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GOVERNOR

STATE OF MAINE  
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY  
LAND USE PLANNING COMMISSION  
45 RADAR ROAD  
ASHLAND, MAINE 04732-3600

WALTER E. WHITCOMB  
COMMISSIONER

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EXECUTIVE DIRECTOR

# PERMIT

## DEVELOPMENT PERMIT DP 4998

The staff of the Maine Land Use Regulation Commission, after reviewing the application and supporting documents submitted by EDP Renewable North America LLC for Development Permit DP 4998, finds the following facts:

1. Applicant: Horse Mountain Wind Farm LLC, subsidiary of EDP Renewables North America LLC  
Attn: Kellen Ingalls  
541 Main St Ste B  
Presque Isle, ME 04769
2. Landowner: Six Rivers Limited Liability Limited Partnership  
112 Broadway  
Bangor, ME 04402
3. Date of Completed Application: May 11, 2016
4. Location of Proposal: T11 R 8 WELS, Aroostook County  
Taxation Plan 01, Lot 1  
Proposed Tower - (Coordinates: 46°36'18.712"N; 68°46'8.537"W)
5. Zoning: (M-GN) General Management Subdistrict
6. Lot Size: 22,559 acres (License)
7. Proposed Development: One (1) Temporary Meteorological Testing Equipment Tower (95 meters tall)
8. The applicant proposes to construct a 95 meter-tall (312 foot) temporary meteorological testing equipment tower and approximately 650 foot long driveway at a site with a ground elevation of approximately 1,155 feet above sea level. The base of the tower would be set back approximately 650 feet from the nearest land management road; 1,000 feet from the nearest wetland, 3,000 feet from Rowe Brook, 4,000 feet from Round Mountain Pond and 12,500 feet from the nearest property boundary line. The soils are mapped as Daigle-Ragmuff-Perham Association, on 3 -15% slopes, and rocky. Approximately 147,200 square feet of vegetation would need to be removed for the installation and



operation of the tower. When completed, the clearing would extend approximately 280 feet from the base of the tower pole.

9. *Site access.* The site would be accessed utilizing existing privately owned forest management roads and an existing skidder trail. No road construction is anticipated.
10. *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 (See Finding #8). The applicant anticipates that anchoring of the tower would be achieved using rock or screw anchors; however, if site conditions warrant, localized blasting of ledge/bedrock with explosives and a buried concrete block would be utilized at each guy set to anchor the structure. New or expanded soil disturbance would be approximately 2,000 square feet; 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.
11. *Birds and bat strikes and ungulate entanglement.* The applicant states that the tower will be equipped with bird/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 will be placed on all guy wires such that all guy wires within 12 feet of the ground will be covered. Furthermore, the applicant will secure loose ends of each guy wire above these yellow-marker sleeves.
12. *Lighting.* Due to its height, the proposed tower is required to have lighting by the Federal Aviation Administration (FAA). The applicant has submitted a *Determination of No Hazard to Air Navigation* issued by the FAA. Medium Intensity White Flashing Obstruction Lights or "white strobes lights" with a maximum "off" interval, and minimum intensity between flashes would be used.
13. *Period of use.* The applicant proposes to leave the proposed meteorological tower in place for no more than 2 (two) years, depending on the results of the research obtained. At the end of the data collection period, if no other project is proposed and permitted, the tower and associated appurtenances will be dismantled and removed from the site.
14. *Title, right and interest and land division history.* On January 21, 2016, the applicant entered into a "License for Meteorological Tower" that grants the applicant permission for, among other things: the installation of a meteorological testing equipment tower, one or more anemometers, wind monitoring devices, foundations, guy wires, remote power system and one or more Anabat microphones on a parcel of land owned by Six Rivers Limited Liability Limited Partnership for the purpose of collecting wind resource data. The applicant has submitted an outlined 20-year land division history indicating that no non-exempt divisions have occurred on the applicable parcel(s) in the past 20 years.
15. *Visual impact assessment.* The applicant stated that the proposed, temporary tower is not anticipated to negatively impact the scenic character or natural resources of the area. The tower would be located in a regenerating forest landscape that has historically been utilized for timber harvesting. The area is 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 the site

would be Garfield Road in the Garfield Plantation, approximately 10.5 miles east of the site. The site, including the vegetation clearing, is set back at least 12,000 feet from the nearest property boundary line.

The applicant further stated that there are no structures within at least 1 mile of the site. 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 public roads, opportunities for clear views of either tower would be limited and it is anticipated that the towers would be minimally visible. In addition, the tower is only proposed to be up for a maximum of 5 years.

16. *Technical and financial capacity, and estimated development costs.* The financing for the project is being provided by the applicant, EDP Renewables North America LLC. EDP Renewables North America has over 14 years of wind energy experience. From 2001-2005 they were known as Zilkha Renewable Energy, from 2005-2010 they were known as Horizon Wind Energy, and in 2010, they officially changed their name to resemble their parent company, EDP. In that time, they have developed over 4,000 MW of wind energy and currently operate over 3,800 MW at 30 separate wind farms. The total cost for the proposed meteorological tower, including installation is estimated to be approximately \$179,600 based on past projects.

17. *Wetlands and Vernal Pools.* There are no mapped wetlands or known vernal pools within the vicinity of the project site. In response to concerns by Maine Department of Inland Fisheries and Wildlife below, the applicant has stated that they will look to avoid disturbance of any areas that may qualify as a wetland or vernal pool.

### Agency Review Comments

18. 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.* "The Wildlife Division of the MDIFW concurs with the wildlife recommendations within the application for the 95-meter Met Tower in T11 R8 WELS. At this time MDIFW significant habitat maps indicate no known presence of SWH's for northern Maine (Inland Waterfowl and Wading Bird Habitat, Significant Vernal Pools), within the project area. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, our Department will need to review and verify any vernal pool data prior to final determination of significance.

Of interest to applicant there are two known bird species of concern within 1.3 miles from the location of proposed met tower. SSE a Rusty Blackbird site ~1.2 miles, and WNW a bald eagle nest site ~1.3 miles near Rowe Lake. This tower should not cause concern with these two species at this time but future locations of towers closer may be an issue.

We have no comments at this time regarding the placement of the Anabat detector. We assume we'll will have further opportunity to comment on any pre-construction bat studies and placement/number of detectors as this project presumably develops into a wind power project.

Avoidance of guy wires is preferable even if it requires a slightly larger footprint for the tower. As suggested and agreed on in recommendations by applicant, avian diverters will be used and installed to manufacturer's suggested rate and spacing for each guy wire. However, the diverters should be of the "flapper" variety, which research has shown to be effective at reducing avian collisions. The diverters should be placed at the manufacturer's suggested rate and spacing for each guy wire. During placement of these diverters, the technician should stagger them on the guy wires so they are not directly under the prior one. As bird diverters can be prone to damage or loss from ice build-up, as a condition of the permit MDIFW also recommends that the bird diverters be annually maintained and replaced, if necessary, for the life of the tower. The diverters should be installed and properly functioning during both the Spring (April 1 to June 7) and Fall (August 7 – November 7) migration periods, and inspected prior to each migration season to ensure they are functioning properly during these periods. These dates capture approximately 90% of the annual avian migration volume.

Also, as suggested and agreed on by the applicant there will be placement of some type of sleeve over the guy wires from the ground level up to approximately 12-15 feet in height. The intent is to make sure that there is adequate coverage of plastic sleeve on the guy wires that would account for ground slope and snowpack to reduce the risk of entanglement. Depending on the angle of the wires, this could necessitate 30 feet or more of length of sleeve per wire. All loops of excess wire should be eliminated, but if excess wire is required for future application then loops of excess wire should be tied off at a height of 20-25 feet above the ground (well above snowpack) instead of near ground level to isolate it from wildlife. These recommendations are made to aid wildlife in detection of wires and help to prevent or reduce entanglement of mammalian wildlife, especially ungulates. Additionally, we recommend that all construction materials (i.e., cable, rope, loose fencing) is either cleaned up and removed from the site, or adequately stored and secured to further prevent/reduce entanglement of wildlife.

Ultimately, the burden of securing the wire and preventing loss or injury belongs to the applicant, who is put on notice to ensure that the taking of a big game species or a listed species, such as Canada lynx (Special Concern in Maine, federally Threatened), does not occur."

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

19. The Maine Natural Areas Program has reviewed the application and states that according to their current information, there are no rare botanical features that will be disturbed within the project site.

### **Commission Review Criteria**

20. 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.

21. 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.

22. 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.

23. 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.

**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, the proposed temporary meteorological tower is an allowed uses in an (M-GN) General Management Subdistrict. The tower structure is necessary to support and elevate the wind resource collection and surveying equipment, and as such is a structure 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 tower may exceed the Commission's maximum 100-foot height restriction for structures because the proposed tower does not contain floor area, is a free standing tower, and the 312-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 temporary meteorological tower, as proposed, is 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 nearest public road. Due to its size, the FAA does require that the tower be lit. Therefore, at night, the lights will be visible to people in the area. While visibility is unavoidable, the metrological 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.

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 amendment request of EDP Renewables NA 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 5 (five) years** from the date of issuance of this permit (the permit expiration), if the temporary meteorological testing equipment tower is 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 temporary meteorological testing equipment tower must be placed at the identified location. The base of the tower 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 total of new cleared area for the project must not exceed 3 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 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. Access to the temporary meteorological testing equipment tower sites must be by existing logging roads and skidder trails, or overland.
9. As recommended by the Maine Department of Inland Fisheries and Wildlife, bird and bat diverters or similar products must be installed on the guy wires at the manufacturer's spacing, and a plan should be implemented to ensure that the devices remain visible, functional and in place for the life of the tower. All excess cable, rope, construction materials be either cleaned up or stowed to prevent entanglement of wildlife. Excess wire should be tied off at a height of 20-

25 feet above the ground (well above snowpack) instead of near ground level to isolate it from wildlife. Yellow marker sleeves or similar devices must cover the bottom 12-15 feet (vertical height) of the guy wire to prevent running animals from colliding or entangling with the wire.

10. The permittee shall comply with the *Determination of No Hazard to Air Navigation* issued by the FAA, which requires the use of white flashing lights on the tower. These should be set with the maximum “off” interval allowed and the minimum intensity allowed between flashes.
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 1, 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. Installation of the temporary meteorological testing equipment tower and any improvement of the land management road 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 tower 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 including: the wildlife protection techniques; the tower sites.
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 temporary meteorological testing equipment tower 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 ASHLAND, MAINE, THIS 17<sup>TH</sup> DAY OF JUNE, 2016.

By: Billie J. MacLean  
for Nicholas Livesay, Executive Director



**STATE OF MAINE**  
**DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY**  
**LAND USE PLANNING 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 Planning Commission. Any variation from the application or the conditions of approval undertaken without approval of the Commission constitutes a violation of Land Use Planning 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 Planning 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 Planning 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.

*Administrative Policy Revised 04/04*

## 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 coastal wetland 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.

<b>Diameter of Tree at 4-1/2 feet Above Ground Level (inches)</b>	<b>Points</b>
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.
  5. When revegetation is required: (i) in response to violations of the vegetation standards set forth in Section 10.27,B,1 through 4; (ii) to address the removal of non-native invasive species of vegetation; (iii) as a mechanism to allow for development by permit that exceeds the vegetation standards of Section 10.27,B or the cleared opening standards of Section 10.27,Q,1,Table A,(4), including removal of vegetation in conjunction with a shoreline stabilization project; or (iv) as part of a mitigation plan for clearing associated with a recreational lodging facility, the revegetation must comply with the following requirements.

- a.** The property owner must submit a revegetation plan, prepared with and signed by a qualified professional (examples include: arborist, forester, landscape architect, U.S.D.A. Natural Resources Conservation Service), that describes revegetation activities and maintenance. The plan must include a scaled site plan depicting where vegetation was, or is to be removed, where existing vegetation is to remain, and where vegetation is to be planted, including a list of all vegetation to be planted.
- b.** Revegetation must occur along the same segment of shoreline and in the same area where vegetation was removed and at a density comparable to the pre-existing vegetation, except where a shoreline stabilization activity does not allow revegetation to occur in the same area and at a density comparable to the pre-existing vegetation, in which case revegetation must occur along the same segment of shoreline and as close as possible to the area where vegetation was removed. When part of a mitigation plan, revegetation must occur along the same segment of shoreline, road, or other resource affected by proposed uses or development, and at a density and configuration comparable to other naturally occurring forests on the site or in the vicinity.
- c.** Revegetation activities must meet the following requirements for trees and saplings:

  - (1) All trees and saplings removed must be replaced with native noninvasive species;
  - (2) Replacement vegetation must at a minimum consist of saplings;
  - (3) If more than three trees or saplings are planted, then at least three different species shall be used;
  - (4) No one species shall make up 50% or more of the number of trees and saplings planted;
  - (5) If revegetation is required for a shoreline stabilization project, and it is not possible to plant trees and saplings in the same area where trees or saplings were removed, then trees or sapling must be planted in a location that effectively reestablishes the screening between the shoreline and structures; and
  - (6) A survival rate of at least 80% of planted trees or saplings is required for a minimum five years period from the time of planting. Replanting of trees or saplings that did not survive does not trigger a new five year period.
- d.** Revegetation activities must meet the following requirements for woody vegetation and other vegetation under three feet in height:

  - (1) All woody vegetation and vegetation under three feet in height must be replaced with native noninvasive species of woody vegetation and vegetation under three feet in height as applicable;
  - (2) Woody vegetation and vegetation under three feet in height shall be planted in quantities and variety sufficient to prevent erosion and provide for effective infiltration of stormwater;
  - (3) If more than three woody vegetation plants are to be planted, then at least three different species shall be planted;
  - (4) No one species shall make up 50% or more of the number of planted woody vegetation plants; and

- (5) Survival of planted woody vegetation and vegetation under three feet in height must be sufficient to remain in compliance with the standards contained within this chapter for a minimum of five years from the time of planting. Replanting of trees or saplings that did not survive does not trigger a new five year period.
- e.** Revegetation activities must meet the following requirements for ground vegetation and ground cover:
- (1) All ground vegetation and ground cover removed must be replaced with native herbaceous vegetation, in quantities and variety sufficient to prevent erosion and provide for effective infiltration of stormwater;
  - (2) Where necessary due to a lack of sufficient ground cover, an area must be supplemented with a minimum four inch depth of leaf mulch and/or bark mulch to prevent erosion and provide for effective infiltration of stormwater; and
  - (3) Survival and functionality of ground vegetation and ground cover must be sufficient to remain in compliance with the standards contained within Section 10.27,B for a minimum of five years from the time of planting.
- f.** The applicant may propose, and the Commission may approve or require, variations from the standards in Section 10.27,B,5,c through e if necessary to achieve effective buffering. The Commission may exempt an individual, whether an applicant or violator, from the requirement that the revegetation plan be prepared by a qualified professional in accordance with Section 10.27,B,5,a, when the proposed revegetation is routine and would not affect a particularly sensitive resource.

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**F. FILLING AND GRADING**


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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 and wetlands, 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. Within 250 feet of major flowing waters, bodies of standing water and P-WL1 wetlands, the sustained slope between the normal high water mark or the upland edge of the resource and the soil disturbance shall be no greater than 20%. For the purposes of this standard, sustained slope means a change in elevation where the referenced percent grade is substantially maintained or exceeded throughout the measured area. The provisions of this paragraph apply only to a face sloping toward the water body or wetland; and
6. 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, a coastal wetland, or the upland edge of freshwater wetlands identified as P-WL1 subdistrict than the following:
  - a. For a minor flowing water, body of standing water less than 10 acres in size, coastal wetland, or freshwater wetland: 75 feet; and
  - b. For a major flowing water and body of standing water 10 acres or greater in size: 100 feet.
7. 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.

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## APPENDIX B GUIDELINES FOR VEGETATIVE STABILIZATION

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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)