Table of Contents

VOLUME I

Forms

Figures

Exhibits

VOLUME II

1.0 PROJECT DESCRIPTION

The Bull Hill wind project is a 19 turbine wind power project proposed by Blue Sky East, LLC (Blue Sky; the applicant) for the Bull Hill and Heifer Hill ridges in T16 MD, Hancock County (see Figures 1 and 2). The proposed turbines are Vestas V100 machines with a 1.8-megawatt (MW) rated power. The turbines will be on 95-meter towers and will have 100-meter rotor diameters. The total height with blades fully extended will be approximately 145 meters (476 feet).

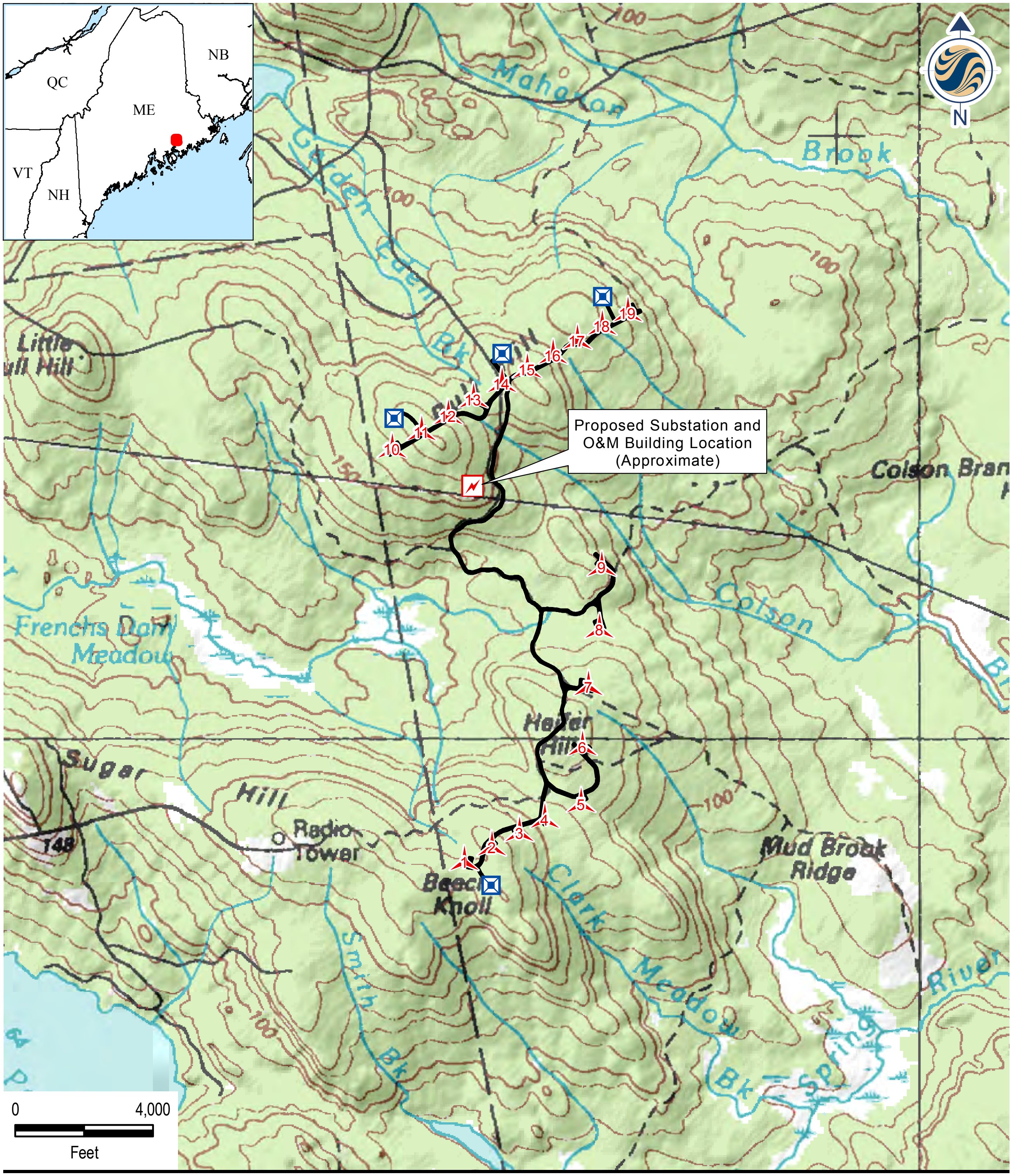
The project also will include up to three 95-meter lattice type permanent meteorological (met) towers. Four potential locations are shown on the project plans; only those locations where a permanent tower will be installed will be cleared. During construction, up to three new temporary 95-meter met towers will be placed in turbine locations before the turbines are erected. The two existing temporary met towers within the project area, and the new proposed temporary met towers, will be removed within one year of turbine construction.

The power from each turbine will be collected in approximately 8.2 miles of underground 34.5-kilovolt (kV) collection lines and will flow to a new substation and operations and maintenance (O&M) building located centrally within the project area. The substation will “step up” the power to 115 kV and transmit it directly to Bangor Hydro Electric Company’s (BHE) Line 66. Line 66 is an existing 115-kV transmission line that can accept the power from the project without structural upgrades. By locating the substation directly adjacent to Line 66, no new 115-kV transmission line will be necessary for the project. Civil and electrical design plans are found in Exhibits 1A and 1B.

Blue Sky has leased all of the lands owned by Lakeville Shores in T16 MD (“leased area”). A subset of that leased area is identified as the “Premises” or the “project area” (see map attached to Exhibit 4A). There are 11 existing leases within the leased area. The two leases nearest the project are being terminated and the existing camps will be removed. Blue Sky has also reviewed the terms of the other nine existing leases located easterly of the project area, but on the leased area, as well as the terms of the Bangor hydroelectric easement. All of the 9 existing leases are 1.3 miles or more from the nearest turbine, and Blue Sky has determined that project will not affect the terms of those leases, or the BHE easement.

The entire Township of T16 MD is designated as expedited for permitting purposes. The project area is low elevation commercial forest, with a substantial road system which the project will utilize to the extent commercially practicable. The ridge elevations are between 450 and 624 feet above sea level.

There is a network of existing haul roads and several gravel pits used for previous road construction. Existing roads will be utilized to the extent possible, and on-site gravel pits will not exceed five acres. The new 24-foot access roads and 36-foot wide crane path will be maintained by the applicant. The roads outside of the project area, under the control of the landowner, would continue to be maintained by the landowner.



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Legend

- Turbine Layout
- Permament MET Towers
- Proposed Access Road

Client/Project

Blue Sky East
Bull Hill Wind Project
T16 MD, Maine

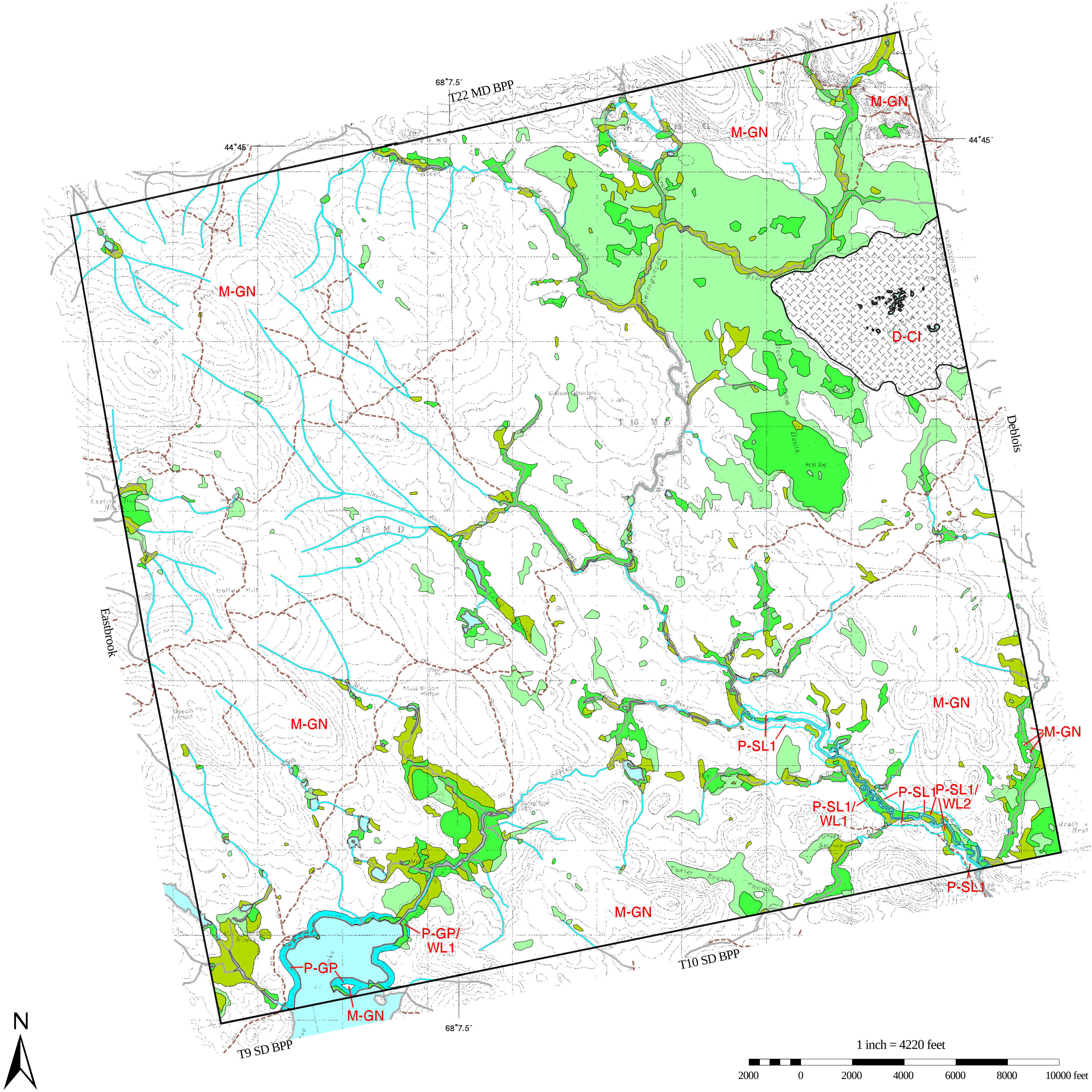
Figure No.

1

Title

Project Site Map
December 3, 2010

00500-00-USGS_turbines8.5x11.mxd



1 inch = 4220 feet

2000 0 2000 4000 6000 8000 10000 feet

Land Use Guidance Map

T16 MD BPP

Hancock County

Location map

Maine Department of Conservation
LAND USE REGULATION COMMISSION
Augusta, Maine 04333−0022
(207) 287−2631
TTY (207) 287−2213
http://www.state.me.us/doc/lurc

Legend

Development Subdistricts

- D−CI Commercial/Industrial

Protection Subdistricts

- P−GP Great Pond
- P−SL1 250 feet Shoreland − Major
- P−SL2 75 feet Shoreland − Minor
- P−WL1 Wetlands − Significant
- P−WL2 Wetlands − Scrub−shrub
- P−WL3 Wetlands − Forested

Management Subdistricts

- M−GN General

- Water body
- Improved road
- Unimproved road
- Trail

Areas designated as two or more protection zones are annotated with each zone, e.g. P−FP/FW/WL1, P−FP/SL1, etc., where necessary

- or Subdistrict boundary
- ① Zoning amendment

Topographic base, roads and trails from U.S. Geological Survey 7.5−minute map series

For the purpose of simplicity, this map does not show the Wetland Protection Subdistricts for areas identified pursuant to Section 10.16,K,2 such as beds of rivers, lakes, and other water bodies, and freshwater wetlands within 25 feet of stream channels, which are nevertheless within P−WL Subdistricts.

This map is a reduced version of the official Land Use Guidance Map. It is not certified to be a true and correct copy. Full size official LURC Land Use Guidance Maps are available from the Commission at its Augusta office. Potential applicants unsure of their zoning should request a full size map from the Augusta office.

Land Use Guidance Map last amended on August 18, 2005

Table 1. Key Facts

Key Facts	Units	Comments
Number of Turbines		
Vestas 1.8 MW V-100	19 Turbines	1.8 MW, 476 feet to vertical blade tip
Bull Hill Rated Output		
Vestas 1.8 MW V-100	34.2 MW	Actual generation will vary
Bull Hill Wind Resource		
Prevailing wind direction	Northwest	
Average wind speed	7.2 meters/second	Between a Class II and Class III wind resource
Cleared Acreage---within M-GN zone		
19 Turbine Pads Temporary clearing Permanent clearing	 22.1 acres 5.3 acres	Temporary clearing (pad clearings + grading) = 0.8 to 1.3 acre per pad. Permanent clearing (crane pad + driveway + foundation + 37.5 radius) = 0.28 acre per pad.
New Crane Paths Temporary clearing Permanent clearing	 23.5 acres 17.0 acres	36 foot wide crane roads Temporary: roadway, ditches, grading Permanent: roadway width
New Access Roads Permanent clearing	 1.3 acres	24 foot wide access roads
New Met Tower Access Roads Permanent clearing	2 acres	12 foot wide permanent met tower access roads
Existing Roads, Widening Temporary clearing Permanent clearing	 0.2 acre 0.0 acre	
Stump Dump	<1 acre	
Lay down areas Temporary clearing Permanent clearing	 9.6 acres 0.0 acre	material/equipment laydown areas only
New Temporary Met Towers Temporary clearing	0.0 acres	Temporary mets will be free standing, eliminating the need for guy wires
Permanent Met Towers Temporary clearing Permanent clearing	 0.0 acres 8.4 acres	Assumes clearing for guy wires for three towers
Collector line corridor Permanent clearing	 0.5 acres	
Total Temporary clearing **Total Permanent clearing** **Total Project clearing**	**55.4 acres** **34.5 acres** **89.9 acres**	
Wetlands & Streams Impacted		
Roads	0.0square feet of permanent wetland fill	One wetland will be bridged
Turbines	0.0 square feet	
Collector line	0.0 square feet	
Total Wetland Impact	0.0 square feet	
Total Stream Impact	0.0 square feet	One intermittent stream will be bridged with an open culvert
Road Mileage		
New Crane Path	3.9 miles	
New Access Road	0.9 miles	

Key Facts	Units	Comments
Total New Roads	**4.8 miles**	
Total Use of Existing Roads	**2.8 miles**	
Approximate Location Distances from nearest turbine		
From Molasses Pond	1.9 miles	
From nearest non-participating dwelling	3,882 feet	Fire Lane 24, Eastbrook
From nearest scenic resource	2.0 miles	Narraguagas Lake
From Schoodic Mountain	8.3 miles	Donnell Pond Public Land

2.0 ESTIMATED PROJECT COST AND FINANCIAL CAPACITY

As evidenced below, Blue Sky has adequate financial and technical capacity to construct the project in compliance with state environmental laws and the standards and regulations adopted pursuant thereto. Financing commitments for the Bull Hill project will be arranged once regulatory approvals are in place.

2.1 Estimate Project Cost

The total project cost is expected to be approximately $78.5 million, broken down as follows.

Turbine cost	$38 million
Transportation	$7 million
Turbine installation cost	$5 million
Foundations	$4 million
Roads	$4 million
Collector electrical lines	$9 million
Other construction costs	$9 million
Development costs	$2.5 million

Blue Sky is the project applicant and lessee. Certificates of Good Standing are included as Exhibit 2A. Blue Sky is wholly owned by First Wind Maine Holdings, LLC, which in turn is a wholly-owned subsidiary of First Wind Holdings, LLC (First Wind). Paul Gaynor is the President or Chief Executive Officer of all three companies. An affiliate of Blue Sky and First Wind will purchase the turbines that will be erected at the project and will assign ownership of the turbines to Blue Sky prior to construction. First Wind will provide the initial equity for the project. A letter from First Wind demonstrating extensive experience in project financing, a balance sheet for First Wind, and a letter of financial support from KeyBank are included in Exhibit 2B.

2.2 First Wind Background

First Wind (formerly UPC Wind Partners, LLC; www.firstwind.com) is an independent North American wind energy company focused exclusively on the development, ownership, and operation of wind energy projects.

First Wind's strategy since inception in 2002 has been to build a company with the ability to develop, own, and operate a portfolio of wind energy projects in favorable markets. Its team of more than 220 employees has broad experience in wind project development, transmission line development, meteorology, engineering, permitting, construction, finance, law, asset management, maintenance, and operations. It has established land control, stakeholder relationships, meteorological programs, and community initiatives, and has developed transmission solutions in the markets in which we focus.

First Wind currently operates 7 wind energy projects across the country, with a generating capacity of 504 MW, has three more projects currently under construction, and has assets in excess of $1.5 billion. Since

2004, First Wind has raised over $4.5 billion, and since the beginning of 2009, First Wind has refinanced, raised, or received approximately $2.8 billion in more than 20 refinancing and new capital-raising activities and customer prepayments. These activities included project debt financings, tax equity, corporate financings, government grants, and customer prepayments. In 2010, First Wind executed over 1.4 billion in financings and repaid $230 million in short-term turbine supply loans. Financings include $98 million for the Rollins Wind project in Penobscot County, Maine; $76 million for the Sheffield Wind project in Vermont; $247 million for the 68-turbine expansion of its Milford Wind project in Utah; and $28 million for the Steel Winds facility in Lackawanna, New York. These recent examples continue a consistent track record for financial capacity in the last two years. Although First Wind intends to secure construction financing to combine with its own equity to construct the Project, the ultimate capital structure will depend on a number of factors, including market conditions at the time of financing.

The Mars Hill project in Mars Hill, Maine, represents Maine's first utility-scale operating wind energy project. During construction of this 28 turbine, 42-MW facility, approximately $22 million of the approximately $95 million project cost went to Maine businesses and local spending. In addition, $10 million in tax payments will be paid to the town of Mars Hill over the next 20 years. This project became fully operational in March of 2007.

First Wind's second large scale wind power project in Maine, the Stetson Wind Project, was constructed in 2008. This 38-turbine, 57-MW facility became fully operational in January 2009. With the addition of the 25.5-MW Stetson II project in 2010, the total of 82.5 MW makes the combined project one of the largest operating utility scale wind farm in New England. Of the total project costs for the two projects, approximately $73 million was spent with Maine businesses. In the first 11 months of 2009, the Stetson project alone generated 139,000 MW hours of electricity.

In aggregate, the Mars Hill and combined Stetson projects generate approximately 377,000 MW per hour per year.

3.0 TECHNICAL CAPACITY

The assembled project team is nearly identical to the Stetson team and has a wealth of experience in project design and wind project development. Exhibit 3. First Wind has successfully permitted five projects in Maine: Mars Hill, Stetson, Stetson II, Rollins and Oakfield. Mars Hill, Stetson and Stetson II are currently operating. The Rollins project is under construction, and the Oakfield project is in the construction planning phases.

First Wind has four other projects in operation outside of Maine: Kaheawa Wind (30 MW) in Hawaii; Steel Winds (20 MW) and Cohocton (125 MW) in New York; and Milford (204 MW) in Utah. In addition, First Wind has four projects under construction in Maine, Vermont, Utah and Hawaii, and is in the development and construction phases of other projects in Maine and across the United States.

The project team for this project consists of James W. Sewall Company and RLC Engineering (engineering and electrical design); Stantec Consulting (environmental and permitting); Terrence J. DeWan and Associates (visual impact); Bodwell EnviroAcoustics (sound); Albert Frick and Associates (soils); TRC, Independent Archeological Consulting and Public Archeology Lab (cultural resources); and Verrill Dana (legal counsel). Each consultant was chosen for their extensive experience in development design and siting.

4.0 TITLE, RIGHT OR INTEREST

Blue Sky has leased an area for turbine construction (the Premises) from Lakeville Shores, Inc., of approximately 10,800 acres in T16 MD, a recorded memorandum of which is found in Exhibit 4A. In the same Exhibit is a copy of the relevant BHE easements adjacent to the substation and a letter acknowledging that the Bull Hill project will connect to Line 66. The portion of that leased area that is necessary for the project---potentially disturbed areas and stormwater buffers---is approximately 158 acres. Included as Exhibit 4B is a 20-year land division analysis demonstrating that this lease does not create a subdivision.

5.0 TURBINE, ROAD AND ELECTRICAL LOCATION AND DESIGN

Wind data, resource delineation, and topographic terrain were carefully analyzed in conjunction with the development of turbine and road designs in order to minimize impacts while still meeting the project purpose. The civil and electrical designs for the project are located in Exhibits 1A and 1B.

Multiple alternatives were considered for road design, turbine pads, and collector design. The final design maximizes the use of existing roads, minimizes turbine pad size, and incorporates an underground electrical collection system.

5.1 Alternatives, Avoidance, and Minimization

A number of alternatives were considered during the conceptual and planning phases of the project. Initial turbine locations and road layouts based on preliminary topographic information were substantially modified once wetland, vernal pool, and stream delineations were completed.

The project area is low gradient with a patchwork of wetlands and small streams. Turbine locations were determined by analysis of wind data, topography, and spacing requirements, and then micro-sited to avoid resources. The result is that no resources are impacted by turbine pads. Turbine layouts were also designed to minimize clearing requirements needed for turbine construction. Typical turbine and turbine pad diagrams are included in Exhibit 5A.

A linear design is the most cost efficient approach to road layout, but such a design would have resulted in impacts to streams, wetlands, and vernal pools. Several iterations of road design were done with the goal of avoiding resources to the maximum effect. The result is a more serpentine road design, but the avoidance effort resulted in no wetland fill in 4.8 miles of new road.

With many wind projects, the unavoidable impacts associated with the transmission and collector lines are the most significant area of resource impact. This project is well located to take advantage of an existing 115-kV transmission line, completely avoiding the need for resource impacts associated with a new 115-kV transmission line.

In addition, impacts from the collector system were avoided by electing to construct an underground collection system that would follow the road system. Although the underground electrical design is more expensive than a traditional above ground system, underground collection was chosen for several reasons. First, there are many small and large wetland and stream resources in the optimal path for an above ground collection system. These impacts could only be avoided by using underground collection in the new and existing roads. Second, it is anticipated that the predominantly porous site soils and gentle topography will reduce the cost of underground installation.

Wetland impacts were avoided and minimized throughout the planning of the project. The project was redesigned numerous times to avoid wetland impacts altogether, including redesigning turbine pads and relocating roads, and deciding to go underground with the collector line. One unavoidable wetland crossing will be accomplished by bridging, with no temporary or permanent fill (see Exhibit 1A, Sheet C202). There is no additional wetland vegetation clearing, and no stream impacts. The one intermittent stream encountered by the road will be bridged with an open bottom culvert (see Exhibit 1A, Sheet C201). The project does not impact any Significant Wildlife Habitat. No rare, threatened, or endangered species were observed or have been documented within the project area.

5.2 Grading and Filling

The project plan takes advantage of the existing topography at each turbine location by setting the top of turbine foundation elevations at or near existing grade elevations. In addition, the vast network of existing gravel logging roads will be utilized for the project to directly access crane paths to the turbine pads. Only minor widening and grading modifications are necessary to fully utilize the existing roadways to provide access of turbine component delivery vehicles to the crane paths of the northern string (Bull Hill) and southern string (Heifer Hill).

Although ledge is anticipated to be encountered at turbine locations atop Bull Hill and at the substation and O&M building site, it is anticipated that the majority of aggregate material will need to be imported to construct the crane paths and turbine pad areas.

Turbine sites will be graded to approximately level with no more than three percent cross slope.

Table 2 outlines the cut and fill requirements for the different portions of the project. Included in these quantities is approximately 3.9 miles of new crane path, 19 turbine pads, the substation site, and 0.9 mile of new access roads.

Table 2: Cut and Fill Calculations

Project Section	Cut (Cubic Yards)	Fill (Cubic Yards)	Net (Cubic Yards)	
Southern String (1-9) Crane Path	**54,007**	**81,617**	**27,610**	**fill**
Northern String (10-19)Crane Path	**50,876**	**67,908**	**17,032**	**fill**
Turbine Pads-southern	**32,379**	**32,670**	**291**	**fill**
Turbine Pads-northern	**33,674**	**76,065**	**42,391**	**fill**
Access Roads	**6,746**	**11,620**	**4,874**	**fill**
Substation/O&M Building*	**36,266**	**9,984**	**26,282**	**cut**
Total	**213,948**	**279,864**	**65,916**	**fill**

* It is anticipated that much of the rock material from the substation and O&M building may be processed and utilized for roadway aggregate material. Additional excavated material to be wasted may be utilized to grade laydown areas within the site.

These calculations are based on the following assumptions.

- Blast rock material will be reused on-site as roadway and turbine fill material and possibly further processed for aggregate base material.
- Grubbings (i.e., duff layer and top layer of soil that is heavy with organics) will be stockpiled on-site and reused in areas to promote revegetation and provide final stabilization. Stump grindings and duff material generated from grubbing will be utilized as erosion control mix while top soil will likely be spread in areas with gradual slopes such as turbine pads and temporary laydown areas.
- The existing access roads are logging roads that are in generally good condition. Regrading will be minimized to the greatest extent practicable and will be done only as necessary to remove irregularities that could potentially cause issues with the turbine delivery vehicles and to improve any stormwater concerns.
- The majority of project cut and fill slopes have been graded at 2H:1V. It is assumed that suitable blast rock material will be available for fill slopes and slope stabilization. More gradual slopes (3H:1V or 4H:1V) adjacent to crane paths and turbine pads may be utilized in fill areas to dispose of excess material.

Although some aggregate material may be processed on-site, it is anticipated that the vast majority of aggregate base material for crane paths and turbine pads will need to be imported. There are a number of local gravel pits in the immediate vicinity of the project that are available to meet the construction material needs of this project. Excavation material that is not suitable for fill directly beneath roadways or turbine pads will be utilized in fill locations outside of structural zone to lessen the side slopes of proposed embankments.

It is anticipated that during construction, blasting will be required in some locations to break up bedrock ledge. This will enable road grades to accommodate oversized loads accessing the site and allow for construction of the turbine foundations and underground electrical collector lines. This blasting and other areas of excavation cuts will provide fill that can be used elsewhere on site for road, turbine pad, and turbine crane pad material.

Test pits completed at the site for the proposed substation and O&M building and atop Bull Hill show shallow ledge throughout these area. Blasted ledge from this location will be processed to be utilized as roadway aggregate material.

Large boulders encountered during construction may be processed for aggregate or pushed to the toe of slope within the proposed clearing limits. No boulders will be placed within protected resources.

When designing the access road and crane path for this project, the project cut/fill balance attempts to minimize the net import or export of fill to or from the site. Any excess material will likely be utilized on-site. In addition, any waste concrete from tower foundations will also be used as fill in the turbine clearings.

Geotechnical investigations have not been completed, and therefore turbine foundation types have yet to be specified for this project. Preliminary indications suggest that the majority of turbine foundations will be a spread footing type of foundation.

6.0 CLEARING AND REVEGETATION

6.1 Clearing

The Project will require clearing a portion of the project area for construction of the wind turbine pads and access roads. Commercial timber harvesting has established a substantial road network which has previously disturbed the entire development area. As a result, clearing activities will not be as extensive as would be required in virgin or otherwise unmanaged forest areas.

Clearing will involve a mix of temporary and permanent impacts. Erosion control protection will be installed as necessary prior to initiation of clearing operations, and buffer areas will be maintained as described more fully in Section 11 below. Construction of a portion of the wind turbine pad and permanent access roads will require permanent clearing. In addition, the construction process will require temporary clearing impact, such as clearings for material and up to six equipment laydown areas. Areas of temporary clearing will be revegetated following completion of construction and startup of commercial operations. The Key Facts Table (Table 1 above) summarizes the permanent and temporary clearing impacts associated with this project. Wetland impacts were minimized to the greatest extent practicable, and the project was redesigned multiple times to minimize all impacts, including clearing.

General descriptions of the clearing required in each portion of the development area are provided in Exhibit 6.

6.2 Revegetation

Following construction, the laydown areas and all but 0.28 acre of each turbine pad area will be revegetated. Topsoil material previously stripped from the development areas and stockpiles will be spread on these areas and seeded with a suitable mix of non-invasive species. Alternatively, some areas may be covered with bark mulch to prevent erosion and will be allowed to revegetate naturally. After October 15, seeding will be delayed until the following spring (after April 15) to provide adequate growth time before the onset of cold weather. In this instance, each area will be heavily mulched to stabilize it for winter.

Following completion of initial revegetation activities, the reseeded areas will be inspected at one-month, three-month, and six-month intervals and reseeded again, as necessary, to provide adequate herbaceous coverage. If eroded or poorly vegetated areas are noted during these inspections, the areas will be stabilized and reseeded. Areas will continue to be inspected and reseeded until an 85 percent project wide vegetative cover is established.

Topsoil stockpiles throughout the site will be protected from erosion and sedimentation through implementation of Best Management Practices (BMPs). This may include encircling down-gradient sides of stockpiles with multiple layers of silt fencing and an erosion control mix berm, as necessary, to protect downstream resources as directed by the onsite engineer. Slopes will be left in a roughened condition to reduce runoff erosion.

The project does not intend to reseed access or crane road travelways. Comments from the State Soil Scientist, Maine Department of Environmental Protection (MDEP) engineers, and Third-Party Inspectors were received on previous projects that the roadway revegetation did little to minimize the impacts and created unstable soils along the road. The 36-foot wide roads are well constructed due to the heavy loads that need to be carried during construction. These heavy loads further compact and stabilize the roadway. Maintaining the roads at 36 feet also facilitates access during operation of the project. The clearing numbers for the project found in Table 1 reflect a permanent 36-foot wide clearing impact for the crane roads and 24 feet for the new access roads.

7.0 CONSTRUCTION, SIGNAGE, TRANSPORTATION AND TRAFFIC

7.1 Construction Plan

Construction of the project is planned to minimize on-site environmental impacts while optimizing the efficiency of construction resources, including personnel, equipment, and supplies. Minor adjustments may be made during construction provided they do not impact regulated resources and are reflected in the final as-built drawings. These include changes that result in a reduction in impact and/or footprint (such as a reduction in clearing or impervious area, and elimination of structures or a reduction in structure size); location of a structure within the identified clearing limits; the type of foundations used; additional drainage culverts, level spreaders or rock sandwiches; changes to culvert size or type provided the hydraulic capacity of the substitute is greater than or equal to that of the original; and changes of up to 10 feet in the base elevation of a turbine vertically up or down as long as the change in elevation does not result in new visual impacts or changes to the stormwater management plan.

Additionally, Blue Sky expects the following minor adjustments may be made upon prior approval by the Third-Party Inspector and reflected in the final as-built drawings: minor changes that do not increase overall project impacts or project footprint and which do not impact any regulated resources as long as any new areas of impact have been surveyed for environmental resources and do not affect other landowners. These changes include adjustments to horizontal or vertical road geometry that do not result in changes to the stormwater management plan; a shift of up to 100 feet in a turbine clearing area; and adjustments to culvert locations based on in field topography.

Other modifications not exempted from licensing requirements by statute or rule would require written approval from the Land Use Regulation Commission (LURC) before the modification may be undertaken.

The proposed construction schedule is attached as Exhibit 7A; this schedule may be modified depending on seasonal conditions. Further details on the construction sequence are provided in Exhibit 1A, Sheet C-3.

Temporary office trailers will be utilized by the project contractor during the construction phase of the project. These trailers will powered by a generator, and likely will be located in the vicinity of a local gravel pit to be utilized for the project. This area will be located beyond the 75-foot setback from the roadway as required by LURC Land Use Districts and Standards. The temporary trailers will be removed within three months after commencement of operation of the project.

A Third-Party Inspection Program (Exhibit 7B) provides for construction oversight for the environmental aspects of the project. A Spill Prevention Control and Countermeasures Plan for construction was also prepared and included herein. Exhibit 7C.

7.2 Signage

Signage on the leased area will be limited to informational and safety signs associated with site activities.

7.3 Transportation

Turbine components will be delivered via the 7300 Road, which intersects Route 9 at the easterly end of an esker known as "The Whaleback." The intersection has suitable visual distances for traffic entering and leaving the 7300 Road. The Maine Department of Transportation (MDOT) has verified that no new highway entry permit is required for this location. Exhibit 7D. Improvements to the horizontal alignment of the existing 7300 Road are anticipated in two areas, as shown in Exhibit 1A, Sheet 500. In addition to the horizontal alignment changes, there will be minor vertical adjustments to grade at various locations to remove the potential for component delivery vehicles to "bottom out." None of these changes will have any natural resource impacts.

There will be no concrete batching on-site. Concrete for foundations will be delivered to the project site via Route 9 and the 7300 Road, and/or Route 182 and the Narraguagas Pond Road. Turbine foundations will generally be installed at a rate no greater than one turbine location per day to spread out construction crew utilization. Foundation types will be determined upon completion of geotechnical investigation; rock anchor and/or spread footing type foundations will be used. For the more concrete dependent type of foundation (spread footings), up to 40 truckloads of concrete are anticipated for each day a turbine pad is poured. Daily concrete requirements will increase if more than one foundation per day is poured. Traffic flagging crews will be utilized as necessary on Route 9 or Route 182, as appropriate, during periods of construction.

The route selection and transportation of turbine components in Maine is being managed by Reed and Reed. Reed and Reed will continue to coordinate with the MDOT and other applicable agencies and town officials, and is responsible for obtaining all necessary permits to affect delivery to the site.

7.4 Traffic

Traffic movements associated with the project will primarily consist of construction-related traffic, including delivery of construction equipment, and commuting of construction workers to the project site during the approximately eight-month construction period. The majority of access to the site will be by Route 9 and the 7300 Road, although an incidental number of workers may come from the south end of the site via the Sugar Hill Road, Route 182, and the Narragaugus Pond Road. It is estimated that during peak construction, the number of worker vehicles traveling to the project site will be approximately 40 vehicles per day, which is a minor traffic demand on Route 9 or Route 182. Once the wind turbines are online and fully operational, site-generated traffic will be limited to vehicles for operations and maintenance. The underlying fee owner will continue to regulate public access to the area.

Once off the public roads, the extensive existing roads will accommodate all construction traffic. These existing roads will not require improvements. Turnouts have been incorporated in the design of the new project access roads to allow construction equipment and material delivery trucks to pass safely and to prevent construction traffic delays or unreasonable queuing of vehicles. This is also incorporated as a safety measure to allow emergency response unhindered access to the project (2-way traffic) in the event of an emergency.

The majority of traffic to the project site will occur over an approximately six-week period during delivery of the turbines. The turbine components, including hubs, DTA's, tower sections, and nacelles and blades are estimated to be delivered to the site at a rate of five turbines per week. Approximately 16 truck loads are required to deliver the component sections of each turbine, resulting in a total of approximately 300 round trip truck trips per week during an approximately 8-week delivery period. Reed and Reed and its transportation contractor will coordinate closely with Maine State Police personnel and local authorities during the turbine delivery period to minimize any potential impacts on localized traffic movement. A transportation study concluded that there are no impediments to delivery over public roads to the Route 9 and 7300 Road intersection (Exhibit 7D). It is expected that police escorts will be required for every oversized load.

8.0 SUBSTATION AND OPERATIONS AND MAINTENANCE BUILDING

The O&M building and substation will be co-located adjacent to an existing road and the existing BHE Line 66 transmission line. The layout of the O&M building and substation, together with an HHE-200 form for the subsurface wastewater disposal system, are presented in Exhibit 8. The O&M building will be a 7,000-square foot metal building, painted in neutral colors, and heated by a propane boiler. This non-residential building will be constructed in accordance with all relevant building and electrical codes; have offices for maintenance and operations personnel; and includes a garage for vehicle and equipment storage and repair. There will be no floor drains in the garage. Electricity will be supplied by overhead line from the substation, with a propane-fired generator as backup. Exterior lighting will be motion sensitive or manually controlled, and parking will be in an unpaved gravel area in front of the building.

The substation will receive power from the turbines via the underground 34.5-kV collector system and will step it up to 115 kV. The substation will be fenced and have pole-mounted floodlights that will only be on during nighttime work at the substation. From the substation, the power will be transmitted directly to Line 66.

9.0 LIGHTING

A safe, efficient turbine lighting scheme that encompasses key safety elements for obstructions has been approved by the Federal Aviation Administration (FAA). Exhibit 9. The lighting plan is in accordance with the FAA Technical Note <u>Development of Obstruction Lighting Standards for Wind Turbine Farms</u> (2005) and "Obstruction Marking and Lighting", Advisory Circular AC 70/7460-1K, Chapter 13 (February 2, 2007). Both are publications of the U.S. Department of Transportation/FAA. The determination of no hazard is conditioned on the project components being lit in accordance with the FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights – Chapters 4,12 & 13 (Turbines).

The layout of the project will consist of 19 Vestas 1.8-MW V100 turbines arranged in two linear configurations, and up to 3 permanent met towers. Nine turbines will be located in association with Heifer Hill, and 10 turbines will be located on Bull Hill. Each turbine will be approximately 476 feet tall from the ground to the full vertical extent of the blade. The following FAA guidelines were used in placement of obstruction lighting for the turbines.

- Lights will be placed on the turbines positioned at each end of the line of turbines.
- Lights will be placed on the highest turbines.
- Lights will then be placed to provide the minimum number of lights that still maintains a safe standard of one lit turbine at least every half mile (i.e., no more than 2,640 feet between lit turbines).
- Lighting will be synchronized.
- A high concentration of lights, in close proximity, will be avoided.

The only other permanent lighting that may be associated with the project will be entry lights at stairs located at the base of each turbine. These may or may not be utilized. This lighting would meet the requirements of LURC's Land Use Standard,10.25,F.

Some temporary nighttime lighting may be required during construction. Turbine erection must be done in lower wind conditions. Therefore, methods such as nighttime lighting are anticipated to provide as much time as possible to take advantage of favorable construction conditions. If required, portable (i.e., trailer-mounted) flood light systems will be used to facilitate nighttime tower erection. Approximately three of these portable flood light units would be used at each tower location. At entrances to the project, there may also be limited temporary nighttime security lighting.

10.0 SERVICES

10.1 Emergency Services

Current emergency services are adequate to meet the needs of the project. No additional emergency medical services will be necessary. Additionally, current police and fire services provided to the area are adequate for the project. The nearest fire station is in Eastbrook, approximately five miles from the project. The Hancock County Sheriff and Maine Forest Service were consulted, and each has provided confirmation that current services are adequate. Exhibit 10A. If emergency medical services are required during or after construction, a cellular phone will be used to call 911. The emergency dispatcher will connect to the Eastern Maine Medical Center in Bangor, which will be able to dispatch LifeFlight of Bangor.

10.2 Solid Waste

Construction of the wind turbines and the 34.5-kV electrical collection line will generate an estimated 40 tons (250 cubic yards) of solid waste consisting of construction debris, packaging material, demolition debris from removal of the two cabins, and associated construction wastes. Any waste concrete will be incorporated into the sub-base for the proposed roadway and turbine pads. Concrete truck wash down will be contained and not allowed to flow to waters of the state prior to appropriate treatment. Cleared vegetation will be harvested and removed as merchantable forest products or chipped or flailed on-site.

Marketable timber will be removed from the site for sale. Smaller woody debris will be mulched and used as a soil amendment or as an erosion control measure. In areas of fill around the turbine pads where trees need to be removed, stumps may be left in place and filled over to avoid unnecessary ground disturbance and minimize waste disposal of the grindings. Other stump grindings will be used to make erosion control mix berms, which will be used to augment or substitute for fabric silt fencing. Ultimately, some stumps and other organic debris may need to be disposed of. This will be accomplished though reuse for erosion control, as noted in Exhibit 1A, sheet C-4, or in a single stump dump constructed in an upland area that will have a footprint area of less than one acre. In needed, the location will be determined by the applicant and the contractor in consultation with the Third-Party Inspector during construction.

Any general construction debris associated with the project, including packing or transportation materials, will be disposed of at appropriately licensed disposal facilities. Included as Exhibit 10B is a capability letter from Juniper Ridge Landfill indicating capacity and willingness to take waste generated by the project.

Following construction, a small amount of operational solid waste generated at the site, primarily office waste, will be collected at the O&M building located in the center of the project and disposed of at a licensed facility.

10.3 Waste Water

During construction, portable toilets will be serviced and wastewater disposed of by contract with a service provider. They will be placed throughout the site as required.

The only subsurface disposal required for the project will be associated with the O&M building located in the center of the project area. An appropriate subsurface wastewater disposal design is included in Exhibit 8.

10.4 Water Supply

During construction, Blue Sky (or its contractors) will supply drinking water for workers and water for dust abatement on the gravel access roads. Drinking water will be provided as bottled water. Dust abatement water will be drawn from off-site non-potable water sources, and its use will not require withdrawals from any ground water source. A 4,000-gallon truck will be used with a maximum of 4 trips per day for a maximum of 20,000 gallons of water withdrawal a day. Note that the off-site water sources will include lake water, but not water from streams or brooks.

No concrete batch plants are proposed during construction. Concrete for the turbine foundations will be supplied and delivered to the project site by local concrete plants.

11.0 STORMWATER CONTROL AND PHOSPHORUS ANALYSIS

The construction of gravel roads, tower foundations, turbine pads, and an O&M building may create stormwater runoff in excess of what the project area presently generates. It is important to mitigate this increase in stormwater runoff to prevent erosion or damage to down gradient ecosystems. In general, the stormwater control plan is designed to minimize the concentration of stormwater flows off the project site. The primary components of the plan include minimizing the permanently impacted areas of the project site and incorporating appropriate BMPs in the project design.

The impacts to site hydrology from the proposed project will be minimized by the use of appropriate stormwater management BMPs such as culverts with outlet protection and level spreaders. The design contemplates the use of “rock sandwiches,” which allow water presently flowing from uphill areas to continue flowing under the road via a layer of coarse rock. This technique is superior to culverts in some instances because the stormwater flows are distributed instead of concentrated, minimizing the potential for erosion. Rock sandwich construction will be used as appropriate in areas where there are groundwater seeps or other hydrologic conditions that warrant their application. In these areas, culverts also will be installed as a backup measure in the event that the rock sandwiches clog or are obstructed by snow. Culvert outlets will be protected by rip rap aprons and level spreaders to dissipate concentrated flows. Stormwater ditches have been outleted to ditch turnouts with level spreaders. Field determinations and changes may be necessary during construction depending on site conditions. A Third-Party Inspector will be retained at the commencement of clearing to inspect clearing activities and ensure BMPs are implemented and erosion control requirements are being met.

11.1 Erosion and Sedimentation Control

Activities that may potentially cause erosion during project construction primarily consist of grading of the access and crane path roads and grading and site preparation for the 19 wind turbine clearings. An erosion and sedimentation plan has been developed and is included in Exhibit 11A. There is the potential for conditions to be encountered during construction that have not been anticipated at this time. This plan and supporting drawings identify the tools that can be implemented during construction of the roadways and pads, explain the basis for their use, and provide details for their installation to be able to field adjust the controls to match encountered conditions. The erosion and sedimentation control plan and attendant drawings are not intended to provide the exact location for placement of the erosion control measures, but rather provide the basis for their use as a “tool box” of control measures.

11.2 Phosphorus Analysis

The Project lies within the Graham Lake, Narraguagus River, and Spectacle Pond Watersheds. According to the MDEP, Graham Lake’s algal productivity is not currently limited by phosphorus. It is a large, fairly shallow, man-made lake with a lot of water level fluctuation. When the lake is drawn down, which is fairly often, and the wind blows, the bottom sediments, particularly in the large Union River delta in the north half of the lake, are re-suspended, and the lake becomes quite cloudy. The secchi disc readings are often less than 2 meters, but the chlorophyll a concentrations indicate very low algal productivity because the suspended sediment is limiting light penetration and therefore limiting algal production. Because of this, the phosphorus standard is not applicable to Graham Lake.

The runoff from the Graham Lake and Narraguagus River watersheds are required to meet the general standards; Narraguagus Lake and Spectacle Pond need to meet phosphorous standards. Buffers were used throughout the project to reduce the phosphorus loading and treat stormwater to ultimately meet MDEP standards. See the support documents for more detailed information in Exhibit 11B.

The phosphorus analysis is based on several assumptions listed in this narrative and specific analytical methods described in “Phosphorus Control in Lake Watersheds: A Technical Guide to Evaluating New Development” published in January 2008 by the MDEP.

Linear portions of the project are gravel or blast rock roadways. From the MDEP guidance documents, these have been assigned a phosphorus runoff coefficient of 1.75 pounds/acre/year. Using this method, the applicant has been able to treat runoff and meet the standards. Phosphorus treatment will be accomplished by extensive forested roadside buffering, ditch turnouts, and stone bermed level lip spreaders. Roadside buffers allow for treatment of sheet flow road surface runoff while ditch turnouts and stone bermed level lip spreaders treat runoff collected in ditches and drainage paths. Calculations demonstrating this analysis and indicating which buffers will treat each section of road is included Exhibit 11B.

Phosphorus export from the proposed development was calculated in Spectacle Pond watershed and was reduced by providing buffers and treatment. A Phosphorus Encumbrance Zone was created based on the expected export associated within this watershed. This Zone is referred to as the total development area in the phosphorus calculations. Due to the size of the Zone, the phosphorus export will be slightly less than that allowed in the phosphorus budget. Within this Zone, which is generally defined as a setback from the centerline of project roads, no additional development resulting in permanent impervious areas will be allowed.

11.3 Buffers

Buffers around the project construction areas are vital to minimize construction-related impacts to existing wetlands, streams, and soils in the project area. In development of the turbine site and road plans, the project has provided for several types of buffers. These buffers include general stormwater buffers, wetland and stream buffers, and Significant Vernal Pool buffers.

The length and width of the proposed buffers will be based on site-specific conditions, including land slope and soil type, as defined by the Maine BMP Manual Chapter 500, Appendix F.

11.3.1 Stormwater Buffers

Three types of stormwater buffers were used on this project. The first type was used in areas adjacent to the downhill side of the road, in which the runoff from the road will sheet directly into a buffer. The second type is a ditch turn-out buffer, in which ditch runoff is diverted to a 20-foot-wide level spreader then distributed into a buffer. The third type of buffer allows runoff to be diverted to a stone bermed level lip spreader and distributed into a buffer. The level lip spreaders were sized according to the most recent version of the Maine BMP Manual.

11.3.2 Wetland and Stream Buffers

The project also incorporates 75-foot-wide buffers around delineated wetlands and streams within the project area, where practical. Some encroachment to these buffers was required as part of the project. See the project plans, Exhibit 1A, for stream and wetland locations in relation to project components.

11.3.3 Significant Vernal Pool Buffers

There are seven Significant Vernal Pools within the project area. Through avoidance and minimization measures, there are no impacts to Significant Vernal Pools or their associated 250-foot habitat.

11.3.4 Visual Buffers

The crane paths and access roads will be visually buffered by trees and the elevation difference between the ridge and the lower surrounding topography. See Section 18 for a full visual analysis.

12.0 WETLAND IMPACT

Wetlands within the project area were delineated in 2009 and 2010 (Exhibit 12A), and are shown on the turbine site and road plans included in Exhibit 1A. There is no temporary or permanent wetland or stream impact associated with construction and operation of the project. The collector system will be placed underground within the road network, so no additional wetland clearing, permanent or temporary fill will be required for the collector system.

A complete wetland and stream report is included in Exhibit 12A.

13.0 WILDLIFE

A variety of forested natural communities can occur within this ecosystem but only one, a regenerating Beech-Birch-Maple Forest is predominate in the project area. See Exhibit 13A for a complete characterization of the area. This is a common forest type across the state, and as such the project area includes many common wildlife species.

The construction and operation of wind turbines on Heifer and Bull Hill will result in some direct and indirect impacts to local wildlife communities and their habitats. In general, the impacts could include habitat loss or conversion, disturbance effects that could result in animals avoiding the project area, habitat fragmentation, and collision-related fatalities. Impacts to wildlife communities due to loss of habitat are not expected to be adverse to those populations, particularly in light of the fact that the local wildlife populations already adapt to the rapid changes in the distribution of habitats along the ridges associated with the frequent timber harvesting activities.

No Deer Wintering Areas, Inland Waterfowl and Wading Bird Habitat, or rare, threatened, or endangered species were documented or observed within the project area.

Blue Sky and Stantec presented a draft work plan for comprehensive natural resource surveys during an initial agency consultation with biologists from the Maine Department of Inland Fisheries and Wildlife (MDIFW) prior to initiation of field surveys in July 2009 (Exhibit 13B). Proposed and completed studies for 2009 and 2010 included avian and bat studies, nocturnal radar surveys, raptor migration surveys, aerial bald eagle nest surveys, and bat acoustic surveys. Studies were designed to address general concerns of state and federal agencies aside from critical habitat for rare, threatened or endangered species.

Songbirds
Stantec conducted nocturnal radar studies to characterize nocturnal migration activity in the project area in fall 2009 and spring 2010. Marine surveillance radar, similar to that described by Cooper *et al.* (1991), was used during field data collection. Radar surveys were conducted on 20 nights between September 1 and October 15 in fall 2009 and on 20 nights between April 29 and May 24 in spring 2010. The radar was located on the summit of Bull Hill at an elevation of approximately 190 meters (624 feet) and provided adequate visibility of the surrounding airspace to characterize migration.

The overall mean passage rate for the entire fall survey period was 614 ± 32 targets per kilometer per hour (t/km/hr) and was 387 ± 21 for the entire spring survey period. Nightly passage rates varied from

188 ± 30 to 1500 ± 209 t/km/hr in fall 2009 and between 43 ± 16 t/km/hr to 879 ± 76 t/km/hr in spring 2010. Mean flight direction through the project area for the fall season was 260 ± 66° and 48 ± 49° for the spring season. The seasonal mean flight height of targets in fall 2009 was 356 ± 9 meters above the radar site and 217 ± 8 meters above the radar site in spring 2010. Nightly flight heights ranged from 208 ± 9 meters to 558 ± 22 meters in fall 2009 and from 100 ± 10 meters to 358 ± 53 meters in spring 2010. The percent of targets observed flying below 145 meters was 14 percent for the entire fall 2009 season and was 38 percent for the entire spring 2010 season.

In terms of passage rates, the mean passage rate of 614 t/km/hr at the project in fall 2009 is on the higher end of the range of results from these other studies (91 to 620 t/km/hr). It is typical for fall passage rates to be higher than spring passage rates as fall migrants include juveniles born that year and older birds who may die during migration or over the winter and therefore would not migrate in spring. Possible concentrations of birds along the coast in the northeast may explain relatively high passage rates at the project.

The results of these other radar studies suggest that the vast majority of nocturnal migrants fly at altitudes well above the rotor swept zone of the proposed turbines (see Appendix A Table 5 of the *2010 Report* in Exhibit 13C for a review of seasonal radar migration surveys from other publicly available wind projects). However, the seasonal average flight height for spring (217 ± 8 meters) is on the low end of the range of flight heights recorded at other wind projects in the east (210 meters to 552 meters in spring). The estimated percent below turbine height during spring 2010 radar surveys at the project was 38 percent for the season. The percent below turbine height at other publicly available wind projects in the eastern United States during spring ranges from 3 to 26 percent. It is important to note that the percent of targets detected below turbine height does not correlate with post-construction mortality events. In other words, this calculation is not an appropriate measure of post-construction risk. Nevertheless, the applicant has committed to perform one year of post-construction mortality surveys to identify the level of project impact on migratory species. An adaptive management plan that involves close coordination with state agencies will implemented to address significant impacts to migratory species should they occur as a result of the project.

The results of completed and ongoing nocturnal avian migration studies within the region has been shown to be relatively consistent for five projects conducted to date (Table 3 below). In general, nightly and seasonal passage rates, average flight heights, average seasonal flight directions, and percentage targets observed below turbine height have nearly all been within general ranges of other ongoing seasonal migration studies. Together, these studies help demonstrate a relatively high elevation flight pattern over the project area landscape, and support the finding that added pre-construction studies at this time would provide little additional new information and data.

Table 3. Summary of available avian radar survey results

Project Site	Season	Number of Survey Nights	Number of Survey Hours	Avg. Passage Rate (t/km/hr)	Range in Nightly Passage Rates	Avg. Flight Directi on	Avg. Flight Height (m)	% Targets Below Turbine Height
Mars Hill	Fall 2005	18	117	512	60-1092	228	424	(120 m) 8%
Mars Hill	Spring 2006	15	85	338	76-674	58	384	(120 m) 14%
Stetson	Fall 2006	12	77	476	131-1192	227	378	(120 m) 13%
Stetson	Spring 2007	21	134	147	3-134	55	210	(120 m) 22%
Rollins	Fall 2007	22	231	368	82-953	284	343	(120 m) 13%
Rollins	Spring 2008	20	189	247	40-766	75	316	(120 m) 13%
Oakfield	Fall 2008	20	n/a	501	116-945	200	309	(125 m) 18%
Oakfield	Spring 2008	20	194	498	132-899	33	276	(120 m) 21%
Bull Hill	Fall 2009	20	232	614	188-1500	260	356	(145 m) 14%
Bull Hill	Spring 2010	20	184	387	43-879	48	217	(145 m) 38%

Raptors

Raptor migration surveys were conducted in summer 2009 on 6 survey days between August 1 and August 27; in fall 2009 on 12 survey days between September 2 to October 14; in winter on 3 survey days (March 19, March 25 and April 6); and in spring 2010 on 12 survey days between April 21 and May 23. The purpose of the raptor surveys was to sample use and migration activity at central and prominent locations within the project area. The specific goal of summer surveys was to characterize bald eagle (*Haliaeetus leucocephalus*) activity in the vicinity of the project during the late-fledging period. Other raptor activity was documented as well. The objectives of surveys during both the summer and fall were to document the species that occur in the vicinity of the project, and the specific flights heights, flight path locations, and other flight behaviors of raptors within or in the vicinity of the project. Therefore, summer and winter surveys were conducted from Sparrow Hill and spring and fall surveys were conducted from Bull Hill.

A total of 24 raptor observations were made in summer 2009, 124 in fall 2009, and 55 in winter and spring 2010, combined. Passage rates were 0.52 raptor observations/hour in summer 2009, 1.43 raptors/hour in fall 2009, and 0.53 raptors/hour in spring 2010. Raptor passage rates at the project were considerably lower than those at nearby Hawk Migration Association of North America sites during the same seasons (Appendix C Table 5 of Exhibit 13C, both reports). In summer 2009, 4 percent of total raptor observations were in the project area, 48 percent were observed in the project area in fall 2009, and 27 percent were observed in the project area in spring 2010. Of these birds, 4 percent were documented flying at heights below 145 meters for at least a portion of their flight in summer 2009, 98 percent were documented flying at heights below 145 meters in fall 2009, and 100 percent were documented flying at heights below 145 meters in spring 2010.

A total of 12 species of raptor were documented in the vicinity of the project area in 2009 and 2010. During fall 2009 raptor migration surveys, one state-listed endangered species, peregrine falcon (*Falco peregrinus*), was observed in the project area. The falcon was flying over tree canopy, approximately 15 meters above ground, moving northwest over Bull Hill. Two state species of special concern were observed during the fall surveys—bald eagle and northern harrier (*Circus cyaneus*). Two state species of special concern were observed in winter and spring 2010: six bald eagle observations were recorded and one eagle was seen as the observer was leaving the Project after a survey. All bald eagle observations were outside the Project area. Five northern harrier observations were made during the spring surveys. One observation of northern harrier occurred within the Project area. For full results of raptor migration surveys conducted at Bull Hill, see Exhibit 13C.

Bats
Acoustic surveys were conducted at Bull Hill between July 14 and November 4 in fall 2009 and were redeployed on April 15 and operated until July 14 in spring 2010. The objectives of acoustic surveys were (1) to document bat activity patterns in airspace near the rotor zone of the proposed turbines, at an intermediate height, and near the ground; and (2) to document bat activity patterns in relation to weather factors, including wind speed and temperature. Six Anabat® acoustic bat detectors were deployed in the project area; two detectors were deployed on the Little Bull Hill met tower, and four were deployed in trees throughout the Project area. Detectors were deployed at relatively low heights where increased bat activity levels are generally documented, particularly during the non-migratory periods. Data were summarized by guild and species and tallied per detector on an hourly and nightly basis.

During the fall 2009 survey period, a total 4,657 call sequences were recorded, resulting in a detection rate of 0.2 bat call sequences per detector night for the met tower detectors combined, and 10.8 bat call sequences per detector night for the tree detectors combined. During the spring survey period, a total of 2,703 call sequences were recorded, resulting in a detection rate of 0.4 bat call sequences per detector night for the met tower detectors combined, and 8.6 bat call sequences per detector night for the tree detectors combined. Of those calls that were identified to species guild, bats of the Genus Myotis were the most abundant bats documented during both the fall 2009 acoustic survey and the spring 2010 acoustic surveys. Other bat guilds that were documented include big brown/silver haired bat, hoary bat, and eastern red bat/tri-colored bat guilds. Tree detectors in both seasons recorded more Myotis calls than the met tower detectors. For full results of acoustic surveys conducted at Bull Hill, refer to Exhibit 13C.

Bald eagles
No active bald eagle nests were identified within the project area during spring aerial nest surveys. A known bald eagle nest (MDIFW Nest #360) was located on an island in Molasses Pond approximately two miles from the southwestern-most turbine, but the nest was not active. Attempts were made to find mapped bald eagle nest locations on Spectacle Pond (MDIFW #221A/B/C), approximately two miles northwest of the turbine string on Bull Hill; Webb Pond (MDIFW Nest #511), approximately six miles from the southwestern-most turbine; Scammon Pond (MDIFW Nest #170A/B), approximately four miles from the southwestern-most turbine; and Abrams Pond (MDIFW Nest #170C), approximately four miles from the southwestern-most turbine. No nests on these ponds were identified. During surveys, one adult bald eagle was observed on Rocky Pond flying along the western shore of the pond and then leaving the pond to the south. One adult bald eagle was also observed on Spectacle Pond flying along the eastern shore. No other bald eagles or nests were observed. Stantec identified two active osprey (*Pandion haliaetus*) nests along the transmission line that bisects the project area. Stantec also attempted to locate a reported great blue heron (*Ardea herodias*) rookery at the south end of Scammon Pond; however, no rookery was observed. Bald eagles and osprey were observed during raptor surveys conducted at the project in 2009 and 2010. A summary of that effort is included in Exhibit 13C.

Collision risk at the Bull Hill Wind Project
Fatality rates from other projects can be used to determine a possible level of impact at the proposed project. The rates observed at other facilities can be considered comparable to a proposed wind farm if those projects are representative of the site being assessed (i.e., in the same region with similar landscape and project design characteristics). Relative mortality estimates from post-construction monitoring conducted at the Mars Hill Wind Project in Maine, Stetson Wind Project in Maine, and Lempster Wind Project in New Hampshire, were low. For raptors, only one owl fatality was found at Mars

Hill in two years of post-construction monitoring. One red-tailed hawk (*Buteo jamaicensis*) was found at Stetson in 2009; however, this fatality was the result of electrocution of the bird, which perched on a riser pole of the electrical collection system. For birds and bats, a total of 27 bats and 36 birds (0.43-4.4 bats/turbine/year [bats/t/yr] and 0.44-2.5 birds/turbine/year [birds/t/yr]), were found in two years of monitoring at Mars Hill, 5 bats and 30 birds (2.11 bats/t/yr and 4.03 birds/t/yr) were found in one year of monitoring at Stetson , and 1 bat and 1 bird were found during one year at Lempster. As mortality rates are typically described as fatalities per turbine per year, the overall mortality expected at a given project is proportional to the size (i.e., number of turbines) of the proposed wind farm. The project would include 19 turbines, a small project compared to most wind projects already operating in the eastern United States.

14.0 UNUSUAL NATURAL AREAS

Stantec contacted the Maine Natural Areas Program during the course of project development and requested information regarding known botanical features, including rare and exemplary natural communities, that have been documented within the vicinity of the proposed project.

At Frenches Meadow (aka Frenches Dam Meadow), a domed bog ecosystem (S3), was identified as a potentially sensitive areas in the vicinity of the project. See Exhibit 14. The final layout of the project is more than 1.25 miles from French's Meadow, and will have no impact.

The wetland delineation efforts for the project in 2009 and 2010 included a field evaluation of hydrologic, soil, and vegetative conditions for the entire project area. No endangered, threatened or special concern species were observed within the project area during the course of those field efforts.

15.0 HISTORICAL AND ARCHAEOLOGICAL

In response to the Maine Historic Preservation Commission's (MHPC) initial comments on the proposed project, Blue Sky conducted historic architecture, Euro-American archaeological, and historic archaeological investigations of the project area to determine what impact the project might have on these historic resources. Reports of these investigations are included as Exhibit 15B through 15D. Each report was provided to the MHPC for its review. By letter of January 5, 2011, MHPC determined that the project would not have an unreasonable adverse effect on historic resources. Exhibit 15A.

15.1 Historic Architecture Survey

The survey of historic architectural resources concluded that there was one resource of state or national significance with eight miles of the project. The Eastbrook Baptist Church and Town House, approximately five miles from the project, is listed on the National Register of Historic Places. Since the church and town house would not have a view of the project due to intervening vegetation and topography, the report concludes that the project would have no visual effect on that property, and no adverse effects on any historic property. Exhibit 15B.

15.2 Euro-American Archaeology Phase O Survey

The survey for Euro-American historic resources conducted by Independent Archaeological Consulting evaluated cartographic information and conducted field investigations to identify likely locations of historic structures. That effort found that the area has been historically used for logging activities, but found no evidence of historical development or historical archaeological resources in the project area. Exhibit 15C.

15.3 Prehistoric Archaeological Survey

TRC Solutions conducted an analysis of the potential for pre-contact archaeology in the project area. That effort concluded that based on the variables of water proximity, unavailability of stone appropriate for tool making, and lack of previously reported sites or artifacts in the area, the area is of low sensitivity. No further investigation was recommended. Exhibit 15D.

16.0 SOILS AND BEDROCK CHARACTERIZATION

Soil surveys have been completed in the project area. A Class L Soil Survey of the turbine and road areas, and a Class A Soil Survey for the O&M building and substation area were conducted by Albert Frick Associates, Inc. Exhibit 16A. The reports conclude that with proper planning and construction techniques, the soils are appropriate for the proposed construction activities.

Areas of hydric soils are identified in the wetland delineation report (Exhibit 12A) of this application and are also shown on the civil design plans (Exhibit 1A).

Prior to construction, a geotechnical investigation of new road segments and each turbine pad will be conducted. The results of this investigation will determine the type of turbine foundation design appropriate for each location. Based on preliminary site investigations, spread footing type anchors are anticipated.

Finally, the underlying bedrock was evaluated for the potential to create for acid rock drainage. Exhibit 16B. That evaluation concluded that the granitic nature of the bedrock in the project are does not pose the risk of acid drainage generation.

17.0 SOUND ANALYSIS

The project is located within the “expedited permitting area” as identified by LURC and defined by 35-A M.R.S.A. Chapter 34-A, Expedited Permitting of Grid-Scale Wind Energy Development. In accordance with the provisions of 12 M.R.S.A. Section 685-B, a wind energy development within the expedited permitting area is required to meet the requirements of the MDEP noise control rules. These rules were adopted pursuant to the Site Location of Development Law and are identified as MDEP Chapter 375.10, Control of Noise. The MDEP noise control regulation applies to in lieu of Section 2, F,1 *Noise* of LURC Chapter 10 *Land Use Districts and Standards*.

An analysis of the likely sound impacts of the project was completed by Bodwell EnviroAcoustics. Exhibit 17. This assessment determines expected sound levels from the project and compares them to the MDEP sound level limits for quiet areas of 45 decibels (dBA) nighttime and 55 dBA daytime at protected locations.

The report conservatively estimates wind turbine sound levels and propagation by:

- utilizing conservative factors for ground attenuation, specifically mapping the surrounding lakes and ponds as reflective surfaces and excluding potential sound attenuation due to foliage;
- adding five dBA to the manufacturer’s wind turbine performance specification to account for uncertainty in measurements used to derive turbine sound output; and
- assuming that all turbines are operating simultaneously, at continuous full sound output, and the wind direction is toward the receptor.

A sound easement has been acquired for one property located approximately 1,700 feet south of the northern string. Exhibit 17. The report demonstrated that the operation of the project will comply with applicable sound level requirements during construction and routine operation.

18.0 VISUAL ANALYSIS AND SCENIC CHARACTER

A Visual Impact Assessment was completed to evaluate the project’s impact on scenic resources of state or national significance. Exhibit 18. The assessment concluded that within the eight-mile study area, the most significant scenic resources are the views from Donnell Pond, Narraguagus Lake, and the summit of several of the mountains in the Donnell Lake Unit.

The project will not be visible from any national natural landmarks, federally designated wilderness areas, properties on the National Register of Historic Places, National Parks, State Parks, scenic river segments, or MDOT scenic turnouts. Throughout the majority of the study area, views of the project are blocked by topography and roadside vegetation.

For each of the scenic resources of state or national significance, the assessment examined its context, significance, existing public use, viewer expectations, project impact, and the potential effect on public use. This information was used to determine whether the project would significantly compromise views from these resources such that it would have an unreasonable adverse effect on its scenic character or the existing uses related to its scenic character. The Visual Impact Assessment concluded that the project should not have an unreasonable adverse impact on scenic values and existing uses of scenic resources of state or national significance.

19.0 POST-CONSTRUCTION MONITORING

During the construction phase of the project, the general contractor will be responsible for site management and maintenance of roads and facilities.

Following completion of construction activities, Blue Sky will assume responsibility for monitoring and maintaining roads and facilities associated with the project. Disturbed areas will be seeded and mulched or otherwise managed for slope stabilization, as explained in the erosion and sedimentation control plan. An approximate 0.28-acre area at each turbine foundation pad will be maintained as an unvegetated part of the project.

Activities and facilities at the site will be monitored both remotely and by on-site personnel. Turbines and overhead electrical systems will be visually inspected no less than once a month. The turbines will receive a detailed annual inspection and will undergo regular maintenance in accordance with the manufacturer's recommendations. These inspections and maintenance procedures will be conducted by technicians trained in the design of the Vestas V-100 1.8-MW turbine.

Blue Sky will enter into a maintenance agreement with a contractor to provide any services necessary to maintain stormwater and erosion control structures. Ditches, culverts, and drainages for roads and access ways will be inspected and repaired as necessary after heavy rain events and spring runoff each year. Maintenance and inspection logs will be maintained and kept at the project O&M building.

Post-construction avian and bat monitoring will generally be conducted according to the post-construction monitoring protocol included in Exhibit 19. This protocol is evolving to take into account post construction monitoring that is completed at existing operating facilities, and may be modified in consultation with the MDIFW and U.S. Fish and Wildlife Service prior to implementation.

20.0 DECOMMISSIONING

Attached as Exhibit 20 is the Decommissioning Plan. It provides a mechanism to set money aside over the next 7 years in order to finance decommissioning, with a commitment to review and have in place full decommissioning funding by year 15 following commercial operations.

21.0 SHADOW FLICKER

Shadow flicker from wind turbines is the effect resulting from the shadows cast by the rotating blades of the turbine on sunny days. The effect may be more or less pronounced depending on the intensity of the sun/shadow contrast and the distance from the turbines to a receptor. The effect is most pronounced during sunrise and sunset on clear days and on receptors closer than 1,000 feet to a turbine.[1]

[1] Environmental Impacts of Wind Energy Projects, National Academies Press, 2007, p. 160.

The 19 potential turbine sites were modeled using the Windpro software model. This software is designed to simulate the path of the sun over the course of a year in order to predict the area where shadow flicker is likely to occur. It is worst case prediction, assuming the sun is shining each day, and does not take into account vegetation screening between a turbine and a receptor. It also assumes that the turbines are perpendicular to the receiver and are always operating. See Exhibit 21 for the complete shadow flicker report and illustrative map.

The flicker report concluded that there are no receptors that will receive shadow flicker impact.

22.0 TANGIBLE BENEFITS

The project will provide significant tangible benefits to Hancock County, as well as to the entire State of Maine.[2] Tangible benefits are defined as environmental or economic improvements or benefits to residents of the State attributable to the construction, operation, and maintenance of the project and include, but are not limited to, property tax payments resulting from the development; other payments to a host community, including, but not limited to, payments under a community benefits agreement; construction-related employment, local purchase of materials, employment in operations and maintenance, reduced property taxes, reduced electrical rates, land or natural resource conservation, performance of construction, operations, and maintenance activities by trained, qualified and licensed workers, or other comparable benefits. 38 M.R.S.A. § 3451(10). There is no requirement in the statute that a project include benefits in each of the specified areas, but rather that the collective benefits from the project be significant. Id. On the local level, the benefits are lease payments for land, employment opportunities, the local purchase of materials and supplies, taxes paid on the project, and an annual Community Benefit Fund payment.

On a larger scale, the project will increase energy diversity, thereby helping to reduce electric price volatility in Maine. The project will also help Maine meet its commitments under the Regional Greenhouse Gas Initiative (RGGI), which establishes limits for emissions associated with the generation of electricity. The project includes a myriad of environmental and economic benefits that constitute tangible benefits under the Wind Power Act and collectively are significant. The U.S. Department of Energy recently evaluated and affirmed that wind power will bring these very benefits to Maine. (http://www.windpoweringamerica.gov/pdfs/economic_development/2008/me_wind_benefits_factsheet.pdf).

22.1 ECONOMIC BENEFITS

22.1.1 Local Landowner Benefits

The project provides a direct economic benefit to the local landowners participating in the project through land leases and easements. The project allows these landowners to capture a new resource to gain economic benefits from their land and will produce steady annual revenue to the landowner with turbines on the property during the life of the project. This income stream can supplement what the landowners typically make from logging and other uses of the land and represents a significant economic benefit. This additional income stream for these commercial forestlands will help maintain the property in traditional forestry and recreational uses, while creating a new source of clean energy.

22.1.2 Increased Employment

Measures of Hancock County's economic climate are below the State average, signaling the need for investment and economic development. The 2009 average annual income for the State of Maine was $36,803; Hancock County's average income of $32,468 is below that state average. While Hancock County's August 2010 un-adjusted unemployment rate of 6.1 percent is below Maine's un-adjusted rate of 6.9 percent for the same month, a closer look demonstrates Hancock's dramatic seasonal employment pattern. Reflecting the seasonality of the local service economy, the County generally stays below the state unemployment average during the months of May to September, but spikes to several percentage

[2] See 35-A M.R.S.A. §3454 and 38 M.R.S.A. §484(3) for relevant criteria.

points above the state average during October to April. In addition, the total number of people employed in Hancock County has been declining since 2008.[3]

The Project would respond directly to area needs and to the people who live and work in the vicinity of T16 MD. A significant portion of the estimated $78.5 million dollar project cost is expected to be spent on development, engineering, and construction-related activities, much of which is anticipated to stay within Maine. The surrounding areas can benefit through construction-related employment opportunities and the ancillary economic benefits of that construction activity. There will be the opportunity for direct jobs for activities like tree clearing and excavation, and ancillary jobs in businesses that support construction such as lodging, restaurant, fuel and concrete supply. For the Mars Hill, Stetson, and Stetson II projects combined, more than 850 people were employed during construction. Based on First Wind's experience developing and constructing facilities with a total capacity of 125 MW of wind energy in Maine, development and construction of the proposed Bull Hill project will require the direct labor of approximately 225 individuals (or 65 full-time equivalent jobs). Following the construction phase, Blue Sky anticipates hiring three to eight permanent employees to operate and maintain the facility. First Wind now directly employs 32 people to support ongoing development, project management, and operations of operating and proposed wind facilities. The project will hire locally whenever possible, providing construction, operations, and maintenance employment opportunities to community residents.

The economic benefits of a wind project are significant and can provide value and stability to the local and regional economy. Although the exact amount of direct and indirect economic benefits of the project may be difficult to predict, the actual economic spending associated with the development and construction of the nearby Stetson Wind Project is evidence of the tangible economic benefits that can be expected from this project. Included as Exhibit 22 is a graphic representing the local and statewide economic benefits associated with the Stetson Wind Project and a list of Maine companies benefiting from that project. As indicated in that graphic, of the approximately $65 million spent for construction, engineering, and development services, about $50 million was spent with Maine businesses, with approximately 350 people directly engaged in construction of the project. Another $23 million was spent locally and in Maine for construction of the Stetson II project. Contractors throughout the state from Fryeburg to Presque Isle, consultants with offices throughout the state, and local businesses in the Lincoln and Danforth area all benefited from these expenditures. These amounts reflect only direct spending by the developer and do not capture the indirect jobs and benefits that may result from that direct spending. For example, the contractors hired by the developer to build the project will spend money on food, lodging, and fuel in the area. Similar benefits during construction are also expected for the Bull Hill Wind Project.

22.1.3 Reduced Local Property Taxes

Utility-scale wind power projects require large capital investments that have been estimated from $95 million to $270 million.[4] The large investment in a wind power project can result in a dramatic increase in real property value, and typically has the corresponding effect of substantially increasing the local property tax base. The applicant expects that it will pay significant annual property taxes on the project.

Host communities to large projects with high taxable value, such as a grid-size wind power project, enjoy tangible benefits related to the taxes paid on these projects, and can select the manner in which the community wishes to enjoy those benefits. Some communities choose to use the new property taxes to reduce local property taxes. As an example, the mil rate in Mars Hill decreased significantly (from $25.00 to $20.00) in 2007 as a result of the tax payments associated with the Mars Hill wind power project. Under the terms of a Tax Increment Financing (TIF) agreement, Evergreen Wind Power, LLC (an affiliate of this Applicant) pays the Town of Mars Hill $500,000 in property taxes annually, and will continue to pay that amount annually through 2026. In total, First Wind is paying more than $1.1 million annually in property tax payments for its Mars Hill and Stetson wind power projects, each of which is subject to a 20-year TIF reimbursement arrangement with the host community. Thus, TIF agreements such as that

[3] Maine Department of Labor, Center for Workforce Research and Development.

[4] *The Benefits, the Quid Pro Quos for Fashioning a Streamlined Approach to Commercially Sized Wind Energy Facility Siting*, Orlando E. Delogu, Emeritus Professor of Law, University of Maine School of Law, January 2008.

between the Town of Mars Hill and Evergreen Wind Power, LLC, can provide long-term stability, predictability, and property tax relief to a community arising from the substantial property tax payments associated with commercial wind power facilities.

Other host communities choose to enjoy their tangible tax-related benefits by segregating the new property taxes in a TIF program and by using the community's share of those new taxes to fund economic development projects that have been approved by the legislative body of the of the governmental entity and the State of Maine Department of Economic and Community Development.[5] As an example, the Washington County Commissioners created a 30-year TIF around both phases of the Stetson Wind Power Project (the Stetson TIF), allowing the County to use a significant portion of the project's property taxes to fund economic development projects within the unorganized territories of Washington County. As part of its TIF program, the County also entered into 20-year TIF agreements with Evergreen Wind Power V, LLC, and Stetson Wind II, LLC (affiliates of this Applicant). The Stetson TIF will provide an average annual payment of approximately $301,226 to Washington County for the County's use in funding a wide variety of economic development projects over a 30-year period.[6]

For the Oakfield Wind Project, the Town of Oakfield designated a TIF district and adopted a Development Program for the TIF district relating to the original Oakfield Wind Project. The Town set out a plan of municipal economic development-related projects that it intends to complete with the municipal TIF revenues. Some of the municipal projects to be funded with municipal TIF revenues, as approved by the Town and the State Department of Economic and Community Development, include a public safety building and equipment, road reconstruction, public works equipment, village infrastructure and business assistance, and resident training.

Blue Sky estimates that the Bull Hill Wind Project will add approximately $69 million of new property tax value to the unorganized territory of Hancock County, resulting in estimated average annual tax payment of approximately $342,343 dollars (averaged over a 20-year period), adjusted by any credit enhancement agreement.

Blue Sky is currently discussing the development with the Hancock County Commissioners, and is proposing a TIF district around the project. As part of a TIF, Blue Sky would enter into a credit enhancement agreement in which it would recoup some portion of the annual tax payment estimated above. By creating a TIF district, the County would have the ability to obtain tax revenue that would have gone directly to the state. The County would then be able to use a significant portion of the project's property taxes to fund a wide variety of economic development projects throughout Hancock County's unorganized territory. Approved county TIF programs in other counties include the purchase of emergency communications equipment, road improvements, scenic by-way enhancements, nature-based tourism planning, county matches for economic development grants, and revolving loan funds for county residents and businesses.

22.1.4 Reduced Energy Price Volatility

The addition of new power generation facilities in Maine will tend to lead to lower and less volatile electricity prices. This is particularly true in the case of the addition of renewable power facilities like wind projects. The price and reliability benefits of new renewable resources have been described by the Maine Public Utilities Commission (MPUC) as follows:

> *The addition of diverse (non-gas) resources in Maine and elsewhere in the region will be beneficial for several reasons. As more non-gas generation is added to the mix, cheaper gas resources and non-gas resources will set the clearing prices in a greater number of hours.* ***This would have the general effect of reducing both the level and volatility of electricity***

[5] In an unorganized territory, the county acts in the place of the municipality in creating and implementing a TIF program. 30-A M.R.S.A. § 5235.

[6] The County created a 30-year TIF around the Stetson project, but entered into 20-year reimbursement agreements with the two First Wind entities.

> ***prices throughout the region. To the extent new generation is constructed within Maine's borders, the benefit to Maine consumers is more direct in that the result would be lower prices within the Maine zone****. In addition, any overall reduction in the demand for gas that results from the addition of non-gas resources in the region should have the effect of reducing the price of natural gas which translates into lower electricity prices. Finally, a reduction in the region's reliance on natural gas would result in a more secure system that is less vulnerable to gas shortages and thus less susceptible to curtailments and blackouts.*[7]

Given that the cost of generating wind power is stable and is not subject to fluctuations in fossil fuel prices, the development of new wind facilities like the project will also create an opportunity to reduce price volatility directly for certain consumers. In addition to opportunities to work directly with consumers, the cost stability of wind energy makes it a strong candidate for long-term contracts.

Additionally, a number of states in New England, including Maine, have adopted some type of Renewable Portfolio Standards (RPS) to diversify the electricity supply portfolio, stabilize rates, increase energy security, improve environmental quality, invigorate the clean energy industry, and promote economic development. Essentially, RPS create a statutory requirement for clean power, and the Maine Legislature has reaffirmed its support for the Maine RPS—and in fact expanded it—in recent sessions. The combined effect of the RPS in New England is an increasing regional demand for renewable energy that far exceeds the currently available and qualifying supply of renewable energy. This 34.2-MW project is estimated to produce an approximate average annual output of 94,000 MW/hours per year, and thereby take an important step toward achieving the policy objectives of the Maine RPS law. The Mars Hill and combined Stetson Wind Projects are already generating a total of approximately 377,000 MW/hours per year.

22.1.5 Community Benefits Package

Blue Sky is required to provide a community benefits package that is valued at no less than $4,000 per turbine per year to the host community or communities. 35-A M.R.S.A. §3454(2). To satisfy this requirement, Blue Sky proposes a package of benefits to the host and adjacent communities, paid annually for 20 years. First, Blue Sky would execute a Community Benefit Agreement (CBA) with the Hancock County Commissioners equal to the $4,000 per turbine per year. This CBA satisfies the minimum statutory requirement for a Community Benefits package. Blue Sky has also offered the adjacent Town of Eastbrook an unrestricted annual payment of $20,000.

In addition, the applicant is proposing a one-time payment to the Downeast Salmon Federation of $25,000 for conservation purposes in the Narraguagas River watershed. Finally, an additional $20,000 annual payment for 20 years would be made to establish a fund for the improvement and preservation of water quality in Spectacle Pond, Narraguagas Lake, and the Narraguagas River Watershed. This fund would be administered by the Eastern Maine Development Corporation.

Table 22.1 Community Benefits

Entity	Benefit	Annual Total
Hancock County Commissioners	$4,000/turbine/year	$76,000
Town of Eastbrook	$20,000 per year	$20,000
Downeast Salmon Federation	$25,000 lump sum	
Eastern Maine Development Corporation	$20,000 per year	$20,000
		$116,000 ($6,105/turbine/year)

[7] MPUC Review Comments for the Land Use Regulation Commission, Zoning Petition ZP 702 (Maine Mountain Power, LLC), April 14, 2006, page 4.

22.2 ENVIRONMENTAL BENEFITS

Electricity generation from wind energy projects results in zero air or water pollution. Each clean MW produced by wind energy displaces generation from more costly and polluting fossil fuels. To put this into perspective, a traditional fossil fuel burning power plant would have burned approximately 288,000 barrels of oil or 61,000 tons of coal per year to produce an amount of energy equivalent to the clean energy produced last year at the 42 MW (nameplate capacity) Mars Hill Wind project in Mars Hill, Maine. However, wind energy generation results in none of the associated toxicity, pollution and public health issues associated with traditional fossil fuel energy sources.

Maine and the region have set aggressive greenhouse gas reduction goals. State and regional experts, including the MPUC and ISO-New England, have concluded that Maine and the region cannot meet these greenhouse gas policy goals without significant additions of wind power and other renewable energy sources in Maine and elsewhere.[8] For instance, RGGI may be more costly to implement unless a substantial amount of wind power is built.

The significant environmental benefits associated with wind power, including avoided air pollution benefits, were recently recognized by the Governor's Task Force on Wind Power Development, and affirmed by the Legislature with enactment of "An Act to Implement the Recommendations of the Governor's task Force on Wind Power Development, Public Law 2008, Chapter 661."[9]

22.3 CONCLUSION

The "*environmental or economic improvements attributable to the construction, operation and maintenance of the [Bull Hill] project*" constitute a significant tangible benefit under the Wind Power Act. The collective impact of the construction-related employment, local purchase of materials, employment in operations and maintenance, and direct payment to host communities through the Community Benefits Agreement provides significant tangible benefits to Hancock County and the State of Maine.

23.0 PUBLIC SAFETY

Recently enacted legislation requires a demonstration that the proposed generating facilities will be constructed with setbacks adequate to protect public safety. Subsequent guidance from the LURC and MDEP states that this requirement is fulfilled by providing documentation that the turbine design meets accepted safety standards, and has appropriate overspeed control and evidence that the generating facilities have been sited with the appropriate safety related setbacks.[10]

23.1 Turbine Design Certification

The project will use Vestas V-100 1.8 MW wind turbine generators. The turbines are International Electrotechnical Commission Code compliant and are designed to withstand wind gusts of 59.5 meters per second. The Vestas V-100 turbine design is also certified by Det Norske Veritas, the leading wind power product certification authority. Exhibit 23A.

23.2 Overspeed Control

There are two independent methods of speed control in each turbine: blade pitch control (feathering) and hydraulic disc braking. Either or both of these systems can initiate to prevent overspeed. The three rotor blades have pitch control that adjusts to wind conditions. Once optimal rotation speed is achieved,

[8] *New England Energy Market and Wind Power in Maine*, MPUC presentation to the Wind Power Task Force, August 3, 2007.
[9] See e.g., 35-A MRSA §3402(1).
[10] Grid Scale Wind Energy Development Permit Applications, Guidance Document issued Sept. 3, 2008 and Checklist for LURC, Appendix B (5). 35-A M.R.S.A § 3455.

operational braking will occur by the blades automatically adjusting their pitch to spill excess wind and keep the turbine spinning at optimum speed.

The Vestas V-100 turbines are protected from speed variation by an independent computer module measuring the rotor rotations per minute (rpm). If the rotor is spinning overspeed (over 17.3 rpm) or the generator is spinning overspeed (1597 rpm), all three blades are automatically feathered. In addition, mechanical braking can be initiated by emergency stop switches located at two locations within the turbine: the base and the nacelle. The turbine is not generating electricity once the brake is applied.

23.3 Public Safety Setbacks

Recent guidance associated with LURC's application requires evidence that the wind turbines have been sited with the appropriate safety related setbacks from adjacent properties and adjacent existing uses. The MDEP and LURC Guidance Documents recommend a minimum setback from property lines, roads, or other structures equal to the local setback requirements or 1.5 times the maximum turbine blade height, whichever is greater.

The project has been sited with appropriate safety-related setbacks from existing leased and fee properties. The recommended setback of 1.5 times the maximum blade height is 714 feet for the Vestas V-100 turbines, which is greater than any local setback requirements. Of the 11 existing leases on the property Blue Sky is leasing, two leases nearest the turbines are being terminated and the buildings removed prior to commercial operation (0900755-Watson; 0900192-Derosiers). Copies of the termination letters are included in Exhibit 23B. The remaining existing leases are all more than 1.3 miles from the nearest turbine. See map in Exhibit 23B.

With the exception of one fee property that is utilized for commercial forestry, each turbine is more than 714 feet from the nearest property boundary. Included as Exhibit 23B is an easement with that fee property owner.

24.0 NOTICE AND PUBLIC MEETINGS

In accordance with Chapter 4 of LURC's Regulations, 4.04.4(B), LURC staff must provide notice of the application to all persons owning or leasing land within 1,000 feet of the proposed project. The applicant has notified all parcel owners within a mile of the project, and all existing leases on the leased parcel. A copy of the Notice of Intent to File was sent to these owners and lessees on January 24, 2011. Exhibit 24. It was also published on January 26, 2011, in the *Bangor Daily News* and on January 27, 2011, in the *Ellsworth American*.

The applicant has discussed the project in additional public meetings and forums in Eastbrook, the nearest community to the project. Included as examples in Exhibit 24 are relevant newspaper articles and an open house notice sent to abutters within one mile of the project, posted in public locations in the Eastbrook area, and published in the Bangor Daily news. Approximately 20 people attended the November 9, 2010, open house.

25.0 ADDITIONAL PERMITS REQUIRED

This project will require the following additional permits.

- DEP Notice of Intent for a Construction General Permit; and
- Forest Operation Notification.