Summary/Highlights:
On April 3, 2014, the county council adopted Ordinance 2014-06, establishing countywide regulation of fertilizer consistent with the state model, and directed staff to inform state agencies of its intent to adopt a seasonal ban on application of nitrogen or phosphorus and to increase the fertilizer free zone from 10 to 15 feet.

The attached ordinance amends Chapter 50, Article VII, Florida-Friendly Fertilizer Use, to include the above local options, as well as the previously discussed ban on phosphorus application without a documented deficiency and a requirement that at least 50% of nitrogen be applied in a slow-release form.

Agency comments regarding the local options, as well as scientific documentation related to fertilizer regulation is posted on Environmental Management's web site and are included as part of the record:


Recommended Motion: Adoption.
ORDINANCE 2014-

AN ORDINANCE OF THE COUNTY COUNCIL OF VOLUSIA COUNTY, FLORIDA, AMENDING THE CODE OF ORDINANCES OF THE COUNTY OF VOLUSIA, CHAPTER 50, ENVIRONMENT, TO AMEND ARTICLE VIII, FLORIDA-FRIENDLY FERTILIZER USE; MAKING CERTAIN FINDINGS AND DETERMINATIONS; PROHIBITING APPLICATION OF FERTILIZER CONTAINING NITROGEN OR PHOSPHORUS FROM JUNE 1 THROUGH SEPTEMBER 30 OF EACH YEAR; INCREASING THE FERTILIZER FREE ZONE AROUND WATERCOURSES FROM TEN FEET TO FIFTEEN FEET; PROHIBITING APPLICATION OF FERTILIZERS CONTAINING PHOSPHORUS IN VOLUSIA COUNTY UNLESS A TISSUE DEFICIENCY IS VERIFIED; REQUIRING FERTILIZER CONTAINING NITROGEN APPLIED WITHIN VOLUSIA COUNTY CONTAIN NO LESS THAN FIFTY PERCENT SLOW RELEASE NITROGEN; PROVIDING FOR CONTINUING EFFECT; PROVIDING FOR INCLUSION IN CODE; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICTING ORDINANCES; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the quality of our rivers, estuaries, streams, lakes and the offshore waters of the Atlantic Ocean is critical to the health, safety and welfare of the citizens of Volusia County; and

WHEREAS, nonpoint sources of pollution, including fertilizer runoff, contribute significant amounts of nutrients to our water bodies; and

WHEREAS, runoff from improper use of fertilizer can contribute to nitrogen and phosphorus pollution in the county’s stormwater and drainage conveyances and natural water bodies; and

Page 1 of 10
Ordinance 2014-
WHEREAS, pursuant to Section 403.9337(1), *Florida Statutes*, all local
governments are encouraged to adopt and enforce the Florida Department of
Environmental Protection’s Model Ordinance for Florida-Friendly Fertilizer Use
(model ordinance), or an equivalent requirement as a mechanism for protecting
local surface and groundwater quality; and

WHEREAS, pursuant to Section 403.9337(2), *Florida Statutes*, all local
governments within the watershed of a water body or water segment that is listed
as impaired by nutrients pursuant to Section 403.067, *Florida Statutes*, shall, at a
minimum, adopt the model ordinance, and a local government may adopt
additional or more stringent standards than the model ordinance if: (a) the local
government has demonstrated, as part of a comprehensive program to address
nonpoint sources of nutrient pollution which is science-based, and economically
and technically feasible, that additional or more stringent standards than the
model ordinance are necessary in order to adequately address fertilizer
contributions to nonpoint source nutrient loading to a water body; and (b) the
local government documents that it has considered all relevant scientific
information, including input from the Department of Environmental Protection, the
Department of Agriculture and Consumer Services, and the University of Florida
Institute of Food and Agricultural Sciences (IFAS), if provided, on the need for
additional or more stringent provisions to address fertilizer use as a contributor to
water quality degradation, and all supporting documentation is entered in the
public record before adoption of the additional or more stringent standards; and
WHEREAS, this ordinance is part of a science-based, and economically and technically feasible comprehensive program to address nutrient pollution, which includes, but is not limited to, stormwater management, surface water quality improvement, water conservation, septic tank management and abatement, public education, and land development standards; and

WHEREAS, more specifically regarding stormwater, the county has a strict stormwater ordinance and illicit discharge enforcement program; and

WHEREAS, the county has a sophisticated stormwater management program to address reduction of pollution from nonpoint sources; and

WHEREAS, to address target areas, the county develops stormwater master plans, including the Deep Creek Basin Stormwater Master Plan and the B-21 Watershed Management Plan; and

WHEREAS, the county actively identifies stormwater management projects for implementation with funding from a stormwater assessment and through grants from the Florida Department of Environmental Protection, the St. Johns River Water Management District and the United States Department of Agriculture Natural Resources Conservation Service; and

WHEREAS, more specifically regarding surface water quality, the county has an extensive surface water quality monitoring program to track and respond to changes in nutrient and other pollution levels; and

WHEREAS, the county initiates specific projects to improve surface water quality, including projects that have reduced street flooding, improved
maintenance of drainage facilities, reduced erosion and sedimentation in canals
and ditches, and improved the overall quality of water in our canals, lakes and
aquifers; and

WHEREAS, the Florida Department of Environmental Protection has
mandated total maximum daily loads (TMDLs) of nitrogen and phosphorus for
water bodies deemed impaired in the county; and

WHEREAS, the Florida Department of Environmental Protection has
estimated nutrient contributions from nonpoint source pollution, including
fertilizer, in many of the county's surface waters; and

WHEREAS, the final TMDL report “Nutrient TMDL for Halifax River, WBID
2363B” dated July 2013, estimates nonpoint source contributions of 475,261
pounds per year of total nitrogen and 33,349 pounds per year of total
phosphorus; and

WHEREAS, the draft TMDL report “Nutrient TMDL for Tomoka River
(Fresh Water), WBID 2634” dated March 2013, estimates nonpoint source
contributions of 338,774 pounds per year of total nitrogen and 22,101 pounds per
year of total phosphorus; and

WHEREAS, the final TMDL report “Nutrient and Dissolved Oxygen TMDLs
for the Six Middle St. Johns River Segments between the Inlet of Lake Harney
(WBID 2964A) and St. Johns River above Wekiva River (WBID 2893C)” dated
December 7, 2009, estimates nonpoint source contributions of 718,907 pounds
per year of total nitrogen and 73,961 pounds per year of total phosphorus; and
WHEREAS, the final TMDL report “Nutrient and Dissolved Oxygen TMDLs for the Indian River Lagoon and Banana River Lagoon” dated March 2009, estimates nonpoint source contributions of 134,986 pounds per year of total nitrogen and 13,901 pounds per year of total phosphorus in the North Indian River Lagoon (WBID 2963F); and

WHEREAS, the final TMDL report “Dissolved Oxygen and Nutrient TMDL for Spruce Creek, WBID 2674A” dated April 2008, estimates nonpoint source contributions of 18,562 pounds per year of total nitrogen and 4,578 pounds per year of total phosphorus; and

WHEREAS, the county adopted the model ordinance on April 3, 2014 by Ordinance 2014-06; and

WHEREAS, the county has demonstrated, as part of a comprehensive program to address nonpoint sources of nutrient pollution which is science-based, and economically and technically feasible, that additional or more stringent standards than the model ordinance are necessary in order to adequately address fertilizer contributions to nonpoint source nutrient loading to a water body; and

WHEREAS, the county has considered all relevant scientific information on the need for additional or more stringent provisions to address fertilizer use as a contributor to water quality degradation, and all supporting documentation is hereby entered in the public record; and
WHEREAS, the county has considered input from the Department of Environmental Protection provided by correspondence dated April 30, 2014; and

WHEREAS, the county has considered input from the Department of Agriculture and Consumer Services provided by correspondence dated March 5, 2014, correspondence dated April 2, 2014 and email correspondence dated May 15, 2014; and

WHEREAS, the county has considered input from the University of Florida Institute of Food and Agricultural Sciences (IFAS) provided by correspondence dated April 9, 2014 and correspondence dated June 9, 2014;

NOW, THEREFORE, BE IT ORDAINED BY THE COUNTY COUNCIL OF VOLUSIA COUNTY, FLORIDA AS FOLLOWS:

(Words in strike-through type are deletions; words in underscore type are additions)

SECTION I: The above recitals are true and correct and adopted as findings of fact in support of this ordinance. By this reference, they are hereby incorporated into the official record for the adoption of this ordinance.

SECTION II: Chapter 50, Article VIII, Florida-Friendly Fertilizer Use, of the Code of Ordinances of the County of Volusia, is hereby amended to read as follows:

... 

Sec. 50-522. Definitions.
For the purposes of this article, the following terms shall have the meanings set forth in this section; words used in the singular shall include plural, and the plural, singular; words used in the present tense shall include future tense. The word “shall” is mandatory and not discretionary. The word “may” is permissive. Words not defined herein shall have the meaning given in other sections of this code and if not therein, shall have the meaning given by common and ordinary use:

... 

_Prohibited Application Period_ means the time period during which a Flood Watch or Warning, or a Tropical Storm Watch or Warning, or a Hurricane Watch or Warning is in effect for any portion of the county, issued by the National Weather Service, or if heavy rain, as defined by the World Meteorological Organization as rainfall greater than or equal to two (2) inches in a twenty-four (24) hour period, is likely.

... 

**Sec. 50.524. Timing of fertilizer application.**

(a) No applicator shall apply fertilizers containing nitrogen and/or phosphorus to turf and/or landscape plants during the prohibited application period, or to saturated soils.

(b) Fertilizer containing nitrogen or phosphorus shall not be applied before seeding or sodding a site, and shall not be applied for the first thirty (30) days after seeding or sodding, except when hydro-seeding for temporary or
permanent erosion control in an emergency situation, or in accordance with an 
adoption stormwater pollution prevention plan for that site.

(c) Fertilizer containing nitrogen or phosphorus shall not be applied to 
turf or landscape plants June 1 through September 30 of each year.

Sec. 50.525. Fertilizer free zones.

(a) Fertilizer shall not be applied within ten (10) fifteen (15) feet of any 
pond, stream, watercourse, lake, canal, or wetland as defined by the Florida 
Department of Environmental Protection Rule 62-340, Florida Administrative 
Code, unless a deflector shield, drop spreader, or liquid applicator with a visibly and sharply defined edge is used in which case a 
minimum of three (3) feet shall be maintained. Newly planted turf and/or 
landscape plants may be fertilized in this zone only for a sixty (60) day period 
begins thirty (30) days after planting if needed to allow the plants to become 
well established. Caution shall be used to prevent direct deposition of nutrients 
into the water.

Sec. 50.527. Fertilizer content and application rates.

(a) Fertilizers applied to turf shall be applied in accordance with 
requirements and directions provided by Rule 5E-1.003(2), Florida Administrative 
Code, “Fertilizer Label Requirements for Urban Turf, Sports Turf or Lawns.”

(b) Nitrogen or phosphorus fertilizer shall not be applied to turf or 
landscape plants except as provided in subsection (a) for turf, or in the University
of Florida/IFAS recommendations for landscape plants, vegetable gardens, and fruit trees and shrubs, unless a soil or tissue deficiency has been verified by an approved test.

(c) Fertilizers containing phosphorus shall not be applied to turf, sod, lawns or landscape plants in Volusia County. No fertilizer containing phosphorus shall be applied to turf, sod, lawns or landscape plants unless a soil or plant tissue deficiency is verified by a testing methodology approved by the University of Florida, Institute of Food and Agricultural Sciences. If a deficiency is verified, the application of fertilizer containing phosphorus shall adhere to the rates and directions for the appropriate Region of Florida, as adopted by Florida Administrative Code Rule. This subsection supersedes any inconsistent provisions in subsections (a) and (b) regarding phosphorus.

(d) Fertilizers containing nitrogen applied to turf or landscaping plants within Volusia County shall contain no less than fifty percent (50%) Slow Release Nitrogen per Guaranteed Analysis Label. This subsection supersedes any inconsistent provisions in subsections (a) and (b) regarding nitrogen.

... 

SECTION III: CONTINUING EFFECT - Except as amended herein, the provisions of the Code of Ordinances of the County of Volusia remain in full force and effect.

SECTION IV: AUTHORIZING INCLUSION IN CODE - The provisions of this ordinance shall be included and incorporated into the Code of
Ordinances of the County of Volusia, as additions or amendments thereto, and
shall be appropriately renumbered to conform to the uniform numbering system
of the code.

SECTION V: SEVERABILITY - Should any word, phrase, sentence, subsection or section be held by a court of competent jurisdiction to be illegal, void, unenforceable, or unconstitutional, then that word, phrase, sentence, subsection or section so held shall be severed from this ordinance and all other words, phrases, sentences, subsections, or sections shall remain in full force and effect.

SECTION VI: CONFLICTING ORDINANCES - All ordinances, or parts thereof, in conflict herewith are, to the extent of such conflict, repealed.

SECTION VII: EFFECTIVE DATE – A certified copy of this ordinance shall be filed with the Department of State by the County Manager within ten (10) days after enactment by the County Council. This ordinance shall take effect upon filing.

ADOPTED BY THE COUNTY COUNCIL OF VOLUSIA COUNTY, FLORIDA, IN OPEN MEETING DULY ASSEMBLED IN THE COUNTYCOUNCIL CHAMBERS AT THE THOMAS C. KELLY ADMINISTRATION CENTER, 123 WEST INDIANA AVENUE, DELAND, FLORIDA, THIS 17th DAY OF JULY, 2014.

ATTEST: COUNTY COUNCIL
COUNTY OF VOLUSIA, FLORIDA

_________________________  ____________________________
JAMES T. DINNEEN   JASON P. DAVIS
COUNTY MANAGER   COUNTY CHAIR
March 5, 2014

Kelli McGee, Director
Growth and Resource Management
Volusia County

Ms. McGee:

We were informed that on March 6, 2014 the Volusia County Commission will be considering more stringent standards for its proposed fertilizer ordinance. As outlined in Ch. 403.9337 2 (b) F.S., local governments who wish to enact standards more stringent than the Florida Department of Environmental Protection’s Model Ordinance for Florida Friendly Fertilizer Use on Urban Landscapes (model ordinance), must document additional standards are part of a comprehensive plan and has considered the input from the University of Florida Institute of Food and Agricultural Sciences, Florida Department of Environmental Protection, and the Department of Agriculture and Consumer Services (department). We have no record of a request from Volusia County for the department’s input, therefore we ask that our comments provided below be included in the record and considered by the Commission in its fertilizer ordinance discussions.

First I would like to emphasize that water quality issues are a priority with the department and we share in the concerns regarding the recent decline in the health of the fragile Indian River Lagoon Estuary.

Upon review of the options under consideration, neither the restriction on summertime turf fertilizer applications, nor a mandated application of either 100% or 50% controlled release nitrogen products have been scientifically validated as effective methods of limiting nutrient migration. Recently completed turf research has demonstrated that restricted application periods, if employed, should be established when turf is in a state of dormancy – not during the actively growing season. Research has also shown that some controlled release products can leach more nitrogen than soluble products. The Department promotes a science based approach to limit nutrient loading and neither of these proposed standards meet this criteria.
Below are our comments on proposed standards more stringent than model ordinance.

1. TIMING OF FERTILIZER APPLICATION

The prohibited fertilizer application period continues to be the most controversial standard proposed in local ordinances. The recently completed Florida Department of Environmental Protection funded turf research\(^1\) examined annual fertilizer applications and the studies revealed the following:

- The majority of the mass flux of NO\(_3\)-N (leaching) occurs in the late fall through early spring.
- In the summer months actively growing turf has the capacity of absorbing applied nutrients well above current labeled application rates.
- If a restricted application period is adopted, it should be in the late fall, winter and early spring months.

A summertime restricted application period has been promoted as a strategy to minimize nutrient migration to ground and surface waters, but to date, there have been no studies produced to substantiate the environmental benefits from a ban on summertime fertilization.

The summer months are when turf can best utilize applied nutrients to ensure its health and the health of our best nutrient filtration system. By banning the practice of summertime fertilizer applications, you are indirectly promoting post restricted period applications. Applications when turf is beginning to enter dormancy, consequently increasing the potential of late season nutrient applications being lost to the environment.

2. FERTILIZER CONTENT AND APPLICATION RATES

a. Ban or limit on phosphorus application to turf or landscape plants

Banning or limiting available phosphate applications is more restrictive than the model ordinance. Rule 5E-1.003(2) allows up to 0.25 lbs. P\(_2\)O\(_5\)/1000 sq. ft. per application up to 0.5 lbs. P\(_2\)O\(_5\)/1000 sq. ft. annually without testing.

The 0.25 lbs. P\(_2\)O\(_5\)/1000 sq. ft. of available phosphate has been determined to be the maintenance level of phosphate required by turf to sustain turf health. Most Florida soils have abundant forms of phosphate, but very little of the phosphate is in a plant available form. Available phosphate is an essential nutrient to ensure turf health and without this essential nutrient, over time the end result will be a decline in root structure and the overall reduction in turf’s filtration capacity.
Volusia County Comments
Page 3

b. Nitrogen content shall contain 100% or at least 50% slow release nitrogen

The recently completed IFAS turf research\(^1\) evaluated the many forms of nitrogen that are applied to turf and the conclusions were:

- When applied at 1 pound every 60 days to St. Augustine grass there was no difference in the total annual amount of NO\(_3^-\)N that leached when comparing soluble urea and a 50% controlled release blended fertilizer.

- The release mechanisms for controlled release products are varied with some forms actually leaching more NO\(_3^-\)N than soluble urea.

Presently there has been no documented research substantiating an environmental advantage to prescribing the application of a 100% or 50% controlled release turf product. Therefore the Department endorses the guidance prescribed in Rule 5E-1.003 F.A.C.

Based on the St. Johns River Water Management District’s water quality data\(^2\) for 2011 and 2012, the total nitrogen levels in the Indian River Lagoon have been declining without the more stringent ordinance standards many local governments around the lagoon have recently adopted. Logically, the concept everyone seems to have embraced to prevent nutrient migration is to prohibit fertilization during the summer months, but the science speaks contrary to this premise. To sustain healthy turf you need to feed it according to labeled use directions when it is actively growing – in the summer months, and discontinue feeding when it isn’t.

In the absence of scientific evidence supporting the effectiveness of the proposed more stringent standards, the Department recommends restricted application periods correspond to the timeframes in which turf is not actively growing, and ordinances adhere to the application guidelines currently prescribed in Rule 5E-1.003 F.A.C.

Sincerely,

Weldon Collier, Program Planning Coordinator
Division of Agricultural Environmental Services

cc: Anderson H. Rackley, Director
    Steven Dwinell, Assistant Director

\(^1\) Warm-Season Turfgrass N Rates & Irrigation BMP Verification (IFAS Research Report to the Florida Department of Environmental Protection; associated peer reviewed articles and a statistical evaluation of the data. These documents are accessible online at [http://publicfiles.dep.state.fl.us/DEAR/nonpoint/](http://publicfiles.dep.state.fl.us/DEAR/nonpoint/)

\(^2\) St. Johns River Water Management District Website - Surface Water Quality
http://www.sirwmd.com/hydrologicdata/waterquality/
April 2, 2014

Kelli McGee, Director
Growth and Resource Management
Volusia County

Ms. McGee:

In response to your March 25, 2014 letter requesting additional comments on proposed fertilizer ordinance provisions, please find below comments on the cited provisions.

1. I would reiterate the comments provided in my letter dated March 5, 2014 in regards to requiring soil tests documenting phosphate deficiencies. It should be emphasized that homeowner turf products are intended for maintenance applications of available phosphate to sustain turf. Consequently, the application of homeowner products would be ineffective in correcting soil deficiencies at labeled application rates.

2. The verbiage that "All fertilizers containing nitrogen shall contain at least fifty percent (50%) Slow Release Nitrogen per a Guaranteed Analysis Label" infringes upon the Department of Agriculture and Consumer Services statutory authority to regulate fertilizer granted in Ch. 570.07 (16) (6) F.S. and Ch. 576.181 (5) (a) F.S. I would recommend you seek input from your county attorney regarding this proposed language in advance of County Council’s review.

Sincerely,

Weldon Collier, Program Planning Coordinator
Division of Agricultural Environmental Services

cc: Anderson H. Rackley, Director
    Steven Dwinell, Assistant Director
From: "Collier, Weldon" <Weldon.Collier@freshfromflorida.com>
To: Ginger Adair <gadair@volusia.org>
Date: 5/14/2014 4:56 PM
Subject: RE: Additional Comments

Ginger,

Below are my comments.

I would point out that some of the referenced TMDL reports are prior to the adoption of the existing Urban Turf Rule and may no longer be an accurate estimate of the current nutrient loading rates for the referenced bodies of water. I would also point out that data from the St. John's Water Management District's website indicate that the total nitrogen levels in the Indian River Lagoon have been in decline over the last 2 years, which is further evidence that the 2009 estimates may no longer be applicable.

In regards to the proposed black out period, I would reiterate there has been absolutely no scientific evidence produced to date that support this standard. What is being overlooked in the discussions on this topic is once applied, nitrogen forms that are converted to nitrate are taken up by the turf/plants within 72-96 hours and consequently no longer available to leach into groundwater or migrate to surface water. Some will make the case that a heavy rain event during this window increases the likelihood of leaching and runoff. However, the recently completed FDEP funded turf research demonstrated that in the summer months turf has that capacity to absorb nitrogen at levels well above current labeled application rates with negligible leaching.

Increasing the buffer zone from 10 - 15 feet, my only comment is by increasing the buffer zone you are depriving a larger area of turf of vital nutrients. Overtime, this can potently lead to a decline in the health of turf adjacent to bodies of water. This decline can result in deceased filtration capacity of the turf, which increases leaching and runoff potential and overtime erosion. These are outcomes that are opposite to what the increased buffer zone is intended to provide.

Weldon Collier
Program Planning Coordinator
Division of Agricultural Environmental Services
Florida Department of Agriculture and Consumer Services

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Please note that Florida has a broad public records law (Chapter 119, Florida Statutes). Most written communications to or from state employees are public records obtainable by the public upon request. Emails sent to me at this email address may be considered public and will only be withheld from disclosure if deemed confidential pursuant to the laws of the State of Florida.
-----Original Message-----
From: Ginger Adair [mailto:gadair@volusia.org]
Sent: Wednesday, May 14, 2014 2:27 PM
To: Collier, Weldon
Subject: Re: Additional Comments

Thanks, we did already have that letter. On April 3rd, the County Council voted to consider two additional local options for which we would like your input. I have attached a letter that was originally sent to you on April 14th detailing these options. You may not have received the letter as we did experience some email problems.

If you have a chance we would appreciate your comments on these additional options. We are hoping to receive all comments by May 23rd, so that we may schedule the next council hearing.

Please let me know if you have any questions.

Thanks, Ginger

Ginger Adair
Volusia County
Director of Environmental Management
123 W. Indiana Ave
Deland, FL 32720
(386) 736-5927 ext. 12059

>>> "Collier, Weldon" <Weldon.Collier@freshfromflorida.com> 5/13/2014 >>> 3:23 PM >>>
Ginger,

Attached is a copy of the additional comments regarding Volusia County's proposed fertilizer ordinance standards.

Weldon Collier
Program Planning Coordinator
Division of Agricultural Environmental Services Florida Department of Agriculture and Consumer Services

(850) 617-7907
(850) 617-7939 Fax
(850) 528-5348 Cell
Weldon.Collier@FreshFromFlorida.com<http://myfdacs/marketing/standardization/docs/Weldon.Collier@FreshFromFlorida.com>

The Conner Building
3125 Conner Boulevard
Tallahassee, Florida 32399-1650


Please note that Florida has a broad public records law (Chapter 119, Florida Statutes). Most written communications to or from state employees are public records obtainable by the public upon request. Emails sent to me at this email address may be considered public and will only be withheld from disclosure if deemed confidential pursuant to the laws of the State of Florida.
April 30, 2014

Ms. Kelli McGee, Director
Growth and Resource Management
Volusia County
123 West Indiana Avenue, Room 200
Deland, Florida 32720-4612

Dear Ms. McGee:

Thank you for your March 25th and April 14th, 2014 submissions of draft fertilizer ordinance provisions under consideration for addition to the state’s model fertilizer ordinance and the reference information found on your website. The Department thanks Volusia County for its progressive understanding and actions in adopting the state model ordinance without delay while giving time for careful consideration of more stringent measures.

Florida Statute 403.9337 recognizes that in some areas of the state the best management practices provided in the Model Ordinance must be amended to account for unique, site specific conditions that make adjacent surface water resources more vulnerable to nutrient enrichment. The statute provides local governments the authority to amend the ordinance with more stringent requirements. This authority is granted contingent upon documentation of those site specific conditions associated with increased vulnerability and documentation that complementary measures to the ordinance (a comprehensive non-point source control program) have been implemented. The County must be able to provide such documentation upon request.

The Department has reviewed the proposed measures and notes that most of the provisions of the draft revisions do appear more stringent. We offer the following comments.

Sec. 50.527. Fertilizer Content and Application Rates

(c) Fertilizers containing phosphorus shall not be applied to turf, sod, lawns or landscape plants in Volusia County. No fertilizer containing phosphorus shall be applied to turf, sod, lawns or landscape plants unless a soil or plant tissue deficiency is verified by a testing methodology approved by the University of Florida, Institute of Food and Agricultural Sciences. If a deficiency is verified, the application of fertilizer containing phosphorus shall adhere to the rates and directions for the Southern Region of Florida, as adopted by Florida Administrative Code Rule.
The Florida Department of Agriculture and Consumer Services (FDACS) Rule 5E-1.003, Florida Administrative Code permits up to 0.25lb P₂O₅/1000 ft² per application up to 0.5lb P₂O₅/1000 ft² annually without testing. Therefore, this part of the draft ordinance is stricter than the model ordinance. In addition, the urban turf rule does not apply to landscape plantings.

While technically more stringent than the Model Ordinance, this provision is generally consistent with the recommendation contained in the 2010 printing of the Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries (GI-BMPs). On Page 31 it states “This BMP manual strongly recommends soil testing before any initial P₂O₅ application and annually if applications are being made based on previous testing. ... For more information, see IFAS Publication SL-181, Soil Testing and Interpretation for Florida Turfgrasses, at http://edis.ifas.ufl.edu/SS317.” Please take note that all commercial applicators are required to receive training in the GI-BMPs by state law. The model ordinance expands the requirement for this training to all institutional applicators.

Volusia County is split between the North and Central regions of Florida. Use of the Southern region rates and times would result in over-application and misapplication of nutrients, thereby increasing the nutrient leaching and runoff. This makes this part less stringent than the model ordinance.

Sec. 50.527. Fertilizer Content and Application Rates

(d) Fertilizers containing nitrogen applied to turf and/or landscaping plants within Volusia County shall contain no less than 50 percent Slow Release Nitrogen per Guaranteed Analysis Label.

This position is also more stringent than the Model Ordinance.

The recommended application amount, one pound, of 50% slow-release fertilizer contains exactly the same amount of quick release nitrogen as the recommended application amount, ½ pound, of 100% quick release nitrogen. They present the same risk of immediate leaching and runoff when applied at the BMP recommended rates, except for the slow release material which will continue to release nitrogen for several weeks, which may or may not be a benefit. If applied in mid fall as a last fertilization, slow release products may release too late and promote additional leaching or runoff, or may be washed into storm drains by a heavy storm and release after transport to a water body. Earlier in the year they are generally beneficial as they can eliminate the labor and risk of additional quick-release only applications.

As in the case above, the general recommendation for the lay person is to use slow release. However, it is not always appropriate in the professional setting, and there are times when quick-release materials are preferred even from an environmental and water-quality standpoint.
Ms. Kelli McGee  
April 30, 2014  
Page Three

Please be aware that the FDACS Urban turf Rule 5E-1.003(2), affecting fertilizer labeling by manufacturers is currently being revised with significant changes. This will necessitate changing the rule references from 5E-1.003(2) to simply 5E-1.003, because the new format covers urban turf uses other than consumer residential, such as golf courses and other users of bulk fertilizer quantities, under their own (numeric) sections instead of the current (2)(a-f). Among the expected changes are the above-mentioned rates; a limitation on soluble fertilizers to grass that is actively growing; an increase in total nitrogen application from 1 to 2 lb. N provided the 7-day release rate does not exceed the soluble fertilizer application rate and limited to the spring to midsummer periods, when the turf can readily uptake the material without significant remaining slow-release N extending into turf dormancy periods; and structural changes to the Rule to conform to national standards.

Sec. 50.524. Timing of Fertilizer Application

(c) Fertilizer containing nitrogen and / or phosphorus shall not be applied to turf and / or landscape plants June 1 through September 30 of each year.

This is more stringent than the model ordinance, and may be contraindicated by research in this climatic zone.

Please refer to the recent study done by the University of Florida over 8 years, and available at: http://publicfiles.dep.state.fl.us/DEAR/nonpoint/Turf%20Leaching%20Study%20Final%20Report/WM869_Final_Report_12042012.pdf.

As noted above, Volusia County is split between the North and Central climatic zones for plant fertilization. The latitude of the UF/IFAS Citra Research station, where the dormant turf leaching studies referenced above were carried out, is just south of the northernmost border of Volusia County.

This body of work indicates that the greatest potential for loss of nitrogen to the shallow ground water is in the early spring, when root structure is most reduced, and fall, when a shorter length of daylight, lower sun angle, and cooling soil temperatures sharply reduce nitrogen uptake by the plant. This effect must be weighed against any increase in direct runoff due to summer rains on Florida’s generally sandy soils.

Given that most businesses that apply agricualtural chemicals in a residential setting operate on about a 2 month cycle, applying the moderate to high end annual fertilization rates while adhering to BMPs and rates under 5E-1.003 F.A.C. effectively forces application to begin when risk of leaching is at the highest point. A homeowner, of course, may apply fertilizer more frequently and apply those rates with 2 or even 3 applications of slow-release products in April and May.
Sec. 50.525. Fertilizer Free Zones

(a) Fertilizer shall not be applied within fifteen (15) feet of any pond, stream, watercourse, lake, canal, or wetland as defined by the Florida Department of Environmental Protection Rule 62-340, Florida Administrative Code, or from the top of a seawall.

Newly planted turf and/or landscape plants may be fertilized in this zone only for a sixty (60) day period beginning thirty (30) days after planting if needed to allow the plants to become well established. Caution shall be used to prevent direct deposition of nutrients into the water.

This provision is more stringent than the model ordinance. Erosion of bank areas may be a concern, and maintenance of effective erosion control practices is very important. This section of the model ordinance was designed only to address accidental deposition of fertilizer into the water during application, not as a filter strip for stormwater treatment.

General Comments

In reviewing material on the website provided, it was noted that some of the results were attributed to the use of more stringent ordinances in a specific area. It was not clear whether the referenced studies on the website took into account how much the statewide effort contributed to the reductions. The Green Industries Best Management Practices (BMP) program and the first FDEP model ordinance date to 2002 and 2003, respectively. In 2007, the Urban Turf Rule, (5E-1.003(2) Florida Administrative Code) was passed, limiting turf fertilizer formulation and labeling. In 2009, the legislature adopted a new DEP Model Fertilizer Ordinance into law, and required training and in some cases licensing of almost anyone applying fertilizer as part of their job by 2014.

Reduction in average nonfarm nitrogen sales from 2004-2008 to 2009-2012, 46%
Reduction in average nonfarm phosphate sales from 2004-2008 to 2009-2012, 54%

Reduction in annual turfgrass fertilizer nitrogen sales from 2009-2012, 35%
Reduction in annual turfgrass fertilizer phosphate sales from 2009-2012, 29%

The above information is derived from fertilizer sales records maintained by the Florida Department of Agriculture and Consumer Services. (http://www.freshfromflorida.com/Divisions-Offices/Agricultural-Environmental-Services/Agriculture-Industry/Fertilizer-Manufacturers/Fertilizer-Consumption-Tonnage-Data).
While at least some of the reductions between 2007 and 2009 may have been due to economic difficulty during the recession, there is little doubt that Florida's efforts through the growing Florida-Friendly Landscaping\textsuperscript{TM} programs, including the model ordinances, have been effective in reducing the overuse of nutrient applications. It is not known whether any studies have looked at the difference between the statewide reductions over the last decade, and those where more stringent local ordinance provisions have been in place.

Lastly, the Department also encourages Volusia County to adopt provisions of the Department's irrigation model ordinance in addition to the statutorily mandated fertilizer model ordinance. Over-irrigation not only wastes our fresh water supply but is a major driving force behind the excess leaching and runoff of nutrients and other pollutants.

The actions of Volusia County to prevent nutrient loadings into adjacent surface waters are recognized and appreciated. Adoption of a local ordinance for urban fertilizer use will enhance the county's stormwater control program. I hope you find the comments offered above to be of assistance in demonstrating consistency with the expectations established in section 403.9337, F.S.

If you have any questions, please feel free to contact Mike Thomas, Professional Engineer III, with the Department's Division of Environmental Assessment & Restoration, at (850) 245-7513.

Sincerely,

Kate Brackett
Administrator
Nonpoint Source Management Section

KB/mi/3p

cc: Mike Thomas, Professional Engineer III, DEP
Dear Ms. McGee,

This is in response to your letter of 25 March, 2014, regarding a more stringent fertilizer ordinance for Volusia County. The specific provisions that you have asked for comment on are:

1. No fertilizer containing phosphorus shall be applied to turf, sod, lawns or landscape plants unless a soil or plant tissue deficiency is verified by a testing methodology approved by the University of Florida, Institute of Food and Agricultural Sciences. If a deficiency is verified, the application of fertilizer containing phosphorus shall adhere to the rates and directions for the Southern Region of Florida, as adopted by Florida Administrative Code Rule.

2. All fertilizers containing nitrogen shall contain at least 50% slow release nitrogen per a Guaranteed Analysis Label.

In regard to phosphorus application, UF-IFAS recommends that the Urban Turf Fertilizer Rule (RE-1.003(2) FAC) serve as the guideline for local fertilizer ordinances. The Rule stipulates that a maximum of 0.25 pounds of P$_2$O$_5$ per 1,000 square feet is allowed per application, with no more than 0.50 pounds allowed annually. No additional P can be applied unless a soil test indicates that P levels are deficient. Providing adequate levels of phosphorus is very important for turfgrass and deficiencies of this macronutrient can lead to loss of groundcover turf, which can result in soil erosion, weed intrusion and less ability for filtration of stormwater runoff in the urban environment.

Liu et. al. (2008) studied the minimal P requirements for St. Augustinegrass grown in sandy soils. It was determined that the minimal P tissue concentration for this species was 1.8 g P kg$^{-1}$ of dried leaf tissue for maintenance of a healthy turfgrass cover. Phosphorus application would not be needed if soil Mehlich-1 P concentrations were above 10 mg kg$^{-1}$.

Gonzalez (2010) looked at phosphorus leaching in St. Augustinegrass and zoysiagrass and found that percentage of applied P that leached was less than 0.25 and 5% from St. Augustinegrass and zoysiagrass, respectively. He further concluded that P could be applied to St. Augustinegrass at the currently allowable rates under that the Urban Turf Fertilizer Rule without adverse leaching when applied during the growing season.

In general, P requirements of turfgrass are lower than the other macronutrients and some Florida soils contain adequate amounts of plant available P. However, many developments and homes are constructed on soils that may be brought in during the construction phase that may less suitable for plant growth than the original topsoil.
These soils may have little or no plant available P and P deficiency can be induced in turfgrass over time in these cases, which could result in decreased ground cover and stormwater filtration, as well as increased soil erosion and weed intrusion. Therefore, we recommend that the P limits in the Rule be followed for maintenance of a healthy turf.

In regard to percentage of slow release nitrogen, we again recommend that the Urban Turf Fertilizer Rule be followed. The Rule places limits on the amount of the soluble fraction of the nitrogen that can be applied. The maximum allowed is currently 0.7 lbs N 1,000 ft$^{-2}$ per application. This allows for application of a 30% slow release nitrogen fertilizer at a 1 lb. N 1,000 ft$^{-2}$ rate, whereas the current proposal (minimum 50% slow release N) restricts this to a maximum of 0.5 lbs N 1,000 ft$^{-2}$. Research has shown that application of up to 1 lb soluble N 1,000 ft$^{-2}$ to St. Augustinegrass will not result in greater nitrate-N leached than from application of 0.5 lbs (Trenholm et al., 2012), when applied to actively growing, healthy turf.

Other research looked specifically at nitrate-N leaching from various N sources over a 4-yr period (Trenholm et al., 2013). In 2 of the 4 years (2009 and 2010), there were no differences in nitrate-N leached during the growing season due to N source from either St. Augustinegrass or zoysiagrass. In 2008, there were no differences in nitrate-N leached due to N source from St. Augustinegrass. Annual cumulative nitrate-N leaching from zoysiagrass was greater from one of the soluble N sources (ammonium nitrate) than from soluble urea or any of the slow release N sources. In 2011, annual cumulative nitrate-N leaching was significantly greater from ammonium nitrate, a polymer coated treatment and milorganite than from control plots.

These results indicate that N source (soluble vs. slow release) is generally not a factor influencing nitrate-N leaching when N fertilizer is applied at the correct rates and timing to a healthy turfgrass with good ground cover. Nitrate-N leaching can be better reduced through implementation of UF-IFAS Best Management Practices (training and certification now mandatory for commercial fertilizer applicators applying on urban turf) and The Florida Friendly Landscaping™ Program for homeowners. Following all of the recommended cultural practices in terms of selection, mowing and irrigation will provide a healthy dense ground cover that can reduce soil erosion, weed intrusion and improve stormwater filtering in the urban environment.

Sincerely,

Laurie E. Trenholm, Ph.D.
Professor, Environmental Horticulture

References:


9 June, 2014

Ms. Adair,

Here are my comments to the points outlined in your letter from April 14, 2014 regarding proposed changes to the Volusia County fertilizer ordinance. The data that are mentioned are from a UF-IFAS research project conducted in 3 locations statewide, lasting 8 years and funded completely by the Florida Department of Environmental Protection.

1. A summer ban on fertilizing with nitrogen during the summer months (June 1 – September 30)

Results do not support the summer fertilizer ban; in fact, the data indicate that this is the time when the grass can best take up the applied nitrogen and will use it most fully (Figure 1).

For the Marion County area where this research was conducted, the recommended annual N rates for St. Augustinegrass range from 2-5 lbs. N per 1,000 square feet. In yr 2, FC2, there were no significant differences in cumulative nitrate-N loading regardless of the range of N rates applied. In yr 2, FC 3, nitrate-
N loading differed between treatments, with the 10 lb rate greatest, followed by the 1 and 4 lb rates, which were statistically equal, and least loading from the 7 lb rate.

In yr 3, FC2, highest loading occurred from the 7 lb rate, followed by the 4, 10 and 1 lb rates. In yr 3, FC3, greater loading occurred from the 10 lb rate, with no differences between the other 3 rates. Nitrate-N loading rates were lowest in the summer months than in spring and fall.

These results demonstrate that actively growing, healthy turfgrass mitigates NO3–N leaching from fertilization events and that the summertime is the time when nitrate-N loading is reduced in a healthy, well maintained grass. Figure 2 represents the typical annual growth habit of a warm-season turfgrass. Note the lack of both shoot and root growth during the non-growing season (fall- late winter) as compared to the ample shoot and root growth during the summer. It is this growth of both shoots and roots that provides the filtering ability of the warm-season grasses during the summer months.

![Figure 2. Warm-Season Grass Growth Curve](image)

When nitrogen is applied at the recommended UF rates during the growing season, nitrate-N concentrations were often well below the minimum detection limit of the analytical instrument as stipulated by Environmental Protection Agency protocols, which were used for all sample collection, handling, storage and measurements. When the nitrate-N concentrations were below the detection limits of 0.15 ppm, which was often the case, Florida Department of Environmental Protection Quality Assurance protocols required that a level of 0.15 ppm nitrate-N be inserted as the value recorded for that sample.

It should also be considered that a growing season fertilizer ban may result in application of fertilizer during the winter months in order for the lawn care provider to meet contractual obligations and provide the recommended rates of fertilizer. Another study conducted under the Florida Department of Environmental Protection research project looked at nitrate-N loading during the winter months in Citra and Jay, FL. In Citra, monthly applications of water soluble urea were made to Floratam St. Augustinegrass and UltimateFlora zoysiagrass at 0, 1/8, ¼, ½, 1 and 2 lbs N per 1,000 square feet. In yr 1, the grass was not established when the study began but results were similar for yrs 2 and 3 (Figure 3).
There were no differences in nitrate-N loading up to 0.50 lbs N per 1,000 square feet, but at the 1.0 lb N per 1,000 square feet rate, greater loading occurred in Jan., Feb. and Mar. At the 2 lb N per 1,000 square feet rate, greater loading occurred in Feb or Mar.

2. Fertilizer Free Zone

We support the Florida Department of Environmental Protection/UF-IFAS Green Industries Beat Management Practices recommendation that professional applicators be allowed to fertilize up to 3’ from a water body if using a deflector shield on rotary spreaders or 10’ if not using the shield. Not fertilizing could potentially result in increased soil erosion, with the soil sediment providing potentially major inputs of nonpoint source pollution into the water body.

3. No phosphorus without a soil test

We support the Florida Department of Agriculture and Consumer Services Urban Turf Fertilizer Rule (RE-1.003(2) FAC), which recommends application of no more than 0.25 lbs P₂O₅ per 1,000 square feet for any single application and no more than 0.5 lbs P₂O₅ per 1,000 square feet applied annually without a soil test. While turf needs for phosphorus are lower than for the other primary macronutrients, it is still an important nutrient for plant cellular function and deficiencies could result without application of the nutrient.

4. At least 50% slow release nitrogen

There are advantages and disadvantages to both water soluble and slow release N sources, but our Florida Department of Environmental Protection research project showed that nitrate-N loading did not often differ significantly due to N source when fertilizer was applied to a healthy turf at the recommended rates. Because of the dense shoot and deep root system found in an actively growing turfgrass, either N source was taken up rather than lost. Figure 4 shows cumulative year-round data sampling for 2010 by treatment.
Data bars are delineated by cumulative sampling period throughout the year, including winter, when no treatments were applied, but plots were sampled for any residual nitrate-N loading. There were no significant differences in nitrate-N loading for any treatments in any of the cumulative sampling cycles. There were likewise no differences in 2008 and 2009. In 2011, there was an interaction of nitrogen source and grass (Figure 5).

Significant differences are marked with an x on the treatment and FC that had greater nitrate-N loading. The PCU applied at 2 lbs every 120 days had greater loading in FC1 (April-May) and throughout the winter sampling period. The Biosolid treatment also had greater loading during the winter sampling period. It should be considered that some of the extended release products applied in October following the ban period may still release nitrogen during the dormant period, when the grass has less...
ability to take up the nutrients and more leaching might occur during the winter. Use of a product with less slow release properties at this time, such as a lower percentage of slow release N would be more appropriate.

Sincerely,

Laurie E. Trenholm
Professor, Environmental Horticulture
April 14, 2014

VIA REGULAR MAIL:

Mr. Weldon Collier, Program Planning Coordinator
Division of Agricultural Environmental Services
Florida Department of Agriculture and Consumer Services
3125 Conner Boulevard
Tallahassee, FL 32399-1650

VIA EMAIL:

Weldon.Collier@FreshFromFlorida.com

Dear Mr. Collier:

Thank you for your correspondence dated April 2, 2014. At the April 3, 2014, Volusia County Council meeting, the Council adopted an ordinance consistent with the state model ordinance for Florida-friendly fertilizer use. At the April 3, 2014 meeting, the Council ALSO directed staff to transmit two additional local options to the required reviewing agencies for comment. These two options are IN ADDITION to the two options transmitted to the required reviewing agencies by correspondence dated March 25, 2014.

Please accept this letter as transmittal of two additional proposed local options, and revised transmittal of the two previously transmitted proposed local options, as required by Section 403.9337(2)(b), Florida Statutes, for a total of FOUR proposed local options. If the Council chooses to adopt more stringent standards than the Model Ordinance, it will consider all relevant scientific information, including input from the Florida Department of Environmental Protection, the Florida Department of Agriculture and Consumer Services, and the University of Florida Institute of Food and Agricultural Sciences on the need for additional or more stringent provisions to address fertilizer use as a contributor to water quality degradation in Volusia County. As required by Section 403.9337(2)(b), Florida Statutes, all documentation will become part of the public record before adoption of any additional or more stringent criteria.

For your information, the supporting documentation listed in this transmittal, as well as additional supporting documentation for our four proposed local options may be reviewed at:

Any additional local options, if adopted, will become part of Volusia County's comprehensive program to address nutrient pollution, which includes, but is not limited to, the county's stormwater management program, surface water quality sampling and pollution control program, water conservation initiative, Water Education Task Team, septic tank management and abatement, educational programs, and land development standards. Volusia County has determined that nonpoint sources of pollution, including fertilizer runoff, contribute significant amounts of nutrients to our water bodies and that runoff from improper use of fertilizer can contribute to nitrogen and phosphorus pollution in the Volusia County's stormwater and drainage conveyances.

More specifically regarding stormwater, Volusia County has a strict stormwater ordinance and illicit discharge enforcement program; however, many communities near our most sensitive water bodies were constructed prior to stormwater management requirements. This raises concerns regarding fertilizer and stormwater runoff as opposed to only leaching.

Regarding surface water quality, Volusia County has an extensive surface water quality monitoring program to track and respond to changes in nutrient and other pollution levels. Volusia County initiates specific projects to improve surface water quality, including projects that have reduced street flooding, improved maintenance of drainage facilities, reduced erosion and sedimentation in canals and ditches, and improved the overall quality of water in our canals, lakes and aquifers. Nonetheless, the Florida Department of Environmental Protection has mandated total maximum daily loads (TMDLs) of nitrogen and phosphorus for water bodies deemed impaired in Volusia County, and has estimated nutrient contributions from nonpoint source pollution, including fertilizer, in many of Volusia County's surface waters including:

- The final TMDL report “Nutrient TMDL for Halifax River, WBID 2363B” dated July 2013, estimates nonpoint source contributions of 475,261 pounds per year of total nitrogen and 33,349 pounds per year of total phosphorus.

- The draft TMDL report “Nutrient TMDL for Tomoka River (Fresh Water), WBID 2634” dated March 2013, estimates nonpoint source contributions of 338,774 pounds per year of total nitrogen and 22,101 pounds per year of total phosphorus.

- The final TMDL report “Nutrient and Dissolved Oxygen TMDLs for the Six Middle St. Johns River Segments between the Inlet of Lake Harney (WBID 2964A) and St. Johns River above Wekiva River (WBID 2893C)” dated December 7, 2009, estimates nonpoint source contributions of 718,907 pounds per year of total nitrogen and 73,961 pounds per year of total phosphorus.

- The final TMDL report “Nutrient and Dissolved Oxygen TMDLs for the Indian River Lagoon and Banana River Lagoon” dated March 2009, estimates nonpoint source contributions of 134,986 pounds per year of total nitrogen and 13,901 pounds per year of total phosphorus in the North Indian River Lagoon (WBID 2963F).
The final TMDL report “Dissolved Oxygen and Nutrient TMDL for Spruce Creek, WBID 2674A” dated April 2008, estimates nonpoint source contributions of 18,562 pounds per year of total nitrogen and 4,578 pounds per year of total phosphorus.

Based on the above findings and subject to additional documentation submitted to the public record before adoption of any additional or more stringent standards than the Model Ordinance, Volusia County hereby transmits the four local options for comment. Since the County adopted the Model Ordinance on April 3, 2014, the text below in strike-through are deletions and in underline are additions. The section numbers are from our local code and included for reference only.

Approved for transmittal by Council on April 3, 2014:

(1) **Sec. 50.524. Timing of fertilizer application.**

* * *

(c) Fertilizer containing nitrogen and/or phosphorus shall not be applied to turf and/or landscape plants June 1 through September 30 of each year.

(2) **Sec. 50.525. Fertilizer free zones.**

(a) Fertilizer shall not be applied within ten (10) fifteen (15) feet of any pond, stream, watercourse, lake, canal, or wetland as defined by the Florida Department of Environmental Protection Rule 62-340. Florida Administrative Code or from the top of a seawall, unless a deflector shield, drop spreader, or liquid applicator with a visibly and sharply defined edge is used in which case a minimum of three (3) feet shall be maintained. Newly planted turf and/or landscape plants may be fertilized in this zone only for a sixty (60) day period beginning thirty (30) days after planting if needed to allow the plants to become well established. Caution shall be used to prevent direct deposition of nutrients into the water.
Previously transmitted and modified:

(3) Sec. 50.527. Fertilizer content and application rates.

* * *

(c) Fertilizers containing phosphorus shall not be applied to turf, sod, lawns or landscape plants in Volusia County. No fertilizer containing phosphorus shall be applied to turf, sod, lawns or landscape plants unless a soil or plant tissue deficiency is verified by a testing methodology approved by the University of Florida, Institute of Food and Agricultural Sciences. If a deficiency is verified, the application of fertilizer containing phosphorus shall adhere to the rates and directions for the Southern Region of Florida, as adopted by Florida Administrative Code Rule.

(4) Sec. 50.527. Fertilizer content and application rates.

* * *

(d) Fertilizers containing nitrogen applied to turf and/or landscaping plants within Volusia County shall contain no less than 50 percent Slow Release Nitrogen per Guaranteed Analysis Label.

We believe these proposed local options are well supported by scientific data and that modifications to the previously transmitted local options address the concerns raised in your correspondence dated April 2, 2014. Thank you for your time and please contact me with any questions.

Sincerely,

Kelli McGee
Director, Growth and Resource Management

cc: Florida Department of Environmental Protection
    University of Florida Institute of Food and Agricultural Sciences