

To: Durham County Manager's Office

From: Morgan Fleming

Re: Reducing Costs to Compliance with Falls Lake and Jordan Lake Rules

Date: December 16, 2013

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MEMORANDUM OF POLICY OPTIONS

Overview

Durham County Manager's Office should consider a combination of an education campaign, a business license and one or more fertilizer ordinances to try to reduce the amount of nitrogen and phosphorus pollution coming from lawn fertilizer application.

The education campaign will help increase homeowner knowledge and awareness around proper fertilizer application. The business license will double as a certification program for commercial applicators, ensuring the applicators are well informed of County policy and applicable guidelines. The fertilizer ordinances will give added weight to the messages conveyed in the education and certification programs by codifying the most important practices in law.

Problem Statement

By 2021, Durham County must be able to demonstrate that non-point source nitrogen (N) and phosphorus (P) loads from the unincorporated areas of Durham County to Falls Lake are at or below 2006 levels. N and P loading to Jordan Lake must be cut 35% and 5%, respectively, from 1997-2001 base levels. The EPA deems both Jordan Lake and Falls Lake "out-of-attainment" for their primary designated use, drinking water. As a result, the North Carolina Department of Environment and Natural Resources successively passed the Jordan Lake Rules and the Falls Lake Rules, compelling Durham County and other local governments in the Upper New Hope and the Upper Neuse Watersheds to make drastic cuts to nutrient loading from three key sources. Those sources are stormwater runoff from impervious surfaces, wastewater management, and agriculture.

Unregulated residential fertilizer application is potentially a large source of phosphorus and nitrogen non-point source pollution in Durham County. Between 4,000 and 6,000 acres of lawn, representing more than 28,000 residential homes, are fertilized within the county each year. These numbers do not include commercial properties, which account for several thousand more acres of fertilized lawn. (Fleming, 2013)

Homeowners in Durham County have a poor track record for responsible fertilizer application. For example, roughly 1/4 of homeowners that fertilize their lawns rarely or never sweep fertilizer off of sidewalks and streets. This leaves raw, unfiltered fertilizer to be washed directly into storm drains, where it will be carried straight into local streams and rivers. Between 1/4 and 1/2 of homeowners that apply fertilizer themselves are at risk for over-applying fertilizer to their lawns. Two-thirds of homeowners take fewer than 1/2 of the steps necessary for responsible fertilizer application. (Fleming, 2013)

Commercial fertilizer applicators contribute even more to the fertilizer problem than do residential homeowners as they maintain commercial properties in addition to fertilizing roughly 1/4 of the homes in the county. Contractors also apply more fertilizer per year, on average, than do homeowners (Osmund, 2000). Contractors apply more because they make more applications, between 3 and 5 per year (Scotts, 2006). The increased number of applications means that contractors are also more likely to violate best management practices, such as applying before major rain events and applying to impervious surfaces.

Criteria

The criteria are essentially the values by which the County might evaluate each alternative. These criteria were selected with the aid of Drew Cummings, Assistant County Manager.

- Cost - The cost of implementing a policy option must be zero or small enough that it can be covered by a minimal increase in taxes.
- Effectiveness - There must be sound reason to believe that the policy option will result in a meaningful improvement of the problem.
- Political Feasibility - The policy option must be something that will be acceptable to the citizens of the county.

Alternatives

1. Fund an aggressive education campaign targeted to county homeowners about the importance of BMPs, how to properly determine the amount of fertilizer to apply, the benefits of proper lawn care, and important questions to ask contractors. The campaign can be an independent initiative of Durham County or a part of a larger, regional effort involving Clean Water Education Program (CWEP), Upper Neuse River Basin Association (UNRBA), and other counties and cities. A robust campaign would include radio and TV spots, newspaper advertisements, mailers, a pamphlet,

workshops, a website and a smartphone application. (See Appendix A for a detailed discussion of Alternative 1.)

2. Implement a county-wide business license to register and monitor professional lawn care services operating inside the county- for both residential and commercial services. Require professional fertilizer applicators to undergo training and certification with the Soil and Water Conservation District. Applicators would be trained in person and then tested on material retention. A roughly \$75 fee would be charged per person, with re-certification required every 2 to 4 years. (See Appendix B for a detailed discussion of Alternative 2.)

3. Pass a county-wide ordinance mandating the practice of certain BMPs, such as sweeping of impervious surfaces and not fertilizing before major rain events. The ordinance would further require applicators- professional or homeowner- to follow fertilizer bag directions. Finally, the ordinance would set limits on the amount of N and P than can be applied per application and per year. The ordinance may or may not be enforced. (See Appendix C for a detailed discussion of Alternative 3.)

Analysis

Alternative 1 - Education Campaign

Cost	Effectiveness	Political Feasibility
-	+	+

An education campaign will cost the County tens of thousands of dollars per year to establish and to maintain over time. The program would have no direct revenue benefits to the County, though many indirect benefits may exist, such as credits for nutrient loading reductions. Ultimately, an education campaign fails the cost criteria.

It is not clear whether a partnership in a regional campaign or a solo campaign by the county would cost more. However, it is clear that both campaigns would have similar levels of costs- in the tens of thousands of dollars every year- with differing levels of outreach. The most expensive part of the campaign would be the establishment phase due to development and production costs. Maintaining the program would not be as large of a burden (Robin Grantham, personal communication). However, according to Forrest Westall of UNRBA, the program would need to be maintained continuously in order for the County to retain any credits earned due to the success of a campaign. Both a County-level and a regional-level program would most likely need to be funded through an increase in property taxes, an added county stormwater fee, or a special GS 139-39 fund.

An education campaign *should* succeed on the effectiveness criteria. Ultimately, however, the success of this policy option depends on how well it is designed.

Thousands of dollars could easily be spent on a poorly targeted campaign that conveys too many disjointed messages and results in little or no effect. Appendix A provides a preliminary look at how an effective campaign might be conceived for Durham County. Done properly, a campaign can have an impact. The Florida Friendly Fertilizer campaign demonstrated a 40% or more improvement of many key issues in 2011 (SWFMD Com Dept, 2011). The campaign was operated at a regional level and used newspaper print ads, TV and radio commercials, booklets and tip cards, and a website.

The success of an education campaign depends on a complex array of factors coming together. On the issue of fertilizer application, the ultimate outcome the County is concerned with is not homeowner behavior changes, but rather actual reductions in N and P loading to Falls and Jordan Lakes *because of* those behavior changes. The County should exercise caution before committing funds to an education campaign. Specifically, the County must make sure that the N and P reductions that follow from homeowner behavior changes will be enough to justify the costs of the program.

An education campaign succeeds on the political feasibility criteria. This policy option should be well received by the public, provided that the cost of the program is not too burdensome on them. A nominal increase in the current ad valorem tax rate of the County should be sufficient to raise the extra money to fund the program. While the tax increase might be small, the actual amount spent might cause some voters to balk at the idea of funding such a program. However, the County can readily justify the expense if it is clear that the program will ultimately save the County and its citizens money in the

long run. More importantly, the expense is small relative to what some homeowners will have to pay out to replace their septic systems with city sewer hookups, what some farmers will have to spend to bring their farms fully into compliance with the Falls Lake and Jordan Lake rules, or the cost of a single stormwater BMP.

Alternative 2 - Business License and Certification

Cost	Effectiveness	Political Feasibility
0	+?	+

A certification program could be designed, in its fee schedule, to be revenue neutral. For this reason this policy option is neutral on the cost criteria. Neutrality requires that the fee schedule cover the cost of educating and certifying contractors as well as any additional enforcement costs. The Maryland fee schedule does this by charging roughly \$165 per year for certification of a supervisor, the business license, and any additional “registered” applicators (McGowan, personal communication).

The certification program receives a questionable success for effectiveness. Unfortunately, there is no research yet on whether or not the fertilizer certification program outlined in Alternative 2 would be effective in reducing N and P loading. Several states have adopted such programs at a state-level; but most of those programs have only just come online this year. Thus, they have not had time to be evaluated.

The program adopted by Florida is the longest running. It was started in 2009 and requires everyone to have a certification license by January 1st, 2014. There, however, efforts to determine N and P loading reductions due to the certification program are undermined by the high rate of development in the state. Nevertheless, Mr. Rainey points out that their certification program does earn a small number of credits for things like NPDES permits. (Rainey, personal communication).

A certification program easily passes the political feasibility criteria. Professional company owners might fight such a program. However, in NJ, MD and FL, lawn care companies and fertilizer companies worked with the state legislatures in the drafting of regulations rather than fighting their implementation (McGowan, Pflugh, Rainey, personal communications). So long as Durham County is clear that the policy will be implemented and open to working with the affected companies, the political process should work relatively smoothly here, as well. Mr. Rainey indicated that the key issue for companies was that the education materials- and any accompanying regulations- be science based and not simply at the whim of the County. As a final note, Mr. Rainey said that most of the early adopters in the Florida program strongly support it and would like to see more of it.

Outside of the affected companies, the general citizenry should broadly support a certification program. The program will be cost neutral, is environmentally minded, will help hold a group accountable for its contributions to the N and P loading problem, and ultimately is aimed at saving the citizenry money and headaches.

Alternative 3 - Ordinance

Cost	Effectiveness	Political Feasibility
0	+	+

Aside from the administrative process of drafting and adopting the ordinance, it won't cost anything to have an ordinance on the books. But neither will it earn any money for the County, so it receives a neutral rating for the cost criteria. Of course, if the County chooses to try and enforce the ordinance, then the County will incur an enforcement cost. However, this cost need not be steep (a few thousand dollars per year) if a well devised enforcement strategy is used (see Appendix C for one idea).

The direct effectiveness of an ordinance is questionable due to the challenges of enforcing it. However, an ordinance's indirect effects earn it a success on the effectiveness criteria.

The restrictions and requirements of the ordinance are in alignment with those of North Carolina State University. However, NC State's recommendations are just that, soft suggestions. While the University is a legitimate source of authority on the topic of lawn maintenance, it lacks the ability to establish a strong moral norm about proper lawn care. This is where a county ordinance comes in. The ordinance, while not being highly enforceable, is highly expressive. What the ordinance is expressing is, "This is the correct, socially acceptable, morally right way to maintain a lawn." In short, it establishes a social norm that not only outlines the correct way to maintain a lawn, but

also conveys to the individual that we, as a society, care about what you, the individual, do to maintain your lawn. (Sunstein, 1996)

Due to its limited enforceability, the effect of the ordinance will not be to force homeowners and commercial applicators to change their behavior. Instead, it will be to induce them to consider more carefully their actions. Some people will change their behavior directly because of the ordinance simply because they want to conform to the new norm of society. Others will not change because of the ordinance; but they will pay more attention to educational materials and give more thought to the personal benefits of the behaviors outlined in the ordinance, making them more likely to change their behavior. Thus, an ordinance will help to provide a backbone to the education campaign and certification program.

The primary threat to the effectiveness of the ordinance is whether or not Durham County citizens consider the County Government to be a legitimate authority for setting norms about residential fertilizer application. Keeping the restrictions and recommendations of the ordinance in line with those of NC State is the best thing the County can do to build and maintain such legitimacy.

An ordinance should be a success on political feasibility. Laws extensively regulating fertilizer application have been passed at the state level in two democratic states- one of which has a Republican governor, as well Sarasota County, Florida. While some citizens may deem such an ordinance an infringement on personal

freedom, the fact of the matter is that proper adherence to the ordinance should result in healthier lawns and cost savings for the homeowner.

Recommendation

I recommend a combination of Alternatives 1, 2 and 3. The first two alternatives combined will cover nearly all residential and commercial lawn fertilizer application inside the county, while the third alternative will give strength and legitimacy to the previous two.

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APPENDICES

APPENDIX A - Education Campaign

1. Fund an aggressive education campaign targeted to county homeowners about the importance of BMP's, how to properly determine the amount of fertilizer to apply, the benefits of proper lawn care, and important questions to ask contractors. The campaign can be an independent initiative of Durham County or a part of a larger, regional effort involving CWER, UNRBA, etc. A robust campaign would include radio and TV spots, newspaper advertisements, mailers, a pamphlet, workshops, a website and a smartphone application.

Target Audience: Middle to upper income single-occupancy homeowners, ages 35 to 75. The actual age range of respondents that reported fertilizing their lawn in a recent study was 24 to 95 years of age. However, 80% of respondents fell between ages 35 and 75. Virtually all respondents were middle to upper income. (Fleming, 2013)

Messages: Unfortunately, the residential fertilizer problem is a complex issue that requires delivering multiple messages in the hopes of achieving multiple behavior changes. Messaging needs to convey why people should care, what they should do, how to do it, and what they are getting out of it (related to why they should care).

Why care? A combination of environmental protection and stewardship as well as helping the County to avoid massive costs of standard solutions- which should help avoid or minimize tax increases from the county.

What they should do? Sweep impervious surfaces; mulch grass; take soil samples; lime; don't fertilize in buffer zones; ensure amount applied is correct amount; don't fertilize before major rain events; ask contractors pointed questions about amount of fertilizer applied, certification status, practice of BMPs, etc.

How they should do it? For some items, such as sweeping impervious surfaces, the "what" is implicit with the "how." However, other activities are more complex, specifically applying the correct amount of fertilizer, taking soil samples (and interpreting them), and asking contractors questions. These items may be more involved and require more than simply a 30 second TV spot to convey. Applying correct amount could be simplified to simply encouraging homeowners to buy small bags of fertilizer instead of large bags. Teaching people to ask questions might simply mean encouraging them to read off a prescribed set from a pamphlet.

What are they getting out of it? Savings on cost of fertilizer because they are buying less; healthier lawns because the fertilizer that is applied is being more effective; less taxation.

Outputs: A selection of or all of TV and radio spots, pamphlets/booklet, smartphone app, mailers, newspaper ads, workshops, website

Outcomes: Improve rates at which people practice BMP's; decrease amount of N and P applied to lawns; decrease rate of over application in the county; increase awareness of proper lawn care companies should be following

Impacts: Reduce N and P runoff from lawns and impervious surfaces due to lawn fertilizer application.

Organization: At the County level, this would presumably be handled by SWCD, though in a much smaller format. At the regional level, this could be handled as a bubble or as individual jurisdictions working together. As a bubble, all participants succeed or fail together. As cooperating jurisdictions, only participating jurisdictions get credit and only if that jurisdiction can demonstrate successful reductions. An organization such as CWEP could be the central agency organizing and administering the campaign.

Funding:

- 319 (h) funds? May take time to come in, however.
- County level: New county tax or stormwater fee
- Regional level: everybody chips in per their own ability and devices.

Costs: Startup costs are the most significant portion of administering the program. These include developing the messaging and branding of the program, drafting scripts and print documents, website and app design, and paying for printing and production of output materials. Further, a pre-program baseline survey must be done to track the program's effectiveness. FFF reports suggests 1 FTE plus 20% of the time of other employees in the department being tied up in development (Grantham, personal communication). A smaller, county-level program might not demand as much time in startup; but a large scale regional program certainly would. However, a larger scale program should be able to spread the costs of the FTE and the additional personnel time out over several groups rather than concentrating it all in one SWCD.

Once the program is up and running, a single FTE should be able to maintain it with little difficulty (Bruce, Grantham, personal communications). Maintenance and operating costs of the program include paying for advertising, paying royalties to actors (minimal cost), new printings of materials, hosting fees for the website and smartphone application, the FTE's salary, and follow-up surveys to measure the effectiveness of the program and gather feedback.

Small Program Strategy: The key to success of a campaign funded and run exclusively by Durham County is focus. The County will have to narrow the messages it tries to convey to homeowners to a select few key messages and make those messages as easy as possible to follow. Further, targeting of those messages will have to be very precise.

To deal with misapplication, I recommend focussing on only one or two BMPs. Those should be sweeping impervious surfaces and not fertilizing before major rain events. Both BMPs are not followed at about the same rate; however the the first one is easily a bigger contributor to the problem since the fertilizer is washed in to storm drains completely unfiltered. To deal with over-application, rather than try to educate homeowners on how to properly calculate fertilizer application rates, I would simply encourage them to buy small bags of fertilizer. The survey results suggests that most instances of over-application are due to homeowners on small lots buying large bags of fertilizer (Fleming, 2013).

In order to be effective, the County's messaging needs to be sustained. Cooperating with Lowe's, Home Depot and Walmart to get displays of County-approved materials at the point of sale for residential fertilizer application would be a low-cost tactic that directly targets homeowners buying fertilizer (Grantham, personal communication). The County could also cooperate with homeowner's associations to get reminders posted in bulletins or to organize local workshops. Finally, the County could use the dataset generated from the recent survey to target mailers to homeowners with high likelihoods of fertilizing.

Developing the smaller campaign will be less labor intensive than the larger program. However, all of the labor must be supplied by the county with little or no outside help.

Large Program Strategy: A regional campaign would adopt all of the strategies from the smaller campaign. However, the regional campaign would have the luxury of using a wider array of media to reach a larger audience. The regional campaign would also be able provide more robust paper and online materials at cost. Finally, the regional campaign would be better able to address the full array of BMPs required for responsible lawn fertilizer application.

Radio and TV spots would focus on promoting the materials available on the website, the smart phone app, and the availability of a small print booklet. In addition, the radio and TV spots would copy the "keep-it-simple" style of messaging suggested in the smaller campaign- i.e. focus on small bags fertilizer and sweeping impervious surfaces. The website, print booklet and smartphone app would provide broader information, but still try to keep presentation simple and easy to follow.

For example, the booklet, website and smartphone app would provide a simple tool for estimating lawn size and a calculator for determining how much fertilizer to buy and apply. They would also cover, in more detail, the dangers of irresponsible fertilizer application and the benefits of following guidelines. A full treatment of all BMPs would be included, as well as a simple schedule for when to apply fertilizer to what types of lawn. Finally, these materials should provide a list of key questions for homeowners to ask their professional lawn care providers.

Developing all of these materials will be labour intensive; however, conducting the campaign at a regional level may allow for the labor to be divided up amongst many smaller entities, reducing the cost for each. Further, the regional program would be large enough to merit hiring one full-time employee to oversee the administration of the campaign.

Supplemental Materials: I've provided a PDF copy of the Pink Book as well as the full host of internal documents generated by the Florida-Friendly Fertilizer campaign in the course of developing their program. Moreover, Ms. Grantham has indicated that FFF is willing to share any copyrighted materials from their program that the County would like to use.

The Pink Book was designed to help groups formulate health-related education campaigns. However, its information is extremely valuable for anyone attempting to educate the masses. It provides a step-by-step guide to designing education programs as well as a variety of frameworks for thinking about how an individual or an institution learn and change.

APPENDIX B - Business License and Certification

2. Implement a county-wide business license to register and monitor professional lawn care services operating inside the county- for both residential and commercial services. Require professional fertilizer applicators to undergo training and certification with the Soil and Water Conservation District. Applicators would be trained in person and then tested on material retention. A roughly \$75 fee would be charged per person, with re-certification required every 2 to 4 years.

Goals:

1. Identify companies operating inside the county
2. Solicit information from them about their application practices
3. Ensure that applicators are informed of proper application practices
4. Reduce the amount of fertilizer over-applied and misapplied by contractors

Enforcement:

- Cruise areas in the County known to be likely to have lots of contractors during peak seasons, spot checking companies to see if they are registered.
- Promote consumer awareness of an online registry that highlights which companies are registered in the county to incentivize registration.

Funding:

- Self-funded through fees
- Additional support from County property taxes, a stormwater fee, or GS 139-39

Other States:

New Jersey, Maryland, Virginia and Florida have implemented state-level laws requiring certification of companies in recent years. Maryland and New Jersey use the same model, which is based on their respective state's pesticide certification programs and are designed to minimize costs to the states and the companies. Both states require at least one person at the company to undergo full certification while other workers at the company are "trained"- either through the state or by the certified employee. Tests are administered in person in MD and online in NJ. In NJ, Rutgers administers the whole program with no enforcement effort on the part of the state. In MD, where enforcement is practiced, the certification program is a vehicle for ensuring companies are following the State's fertilizer regulations (established in the same bill as the certification program). Fee schedules for each program are listed below. MD requires re-certification every year while NJ requires it every 4 years.

Florida and Virginia differ in that they allow for a more decentralized approach to certification. For example, in Virginia, a company can get training through the State or through a number of green industry groups that have their own programs. Florida's law is the most stringent in terms of who it requires to undergo training. *Anyone* that applies fertilizer (besides private homeowners) is required to go through the full training process

and carry a license. This goes above and beyond the NJ and MD laws, which only require the supervisor to be fully certified.

Implementation:

A Durham County program might look more like the Florida program than the MD and NJ programs. The NJ and MD programs are designed to service an entire state efficiently. Thus, the programs do not require the full certification of every employee. The smaller size of Durham County and the smaller number of companies that would be affected by the program might allow for small group training and certification by SWCD staff. This would be made all the more manageable if the County establishes a schedule for companies to be certified, giving different deadlines to different companies, with larger companies having later deadlines. The schedule could be drawn out over two years to allow time for everyone to get certified. Companies could then be required to go through re-certification every two to four years.

If North Carolina, as a state, or the governments affected by the Falls Lake Rules, as a region, were to adopt a certification program, NC State University might serve as a legitimate center for training and certifying companies. Enforcement in this case would best be carried out by a small number of agents (1 or 2) with authority in all of the participating counties. MD has 2 FTE's for enforcement in the whole state. However, collection of fees and disbursement of revenues to fund the certification program and enforcement officer(s) may become complicated. A larger, regional program would likely need to conform more to the MD and NJ models due to the burden of fully certifying all applicators on both the State/region and the companies themselves.

Fee Schedules:

New Jersey

Certified Employee

\$75 certification fee + \$25 per year after that

- Re-certification happens every 4 years for \$75 unless can demonstrate sufficient continuing education credits
- Certified individual must at least be within immediate phone contact of trained applicators
- Certified individual must be present with any applicators in training

Trained Employee

\$25 training fee per year

- Training is basically the same as certification, only less stringent
- All applicators must be registered as having been trained

Maryland

Certified Employee

\$100 for certification per year

- In person test
- Certified individual must be in immediate phone contact of trained applicators

- Certified individual is responsible for proving to the state that trained applicators have been through proper training

Registered Employee

\$15 for registered (trained) person per year

Business

\$50 for a business license

APPENDIX C - Ordinance

3. Pass a county-wide ordinance mandating the practice of certain BMPs, such as sweeping of impervious surfaces and not fertilizing before major rain events. Further require applicators- professional or homeowner- to follow fertilizer bag directions. Limit the amount of fertilizer than can be applied per year.

Goals:

1. Get people to apply correct amount at correct times in correct manor
2. Provide a unified backbone for the education and certification programs, with the moral strength of law

Enforcement:

- None
- Records checking of certified companies (see Alternative 2)
- Citizen reporting
- Ride through high-priority neighborhoods and check streets for fertilizer.

The simple ride-through may be an effective, low-cost enforcement strategy for the portion of the ordinance dealing with impervious surfaces. The enforcer would use a GoPro camera or similar setup mounted to the exterior of the vehicle, close to ground, to facilitate the process and document violations. Roughly 100 hours per year (12.5 8 hour days) would be spent driving through high-priority neighborhoods at low speed during peak months.

Fines would be issued based on the number of feet the property borders the roadway and the value of the home. For example, \$1 per foot for under \$100,000 in value; \$2 per foot for \$100,000 to \$199,999 in value; and \$3 per foot for over \$200,000 in value. This scales the fine both to ability to pay and potential size of infraction. Property value would easily be accessed in the Tax Parcel database while the road-lawn border could easily be measured with a measuring wheel.

The goal of this enforcement strategy is not 100% enforcement. Rather, it is creating awareness in homeowners minds that there is a real risk and cost associated with not complying with the impervious surface portion of the ordinance. With that knowledge, that will think more carefully about whether or not taking 10 minutes to sweep up is worth it. For example, is finishing 10 minutes early now worth the risk of an \$80 fine later? Some homeowners will think it is. Others won't, and so they will adapt their behavior accordingly.

An important part of this strategy is making sure the enforcement is visible. This might entail posting of results in HOA bulletins or local media outlets such as newspapers.

Cost:

- None if the ordinance is not enforced
- Low if the County attempts enforcement (~\$2,500 per year (\$25/hour) plus \$2,000 for equipment)

Model Ordinance:

NJ/MD

Do not fertilize before heavy rainfall or when soils are saturated

Do not apply to impervious surfaces AND sweep misapplied fertilizer up

Do not apply before March 1st or after November 15th

Do not apply more than 3.2 lbs N/1,000 sqft/yr (limit increased to 4.25 lbs for commercial applicator)

Do not apply more than 0.7 lbs water soluble N/1,000 sqft/application AND 0.9 lbs total N/1,000 sqft/application (total N limit increased to 1.0 lb for certified applicator)

Do not apply fertilizer within 25 ft of a waterbody (reduced to 10 ft if applied with drop spreader, rotary spreader with side guard or targeted spray liquid)

Do not apply P UNLESS can demonstrate need for it in the lawn

Do use a minimum of 70% slow release N

Sarasota, FL

Do not fertilize between June 1st and September 30th (rainy season)

Do not apply fertilizer within 10 ft of a waterbody (reduced to 3 ft if applied with drop spreader, rotary spreader with side guard or targeted spray liquid)

Do not leave grass clippings in stormwater drains, ditches, conveyances, water bodies or roadways

Do use a deflector shield on rotary spreaders

Do not apply more than 4 lbs N/1,000 sqft/yr

Do not apply more than 0.25 lbs P per application or 0.5 lbs P per year

Do use minimum 50% slow release N

Durham County*

Do not fertilize before heavy rainfall or when soils are saturated

Do not apply to impervious surfaces AND sweep misapplied fertilizer up

Do not apply before February 15th or after November 15th (expanded to February 1st and December 1st for certified applicator)

Do use minimum 20% slow release N

Do not apply fertilizer within 25 ft of a waterbody (reduced to 10 ft if applied with drop spreader, rotary spreader with side guard or targeted spray liquid)

Do not apply more than 0.7 lbs water soluble N/1,000 sqft/application AND 0.9 lbs total N/1,000 sqft/application (total N limit increased to 1.0 lb for certified applicator)

Do not apply more than 0.25 lbs P/1,000 sqft/application or more than 1.0 lb P/1,000 sqft/year

*Some numbers may seem overly specific. However, due to the actions of NJ and MD and the likelihood of other states following suite, major fertilizer companies, such as

Scotts, are already bringing their fertilizers sold in this region into compliance with these regulations. Michael Dupree indicated that he has spoken with officials from more than 20 other states that are considering adopting regulations very similar to the ones above.