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GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
LAND USE PLANNING COMMISSION
106 HOGAN ROAD, SUITE 7
BANGOR, MAINE 04401

WALTER E. WHITCOMB
COMMISSIONER

NICHOLAS D. LIVESAY
EXECUTIVE DIRECTOR

PERMIT

DEVELOPMENT PERMIT DP 4949

The staff of the Maine Land Use Planning Commission, after reviewing the application and supporting documents submitted by Weaver Wind, LLC for Development Permit DP 4949, finds the following facts:

1. Applicant: Weaver Wind, LLC
Attn: Josh Bagnato
129 Middle Street, 3rd Floor
Portland, Maine 04101
2. Landowner: Ursa Major, LLC
Attn: American Forest Management
Milford, Maine 04461
3. Agent: Stantec Consulting Services Inc.
Attn: Joy Prescott
30 Park Drive
Topsham, Maine 04086
4. Date of Completed Application: November 14, 2013
5. Location of Proposal: Town of Osborn, Hancock County, Maine
Hancock County Registry of Deeds: Book 5571; Page 1
6. Zoning: (M-GN) General Management Subdistrict
7. Proposed Development: Two (2) Meteorological Towers and one SODAR¹ Unit

Existing Conditions

8. Currently, the parcel is actively utilized for commercial timber harvesting, which would continue, and is dominated by second growth regenerating mixed hardwood and softwood forest communities interspersed with a network of skidder trails, log landing yards, clear cuts and land management roads.

¹ SODAR Unit - Sonic Detection and Ranging Unit

Proposal

9. *Structure(s)/Site(s) description, setbacks and clearing.* The applicant proposes to construct two (2) temporary meteorological towers and place one (1) SODAR unit in the Town of Osborn to collect wind and weather data. Each tower would be a maximum of 197 feet tall and would consist of an 8-inch diameter tubular pole which would be situated on an approximately 7.7 square foot base plate and have four sets of cable guy wires and anchors.
 - A. *Site 1587, Tower.* This tower would be located at an elevation of approximately 380 feet above sea level and the base would be set back approximately 2,300 feet from the 73-18-0 Road; 425 feet from the 69-12-3 Road, 202 feet from the nearest wetland, 516 feet from Johns Brook, and 1,400 feet from the nearest property boundary line. The site is dominated by a mixed Red Spruce-Yellow Birch-Balsam Fir-Eastern White Pine forest community interspersed with a network of skidder trails and land management roads. The topography is relatively flat and the tree height is 20 to 40 feet. The soils are mapped as Colonel-Brayton-Dixfield association comprised of very stony, poorly-drained to moderately-well-drained soils formed in glacial till. Vegetation clearing would extend 200 feet from the base of the tower pole, except in the vicinity of wetland areas where a 10-foot buffer strip would be retained between the upland edge of the wetland boundary and the clearing. Approximately 128,502 square feet of vegetation would be removed for the installation and operation of the tower and access road (2.88 acres for the tower and 0.7 acres for the access road).
 - B. *Site 1588, Tower.* This tower would be located at an elevation of approximately 640 feet above sea level and the base would be set back approximately 1,700 feet from State Route 9, 800 feet from the 09-18-0 Road, 640 feet from the 09-18-1 Road, 196 feet from the nearest wetland, and 1,800 feet from the nearest property boundary line. The site is dominated by a mixed Beech-Yellow Birch-Sugar Maple forest community with a regenerating shrub layer. The topography is relatively flat to sloping downhill to the northwest. The soils are mapped as Marlow-Dixfield association comprised of very stony, moderately-well-drained to well-drained soils. Vegetation clearing would extend 200 feet from the base of the tower pole, except in the vicinity of wetland areas where a 10-foot buffer strip would be retained between the upland edge of the wetland boundary and the clearing. Approximately 125,453 square feet of vegetation would be removed for the installation and operation of the tower (2.88 acres). The access road at this location is already cleared.
 - C. *Site 1588, SODAR Unit.* This site would potentially include the installation of a SODAR unit to accurately assess the wind profile; this equipment, if installed would require additional clearing of the site but would not require additional filling or grading. Vegetation clearing for the SODAR unit would be approximately 89,733 square feet (2.06 acres); any clearing near the wetland areas would be set back 10 feet from the upland edge of the wetland boundary.
10. *Site access.* Construction of new permanent roads or parking areas is not proposed; both sites would be accessed utilizing existing privately owned forest management roads and skidder trails which would require temporary, minor clearing and improvements. Neither temporary access road would cross any flowing water; wetlands existing near the both access routes would be flagged and avoided. Tower 1587 would be accessed by a 10-foot wide temporary access road off the 69-12-3 Road; Tower and SODAR Unit 1588 would be accessed by a 10-foot wide temporary access road off the 09-18-0 Road.
11. *Soils, Soil Disturbance and Erosion and Sedimentation Control Measures.* Soil map unit data were obtained and reviewed using the U.S. Department of Agriculture's (USDA) National Resource Conservation Service's (NRCS) Soils Survey Geographical database for Hancock County, Maine (See Finding #9, A and B for soil details for each site). The applicant anticipates that anchoring of the tower would be achieved

using rock or screw anchors; however, if site conditions warrant, a 4 square foot buried concrete block would be utilized at each guy set to anchor the structure. New or expanded soil disturbance would be less than 100 square feet per tower; the filling and grading would be in the (M-GN) General Management Subdistrict. Erosion control best management practices would be implemented in accordance with the Commission's Land Use Districts and Standards and the Maine Department of Environmental Protection's, Maine Erosion and Sediment Control BMP's, March 2003.

12. *Wetland alteration.* The applicant stated that no wetlands would be impacted by the clearing, construction, or operation of the proposed projects. All wetlands within 50 feet of the edge of the clearing limits would be flagged prior to clearing and construction; these wetland areas would be avoided. Two wetlands were delineated at Site 1587, approximately 202 feet southwest and 210 feet north of the tower site. One wetland was delineated at Site 1588, approximately 196 feet northeast of the tower site. All wetlands would be flagged prior to clearing; any clearing would be set back at least 10 feet from the upland edge of the wetland boundary.
13. *Period of use.* The applicant anticipates that the proposed meteorological towers would be in place for no more than seven years. At the end of the data collection period, if no other project is proposed and permitted, the towers and associated appurtenances would be dismantled and removed from the site.
14. *Birds and bat strikes and ungulate entanglement.* The applicant stated that each tower would be equipped with bird and bat diverters arranged on the guy wires at the manufacturer's suggested rate and spacing to prevent/reduce strikes. In addition, to prevent/reduce entanglement of mammalian wildlife, especially ungulates, double yellow-marker sleeves would be placed on all guy wires such that all guy wires within 12 feet of the ground would be covered. The applicant would secure loose ends of each guy wire above these yellow-marker sleeves. Further, the tower would be equipped with pulleys for potential placement of anabat detectors.
15. *Title, right and interest and land division history.* On October 22, 2012, the applicant entered into a wind energy easement agreement that grants the applicant permission for, among other things, the installation of meteorological testing equipment towers on a parcel of land owned by Ursa Major, LLC for the purpose of collecting wind resource data (Reference, Hancock County Registry of Deeds: Book 5571; Page1). The applicant submitted an outlined 20-year land division history and indicated that no non-exempt divisions have occurred on the applicable parcel(s) in the past 20 years.
16. *Visual impact assessment.* The applicant stated that the two proposed, temporary towers are not anticipated to negatively impact the scenic character or natural or historic features of the area. Each tower would be located in a regenerating forest landscape that has historically been utilized for timber harvesting. The areas are mixed hardwood and softwood forests that exhibit evidence of past logging activities such as, land management roads, log landing yards, skidder trails, and clear cuts. The nearest improved public road from Site 1587 would be State Route 179 approximately 3.5 miles west of the site and the nearest improved public road from Site 1588 would be State Route 9, approximately 0.3 miles north of the site. Both sites, including the vegetation clearing, are set back at least 1,200 feet from the nearest property boundary line.

The applicant further stated that there are no structures within 1 mile of either site and neither site has been identified as an archaeological sensitive area or will affect historic properties. Given the rural setting, the surrounding forest management lands, the minimal amount of vegetation cutting, the setbacks from the nearest property boundary lines, and the setbacks from the both State Route 179 and State Route 9, opportunities for clear views of either tower would be limited and it is anticipated that the towers would be minimally visible. Further the towers are pole style and gray in color and because the tower would be less

than 200 feet in height, no additional notification or lighting would be required by the Federal Aviation Administration.

17. *Technical and financial capacity, and estimated development costs.* Weaver Wind, LLC is an indirect wholly-owned subsidiary of First Wind Holdings, LLC which has significant experience in developing and operating wind energy facilities, including the installation of meteorological towers and SODAR units, throughout Maine and New England. In addition, the applicant has retained Stantec Consulting Services Inc. which has extensive experience in environmental planning, assessment and permitting of wind energy development. First Wind Holdings, LLC would fund the total cost, estimated to be approximately \$60,000, for permitting, installation, operation, maintenance and decommissioning of the two meteorological towers and the SODAR unit.

Agency Review Comments

18. The Maine Historic Preservation Commission reviewed the proposal, requested further information, and commented that based on the information submitted, the Commission has concluded that there are no concerns regarding archaeology and there will be no historic properties affected by the proposed undertakings.

19. The Maine Department of Inland Fisheries and Wildlife reviewed the application and consideration of the proposal's probable effect on the environment, and on the agencies programs and responsibilities, and provided the following comments:

A. *Wildlife Considerations.* This project was reviewed by Region C wildlife biologist. The Biologist stated that the applicant has included all of the standard recommendations usually stipulates in met tower applications, including bird diverters on guy wires and entanglement prevention sleeves at the base of the guy wires. Minimal impacts to wildlife are anticipated.

B. *Fisheries Considerations.* There are no inland fisheries concerns for this project.

20. The Maine Natural Areas Program reviewed the proposal and searched the Natural Areas Program's Biological and Conservation Data System files for rare or unique botanical features in the vicinity of the proposed sites and indicates that according to their current information there are no rare botanical features that would be disturbed within the project sites.

21. The Hancock County Commissioners received a copy of the proposed meteorological towers and SODAR unit and stated that they would not be providing comments on the proposed development.

Commission Review Criteria

22. Pursuant to Section 10.22,A,3,a,(6) of the Commission's Land Use Districts and Standards, surveying and other resource analysis shall be allowed without a permit from the Commission within an (M-GN) General Management Subdistrict.

23. Pursuant to Section 10.22,A,3,c,(26) of the Commission's Land Use Districts and Standards, other structure, uses, or services that are essential to the uses listed in Sections 10.22,A,3,a though c may be allowed within an (M-GN) General Management Subdistrict upon issuance of a permit from the Commission pursuant to 12 M.R.S.A. §685-B, and subject to the applicable requirements set forth in Sub-Chapter III.

24. Pursuant to Sub-Chapter III, Section 10.26,F of the Commission's Land Use Districts and Standards, for structure set back at least 500 feet from a great pond, the maximum structure height shall be 100 feet for commercial, industrial, and other non-residential uses involving one or more structures. Features of structures which contain no floor area such as chimneys, towers, ventilators and spires, and free standing towers and turbines may exceed the maximum height with the Commission's approval.
25. Pursuant to 12 M.R.S.A. §685-B,4,(C), the Commission may not approve an application, unless adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to ensure there will be no undue adverse effect on existing uses, scenic character and natural and historic resources in the area likely to be affected by the proposal.
26. The facts are otherwise as represented in Development Permit application DP 4949 and supporting documents.

Based upon the above Findings, the staff Concludes that:

1. In accordance with Sections 10.22,A,3,a,(6) and 10.22,A,3,c,(26) of the Commission's Land Use Districts and Standards, both proposed temporary meteorological towers and the SODAR Unit are allowed uses in an (M-GN) General Management Subdistrict. The tower structures are necessary to support and elevate the wind resource collection and surveying equipment, and as such are structures essential to an allowed use.
2. In accordance with Sub-Chapter III, Section 10.26,F of the Commission's Land Use Districts and Standards, the proposed temporary meteorological towers may exceed the Commission's maximum 100-foot height restriction for structures because the proposed towers do not contain floor area, are free standing towers, and the 197-foot height is necessary for wind data collection.
3. In accordance with 12 M.R.S.A. §685-B,4,(C), the installation of the two temporary meteorological towers and one SODAR unit, as proposed, are not expected to have an undue adverse effect on existing uses, scenic character and natural and historic resources in the area likely to be affected by the proposal. Specifically:
 - A. The parcel is currently actively utilized for commercial timber harvesting; this use would continue.
 - B. The potential undue adverse impacts to the scenic character have been minimized with: the rural setting; the vast surrounding forest management lands; the limited opportunity for clear tower views; the setbacks from the nearest property boundary lines; the setbacks from State Route 179 and State Route 9, and the neutral color and thin profile of the towers which would blend with the topographic landscape. While visibility is unavoidable, the meteorological towers are temporary in nature and are expected to be perceived as subordinate elements of the larger landscape against a backdrop of trees, mountains, and forest areas that exhibit evidence of past logging activities such as, land management roads, log landing yards, skidder trails, and clear cuts.
 - C. The potential undue adverse impacts to natural resources have been minimized by limiting the amount of vegetation cutting to only that which is needed to complete the wind resource analysis, and by locating the towers so that no wetlands, rare or unique botanical features, inland wading bird and waterfowl habitat, deer wintering areas or inland fish habitat would be directly affected. Further, appropriate erosion control measures have been outlined and would be implemented to minimize the potential for undue adverse impacts to nearby streams and wetlands. Lastly, the proposal includes design elements that would help limit bird and bat strikes and ungulate entanglement.

- D. There are no undue adverse impacts to historic resources. A review of the proposals by the State Historic Preservation Office indicates that there are no concerns regarding archaeology and there would be no historic properties affected by the proposals.
4. If carried out in compliance with the Conditions below, the proposal will meet the applicable requirements set forth in Sub-Chapter III of the Commission's Land Use Districts and Standards and the Criteria for Approval, section 685-B(4) of the Commission's Statutes, 12 M.R.S.A.

Therefore, the staff approves the request of Weaver Wind, LLC with the following Conditions:

1. The Standard Conditions for Development Permits, revised 04/2004, a copy of which is attached.
2. Notwithstanding Standard Conditions for Development Permits, Condition #3, prior to seven years from the date of issuance of this permit (the permit expiration), if the two temporary meteorological testing equipment towers and the one SODAR unit are proposed to remain on site and if no permanent meteorological reference tower associated with a commercial wind energy development has been proposed, the permittee shall submit a new permit application and obtain approval from the Commission to extend the time period to the expiration date of this permit.
3. Except as provided for in this permit, all activities shall be in conformance with the Standards for *Vegetation Clearing*, Section 10.27,B of the Commission's Land Use Districts and Standards, revised September 01, 2013, a copy of which is attached.
4. Except as provided for in this permit, all activities shall be in conformance with the Standards for *Filling and Grading*, Section 10.27,F of the Commission's Land Use Districts and Standards, revised September 01, 2013, a copy of which is attached.
5. Except as provided for in this permit, all activities shall be in conformance with the *Guidelines for Vegetative Stabilization*, Appendix B of the Commission's Land Use Districts and Standards, revised September 01, 2013, a copy of which is attached.
6. The two temporary meteorological testing equipment towers must be placed at the identified locations. The base of the towers and must be set back at least one tower height from any public road, any private road open for public use, and any other property boundary line, 500 feet from all bodies of standing water 10 acres or greater in size, 150 feet from the nearest major flowing water, and 100 feet from the nearest minor flowing water and upland edge of wetlands designated as (P-WL1) wetland of special significance.
7. The one SODAR unit must be placed at the identified location and must be set back at least 75 feet from any public road and any private road open for public use, 150 feet from all bodies of standing water 10 acres or greater in size and the nearest major flowing water, 100 feet from the nearest minor flowing water and P-WL1 wetland of special significance, and 25 feet from the nearest property boundary line.
8. The total cleared area for Site 1587 (tower and access road) must not exceed 2.95 acres; the total cleared area for Site 1588 (tower, SODAR unit, and access road) must not exceed 4.94 acres, for a combined total of 7.89 acres. The cleared areas must not impact any area meeting the description of a (P-GP) Great Pond Protection Subdistrict, a (P-SL) Shoreland Protection Subdistrict or (P-WL)

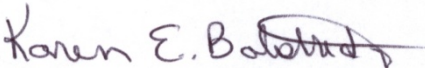
Wetland Protection Subdistrict. The cleared areas must meet the setback requirements outline in Condition #7.

9. Access to the temporary meteorological testing equipment towers and SODAR unit sites must be by existing logging roads and skidder trails, or overland; no new access roads shall be created.
10. Bird diverters must be secured and maintained on the guy wires at a rate of five (5) per set of guy wires, at varying heights as recommended by the Maine Department of Inland Fisheries and Wildlife. Sleeves to protect wildlife from becoming entangled in the guy wires must be securely installed and must extend up to 12 feet vertical height above the ground. Loose ends of the guy wires must be secured. The diverters and sleeves must be maintained for the life of the project.
11. The permittee shall secure and comply with all other applicable licenses, permits, and authorizations of all federal, state and local agencies.
12. All activities shall be in conformance with the standards for *Erosion and Sedimentation Control*, Section 10.25,M of the Commission's Land Use Districts and Standards, revised September 01, 2013, a copy of which is attached.
13. For areas where soil is to be disturbed, erosion and sedimentation control structures, including but not limited to silt fences, must be installed prior to commencement of construction, and measures to control erosion, including but not limited to hay mulch, re-seeding and water bars, must be employed during and after construction. Once implemented or put in place, erosion control devices and measures must be maintained to insure proper functioning.
14. If weather permits, the clearing must be conducted when the ground is frozen. Installation of the temporary meteorological testing equipment towers, SODAR unit, and widening of the skidder trail must be avoided when the soil is saturated; or if unavoidable, slash, wood chips, or mats must be used to drive heavy equipment over where the soil is soft enough to rut. However, work that will disturb soils must not be conducted if conditions are such that significant erosion and sedimentation with the potential to damage a stream, vernal pool or wetland will occur. For the development proposed, no clearing or other disturbance may occur within any wetland areas, vernal pools, or streams.
15. Excluding areas actively use for forest management activities or existing access road or skidder trails, all areas of disturbed soil associated with the installation of the towers and SODAR unit must be promptly reseeded and stabilized with mulch until 85% vegetative cover is achieved, and maintained in a vegetated state to prevent soil erosion. In areas where re-vegetation is not initially successful, additional measure to control erosion and sedimentation must be undertaken as often as necessary to be effective.
16. Should any erosion or sedimentation impacting a wetland or stream occur during construction, the permittee shall contact the Land Use Planning Commission staff immediately, or as soon as possible if the event occurs outside of regular business hours, notifying staff of the problem and describing all proposed corrective measures.
17. Once construction is complete, the permittee shall submit to LUPC staff photos of the site showing the completed work at each meteorological tower including: the wildlife protection techniques; the tower sites; the SODAR unit site; and along the skidder trails, accompanied by a brief narrative of the erosion and sedimentation controls employed.

18. Upon completion of the data collection or upon the expiration date of this permit, if no extension of time is requested for this permit, or if no permanent meteorological reference tower associated with a commercial wind energy development is proposed, the permittee shall lower the two temporary meteorological testing equipment towers and remove them and all other associated equipment from the site. Any waste materials must be disposed of in accordance with Maine Solid Waste Disposal Rules.

This permit is approved upon the proposal as set forth in the application and supporting documents, except as modified in the above stated conditions, and remains valid only if the permittee complies with all of these conditions. Any variation from the application or the conditions of approval is subject to prior Commission review and approval. Any variation undertaken without Commission approval constitutes a violation of Land Use Planning Commission law. In addition, any person aggrieved by this decision of the staff may, within 30 days, request that the Commission review the decision.

DONE AND DATED AT BANGOR, MAINE, THIS 20TH DAY OF NOVEMBER, 2013.

By: 
_____ *for* Nicholas D. Livesay, Executive Director



STATE OF MAINE
DEPARTMENT OF CONSERVATION
MAINE LAND USE REGULATION COMMISSION
22 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0022

STANDARD CONDITIONS OF APPROVAL FOR ALL DEVELOPMENT PERMITS

1. The permit certificate must be posted in a visible location on your property during development of the site and construction of all structures approved by this permit.
2. This permit is dependent upon and limited to the proposal as set forth in the application and supporting documents, except as modified by the Commission in granting this permit. Any variation therefrom is subject to the prior review and approval of the Maine Land Use Regulation Commission. Any variation from the application or the conditions of approval undertaken without approval of the Commission constitutes a violation of Land Use Regulation Commission law.
3. Construction activities authorized in this permit must be substantially started within two (2) years of the effective date of this permit and substantially completed within five (5) years of the effective date of this permit. If such construction activities are not started and completed within this time limitation, this permit shall lapse and no activities shall then occur unless and until a new permit has been granted by the Commission.
4. The recipient of this permit ("permittee") shall secure and comply with all applicable licenses, permits, and authorizations of all federal, state and local agencies including, but not limited to, natural resources protection and air and water pollution control regulations and the Subsurface Wastewater Disposal Rules of the Maine Department of Environmental Protection and the Maine Department of Human Services.
5. Setbacks of all structures, including accessory structures, from waterbodies, roads and property boundary lines must be as specified in conditions of the permit approval.
6. In the event the permittee should sell or lease this property, the buyer or lessee shall be provided a copy of the approved permit and advised of the conditions of approval. The new owner or lessee must contact the Land Use Regulation Commission to have the permit transferred into his/her name and to reflect any changes proposed from the original application and permit approval.
7. The scenic character and healthful condition of the area covered under this permit must be maintained. The area must be kept free of litter, trash, junk cars and other vehicles, and any other materials that may constitute a hazardous or nuisance condition.
8. The permittee shall not advertise Land Use Regulation Commission approval without first obtaining Commission approval for such advertising. Any such advertising shall refer to this permit only if it also notes that the permit is subject to conditions of approval.
9. Once construction is complete, the permittee shall notify the Commission that all requirements and conditions of approval have been met. The permittee shall submit all information requested by the Commission demonstrating compliance with the terms of the application and the conditions of approval. Following notification of completion, the Commission's staff may arrange and conduct a compliance inspection.

B. VEGETATION CLEARING

Vegetation clearing activities not in conformance with the standards of this section may be allowed upon issuance of a permit from the Commission provided that such types of activities are allowed in the subdistrict involved. An applicant for such permit shall show by a preponderance of the evidence that the proposed activity, which is not in conformance with the standards of this section, shall be conducted in a manner which produces no undue adverse impact upon the resources and uses in the area.

The following requirements shall apply to vegetation clearing activities for any purpose other than road construction, road reconstruction and maintenance, wildlife or fishery management, forest management, agricultural management, public trailered ramps or hand-carry launches:

1. A vegetative buffer strip shall be retained within:
 - a. 50 feet of the right-of-way or similar boundary of any public roadway,
 - b. 75 feet of the normal high water mark of any body of standing water less than 10 acres in size, or any tidal water or flowing water draining less than 50 square miles, and
 - c. 100 feet of the normal high water mark of a body of standing water 10 acres or greater in size or flowing water draining 50 square miles or more.
2. Within this buffer strip, vegetation shall be maintained as follows:
 - a. There shall be no cleared opening greater than 250 square feet in the forest canopy as measured from the outer limits of the tree crown. However, a footpath is permitted, provided it does not exceed six (6) feet in width as measured between tree trunks, and, has at least one bend in its path to divert channelized runoff.
 - b. Selective cutting of trees within the buffer strip is permitted provided that a well-distributed stand of trees and other natural vegetation is maintained.

For the purposes of this section a “well-distributed stand of trees” adjacent to a body of standing water 10 acres or greater in size shall be defined as maintaining a rating score of 24 or more in a 25-foot by 50-foot rectangular area as determined by the following rating system.

Near other water bodies, tributary streams and public roadways a “well-distributed stand of trees” shall be defined as maintaining a rating score of 16 or more per 25-foot by 50-foot (1250 square feet) rectangular area as determined by the following rating system.

Diameter of Tree at 4-1/2 feet Above Ground Level (inches)	Points
2.0 to < 4.0	1
4.0 to < 8.0	2
8.0 to < 12.0	4
12.0 +	8

Table 10.27,B-1. Rating system for a well-distributed stand of trees.

The following shall govern in applying this rating system:

- (1) The 25-foot x 50-foot rectangular plots shall be established where the landowner or lessee proposes clearing within the required buffer;
- (2) Each successive plot shall be adjacent to but not overlap a previous plot;
- (3) Any plot not containing the required points shall have no vegetation removed except as otherwise allowed by these rules;
- (4) Any plot containing the required points may have vegetation removed down to the minimum points required or as otherwise allowed by these rules; and
- (5) Where conditions permit, no more than 50% of the points on any 25-foot by 50-foot rectangular area may consist of trees greater than 12 inches in diameter.

For the purposes of this section, “other natural vegetation” is defined as retaining existing vegetation under 3 feet in height and other ground cover and retaining at least 5 saplings less than 2 inches in diameter at 4½ feet above ground level for each 25-foot by 50-foot rectangular area. If 5 saplings do not exist, the landowner or lessee may not remove any woody stems less than 2 inches in diameter until 5 saplings have been recruited into the plot. In addition, the soil shall not be disturbed, except to provide for a footpath or other permitted use.

- c. In addition to Section 10.27,B,2,b above, no more than 40% of the total basal area of trees 4.0 inches or more in diameter, measured at 4½ feet above ground level, may be removed in any ten (10) year period.
 - d. Pruning of live tree branches is prohibited, except on the bottom 1/3 of the tree provided that tree vitality will not be adversely affected.
 - e. In order to maintain a buffer strip of vegetation, when the removal of storm-damaged, diseased, unsafe, or dead trees results in the creation of cleared openings in excess of 250 square feet, these openings shall be established with native tree species.
3. At distances greater than one hundred (100) feet, horizontal distance, from the normal high water mark of a body of standing water greater than 10 acres, no more than 40% of the total basal area of trees four inches or more in diameter, measured at 4½ feet above ground level, may be removed in any ten (10) year period. In no instance shall cleared openings exceed, in the aggregate, 10,000 square feet, including land previously cleared. These provisions apply to areas within 250 feet of all bodies of standing water greater than ten (10) acres, and to the full depth of the P-AL zone. This requirement does not apply to the development of uses allowed by permit.
 4. Cleared openings legally in existence as of June 7, 1990 may be maintained, but shall not be enlarged except as permitted by these regulations.

In all subdistricts where natural vegetation is removed within the required vegetative buffer strip of a flowing water, body of standing water, tidal water, or public roadway, it shall be replaced by other vegetation (except where the area cleared is built upon) that is effective in preventing erosion and retaining natural beauty.

F. FILLING AND GRADING

The following requirements for filling and grading shall apply in all subdistricts except as otherwise provided herein.

Filling and grading activities not in conformance with the standards of this section may be allowed upon issuance of a permit from the Commission provided that such types of activities are allowed in the subdistrict involved. An applicant for such permit shall show by a preponderance of the evidence that the proposed activity, which is not in conformance with the standards of this section, shall be conducted in a manner which produces no undue adverse impact upon the resources and uses in the area.

These standards do not apply to filling or grading activities which constitute forest or agricultural management activities, the construction, reconstruction and maintenance of roads, or the construction of public trailered ramps, hand-carry launches, or driveways. Such activities are separately regulated.

1. Within 250 feet of water bodies and wetlands, the maximum size of a filled or graded area, on any single lot or parcel, shall be 5,000 square feet. This shall include all areas of mineral soil disturbed by the filling or grading activity; and
2. Beyond 250 feet from water bodies, the maximum size of filled or graded areas, as described above, shall be 20,000 square feet, except that there shall be no limit to the size of filled or graded areas in M-GN subdistricts which are greater than 250 feet from water bodies and wetlands. In such M-GN subdistrict areas, the provisions of Section 10.27,F,4 and 6 shall apply; and
3. Clearing of areas to be filled or graded is subject to the clearing standards of Section 10.27,B; and
4. Imported fill material to be placed within 250 feet of water bodies shall not contain debris, trash, rubbish or hazardous or toxic materials. All fill, regardless of where placed, shall be free of hazardous or toxic materials; and
5. Where filled or graded areas are in the vicinity of water bodies or wetlands such filled or graded areas shall not extend closer to the normal high water mark of a flowing water, a body of standing water, tidal water, or upland edge of wetlands identified as P-WL1 subdistrict than the distance indicated in the following table:

Average Slope of Land Between Exposed Mineral Soil and Normal High Water Mark or Upland Edge (Percent)	Width of Strip Between Exposed Mineral Soil and Normal High Water Mark or Upland Edge (Feet Along Surface of the Ground)
10 or less	100
20	130
30	170
40	210
50	250
60	290
70	330

Table 10.27,F-1. Unscarified filter strip width requirements for exposed mineral soil created by filling and grading.

6. All filled or graded areas shall be promptly stabilized to prevent erosion and sedimentation.

Filled or graded areas, including all areas of disturbed soil, within 250 feet of water bodies and wetlands, shall be stabilized according to the Guidelines for Vegetative Stabilization contained in Appendix B of this chapter.

APPENDIX B GUIDELINES FOR VEGETATIVE STABILIZATION

Areas of disturbed soil, including but not limited to areas that are filled, graded or otherwise disturbed during construction projects, should be stabilized according to the following guidelines. These guidelines do not apply to forest management activities and are not strict regulations, and therefore alternative methods of stabilizing soil may be used. However, whenever soil stabilization or stabilization of disturbed areas is required by regulation or by the terms of individual permits, individuals must assure that either these guidelines, or measures equally effective in stabilizing disturbed areas of soil are employed.

The goals to be achieved by proper stabilization are the avoidance of accelerated soil erosion and the avoidance of sedimentation or pollution of water bodies. All stabilization measures must be maintained so that grass or other vegetation remains intact and healthy, otherwise these measures will be ineffective.

In general:

1. Sterile soils such as sands and gravels should be covered with 2 to 4 inches of soil medium that will support vegetative growth.
2. Disturbed soil areas should be graded such that runoff water is either minimized or eliminated from running over the site.
3. Disturbed areas which can be seeded between May 1 and September 15 should be prepared and seeded during that period.
4. Disturbed areas which cannot be seeded between May 1 and September 15 should be mulched with hay, straw or some other suitable material to keep them as stable as possible over the winter, and particularly during spring runoff the following year. For over-wintering, mulch must be tacked down, as it is easily blown around on frozen ground, leaving areas of soil exposed. Mulch hay should be applied at a depth of 4 inches, or between 150 to 200 lbs. per 1,000 square feet, over the disturbed site. Mulched over-wintered areas should be prepared and seeded the following spring as soon as conditions allow.

It is not recommended that disturbed areas be seeded after September 15th (“dormant seeding”) for a number of reasons. Among the reasons, seeding rates are doubled, which is more expensive; timing is critical to ensure that germination does not occur before the following spring; there is an increased risk of sedimentation because sites are generally wetter in the fall; the thicker mulch must be removed in the spring in order to allow the germinating seed to survive; and the application of fertilizer during this time increases the risk of leaching or runoff loss of nutrients into water bodies.

5. Seeding preparation, in addition to providing a soil medium that will support vegetative growth if the site is sterile, includes the application of lime and fertilizer, which should be lightly raked prior to seeding. After the area is seeded, it should be lightly watered and then mulched with 70 to 90 lbs. (2 standard bales) per 1,000 square feet of weed free hay or straw to protect the seed. Keep the site stable and moist, and allow the seed to germinate and grow.
6. For accurate liming as well as fertilization, it is recommended that you have the soil analyzed to determine the specific nutrient requirements of your site.

Lime should be applied at a rate of approximately 140 pounds to 1,000 square feet of area. This rate may vary depending on the natural conditions of the soil on the site. 10-5-20 fertilizer should be applied at a rate of 18.5 lbs. per 1,000 square feet of area. Following the establishment of vegetation, non-phosphorous fertilizer should be used in accordance with the Department of Environmental Protection’s recommendations.

7. In shoreland areas in particular, fertilizers should be of the "quick release" low phosphorus type, such as 12-4-8 mixtures applied at a rate of 8 pounds per 1,000 square feet of area. If you are near water bodies, it is important not to apply more than approximately this amount of fertilizer, as excess may be washed into streams or lakes and contribute to lowering water quality and such things as algae blooms in lakes.

Following the establishment of vegetation, non-phosphorous fertilizer should be used in accordance with the Department of Environmental Protection's recommendations.

Fertilizers should never be applied right before thunder storms or before spring runoff, because the great amounts of water running over the land will wash the fertilizer, particularly phosphorus, into water bodies. However, a light watering after the fertilizer is applied will help bind the phosphorus to the soil.

8. There are many combinations of grasses that can be used. One combination particularly good for providing soil stability, generally referred to as the Soil Conservation Mixture, consists of:
(Proportions, by weight)

Creeping Red Fescue	35%	Kentucky Bluegrass	25%
Annual Rye Grass	15%	Perennial Rye Grass	10%
Red Top	10%	White Dutch Clover	5%
* Oats - See Below			

This seed would be applied at a rate of 1 pound per 1,000 square feet. These particular grasses do best if mowed no closer than 2-1/2 to 3 inches from the ground. Of course, other seed mixtures are available.

It is important, in choosing a mixture, to choose one suitable for the site being stabilized. There are many different types of seeding mixtures designed for particular site conditions such as shade, sun, and drainage. Any mix should contain some seed which germinates rapidly to provide the quickest stabilization possible while awaiting the germination of the remaining types.

- (*) For quick germination, oats are very good. They germinate in 7 to 10 days. They should be planted at a rate of approximately 1 to 1-1/2 bushels per acre, in addition to the basic grass mixture. Oats should be mowed when they reach knee height to allow the germinating grasses to receive sunlight.

Alternatives:

As indicated above, other stabilization programs may be used, provided they are equivalently effective in stabilizing disturbed areas and preventing accelerated soil erosion and sedimentation of water bodies. Further assistance may be obtained, including in some cases site-specific recommendations, as follows:

- Local Soil and Water Conservation Districts
- The USDA Natural Resource Conservation Service
- Maine Department of Environmental Protection, Lakes Program
- Landscaping Professionals
- Reputable Lawn and Garden Supply Dealers

The following documents may provide valuable assistance to those developing a soil stabilization plan:

Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices (Cumberland County Soil & Water Conservation District and Maine Department of Environmental Protection, 1991)

Strategy for Managing Nonpoint Source Pollution From Agricultural Sources and Best Management Guidelines (NPS Agricultural Task Force, 1991)

Erosion and Sediment Control Handbook for Maine Timber Harvesting Operations, Best Management Practices (Maine Forest Service, 1991)

M. EROSION AND SEDIMENTATION CONTROL

The standards set forth below must be met for all development that involves filling, grading, excavation or other similar activities which result in unstabilized soil conditions.

1. General Standards.

- a. Soil disturbance shall be kept to a practicable minimum. Development shall be accomplished in such a manner that the smallest area of soil is exposed for the shortest amount of time possible. Operations that result in soil disturbance shall be avoided or minimized in sensitive areas such as slopes exceeding 15% and areas that drain directly into water bodies, drainage systems, water crossings, or wetlands. If soil disturbance is unavoidable, it shall occur only if best management practices or other soil stabilization practices equally effective in overcoming the limitations of the site are implemented.
- b. Whenever sedimentation is caused by stripping of vegetation, regrading, or other construction-related activities, sediment shall be removed from runoff water before it leaves the site so that sediment does not enter water bodies, drainage systems, water crossings, wetlands, or adjacent properties.
- c. Soil disturbance shall be avoided or minimized when the ground is frozen or saturated. If soil disturbance during such times is unavoidable, additional measures shall be implemented to effectively stabilize disturbed areas, in accordance with an approved erosion and sedimentation control plan.

2. Design Standards.

- a. Permanent and temporary erosion and sedimentation control measures shall meet the standards and specifications of the “Maine Erosion and Sediment Control BMPs” (Maine Department of Environmental Protection, March 2003) or other equally effective practices. Areas of disturbed soil shall be stabilized according to the “Guidelines for Vegetative Stabilization” (Appendix B of this chapter) or by alternative measures that are equally effective in stabilizing disturbed areas.
- b. Clearing and construction activities, except those necessary to establish sedimentation control devices, shall not begin until all sedimentation control devices have been installed and stabilized.
- c. Existing catch basins and culverts on or adjacent to the site shall be protected from sediment by the use of hay bale check dams, silt fences or other effective sedimentation control measures.
- d. If streams will be crossed, special measures shall be undertaken to protect the stream, as set forth in Section 10.27,D.
- e. Topsoil shall not be removed from the site except for that necessary for the construction of roads, parking areas, building excavations and other construction-related activities. Topsoil shall be stockpiled at least 100 feet from any water body.
- f. Effective, temporary stabilization of all disturbed and stockpiled soil shall be completed at the end of each workday.

- g.** Permanent soil stabilization shall be completed within one week of inactivity or completion of construction.
- h.** All temporary sedimentation and erosion control measures shall be removed after construction activity has ceased and a cover of healthy vegetation has established itself or other appropriate permanent control measures have been implemented.

3. Erosion and Sedimentation Control Plan.

- a.** For development that occurs when the ground is frozen or saturated or that creates a disturbed area of one acre or more, the applicant must submit an erosion and sedimentation control plan for Commission approval in accordance with the requirements of Section 10.25,M,3,b,(2).
- b.** A Commission approved erosion and sedimentation control plan in conformance with these standards shall be implemented throughout the course of the project, including site preparation, construction, cleanup, and final site stabilization. The erosion and sedimentation control plan shall include the following:
 - (1) For activities that create a disturbed area of less than one acre:
 - (a) A drawing illustrating general land cover, general slope and other important natural features such as drainage ditches and water bodies.
 - (b) A sequence of construction of the development site, including clearing, grading, construction, and landscaping.
 - (c) A general description of all temporary and permanent control measures.
 - (d) Provisions for the continued maintenance of all control devices or measures.
 - (2) For activities that create a disturbed area of one acre or more:
 - (a) A site plan identifying vegetation type and location, slopes, and other natural features such as streams, gullies, berms, and drainage ditches. Depending on the type of disturbance and the size and location of the disturbed area, the Commission may require a high intensity soil survey covering all or portions of the disturbed area.
 - (b) A sequence of construction of the development site, including stripping and clearing; rough grading; construction of utilities, infrastructure, and buildings; and final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.
 - (c) A detailed description of all temporary and permanent erosion and sedimentation control measures, including, without limitation, seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures.
 - (d) Provisions for the continued maintenance and inspection of erosion and sedimentation control devices or measures, including estimates of the cost of maintenance and plans for meeting those expenses, and inspection schedules.

4. Inspection.

- a.** For subdivisions and commercial, industrial or other non-residential development that occurs when the ground is frozen or saturated or that creates a disturbed area of one acre or more, provision shall be made for the inspection of project facilities, in accordance with Section 10.25,M,4,a,(1) or (2) below:
 - (1) The applicant shall hire a contractor certified in erosion control practices by the Maine Department of Environmental Protection to install all control measures and conduct follow-up inspections; or
 - (2) The applicant shall hire a Maine Registered Professional Engineer to conduct follow-up inspections.
- b.** The purpose of such inspections shall be to determine the effectiveness of the erosion and sedimentation control plan and the need for additional control measures.
- c.** Inspections shall be conducted in accordance with a Commission approved erosion and sedimentation control plan and the following requirements.
 - (1) Inspections shall be conducted at least once a week and after each rainfall event accumulating more than ½ inch of precipitation, until all permanent control measures have been effectively implemented. Inspections shall also be conducted (a) at the start of construction or land-disturbing activity, (b) during the installation of sedimentation and erosion control measures, and (c) at the completion of final grading or close of the construction season.
 - (2) All inspections shall be documented in writing and made available to the Commission upon request. Such documentation shall be retained by the applicant for at least six months after all permanent control measures have been effectively implemented.
- d.** Notwithstanding Section 10.25,M,4,a, development may be exempt from inspection if the Commission finds that an alternative, equally effective method will be used to determine the overall effectiveness of the erosion and sedimentation control measures.