Section 14

Basic Standards

Section 14. Basic Standards

14.1 State Standards

The Project must comply with the Basic Standards outlined in Section 14 of the Site Law.

14.2 Narrative

The proposed Project is a three-turbine wind energy facility in the Town of Rumford on South Twin Mountain, with associated infrastructure in both Rumford and the adjacent Town of Roxbury. The Applicant proposes installing three GE-6.1-158 wind energy generators. These machines were selected due to their nameplate capacity (6.1 MW), allowing the Applicant to maximize the output of the site while minimizing the project's footprint. As part of this project, 10,760 feet of new road will be constructed along with 3 turbine pads on South Twin.

The following plan addresses the potential for erosion and sedimentation associated with the Project. This plan includes both during construction and long-term erosion and sedimentation practices. Erosion and sedimentation at the site will be primarily from and associated with grubbing, the construction of roads, stormwater structures, and turbine pads.

Erosion will mainly be managed through the use of silt fencing, erosion control mic ("ECM") berms, riprap, stone check dams and revegetation. Silt fencing or ECM berms will be installed after clearing but prior to any other construction activities and will be maintained in working condition by the contractor until final soil stabilization is achieved.

Refer to Section 11 for additional soil data and discussion.

The areas of concern for potential erosion are areas with steep slopes, wetlands and streams.

Construction activities associated with the proposed project will avoid mapped wetland areas to the best extent practicable. The boundary of wetlands permitted for disturbance will be flagged to alert equipment operators of their edges. If work is being done within 100 feet of a natural resource, a double layer of the sediment barrier will be installed.

Erosion Control Measures include the following:

- All disturbed areas that are intended for vegetation are to be loamed, seeded and stabilized with mulch or geotextile fabric. ECM may also be utilized for permanent stabilization which will allow for natural vegetation.

- Silt fencing or ECM berms will be installed down gradient of all grubbing and earth moving activities. A double row of silt fencing or ECM berms will be installed within 100 feet of a resource.
- Temporary grass or legume cover will be installed on dormant stockpiles and construction during the non-growing season.
- Water will be utilized to control dust as necessary. Calcium Chloride may also be used in areas experiencing significant dust problems and to reduce the frequency of watering.
- Construction entrances will be installed to minimize materials being carried off site by construction vehicles.

Items listed in Erosion Control Measures will be incorporated before and during construction for site stabilization. Minor field adjustments to the construction and erosion and sedimentation control plan may be necessary during construction based on field conditions. Below is a list of changes that do not require a permit modification and may be made without advance notice to MDEP and do not require prior approval by the third-party inspector or MDEP staff as long as they are reflected in the final as-built drawings:

- Reduction in clearing, impervious surface or size of structure; elimination of a structure; or relocation of a structure within the clearing limits;
- Change in foundation type;
- Location, dimension or addition of drainage culverts, level spreaders, rock sandwiches or other stormwater infrastructure, provided that the culvert does not convey a regulated stream, impact a resource and that the hydraulic capacity of the modified stormwater infrastructure meets design standards;
- Changes to locations for the electrical collection system, provided that any adjustment does not expand the permitted clearing limits and meets the buffer requirements as defined in Section 10;
- Maintenance within the footprint of existing roads, with the exception of any in-stream work or wetland impacts to be used for temporary construction access;
- Temporary vegetation clearing or disturbance of soil, that does not impact protected natural resources, to accommodate road alignment adjustments during component delivery;
- Changes of up to 10 feet in vertical roadway alignment and turbine pad elevation;
- Changes of up to 300 feet in either direction in horizontal roadway alignment and associated clearing, and in turbine or met tower clearing areas, and in electrical collection alignment laydown/staging areas.

Additional adjustments may be made upon prior approval by the third-party inspector or Department staff:

- Minor changes that do not increase the footprint of the project and do not increase natural resource impacts;
- A change in the turbine as long as the applicable sound limits will be met and there will not be a significant change in visual impacts associated with the new turbine; and
- Changes other than those identified above and that do not otherwise require a permit amendment, as determined by the Department.

14.3 Implementation Schedule

Refer to Table 1.1, Construction Schedule, for the implementation schedule for installing the erosion and sedimentation controls.

In summary, they are the first items to be installed and the last to be removed.

14.4 Sedimentation and Erosion Control Plan

Refer to the attached plan in Exhibit 1-3 entitled "Erosion and Sedimentation Control Plan" (Sheets 13 and 14), which includes the following:

- Contours
- Erosion and Sediment Control Plan Elements
- Land cover types and boundaries
- Protected natural resources
- Locations (general)
- Disturbed areas

14.5 Details and Specifications

Refer to the attached plans in Exhibit 1-3 entitled "Erosion and Sedimentation Control Plan" (Sheets 13 and 14), and "Grading Plan" (Sheets 7 to 12), and "Details" (Sheets 2 to 6), which includes details of erosion control measures and a description of the sizing, spacing and stabilization of each erosion control measure.

14.6 Design Calculations

See Section 12 Exhibit 12-2 for the level spreader sizing calculations.

14.7 Stabilization Plan

Temporary Seeding. Temporary Seeding of Disturbed Areas - Growing Season, April 15th – September 15th

Limestone and Fertilizer - Application rates shall be according to soil test recommendations. If soil tests are not feasible or timing is critical then fertilizer may be applied at a rate of 13.8 lbs/1000 SF of 10-10-10 (N-P205-K20) or equivalent. Limestone (equivalent to 50 percent calcium plus magnesium oxide) may be applied at a rate of 138 lbs/1000 SF.

Seed - Between August 15th and October 1st, Winter Rye may be applied at a rate of 112 lbs/1 acre and to a depth of 1.0-1.5 inches. Between April 1st and July 1st, Annual Rye may be applied at a rate of 40 lb/1 acre and to a depth of 0.25 inches. Between May 15th and August 15th, Sudangrass may be applied at a rate of 40 lb/1 acre and to a depth of 0.5-1.0 inches.

Mulch - Hay or straw mulch at a rate of 70-90 lbs./1000 SF (2 bales/1,000 SF) or equivalent mulch.

Matting - Will be applied to disturbed areas, such as the base of grassed waterways, steep slopes (>15%) and any disturbed soil within 100 feet of lakes, streams and wetlands. Installation shall as per manufacturer directions.

Permanent Seeding. Growing season of April 15th to September 15th.

Seedbed Preparation - Topsoil shall be applied to a level of 4". Limestone and Fertilizer should be worked into the soil to a depth of 4 inches, when practical. All debris, stones 2 inches or larger in diameter, and other unsuitable material should be removed from the surface, when practical.

Seed – A conservation seed mixture (a mixture of Creeping Red Fescue, Redtop, Tall Fescue, Clover and Annual Rye) at a rate of 1.0 lb/1,000 SF shall be used on loamed or existing soil areas which are expected to be maintained infrequently: i.e. inslopes, ditches, and turbine pads.

Lime - Application rates will be determined by soil tests. If soil tests are not feasible or where time is insufficient for soil tests, ground limestone (equivalent to 50 percent calcium plus magnesium oxide) may be applied at a minimum rate of 138 lbs./1000 SF.

Fertilizer - Application rates will be determined by soil test results. If soil tests are not feasible or there is insufficient time for soil tests, fertilizer may be applied at a rate of 18.4 lbs. (of 10:20:20(N-P205-K20) per 1000 SF.

Mulch - Hay or straw bales will be applied at a rate of 70-90 lbs./1000 SF, 1/2"-1" thick.

Erosion Control Mat - As per manufacturer's directions.

Hydroseeding - Hydraulic application is a suitable method for the application of seed, fertilizer, limestone, and mulch. The seedbed is prepared by raking the soil to loosen and smooth the soil and to remove surface stones exceeding 6 inches in diameter and other unsuitable organic and inorganic materials. Slopes must be no steeper than 2 to 1

(horizontal to vertical). Limestone and fertilizer may be applied simultaneously with the seed. Straw mulch may be used with adhesive materials or 500 pounds per acre of wood fiber mulch. Seeding application rates shall be increased 10 percent when hydroseeding.

Final Acceptance: Final acceptance will be granted only when seeding is done in season and there is an even stand of grass with 85% germination.

Sodding. Not applicable.

Temporary Mulching.

Purpose – For a limited amount of time, temporary mulch prevents erosion by protecting the exposed soil surfaces and to aid in the growth of vegetation by conserving available moisture, controlling weeds, and providing protection against extreme heat and cold.

Function – Temporary mulch is the most effective and quickest means of controlling runoff and erosion on disturbed land when permanent erosion control is not possible.

Application – Apply to exposed soil surfaces prior to any storm event and within 7 days of soil exposure.

Product – Organic mulches: Hay or straw mulch free of weed seeds; bark or shavings free of objectionable coarse materials; and wood fiber cellulose made from natural wood usually with green dye and dispersing agent added with a moisture content not to exceed 15%.

Construction Specifications:
Hay or Straw Mulch: 70-90 lbs. (2 bales) per 1,000 SF or 90-100 bales per acre. Lightly cover 75-90% of the surface.
Bark or Shavings: 460-920 lbs. per 1,000 SF or 10-20 tons per acre applied at a depth of 2-6 inches.
Wood Fiber Cellulose: 50 lbs. Per 1,000 SF or 2,000 lbs. per acre.

All mulches shall be inspected weekly or after every storm event to check for rill erosion. Remulching shall be required if less than 90% of soil surface is covered. Temporary mulch shall be removed once vegetative cover has been established, regrading is to be done, or a permanent erosion control measure is installed.

Permanent Mulching. Not applicable.

14.8 Winter Stabilization Plan

Dormant Seeding. Winter Construction, November 1st – April 15th.

Fertilizer & Seed – October 15th to April 1st - Prepare seedbed, add required amounts of lime and fertilizer then mulch and anchor. After November 1st or the first killing frost, broadcast or hydroseed the selected seed mixture at triple the rate required for permanent seeding. Seeding requires inspection and reseeding where necessary in the spring.

Mulch - Hay or straw mulch at a rate of 150 pounds/1000 square feet. Mulch shall be anchored with lightweight paper, jute, wood fiber, or plastic netting to soil's surface. With the use of peg and twine, the mulch shall be divided into 1 foot square grids: drive 4-6 pegs per grid to within 2-3 inches of the soil surface; and secure mulch to soil's surface by stretching twine between pegs in a crisscross pattern on each grid.

Mats – September 15th to April 15th - Use heavy grade mats on the base of grassed waterways, steep slopes (>15%). Use light grade mats (or mulch and netting) on side slopes of grassed waterways and on moderate slopes (> 8%).

Winter mulching. Hay or straw mulch at a rate of 150 pounds/1000 square feet at a depth of four inches. All open areas which are not permanently stabilized will be heavily mulched when work is completed on the site and not anticipated to begin again within one day. All open areas will be heavily mulched every night in the case of a stormy forecast within the next 12 hours.

14.9 Third Party Inspections

A third-party inspector has not been obtained at this time. If one is required by the Department, an inspector will be provided at the expense of the Applicant.