

ATTACHMENT A

A RESOLUTION RECEIVING THE STAFF REPORT ON FERTILIZER REQUIREMENTS

Resolution No. 31/2008-09

WHEREAS, Carrboro entered into a 5 year NPDES stormwater permit on July 1, 2005 with the State of North Carolina that requires Town oversight of fertilizer application; and

WHEREAS, staff have drafted an update to the Town Code to provide this oversight for grassed areas of 5 acres or more; and

WHEREAS, the Board of Aldermen asked staff to provide a report regarding properties affected by the new Town Code provision and an analysis to help inform the area threshold; and

WHEREAS, Carrboro is committed to the ongoing high quality management of stormwater runoff within the Town's jurisdiction;

NOW THEREFORE, the Carrboro Board of Alderman does hereby:

1. Accept the Staff report; and
2. Adopt the Town Code provision drafted by staff, with the following revisions:
 - a. Adopt an area threshold for fertilizer requirements of ____ acres.
 - b. Additionally, update the Town's fertilizer requirements as follows: _____



TOWN OF CARRBORO

NORTH CAROLINA

TRANSMITTAL

PLANNING DEPARTMENT

DELIVERED VIA: ☒ HAND ☐ MAIL ☐ FAX ☐ EMAIL

To: Steve Stewart, Town Manager
Mayor and Board of Aldermen

From: Randy Dodd, Environmental Planner

Date: October 21st, 2008

Subject: Fertilizer Management Report

Background and Summary

In June, 2008 the Town adopted a Town Code provision regulating fertilizer application in consideration of NPDES Phase II permit requirements. A 5 acre applicability threshold was chosen based on pending Jordan Lake rules. The BOA requested that staff report back regarding who the existing fertilizer permit requirements apply to as well as how it might be applied to smaller parcels. The purpose of this memo is to respond to this request.

Information

Staff has completed an analysis using the Town's GIS database to compile information about turf area, land use, and property ownership within the Town limits. The principal steps in the analysis were to: estimate turf area; overlay parcel boundaries; and summarize results. The Town does not currently have explicit GIS data for turf, so an approximation was created from other data sources via a process of elimination. This process entailed merging all the data sources that clearly represent non-turf areas (e.g., paved areas, buildings, tree cover, water bodies) and assuming the remainder was turf. Staff visually inspected the results and found the estimation of turf area to be relatively unbiased for Town wide analysis, while generally not containing the level of precision warranted for site specific planning. Results have been summarized for thresholds ranging from ½ acre to 5 acres (Table 1).

Table 1: Results of GIS Analysis of Grassed Areas in Town Limits

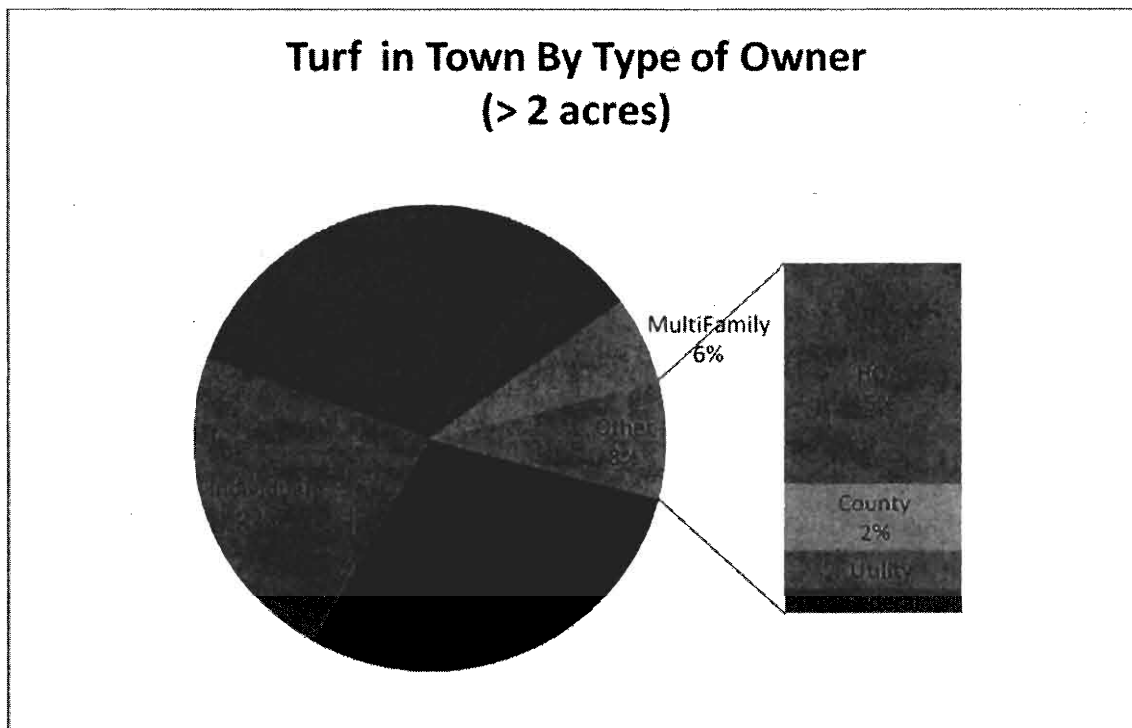
Estimated Turf Area	Public		Business		Open Space *		Residential				Area		Parcels	
							Multi Family		Single Family		Total		Total	
	Acres	# Parcels	Acres	# Parcels	Acres	# Parcels	Acres	# Parcels	Acres	# Parcels	Acres	% Total	#	% Total
> 5 acres	137	8	9	1	18	2	34	5	11	2	209	21%	18	0%
> 2 Acres and < 5 Acres	27	8	9	3	18	6	71	21	39	13	163	16%	51	1%
> 1 Acre and < 2 Acres	6	5	8	6	3	3	12	9	25	18	55	5%	41	1%
> 1/2 Acre and < 1 Acre	5	6	11	16	6	9	10	13	38	57	70	7%	101	2%
< 1/2 Acre	6	40	17	181	14	98	23	155	442	3,658	502	50%	4,132	95%
Total Turf	181	67	54	207	59	118	151	203	554	3,748	999	100%	4,343	100%
Total as % of Total Land	4%	1%	1%	4%	1%	2%	4%	4%	13%	70%				
Total as % of Total Turf	18%	2%	5%	5%	6%	3%	15%	5%	56%	91%				

Within the constraint of the absence of rigorous GIS data for grassed cover, the results presented in Table 1 indicate that:

- As much as a quarter of the Town's land is in grass/turf. About 80% of lots have some grass.
- The total amount of grassed area within the Town limits is about 1000 acres, or about 1.5 square miles.
- A majority of the grassed land is residential; however, an overwhelming portion of residential grass is in small ($< \frac{1}{2}$ acre) patches.
- The second largest category of grassed land is public, representing almost a fifth of the total grassed area. The proportion of relatively large patches in public ownership is the greatest amongst the categories studied.
- Slightly more than a third of the grassed area is in patches greater than 2 acres.
- There is limited area of grass in patches of $\frac{1}{2}$ to 2 acres.

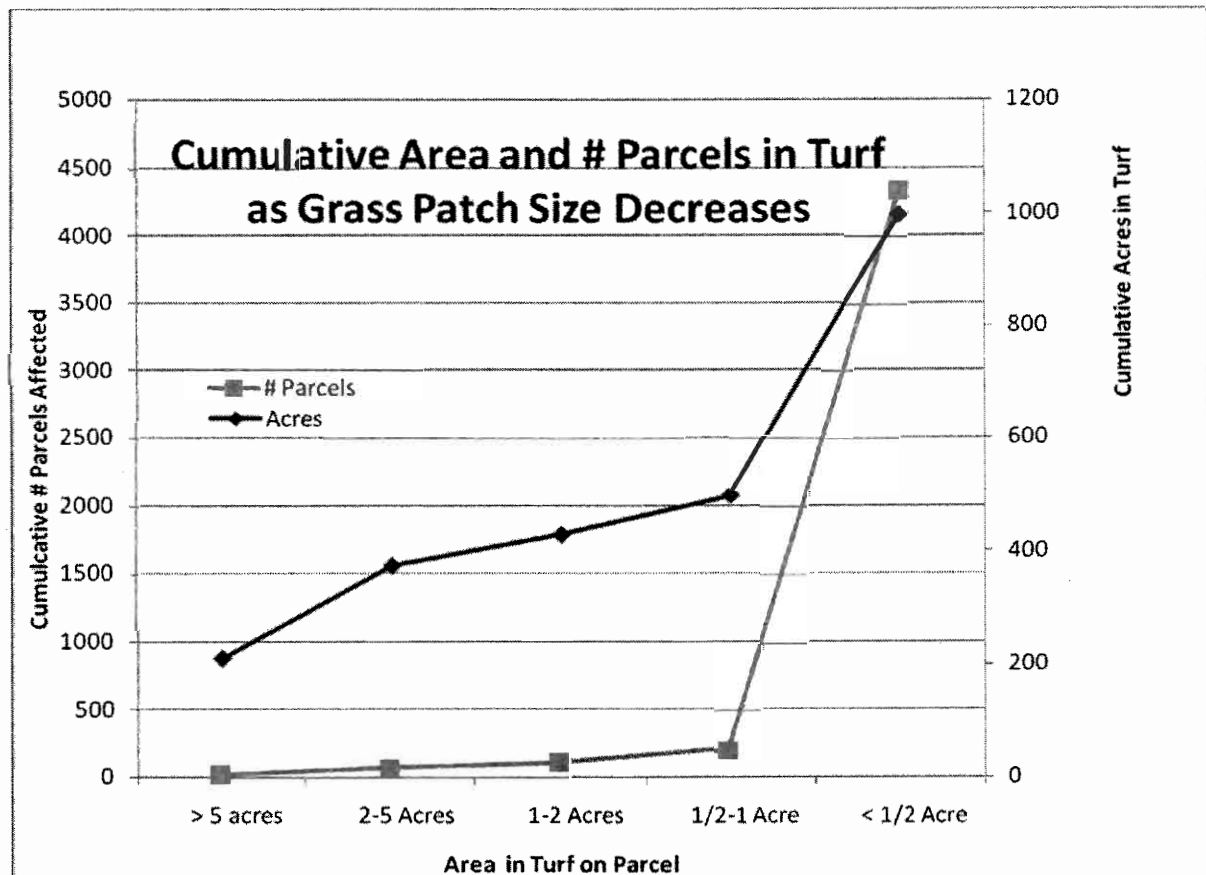
Ownership of grassed area was studied further by categorizing the ownership subjectively from land records data into categories as presented in Figure 1, for grassed areas greater than two acres. For this data: "Town" refers to land owned by the Town; "Individual" refers to land owned by an individual; and HOA refers to land owned by a homeowners association (hopefully the other categories are self explanatory). These results indicate that the Town, individuals, and businesses own about $\frac{3}{4}$ of the grassed land, with the remainder being shared by a variety of public and private entities.

Figure 1: Categories of Ownership for Grassed Areas in Town (%'s based on area)



With regard to the BOA expressed interest in exploring a threshold less than 5 acres for fertilizer regulation, the results indicate that there is a tradeoff in the intensity and amount of regulation required (as measured by the number of properties and total area in turf) that suggests that a lower threshold than 5 acres could be considered, although regulation all the way to the level of $\frac{1}{2}$ acre (or less) would involve substantially more properties with relatively limited benefit in area treated. Figure 2 presents this tradeoff explicitly.

Figure 2: Trading Off Area and Number of Lots Regulated



The way to interpret this figure is to read up from the bottom axis, while noting that there is a fourfold difference in the scales for the vertical axes. Therefore, for grassed areas greater than 5 acres, there are about 20 parcels (reading to left, from "parcels" line), but about 200 acres (reading to right, from "acres" line) affected. Lowering the threshold to 2 acres slightly increases the number of parcels affected, while approximately doubling the area affected. This presentation clarifies that there are clear "diminishing returns" in regulating smaller areas, with the most drastic difference being for areas less than $\frac{1}{2}$ acre. Even for decreases in the threshold size for larger grassed patches, there appear to be diminishing returns. For example, 10 times as many lots would be affected at the $\frac{1}{2}$ -1 acre size as at the 5 acre size, while affecting about 2.5 times as much area.

Staff Recommendation

Staff recommends that the Board of Aldermen either accept the area threshold of 5 acres proposed in the Jordan Lake rules, or adopt a 2 acre threshold. Staff also recommends that single family residential land be exempt from regulation to avoid homeowner and regulatory burden. Staff awaits Board direction regarding additional exemptions, provisions, or requests for further staff analysis.

AN ORDINANCE AMENDING CHAPTER 5 OF THE TOWN CODE TO REGULATE THE
APPLICATION OF NUTRIENTS TO FIVE ACRES OR MORE OF LAND AREA

THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO ORDAINS:

Section 1. Article II of Chapter 5 of the Carrboro Town Code is amended by adding thereto a new Section 5-15 as follows:

Section 5-15 Application of Nutrients to Five Acres or More of Land Area.

(a) No person may apply nutrients, including fertilizer, bio solids, or compost, to any land area that exceeds five acres in size, or cause, suffer, or permit the application of such nutrients to any land area that exceeds five acres in size under the control of such person, unless:

- (1) The person who applies the nutrients has attended and completed nutrient management training as described in subsection (b) of this section or works under the direct supervision of someone who has attended and completed such training; or
- (2) The nutrients are applied in accordance with a nutrient management plan prepared and approved as provided in subsections (c) and (d) of this section.

(b) In order to satisfy the requirements of this section by nutrient management training, a person must complete training provided by either the North Carolina Cooperative Extension Service or the North Carolina Division of Water Quality and obtain a certificate from the training entity to that effect. Training shall be sufficient to provide participants with an understanding of the value and importance of proper management of nitrogen and phosphorus, and the water quality impacts of poor nutrient management, and the ability to understand and properly carry out a nutrient management plan. Training certificates must be kept at the site of the nutrient application or be produced within 24 hours of a request by the town.

(c) A nutrient management plan developed to satisfy the requirements of this section shall be prepared in accordance with the guidelines set forth in the most current edition of one or more of the following publications as applicable:

- (1) *Water Quality and Professional Lawn Care*, or *Water Quality and Home Lawn Care*, published by the North Carolina Cooperative Extension Service (NCCES publication numbers WQMM-155 and WQMM-151, respectively).
- (2) *Water Quality for Golf Course Superintendents and Professional Turf Managers*, published by the North Carolina Cooperative Extension Service (NCCES publication numbers WQMM-156, revised).
- (3) Other publications establishing appropriate guidelines for nutrient application promulgated by land-grant universities.

(d) A nutrient management plan developed to satisfy the requirements of this section must be approved in writing by a technical specialist designated by the North Carolina Soil and Water Conservation Commission or North Carolina Environmental Management Commission.

ATTACHMENT C-2

Such nutrient management plans and supporting documents must be kept at the site of the nutrient application or be produced within 24 hours of a request by the town.

(e) Landowners and other individuals applying fertilizer to areas less than 5 acres in size are encouraged to apply fertilizer at rates recommended by the North Carolina Cooperative Extension Service.

Section 2. All provisions of any town ordinance in conflict with this ordinance are repealed.

Section 3. This ordinance shall become effective six months after the date of adoption.