STATE OF MAINE
LAND USE REGULATION COMMISSION

IN THE MATTER OF	)	Pre-Filed Direct Testimony of
BULL HILL WIND PROJECT	)	Terrence J. DeWan
BLUE SKY EAST, LLC	)	on Behalf of Blue Sky East
DP 4886	)	

On behalf of Blue Sky East, LLC ("Blue Sky East"), Terrence J. DeWan is submitting this pre-filed direct testimony in support of the Bull Hill Wind Project ("Project" or "Bull Hill Wind Project").

I. QUALIFICATIONS AND BACKGROUND

My name is Terrence DeWan. I am self-employed as a landscape architect with Terrence J. DeWan & Associates in Yarmouth, Maine. I received a Bachelors in Landscape Architect (BLA) in 1968 from the State University of New York College of Environmental Sciences and Forestry in Syracuse, New York. I am licensed by the Maine State Board of Licensure for Architects, Landscape Architects, and Interior Designers (license #6).

I have been involved in visual impact assessments (VIA's) in Maine since the mid-1970s. My firm and I have worked on over 50 VIA's in Maine, New England, and elsewhere for a wide variety of projects, including port facilities, electrical power generating facilities, transmission lines, natural gas storage facilities, a liquefied natural gas terminal, industrial buildings, sanitary landfills, wind energy projects, hydroelectric dams, and new community development. I served as a consultant to the Maine Department of Environmental Protection in the development of Scenic Impact Rules and also served on a DEP Task Force for the Development of Chapter 315 (Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses.) I recently authored the *Scenic Assessment Handbook* for the Maine State Planning Office.

My extensive experience in wind energy projects includes development of VIA's for the New England Wind Energy Station for Kenetech in the Boundary Mountains of Maine; the Redington Wind Farm and the Black Nubble Wind Farm for Maine Mountain Power; Stetson I and Stetson II for First Wind; Pinnacle Wind Farm at NewPage for Pinnacle Wind Force in Mineral County, West Virginia; Spruce Mountain Wind Project for Patriot Renewables in Woodstock, Maine; Saddleback Ridge Wind Project in Carthage Maine for Patriot Renewables; and Highland Wind Project in Highland Plantation for Independence Wind. I also conducted a peer review of the Cape Wind Project VIA prepared by the Mineral Management Service on behalf of Save Our Sound. I also was invited to participate in the North American / United Kingdom Stewardship Exchange to study the issue of siting wind farms in scenic areas of southern England. In my professional career I have observed wind energy projects in California, Minnesota, Vermont, Maine, West Virginia, Colorado, New York, Germany, and England. A copy of my resume is attached as Exhibit 9.

II. INVOLVEMENT WITH THE BULL HILL WIND PROJECT

I was responsible for field evaluation, site photography, coordination of the intercept survey, and preparation of the visual impact assessment for the Bull Hill Wind Project. The VIA was based on a review of the Bull Hill Application, including the civil design plans (in Exhibit 1A in the application). In addition, the VIA was also based on extensive field work conducted over the course of visits to the study area on October 3, 4, 11, and 12, 2010, November 10, 2010, and March 17 and 18, 2011, to observe the Project site and determine its relative visibility during leaf-off conditions. I visited the study area (along with members of my staff) by automobile, motorboat, and on foot. Fieldwork was limited to lands that were open to the public; no attempt was made to investigate potential impacts on individual private properties. Finally, in reaching the conclusions in the VIA related to nature and extent of the use and viewer expectations, I

relied on the following data: an intercept survey conducted by Market Decisions for the Bull Hill Wind Project; intercept surveys conducted for other wind energy projects in Maine; the Downeast Region Management Plan prepared by the Maine Bureau of Parks and Lands; the Downeast Coastal Scenic Inventory, Hancock and Washington Counties, Maine, prepared for the Maine State Planning Office Coastal Program by the Hancock Country Planning Commission and Washington County Council of Governments; various guides to recreation; and field observations by myself and members of my firm.

I also oversaw the preparation of viewshed analysis and computer-generated models of the Project by members of my staff. A detailed description of the process used to prepare the photosimulations and other computer mapping is included in Section 2.3 of the VIA. This testimony provides a summary of the VIA provided in Exhibit 18 of the application submitted to LURC by Blue Sky East for the Bull Hill Wind Project ("the Application").

III. SUMMARY OF VISUAL IMPACT ASSESSMENT

In my opinion, the Bull Hill Wind Project has been sited in a location and manner that will not have an unreasonable adverse effect on the scenic values and existing uses related to the scenic character of the surrounding area. Further, the Bull Hill Wind Project will not have an unreasonable adverse effect on the uses of or views from the 15 scenic resources of state or national significance located within the eight mile-study area.

The VIA was prepared in accordance with the scenic impact assessment requirements of the Wind Energy Act (found at 35-A M.R.S.A. § 3452, et seq.), to determine the potential visual impact of the Bull Hill Wind Project on scenic resources of state or national significance within a three-mile radius of the Project. Although not required to do so, in order to provide a more complete visual assessment to the Commission, Blue Sky East chose to extend this analysis to include an area within an eight-mile radius. I identified all relevant scenic resources of state or

national significance within this eight-mile area and assessed the potential visual impacts of the Bull Hill Wind Project on those resources in accordance with the evaluation criteria contained in the Wind Energy Act.

The regulatory standard for the analysis of scenic impacts is:

> *The primary siting authority shall determine…whether the development significantly compromises views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the scenic resource of state or national significance. 35-A M.R.S.A. § 3452 (1).*

The statute directs LURC to consider the following six evaluation criteria when making its determination:

- The significance of the potentially affected scenic resource of state or national significance;
- The existing character of the surrounding area;
- The expectations of the typical viewer;
- The expedited wind energy development's purpose and the context of the proposed activity;
- The extent, nature and duration of potentially affected public uses of the scenic resource of state of national significance and the potential effect of the generating facilities' presence on the public's continued use and enjoyment of the scenic resource of state or national significance; and
- The scope and scale of the potential effect of the views of the generating facilities on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or national significance, the distance from the scenic resource of state or national significance and the effect of the prominent features of the development on the landscape.

The VIA addresses each criterion.

The Wind Energy Act recognizes that wind turbines are potentially a highly visible feature on the landscape. However, the statute states expressly that this, alone, does not provide sufficient basis for determining that a wind energy project located in the expedited area will have an unreasonable adverse effect on the scenic character and existing uses related to the scenic

character and is not sufficient basis for denying an application. See 35-A M.R.S.A. § 3452 (3). The VIA is designed to determine whether the Bull Hill Wind Project will have an unreasonable adverse impact on scenic values and existing uses of scenic resources of state or national significance. In addition, the VIA also reviewed the associated facilities (turbine pads, meteorological towers, access roads, operations and maintenance facility, and substation) under the Wind Energy Act's scenic impact standard[1] to determine if they would have an unreasonable adverse effects on scenic character and existing uses.

In order to gain a better understanding of public use of the Donnell Pond Unit and public reaction to the proposed Project, Market Decisions, a market research and survey firm in Portland, Maine, was engaged to develop and conduct a survey of recreational users and to evaluate the results. Market Decisions interviewed 81 people during the three-day Columbus Day weekend 2010. The survey results were used to assist in an analysis of user expectations and impacts. The Market Decisions Report is included as Appendix D to the VIA.

A. DISTANCE ZONES

The concept of distance zones is based upon the USDA Forest Service visual analysis criteria for evaluating visual impacts to forested landscapes and on the amount of detail that an observer can differentiate at varying distances.[2] Given the size of the wind turbines in Maine, the distance zones that have been established to evaluate scenic impacts for more common development projects may have different significance for wind power projects. Nonetheless, the

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[1] Unless LURC determines that the visual impact of associated facilities will have an unreasonable adverse effect due to the scope, scale, location or other characteristics, they, like the generating facilities, will be evaluated under the Wind Energy Act scenic standard and not under the traditional scenic standard under Title 12. 35-A M.R.S.A. § 3452(1). In the Third Procedural Order, Presiding Officer Hilton concluded that the Wind Energy Act scenic standard applies to review of the visual impacts related to review of the entire Project. See Third Proc. Order at 4,5.

[2] Landscape Aesthetics: A Handbook for Scenery Management. USDA Forest Service. Agricultural Handbook Number 701. December 1995.

evaluation of foreground, midground, and background provides a useful framework for evaluating the presence of wind turbines and the associated facilities in the larger landscape. With the exception of Narraguagus Lake (viewed in the midground), the remaining views of the Bull Hill Wind Project from resources of scenic of state or national significance will be seen in the background (and the closest of those, Tunk Mountain, from 4.9 miles away). The distance zones used for the Bull Hill Wind Project are discussed in detail in the VIA:

Foreground: 0 to 1/2 mile from the observer. Within the foreground, observers are able to detect surface textures, details, and a full spectrum of color. For example, the details of the turbines (blades, nacelles, support towers) or the meteorological towers will be readily apparent. There are no scenic resources of state or national significance within one-half mile of the Project. There are several woods roads on private lands within the foreground that the public uses for hunting, snowmobiling, and similar traditional uses.

Midground: 1/2 mile to 3-5 miles from the observer. Within the midground the objects in the landscape are significant; buildings are seen as simple geometric forms; roads and rivers become lines. Development patterns are readily apparent, especially where there is noticeable contrast in scale, form, texture, or line. Narraguagus Lake is the only scenic resource of state or national significance that will have a midground view of the Project.

Background: greater than 3–5 miles. Background distances provide the setting for panoramic views that give the observer the greatest sense of the larger landscape. However, the effects of distance and atmospheric haze will obliterate the surface textures, detailing, and form of project components. Objects in the background will be highly visible only if they present a noticeable contrast in form or line, and when weather and lighting conditions are favorable. Most structures in typical development proposals cease to be uniquely recognizable at distances

greater than 3–5 miles. However, since wind turbines are very large and relatively simple objects, their form and color remain readily distinguishable within the midground and well beyond into the background (up to eight miles from the observer). Due to the thinness of the design, the outer ends of the turbine blades will be minimally visible in the outer portion of the background. The majority of the views of the Bull Hill Wind Project from scenic resources of state or national significance will be in the background.

B. PROJECT STUDY AREA

1. Landforms

The land within the eight mile study area is divided into two distinct physiographic areas. The southern portion is characterized by relatively low ridges surrounded by flat, poorly drained terrain. In general, elevations are typically less than 100 feet above sea level, with the exception of the mountains of Mount Desert Island and the Schoodic / Black / Tunk Mountain area, where elevations rise to over 1,000 feet. The mountains of this area, primarily in the Donnell Pond Unit, are distinctive landmarks in the area north of Mount Desert Island and include Schoodic Mountain (el. 1060), Black Mountain (el. 1094), and Tunk Mountain (el. 1140).

The northern portion of the study area contains the main stems and tributaries of the Narraguagus, Pleasant, and Machias Rivers. The topography is generally rolling, with elevations averaging 200 to 400 feet. Higher hills, such as Lead Mountain, are scattered throughout.

The Project will be built on two relatively low ridgelines (Bull Hill and Heifer Hill), with elevations between 450 and 620 feet above sea level. Neither landform has a particularly distinct profile, and both are very difficult to distinguish when seen in the background (greater than 3-5 miles).

2. Lakes and Ponds

The land between Black Mountain on the south and Lead Mountain on the north is

recognized for its abundance of water features, with 29 lakes and ponds within the 8-mile study area. Eleven of these are considered scenic resources of state or national significance: Narraguagus Lake, Upper Lead Mountain Pond, Middle Lead Mountain Pond, Lower Lead Mountain Pond, Myrick Lake, Fox Pond, Little Long Pond, Tilden Pond, Spring River Lake, Tunk Lake, and Donnell Pond. The Project will be visible from three of them, i.e., Narraguagus Lake, Myrick Lake, and Donnell Pond.

3. Vegetation

The predominant forest cover in the study area is mixed second growth softwood/hardwoods that is either privately owned or part of the Donnell Pond Unit of the Maine Public Reserve Land. Much of the study area is actively being used for timber production.

4. Cultural Features

Population Centers**:** Eastbrook (population 370) is the only population center within the study area. The community is composed of many neighborhoods, with the majority concentrated on the shores of Molasses Pond. The only structure on the National Register of Historic Places, the Eastbrook Baptist Church and Town House, is located at the junction of Route 200 and the Molasses Pond Road 5 miles west of the Project. The Project will be visible from many locations within the community, especially on the western and southern shores of Molasses Pond, where the closest turbines will be 3± miles to the east. These are not, however, scenic resources of state or national significance.

Lakeside cottages are found in dense clusters on significant portions of the shoreline on Molasses Pond, Webb Lake, Spectacle Pond, Georges Pond, Abrams Pond, and Upper Lead Mountain Pond. Turbines will be visible from several of these areas, as indicated on the

Viewshed Maps, which are attached as Exhibits 1 and 2[3]. Additionally, small clusters of cottages in concentrated areas are found on Lower and Middle Lead Mountain Ponds, Donnell Pond, Spring River Lake, and Tunk Lake. Many of the smaller ponds are either undeveloped or have very few cottages; these include Fox Pond, Tilden Pond, Little Long Lake Pond, Narraguagus Lake, and Myrick Lake. With few exceptions, turbines will not be visible from the cottages on these lakes.

Recreational areas and facilities include the Donnell Pond Unit of the Maine Public Reserve Land, which features boat launches, camping areas, beaches, picnic areas, and hiking trails (see description below); a public beach on Molasses Pond; public boat launches on most of the larger waterbodies, including Donnell Pond, Fox Pond, Tunk Lake, Long Pond, Georges Pond, Molasses Pond, Scammon Pond, Webb Pond, Spectacle Pond, Rocky Pond, Lower Lead Mountain Lake, and Upper Lead Mountain Lake. The recreational areas within the Donnell Pond Unit are the only scenic resources of state or national significance that will have views of the Project.

Scenic Byways: Route 182, connecting the towns of Franklin and Cherryfield, has been designated as the Blackwoods Scenic Byway by the Maine Department of Transportation. While several miles of the byway are located in the southern part of the study area, there are no scenic turnouts that have been constructed by the Maine Department of Transportation with views of the Project. There are no views of the Project from the Scenic Byway throughout its length due to screening of intervening topography and roadside vegetation.

[3] A correction to the Viewshed Map F contained in the Application was made to depict the proper visibility from Spectacle Pond (although not a resource of state or national significance) and provided to Project Manager Murphy and Dr. Palmer on March 4, 2011.

Multi-use trail**:** A short section of the recently completed 87-mile Down East Sunrise Trail is located in the southern part of the study area. There will be no views of the Project from the trail due to topography and vegetation.

Designated snowmobile trails**:** According to Maine Snowmobile Trails, the only portion of the Interconnected Trail System (ITS) in or near the study area is ITS 81, which parallels the Narraguagus River between Beddington and Cherryfield. Most of this segment is at least 8 miles from the Project. Turbines are not expected to be visible from any portion of the ITS.

C. PROJECT COMPONENTS

1. Generating Facilities

Wind Turbines

A total of 19 turbines will be installed in two distinct strings, both located in Township 16 MD ("T16"). The northern group of 10 turbines will run in a northeast/southwest direction on 1.5 miles of Bull Hill in the northwest corner of Township 16 MD. The southern group of 9 turbines will run in a north/south direction on Heifer Hill and in northeast/southwest direction on Beech Knoll. The length of the southern string is approximately 2.2 miles.

The turbines will be Vestas V100-1.8 MW machines, with a 95-meter hub height (317 feet), a 100-meter rotor diameter (328 feet), and a maximum tip-of-blade height of 145 meters (476 feet). Turbines will be located at elevations between 388 and 620 feet above sea level.

All components of the turbine will be painted white. Turbine contrast and visibility is a highly variable phenomenon; turbines can appear to change from dark gray to a shade that almost matches the background sky, depending upon the time of day, orientation of the viewer, atmospheric conditions, and weather. In the midground and background viewing distances (greater than five miles) where the Project will typically be seen, the turbines will appear as light gray due to the effects of atmospheric perspective, especially on hazy or overcast days.

Turbine Lighting

Lighting for the Project will follow the Federal Aviation Administration (FAA) recommendations for aviation safety. Red lights will be mounted on the top of some of the nacelles in accordance with an FAA approved lighting design. Under normal operations, the lights will be synchronous, red, flashing, with a slow-on, slow-off profile. The permanent meteorological towers will also have FAA approved lighting. Turbine warning lights are designed to be brightest when viewed from above or at the same horizontal plane to make them most apparent to pilots. Importantly, because nighttime lighting is required by FAA regulation to concentrate emitted light to a beam that is 3± degrees of horizontal, the intensity of the light diminishes below the horizon, which minimizes impacts on surrounding land uses.

2. Associated Facilities[4]

Access Roads

A network of existing haul roads on the property will be utilized. In addition, there are several on-site gravel pits that were used for previous road construction and will be available for the Project.

Each wind turbine will be linked by a 36 foot± wide gravel road designed to provide safe access for the construction crane to reach the turbine site throughout the installation process. In some instances the topography will dictate a circuitous route to accommodate the engineering requirements of the installation equipment and minimize site disturbance. In most locations the access roads will be screened by existing vegetation and will not be highly visible from outside the immediate area.

[4] All simulations included in the VIA, Appendix C and attached to this testimony, have taken the associated facilities into account.

Crane Pads and Crane Assembly Areas

A cleared and level pad area averaging one acre in size will be required at the base of each turbine for staging, crane movement, and turbine installation. Additional clearing may be needed in some areas to account for cut/fill slopes. Following construction the majority of crane assembly and turbine pad areas will be allowed to naturally revegetate.

Meteorological Towers

The two towers that have been erected on the site to gather meteorological data are temporary and will be removed within one year of turbine construction. Up to three 95 meter (312 feet) temporary towers will be installed during construction, and up to three permanent 95 meter towers will be installed on the site and remain for the life of the Project. These towers will be lighted according to FAA requirements. The towers are expected to be of a guyed lattice construction with a triangular cross section approximately 18 inches across. Their slim profile and light color will greatly reduce their visibility at distances greater than one mile.

Operations and Maintenance Facility

An operations and maintenance (O&M) facility will be constructed on the property between Bull Hill and Heifer Hill. The facility will consist of a single-story building containing a warehouse and office and a small parking area. The building will be served by on-site water and septic. It will have a dark roof and be painted a neutral color to minimize contrast in color. It will not be visible from outside the immediate area or from any scenic resources of state or national significance.

D. VISUAL IMPACTS ON SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE

There are fifteen scenic resources of state or national significance within the eight mile study area: Eleven Great Ponds with outstanding or significant scenic values, one site on the

National Register of Historic Places, two designated scenic viewpoints on Maine Public Reserved Land, and one ranked scenic viewpoint within the coastal area. Eight of the Great Ponds and the National Register Site (Eastbrook Baptist Church and Town House) will not have any views of the Project.[5]

Table 1: Scenic Resources of State or National Significance in Study Area

Scenic Resource of State or National Significance	Resource Category	Distance to Nearest Turbine	Turbines Visible[6]
Within 3 miles			
Narraguagus Lake	Great Pond	2.0	19
Within 8 miles			
Eastbrook Baptist Church / Townhouse	Historic Site	5.0	0
Donnell Pond	Great Pond	5.2	9
Fox Pond	Great Pond	5.1	0
Little Long Pond	Great Pond	5.4	0
Lower Lead Mountain Pond	Great Pond	7.6	0
Middle Lead Mountain Pond	Great Pond	8.0	0
Myrick Lake	Great Pond	4.6	6
Spring River Lake	Great Pond	5.8	0
Tilden Pond	Great Pond	5.8	0
Tunk Lake	Great Pond	7.2	0
Upper Lead Mountain Pond	Great Pond	7.0	0
Black Mountain	Public Reserve Land	7.8	5
Schoodic Beach	Public Reserve Land	8.0	2
Tunk Mountain	Coastal Viewpoint	4.9	19

For each of the scenic resources of state or national significance with views of the Project, the VIA evaluated the following criteria, taken from the Wind Energy Act:

- **Context**. *The existing character of the surrounding area and the context of the proposed activity*. (§ 3452.3.B and 3452.3.D).
- **Significance**. *The significance of the potentially affected scenic resource of state or national significance.* (§ 3452.3.A).
- **Public Uses**. *The extent, nature and duration of potentially affected public uses of the scenic resource of state or national significance.* (§ 3452.3.E).
- **Viewer Expectations**. *The expectations of the typical viewer* who would be using or enjoying the scenic resource of state or national significance. (§ 3452.3.C).

[5] Route 182, connecting the towns of Franklin and Cherryfield, has been designated as the Blackwoods Scenic Byway by the Maine Department of Transportation (MDOT). While several miles of the byway are located in the southern part of the study area, there are no MDOT scenic turnouts that will have views of the Project.

[6] Only turbines within eight miles are included in this column.

- **Project Impact**. *The scope and scale of the potential effect of views of the Project on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or national significance, the distance from the scenic resource of state or national significance, and the effect of prominent features of the development on the landscape.* (§ 3452.3.F).
- **Potential Effect on Public Use**. *The potential effect of the generating facilities' presence on the public's continued use and enjoyment of the scenic resource of state or national significance.* (§ 3452.3.E).
- **Conclusion**. *A determination of whether the development significantly compromises views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the scenic resource of state or national significance.* (§ 3452.1).

A summary of the impacts to these resources follows:

1. Narraguagus Lake

Context. Narraguagus Lake (426 acres, elevation 224) is located 2.0 miles southeast of the Project. Heifer Hill and Bull Hill are typical of the low hills that partially surround the lake, create an undulating sense of enclosure throughout much of its length. The most distinctive landform visible from the lake is the partially bald face of Tunk Mountain (el. 1157), 2.3 miles to the southeast. While the majority of the shoreline is undeveloped, there are half a dozen cottages on the northwestern corner and western shoreline, facing Tunk Mountain, accessed from a logging road on the west side of the lake. Most of the area surrounding Narraguagus Lake is either private timberland or held by The Nature Conservancy. Ongoing commercial logging operations have created a network of roads within 0.5 miles of the waterfront on the west, south, and east sides.

Significance. The Maine Wildlands Lakes Assessment notes that the lake is accessible and undeveloped and received a resource rating of 'significant' for its scenic resources. The Assessment assigned Narraguagus Lake to Resource Class 1B.[7]

[7] Lakes and ponds in Resource Class 1B are lakes of statewide significance with a single outstanding natural value.

Prior to the publication of the Maine Wildlands Lakes Assessment, the State Planning Office issued the Scenic Lakes Character Evaluation in Maine's Unorganized Towns, which evaluated the scenic characteristics of all 1,509 lakes and ponds (with a surface area greater than 10 acres) in LURC territory. The Evaluation was based on six criteria: relief, physical features, shoreline configuration, vegetation diversity, special features, and inharmonious development. A point system was developed to assign a rating to each of the criteria, depending upon their presence in the landscape. The table on the following page provides a short description of each of the criteria and summarizes the findings for Narraguagus Lake[8].

A total of 118 lakes with a total of 50 or more points were identified as 'Outstanding' in the Evaluation. There were 162 lakes, including Narraguagus Lake, that achieved a score between 20 to 45 points and were identified as 'distinctive', which was the basis for the 'Significant' rating.

[8] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. The ratings in the chart – from None to High – are taken from the SPO document.

Table 2: Visual Characteristics of Narraguagus Lake

FACTOR	DEFINITION	RATING	MAX. PTS.	SCORE
Relief	Complexity of relief Dramatic relief	None	30	0
Physical Features	Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands, beaches.	Medium	25	15
Shoreline Configuration	Relative complexity of the shoreline.	Low	15	5
Vegetation Diversity	Four possible types were identified: mixed hardwood/softwoods; softwoods; marsh; super-story trees.	Medium	15	10
Special Features	Water clarity Opportunities for wildlife viewing	None	15	0
Inharmonious Development	Residential development, visible roads, powerlines, etc.	Low/None	-20	0
TOTAL				**30**

LURC's Comprehensive Land Use Plan includes Narraguagus Lake in Management Class 7, which consists of all lakes not classified into the other six management classes, including many lakes that have multiple outstanding or significant resource values identified in the Wildlands Lake Assessment. LURC's management objectives for lakes in Class 7 call for multiple uses, including resource conservation, recreation, and timber production, giving specific consideration to identified resource values when evaluating the merits of lake-related rezoning and permit applications

Public Uses. Public recreational use of the lake is expected to be very light, due to the lack of formal public access and the rough condition of the nearby roads. Those who do use the lake enjoy boating, fishing, swimming, and seasonal camps. Boat access to the lake is limited to informal hand-carry put-ins. While the majority of the shoreline is undeveloped, there are half a dozen cottages on the northwestern corner and western shoreline, facing Tunk Mountain, accessed from a logging road on the west side of the lake. Most of the area surrounding Narraguagus Lake is either private timberland or held by The Nature Conservancy.

Viewer Expectations. People who use Narraguagus Lake are expected to have moderate to high expectations of scenic quality, since the majority of the lakefront is undeveloped. The expectation may be tempered by the occasional sounds of heavy logging equipment on the land surrounding the lake. Ongoing commercial logging operations have created a network of roads within 0.5 miles of the waterfront on the west, south, and east sides.

Visual Impact. The viewshed maps indicate most of the 19 turbines will be seen in the north-northwest over the majority of the lake, at distances ranging from 2 to 6 miles, over a horizontal arc of 17º to 25º. This represents approximately 5 - 7% of the 360-degree view that a person would see from a midpoint on the lake. The majority of views will not include turbines or camps, thus preserving much of the undeveloped, high scenic quality of the viewer experience. Photosimulation 1 illustrates the visual impact of the Project on Narraguagus Lake and is attached hereto as Exhibit 3. The photosimulation is based on a photograph taken from a point near the southeastern end of the lake, where 19 turbines will be visible on the horizon. The turbines will not be visible from the camps on the northwestern shore of the lake. The red warning lights on the turbines will be visible above the horizon from much of the lake during the evening and nighttime hours, with the exception of the populated cove at the northwestern end. The presence of the turbines will not have an effect on the lake's physical features or its vegetation diversity, characteristics that gave it the majority of the points in the Scenic Lakes Character Evaluation (summarized in Table 2).

Potential Effect on Public Use. The primary impact will be on the relatively low number of people who fish or boat on the lake. The presence of the turbines will have an effect on the character of Narraguagus Lake by introducing man-made elements in a portion of the view within a largely natural landscape. The turbines will occupy a small percentage of the views of

the surrounding low hills and they will not be seen in conjunction with Tunk Mountain to the southeast.

Conclusion. The Project will occupy a prominent position above the northwestern shoreline of the lake, where all 19 turbines will be visible. There are several moderating circumstances which affect the overall scenic impact: the turbines will not interfere with the southerly view toward Tunk Mountain, which is the focal point of the lake; there are relatively few people who use the lake; there is no public access to the water; and the rating for the lake in the Wildlands Lake Assessment is relatively low. The Project should not have an unreasonable adverse effect on its scenic character or the recreational uses related to the scenic character of the lake.

2. Myrick Lake

Context. Myrick Lake (45 acres, elevation 236) is a small remote waterbody 4.6 miles southeast of the Project. The pond is located in commercial forestland, 4.5 miles from Route 182 on the Myrick Pond Road. The pond is just north of the border of the Donnell Unit Maine Public Reserve Lands. The northern part of the pond has southerly views to Tunk Mountain (el. 1,157) and several other nearby prominent hills. A few seasonal camps are located on the pond, but are very well screened and/or set back from the edge of the water.

Significance. The Maine Wildlands Lakes Assessment notes that the lake is inaccessible and developed and received a resource rating of 'significant' for its scenic resources. The Scenic Lakes Character Evaluation in Maine's Unorganized Towns assigned Myrick Lake 20 points, which was the basis for the 'Significant' rating. LURC's Comprehensive Land Use Plan includes Myrick Lake in Management Class 5: lakes approaching heavily developed status,

which is for lakes with less than 20 acres or 1,000 feet of frontage per dwelling unit taken as an average around the entire lake.

Table 3: Visual Characteristics of Myrick Lake

FACTOR	DEFINITION	RATING	MAX. PTS.	SCORE
Relief	Complexity of relief Dramatic relief	Low	30	10
Physical Features	Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands, beaches.	None	25	0
Shoreline Configuration	Relative complexity of the shoreline.	Low	15	5
Vegetation Diversity	Four possible types were identified: mixed hardwood/softwoods; softwoods; marsh; super-story trees.	Low	15	5
Special Features	Water clarity Opportunities for wildlife viewing	None	15	0
Inharmonious Development	Residential development, visible roads, powerlines, etc.	Low/None	-20	0
TOTAL				**20**

Public Uses. Recreational uses of Myrick Lake include boating, fishing, ice fishing, swimming, and seasonal camps. The use of the lake is limited by lack of formal access. Several seasonal camps are located on the pond at the north and southern end.

Viewer Expectations. People who use Myrick Lake are expected to have high expectations of scenic quality, given the remote nature of the pond, the lack of obvious human intrusions, and the access off Route 182 (Blackwoods Scenic Byway).

Project Impact. The Viewshed Map indicates that 6± of the turbines may be visible at the extreme southern end of the pond, over an arc of 11º. By taking existing vegetation into account, it appears that the tops of a few turbines may be visible from the southern portion of the lake; more may be visible during the leaf-off seasons. Several of the turbine lights may be visible, filtered through the upper branches of the shoreline trees. The presence of the turbines would result in a low to moderate level of visibility.

Potential Effect on Public Use. Since the turbines are not expected to be highly visible, their presence (if seen at all), should not have a significant effect on the public use of Myrick Lake.

Conclusion. There are several moderating circumstances which affect the overall scenic impact on Myrick Lake: the turbines will not be visible from the majority of the waterbody; where the Project is visible, a relatively few number of turbines will be seen at a distance of more than 4.6 miles; there are relatively few people who use the pond; there is no public access to the water; and the rating for the lake in the Wildlands Lake Assessment is very low. The Bull Hill Wind Project will not significantly compromise views from Myrick Lake. The Project will not have an unreasonable adverse effect on its scenic character or the uses related to the scenic character of the pond.

3. Donnell Pond

Context. Donnell Pond (1,120 acres) is the second largest of the 14 lakes and ponds in the Donnell Pond Unit. (The largest is Tunk Lake at 2,010 acres.) At its closest point, Donnell Pond is located 5.3 miles from the nearest turbine. Most of the pond is located in T9 SD; a small portion (near the boat launch at Card Mill) is located in the town of Franklin. The lake is pinwheel-shaped, with three main fingers. The western portion is the most heavily developed, with camps lining a narrow cove that terminates at a small dam and the boat launch. The northern section is composed of 'the Narrows,' which leads into Martin Ridge Cove, where a dozen camps and other structures are located. Recreational facilities are concentrated at the southern end, with very popular campsites, beaches, and picnic areas with views of Schoodic Mountain and Black Mountain.

According to the Downeast Region Management Plan, 86% of the shoreline is within the Donnell Pond Unit. Eight miles (66% of the shoreline) is held in fee by the Department of Conservation; another 3.4 miles (20% of the shoreline) is protected by a scenic easement. According to the Management Plan, "The extensive sand beaches of Donnell Pond make this area an increasingly popular destination for day users and campers. A combination of scenic surroundings and the pond's popularity for boating provide an attractive setting for camping and day use, and give this area a quality and experience often sought after within Maine's State Park system."[9]

The view from the surface of Donnell Pond is very dynamic, i.e., the profile of the hills and mountains rising above the shoreline constantly changes as the viewer moves, unfolding and closing views to more distant points in a matter of a few hundred yards. The mature pines along the shoreline and on the islands also contribute to the complexity of the viewing experience by screening more distant views.

Significance. Notwithstanding the camps noted above, the Maine Wildlands Lakes Assessment notes that the lake is accessible and undeveloped and received a resource rating of 'outstanding' for its scenic resources. The Assessment assigned Donnell Pond to Resource Class 1A. The Scenic Lakes Character Evaluation in Maine's Unorganized Towns, assigned Donnell Pond 60 points, which was the basis for the rating of 'Outstanding' (50 points is the minimum score to be considered 'Outstanding'; ponds that achieved a score between 20 and 45 are considered 'Significant'). The following table provides a short description of each of the criteria

[9] Downeast Region Management Plan, Maine Department of Conservation, Bureau of Parks and Lands, Augusta, Maine. March 2007.

and summarizes the findings for Donnell Pond [10]:

Table 4: Visual Characteristics of Donnell Pond

FACTOR	DEFINITION	RATING	MAX. PTS.	SCORE
Relief	Complexity of relief Dramatic relief	Medium	30	20
Physical Features	Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands, beaches.	High	25	25
Shoreline Configuration	Relative complexity of the shoreline.	Medium	15	10
Vegetation Diversity	Four possible types were identified: mixed hardwood/softwoods; softwoods; marsh; super-story trees.	None	15	0
Special Features	Water clarity Opportunities for wildlife viewing	Medium	15	10
Inharmonious Development	Residential development, visible roads, powerlines, etc.	Medium	-20[11]	-5
TOTAL				**60**

LURC's Comprehensive Land Use Plan includes Donnell Pond in Management Class 4, high value, developed lakes. The criteria for this class is two or more outstanding resource values; accessible to within 1/4 mile by 2 wheel drive vehicles; more than one development unit per mile; not included in Management Class 3 (potentially suitable for development).

The significance of Donnell Pond is described in Maine's Finest Lakes:

> ***Summary of Significance****: Donnell Pond is considered an exceptional resource, with outstanding fisheries, scenic qualities, and shore characteristics, and significant cultural values.*
>
> ***General Description****: This pristine lake is located in the Ellsworth area of eastern Maine, nestled at the base of several scenic coastal mountains, but easily accessed from Route 182. In 1988, much of the area around the pond was purchased by the State due to its significance as a natural resource. There were*

[10] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. The ratings in the chart – from None to High – are taken from the SPO document. Individual scores for most categories are assumed.

[11] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. 20 Points were deducted for lakes with drastic changes in water levels; 10 points were deducted if inharmonious development was rated as 'high'; 5 points were deducted if inharmonious development was rated as 'medium'.

five seasonal dwellings on the pond as of 1988. Maximum depth is 119 feet and average depth is 33 feet.

Description of Significant Resource Features: *Scenic: Dramatic relief, numerous sand beaches, boulders, and islands combine to make this an outstanding scenic resource. Shore Character: The shore character of Donnell Pond is considered outstanding because of the many natural beaches dominating the shoreline.*[12]

Public Uses. The Management Plan contains the following description of the Donnell Pond Unit (it should be noted that not all of Donnell Pond is within the Maine Public Reserved Land and is beyond the land use controls of the Bureau of Parks and Lands). *"The Donnell Pond Unit offers excellent opportunities for remote and semi-remote recreational experiences. The quality of the lakes and ponds, along with its miles of undeveloped shoreline, sand beaches, hiking trails, and campsites in scenic surroundings combine to make this Unit of high recreational value for a variety of users. The recreation management goal for the Unit has been to maintain its remote to semi-remote natural character, while developing and maintaining facilities and opportunities that best take advantage of these attributes. The extensive sand beaches of Donnell Pond make this area an increasingly popular destination for day users and campers. A combination of scenic surroundings and the pond's popularity for boating provide an attractive setting for camping and day use, and give this area a quality and experience often sought after within Maine's State Park system.*[13]"

Boating. Boat access is provided at the Card Mill boat launching site at the western end of the pond. This is a basic facility with a gravel ramp suitable for trailered boats, a parking area for 20± vehicles, an information kiosk, and an outhouse. Personal watercraft are prohibited on Donnell Pond. The popularity of the lake for boating is summarized in the Management Plan, which notes "it is not unusual during the spring, summer, and fall seasons to see overflow parking along the access road to this site. Acquisition and site improvement to this site took

[12] Maine's Finest Lakes: The Results of the Maine Lakes Study. Drew Parkin and John Lortie et al. A Report Prepared for the Maine Critical Areas Program, State Planning Office. Planning Report No. 90. October 1989.

[13] Downeast Region Management Plan, Maine Department of Conservation, Bureau of Parks and Lands, Augusta, Maine. March 2007.

place in 2000."[14] The Project would not be visible from the boat launch.

Camping. A total of 14 water-access campsites are located on Donnell Pond[15], all in the southerly 'finger' of the pond. The Project will not be visible from any of these campsites, due to their orientation, topography, and riparian vegetation.

Swimming/Picnicking. Donnell Pond is noted for its many natural beaches that are located on the shoreline. Schoodic Beach, at the southern end of the pond, is a popular destination for swimming, picnicking, and camping. As seen in Photosimulation 6, attached as Exhibit 4, the tops of two of the turbines would be visible from the western end of the beach, at a distance of 8.01 miles. No turbines would be visible from the eastern 2/3rds of the beach, which includes a group camping area, individual campsites, and an information kiosk. The Project will not be visible from Redmans Beach, another popular destination on the northern end of the southerly 'finger'.

Seasonal Camps. Camps are concentrated in two locations on the pond. The largest group is at Card Mill on the western end of the pond, where 50± camps are situated on both sides of the extended cove that terminates at the boat launch. The second group of camps is located on the northern end of the pond in Martin Ridge Cove. The 12± camps and larger structures are highly visible from the northern portion of the pond. The Project will not be visible from the majority of these camps.

Viewer Expectations. People who use Donnell Pond are anticipated to have high expectations of natural scenic quality, mixed with human development and man-made intrusion given the highly visible cottages and docks along the shoreline near the boat access in Franklin

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[14] Downeast Region Management Plan, Maine Department of Conservation, Bureau of Parks and Lands, Augusta, Maine. March 2007.

[15] Ibid.

and in Martin Ridge Cove, the relative ease of access, and the amount of use that the pond receives. As noted above, the Management Plan says "the extensive sand beaches of Donnell Pond make this area an increasingly popular destination for day users and campers. A combination of scenic surroundings and the pond's popularity for boating provides an attractive setting for camping and day use, and gives this area a quality and experience often sought after within Maine's State Park system.[16]" As a way of illustrating the pond's popularity and use patterns, the Management Plan includes a photograph of Schoodic Beach with a floatplane and several motorboats at the water's edge.

Visual Impact. The viewshed maps indicate that between 1 and 9 turbines within 8 miles may be visible to the north from the Narrows south to a point near the western end of Schoodic Beach over an arc of 7-8º. Between 1-5 turbines may be visible at a distance of over five miles from a few locations in Martin Ridge Cove at the northern end of the pond. Based upon the viewshed maps, at least one turbine within 8 miles would be visible from approximately 19% of the surface of the lake. The greatest number of turbines within eight miles would be seen at the southern end of the pond, where between 6 and 9 turbines would be visible in a narrow north-south area near the western shoreline. (See Exhibit 1 Viewshed Map E and Exhibit 2 Viewshed Map F.) This situation occurs on approximately 1% of the surface of the pond.

Photosimulations 4 and 5 illustrate the visual impact of the Project on Donnell Pond and are attached hereto as Exhibits 5 and 6, respectively. Photosimulation 4 is based on photographs taken on the water from a point near the southeastern end of the lake, north of Schoodic Beach, where up to 9 turbines within 8 miles will be visible. From this location, the turbines would be seen in conjunction with a series of low hills that rise over the pond at its far northern end.

[16] Downeast Region Management Plan, Maine Department of Conservation, Bureau of Parks and Lands, Augusta, Maine. March 2007.

While the turbines are clearly visible from this vantage point, they appear smaller than the surrounding hills and would not be a dominant part of the landscape.

Photosimulation 5 is based on photographs taken from a point 225 feet north of Cape Rosier Point looking north up the Narrows. From this location up to 4 turbines would be seen to the left of a small hill on the west side of Otter Bog Mountain at a distance of at least 6.8 miles. Even though the viewpoint is closer than Photosimulation 4, the turbines would be less visible due to the intervening landforms and the vegetation on the hills near the water.

The red warning lights on several of the turbines will be visible from various points on the pond at distances of 5.6 to 8 miles. The lights will appear very low to the horizon and occupy an arc of 7-8º (approximately four thumb widths, seen at arms length). The lights will not be visible from any of the shoreline campsites, which are all oriented away from the Project. One light will be visible from the western end of Schoodic Beach at the southern end of Donnell Pond (at 8.0 miles) where a lit communications tower is already present.

The presence of the turbines will have an effect on the character of Donnell Pond by introducing additional man-made elements in a largely natural landscape and present a contrast in form, line, and color. At viewing distance of 5.6 to 8 miles, the turbines will appear to be relatively small when compared with the surrounding mountains and should not present an unacceptable contrast in scale. The turbines are located in a northerly viewing direction that includes existing man made features, such as seasonal camps and a communication tower on Martin Ridge. Where the turbines are visible, they primarily appear between small hills and mountains, and not on the more prominent ridgelines. The turbines will not block views of the surrounding mountains from any point on Donnell Pond.

Potential Effect on Public Use. The primary impact will be on people who fish or boat on the lake. To gain a better understanding of public use of the Donnell Pond Unit and public reaction to the proposed Project, Market Decisions, a market research and survey firm in Portland, Maine, was engaged to develop and conduct a survey of recreational users and to evaluate the results. Market Decisions interviewed 81 people during the three-day Columbus Day weekend 2010 (October 9, 10, 11), and administered a relatively short (27-question) survey. During this period these people were intercepted in two locations (the Schoodic Beach parking area and on top of Black Mountain).

To gain a perspective on Donnell Pond specifically, interviewees were asked to rate a photograph of the view from the southerly end of Donnell Pond looking north, toward the center of the pond. They were then asked to rate the same view, but this time with a photosimulation of the Bull Hill Wind Project. The photosimulation was developed from a point on the pond where the most number of turbines would be visible according to the Viewshed Maps. In the photosimulation eleven turbines are fully or partially visible at a distance of 7.7± miles.

Most respondents (78%) indicated that the addition of the Project to the view would not affect their use of Donnell Pond for water activities such as boating, canoeing, kayaking, swimming, or fishing. In addition, 4% of the respondents indicated that they would more likely return to Donnell Pond for water activities, while 3% said that they would be less likely to return for water activities.

The addition of the Project to the view dropped the respondents' rating of the scenic value of the view from Donnell Pond from 5.50 to 4.62 on a 7-point scale (where 7 is the highest scenic quality). Once they were shown the photosimulation, 51% of those interviewed did not change their ratings of the scenic value of the pond.

Conclusion. The Bull Hill Wind Project will have an adverse effect on the views from Donnell Pond by introducing additional man-made elements in the background of a generally natural, highly scenic landscape. However, the change will be noticeable over a relatively small portion of the pond (approximately 1/5th) and only by those heading toward the Project. Additionally, most of the turbines will be seen at distances of greater than 7 miles, thus minimizing their relative size and overall significance. The turbines will be seen in the context of a landscape that also now includes a communications tower, shoreline development, and other forms of development. The presence of the turbines will not have an unreasonable adverse effect on the scenic character or the uses related to the scenic character of Donnell Pond.

4. Donnell Pond Unit, Maine Public Reserve Land

Context. The Donnell Pond Unit, located between 2 and 8+ miles to the southeast of the Project, is a Maine Public Reserve Land that is comprised of 15,384 acres of remote forest land. It is known for its wooded lakes, secluded ponds, and relatively low mountains that afford panoramic views of the coastline and surrounding landscape. The Maine Public Reserve Lands are actively managed for a variety of resource values, including recreation, wildlife, and timber.

The terrain in the Unit is generally rolling to mountainous, with much of the lowlands being wetlands and open water. Approximately 91% of the Unit is forested. The highest peaks in the Unit are found on Black Mountain (1,049 and 1,094 feet) and Schoodic Mountain (1,060 feet). The summit of Tunk Mountain (1,140 feet) is located on private land and is described in Section 6.H below.

TJD&A visited Schoodic Mountain (beyond the eight-mile limit), both peaks of Black Mountain, Tunk Mountain, Caribou Mountain, and Fiery Mountain. These peaks were considered to be characteristic of the hiking experience within the study area. Many of the other peaks in the Unit have limited or no access or are lower in elevation.

Significance. The Department of Conservation's website describes the Donnell Pond Unit as: "more than 14,000 acres of remote forested land with crystal clear lakes, secluded ponds, and mountains with panoramic views. Located in Hancock County between Franklin and Cherryfield, this is where visitors can enjoy outdoor recreation in a scenic, remote setting."

The Downeast Management Plan recognizes the scenic quality throughout the Unit as a valuable resource that needs to be considered in any management decisions related to land use activities. The ridgelines and low mountains that characterize the area offer panoramic views of coastal bays and islands, lakes, ponds, cliffs, and forestland, often extending well beyond the Unit. The mountains within and near the Unit offer a recreation experience that is easily accessible to visitors to the Bar Harbor / Downeast region of Maine. The peaks are low enough for families to enjoy while offering a rewarding experience, both along the trails and at the summits.

Public Uses. A developed network of hiking trails is found throughout the Unit, centered on the Schoodic Beach parking area. The Management Plan notes that there is significant potential to expand the trail system and to further interconnect many of the mountains. A total of 15 miles of designated trails currently exist, with the potential to add an additional 15 miles in the future.

A three-day intercept survey was performed by Market Decisions over the Columbus Day weekend to gain a perspective on recreational use in the Donnell Pond Unit. Interviewees were asked a series of questions regarding their use of the mountains in the Unit, and more specifically Black Mountain. This mountain was selected for a number of reasons: the top of Schoodic Mountain, the most popular peak in the Donnell Pond Unit, is greater than eight miles from the Project; Black Mountain is considered a similar experience in terms of view and hiking time;

there are multiple trails to the summit of Black Mountain; trailheads are easy to find; and parking is adequate. Market Decisions was also looking for a viewpoint that was reasonably well used in order to generate a representative sampling of recreational users in the Donnell Pond Unit.

The intercept survey supports the Management Plan's observations about the relative popularity of Schoodic Mountain. It is clear from the width and condition of the trails that Schoodic receives far more visitor use than either Black Mountain or Tunk Mountain.

Viewer Expectations. People who hike Black Mountain are expected to have high expectations of scenic quality, given the quality of the trail ascending the mountain, the generally undeveloped nature of the lakes visible from the summit, the nearby Scenic Byway, the description of the Donnell Pond Unit on the State's web page, and the designation as Maine Public Reserve Land. The AMC Maine Mountain Guide provides a description of the hike up Black Mountain: "The easternmost and highest peak of Black Mtn. (is) known locally as Bald Peak, it has beautiful 360-degree views of Downeast Maine."[17]

When asked about their reasons for being in the Donnell Pond Unit during the Market Decisions intercept survey, people offered a wide range of reasons, including hiking, foliage watching, spending time with family and company, enjoying the views, and exercise. While many people reported that the view was a reason for being in the Donnell Pond Unit, it was not the reason most often given.

People who participated in the survey were asked to rate the views from the summit of Black Mountain looking both north (inland, toward Bull Hill and Narraguagus Lake) and south (toward the ocean and Mount Desert Island). On a seven point scale (where 1 is the lowest scenic value and 7 is the highest), the view to the north was rated a 6.26, while the view to the south rated an average of 6.93.

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[17] Maine Mountain Guide, 9th Edition. Appalachian Mountain Club. Boston. 2005.

Project Impacts. Photosimulation [18]3 from Black Mountain, attached as Exhibit 7, indicates that all 19 turbines would be visible from the summit over an arc of 11º at distances ranging from 7.9 to 10.4 miles. Of these, five turbines would be located within 8 miles and would occupy an arc of 6º (or 1.7% of the total 360º view).

The presence of the turbines will have an adverse effect on the view from the summit of Black Mountain by introducing man-made elements in a largely natural landscape and present a contrast in form, line, and color. At a viewing distance of 7.9 to 8.0 miles, the turbines will appear to be relatively small when compared with the surrounding low hills and background mountains and should not present an unacceptable contrast in scale. The turbines will be seen in a broad valley to the north and will not block views of the surrounding lakes or mountains.

Potential Effect on Public Use. People interviewed on Black Mountain were asked to rate the actual view looking both north (toward the Bull Hill Wind Project) and south (toward a more complex view that extended out to the mountains of Acadia National Park and the Atlantic Ocean), and then to rate a photograph of the view looking north. They were then asked to rate the same view, but with a photosimulation of the Project in place.

The addition of the Project to the northerly view from Black Mountain dropped the respondents' rating of the scenic value of the view from 6.26 to 4.32 on a 7-point scale (an average decrease of 1.91). Forty-five percent of respondents indicated that their enjoyment of coming to Black Mountain would not be affected (rating of 4) by a change in the current views looking north that would include the proposed Project. Four percent stated the change in current views would have a very positive effect on their enjoyment (rating of 7) while 10% stated the change in current views would have a very negative effect on their enjoyment (rating of 1).

[18] The legend on Photosimulation 3 has been corrected to state the Project name. No substantive changes have been made.

Eight percent stated that the change in current views would have a negative effect on the enjoyment (rating of 2). Overall, 54% indicated that the Project would have no effect or would improve their enjoyment in returning. 47% indicated that it would negatively affect their enjoyment upon returning.

Conclusion. The Bull Hill Wind Project will have an adverse effect on the northerly views from the summit of Black Mountain, located a distance of 7.9 miles from the Project, and the views from several of the other mountains in the Donnell Pond Unit by introducing large, man-made elements in a generally natural, scenic landscape. The change will affect a relatively small portion of the 360º view that hikers can enjoy on top of Black Mountain, and will have no effect on the most highly rated view toward Mount Desert Island and Acadia National Park to the south. The Project will not affect the views from the trail leading to the eastern summit. The survey indicated that hikers considered the turbines to have a slight negative impact on their enjoyment of the view; however, just over half of the respondents also indicated that the presence of the turbines would not influence their decision to return to Black Mountain. The Project should not have an unreasonable adverse effect on the scenic character or the uses related to the scenic character of Black Mountain.

5. Tunk Mountain

Context. Tunk Mountain, located 4.9 miles from the Project, is the highest peak within the 8-mile study area. Its bald ledges and sharp profile make it an easily identified landmark in the area surrounding the Donnell Pond Unit. The southerly base of the mountain is part of the Maine Public Reserve Land; however, the summit of Tunk Mountain is held privately (The Nature Conservancy) and is not a scenic viewpoint on Public Reserved Land.

Significance. Tunk Mountain is a much more linear peak than either Black Mountain or Schoodic Mountain, and the closest significant mountain to the Project. Several trails from both

the north and south sides lead to the top. Judged by the condition of the trails, the mountain does not appear to have significant use. The majority of the open views are to the southeast to west, and include Spring River Lake at the base of the mountain and the distant peaks on Mount Desert Island. One open ledge on the north side of the mountain looks toward the Project, which will be visible at a distance of 4.9 miles to the closest turbine. This view looks out to flatter landscape, and encompasses Narraguagus Lake, Molasses Pond, and Lead Mountain in the distance. This viewpoint is also the location of a small building with a communications antenna mounted on its roof.

Tunk Mountain was inventoried as part of the Downeast Coastal Scenic Inventory and given a rating of 81 (out of a possible 100). The Inventory provides the following description of the view: "Tunk Mountain is the northernmost and highest peak in the string of mountains that make (up) the Black Woods area. The climb takes about one hour and passes several ponds, climaxing in a steep assent up a rocky face. There is a radio tower on the top that detracts somewhat from the view which is generally characterized as rustic with few imprints of man. The 360 degree view is excellent."[19]

The Maine Conservation Corps, working with BPL, is in the process of upgrading trails, improving trailheads, and providing better parking facilities for access to Tunk Mountain and Caribou Mountain.

Public Uses. Since the summit of Tunk Mountain is on private property there is no record of public use. However, it appears from the width and condition of the trails that Tunk Mountain receives far fewer visitors than either Black Mountain or Schoodic Mountain.

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[19] Downeast Coastal Scenic Inventory, Hancock and Washington Counties, Maine, prepared for the Maine State Planning Office Coastal Program by the Hancock Country Planning Commission and Washington County Council of Governments. February, 2010. Schoodic Mountain is also inventoried, but is beyond the 8-mile study area. The inventory was conducted by a volunteer reviewer who was trained by Terry DeWan.

Viewer Expectations. People who hike Tunk Mountain are expected to have high expectations of scenic quality, given the quality of the trail ascending the mountain, the generally undeveloped nature of the lakes visible from the summit, the nearby Scenic Byway, and the proximity to the Donnell Pond Unit. The AMC Maine Mountain Guide provides a description of the hike: "There is no trail on Tunk's upper part, but bushwhacking is fairly easy…Once the trail crosses by the western end of (Mud) Pond, it rises sharply and becomes much less distinct as it passes through spruce forest. Eventually it breaks onto open ledges on the slopes of the five-peaked summit ridge. The whole southern face of the mountain consists of cliffs and steep ledges. Views are limited but interesting, particularly those of Spring River Lake and the Black Hills."[20]

Project Impacts. Photosimulation 2[21] from Tunk Mountain, attached as Exhibit 8, indicates that all 19 turbines would be visible from the viewpoint on the summit with the northerly view. From this viewpoint the turbines would be visible over an arc of 22º at distances ranging from 4.9 to 7.2 miles. The Project would not be visible from any of the more prominent southerly views from the summit. The presence of the turbines will have an adverse impact on this view by introducing man-made elements in a largely natural landscape and presenting a contrast in form, line, and color. At viewing distances of 4.9 to 7.2 miles, the turbines will be highly visible when looking north. The turbines will appear to be relatively small when compared with the surrounding low hills and background mountains. The turbines will be seen in a broad valley and will not block views of the surrounding lakes or mountains.

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[20] Maine Mountain Guide, 9th Edition. Appalachian Mountain Club. Boston. 2005. Note: The Guide makes reference to a trailhead just east of Fox Pond; however, the trail is now gated with 'No Trespassing' signs.

[21] The legend on Photosimulation 2 has been corrected to state the Project name. No substantive changes have been made.

Potential Effect on Public Use. The addition of the Project to the northerly view from Tunk Mountain is expected to have an effect that is similar to, or slightly greater than (due to the increased proximity), that described above for Black Mountain, i.e., most respondents indicated that the Project would not affect their enjoyment of coming to the mountain; a small number (4%) stated the Project would have a very positive affect on their enjoyment; and 10% stated the Project would have a very negative effect on their enjoyment.

Conclusion. The Project will have an adverse effect on the northerly view from Tunk Mountain by introducing large, man-made elements in a generally natural, scenic landscape. The Project will not be visible from the majority of the overlooks on Tunk Mountain which are oriented to the south toward Frenchman Bay and the mountains of Mount Desert Island. Additionally, although the Project will be visible from viewpoints with a northerly view, the turbines will be between 4.9 and 7.2 miles away, thereby diminishing their overall significance. The Project should not have an unreasonable adverse effect on the scenic character or the uses related to the scenic character of Tunk Mountain.

E. ASSOCIATED FACILITIES

The associated facilities for the Bull Hill Wind Project include the substation and Operation and Maintenance Building, the access roads, the crane pads and crane assembly areas, and the meteorological towers. There will be no generator lead lines required and the collector system will be located underground. TJD&A reviewed the scope, scale, location, and visibility of these facilities as part of the VIA through the use of cross-sections and Google Earth computer modeling.[22] All simulations included in the VIA, Appendix C and attached to this testimony, have taken the associated facilities into account.

[22] Google Earth models are used to determine the visibility of associated facilities since WindPro is not designed to evaluate these types of facilities.

1. Transmission Line

Unlike other projects that may require long generator leads connecting the project to the electrical grid, the Bull Hill Wind Project will not require the installation of any new generator lead lines. The Project is located approximately eight miles from an existing Bangor Hydro 115 kV transmission line. The collector system from the turbines will be located underground and, therefore, not visible. These lines will transport power to the Project substation, which is located adjacent to the Bangor Hydro line. As a result, there will be no above-ground transmission lines associated with the Project.

2. Substation and Operation and Maintenance Building

The substation and operation and maintenance (O&M) building will be located immediately adjacent to Bangor Hydro Electric's Line 66 and constructed between the two turbine strings. The structures will be located well below the ridgeline of the surrounding low hills and surrounded by existing forest vegetation, making them extremely hard to see except by individuals in close proximity. The open nature of the substation components will make them very difficult to discern beyond the immediate foreground.

3. Access Roads

The majority of the roads used to access the turbine sites are existing logging roads. The additional 4.8 miles of new roads (including 3.9 miles of ridgeline roads) will be constructed within and, to the extent visible, seen as part of the existing patchwork of actively managed forestland and logging roads. Construction of the new roads will include some fill slopes, but these will be located at relatively low elevations. The access roads will not be visible from Narraguagus Lake (the closest scenic resource of state or national significance), as they will not be visible above the treetops between the lake and the Project site. Photosimulation 1 shows that

none of the associated facilities will be visible from Narraguagus Lake. Photosimulation 2 illustrates that several of the access roads will be visible from portions of Tunk Mountain, where they will be seen in context with an extensive system of haul roads that are common in the study area.

4. Crane Pads and Crane Assembly Areas

A cleared and level pad area averaging one acre in size will be required at the base of each turbine for staging, crane movement, and turbine installation. Additional clearing may be needed in some areas to account for cut/fill slopes. Following construction the majority of crane assembly and turbine pad areas will be allowed to naturally revegetate, which will reduce the contrast in color and texture. Photosimulation 2 illustrates the appearance of the crane pads after several growing seasons.

5. Meteorological Towers

Up to three 95 meter (312 feet) permanent meteorological towers will be installed on the site and remain for the life of the Project. These towers will be lighted according to FAA requirements. The towers are expected to be of a guyed lattice construction with a triangular cross section approximately 18 inches across. Their slim profile and light color will greatly reduce their visibility at distances greater than two miles. From certain vantage points (e.g., Schoodic Beach) the lit towers will be seen in conjunction with an existing communication tower.

F. SUMMARY

The Maine Wind Energy Act established several criteria to determine whether expedited wind energy development significantly compromises views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic

character or existing uses related to scenic character of the resource. The summary presented in Table 5 is based upon the information provided in the Visual Impact Assessment, the intercept survey conducted by Market Decisions, and other information on existing use patterns.[23]

The first five criteria evaluate the 8-mile study area, the immediate Project area, the quality of the resource, existing use patterns and viewer expectations, and the purpose of the Project:

1. Resource Significance: This criterion reflects the designation of scenic significance by the State or Federal Government. All the resources on the table have been identified as Scenic Areas of State or National Significance. The light gray are significant resources; medium gray are outstanding resources.

2. Character of Surrounding Area: This criterion evaluates the setting of the resource and its surrounding area. In most cases the surroundings have been noted as medium (generally of a natural condition for lakes and mountains, and of a typical Maine village condition for historic resources). The dark gray indicates high levels of landscape contrast (usually resulting from the juxtaposition of water and landforms).

3. Viewer Expectation: This criterion takes into account the designation of scenic quality by state agencies, the intrinsic character of the resource, the presence of cultural modifications, and other factors. Intercept surveys of hikers in Maine have shown that people hike for many reasons other than to enjoy the scenery.

4. Purpose and Context: This criterion is a reflection of how the Project contributes toward the state's goals for energy as per the Wind Energy Act. A medium gray color was assigned, since the Project will make a moderate contribution toward achieving the State's goals.

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[23] This section and the Summary of Evaluation Criteria is based upon the Review of the Spruce Mountain Wind Project Visual Assessment, prepared for the Maine Department of Environmental Protection by James F. Palmer, June 11, 2010.

5(a). Extent, nature & duration of uses: This criterion looks at the number of users, the potential for access (in the case of lakes and ponds), the type and extent of facilities, typical length of stay, and information from the intercept survey.

The last two criteria evaluate the possible effect that the Project may have on the use of the resource and the likely visual impacts:

5(b). Effect on continued use and enjoyment: This criterion is largely based on the intercept surveys to determine if the Project would significantly affect their continued use and enjoyment of the resource. If the Project will not be visible from the resource, the matrix is left blank (no effect). A light color indicates that the Project is not expected to have a major impact on people's continued use or enjoyment.

6. Scope and scale of Project views: This criterion looks at the number of turbines visible, their position in the landscape, the angle of view that they are seen over, and the distance from the observer. Only turbines within eight miles of the resource are considered.

If the Project is not visible from the resource, then the scenic impact is rated as "None" on Table 5. Myrick Lake is rated Low due to the low number of recreational users and difficult access. Narraguagus Lake is rated as Low tending to Medium due to the low number of users and the lack of public access, as well as the proximity and visibility of the Project. Donnell Pond is rated as Low tending to Medium due to the results of the intercept survey, the scenic quality of the place, the lack of visibility from major recreation areas, the presence of development along the shoreline, and the limited and distant visibility of the Project.

Most of the mountains have a Low Overall Scenic Impact due to their relatively low number of users and distance to the Project. Both Black Mountain and Tunk Mountain were rated as Low tending to Medium due to their greater elevations and panoramic views toward the

Project. The views from these mountains toward the Project, when present at all, are not the most significant views. The more significant southerly views, which often feature 360-degree panoramas that include Mount Desert Island, Frenchman Bay, and the nearby lakes, will not be affected by the Project.

Table 5: Summary of Evaluation Criteria

Scenic Resource of State or National Significance within 8-mile Study Area	Scenic Impact Evaluation Criteria							Overall Scenic Impact
	A: Resource Significance	B. Character of Surrounding Area	C: Viewer Expectation	D: Purpose and Context	E.1: Extent, Nature, Duration of Use	E.2: Continued Use and Enjoyment	F: Scope and Scale of Project Views	
6B Historic Sites								
Eastbrook Baptist Church and Town House								None
6D. Great Ponds								
Narraguagus Lake								Low-Medium
Upper Lead Mtn. Pond								None
Middle Lead Mtn. Pond								None
Lower Lead Mtn. Pond								None
Little Long Pond								None
Myrick Lake								Low
Spring River Lake								None
Tilden Pond								None
Tunk Lake								None
Donnell Pond								Low-Medium
6F. Scenic Viewpoints: Public Reserve Land								
Black Mountain								Low-Medium
Caribou Mountain								None
Fiery Mountain								None
6H. Coastal Viewpoints								
Tunk Mountain								Low-Medium

G. CONCLUSION

There are several scenic resources of state or national significance within the viewshed of the Bull Hill Wind Project. Within the 8-mile study area the most significant scenic resources are Donnell Pond, Narraguagus Lake, and the mountains in the Donnell Pond Unit.

Within this area, 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 this area, views of the wind turbines ("generating facilities") are blocked by topography and roadside vegetation.

The associated facilities for the Project (i.e., the access road, the underground electrical collection system, the aboveground electrical transmission line, and the O&M facility) will have limited to no impact on views from scenic resources of state or national significance. The associated facilities are located in actively managed timberland that is generally out of view from the surrounding area. The associated facilities will not be of a scope, scale, or location to cause an unreasonable adverse visual effect on the scenic character of the surrounding area.

The visual impact assessment examined the criteria established by the Maine Wind Energy Act: i.e., the context, significance, existing public use, viewer expectations, project impact, and the potential effect on public use for each of the scenic resources of state or national significance. This information was used to make a determination of 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. While scenic impacts on several of these resources is anticipated, the Bull Hill Wind Project should not

have an unreasonable adverse impact on scenic values and existing uses of scenic resources of state or national significance.

Date: 4/21/11

Terrence DeWan

STATE OF MAINE
County of Cumberland

Date: April 21, 2011

Personally appeared before me the above named Terrence DeWan, who, being duly sworn, did testify that the foregoing testimony was true and correct to the best of his knowledge and belief.

Before me,

Notary Public

My commission expires:

RUTH A. BENNETT
Notary Public, Maine
My Commission Expires November 15, 2013

DeWan Pre-Filed Direct Testimony Exhibits

Exhibit 1: Viewshed Map E

Exhibit 2: Viewshed Map F

Exhibit 3: Photosimulation 1

Exhibit 4: Photosimulation 6

Exhibit 5: Photosimulation 4

Exhibit 6: Photosimulation 5

Exhibit 7: Photosimulation 3

Exhibit 8: Photosimulation 2

Exhibit 9: Dewan Resume

NOTE: Viewshed mapping is a preliminary means of visual analysis. While beneficial for preliminary orientation and investigation, viewshed maps are not a definitive indication of visibility. Potential visibility was confirmed through cross sectional analysis, field investigation, and other visualization techniques.

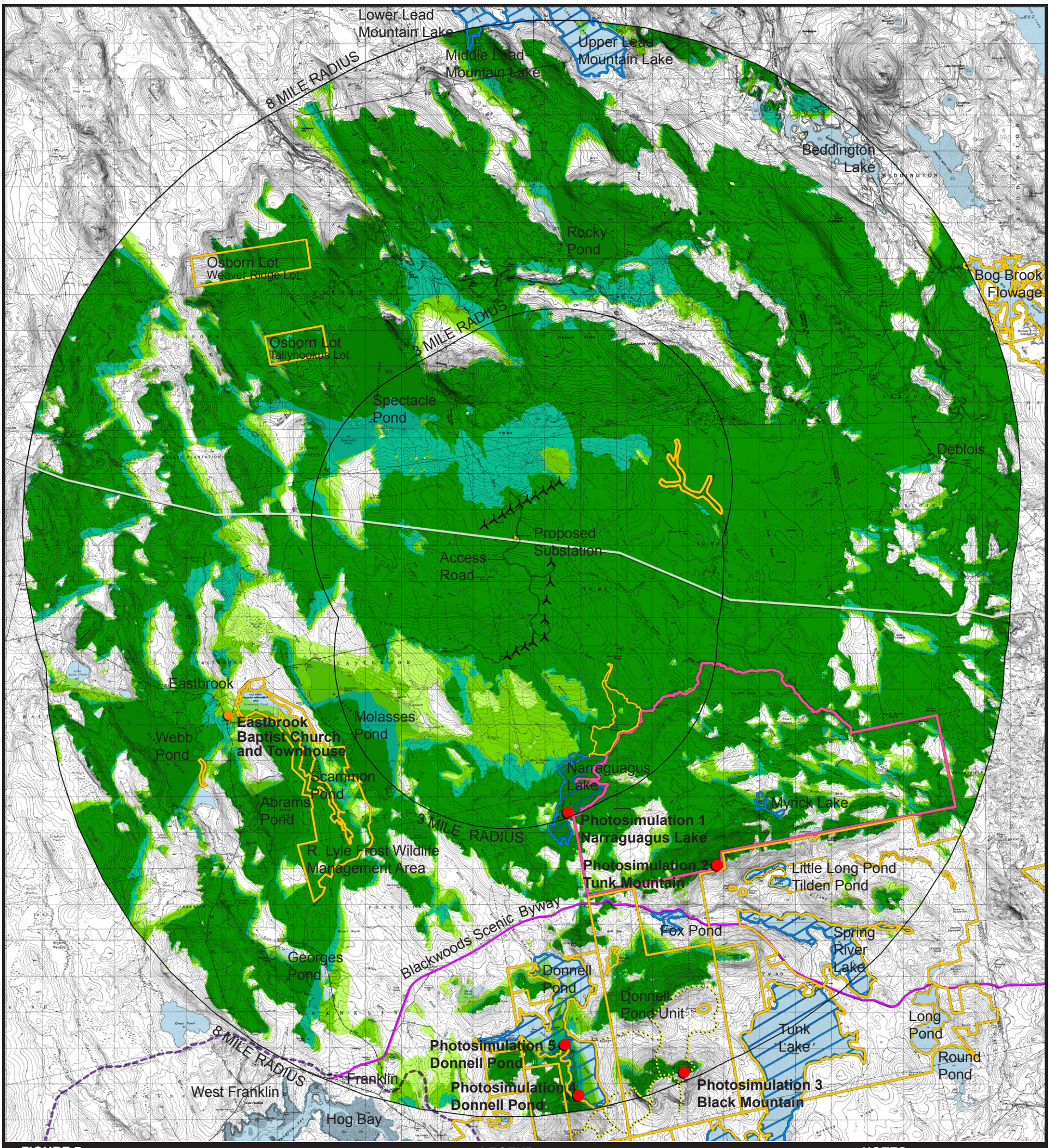


FIGURE 7

VIEWSHED MAP E
Topography

Bull Hill Wind Project

BLUE SKY EAST, LLC
AN AFFILIATE OF FIRST WIND

LEGEND

- PROPOSED TURBINES
- CONSERVATION LAND AREAS FROM ME OGIS
- NATURE CONSERVANCY LAND
- SCENIC LAKE OR POND
- BLACKWOODS SCENIC BYWAY
- PHOTOSIMULATION LOCATION (SEE APPENDIX B)
- STRUCTURE ON NATIONAL REGISTER
- HIKING TRAILS WITHIN DONNELL UNIT
- DOWNEAST SUNRISE TRAIL
- EXISTING TRANSMISSION LINE

NUMBER OF TURBINES VISIBLE

- 1-5 VISIBLE TURBINES
- 6-10 VISIBLE TURBINES
- 11-14 VISIBLE TURBINES
- 15-19 VISIBLE TURBINES

NOTES

Viewshed Map E does not account for the screening effects of existing vegetation, buildings, or other structures that will block views of the Project.

tjd&a

NORTH

1.0 MILE

12.07.10

NOTE: Viewshed mapping is a preliminary means of visual analysis. While beneficial for preliminary orientation and investigation, viewshed maps are not a definitive indication of visibility. Potential visibility was confirmed through cross sectional analysis, field investigation, and other visualization techniques.

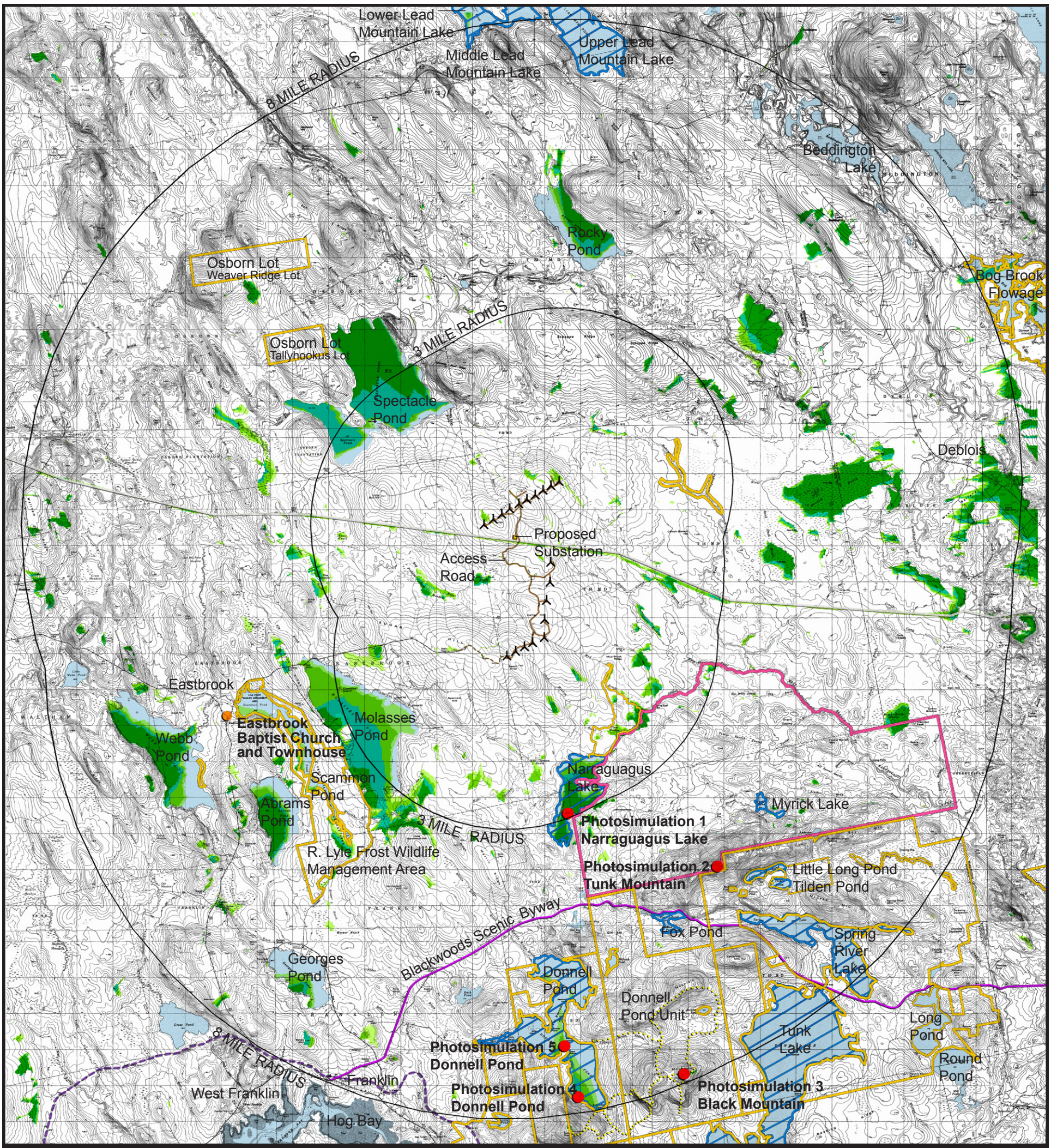


FIGURE 8

VIEWSHED MAP F
Topography and Vegetation

Bull Hill Wind Project

BLUE SKY EAST, LLC
AN AFFILIATE OF FIRST WIND

LEGEND

- PROPOSED TURBINES
- CONSERVATION LAND AREAS FROM ME OGIS
- NATURE CONSERVANCY LAND
- SCENIC LAKE OR POND
- BLACKWOODS SCENIC BYWAY
- PHOTOSIMULATION LOCATION (SEE APPENDIX B)
- STRUCTURE ON NATIONAL REGISTER
- HIKING TRAILS WITHIN DONNELL UNIT
- DOWNEAST SUNRISE TRAIL
- EXISTING TRANSMISSION LINE

NUMBER OF TURBINES VISIBLE

- 1-5 VISIBLE TURBINES
- 6-10 VISIBLE TURBINES
- 11-14 VISIBLE TURBINES
- 15-19 VISIBLE TURBINES

NOTES

Viewshed Map F accounts for the screening effects of existing vegetation as well as topography. Landcover data from the Maine OGIS

tjd&a

NORTH

1.0 MILE

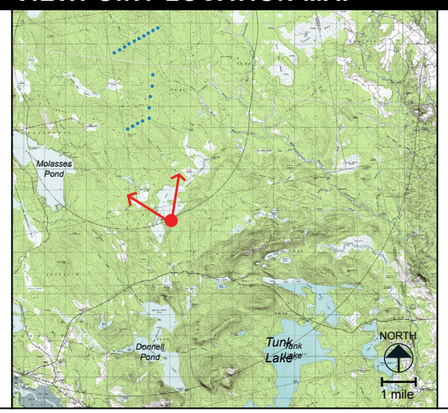
12.07.10

Photosimulation 1A: Panoramic view looking northwest to northeast from near 'Chez Vent', a point of land on the southeastern portion of Narraguagus Lake in T9 SD, toward the proposed Bull Hill Wind Project.

LEGEND

- Bull Hill Wind Project Turbines
- Viewpoint location and direction of view

VIEWPOINT LOCATION MAP



PHOTOSIMULATION INFORMATION

Turbine Model:	Vestas V100
Hub Height:	95m (312 ft)
Rotor Diameter:	100m (328 ft)
View Coordinates:	Latitude: 44.653609°, Longitude: -68.145833°
Viewer Elevation:	66 m (217 ft)
Direction of View:	North
Focal Length:	Digital equivalent to 50mm normal lens
Closest Visible Turbine:	2.9 miles
Furthest Visible Turbine:	5.7 miles
Turbines Visible:	19
Date of Photo:	10.03.10
Time of Photo:	5:49 pm

Photosimulation 1
Narraguagus Lake

Bull Hill Wind Project
Visual Impact Assessment

BLUE SKY EAST, LLC
AN AFFILIATE OF FIRST WIND

tjd&a
Terrence J. DeWan & Associates
Landscape Architects & Planners

12.07.10

Existing Conditions: Normal view looking north from Narraguagus Lake. Viewer should hold this image, when printed at 11” x 17”, approximately 21” from eye to replicate actual view.	**Narraguagus Lake** **Existing Conditions**	Page 2

Photosimulation 1B: Normal view looking north toward the proposed Bull Hill Wind Project from Narraguagus Lake. All 19 turbines would be visible from this location at distances of 2.9 to 5.7 miles. Viewer should hold this image, when printed at 11" x 17", approximately 21" from eye to replicate actual view.	**Narraguagus Lake** **Photosimulation 1**	Page 3