

# Town of Windham

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## MEMO

DATE: October 19, 2017

TO: Windham Town Council

THROUGH: Tony Plante, Town Manager

FROM: Ben Smith, Planning Director

Cc: Chris Hanson, Director of Code Enforcement

Amanda Lessard, Planner

Jon Earle, P.E., Town Engineer

RE: Highland Lake – ordinance changes to reduce water quality impacts from development

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Staff has further developed the conceptual ideas for ordinance changes outlined in an email to Tony Plante dated September 28, 2017. This list of ideas was generated as a result of the Moratorium Ordinance on Development within the Highland Lake Watershed, enacted by the Town Council on September 12, 2017.

The proposed changes are attached to this memo:

### Surface Water Protection Ordinance

- ) Temporary erosion control measures, such as silt fence, bark mulch, or hay, must be doubled up for any project that requires a Soil & Erosion Control Permit or is approved through the Planning Board.
- ) Projects that do not get reviewed by the Planning Board are subject to a points-based system that will allow for assurance that stormwater runoff will be treated prior to leaving the site without the need for small projects to hire professionals to design stormwater plans for small projects.

### Shoreland Zoning Ordinance

- ) New and replacement septic systems in in the Limited Residential shoreland zone associated with Highland Lake (all properties within 250 feet of the lake) must be designed to 120 gallons per day, versus the standard 90 gallons per day.

Land Use Ordinance, Section 800 & 900

- ) All subdivisions and site plans in the Highland Lake watershed must be designed to meet the DEP phosphorous allocation. A proposal that pays a fee in lieu of meeting that standard is not acceptable.
- ) Projects in the Highland Lake watershed must be designed to provide stormwater treatment for 95% of all impervious areas and 90% of the total developed area as opposed to the general standard of 90% and 80%, respectively.
- ) Land Use Ordinance, Section 900.

# **SURFACE WATER PROTECTION ORDINANCE**

## **A. PURPOSE**

The purposes of this Ordinance are to prevent and minimize surface water pollution due to phosphorus contained in stormwater runoff from developed areas, to promote preventive measures to improve surface runoff water quality and lessen degradation to receiving watersheds and bodies of water within the Town of Windham to prevent and control water pollution caused by soil erosion and sediment transport resulting from soil disturbance associated with building development, to protect and promote safe and healthful conditions for humanity, and to protect fish spawning grounds, aquatic life, bird and other wildlife habitat in the town.

## **B. AUTHORITY**

This Ordinance has been prepared in accordance with the provisions of Title 38 S435-449 of the Maine Revised Statutes Annotated (M.R.S.A.).

## **C. APPLICABILITY**

This Ordinance applies to all activities which involve filling, grading, excavation or other similar activities which result in unstabilized soil conditions and a permit shall be required and a written soil erosion and sedimentation control plan. The plan shall be submitted to the permitting authority for approval and shall include, where applicable, provisions for:

1. Mulching and re-vegetation of disturbed soil.
2. Temporary runoff control features such as hay bales, silt fencing or diversion ditches.
  - a. Projects within the Highland Lake watershed must incorporate double temporary erosion control measures at the perimeter of the project.
3. Permanent stabilization structures such as retaining walls or riprap.
4. Activities which require site plan approval from the Planning Board are to be prepared in accordance with prevailing best management practices as referenced in the current issue of Maine Erosion and Sediment Control Handbook for Construction: Best Management

Exempt from the requirements of this ordinance are the following:

- a. Activities in the Shoreland Zone which are governed by the Shoreland Zone Ordinance.
- b. Permit applications in subdivisions, which have a Planning Board approved soil erosion and sediment control plan.
- c. Activities wherein none of the area of soil disturbance has a slope steeper than two percent, but it shall be the applicant's responsibility to furnish a topographic survey demonstrating such gradual slope.

## **K. STORM WATER RUNOFF**

### **1. Construction:**

All construction and development shall minimize stormwater runoff from the site in excess of the natural pre-development conditions. Where possible, existing natural runoff control features, such as berms, swales, terraces and wooded areas shall be retained in order to reduce runoff and encourage infiltration of stormwaters. Areas of connected impervious surfaces should be minimized to take full advantage of these features. Where runoff can not be retained on site it shall be reviewed by licensed professionals in this field.

#### **a. Buffers:**

Buffers (also know as vegetative filter or filter strips). Within the required setback of the corresponding zone three shall be a vegetative buffer. Excluded from this requirement are all of the commercial zones. This buffer shall consist of landscaping, to include but not limited to, grass, trees, shrubs, and wood chips. Within this buffer access to the property can be made for essential services and driveway access.

#### **b. Drainage ways:**

Natural and man-made drainage ways and drainage outlets shall be protected from erosion from water flowing through them. Drainage ways shall be designed and constructed in order to carry water from a twenty five (25) year storm or greater, and shall be stabilized with vegetation or lined with rip-rap

### **2. Maintenance:**

Stormwater runoff control systems shall be maintained as necessary to ensure proper functioning.

### **3. Plan Required:**

When required by this ordinance, the Code Enforcement Officer or the Planning Board, stormwater management plans shall be designed utilizing the most recent approved version of the Cumberland County Soil and Water Conservation Districts and Maine DEP's "Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices and the Maine DEP's Stormwater Management for Maine: Best Management Practices. Completed plans, when required above, may be reviewed by the Cumberland County Soil and Water Conservation District, or other qualified professional firm, agency, or organization..

### **4. General:**

All activities are expected to employ appropriate stormwater management practices regardless of the zone or district they are located in.

### **5. Additional requirements for projects in the Highland Lake watershed that are not subject to subdivision or site plan review.**

- a) The Code Enforcement Officer shall issue a Stormwater and Phosphorus Management Control Permit if the applicant meets or exceeds fifty (50) points based on the following point schedule. The applicant shall submit a Sketch Plan of the lot showing how each of the following point credits or deductions applies to the

proposed development. The Sketch Plan shall show approximate locations and dimensions of each Stormwater BMP, or other measure.

a. Credits

- i. 10 Points for correcting an existing erosion problem on the project site, as approved by the Code Enforcement Officer.
  1. Installing non-structural BMP (vegetation, loam and seed, mulch, etc.)
  2. Installing a structural BMP (woven geotextile mats and fabric, rip rap, etc.)
  3. Installing sediment control barriers until 1 & 2 have been established.
- ii. 10 Points for a building footprint less than 1,500 square feet
- iii. 10 Points for a clearing limitation of less than 20% of the lot, or 15,000 square feet, whichever is less; or 20 Points for a clearing limitation of less than 15% of the lot, or 10,000 square feet, whichever is less
- iv. 15 Points for the installation of rock-lined drip edges or other infiltration system to serve no less than 50% of the new impervious area on the site. Test pit information certified by a Licensed Site Evaluator, Certified Soil Scientists (CSS) or Certified Geologist (CG) must show that one foot of separation exists between the Seasonal High Groundwater Table and the bottom of any proposed infiltration structure. Infiltration systems must be sized to accommodate one inch of runoff from contributing impervious areas within the structure (this will include an assumption of 30% void space in washed stone) and designed in accordance with the details following approved engineering practices and techniques as published by the Maine Department of Environmental Best Management Practices (BMPs)
- v. 25 Points for the installation of rock-lined drip edges or other infiltration system to serve no less than 75% of the new impervious building area on the site. Test pit information certified by a Licensed Site Evaluator, Certified Soil Scientists (CSS) or Certified Geologist (CG) must show that one foot of separation exists between the Seasonal High Groundwater Table and the bottom of any proposed infiltration structure. Soil filtration or infiltration systems must be sized to accommodate one inch of runoff from contributing impervious areas within the structure (this will include an assumption of 30% void space in washed stone) and designed in accordance with the details following approved engineering practices and techniques as published by the Maine Department of Environmental Best Management Practices (BMP's)
- vi. 25 Points for the installation of rain gardens soil filtration system, or wet pond design to serve no less than 50% of the total new impervious area on the site. Rain gardens, soil filter, and wetpond systems shall be sized to accommodate one inch of runoff from contributing impervious areas, and designed in accordance with the details following approved engineering practices and techniques as published by the Maine Department of Environmental Best Management Practices (BMP's)

- vii. 40 Points for the installation of rain gardens soil filtration system, or wetpond design to serve no less than 75% of the new impervious area on the site. Rain gardens soil filter, and wetpond systems shall be sized to accommodate one inch of runoff from contributing impervious areas, and designed in accordance with the details following approved engineering practices and techniques as published by the Maine Department of Environmental Best Management Practices (BMP's).
- viii. 30 Points for a 50 foot wide (no greater than 15% slope) wooded buffer strip, or a 75 foot wide vegetated buffer (no greater than 8% slope) strip located down gradient and adjacent to the developed area, provided there is no channelization within the buffer; or
- ix. 35 Points for a 75 foot wide (no greater than 15% slope) wooded buffer strip, or a 100 foot wide vegetated buffer (no greater than 15% slope) strip located down gradient and adjacent to the developed area, provided there is no channelization within the buffer; or
- x. 40 Points for a 100 foot wide (no greater than 15% slope) wooded buffer strip, or a 150 foot wide vegetated buffer (no greater than 15% slope) strip located down gradient and adjacent to the developed area, provided there is no channelization within the buffer.
- b. Deductions
  - i. 5 Points deducted for a new structure footprint exceeding 2000 square feet, and an additional 5 points deducted for each additional 500 square feet of structure footprint.
  - ii. 5 Points deducted for clearing more than 50% disturbance.
- b) Alternate Means of Calculation. In those cases where the Code Enforcement Officer determines that use of the points system is inadequate to achieve the purposes of storm water and phosphorous management control or is otherwise inappropriate because of particular circumstances of the property, the Code Enforcement Officer may assess conformance with this standard based on the following:
  - a. A licensed State of Maine Professional Engineer or Soil Evaluator or Certified Profesional in Soil and Erosion Control certifies that the proposed treatment measure matches or exceeds the performance of the treatment measure under the specific point system allowance. It shall be the engineer's responsibility to provide evidence that the measure has been approved by the Maine Department of Environmental Protection or provides other certification into comparable treatment by professional testing results.

## **L. CONDITIONS OF PERMITS**

Permits granted under this section may be made subject to additional conditions or restrictions to ensure conformity with the purposes and provisions of this chapter. Each application for a building permit shall be accompanied by the building permit fee set by the Town. Each application to the Code Enforcement Officer for a permit to erect a new building or structure or to enlarge or to move an existing one shall be accompanied by a site plan showing the measurements of the lot and of all buildings, driveways, yards and parking spaces, drainage ways, storm drains, streams existing

All activities within the Shoreland Zone are expected to employ appropriate stormwater management practices regardless of the zone or district they are located in.

K. Septic Waste Disposal.

1. All subsurface sewage disposal systems shall be installed in conformance with the State of Maine Subsurface Wastewater Disposal Rules, and the following: a) clearing or removal of woody vegetation necessary to site a new system and any associated fill extensions, shall not extend closer than seventy-five (75) feet, horizontal distance, from the normal high-water line of a water body or the upland edge of a wetland and b) a holding tank is not allowed for a first-time residential use in the shoreland zone.

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NOTE: The Maine Subsurface Wastewater Disposal Rules require new systems, excluding fill extensions, to be constructed no less than one hundred (100) horizontal feet from the normal high-water line of a perennial water body. The minimum setback distance for a new subsurface disposal system may not be reduced by variance.

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2. For all new and replacement systems within the Limited Residential shoreland zone associated with Highland Lake, septic systems must be designed to meet a design flow of 120 gallons per day.

L. Essential Services.

1. Where feasible, the installation of essential services shall be limited to existing public ways and existing service corridors.
2. The installation of essential services, other than road-side distribution lines, is not allowed in a Resource Protection or Stream Protection District, except to provide services to a permitted use within said district, or except where the applicant demonstrates that no reasonable alternative exists. Where allowed, such structures and facilities shall be located so as to minimize any adverse impacts on surrounding uses and resources, including visual impacts.
3. Damaged or destroyed public utility transmission and distribution lines, towers and related equipment may be replaced or reconstructed without a permit.

M. Mineral Exploration and Extraction:

Mineral exploration to determine the nature or extent of mineral resources shall be accomplished by hand sampling, test boring, or other methods which create minimal disturbance of less than one hundred (100) square feet of ground surface. A permit from the Code Enforcement Officer shall be required for mineral exploration which exceeds the above limitation. All excavations, including test pits and holes, shall be immediately capped, filled or secured by other equally effective measures to restore disturbed areas and to protect the public health and safety.

Mineral extraction may be permitted under the following conditions:

The site plan shall provide for a system of pedestrian ways within the development appropriate to the type and scale of development. This system shall connect the major building entrances/exits with parking areas and with existing sidewalks, if they exist or are planned in the vicinity of the project. The pedestrian network may be located either in the street right-of-way or outside of the right-of-way in open space or recreation areas. The system shall be designed to link the project with residential, recreational, and commercial facilities, schools, bus stops, and existing sidewalks in the neighborhood or, when appropriate, to connect with amenities such as parks or open space on or adjacent to the site.

**E. Stormwater Management**

1. Adequate provisions shall be made for the collection and disposal of all stormwater that runs off proposed streets, parking areas, roofs, and other surfaces, through a stormwater management plan, which shall not have adverse impacts on abutting or downstream properties.
  - (a) Stormwater management systems for minor and major site plans shall detain, retain, or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project. The Planning Board may waive the flooding standard in accordance with the following criteria:
    - (1) Insignificant Increases in Peak Flow Rates from a Project Site. When requesting a waiver for a project resulting in an insignificant increase in peak flow rates from a project site, the applicant shall demonstrate that insignificant increases in peak flow rates cannot be avoided by reasonable changes in project layout, density, and stormwater management design. The applicant shall also demonstrate that the proposed increases will not unreasonably increase the extent, frequency, or duration of flooding at downstream flow controls and conveyance structures. In making its determination to allow insignificant increases in peak flow rates, the Planning Board shall consider cumulative impacts.
    - (b) The applicant shall demonstrate that on- and off-site downstream channel or system capacity is sufficient to carry the flow of a minimum 25-year storm without adverse effects, including but not limited to, flooding and erosion of drainage channels and shoreland areas, or that he/she will be responsible for whatever improvements are needed to provide the required increase in capacity and/or mitigation. The Development Review Committee or Planning Board may require capacity for a storm of greater than 25 years due to soil, topographic, or other factors that affect stormwater drainage.



- (c) All natural drainage ways shall be preserved at their natural gradients and shall not be filled or converted to a closed system unless approved as part of the site plan review.
- (d) The design of the stormwater drainage system shall provide for the disposal of stormwater without damage to streets, adjacent properties, downstream properties, soils, and vegetation.
- (e) The design of the storm drainage systems shall be fully cognizant of upstream runoff which shall pass over or through the site to be developed and provide for this movement.
- (f) Major site plans, regardless of size, shall submit a stormwater management plan that complies with Section 4B(2) and Section 4B(3) of the General Standards of the DEP Chapter 500 Stormwater Management, as amended. Major and minor site plan projects located within the Highland Lake watershed shall also meet the following standards:
  - i. Projects in the Highland Lake watershed must include a stormwater plan designed to ~~shall not be allow~~ meet the parcel's phosphorous allocation. The option to pay the compensation fee for exceeding the parcel's phosphorus allocation is not allowed in this watershed.
  - ii. Projects in the Highland Lake watershed shall provide stormwater treatment BMPs for 95% of the impervious area and 90% of the developed area.

#### F. Erosion Control

1. All building, site, and roadway designs and layouts shall harmonize with existing topography and conserve desirable natural surroundings to the fullest extent possible, such that filling, excavation and earth moving activity shall be kept to a minimum. Parking lots on sloped sites should be terraced to avoid undue cut and fill, and/or the need for retaining walls. Natural vegetation shall be preserved and protected wherever possible.
2. Soil erosion and sedimentation of watercourses and water bodies shall be minimized by an active program meeting the requirements of the "Maine Erosion and Sediment Control BMPS" (Maine Department of Environmental Protection), dated March 2003, or other construction management practices system approved by the Planning Board or Development Review Committee, as appropriate.

### I. Floodplain Management

When any part of a subdivision is located in a special flood hazard area as identified by the Federal Emergency Management Agency:

1. All public utilities and facilities, such as sewer, gas, electrical and water systems shall be located and constructed to minimize or eliminate flood damages.
2. Adequate drainage shall be provided so as to reduce exposure to flood hazards.
3. The plan shall include the finished floor elevation of all proposed structures within the flood hazard area.
4. The plan shall meet the requirements of the Town's floodplain management ordinance.

### J. Stormwater Management

1. Stormwater management for subdivisions shall incorporate appropriate treatment measures for water quantity and quality to meet the requirements specified below for development of the lots as well as the infrastructure to support the project. Each application shall include maximum developed, disturbed and impervious areas for each lot based upon the definitions contained in Section 3 DEP Chapter 500 Stormwater Management.
2. For subdivisions that require a DEP review under the Site Location of Development Act (SLDA), a stormwater management plan shall be submitted which complies with the SLDA permit and the requirements of DEP Chapter 500 Stormwater Management.
3. For subdivisions that do not require a SLDA permit, but require a DEP permit under the Stormwater Law, a stormwater management plan shall be submitted which complies with the requirements of DEP Chapter 500 Stormwater Management.
4. For subdivisions outside of the watershed of a Great Pond, that neither require a SLDA permit, nor a DEP stormwater permit, a stormwater management plan shall be submitted that complies with Section 4A Basic Standards and 4B General Standards of the DEP Chapter 500 Stormwater Management.
5. For subdivisions within the watershed of a Great Pond that require neither a DEP SLDA permit nor a DEP Stormwater Permit, a stormwater management plan shall be submitted that complies with Section 4A Basic Standards of DEP Chapter 500 Stormwater Management. In addition, the stormwater management plan shall comply with Section 4C Phosphorous Standards of DEP Chapter 500 Stormwater Management. If the Great Pond is not severely blooming as listed in DEP Chapter 502, the applicant shall submit a stormwater management plan that complies with

either Section 4B General Standards or Section 4C Phosphorous Standards of DEP Chapter 500 Stormwater Management.

6. For all subdivisions, regardless of size, a stormwater management plan shall be submitted that complies with Section 4E Flooding Standard of the DEP Chapter 500 Stormwater Management, as amended. For a project that does not require a DEP SLDA Permit, the Planning Board, upon a request by the Applicant, may waive the Flooding Standard in the event that greater than 75% of the impervious and developed areas (as defined in Section 3 of DEP Chapter 500) for both the lots and infrastructure are treated through the use of buffers in accordance with DEP Chapter 500 Stormwater Management.

7. For all subdivision, regardless of size, located in the Highland Lake watershed, the following additional standards shall be met:

(a) Projects in the Highland Lake watershed shall not be allow to pay the compensation fee for exceeding the project's phosphorus allocation.

(b) Projects in the Highland Lake watershed shall provide stormwater treatment BMPs for 95% of the impervious area and 90% of the developed area.

*(See also Chapter 142 Surface Water Protection Ordinance)*

K. Cluster Developments

1. ***Purpose***

Development under this provision is intended to promote imaginative, well-designed subdivisions which preserve open space and agricultural uses, provide public access to land for passive and active recreation, protect natural features, environmentally sensitive areas and wildlife cover, respect the physical qualities of the land, and, in some instances, reduce the overall development costs of a subdivision. The standards for cluster development allow for the creation of lots that are smaller than those that would otherwise be required by the applicable zoning district regulations and in some cases can be combined with density bonuses to allow additional lots, in return for setting aside the balance of the property as permanent common open space. In addition to all applicable standards of this Ordinance, the Planning Board may approve a single-family cluster subdivision provided the following conditions are met:

2. ***Procedure***

- (a) **Application Requirements.** All submissions for single-family subdivisions that meet the space and bulk requirements listed in the appropriate zoning district may be designed as a cluster subdivision.