

MODEL ORDINANCE FOR MANAGING FERTILIZER APPLICATION TO PROTECT WATER QUALITY

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ARTICLE II. MANUFACTURED FERTILIZERS

Sec. 14.5-11. Intent and purpose.

- a) Based upon scientific studies and general knowledge, the _____ has determined that certain compounds containing nitrogen and phosphorus which are contained in manufactured fertilizers, when used within the _____, enter into the _____'s water resources, including wetlands and watercourses, resulting in excessive and accelerated growth of algae and aquatic plants (eutrophication) which is detrimental to such resources. Therefore, the _____ has determined it necessary and appropriate to regulate the rate and application of manufactured fertilizers.
- b) It is the intent of this article to regulate the application of manufactured fertilizers on turf areas and not on or in areas such as gardens, farms, or landscape amenities.
- c) It is also the intent of this article to implicitly recognize that mature topsoil has sufficient compounds such as phosphorus which occur naturally to promote adequate turf root growth.

It is the further purpose and intent of this article to require licensure of commercial and institutional applicators of manufactured fertilizers within the _____.

Sec. 14.5-12. Definitions.

In the interpretation of this article, the following definitions shall apply:

COMMERCIAL APPLICATOR: Any individual or entity who applies manufactured fertilizer in the _____ in exchange for money, goods, services, or other valuable consideration.

DEPARTMENT:

DIRECTOR: The director of the department.

INSTITUTIONAL APPLICATOR: Any individual or entity who applies manufactured fertilizers for the purpose of maintaining turf areas of more than one (1) acre. Institutional applicators shall include but shall not be limited to, owners, operators, and caretakers of golf courses, public lands, schools, parks, religious institutions, utilities, industrial or business sites and any residential properties maintained in condominium and/or common ownership. Owners of individual parcels in single-family residential districts shall not be considered as institutional applicators.

MANUFACTURED FERTILIZERS: A commercially manufactured substance which enriches the soil containing elements essential for turf growth, being primary nitrogen, phosphorus, and potassium.

TURF: A covering of grass vegetation which has both aesthetic and functional benefits maintained at a given level of management.

Sec. 14.5-13. Construction of article

This article shall be liberally construed in favor of protecting the water resources of the _____, including watercourses and wetlands.

Sec. 14.5-14. Rates and application schedule; prohibitions.

The following regulations shall apply for turf applications of manufactured fertilizers:

- 1) Manufactured fertilizers shall not be applied more than once every six (6) weeks or more than five (5) times during any one (1) calendar year to any turf area.
- 2) Application of manufactured fertilizers shall not be permitted prior to April 1 nor after November 15 in any year (due to the inability of frozen soil to absorb nutrients).
- 3) Manufactured fertilizers shall not be applied to sidewalks, streets, driveways, or other nonturf or nonlandscaped areas unless removed within a period of two (2) hours.
- 4) In view of the specialized needs of golf course turf areas, the application schedules set forth in subsection (1) above shall not apply to golf courses. Golf courses shall conform to the permissible rates specified in subsection (5). New greens and tees on golf courses shall be allowed a greater amount of annual rate of fertilizer than permitted permissible rates will be exceeded is given to the department prior to or immediately following the initial application of manufactured fertilizer to the green or tee area, which notice shall contain the intended schedule and rates for the two year exemption period. Written notice of any changes or deviations from the intended schedule and rates shall be given to the department.
- 5) Individuals who are not commercial or institutional applicators shall use their best efforts to conform with the following rates and applications. Commercial applicators and institutional applicators shall apply manufactured fertilizer only at the lowest rate necessary without exceeding the maximum weight per application. Section 14.5-22 is intended to assist all applicators in making the determination necessary to comply with these maximum rates.
 - a. Nitrogen (n). Element nitrogen shall be applied at the maximum of three and one-half (3 $\frac{1}{2}$) pounds per one thousand (1,000) square feet of turf area per year. Single applications of elemental nitrogen shall not exceed one (1) pound per one thousand (1,000) square feet of turf area.
 - b. Phosphorus (p). Elemental phosphorus shall be applied at the maximum rate of seven-tenths (0.7) pound per one thousand (1,000) square feet of turf area per year.

Single applications of elemental phosphorus shall not exceed one-quarter (0.25) pound per one thousand (1,000) square feet of turf area.

- c. Potassium (K). Concentration of potassium is not regulated under this article.

Sec. 14.5-15. Administrative relief.

- a) All applicators desiring to apply manufactured fertilizers more frequently than permitted in subsection 14.5-14(1) or in amounts exceeding the quantities prescribed in this article may seek administrative relief in accordance with this section.
- b) An applicator desiring to seek administrative relief under this section shall file an application with the department of the form approved by the _____ board.
- c) A soil sample or samples shall be taken from the site on which an applicator is proposing to apply manufactured fertilizers in amounts exceeding the quantities prescribed in this article. Such soil samples shall be taken by the director or his designee and forward to the County Extension Service for analysis. Following completion of the analysis, the results shall be reviewed by the director or the director's designee.
- d) Approval or denial of the application shall be determined by the director as expeditiously as possible, but in no event later than five (5) days after receipt of the soil analysis, taking into consideration the following criteria:
 - 1) Anticipated environmental impact upon surrounding water resources.
 - 2) Permeability of soils and topographic conditions of the site.
 - 3) Conditions of stormwater management systems and ability of the system for nutrient uptake.
 - 4) Percentage of the site allocated to impervious surface.
 - 5) Necessity demonstrated by the application with regard to the turf management requirements of the site.

Sec. 14.5-16. Special regulation for wetlands and watercourses.

Manufactured fertilizers shall not be permitted within any wetland, watercourse, or fringe area as defined in _____. The _____ board may impose additional requirements of prohibitions with regard to the rate, area, and applications of manufactured fertilizers for the purpose of protecting wetlands, watercourses, and fringe areas.

(Ord. No. C-310, § 1(6), 4-15-91)

Sec. 14.5-17. Licensure requirement and procedure.

- a) All commercial and institutional applicators shall be licensed in good standing by the _____ prior to applying manufactured fertilizers on any lands in the _____.
- b) A license issued under this article shall be valid until expiration, suspension, or revocation.
- c) To secure a license, a commercial and/or institutional applicator shall complete and submit to the _____ clerk a license application. Previously licensed applicators shall submit their application shall include the following:

- 1) Legal and business name(s), address, telephone number and contact person of applicant
 - 2) Name (if applicable), address, and description of institutional applicator property, including the use, area, and dimension of the property.
 - 3) A copy of the applicant's material safety data sheets (MSDS) may also be required as part of the license application.
 - 4) The product name or names of manufactured fertilizers to be used, including the percentage weight and ratios of elemental nitrogen and elemental phosphorus.
 - 5) A description of the vehicles, including trailers, which will be used by the applicator during the license period to apply manufactured fertilizer to turf areas in the _____, which shall include to make, model, year, and weight of the vehicle; the size of any manufactured fertilizer tanks; the vehicle identification number; the license plate/registration number assigned by the Michigan Secretary of State and any other registration or identification numbers assigned by other state or federal governmental agencies.
- d) Upon submission of an application to the clerk, the applicant shall pay the fee according to the schedule established by resolution of the _____ board, which fee schedule shall be calculated to cover the license review, issuance and periodic field inspection.
 - e) The clerk shall forward the completed application to the department for determination whether the manufactured fertilizers to be used comply with the provisions of this article.
 - f) The application shall be approved or denied within thirty (30) days by the department, and if approved:
 - 1) A numbered license shall be issued, to expire on the next day immediately following November 15.
 - 2) A sticker or decal for each vehicle disclosed in the application under subsection (c) (5) shall be issued, which shall immediately be permanently affixed by the licensee to the inside lower left corner of each vehicle's windshield.
 - g) The _____ clerk shall maintain a current list of all licensed commercial and institutional applicators.
 - h) A licensee shall notify the department in writing of any changes in the information disclosed in the license application. Additional vehicles shall not be used to apply manufactured fertilizer to turf areas in the _____ until a sticker or decal for that vehicle has been used and permanently affixed to the vehicle windshield as provided in subsection.

Sec. 14.5-19. Inspection and license revocation.

- a) The _____, through the department and _____ enforcement officer, shall monitor for conformance with this article and shall be permitted to conduct periodic spot checks on all commercial and institutional applicators for such purpose.
- b) Should a commercial or institutional applicator be found to be in violation of this article, the _____ board, following notice, and an opportunity of the licensee to be heard, shall have the right to revoke a license for a period of up to one (1) year. If a commercial or institutional

applicator is found to be in violation of this article on more than one (1) occasion, in any one (1) calendar year, the _____ board shall revoke the license of such applicator for a period of not less than one (1) calendar year by not more than five (5) calendar years.

Sec. 14.5-21. Calculations for proper application.

In order to determine permitted rates under this article, the following calculations reference the proper application levels per one thousand (1,000) square feet of lawn area:

- 1) Methodology for determining the greatest amount (in pounds per one thousand [1,000] square feet) of manufactured fertilizer allowable in accordance with this article:
 - a) The three-number ratio given on the manufactured fertilizer bag represents the percent ratio for nitrogen, phosphorus, and potassium for any given manufactured fertilizer weight.
Example: 29-3-4 mean 29% nitrogen, 3% phosphorus, and 4% potassium.
NOTE: The third number may be disregarded, since potassium is not regulated in this article.
 - b) To determine the maximum amount (in pounds per one thousand [1,000] square feet) of applied manufactured fertilizer allowed annually, divide 3.5 (the maximum amount of nitrogen allowed) by the first number in the ratio (percent nitrogen) and then multiply by 100.
Example: $3.5 \div 20 = 0.121$
 $0.121 \times 100 = 12.1$ pounds
 - c) Compare the number of pounds as determined from the percent nitrogen with the number of pounds as determined by the percent phosphorus. The smaller weight represents the maximum amount of manufactured fertilizer that shall be used.
Example: The sample problem above gave 12.1 pounds and 23 pounds as the maximum quantities of manufactured fertilizer. Using 12.1 pounds of manufactured fertilizer ensures that neither phosphorus nor nitrogen will exceed the allowable annual application rates described in this article. If 23 pounds were used, the amount of nitrogen would exceed its limits of 3.5 pounds per one thousand (1,000) square feet of turf area.
 - d) To convert the maximum allowable pounds per one thousand (1,000) square feet per year into the maximum allowable pounds per one thousand (1,000) square feet per application, divide the pounds per year by the number of applications per year.

Example: 12.1 pounds per year divided by 5 applications = 2.4 pounds per 1,000 square feet per application

EXAMPLES OF MANUFACTURED FERTILIZERS SELECTIONS

<i>Annual Application (lbs. per 1,000 sq. ft.)</i>		<i>Possible Fertilizer Analysis</i>	<i>Maximum Amount of Fertilizer Allowed* (lbs. per 1,000 sq. ft.)</i>
<i>N (Nitrogen)</i>	<i>P (Phosphorus)</i>		
3.5	0.7	35-7-X	10
3.5	0.3	35-3-X	10
3.4	0.3	35-3-X	10
3.3	0.4	30-4-X	11
3.5	0.4	29-3-X	12
3.4	0.5	28-4-X	12
3.4	0.4	28-3-X	12

**Numbers are rounded to the highest whole number permissible by this article.
X - Does not apply to this article.*

2) Methodology for determining how many square feet of turf can be covered by a given bag of manufactured fertilizer:

a) To determine the total pounds of nitrogen in a given bag of manufactured fertilizer, multiply the percent ratio of nitrogen (the first number) by the total bag weight. Then divide by 100.

Example: If you have a 12-pound bag of manufactured fertilizer with a 28-4-X ratio, the equation would be as follows:

$$28 \text{ multiplied by } 12 = 366$$

$$366 \text{ divided by } 100 = 3.66 \text{ or rounded } 3.4 \text{ total pounds of nitrogen}$$

b) To determine the total number of square feet that can be treated by the nitrogen in the given bag of manufactured fertilizer, divided by the total pounds of nitrogen by 3.5 (the maximum amount of nitrogen allowed). Then multiply by 1000.

$$\text{Example: } 3.4 \text{ divided by } 3.5 = 0.97$$

$$0.97 \text{ multiplied by } 1000 = 970 \text{ square feet can be treated by nitrogen}$$

- c) To determine the total pounds of phosphorus in a given bag of manufactured fertilizer, multiply the percent ratio of phosphorus (the second number) by the total bag weight. Then divide by 100.
Example: 4 multiplied by 12 = 48
48 divided by 100 = 0.48 or rounded 0.5 total pounds of phosphorus
- d) To determine the total number of square feet which can be treated by the phosphorus in the given bag of manufactured fertilizer, divide the total pounds of phosphorus by 0.7 (the maximum amount of nitrogen allowed). Then multiply by 1000.
Example: 0.5 divided by 0.7 = 0.71
0.71 multiplied by 1000 = 710 square feet can be treated by phosphorus
- e) Compare the total square feet that can be treated by the nitrogen and the total number of feet that can be treated by the phosphorus. The larger number of square feet represents the amount of square feet to be covered by the bag of manufactured fertilizer. This ensures that neither the phosphorus nor the nitrogen will exceed the limits outlined in this article.

Example: If you apply the manufactured fertilizer to 970 square feet, both nitrogen and phosphorus fall within their minimum limits of application. However, if you apply manufactured fertilizer to only 710 square feet, then the nitrogen is not being applied to a large enough area (970 square feet). Therefore, the nitrogen exceeds the limits specified in this article.