

Proposed Work Plan for Avian, Bat, and Habitat Studies  
at the proposed Wild Meadows Wind Project  
Grafton County and Merrimack County, New Hampshire

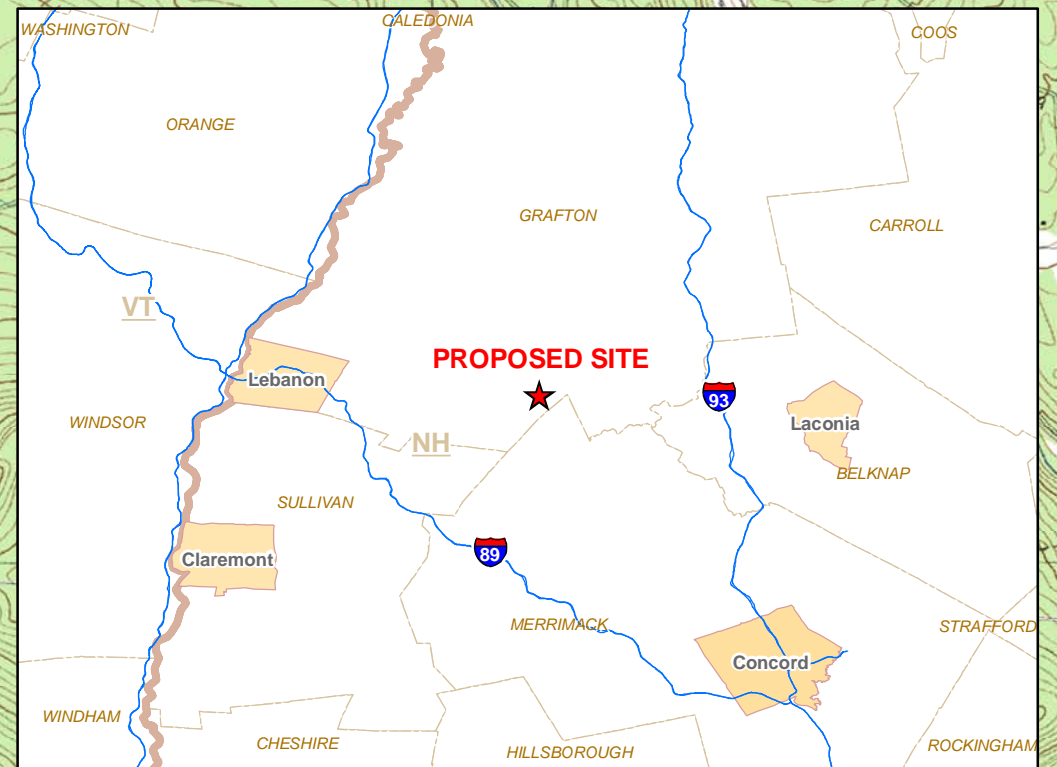
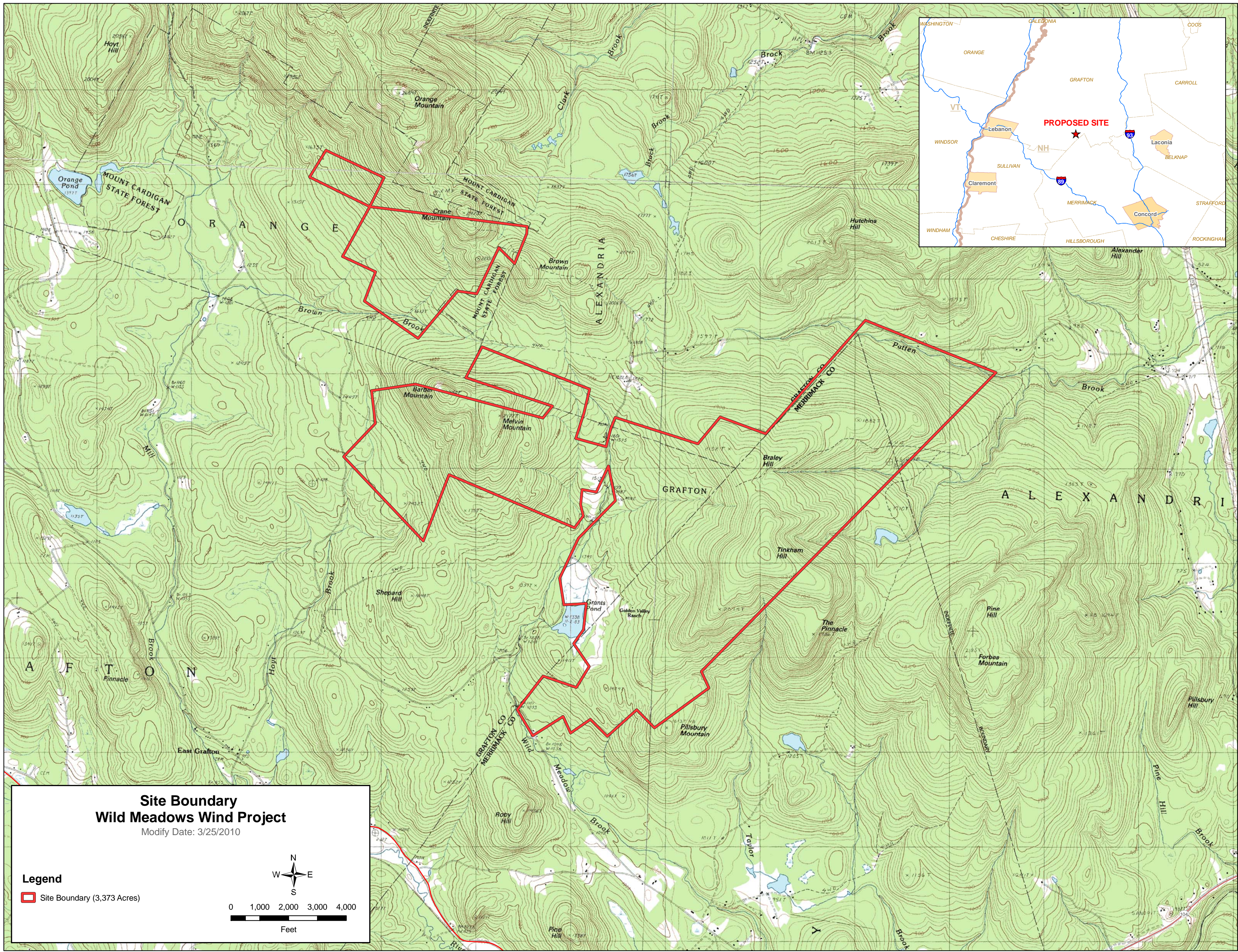
March 26, 2010

Proposed Project Background

Wild Meadows Wind, proposes to construct up to 45 wind turbines, each with an estimated nameplate capacity of 2.0 megawatts (MW), for a total project capacity of about 50 - 90 MW on in Grafton and Merrimack Counties, New Hampshire. The specific locations would be on leased land located principally in the Towns of Danbury, Grafton, and Orange, on Tinkham and Brayley Hills, and Melvin, Barber, and Crane Mountains. The proposed project would consist of turbines, access roads, buried and aboveground interconnection lines, a substation with one or more transformers, an operation and maintenance facility and storage area, and one or two permanent meteorological towers. The wind turbines would have a hub height of about 78 meters (256 feet) above ground level (agl) and rotor diameters of about 87 m (286 feet). With the rotor tip in the 12 o'clock position, the wind turbines would reach a maximum height of about 120.5 m (398 feet). Turbines would be mounted on steel tubular towers and all or a subset of them would be lit according to Federal Aviation Administration (FAA) guidelines.

Early stage consultation with relevant agencies and NGOs is an important first step to identify appropriate pre-project environmental studies. Letter consultation is currently underway with United States Fish and Wildlife Service (USFWS) and New Hampshire Department of Fish and Game (NHF&G). Additionally, face to face discussions with both USFWS and NHF&G has been requested. In concert with Iberdrola Renewables Avian and Bat Protection Plan (ABPP) these initial discussions will take place at USFWS New England Field office on April 1, 2010. The following proposed study plan is the basis for those discussions.





**Site Boundary**  
**Wild Meadows Wind Project**  
 Modify Date: 3/25/2010

**Legend**  
 Site Boundary (3,373 Acres)

N  
 W — E  
 S

0 1,000 2,000 3,000 4,000  
 Feet



## Study Objectives

With two post-construction studies completed in New England in addition to Lempster Wind, new information is now publicly available assessing the impact of wind turbines on avian and bat species in the northeastern United States. The pre-construction studies included in this work plan have been designed to determine baseline avian and bat use of the Project Area throughout the year in anticipation of correlating with potential post-construction work if possible. As with all pre-construction studies in the Northeastern United States the pre-construction surveys for birds and bats have placed an emphasis on migratory and breeding periods. Overall, the main objectives are to:

- Determine whether suitable habitat for threatened or endangered species is present within the Project area;
- Collect baseline information on flight directions, passage rates, and flight altitudes of birds and bats throughout the migration seasons, including assessments of nocturnal bird and bat migration and diurnal raptor migration;
- Collect information on the occurrence and distribution of bird species including threatened or endangered species in the project area during the breeding seasons; and

Analyze baseline data and other available pre and post construction results from other proposed or operational wind projects in the northeast to evaluate potential impacts on birds and bats from the proposed Wild Meadows Project.

## Methodologies

### Phase 1 Avian Risk Assessment (2010)

A Phase 1 Avian and Bat Risk Assessment which includes a literature review, site visit, written agency consultation and a general habitat assessment will be completed. The purpose of the Phase I Avian and Bat Risk Assessment is to aid the project's design to minimize potential impacts to birds and bats and their habitat to the extent practicable during the initial planning phase of the project. In addition, the Phase I Risk Assessment will help determine potential collision and displacement risk to birds from construction and operation of the proposed Project and will be used to help develop additional site specific field surveys at the project. At the date of this submission, agency consultation letters have been sent to the appropriate regulatory agencies, however, these letters were just recently submitted. Therefore, information responses from the agencies have not yet been received. Because information responses have not yet been received from the agencies this report will be submitted to the agencies as a DRAFT in concert with this work plan. Once agency responses are received, the Phase I Risk Assessment will be updated to incorporate agency responses and a final draft will be prepared and submitted.

### Radar studies (2009 - 2010)

Stantec was retained to perform one full year of Nocturnal Radar Migration Surveys consisting of one fall (August 15 to October 15) and one spring (April 15 to May 31) one migration season to yield a full year of nocturnal migration data. A fall survey was already conducted in the project area in 2009 and consisted of 35 nights of sampling from sunset to sunrise. The spring survey will be initiated in mid April 2010 and will consist of sampling sunset to sunrise on 35 nights between April 15 and May 31. Surveys will be conducted from one location within the project area during both migration seasons and is consistent with nocturnal radar migration surveys conducted at other proposed wind projects in New Hampshire and the northeast.

### Diurnal Raptor Migration Surveys (2010)

Despite very low raptor mortality rates observed at existing wind projects, Wild Meadows Wind will contract with a third party to conduct spring and fall raptor migration surveys in 2010. Spring Raptor Migration surveys will be conducted in the Project Area between April 15 and June 1, 2010 for a total 10 days of sampling during the spring migration season. Fall 2010 Raptor Migration Surveys will consist of 10 days of sampling between August 15 and October 15. Surveys will be conducted with two observers to provide adequate coverage of the two main ridges in the Project Area. Surveys will occur at each location simultaneously. The selection of the sampling locations will be dependent upon observation views afforded from the top of the ridges, but are expected to include one location at the summit of Melvin Mountain and one location on the summit of Tinkham Hill. All observations will be recorded on Hawk Migration Association of North America datasheets and methodologies will be based on HMANA methods. It is expected that fall surveys will repeat methodologies of the spring surveys.

### Breeding Bird Surveys (2010)

Wild Meadows Wind intends to contract with a third party to complete one season of breeding bird point count surveys. Breeding bird point count surveys will be conducted in two visits within the Project Area during the primary breeding season (June) of 2010. Each of the two visits will occur during two or three days to provide time to cover all points within the Project and control areas. At the Wild Meadows site it is anticipated that 21 point count locations will be surveyed within the project area. In addition to the 21 points located within the project area, 6 additional points will be used as control points and are located outside of the project area in Cardigan Mountain State Forest along Crane and Orange Mountains. Control points will be surveyed to provide information in areas that will not be impacted by the proposed project to determine if any changes in the breeding bird community post construction are a result of the project or other environmental factors. Surveys will follow USGS Breeding Bird Survey techniques with an observer recording all birds identified by sight or sound in 10-minute periods at each survey point. Birds observed flying through the area will also be documented and noted

separately on the datasheets as flyovers. An estimated flight altitude will be collected for flyovers documented during the point counts. All surveys will be conducted on fair weather days when wind or rain does not restrict an observer's ability to detect birds at each point. Surveys will be conducted between sunrise and noon during two to three consecutive days during the breeding season. The data from these surveys will also help identify the presence/absence of listed rare, threatened, or endangered species on the site.

#### Acoustic Monitoring for Bats (2009, 2010)

Acoustical monitoring via anabat was initiated in the fall of 2009 and occurred from August 19 to October 22, 2009 and covered the late summer and fall migratory period. At the time of the fall 2009 survey, on-site meteorological measurement towers (met towers) were not yet installed to assist in getting anabat detectors at heights near the proposed turbines. Therefore, temporary met towers were installed at three locations within the project area to get the anabat detectors at heights above tree canopy to better capture migratory tree roosting bat species that are known to fly at greater heights and are also those species that are of greatest concern with respect to collisions with wind turbines at some facilities. Temporary met towers were installed on Brailey Hill, Tinkham Hill, and Melvin Mountain. One detector was installed in each tower at each location during the fall 2009 survey. To supplement the fall survey and to cover all three seasons that bats are active in the northeast, a spring and summer 2010 survey will be conducted from April 15 to August 15. On-site met towers were installed in the project area during winter 09/10 and will be used during the spring and summer acoustic bat survey. The spring/summer 2010 survey will consist of three detectors in each of the three on-site met towers. These met towers are in close proximity to the locations used for the temporary met towers in fall 2009. In each of the three met towers, one detector will be deployed at a height of approximately 50 to 60 meters (164' to 197'), one detector at approximately 22 meters (72'), and one detector at approximately 2 meters (7'). Deployment in this fashion allows for the detection of all species of bats known to occur in New Hampshire and at different heights.

Acoustic detectors will document the presence/absence of bat species or species groups in the Project Area. Call rates by species or species groups, as well as total detections and trends in species' presence in the data set will be reported. Additionally the call rates and species composition of the detectors will be compared to other publicly available studies in the region. This survey protocol is consistent with other pre-construction studies conducted at proposed wind energy projects in New Hampshire and the northeast.

#### Avian and Bat Risk Assessment (2011)

At the conclusion of all studies, a final Avian and Bat Risk Assessment will be prepared and presented as part of the Site Evaluation Committee Application. This Risk Assessment will incorporate the results of on-site field surveys as well as what has been

documented during post construction studies at operational wind energy projects in the northeast. This document will incorporate everything that it's currently known regarding bird and bat impacts from wind energy projects and will include a weight of evidence approach for determining potential risks from the proposed Wild Meadows Wind Project. It is anticipated that these study results will be discussed with USFWS and NHF&G upon completion. Additionally, these studies will inform a project-specific Avian and Bat Protection Plan (ABPP) which incorporates the company wide best practices ABPP endorsed by the USFWS in October 2008.

#### Habitat Assessment (2010)

A formal habitat assessment will be conducted to describe current site conditions including plant communities and wildlife inter-relationships. It will summarize the habitat strengths and limitations within the project as well as address potential project impacts and recommendations to minimize those impacts.