

ORDINANCE NO. 2011-01-001

**AN ORDINANCE AMENDING BELLINGHAM MUNICIPAL CODE SUBSECTION 15.42.050 D AND ADDING BELLINGHAM MUNICIPAL CODE SUBSECTION 15.42.050 E TO ADD REQUIREMENTS THAT RETAIL ESTABLISHMENTS SELLING FERTILIZERS, MULCHES, AND SOIL AMENDMENTS CONTAINING PHOSPHORUS PROVIDE SIGNAGE AND LITERATURE NOTIFYING CUSTOMERS OF PROHIBITED USES OF PHOSPHORUS FERTILIZERS, MULCHES, AND SOIL AMENDMENTS IN THE LAKE WHATCOM WATERSHED, EXTENDING THE PROHIBITION FROM LAWNS AND TURF TO INCLUDE ALL GARDENING AND HORTICULTURAL APPLICATIONS, EXTENDING PHOSPHORUS FERTILIZER PROHIBITIONS TO COMMERCIAL PROPERTIES IN THE WATERSHED, AND REPEALING THE EXEMPTION FOR LAWNS IN THE FIRST GROWING SEASON.**

**WHEREAS**, Lake Whatcom is the source of drinking water for 90,000 people in the City of Bellingham and Whatcom County; and

**WHEREAS**, the protection of the Lake Whatcom Reservoir is of utmost importance to those citizens for public health reasons, and

**WHEREAS**, pursuant to section 303(d) of the federal Clean Water Act, the Lake Whatcom Reservoir is listed as an impaired water body due to excessive phosphorus discharges into it, and the Silver Beach Creek is listed as well due to fecal coliform; and

**WHEREAS**, the City of Bellingham and Whatcom County are under direction by the Washington Department of Ecology to substantially reduce the phosphorus content in the waters of the Reservoir, commonly referred to as TMDL ("Total Maximum Daily Load"); and

**WHEREAS**, the failure to reduce phosphorus and other pollutants in the waters of the Reservoir will lead to substantial expenses for enlargement and upgrading of the City of Bellingham's water treatment plant, which can be avoided by immediate actions; and

**WHEREAS**, improper use of fertilizers, mulches, and soil amendments containing phosphorus is a known source of phosphorus contamination in water bodies; and

**WHEREAS**, scientific research has shown that most soils contain adequate phosphorus, and that addition of phosphorus is often not necessary for healthy plant growth and may actually detract from it; and

**WHEREAS**, soil tests in the Lake Whatcom watershed have revealed that most soils in the area already contain levels of phosphorus adequate for healthy plant growth; and

**WHEREAS**, knowledge by residents and businesses of the City of Bellingham's prohibition on use of phosphorus-containing materials in the Lake Whatcom watershed, and of

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gardening materials and practices appropriate for the Watershed, will be improved if such information is provided at the retail level;

**THEREFORE, THE CITY COUNCIL OF THE CITY OF BELLINGHAM DOES ORDAIN:**

**Section 1.** BMC 15.42.050 D is hereby amended as follows:

D. Restrictions on Application of Fertilizers, Mulches, and Soil Amendments containing phosphorus, and requirements for retail stores selling such materials:

1. No person shall apply any fertilizer, mulch, or soil amendment to properties within the Bellingham city limits area of Basin One of the Lake Whatcom Watershed that is labeled as containing more than 0% phosphorus or other compounds containing phosphorus, such as phosphate.
2. No fertilizer of any type, mulch, or soil amendment, shall be applied when the ground is frozen.
3. No person shall apply, spill, or otherwise deposit fertilizer, mulch, or soil amendments on impervious surfaces. Any fertilizer, mulch, or soil amendment applied, spilled or deposited, either intentionally or accidentally, on impervious surfaces shall be immediately and completely removed.
4. Retail stores selling fertilizer, mulch, or packaged or bulk soil amendments labeled as containing more than 0% phosphorus or other compounds containing phosphorus, such as phosphate, must display prominently, and within ten feet of the area containing such products, a sign, with content and layout provided by the City of Bellingham, and of a minimum dimension of 2 feet by 3 feet, explaining the City of Bellingham code provision prohibiting application of phosphorus-containing materials in the Lake Whatcom watershed.
5. Retail outlets selling fertilizers, mulches, or soil amendments labeled as containing more than 0% phosphorus or other compounds containing phosphorus, such as phosphate, must make available for distribution to customers educational materials that explain the provisions of the City of Bellingham's code provision, describe the need for the elimination of phosphorus sources in the watershed, and summarize guidelines for materials and practices. Such materials must be available within 5 feet of the area containing such products. The content and layout of these educational materials will be created by the City of Bellingham and made available to retail stores via the City of Bellingham's web site.
6. The City of Bellingham shall make available to the public guidelines for gardening materials and practices in the Lake Whatcom watershed. Such guidelines may change from time to time as required by the development of new products or scientific knowledge of best practices to reduce phosphorus pollution in water bodies.

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**Section 2.** A new subsection, BMC 15.42.050 E is added to the Bellingham Municipal Code to read as follows:

This ordinance shall go into effect on February 1, 2011.

**PASSED** by the Council this 10th day of January, ~~2010~~ 2011

  
\_\_\_\_\_  
Council President

**APPROVED** by me this 18<sup>th</sup> day of January, ~~2010~~ 2011

  
\_\_\_\_\_  
Mayor

**ATTEST:**   
\_\_\_\_\_  
Finance Director

**APPROVED AS TO FORM:**  
  
\_\_\_\_\_  
Office of the City Attorney

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# Guidelines for Gardening Materials and Practices in the Lake Whatcom Watershed

Revised 12/06/10

**Overview.** Bellingham Municipal Code 15.42.050 prohibits use of fertilizers, mulches, and soil amendments tested and labeled as containing more than trace amounts of phosphorus in the Lake Whatcom Watershed. All labeled products should list a "0" for the content of phosphorus by weight. For mulches, bulk soil amendments, and fertilizers, a range of locally-available materials have been identified that, when used properly, are consistent with reducing watershed pollution and with enhancing plant growth and health. This set of guidelines identifies recommended soil amendments and mulches and also those that are not recommended, on environmental and plant health grounds. The document lists acceptable practices for organic materials originating on parcels in the watershed (e.g. yard waste). It also identifies some general gardening and horticultural recommendations to reduce pollution and soil erosion and improve soil health.

**Note:** A soil test by a certified lab is recommended to determine the need for additional organic materials or nutrients. See information at [http://whatcom.wsu.edu/ag/homehort/Soil\\_Sampling.pdf](http://whatcom.wsu.edu/ag/homehort/Soil_Sampling.pdf) or call WSU Extension at 360-676-6736).

## Recommended Materials:

### I. Commercial fertilizers and soil amendments labeled as containing 0 percent phosphorus.

**II. Wood-Based Mulches.** There are a number of wood-based mulches available. Wood-based mulches help retain moisture in the soil, impede weed growth, protect roots from freezing, and sustain the growth of healthy soil organisms. While the names of these products may be somewhat confusing, nursery or garden staff can usually direct you to the right product. The following list describes a number of variants that have proven to perform well in horticultural applications.

- **Hardwood chips** -- Wood chips from hardwood trees.
- **Cedar chips** -- Wood chips from Cedar trees.
- **"Hog Fuel"** -- Trees and other tree parts, often including roots, derived from grinding instead of chipping.
- **"Black Mulch"** -- Weathered, screened wood chips with minimal fine organic material.
- **Arborist chips** -- Chipped tree parts, hardwood or softwood, resulting from tree pruning or removal, and often available directly from a tree service company. *Since the phosphorus content of arborist chips can vary substantially by source, we recommend obtaining chips from a tree service company knowledgeable of watershed gardening, or from certified arborist.*

### III. Soil Amendments

- **Compost.** Compost materials can provide beneficial soil bacteria important to root health and water absorption. They can also contain excessive phosphorus, fecal coliform or pesticides that could be detrimental to Lake Whatcom. Request a completely composted product suitable for use in gardening in the Lake Whatcom watershed from your local garden supply outlet. If used, compost should be turned into the soil, or immediately covered with a mulch from the recommended products list.
- **Composted Manure.** Choose completely composted dairy manures only. Proper composting is essential to assuring the destruction of fecal coliform bacteria. *Because of recent problems*

with pesticide contamination of dairy compost, consumers should choose this product with caution.

- **Topsoil.** Choose topsoils with a relatively low level of organic material content (ideally, with organic content of a maximum of 10% by volume). Topsoils can be highly variable in phosphorus content and fecal bacteria depending on their source and composition.
- **Home-generated materials.** Materials such as yard waste or home-created compost may be acceptable when applied according to the following practices:

**Grass clippings.**

- ✓ Send to “Clean Green” or SSC yard waste collection. If this is not possible, mow with mower set high (2” or higher for most types of turf) to improve capture of the grass particles in the turf structure. If possible, use a mulching mower.
- ✓ Composting of grass is not recommended due to excessive phosphorus content and the inability of home composting systems to sufficiently compost materials for use.
- ✓ Grass clippings should not be used as a landscaping mulch.
- ✓ Any grass that may end up on impervious surfaces (walkways, patios, etc.) or near drainage systems should be promptly swept or blown into the lawn area.

**Home composting.**

- ✓ Home composting areas or equipment should be contained, covered from rainfall, and located away from slopes, hard surfaces or drainage systems to control runoff.
- ✓ Compost, if used, should be turned into the soil, or immediately covered with a recommended mulch (see recommended product types above).
- ✓ Do not apply excessive amounts of compost to the soil. Optimal amounts are around 10% of soil volume. *Perennial landscape soils do not need continuous incorporation of compost materials.* Excess organic materials can cause soil subsidence, excessive nutrient concentration, and nutrient and pollutant runoff.

**Materials NOT Recommended:**

- Fresh or incompletely composted manure of any sort. This is likely to contain fecal matter and is likely higher in soluble phosphorus.
- Bark groundcover of all grades and sizes (e.g. “beauty bark.”). Bark may contain excessive phosphorus and some types can impede movement of water into the soil, increasing runoff.
- Sawdust, when used as a mulch. Sawdust can impede movement of water into the soil, increasing runoff.

**Recommended Landscaping and Gardening Practices:**

**Minimizing impacts during construction or soil disturbance:**

- ✓ Avoid or limit removal of topsoil.
- ✓ To avoid soil compaction, use wood mulches in areas where equipment and vehicles will have access, and under the drip line or canopy of trees.
- ✓ Limit equipment access to one entry and exit point to reduce track out of soil.
- ✓ To prevent erosion on sloped areas, use hog fuel, jute matting and ground cover plantings for permanent stabilization, or plastic tarps anchored with sandbags for temporary stabilization.

- ✓ Cover all exposed soil with 3-4 inches of recommended mulch as soon as possible, preferably covering worked areas as they are created during the clearing and grading process.
- ✓ Store mulch, soil, and other landscape materials on a soft surface and cover with a plastic tarp secured with sandbags or heavy rocks. Never store or stage materials in roads or sidewalks.

#### **Vegetable gardens:**

- ✓ Vegetable gardens may need organic materials and nutrients to compensate for the effect of harvesting. Berming around garden areas to keep exposed soils on site is recommended.
- ✓ Vegetable gardens should be located to avoid creating runoff. Locate garden on the flattest area available and berm soil around the garden to contain runoff and reduce erosion.
- ✓ Cover bare vegetable gardens in the winter with a cover crop or straw.

#### **Horticulture and landscaping:**

- ✓ Install native plants, or native/ornamentals, on the site to enhance infiltration capacity and slow surface runoff. Use wood-based mulches for soil health.
- ✓ Use cedar chips for high-travel areas or under decks.
- ✓ Never use beauty bark or uncomposted manure, including products which explicitly list bark or uncomposted manure as a primary component.
- ✓ Consider using a mulching method (6-8" minimum) to replace lawn with native or ornamental landscaping.
- ✓ Avoid "weed and feed" products. The use of wide broadcast granular pesticides is strongly discouraged. Spot application of pesticides according to manufacturer guidelines is preferred.

**Note:** The City of Bellingham has tested certain garden products to identify those with very low phosphorus content that are suitable for gardening and horticultural use in the watershed. These tests do not guarantee the current phosphorus content of any particular product from any particular source. To obtain a copy of this list, please contact the City of Bellingham Public Works Stormwater Division at 360-778-7700 or call the Stormwater Hotline at 360-778-7979 to leave a message after business hours.

## **Definitions**

**Compost.** A mixture of organic materials, decomposed by bacteria and other soil organisms, usually containing well-aged leaves, woody material, herbaceous green matter and sometimes manure and kitchen scraps, used to enrich soil.

**Mulch.** Organic material that covers and protects topsoil from erosion or colonization by weed species, retains soil moisture, and stimulates soil improvements. This layer may add organic material to the topsoil by decomposition, so periodic replacement or addition may be necessary to long term functioning of the mulch layer. An organic mulch layer can provide microorganisms beneficial to plant and soil health. These organisms are crucial to healthy root systems that encourage infiltration and the uptake of nutrients. Improperly selected mulches can also be a source of pollution of surface or ground water.

## Definitions, continued.

**Pesticide.** A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest. A pesticide may be a chemical substance, biological agent (such as a virus or bacterium), antimicrobial, disinfectant or device used against any pest. Pests include some insects, plant pathogens, weeds, animals, and microbes that destroy property, spread disease or are a vector for disease or cause a nuisance.

**Soil Amendments.** Materials imported to increase the capacity of soil to filter and treat stormwater runoff or to improve nutrient content or soil structure. These amendments can be tilled into existing soils on-site, and amended soils that are produced off-site can be imported. Both subsoil and topsoil can be amended.

**Subsoil.** Mineral layer below topsoil consisting of generally small sized organic and inorganic particles not normally subject to erosive forces. Healthy and biologically active subsoil is critical for long term infiltration and treatment of stormwater.

**Soluble Reactive Phosphorus.** Phosphorus in a dissolved state that is immediately available to plant growth. Runoff containing this form of phosphorus will fuel unwanted algae blooms in lakes. Phosphorus bound to organic materials that slowly decay to release phosphorus to plants is preferred.

**Topsoil.** Top 10" of soil comprised of active nutrients and larger soil particles, providing void space for absorption of surface water. Water and the associated nutrients in topsoil are available for plant growth, transmission into the groundwater table, or both. Topsoil can be impacted by erosive forces.