plan for the property
2. Maintain a **dense** vegetative cover of turf grass or conservation landscaping
3. Choose not to fertilize, **OR** adopt a reduce rate/monitor approach **OR** the use the small fertilizer dose approach
4. Retain clippings and mulched leaves on the yard and keep them out of streets and storm drains
5. Do not apply fertilizer before spring green up or after Halloween *

Core UNM Practices for the Chesapeake Bay

6. Maximize use of slow release N fertilizer during the active growing season
7. Set mower height at 3 inches or taller
8. Immediately sweep off any fertilizer that lands on a paved surface
9. Do not apply fertilizer within 20 feet of a water feature and manage this zone as a perennial planting, a tall grass buffer or a forested buffer
10. Employ lawn practices to increase soil porosity and infiltration capability and use the lawn to treat stormwater runoff.

Effect of Outreach on Fertilizer Behaviors

- Recent sociological research indicated fertilization and lawn care behaviors are deeply rooted and hard to change
- Strong neighborhood pressures and norms often outweigh environmental or water quality considerations

Summary of Comments (so far)

- Reluctance on alternative outreach option credit
- Verification issues with urban nutrient management plans
- Concern about state non-farm fertilizer statistics
- Nutrient management terminology
- MD: not getting credit for mandatory N reductions by commercial applicators

Alternative Outreach

Alternative methods to motivate property owners or commercial applicators to implement the core UNM practices, such as:

- Use of local or regional social media/marketing campaigns to deliver the core message to a geographically defined target population, and encourage them to develop a UNM plan/pledge.
- Map high risk export factors within a community to target outreach efforts to develop more UNM plans in these areas
- Target training to commercial applicators, lawn care companies, landscape contractors or property managers to encourage them to adopt UNM practices
- Point of sale outreach at retail sales outlets to encourage UNM practices
- Other innovative outreach efforts, as approved by state and/or extension service.

Alternative Outreach (cont.)

- Sponsoring agencies are eligible for a three year N reduction credit equivalent to 3% of the N load generated for the total pervious area within the geographical area targeted.
- Credit is contingent upon the implementation of a before and after survey to measure actual changes in fertilization behavior outcomes.
- After 3 years, the credit expires, and is replaced by the actual acreage of UNM plans/pledges that are produced by the outreach effort

Essentially a short term incentive for localities to invest in innovative UNM delivery efforts

Credit for Alternative Outreach Option

- Credit is contingent upon before and after surveys, monitoring or other research that can scientifically evaluate the quantitative outcome of the outreach program, in terms of actual changes in fertilization behavior or increased delivery of UNM plans.

- Acknowledged that some alternative outreach efforts may fail or may not meet their original expectations, but new data collected will improve future UNM delivery.

Verification for Alternative Outreach Option

- Nature of the intended target population (including number of applicators, their demographics, and the estimated acreage of pervious land they manage)
- Specific geographic area in which the outreach effort is being applied (e.g., total acres of pervious land)
- Specific UNM hypothesis that will be tested
- UNM metric that will be measured or mapped (e.g., fertilization behavior, risk factors, change in lawn runoff or nutrient concentration).
- Baseline measurement or survey prior to define the metric prior to the implementation of the alternative outreach option
- Post outreach measurement or survey to assess whether the metric changed in response to the outreach effort and test the original hypothesis
- Surveys should be designed to provide a maximum 5% margin of error for the target population
- All surveys should be focused on measuring changes in UNM outcomes; documenting changes in awareness or attitudes are not sufficient.

Verification Procedures for State-wide Credits

After 2015, however, the automatic state credit will lapse and be replaced with state-reported estimates of actual P and N non-farm fertilizer applications to pervious land

The Panel acknowledges that most current state non-farm fertilizer sales statistics are not detailed enough to characterize urban nutrient content, but feel that such data is critical to verify the substantial Bay-wide reductions provided.

- 250,000 lbs of TP
- 1,000,000 lbs of TN

States may be able to get even greater reductions if they can be verified by more accurate reporting

May need to set up group of ag statistics folks to develop a uniform reporting system

Fundamental Reporting Unit: Acres in UNM Plan

UNM Plan for 9200 Bradford Pear Lane: 0.5 acres		
1	Get Expert Lawn Advice	✓
2	Maintain Dense Cover on Turf	✓
3	Choose NOT to fertilize	✓
4	Recycle Lawn Clippings and Compost Fallen Leaves	✓
5	Correct Fertilizer Timing	N/A
6	Use Slow Release Fertilizer	N/A
7	Set Mower Height at 3 inches	✓
8	No off-target fertilization	N/A
9	Fertilizer free buffer zones around water features	✓
10	Increase soil porosity and infiltration	✓

Qualifying Conditions for UNM

- Each UNM plan must be prepared by a trained expert (e.g., certified plan writer)
- Plan must be consistent with the applicable UNM core lawn care practices or existing state requirements (e.g., Virginia)
- Each UNM plan must clearly document the:
  - Start and end dates for the plan
  - Name, contact information and locator data for the owner, applicator and UNM planner
  - Acreage of turf and landscaping covered by the plan
  - Annual N and P fertilization rate, if any
  - Whether the turf is classified as high or low risk of nutrient export or is an unfertilized lawn (optional)

UNM Plan Verification

- Maximum duration of a UNM plan is 3 years
- Can be renewed based on affirmation from the owner or applicator that they are either (a) maintaining the plan or (b) or have modified the plan based on further professional feedback/tests
- If a UNM plan cannot be reconfirmed after 3 years, it will be considered lapsed, and the treated acreage should be deducted from the UNM planning agency database.
- Turf areas greater than one acre in size may require an on-site visit to assess turf condition and nutrient export risk.

UNM Record Keeping

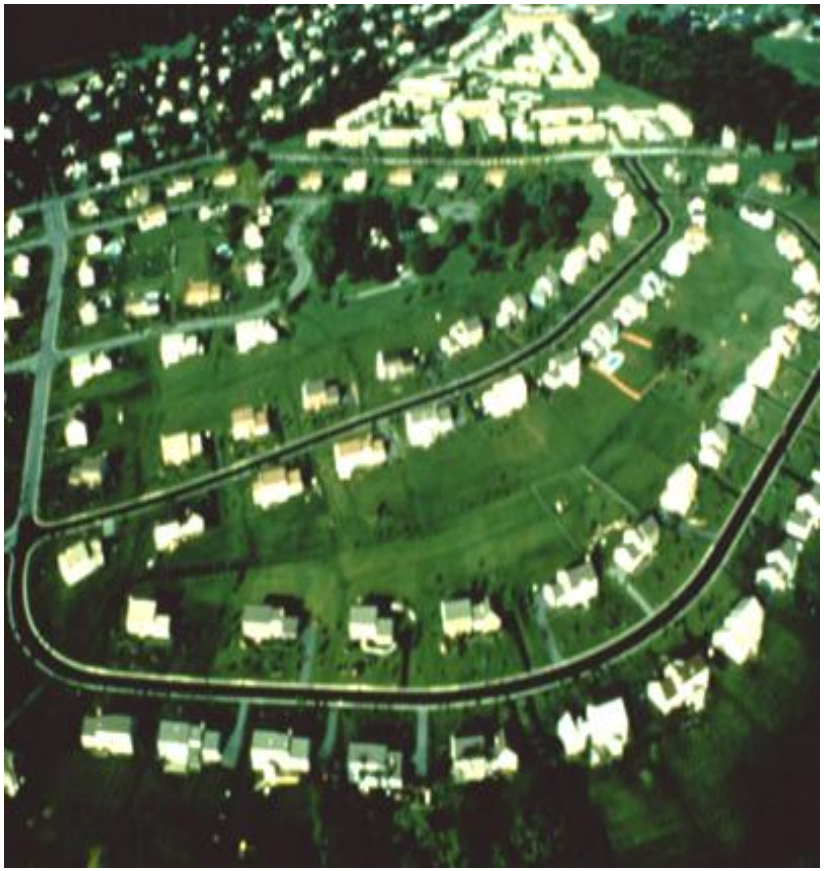
- Electronic or hard copy of the individual UNM plan
- Owner contact information and street and watershed address
- A UNM contact database so that they can communicate by mail or e-mail, and send at least one reinforcement message to each UNM owner/applicator each year.
- A UNM tracking database or spreadsheet to track required data elements for NEIN reporting and the status of UNM plans over time

More on UNM Verification

- Verification involves an affirmation by the plan writer, property owner or operator that the UNM plan is still valid, and is still being implemented.
- The UNM planning agency (or delegated third party organization) will also need to randomly sub-sample either plan writers or property owners with high nutrient export risk under a defined schedule.
- The aggregate compliance rates derived from the sub-sample surveys will be used to extrapolate UNM compliance rates for the community as a whole.
- The compliance rates are then used to downgrade UNM nutrient reduction credits

UNM Verification Issues

- 84,000 farms vs. 4 million lawns
- What would on-site UNM verification actually measure ?
- Very limited existing institutional capacity for UNM delivery and verification
- Residential lawn police ?
- What can we borrow from your new verification protocol?



Next Steps??

- Comment period extends to end of January
- CSN to revise report and go thru the WTWG/WQGIT approval process in Feb
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