

TOWN OF AYER

ARTICLE ???? – FERTILIZER USE BYLAW

DRAFT – August 17, 2021

SECTION 1: PRESUMPTIONS

- A. Over 13.5% of Ayer’s topography is comprised of open water (ponds, streams, rivers) and diverse wetlands. In addition, three important underground aquifers are located within Ayer’s boundaries, two of which supply drinking water to town residents and businesses.
- B. Sufficient scientific evidence exists that demonstrates that the inappropriate, excessive, and/or improper use of turf fertilizer products containing phosphorus and nitrogen can result in the direct runoff and/or groundwater leaching of these products into water resources and nearby ponds and streams. This impact, however unintended, can be significant and costly.
- C. Public health risks from excessive loading of nutrients to water resources may include direct detrimental effects on drinking water sources by increased concentrations of nitrates and phosphates that can violate safe drinking water standards.
- D. Evidence also shows that the excessive nutrient enrichment of ponds from fertilizer runoff can contribute to the significant acceleration of a natural process called ‘**eutrophication**’ (see Definitions). Fertilizer runoff is just one source of over-enrichment that stimulates the dense growth of algae, invasive aquatic vegetation, and the overgrowth of native plant species. The build-up of the resulting organic sediment at the bottom of a pond leads to the gradual depletion of oxygen in the water, the deterioration of water quality, and the destruction of habitat for fish and wildlife. In addition to potential algae blooms and fish kills, this also may drive up the cost of drinking water purification and impair human recreational uses.
- E. Ayer already annually spends thousands of dollars of taxpayer revenue to treat some of its ponds in order to slow eutrophication, reduce the growth of invasive aquatic vegetation (e.g. milfoil, fanwort) and manage the over-growth of native aquatic vegetation (e.g. waterlilies, phragmites) – all forms of vegetation that thrive from the addition of fertilizer runoff.
- F. Because fertilizer use is a more controllable source of excessive nutrient runoff, and because there are reasonable alternatives, this bylaw is an effort to encourage our community to do what we can to minimize and/or mitigate these negative effects and better protect our valuable water resources.

SECTION 2: GOALS

A Town bylaw to conserve resources, protect the environment, and reduce taxpayer expenses by regulating the outdoor application of nitrogen and phosphorus in commercial fertilizers in order to reduce the overall amount of excess nitrogen and phosphorus entering the Town's resource areas as defined in the Ayer Wetlands Protection Bylaw (Article XXVI). Reducing excess nitrogen and phosphorus will help protect and improve the water quality of Ayer's valuable aquifers and surface waters and to prolong the health of its ponds and wetlands for habitat and recreational use.

Consistent with this goal, and based on the findings provided above, the Town provides this bylaw to achieve the following goals:

- A. To provide standards and regulations that will allow reasonable use of fertilizers for the enhancement and maintenance of turf quality.
- B. To ensure application of fertilizer shall be performed in a manner consistent with best management practices (BMPs), which from time to time may undergo changes in response to scientific research.
- C. To provide a legal mechanism for enforcement against the inappropriate and/or improper use of fertilizer.
- D. To incorporate, by reference, the University of Massachusetts Extension's Turf Management BMPs as the primary standard for the content and application practices related to turf fertilizer.
- E. To provide a regulatory tool that will help the Town to achieve total daily maximum load (TDML) improvements to impaired waters within Ayer as well as to achieve the phosphorus reduction goals identified in the "Biological Survey, Assessment and Management Recommendations for Ayer's Ponds" prepared by Geosyntec Consultants in 2016.
- F. To conserve valuable water resources, increase property values, and reduce the financial burden on taxpayers and property owners by regulating the outdoor application of nitrogen and phosphorus on turf.
- G. To help achieve goals set forth in the Town of Ayer's Master Plan, Open Space & Recreation Plan, and local Wetland Bylaw (Article XXVI).

SECTION 3: AUTHORITY

This bylaw is adopted by the Town of Ayer as implementing regulations pursuant to and as authorized by Section 9 of Chapter 262 of the Acts of 2012 as adopted by the Legislature of the Commonwealth of Massachusetts.

SECTION 4: PERFORMANCE STANDARDS FOR FERTILIZER APPLICATION

This bylaw shall apply to, and regulate any and all, applications of fertilizers containing nitrogen and phosphorus within the Town of Ayer. Except as specified under Exemptions (see following section), applications of fertilizer to turf shall comply with the following standards:

- A. The application of fertilizer containing nitrogen and/or phosphorus is prohibited between November 1 and April 1 unless specifically permitted by the enforcement authority.
- B. Nitrogen or phosphorus from any fertilizer application shall not be applied to, or otherwise deposited on, any impervious surface, including parking lot, roadway, sidewalk, frozen soil, or ice. Any fertilizer applied, spilled, and/or deposited on any impervious surface, either intentionally or accidentally, must be immediately and completely removed and contained and either legally applied to turf or any other legal site or returned to an appropriate container.
- C. No person shall apply nitrogen or phosphorus containing fertilizer directly during or immediately prior to forecast heavy rainfall, such as but not limited to thunderstorms, hurricanes, or nor'easters, nor shall fertilizer be applied onto saturated ground.
- D. Applications of fertilizer should be watered in with a minimum amount of water to avoid runoff into nearby resources or across impervious surfaces. A suggested standard is no more than 0.25 inch of irrigation or natural rain within the twenty-four hour period following application.
- E. The application of nitrogen or phosphorus containing fertilizer is prohibited within 100 feet of Wetland Resource Areas and within 200 feet of Riverfront Areas as defined in the Ayer Wetland Protection Bylaw (Article XXVI) and Regulations unless permission is obtained through the enforcement authority herein allowing such activity. The application of such fertilizers is also prohibited within all land mapped as Zone II (Aquifer Protection Overlay District) surrounding a public water supply well and including all Interim Wellhead Protection Areas, as detailed in Section 8.1 of the Ayer Zoning Bylaws.
- F. Fertilizer that contains phosphorus shall not be used unless a soil test taken not more than three years before the proposed fertilizer application indicates that additional phosphorus is needed for growth of that turf, or unless establishing new turf or re-establishing or repairing turf after substantial damage or land disturbance, in which case the application shall be in compliance with the BMP developed by the University of Massachusetts Extension, Center for Agricultural, Turf Program.
- G. The fertilizer application requirements of this subsection shall apply with the same limitations to combination products as defined by this bylaw.

SECTION 5: EXEMPTIONS

- A. For agriculture and horticulture uses. Applications of fertilizer to vegetated areas that do not include managed turf/landscaped areas are not subject to the provisions of this bylaw as they are regulated by MDAR fertilizer regulations (see definitions below).
- B. For use in gardens, including vegetable and flower, trees, shrubs, and indoor applications including greenhouses.
- C. For the establishment of new turf, including the use of hydroseeding, and/or vegetation in the first growing season.
- D. For the repair of existing turf, including the use of hydroseeding, after substantial damage or ground disturbance, or where soil tests performed within 3 years confirm the need for additional phosphorus or nitrogen application. The lawn fertilizer application shall not contain amounts of phosphorus or nitrogen exceeding the amount and rate of application recommended in the soil test evaluation.
- E. Yard waste compost or other similar materials that are primarily organic in nature and are applied to improve the physical condition of the soil itself.

SECTION 6: DEFINITIONS

For the purposes of this bylaw, the following terms are defined as provided below:

AGRICULTURE/AGRICULTURAL USE

Includes farming in all its branches, generally as the cultivation and tillage of the soil, dairying, the production, cultivation, growing and harvesting of any agricultural, floricultural, viticultural or horticultural commodities.

BEST MANAGEMENT PRACTICES (BMP)

A sequence of activities designed to limit a non-point pollution source. For the purposes of this bylaw, BMP means the “Best Management Practices for Soil and Nutrient Management in Turf Systems,” prepared by the University of Massachusetts Extension, Center for Agriculture, Turf Program. The version of this document that applies to this bylaw shall be that which was most recent at the time of the adoption of this bylaw or any subsequent versions that are adopted as an amendment to this bylaw through a majority vote at Town Meeting.

COMBINATION PRODUCTS

Sometimes known as “weed and feed,” any product that, in combination with fertilizer, contains pre- or post-emergence herbicides, insecticides, or other pesticides or plant growth regulators.

COMPOST or ORGANIC COMPOST

The biologically stable, humus-like material derived from composting or the aerobic, thermophilic decomposition of organic matter.

EUTROPHICATION

In Greek, this means “well-nourished.” When talking about lakes and ponds, its meaning is more like “over-nourished,” derived from the gradual increase in concentrations of phosphorus, nitrogen, and other plant nutrients. As ponds fill with sediments from decaying plant growth, they lose oxygen, depth, and water quality, leading to fish kills, algae blooms, and the loss of habitat. While eutrophication used to mean the process of a pond or lake aging naturally over thousands of years, human activities – including the use of excess or inappropriate fertilizers and other forms of pollution run-off – have been shown to dramatically accelerate the process and are now regarded as the primary driver of this serious ecological challenge.

FERTILIZER RATIO (N-P-K RATIO)

When buying commercially-available fertilizers, nutrient levels are indicated on packaging as a ratio of three numbers, e.g. ‘10-10-10’ or ‘24-6-6’, etc. These numbers refer to the percentage by weight in the package of Nitrogen (N)-Phosphorus (P)-Potassium (K). The remainder of the package is comprised of inert filler material that assists in the dispersal of the nutrients.

FERTILIZER

A substance that enriches the soil with elements essential for plant growth, such as nitrogen, phosphorus, potassium or other substances. Fertilizer does not include those nutrients that are normally excluded from fertilizer, such as chemicals that are part of horticultural gypsum, dolomite, limestone, lime, Jersey greensand, grass clippings, or compost topdressing.

Commercially available fertilizers can be broken down into two types: Organic and Synthetic.

ORGANIC FERTILIZERS

Organic fertilizers feed the soil. They are derived from plants, manure, once-living organisms, and naturally-occurring mineral deposits and include alfalfa, seaweed, cottonseed meal, bone meal, manure, heat-dried microbes, greensand, rock phosphate. These fertilizers are slow-release and water-insoluble, relying on microorganisms in the soil to digest and break down the nutrients more slowly into a form then available to plants. While they have a slower immediate impact, they tend to remain in the soil and provide ongoing effects. They present a low risk of burning, leaching, or run-off.

SYNTHETIC FERTILIZERS

Synthetic fertilizers feed the plant. They are manufactured by chemically processing minerals, gases, and waste products, and are engineered to deliver nutrients rapidly into the plant itself. They are water-soluble for immediate root uptake and do not tend to improve the soil itself. They have a higher risk of burning, leaching, or run-off if used in excess.

HEAVY RAIN

A rainfall greater than 0.25 inch per hour during a given twenty-four-hour period or a rainfall of greater than one inch total in the next twenty-four-hour period.

IMPERVIOUS SURFACE

Any structure, surface, or improvement that reduces or prevents absorption of stormwater into land, and includes concrete, asphalt, paver blocks, gravel, decks, patios, elevated structures, and other similar structures, surfaces, or improvements, in addition to frozen ground during winter months.

MANAGED TURF AREA

An area of turf, such as a lawn or landscaped area, that is periodically maintained through mowing, fertilizing, aerating, irrigation, or other similar activities designed to maintain or enhance the health, functionality, and/or aesthetic appeal of the turf.

MDAR FERTILIZER REGULATIONS

The most recent regulations of the “Plant Nutrient Application Requirements for Agricultural Land and Land Not Used for Agricultural Purposes,” developed by the Massachusetts Department of Agricultural Resources (MDAR) pursuant to its authority under MGL, c. 128, sections 2(k) and 65(A), as amended by Chapter 262 of the Acts of 2012, 330 CMR 31.00.

MUNICIPAL APPLICATOR

A public employee of a town, the county, or the state or federal government (or an employee of a department of and within such public entity) who fertilizes and manages turf located on property owned or controlled by a town, the county, the state or federal government (including publicly owned golf courses and athletic fields) within the scope of their official public employment responsibilities.

NITROGEN (N)

An element essential to plant growth. For the purposes of the bylaw, nitrogen may be available in 2 forms: **slow-release** (aka controlled-release, timed-release, slowly available, or water-insoluble) nitrogen, which means nitrogen in a form that delays its availability for plant uptake and use after application and is not rapidly available to turf and other plants; and/or **quick-release**, water-soluble nitrogen, which means nitrogen in a form that has no delay and is rapidly available for turf and other plant uptake and use after application.

NUTRIENT

Any of the following 17 elements needed for growth of a plant: the three non-mineral elements: carbon, hydrogen, and oxygen; the six macronutrients: nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur; and the eight micronutrients: boron, copper, iron, chloride, manganese, molybdenum, nickel, and zinc.

PHOSPHORUS (P)

Phosphorus, in mineral or organic form, is just one of the nutrients needed by plants to maintain healthy, strong growth. It is also one of the chemicals involved with fertilizers that are commonly found in water runoff that contributes to the pollution of ponds and groundwater.

SATURATED GROUND

Soil soaked with moisture so that it cannot absorb any more liquid.

TURF

Any non-crop land area that is covered by any grass species (i.e. 'lawn' or 'sod') or related groundcover, excluding meadows, grasslands, pasture, hay land, trees, shrubs, turf grown on turf farms, or any form of agricultural production or use.

SECTION 7: ENFORCEMENT

The enforcement authority shall be the Conservation Commission and its agents, or any town officials in addition as designated by the Select Board to oversee and enforce the provisions of this bylaw. A warning in lieu of a fine or other enforcement action for the first offense can be issued at the discretion of the enforcement authority.

SECTION 8: REGULATIONS

After public notice and public hearing, the Conservation Commission may enact additional regulations to carry out the purposes of this bylaw, effective when approved by vote of the Commission and filed with the Town Clerk.

SECTION 9: OTHER REMEDIES

The enforcement authority may enforce this bylaw or enjoin violations thereof through any lawful process, and the election of one remedy by the enforcement authority shall not preclude enforcement through any other lawful means.

SECTION 10: EDUCATION

A. The Ayer Conservation Commission will assist in maintaining a program of fertilizer and turf management education that is based on BMPs and the latest science.

B. Fertilizer education may consist of, but is not limited to, collaboration with retailers to post in-store information on Town fertilizer regulations, the BMP requirements, mailings and flyers for the general public concerning Town fertilizer regulations, the BMP requirements, and

outreach to landscape professionals and municipal applicators concerning fertilizer-related laws and the BMP requirements.

SECTION 11: SEVERABILITY

Should any section, part, or provision of this bylaw be deemed invalid or unconstitutional, such decision shall not affect the validity of the remaining terms of this bylaw as a whole or any part thereof, other than the section, part, or provision held invalid or unconstitutional.

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