URBAN NUTRIENT MANAGEMENT CREDITS IN THE CHESAPEAKE BAY MODEL

The Chesapeake Bay Program recently approved new methodologies for crediting urban nutrient management within the Bay Watershed. These methods are explained in detail in the final report[1] available through the Chesapeake Stormwater Network website: chesapeakestormwater.net. This fact sheet has been created by HRPDC staff to summarize the report recommendations and explain how localities can receive credit for urban nutrient management programs.

DEFINITIONS OF URBAN NUTRIENT MANAGEMENT:

Old: Reduction in fertilizer use by adhering to certain best practices (e.g., fertilizing at recommend rates in the appropriate season using slow release formulations).

TABLE 1

Previous Nutrient Management Credits	
Nitrogen Reduction	Phosphorus Reduction
17%	22%

New: Identifying how the major nutrients (nitrogen, phosphorus, and potassium) should be managed for turf, landscape plants, and for water quality protection. A nutrient management plan is a written, site specific plan which addresses these issues.

URBAN NUTRIENT MANAGEMENT CREDITS:

TABLE 2

Current Nutrient Management Credits		
Management Action	Nitrogen Reduction	Phosphorus Reduction
Statewide Fertilizer Legislation	Commercial: 9%* Homeowner: 4.5%*	25%****
No Statewide Fertilizer Legislation**	3% reduction for every 10% reduction from the Bay Model baseline	20%****
Urban Nutrient Management Plans***		
Low Risk	6%	3%
High Risk	20%	10%
Blended	9%	4.5%

*Maryland is the only State that currently has statewide legislation for Nitrogen.
**States without legislation benefit from industry phase out of phosphorus in fertilizer products.
*** Plans must be renewed every three years.
****Starting in 2016, reductions will be based on two years of fertilizer sales data.

EXPLANATION OF CREDITS:

Statewide Legislation

Statewide phosphorus reduction credits were calculated through a series of Chesapeake Bay Watershed Model runs. The chosen reduction scenario reflects an assumption that reductions of phosphorus in fertilizers will reduce the application rate of phosphorus to pervious lands by 70% in States that have adopted legislation. Phosphorus application rates in states without fertilizer legislation will still decrease due to industry action to comply with other states' regulations.

Urban Nutrient Management Plans

The panel determined that targeting high risk lawns would be the most effective and economical. If a locality does not identify the risk factor of lawns under urban nutrient management, then the blended rate will be credited.

HIGH RISK LAWNS HAVE ONE OR MORE OF THE FOLLOWING CHARACTERISTICS:

- Fertilized at a rate higher than state or extension recommendations
- Phosphorus saturated soils (determined by a soil test)
- Water table within 3 ft of the surface
- Sandy, shallow, or compacted soils
- Exposed soil (greater than 5% if managed, and greater than 15% if unmanaged)
- High use areas such as athletic fields and golf courses
- Within 300 ft of a stream, river, or Bay
- Slopes greater than 15%
- Newly established turf
- Excessive irrigation (waterlogged soils)
- Karst terrain

IMPACTS TO LOCAL GOVERNMENTS

Virginia Fertilizer Regulations

Local governments will not directly receive credit for the phosphorus ban in Virginia. The reduction will be applied to the urban sector as whole. Local government reduction targets may be adjusted as part of the Phase III WIP process in 2017-2018.

Urban Nutrient Management

PUBLIC LANDS

Virginia's Chesapeake Bay TMDL Phase I Watershed Implementation Plan (WIP) details the nutrient reduction requirements for urban areas. In addition to the numeric targets in the WIP, MS4s must develop certified urban nutrient management plans for all lands owned or operated by the MS4 where nutrients are applied to a contiguous area greater than one acre. All acres covered under a certified plan are reported directly to DCR and reported to the Bay Program, but localities should track these acres for planning purposes.

PRIVATE PROPERTY

Certified Nutrient Management Plans

Localities can receive credit (see Table 2) for urban nutrient management plans on private lands that are not otherwise required to have nutrient management. These plans must be prepared by a certified nutrient management planner in accordance with Virginia's Nutrient Management Training and Certification Regulations. DCR has a program to certify private and public sector nutrient management planners[2]. All acres covered by a certified plan are reported by the preparer to DCR, then to the Bay Program for crediting.

Virginia has also developed a Water Quality Agreement Program whereby lawn care operators agree to follow a Nutrient Management Plan approved by DCR. The acres treated by these operators will be credited according to Table 2. Localities should coordinate with DCR and lawn care operators to track these acres for planning purposes. A list of qualifying operators can be found online at the Virginia DCR website[3].

Pledges

The report does not include a direct credit for outreach, but it does assign credit to homeowner pledges. A homeowner must have a trained professional conduct a soil test, then pledge to implement the appropriate practices from Table 3. The credit for low risk lawns will be applied to all acres covered by homeowner pledges. DCR is currently working to develop a pledge program for Virginia.

TABLE 3

Core Urban Nutrient Management Practices (Not all practices are applicable on all sites.)
1. Consult with local extension service or certified nutrient management planner to get a soil test.
2. Maintain a dense vegetated cover.
3. Choose nutrient application strategy: no fertilizer; reduce rate and monitor; or split extension recommended rate into 3 to 4 smaller doses during the growing season.
4. Retain clippings and mulched leaves on the lawn.
5. Do not apply fertilizer when grass is dormant.
6. Use slow release N fertilizer.
7. Set mower height to at least 3 inches.
8. Immediately sweep up any fertilizer that lands on pavement.
9. Do not apply fertilizer within 20 feet of a water feature.
10. Use lawn care practices that increase soil quality (composting, aerating, dethatching).

Additional information on Virginia's Urban Nutrient Management program can also be found at the Virginia DCR website[4] or by contacting Derik Cataldi at Derik.Cataldi@dcr.virginia.gov.

[1] Chesapeake Stormwater Network UNM Expert Panel Report: http://chesapeakestormwater.net/wp-content/uploads/downloads/2014/03/CBP-APPROVED-FINAL-UNM-EXPERT-PANEL-REPORT-032514.pdf

[2] DCR Nutrient Management Planner Certification: http://www.dcr.virginia.gov/water_quality/nutmgt.shtml

[3] DCR List of Qualifying Operators: http://www.dcr.virginia.gov/water_quality/documents/wqagree.pdf

[4] Information on Virginia's Urban Nutrient Management Program: http://www.dcr.virginia.gov/water_quality/urban-nutmgt.shtml