

**Petition for a Declaratory Ruling, Pursuant to General Statutes §§ 4-176 and 22a-19, that the Council’s Approval of the Development and Management Plan Modification Submitted by BNE Energy, Inc. in Connection with Petition No. 983 Violated State Law, Denied Abutting Property Owners of Due Process of Law, and Was in Material Conflict with the Connecticut Siting Council’s Decision Approving that Petition**

**I. INTRODUCTION**

FairWindCT, Inc. (“FWCT”), Julia and Jonathan Gold, and the Grant Swamp Group (collectively, the “Petitioners”) submit this petition pursuant to General Statutes §§ 4-176 and 22a-19 and in accordance with Regulation § 16-50j-38 *et seq.*

This petition is in response to the Connecticut Siting Council’s (the “Council”) unlawful approval of a modified development and management plan submitted by BNE Energy, Inc. (“BNE”). Specifically, on March 6, 2020, Council staff issued a memorandum approving BNE’s January 9, 2020, request to modify its D&M Plan (the “Modification Decision” (attached hereto as Exhibit A) to allow for the construction of a third turbine and associated roads on two parcels of land that were never part of the Council’s original consideration and approval of the underlying petition or its consideration and approval of any of the earlier iterations of the D&M Plan.

By Decision and Order dated June 2, 2011, the Council approved BNE’s petition to construct a three-turbine facility known as Wind Colebrook South on a project site comprised of 79.4<sup>1</sup> acres located at 29 Flagg Hill Road and 17 Flagg Hill Road (the “June 2011 Decision”). The Council subsequently approved D&M Plans modifying the site plans and turbines to be used in 2011 and 2013, and BNE ultimately constructed two turbines that went into operation in late 2015. In early 2020, more than 9 years after its initial petition, BNE filed a request to modify its

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<sup>1</sup> At various points in the Petition 983 proceeding, the Wind Colebrook South site has been referred to as totaling 79.4, 79.44 and 79.74 acres.

D&M Plan to site a third, larger and taller turbine and its associated access road on two parcels of land that were never part of the previously approved project site (the “Modification”).

This petition is in two parts. First, the Petitioners seek a declaratory ruling that (1) the Modification was in material conflict with the June 2011 Decision; (2) the Council did not have jurisdiction over the Modification because BNE was proposing a new facility and otherwise addressed matters not raised during the petition process; (3) neither the Council nor its staff had statutory authority to approve the Modification; and (4) the Modification Decision violated the fundamental due process rights of property owners abutting 45 and 53 Flagg Hill Road.

Second, the Petitioners seek a declaratory ruling that the Modification violates the Connecticut Environmental Protection Act, General Statutes § 22a-19 because it will unreasonably destroy or impair the public trust in the water of the state and in the natural resources of the state. Because BNE did not complete or verify its wetlands delineation or conduct on-site surveys for vernal pools or wildlife, it failed to inform the Council of the true impacts of the Modification, which will include construction of a wetlands crossing at the intersection of steep slopes just 300 feet from a high-value, Tier 1 vernal pool.

The Petitioners therefore ask that the Council reverse or vacate the Modification Decision and deny BNE’s request to modify the D&M Plan.

## **II. PETITIONERS AND NOTICE**

As required by R.C.S.A. § 16-50j-39, the names and addresses of petitioners are as follows:

FairWindCT, Inc. (a CT corporation)  
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To the extent an express request is required, each of the Petitioners hereby also requests party status in any proceeding held by the Council and is hereby providing notice of CEPA intervention. The grounds for the Petitioners' requests and intervention are detailed in this petition as well as in their party status requests previously filed with the Council in Petition 983, incorporated by reference herein, and attached hereto as Exhibits B, C and D. Each party has also executed verifications of this petition, which are appended hereto. Petitioners are entitled to party status pursuant to Sections 4-177a, 16-50l, 16-50n, 22a-14 through 22a-20 of the Connecticut General Statutes and Sections 16-50j-13 through 17, 16-50j-40 and 16-50j-43 of the Regulations of the Siting Council.

Correspondence or communications regarding this petition should be addressed to:

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Undersigned counsel hereby certifies that it has provided, on this same date, notice of the substance of this petition to all persons required to receive such notice pursuant to R.C.S.A. § 16-50j-40(a), as well as to other persons known by Petitioners to have an interest in the subject matter of this petition. Specifically, Petitioners have provided complete copies of the petition to all parties and intervenors in Petition 983, as well as to all owners of property adjacent to 47 and

53 Flagg Hill Road and the chief elected officials of the towns of Colebrook, Norfolk and Winchester/Winsted. An affidavit of service is attached at Exhibit E.

### **III. STATUTES AND REGULATIONS AT ISSUE**

General Statutes § 4-176 provides that “[a]ny person may petition an agency ... for a declaratory ruling as to the validity of any regulations, or the applicability to specified circumstances of a provision of the general statutes, a regulation, or a final decision on a matter within the jurisdiction of an agency.” The requirements for a petition for declaratory rulings before the Council are set forth in Regulations §§ 16-50j-30 through 16-50j-40. This petition seeks a determination that the Council did not have jurisdiction over the Modification, such that its approval was unlawful, and further, that the Modification does not comply with the June 2011 Decision. A declaratory ruling is the proper vehicle to contest a D&M Plan and to secure a ruling on the applicability of statutes and regulations. *Middlebury v. Conn. Siting Council*, Superior Court, judicial district of New Britain, No. CV010508047S, 2002 WL 442383, at \*2 (Feb. 27, 2002, Cohn, J.)

This petition is also brought pursuant to the Connecticut Environmental Protection Act (“CEPA”), which permits any person to “intervene as a party upon the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” *See* Conn. Gen. Stat. §§ 22a-19, 22a-20. Once that intervention has occurred, the Council is required to consider the alleged unreasonable impairment or destruction of the public trust, “and no conduct shall be authorized or approved which does, or is reasonably likely to, have such effect as long as, considering all relevant surrounding circumstances and factors, there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety and welfare.”

Conn. Gen. Stat. §§ 22a-19(b). Here, as discussed below and set forth in the attached report, the Modification fails to protect the environment based on the absence of environmental data present in the record with respect to the two parcels of land outside of the project site and the likelihood that the wetlands crossing will have significant adverse impacts on a vernal pool present downstream from the crossing on an abutting parcel, as well as other environmental issues.

#### **IV. HISTORY OF PETITION 983**

On December 6, 2010, BNE filed its Petition of BNE Energy Inc. for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is Required for the Construction, Maintenance, and Operation of a 4.8 MW Wind Renewable Generating Facility Located on Flagg Hill Road in Colebrook, Connecticut (“Wind Colebrook South”). In that petition, BNE asked the Council to:

issue a declaratory ruling for BNE’s proposed location, construction, operation and maintenance of three GE Energy (“GE”) 1.6-megawatt (“MW”) wind turbines, and associated ground equipment, an access road, an ancillary building and a 23-kiloVolt (“kV”) electrical interconnection (together, the “Project” or “Wind Colebrook South”) *at 29 Flagg Hill Road and 17 Flagg Hill Road* in Colebrook, Connecticut (together, the “Property”).

(Petition 983 at 1 (emphasis added).) At that time, BNE noticed the abutters to what it defined as the “Property,” i.e., 29 Flagg Hill Road and 17 Flagg Hill Road. (Petition 983, Ex. D (listing abutters served with original petition).)

FWCT intervened in the petition as a party under CEPA, and the Council approved its party status at a public meeting, as it did for every other request for party or intervenor status filed before the hearings began. Following proceedings that included several days of hearings, the Council granted the petition on June 2, 2011 (the “June 2011 Decision”). In its opinion issued on that date, the Council described the proposed facility as being “located *on a 79.4-acre site*, comprised of two adjoining properties *at 17 and 29 Flagg Hill Road*, owned by BNE.” (Petition

983, Opinion at 1 (emphases added).) The June 2011 Decision approved a facility on that site comprised of three 1.6 MW turbines manufactured by GE standing a total of 492 feet tall, as well as an access road and changes to a residential structure already on the site.

BNE submitted its original D&M Plan in September 2011, in which it proposed moving the location of T1. That submission was modified by an October 2011 filing, in which BNE also proposed moving the access road so that the site would be accessed via 17 Flagg Hill Road and would not cross over the northwest corner of the property located at 29A Flagg Hill Road. FWCT and other intervenors submitted comments opposing the plan for varied reasons. The Council voted to approve the D&M Plan in November 2011 at a public meeting.

BNE submitted a request to revise its D&M Plan in November 2012, in which it sought to further modify the access road to be located over a driveway easement BNE held at abutting property 29A Flagg Hill Road. BNE also sought to relocate turbines T1 and T2 by less than 200 feet to reduce wetlands impact. The Council voted to approve the D&M Plan in February 2013 at a public meeting.<sup>2</sup>

BNE submitted a second request to revise its D&M Plan in November 2013, in which it sought approval for use of three 2.85 MW GE turbines rather than the originally approved 1.6 MW GE turbines. In that request for modification, BNE expressly stated that it was seeking approval of a D&M Plan modification:

for the construction, operation and maintenance of three GE Energy (“GE”) 2.85-megawatt (“MW”) wind turbines with 98.3 meter hub heights and 103 meter diameter blades to be located *at 29 Flagg Hill Road and 17 Flagg Hill Road* in Colebrook, Connecticut.

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<sup>2</sup> In July 2013, a lot line readjustment was filed by the owner of 29A Flagg Hill Road, deeding over to BNE approximately 13,000 square feet in the northwest corner of the lot so that BNE could construct the access road as approved in that modification.

(Petition 983, BNE D&M Plan Modification, 11/5/13 at 1 (emphasis added).) FWCT and other intervenors submitted objections to the modification. The Council voted to overrule those objections and approve the modification at a public meeting in December 2013, specifically noting that the three new wind turbines proposed by BNE were to be in the same locations and of the same height as the wind turbines approved by the Council in the original D&M Plan.

BNE elected to build only two of the approved 2.85 MW turbines, which went into commercial service in November 2015. Although the two turbines had a total nameplate capacity of 5.7 MW, the turbines were “de-rated” to cap production at 5 MW per the limits of the power purchase agreement (“PPA”) BNE had in place with the utility company at the time.

The Council’s June 2011 Decision provided that the approval would be void if all construction was not completed within the later of four years of its effective date or four years after all appeals associated with the Council’s approval were resolved. The final decision on appeals from the June 2011 Decision was issued in September 2014, making the deadline for completion of construction of the three-turbine facility September 2018. In July 2018, BNE moved for an extension of time in which to complete construction of the third turbine that had been approved by the Council. In that motion, BNE specifically asked that the Council:

grant a three-year extension until September 23, 2021 for the completion of construction of the Wind Colebrook South wind renewable generating facility located *at 29 Flagg Hill Road and 17 Flagg Hill Road* in Colebrook, Connecticut ...

(Petition 983, BNE Motion for Extension at 4 (emphasis added).) At a public meeting in August 2018, the Council voted to approve that extension request. The effect of that approval was to provide BNE with an additional three years in which to complete construction of the facility approved in the June 11 Decision, which sited a three-turbine facility at 29 Flagg Hill Road and 17 Flagg Hill Road.

On January 9, 2020, BNE filed a third request to modify the D&M Plan (the “Modification”). In that request, BNE asked the Council to approve a

modification for the construction, operation and maintenance of the third wind turbine, an Enercon 4.23-megawatt (“MW”) wind turbine with a 128 meter hub height and 138 meter diameter blade to be located at 29 Flagg Hill Road and 17 Flagg Hill Road in Colebrook, Connecticut.

(Petition 983, BNE D&M Plan Modification, 1/9/20 at 1.) BNE framed its request as seeking permission to move the location of the third turbine (referred to as “T3” herein) and to allow it to substitute a different, larger turbine that has a higher nameplate capacity in place of the approved GE 2.85 MW turbine. (*See id.*) However, the content of that Modification revealed that BNE actually sought permission to site T3 *on two different parcels of land*, located at 53 Flagg Hill Road and 45 Flagg Hill Road. The two parcels total approximately 37 acres. Those properties and the accompanying acreage were not part of Wind Colebrook South, either as built or as approved by the Council.<sup>3</sup>

Despite the extraordinary nature of BNE’s request, the Council proceeded to consider the Modification as if properly filed under its regulations, which provides that within 60 days, the Council must act on the D&M Plan submission or it is deemed approved. *See* R.C.S.A. §16-50j-60. The Council asked BNE to agree to an extension of one week on the deadline and BNE agreed, meaning the Council was to act on the Modification by March 16, 2020.

FWCT objected to the Modification on March 4, 2020, arguing that the Council did not have the jurisdiction to approve the Modification because the nature of BNE’s request was outside the scope of the June 2011 Decision, requiring BNE to file a new petition. FWCT also

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<sup>3</sup> Petitioners believe that BNE pursued the Council’s approval of this entirely new site for its wind turbine via a proposed D&M Plan modification to avoid application of the wind turbine siting regulations that were adopted in 2014. Under those regulations, BNE’s plan would have been rejected by the Council due to its proposed setbacks and lack of surveys with respect to 53 Flagg Hill Road and 45 Flagg Hill Road.

raised due process and environmental concerns. The Golds and GSG, who were not served with notice of the Modification until late January, and only after the Council asked BNE to notify abutters, both filed party status requests and notices of intervention under CEPA on the same date and requested a hearing on the Modification. The Golds and GSG argued that as owners of property that abutted 53 Flagg Hill Road, they had not been notified of Petition 983 when originally filed in late 2010, and that they therefore would be denied due process of law if not permitted to now participate in a hearing with respect to a facility that would now be abutting their properties. They also raised environmental issues, specifically noting that BNE had not presented the Council with any data concerning natural resources present on either 45 and 53 Flagg Hill Road or on their adjacent properties, which they knew to contain wetlands and likely vernal pools.<sup>4</sup>

Two days later, on March 6, 2020, the Council's executive director penned a letter to BNE stating that the Modification was "hereby approved" subject to eight conditions. Council staff also separately notified the Golds and GSG that their requests for party status and CEPA intervention were moot because "there is no pending matter or proceeding in which to intervene,"<sup>5</sup> and summarily suspended them. The Council did not consider the Modification, FWCT's objection or the party status requests at a public meeting, contrary to its practice for every other D&M submission, objection and party status request. Instead, the Council staff issued a lengthy memorandum purporting to summarize the history of Petition 983, the D&M Plan process, and the Modification, in which staff concluded that there was precedent for

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<sup>4</sup> Approximately one week earlier, The Nature Conservancy also filed a request for party status and to intervene under CEPA. TNC owns property immediately adjacent to the western boundary of Wind Colebrook South, and that property extends south so that TNC is also an abutter to both of the parcels located at 45 and 53 Flagg Hill Road.

<sup>5</sup> Several days earlier, Council staff issued similar correspondence to TNC, apparently denying its request for party status and to open the proceedings as moot. That action was also taken without a public meeting and vote.

approving a facility relocation to a new site in a D&M proceeding. Portions of that staff memorandum will be addressed below, but most significantly, the assertion that there is precedent for using the D&M Plan process to relocate a facility onto a new parcel of land that was never part of the underlying proceeding is wholly unsupported. Not a single one of the proceedings cited by Council staff in support of that assertion is comparable to the Council's actions here. Simply stated the Council cannot "confer jurisdiction upon [itself]" to site facilities in the D&M Plan process. *See Castro v. Viera*, 207 Conn. 420, 428 (1988).

## V. **BASES FOR DECLARATORY RULING**

The Council is a creature of statute, and accordingly has authority to site electric generating facilities *only* pursuant to express legislative authority. *See Castro*, 207 Conn. at 428; *Stern v. Conn. Med. Examining Bd.*, 208 Conn. 492, 502 (1988). Here, the Council sited, via a statutorily-defined petition process, a three-turbine facility on an approximately 79-acre site located at 17 and 29 Flagg Hill Road. It cannot, as part of the "fill up the details" D&M Plan process, now re-site one-third of that facility onto two entire separate parcels of land never before considered by the Council. Moreover, the absence of any information about 47 and 53 Flagg Hill Road means that the Council could not have fulfilled its statutory obligation of balancing the need for adequate and reliable public utility services at the lowest reasonable cost to consumers with the need to protect the environment and ecology of the state and to minimize damage to the scenic, historic, and recreational values while also assuring the welfare and protection of the people of the state.

### A. **The Council Does Not Have Jurisdiction Over Any Facility to be Located at 45 and 53 Flagg Hill Road**

This Council, rather than the local zoning commission, has authority over Wind Colebrook South as originally proposed at 29 and 17 Flagg Hill Road only because BNE filed a

petition for declaratory ruling, pursuant to General Statutes § 16-50k. The Council issued an opinion and decision and order that, pursuant to General Statutes § 16-50k(a), the project proposed in the petition was eligible to be approved by declaratory ruling as a grid-side distributed resource facility under 65 MW that complied with the air and water quality standards established by the Connecticut Department of Energy and Environmental Protection. The Council has continued jurisdiction over the project it approved pursuant to that statutory authority. It does not, however, have authority to approve by the D&M process a “modification” that so fundamentally changes the project site. The Modification was for a different facility on a different site, and it was therefore not properly before the Council because it was not a petition brought under Section 16-50k.

Since it first filed Petition No. 983 in December 2010, BNE has sought the Council’s approval to develop a wind turbine facility at property *located at 29 Flagg Hill Road and 17 Flagg Hill Road* in Colebrook, Connecticut. Not once, through its many iterations of site plans, proposed turbine locations, proposed turbine heights or access road design changes, has BNE *ever* proposed siting the Wind Colebrook South turbines on a different parcel of land. The Council’s opinion, findings of fact and decision and order concerned only 29 and 17 Flagg Hill Road. In short, more than nine years after its original filing and more than four years after Wind Colebrook South was first put into service, BNE asked the Council to approve a “modification” permitting it to place a third turbine, and the associated access road and related structures, on two entirely separate residential properties and bordering the town of Winchester. Those two residential properties were never identified as part of the project site (or even as part of alternative project sites) during the underlying proceeding. The Council has authority to approve modifications to a facility during the D&M Plan process, including relocating portions of the

facility within the boundaries of the approved project site. It does not have authority to relocate a facility outside of the approved project site boundaries during the D&M Plan process.

To mask the significance of its proposed change to the boundaries of the project site, BNE stated in a cursory manner that it will acquire and “merge” the two new properties into 29 Flagg Hill Road before construction. Based on that plan, BNE claims that “[t]he requested modification would not constitute a significant change or alteration of in the general physical characteristics of the facility....” (Petition 983, BNE D&M Plan Modification, 1/9/20 at 1.) BNE’s plan to eventually acquire and merge additional parcels of land – which has yet to happen as of the date of this filing – does not change the analysis with respect to the Council’s authority. By permitting such a consequential change during the abbreviated D&M Plan process, which is intended to be used to “fill in the details” and complete the “nuts and bolts” of an approved facility, the Council has set a precedent that will allow developers to site facilities by sidestepping the due process protections that apply to petitions and applications. The Council’s *purpose* is to site facilities and towers, and it did just that by approving a petition to site three wind turbines on two specific parcels of land in Colebrook. It did not approve a petition to site three turbines on four parcels of land, or to site one turbine at 45 and 53 Flagg Hill Road. Nor is the Council authorized to use the D&M Plan process to make such a change to an approved facility.

As the Council is aware, in connection with Wind Colebrook South, BNE has entered into various power purchase agreements (“PPAs”) with utility companies. In each of those agreements, filed with PURA, BNE has represented that Wind Colebrook South is a 79.74-acre site located at 17 and 29 Flagg Hill Road. In BNE’s most recent PPA with Eversource, dated

June 23, 2017, which relates only to the proposed T3, BNE described the “facility” subject to the PPA as follows:

**Facility:** Wind Colebrook South Phase II is a one turbine wind-powered electrical generation project with an expected capacity of 3.83 MW located on approximately 79.74 acres at 17 and 29 Flagg Hill Road in Colebrook, Connecticut 06021.

(See Ex. A to 6/23/17 PPA, PURA docket #17-01-11 Ex. C-21, attached hereto as Exhibit F.)

BNE also represented in that PPA that it has site control because it owns the 79.74-acre site. (See Ex. B to same filing, attached hereto as Exhibit G.) BNE has therefore been representing to other state agencies, and to the utility companies, that T3 will be located on the property that it already owns, i.e., the two parcels of land for which it originally received Council approval, as identified not only by street address but by total acreage. That is false, and the Council should be concerned with BNE’s dishonesty with other entities.

Perhaps more importantly, however, BNE refers to T3 as a “facility” that includes only one turbine, rather than the second or final phase of a three-turbine facility; BNE references T3 as a standalone facility, which provides conclusive evidence that even BNE views T3 as exactly what it is, i.e., a new facility on a new piece of land. BNE cannot have it both ways – it cannot seek approval for T3 from the Council as a routine modification of the D&M Plan for a three-turbine facility while representing to all others that T3 is a new, single turbine facility. The Modification decision was unlawful because the Council only has jurisdiction over petitions, and it has never considered a petition for a single wind turbine facility located at 53 and 45 Flagg Hill Road. Moreover, approval of a facility located on a different parcel of land does not comply with the June 2011 Decision, which provides that Wind Colebrook South must be “constructed, operated, and maintained substantially as specified in the Council's record in this matter.” The record in this matter is silent with respect to 53 and 45 Flagg Hill Road.

The Council's own executive director has repeatedly noted that "[a] D&M Plan functions to 'fill up the details' constitutes the 'nuts and bolts' of the facility approved by the Council." (See, e.g., Petition 983, Bachman letter to TNC, 2/27/20 at 2; Bachman letter to Golds, 3/6/20 at 2; Bachman letter to GSG, 3/6/20 at 2.) See also *Middlebury*, 2002 WL 442383, at \*5 ("the D&M plan functions to 'fill up the details' in the siting council's final decision"); *Westport v. Siting Council*, 47 Conn. Supp. 382, 403 (2001). The executive director has also repeatedly stated: "The D&M Plan cannot provide a substitute for matters not addressed during the application process." (Petition 983, Bachman letter to TNC, 2/27/20 at 2.) See also *Middlebury*, 2002 WL 442383, at \*3. What the executive director apparently fails to recognize in her reliance on those principles is that the *reason* the D&M Plan process cannot serve as a substitute for the petition process is that the Council does not have the jurisdiction to use the D&M Plan process in that manner. The Council has statutory authority to site wind turbines only via petitions for declaratory ruling; it cannot do so through the approval or modification of a D&M Plan. The rationale for this fundamental distinction lies in the review required by statute and in the due process protections necessary for the approval of petitions, the absence of which is the root of this petition, as further described below.

**B. The Council Violated Basic Principles of Procedural Due Process**

Administrative proceedings include a "right to fundamental fairness," which encompasses a variety of procedural protections ... characterized ... as 'due process' rights." *Grimes v. Conservation Commission*, 243 Conn. 266, 273 n.11 (1997). Thus, when a new petition is filed, state law and Council regulations have in place certain requirements of notice that are aimed at providing potentially interested parties with a certain level of due process. Abutters must be noticed, towns and certain officials must receive copies of the filing, and various state agencies are invited to comment. *None* of those due process protections are present

in the D&M Plan process, presumably because a D&M Plan is intended to do nothing more than to “fill up the details” of an already approved project following an application or petition proceeding that provided due process rights. Here, when the Council (via its staff) approved the Modification, it denied abutting property owners, including the Golds, GSG and others, as well as the town of Winchester, the opportunity to participate in a hearing. The public was also denied the right to attend a public hearing and to make comments. DEEP and other state and federal agencies were not asked to weigh in to provide comments or input as the Council considered the Modification. No one, including the Council, is served by cutting corners to avoid “basic principles of procedural due process.” *See Douglas Bldg., Inc. v. Woodstock Inland Wetlands & Watercourses Agency*, Superior Court, judicial district of Windham, No. CV054002089S, 2006 WL 3114439, at \*10 (Oct. 12, 2006, Martin, J.).

The Council has permitted BNE to increase the size of Wind Colebrook South to 116.64 acres, a *46% increase*. That significant expansion of the project’s footprint will result in direct impacts to the abutters, local municipalities, and the environment, but the Council allowed it to happen via a mechanism that denied new abutters, the municipalities and other interested parties their common-law rights to fundamental fairness and due process. Although BNE claimed that the new turbine location would be “further away in the woods” and “further in the woods from the homes located on Flagg Hill Road and Route 44” (Petition 983, BNE D&M Plan Modification, 1/9/20 at 3-4), the project site now impacts Winchester on its southernmost border, and at least two new abutters. The Golds, whose property lines were more than 1500 feet from the two turbines already in operation, will now be just 321 feet from T3, according to BNE’s own measurements. (Petition 983, BNE Interrog. Responses, 2/21/2020 at 5.) That proximity is so close to the property lines that were T3 to fall, it could land more on the Golds’ property than

on 53 and 45 Flagg Hill Road. T3 will also be only 523 feet from GSG's property line. (*Id.*) Figure B to the attached report by REMA Ecological Services, LLC ("REMA") shows the site boundaries and abutters considered and approved in the June 2011 Decision and subsequent D&M Plan modifications, as well as the new site boundaries approved in the Modification Decision and the new abutters.

Because the Council did not question BNE's effort to shoehorn a new facility on a new project site into a D&M Plan modification, these property owners never had the opportunity present testimony or evidence to the Council, were not permitted to issue interrogatories to BNE, and in most cases *did not even receive notice of BNE's filing* until after BNE was asked to provide proof that it had served notice on abutters in its responses to interrogatories, which was halfway through the 60-day period for the Council to take action.<sup>6</sup> Accordingly, these abutters were suddenly thrust into Petition 983 at the end stage, with no rights to a hearing or to an appeal. That was grossly unfair, and violated the Council's obligation to render its decisions while balancing the welfare and protection of the people of the state.

Had the Golds and GSG been permitted to participate in the administrative process, they would have had the opportunity to present evidence and question BNE on public health and safety issues, including setbacks, ice throw/drop and shadow flicker, and on environmental issues, including noise and impacts on watercourses and wetlands and wildlife. FWCT would have done the same had the Council held a hearing on the Modification.

With respect to public health and safety, BNE's submissions to the Council provided no information upon which the Council could rely to make its required findings. Manufacturers of

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<sup>6</sup> In fact, BNE never served all of the abutters, as the property at 47 Flagg Hill Road changed hands by way of a deed recorded with the Town of Colebrook on December 18, 2019. BNE served the previous property owner in late January 2020.

wind turbines generally provide recommendations or guidelines for minimum setbacks in order to protect the public from the dangers of events such as ice throw/drop from turbine blades, blade throw and turbine collapse and to reduce adverse impacts from noise and shadow flicker.<sup>7</sup> In the Modification, BNE claimed that its proposed siting of T3 complied with GE’s ice setback requirements – despite the fact that the turbine BNE plans to use was manufactured by Enercon, not GE, with different hub height and blade length. In response to a Council interrogatory asking for technical documentation and setback considerations specific to the Enercon turbine, BNE claimed that Enercon “does not have minimum ice throw setback requirements.” (Petition 983, BNE Interrog. Responses, 2/21/2020 at 4.) Instead, BNE attached an ice throw “site-specific risk assessment” conducted by Enercon that was devoid of any explanation as to methodology and repeatedly and expressly stated that it was based solely on inputs provided by BNE – inputs that apparently included measurements only to certain features on the Golds’ property, rather than the property lines of that abutter or any other. (*See id.* at Ex. C.) This was misleading, as the Golds’ property boundary is only 321 from the proposed T3 location. (*See* Figure C to REMA’s report (adding property lines to the ice throw assessment provided by BNE).)

Remarkably, the staff memorandum states that the siting of T3 “conservatively exceeds industry setback standards” because by the staff’s calculations, T3 is approximately 1.6 times the turbine height to the Golds’ residence. (Petition 983, Staff Modification Memorandum, at 7.) That statement is wholly unsupported by the record, as the only “industry setback standards” in the record are GE’s recommended setbacks (from nearly *nine years ago* and for a turbine model that BNE has never proposed for the Wind Colebrook South site) and the setbacks put in place by the legislature after the June 2011 Decision. There is no evidence that GE’s setbacks are the

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<sup>7</sup> Setbacks also reduce visual impact, though that is not typically considered a public health and safety concern.

industry standard, apply to the Enercon turbine, or are intended to ensure safety from “blade failure, ice throw, tower collapse, rotor sweep and falling objects.” (Petition 983, Staff Modification Memorandum, at 7.) The Council staff’s singular focus on the distance from T3 to the Golds’ residence also ignores the fact that the safety concerns of siting wind turbines in proximity to people is not limited residences alone, but to any part of the surrounding area that may be occupied by people. The Golds use the southwest portion of their property regularly, up to the property line immediately adjacent to 53 Flagg Hill Road, and their pool, barn, driveway and yard are all several hundred feet closer to T3 than their residence. All of those areas are occupied by the Golds and their guests on a regular basis throughout the year, and all of those areas are closer than the supposed “industry setback standards” relied upon by Council staff. Figure C to REMA’s report shows that a large swath of the area between the Golds’ residence and T3, most of which is on the Golds’ property, is within the area of Enercon’s ice throw risk assessment.

Moreover, there is no question that the location of the new turbine violates the requirements of the wind regulations, which could also have been considered by the Council as “industry setback standards.” The wind regulations require that turbines be sited at least 1.5 times the wind turbine height from any property lines. R.C.S.A. § 16-50j-95(a)(1)(B). Here, the wind turbine height is 197.3 meters (128 hub height + (138.6 blade diameter/2)). Under the regulations, then, absent waivers from the Golds and GSG, the turbine must be at least 295.95 meters, or just under 971 feet, from adjacent property lines. The Council permitted BNE to site its turbine just 321 feet from one abutter’s property line and 523 feet from another. (Petition 983, BNE Interrog. Responses, 2/21/20 at 5.) Council staff concluded that the setback was reasonable because the residence is 1,027 feet from T3, or 1.6 times the turbine height from the residence,

thus ignoring the dangers T3 would pose to other portions of the Golds' property or to the GSG property. (See Figure D to REMA report, comparing the setbacks approved in the Modification Decision to those that would be required by GE's setbacks and by the wind regulations.) The Council staff also incorrectly stated that "the wind regulations allow for a setback distance of no less than 1.5 times the wind turbine height to a residence." In fact, the regulations – which Council staff went out of their way to explain do not apply to Petition 983 – *only* permit that setback from a residence *with waiver by the residential property owner or a vote by two-thirds of the Council based on good cause*. R.C.S.A. § 16-50j-95(a)(2). No abutting property owner has provided such a waiver for T3, and the Council did not vote on the Modification itself, let alone hold a specific vote on a waiver of the regulatory setback requirements.<sup>8</sup> The Council denied property owners abutting 45 and 53 Flagg Hill Road the opportunity to address these issues, essentially permitting a taking of their land without any due process at all.

The Council also denied Petitioners the opportunity to present evidence or cross examine BNE with respect to the visual and shadow flicker impacts of T3. BNE claimed that it had a flicker assessment done by a consultant, but never provided a copy of any work product; instead, it asserted in response to Council interrogatories, without any context for methodology, inputs, assumptions or the like, that the two residences closest to T3 "will not receive any shadow flicker." (Petition 983, BNE Interrog. Responses, 2/21/20 at 12.) Petitioners should have been permitted to challenge those assertions and test BNE's methodology, as well as to explore whether there would be shadow flicker impact on yards or other structures on those properties.

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<sup>8</sup> Moreover, mere distance from the property line is not the sole concern with respect to safety issues. For example, the Enercon T3 blades will sweep an area of approximately 3.69 acres, which is an *84% increase* over the previously approved GE 2.85 MW T3, and the height of the turbine to the tip of the blade is 150 feet higher.

BNE also projected that two other residences, identified only using their “receptor” labels from a report originally submitted in March 2011, would experience more than 30 annual hours of shadow flicker – in excess of what is permitted by the wind regulations. (*Id.*) See Regs. § 16-50j-95(c)(1). Again, Petitioners were denied any opportunity to evaluate those impacts, or to probe further on the visual impacts analysis submitted by BNE. The wind regulations would require a viewshed analysis out to eight miles given the wind turbine height of 647 feet. Regs. § 16-50j-94(c)(3). The analysis provided by BNE at the request of the Council did not comply with that requirement. Nor does the record contain any renderings of what T3 will look like from portions of the Golds’ or GSG’s property.

The Council’s action on the Modification also denied Petitioners due process with respect to the associated environmental impact. Petitioners were not provided the opportunity to cross examine or to even ask BNE questions about its assertions concerning the environmental issues of noise and impact on wetlands and wildlife. In fact, the Council declined to even vote on the Modification at a public meeting, as it had done for every D&M submission by BNE in connection with Petition 983. As discussed below in the CEPA section, BNE’s claims were wholly unsupported by any evidence in the record, and Petitioners were foreclosed from providing evidence to the Council refuting BNE’s claims, including an expert’s conclusions based on an actual survey of resources present on the Golds’ property that will be adversely impacted by the wetlands crossing and that expert’s review and criticism of BNE’s site plans.

C. **The Modification Will Unreasonably Destroy or Impair the Public Trust in the Waters and Natural Resources of the State**

The Council violated both its obligations under PUESA and CEPA by approving the Modification because: (1) BNE provided no information with respect to the natural or wildlife resources present at 45 and 53 Flagg Hill Road or at any abutter’s property; (2) BNE’s site plans

are inadequate to protect the wetlands, as its wetlands crossing grossly underestimates the area of disturbance and the detention basin proposed for the west of the wetlands crossing likely will fail given the topography of 53 Flagg Hill Road; and (3) an actual survey of the area would have revealed the presence of a Tier 1 vernal pool located primarily on the Golds' property, with an envelope extending up into 53 Flagg Hill Road, that will be significantly impacted by the wetlands crossing and merits review by the U.S. Army Corps of Engineers.

As an initial matter, the Modification Decision was made in a vacuum. BNE's request did not include any actual site surveys of the resources present at 45 or 53 Flagg Hill Road. Because all proceedings before that request concerned 17 and 29 Flagg Hill Road (and access over a driveway and northwest corner of 29A Flagg Hill Road), no evidence was ever gathered or presented about the new proposed site for T3 and its associated access road. Despite those facts, in its request and in responses to the Council's interrogatories, BNE made many wholly unsupported assertions about the environmental impact of the Modification. Those assertions have proven to be false.

For example, BNE claimed a "significant reduction to vernal pool impacts" because T3 would move further from the two high-value vernal pools known to be located on the original project site – yet it did not provide a shred of information indicating whether vernal pools exist at 45 or 53 Flagg Hill Road or whether vernal pools are present on any of the new abutters' properties in proximity to any of the proposed construction areas. BNE and the Council are well aware of the 100-foot vernal pool envelope and restrictions on clearing within 750-foot of any vernal pool to protect the upland habitat zone, because those restrictions caused multiple changes to BNE's original site and stormwater management and erosion control plans. In the absence of any on-site surveying, it was impossible for BNE to support such claims of reduced impact. Yet

BNE did not provide, and the Council did not ask for, surveys to determine if vernal pools existed at or near the new project site. Logically, if the T3 relocation were to move further from the vernal pools at 17 and 29 Flagg Hill Road but closer to vernal pools at 45 and 53 Flagg Hill Road or on the Golds' property, BNE's claim of reduced impact would fail; instead, the impact of the T3 relocation would actually be increased, not reduced.<sup>9</sup> Instead of requiring such studies, Council staff concluded that the Modification would relocate the "wetland crossing location for T3" so that it would be "approximately 930 feet from the nearest vernal pool and completely outside of the [750-foot critical terrestrial habitat]." (Petition 983, Staff Memorandum at 11.) Without any information about the presence or absence of vernal pools on any of the properties within the areas of concern for the newly located T3 and access road, the Council simply did not know whether vernal pools are present and may be impacted.

Shortly after the Modification was approved, Petitioners engaged REMA, to conduct a survey of the Golds' property. (See REMA report, attached as Exhibit H.) REMA discovered a high-value, Tier 1 vernal pool straddling the Golds' property line, with limits that extend up into 53 Flagg Hill Road in proximity to the planned wetlands crossing. BNE made no mention of this significant resource in its submissions to the Council.<sup>10</sup> The vernal pool, created by a beaver

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<sup>9</sup> Moreover, BNE's claim and the Council staff's conclusion of reduced impact are based on site surveys done pre-construction, more than nine years ago. As no post-construction vernal pool delineation surveys have been conducted at the existing Wind Colebrook South site, even the impact on those vernal pools located at 17 and 29 Flagg Hill Road is not clear. Boundaries of those pools may have shifted in the ensuing decade, especially given the changes to topography of the site caused by the construction of T1 and T2 and associated access roads.

<sup>10</sup> As the Council may recall, BNE filed its original petition claiming that there were no vernal pools on the site and that there was no evidence of habitat that would attract the presence of any state-listed species. Those claims were found to be false after an adequate site survey was conducted following concerns raised by FWCT's experts. Michael Klemens concluded that four cryptic vernal pools existed on the site and one was present just off site, that two of those on-site pools warranted protection in the design and construction process, and that the site contained habitat suitable for the state-listed threatened spring salamander as well as two state listed species of concern snakes. (See Petition 983, 4/20/11 Klemens Herpetological Assessment.) As a result, BNE had to make significant changes to its site plans and the Council imposed several years of monitoring requirements on BNE as well as a requirement that BNE secure a conservation easement over a significant portion of the site. That easement has never been recorded on the Colebrook land records, which means that there is not restriction on "development for the life of the project or in perpetuity," in violation of condition 2(b) of the June 2011 Decision.

impoundment of a brook, was surveyed in early spring and determined to be high-value based on the number of amphibian egg masses counted. The 750-foot envelope extends over much of 53 Flagg Hill Road and up into 45 Flagg Hill Road and even onto the existing Wind Colebrook South site in proximity to T1. (See Figure A to REMA report.) REMA concluded that the proposed activity, particularly the proposed wetlands crossing that is planned for just 300 feet upstream of the vernal pool limits, will have a significant adverse impact on the vernal pool and the species that breed in it, which could include the state-listed spring salamander. The Council did not consider these facts because BNE did not present them.

BNE similarly claimed that the Modification would reduce wetland activity by 45%. (Petition 983, BNE D&M Plan Modification, 1/9/10 at 2.) However, in response to the Council's interrogatories, BNE changed its calculations on direct wetlands just weeks after its initial submission. Council staff accepted BNE's revised calculation and concluded that approximately 2320 square feet of wetlands will be impacted by construction. (Petition 983, Staff Memorandum at 13.) However, as set forth in the attached report, REMA concluded that BNE's delineation of wetlands at the border of 53 Flagg Hill Road and the Golds' property was incomplete because it abruptly ended approximately 224 feet above the southern property boundary. As a result, BNE likely significantly under-represented the size of the wetlands in the area surrounding the crossing and adjacent to the southernmost portion of the proposed access road. Given that BNE failed to complete that delineation and failed to survey the resources located just over the southern property boundary, if BNE also otherwise under-represented the overall wetlands resources present at 45 and 53 Flagg Hill Road, the Modification could actually *increase* the wetland activity. REMA also opined that given the incomplete delineation and the existence of the vernal pool envelope, BNE's stormwater management plans may not actually be feasible.

Specifically, the stormwater detention basin planned to be located to the southwest of the wetlands crossing likely cannot be constructed as planned due to their proximity to the vernal pool (just 275 feet) and likely location in wetlands. The Council therefore could not, based on BNE's submissions, actually assess the impact of the Modification on the wetlands resources located at and immediately adjacent to the new project site, because BNE did not present this information. In the absence of that information, the Council could not determine whether the Modification complied with the water quality standards of the State of Connecticut.

Moreover, as set forth in the REMA report, further analysis is required to assess whether BNE is required to secure a permit from the U.S. Army Corps of Engineers in order to commence construction at the new project site. BNE previously underestimated potential wetland impacts at Wind Colebrook South, and erroneously claimed it did not need to apply for an Army Corps permit, as FWCT pointed out in the original proceeding. The same could be true here based on REMA's assessment of BNE's incomplete wetlands delineation work and the discovery of a Tier 1 vernal pool in such proximity to the crossing, the access road and a planned stormwater detention basin. Again, the Council did not consider these facts because BNE did not present them.

BNE did not provide any bird or bat studies in support of the Modification. It is entirely possible that the new 37 acres, or even the properties of the new abutters, have wildlife resources that were absent from the 17 and 29 Flagg Hill Road. Bat and bird migration patterns could be different. The significantly larger blade sweep area and higher turbine height of the Enercon turbine may also cause increased impact. Due to nature of the Council's D&M process, even the post-construction bat and bird fatality monitoring that was submitted for 17 and 29 Flagg Hill Road were never reviewed by DEEP or any other scientist, so it is not clear that the impact of the

original Wind Colebrook South site has ever been adequately assessed. With the Modification, BNE did not even pretend to have assessed the potential impacts on bats and birds, and Council staff simply concluded that since the significantly shorter turbines present on different parcels of land did not seem to result in significant bat or bird mortality, the same would be true for T3. The record is simply devoid of any evidence indicating whether such an extrapolation is reasonable given the habitats present at the new site and the behavior patterns of those species. Moreover, while on site, REMA observed several avian species, including the uncommon though not state-listed drumming rough grouse. Those observations, incident to a vernal pool survey, demonstrate the value of an on-site wildlife survey in assessing the impacts of development.

Petitioners were denied the opportunity to present any of this evidence to the Council or to ask BNE questions on these issues. By permitting BNE to bootstrap this new facility into the approval of Petition 983, the Council improperly limited its ability to receive and review critical information that would permit it to fulfill its mission and to ensure that T3 was properly sited so as to adequately protect the wetlands and waters in and around the new project site. Consequently, the Council abdicated its responsibility under its governing statutes and regulations.

**D. BNE Did Not Provide Any Data Demonstrating Compliance with State Noise Law**

The sound report provided by BNE in response to interrogatories from the Council fell well short of both DEEP's noise regulations and the wind regulation requirements and does not provide any basis for the Council staff's conclusion that the cumulative noise from the two turbines already in place and the proposed T3 will "comply with the DEEP Noise Control Standards." Those standards require compliance *at the property lines*. See, e.g., Conn. Gen. Stat. § 22a-69(a)(2) (instructing commissioner of then-DEP to adopt noise regulations that would

control stationary noise sources that which are “major sources of noise when measured from beyond the property line of such source”); *see also, e.g.*, R.C.S.A. § 22a-69-3.1 (“General Prohibition. No person shall cause or allow the omission of excessive noise beyond the boundary of his/her Noise Zone . . .”); R.C.S.A. §§ 22a-69-3.2 (“No person shall cause or allow the emission of impulse noise . . . to any Noise Zone.”), 22a-69-3.3 (“Continuous noise measured beyond the boundary of the Noise Zone of the noise emitter . . . shall be considered excessive noise . . .”), 22a-69-3.4 (“No person shall emit beyond his/her property infrasonic or ultrasonic sound . . .”); R.C.S.A. § 22a-69-4(g) (“Measurements taken to determine compliance with Section 3 [Allowable noise levels] shall be taken at about one foot beyond the boundary of the Emitter Noise Zone within the receptor’s Noise Zone.”) BNE did not submit any actual noise monitoring data at all; instead, it submitted a brief report by Howard Quin based solely on noise modeling. (BNE Interrog. Responses, dated Feb. 21, 2020, at Ex. D (the “Quin noise report”).) That noise modeling was not conducted to property lines, only to “residential receptors” that it largely did not even identify by street address. (*See id.* at p. 5.)

The Quin noise report contains other information and methodologies that are not supported by the language of Connecticut’s noise regulations. For example, Quin summarized the noise zone standards using an “L90” value. (*Id.* at Table 1.) L90 is the noise level that is not exceeded 90% of the time, meaning that is not the maximum noise level, but a “most of the time” noise level used to assess background sound levels. *See* R.C.S.A. § 22a-69-4(e) (“The determination of L90 to ascertain background levels requires a statistical analysis.”). The actual noise zone standards contained in the noise regulations provides that levels in excess of the values listed “shall be considered excessive noise.” R.C.S.A. § 22a-69-3.5. Those standards do not mention L90 and are instead absolute or “not-to-exceed” noise regulations, as explained by

Robert Rand, a renowned noise expert engaged by FWCT to review BNE's post-construction noise monitoring reports in 2016. (*See Peer Review of Quin Noise Compliance Studies* by Robert Rand, dated Oct. 10, 2016 (attached as Exhibit I), at 7.) To assess compliance with the noise regulations, then, the appropriate sound level to measure is Lmax (the maximum sound level) or L01 (the sound level exceeded only 1% of the time). According to Rand, using L90 "minimizes reported noise impacts by reporting the quieter lower level L90, not the actual audible maximum wind turbine noise level" and therefore does not comply with regulatory requirements. (*Id.*) In addition, Quin's modeling resulted in "predicted Leq noise levels" at residences. (BNE Interrog. Responses, dated Feb. 21, 2020, at Ex. D at 5.) An Leq value is an average sound level, or the noise level that would result in the same total sound energy being produced over a given period. Again, a Leq sound level is not the Lmax or even the L01 that the noise regulations call for.

Nor did BNE submit any of the noise data required by the wind turbine regulations. Those regulations require discussion of the existing sound levels at the site, details about the manufacturer's technical documentation of noise emission characteristics, calculations of sound levels at the property lines (reinforcing that "residential receptors" are irrelevant for purposes of state noise law), and projected levels of infrasonic and ultrasonic sound, impulsive noise and prominent discrete tones. *See R.C.S.A. § 16-50j-94(d).*

Despite those errors and omissions, Council staff concluded that the cumulative noise levels "are expected to comply with the DEEP Noise Control Standards at the nearest residential receptors." As set forth above, state law requires compliance with the maximum permissible sound levels at the property lines and the modeling conducted by BNE is silent with respect to both. The Council staff also inexplicably reviewed in detail (1) the noise predictions of the

originally proposed project, which included a T3 location more than 1500 feet away from the new abutters and is therefore irrelevant because it was never constructed; and (2) the post-construction noise monitoring conducted four years ago, which included monitoring locations that were not at the boundaries of the project site (then or as proposed to change with the Modification) and is therefore similarly irrelevant. The Council staff did not mention the Rand report criticizing the post-construction monitoring, or address BNE's refusal to even commit to using the available Enercon reduced sound output mode in its operation of T3. In short, BNE did not provide, and the Council did not ask for, data showing that T3 would comply with the noise regulations.

**E. Conclusion**

The Council approved a D&M Plan modification that relocated a facility onto a project site that was never before considered, thereby affecting new abutters with impacts that were never before identified or evaluated. Because the Council only has the authority to site wind turbines in connection with a duly-filed petition for declaratory ruling, the Modification Decision exceeded the Council's jurisdiction and authority and will unreasonably destroy or impair the waters and natural resources of the state. For those reasons, as more fully set forth above, Petitioners ask that the Council issue a declaratory ruling as described above, reversing or vacating the Modification Decision and denying BNE's attempt to circumvent statutory and regulatory requirements that has deprived Petitioners and others of procedural due process and will cause unreasonable environmental harm. Petitioners also ask that the Council grant their party status requests and acknowledge their status as CEPA intervenors.

**PETITIONERS  
FAIRWINDCT, INC.,  
JULIA AND JONATHAN GOLD, and  
GRANT SWAMP GROUP**

By: /s/ Emily A. Gianquinto  
Emily A. Gianquinto  
EAG Law LLC  
21 Oak Street, Suite 601  
Hartford, CT 06106  
Tel: (860) 785-0545  
Fax: (860) 838-9027  
emily@eaglawllc.com

**VERIFICATION**

I, Joyce Hemingson, being duly sworn, depose and say that I am president of FairWindCT, Inc. and therefore authorized to act on its behalf, that I have read the foregoing petition, and that verify that it is true and accurate to the best of my knowledge.

By: Joyce Hemingson  
Joyce Hemingson, President

Subscribed and sworn to before me this 29<sup>th</sup> day of May, 2020.

[Signature]  
Notary Public / Commissioner of the Superior Court  
My Commission Expires:

**VERIFICATION**

I, Adair Mali, being duly sworn, depose and say that I am a partner of the Grant Swamp Group and therefore authorized to act on its behalf, that I have read the foregoing petition, and that verify that it is true and accurate to the best of my knowledge.

By: Adair P. Mali

Adair Mali

Subscribed and sworn to before me this 29<sup>th</sup> day of May, 2020.

[Signature]  
Notary Public / Commissioner of the

\_\_\_\_\_  
Superior Court

My Commission Expires:

**VERIFICATION**

I, Joyce Hemingson, being duly sworn, depose and say that I am president of FairWindCT, Inc. and therefore authorized to act on its behalf, that I have read the foregoing petition, and that verify that it is true and accurate to the best of my knowledge.

By: \_\_\_\_\_

Joyce Hemingson, President

Subscribed and sworn to before me this \_\_\_\_ day of May, 2020.

\_\_\_\_\_  
Notary Public / Commissioner of the Superior Court

My Commission Expires:

**VERIFICATION**

I, Julia Gold, being duly sworn, depose and say that I have read the foregoing petition, and that verify that it is true and accurate to the best of my knowledge.

By: Julia Gold 5.29.2020

Julia Gold

Subscribed and sworn to before me this 29th day of May, 2020.

\_\_\_\_\_  
Notary Public / Commissioner of the Superior Court

My Commission Expires:

**VERIFICATION**

I, Adair Mali, being duly sworn, depose and say that I am a partner of the Grant Swamp Group and therefore authorized to act on its behalf, that I have read the foregoing petition, and that verify that it is true and accurate to the best of my knowledge.

By: \_\_\_\_\_

Adair Mali

Subscribed and sworn to before me this \_\_\_\_ day of May, 2020.

\_\_\_\_\_  
Notary Public / Commissioner of the Superior Court

My Commission Expires:

# **EXHIBIT A**



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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March 6, 2020

Lee D. Hoffman, Esq.  
Pullman & Comley  
90 State House Square  
Hartford, CT 06103-3702

RE: **PETITION NO. 983** - BNE Energy, Inc. Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of a 4.8 MW Wind Renewable Generating facility located on Flagg Hill Road, Colebrook, Connecticut. **D&M Plan Modification.**

Dear Attorney Hoffman:

The Connecticut Siting Council (Council) is in receipt of your correspondence dated January 9, 2020 regarding a modification to the Development and Management (D&M) Plan for the above-referenced Wind Colebrook South site that was approved by the Council on November 22, 2011.

Pursuant to Regulations of Connecticut State Agencies §16-50j-62(b), the Council's June 2, 2011 Declaratory Ruling and the Council's October 21, 2011, November 22, 2011, February 7, 2013 and December 17, 2013 D&M Plan and D&M Plan modification approvals, the request to relocate Turbine 3 (T3) and to construct, maintain and operate an Enercon 4.2-138 MW wind turbine at Wind Colebrook South is hereby approved with the following conditions:

1. Submission of a final site plan that includes, but is not limited to, details for crossing Wetland 1, extent of vegetative clearing, grading, wetland buffers, access roads, turbine foundation, equipment and material laydown and staging area, electrical interconnection, fencing, equipment pad, and post-construction stormwater controls, as designed in the DEEP-approved Stormwater Pollution Control Plan (SWPCP);
2. Submission of a copy of the DEEP General Permit and DEEP-approved SWPCP prior to commencement of construction;
3. Retention of a third party monitor to ensure establishment of appropriate environmental safeguards protective of amphibian and reptile species during construction consistent with Note 5 under "WCS Third Party Environmental Inspections" on Sheet C600 of the D&M Plan Modification;
4. Submission of the final FAA determination(s);
5. Written notice of commencement of site clearing, foundation construction, T3 installation, completion of remediation, and commencement of T3 operation;
6. Performance of a post-construction noise monitoring protocol consistent with the existing WCS protocol describing locations, frequency and methods to be employed for a post-construction noise study of all three turbines. Upon review of the subsequent noise study, the Council will evaluate and determine if any mitigation measures should be employed, including turbine operations management;

7. Performance of post-construction monitoring of bats and birds consistent with the existing WCS protocol to document any mortality from T3 operations. An annual summary of the study results shall be submitted to the Council for a period of three years with the first report due one year after commencement of T3 operation. At the end of the three-year study period, the Council will evaluate and determine if any mitigation measures should be employed to reduce bat and/or bird mortality; and
8. Submission of a first year operating report within three months after the conclusion of the first year of operation that includes a discussion of the number of hours of operation, wind speeds, and the amount of generation produced by T3.

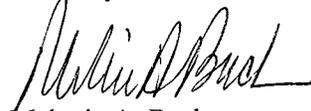
This approval applies only to the D&M Plan modification dated January 9, 2020 and supplemental information submitted on February 21, 2020, February 26, 2020, March 2, 2020 and March 5, 2020.

Any significant changes to the D&M Plan require advance Council notification and approval.

Enclosed is a copy of the staff report on this D&M Plan modification, dated March 6, 2020.

Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman  
Executive Director

MB/MP/laf

c: Council Members

Enclosure: Staff Report, dated March 6, 2020

**Petition No. 983**  
**BNE Energy, Inc. – Wind Colebrook South**  
**Development & Management Plan Modification**  
**Staff Report**  
**March 6, 2020**

**Introduction**

On June 2, 2011, the Connecticut Siting Council (Council) issued a Declaratory Ruling to BNE Energy, Inc. (BNE) in Petition 983, pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for the construction, maintenance, and operation of a 4.8 megawatt (MW) wind electric generating facility located on Flagg Hill Road in Colebrook, Connecticut, known as Wind Colebrook South (WCS).<sup>1</sup> WCS is the only utility-scale wind electric generating facility in the state.

The parties and intervenors to Petition 983 were: Robin Hirtle, Stella and Michael Somers, FairwindCT, Inc. (Fairwind), David Lawrence and Jeannie Lemelin, the Town of Colebrook (Town), Benjamin and Kristin Mow, Walter Zima, Brandy Grant, Eva Villanova and Susan Wagner (Parties and Intervenors).

BNE initially proposed the construction, maintenance and operation of three GE 1.6-82.5 MW (GE-1.6) turbines with hub heights of 100 meters (m) and rotor diameters of 82.5m (tip height of 463 feet), but also requested allowance for a 100m rotor diameter if it became commercially available in 2012. In its Declaratory Ruling, the Council found the visual impact among the two rotor diameters not significantly different and approved three GE-1.6 turbines with hub heights of 100m and rotor diameters of 100m (tip height of 492 feet) at WCS.

**Wind Regulations**

Public Act (PA) 11-245 required the Council to adopt regulations concerning the siting of wind turbines and imposed a moratorium on any application or petition for siting of a wind turbine until after the adoption of the regulations. The regulations include, but are not limited to, consideration of setbacks, shadow flicker, ice throw, noise, decommissioning and natural resources. PA 11-245 took effect on July 1, 2011. The Council issued its Declaratory Ruling for WCS on June 2, 2011. PA 11-245 did not apply to WCS. Wind regulations were adopted on May 9, 2014. They do not apply to WCS.<sup>2</sup>

**Judicial Appeal**

Fairwind appealed the Council's Declaratory Ruling. The Superior Court dismissed Fairwind's appeal on October 1, 2012. Fairwind appealed to the Supreme Court. On September 23, 2014, the Supreme Court affirmed the Superior Court's dismissal of Fairwind's appeal. It held, in relevant part:

1. The wind regulations are not retroactive;
2. The Council is not bound by Department of Environmental Protection Noise Control regulations;

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<sup>1</sup> BNE purchased the site in November 2007. It submitted a proposal into the Connecticut Clean Energy Fund's (CCEF) Call for Applications for Renewable Energy Projects in Pre-Development, an initiative in support of the state Renewable Portfolio Standard requiring the distribution companies to enter into minimum 10-year contracts for at least 100 MW of Class I renewable capacity. CCEF selected BNE's proposal in July 2008.

<sup>2</sup> *FairwindCT, Inc. v. Conn. Siting Council*, 313 Conn. 669 (2014).

3. The Council is authorized to condition a Declaratory Ruling with a Development and Management (D&M) Plan;
4. Substantial evidence in the record supports the Declaratory Ruling; and
5. Sufficient notice of plan changes and relocation of the turbines was provided.

The Supreme Court concluded that the plans submitted with the petition had to be revised after approval to address unforeseen site conditions.<sup>3</sup> This is the purpose of a D&M Plan.

### **WCS D&M Plan**

Condition 2 of the Declaratory Ruling states: “The Petitioner shall not commence construction activities until securing Council approval of a D&M Plan. The D&M Plan shall be served on all parties and intervenors as listed in the service list for comment, and submitted to and approved by the Council in one or more sections prior to the commencement of facility construction ...”

Regulations of Connecticut State Agencies (RCSA) §16-50j-60 requires each section of a D&M Plan to be approved, modified or disapproved within 60 days of receipt. The regulations allow for changes to a D&M Plan while it is under review, at any time during or after preparation of the plan, and at any time after the plan has been approved. RCSA §16-50j-62 requires advance written notice whenever a significant change to an approved D&M Plan is necessary and for significant changes to be approved, modified or disapproved by Council staff in accordance with RCSA §16-50j-60. Significant changes to an approved D&M Plan include, but are not limited to, “a change in structure type or location.”

On September 16, 2011, BNE submitted its D&M Plan. It included all of the sections required under Condition 2 of the Council’s Declaratory Ruling. Copies of the D&M Plan were served on all Parties and Intervenors. The Town submitted comments related to the Host Community Agreement, conservation easement, infrastructure protection, noise monitoring, environmental monitoring and Decommissioning Plan.<sup>4</sup> Fairwind submitted comments claiming the D&M Plan did not satisfy the Council’s orders in the Declaratory Ruling. The Council approved the site clearing and environmental monitor sections of the D&M Plan on October 21, 2011.

### ***October 28, 2011 D&M Plan Modification***

On October 28, 2011, BNE submitted a modification to the pending D&M Plan to relocate the temporary construction access road. This relocation avoided use of the driveway and utility easement in favor of the WCS property over abutting property to the east owned by Hirtle located at 29A Flagg Hill Road. Copies of the D&M Plan Modification were served on all Parties and Intervenors. No comments were received.<sup>5</sup> The Council approved all of the remaining sections of the D&M Plan, including relocation of the temporary construction access road requested in the D&M Plan Modification, on November 22, 2011.

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<sup>3</sup> *Id.*, A D&M Plan is not the subject of a proceeding. It is a condition of a final decision in a proceeding that must be met in order to commence facility construction. A D&M Plan functions to “fill up the details” and constitutes the “nuts and bolts” of the facility approved by the Council. *Town of Westport v. Connecticut Siting Council*, 260 Conn. 266 (2002); *Town of Middlebury v. Conn. Siting Council*, 2002 Conn. Super. LEXIS 610 (Conn. Super. 2002).

<sup>4</sup> Pursuant to Conditions 2(c) and 3 of the Declaratory Ruling, in its D&M Plan, BNE submitted details for the protection of town infrastructure and for the Host Community Agreement with the Town.

<sup>5</sup> On January 10, 2012, counsel for Hirtle submitted concerns regarding the relocation of the temporary access road.

### ***November 2, 2012 D&M Plan Modification***

On November 2, 2012, BNE submitted a modification to the approved D&M Plan to further modify the construction access road and to relocate Turbines 1 and 2 (T1 and T2). For the relocation of T1 and T2, BNE purchased the 5-acre abutting parcel to the east at 29A Flagg Hill Road to utilize the existing residential driveway for the access road. Copies of the D&M Plan Modification were served on all Parties and Intervenor. No comments were received. T1 was relocated approximately 135 feet to the east farther from Wetland 1 resulting in 6,100 square feet less tree clearing within 100 feet of Wetland 1 and an increase in ground elevation of 16 feet. T2 was relocated approximately 167 feet to the southwest further into the interior of the site property resulting in 12,550 cubic yards less fill and an increase in ground elevation of 22 feet. The Council approved the D&M Plan Modification on February 7, 2013.

### ***November 5, 2013 D&M Plan Modification***

On November 5, 2013, BNE submitted a modification to the approved D&M Plan to construct, maintain and operate three GE 2.85-103 MW (GE-2.85) turbines with 98.3m hub heights and 103m rotor diameters (tip height of 491 feet) due to changes in GE's product line that rendered the three Council-approved GE-1.6 turbines no longer available. Copies of the D&M Plan Modification were served on all Parties and Intervenor. Fairwind objected claiming no statute or regulation allows for project modifications in the D&M Plan process, the modification is prohibited by the PA 11-245 moratorium, the GE-1.6 turbines are available, the GE-2.85 turbines would produce the same electrical output as the GE-1.6 turbines and BNE failed to submit updated, engineer-certified plans. The Council overruled Fairwind's objection and approved the D&M Plan Modification on December 17, 2013.

### **Construction and Operation of T1 and T2**

Site clearing and construction at WCS commenced on December 5, 2011. In compliance with the Council's Declaratory Ruling and the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) issued by the Department of Energy and Environmental Protection (DEEP), BNE submitted 104 bi-weekly environmental monitoring reports, 20 stormwater monitoring reports, 14 erosion and sedimentation control reports, 2 post-construction amphibian monitoring reports,<sup>6</sup> 3 post-construction bird and bat monitoring reports,<sup>7</sup> and 3 post-construction noise monitoring reports, including a final noise compliance measurement study.<sup>8</sup>

BNE achieved commercial operation of T1 and T2 on November 4, 2015 and completed first year operations at the end of 2016 at an annual average wind speed of 15.44 miles per hour, a capacity factor of 29.1%, generation of 12,741,917 kilowatt hours of electricity, and production of 12,741 renewable energy credits. The number of hours of operation was 8,330 out of 8,760, resulting in an average availability for T1 and T2 of 95.09%. BNE did not submit notification of completion of construction and site rehabilitation pursuant to RCSA §16-50j-62 because the Council's Declaratory Ruling approved the construction of three wind turbines at WCS and Turbine 3 (T3) has not yet been constructed.

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<sup>6</sup> The reports concluded the spotted salamander population is stable and the wood frog population is increasing.

<sup>7</sup> The reports concluded the mortality results are significantly below the WCS predicted average mortality rates.

<sup>8</sup> The reports and study conclude T1 and T2 operate at cumulative noise levels no greater than 49 dBA.

### **Extension for Construction of T3**

Condition 7 of the Declaratory Ruling required completion of construction at WCS within four years of the date of the Declaratory Ruling or within four years after all appeals of the Declaratory Ruling have been resolved. The Supreme Court dismissed Fairwind's appeal of the Declaratory Ruling on September 23, 2014 rendering the deadline for completion of construction as September 23, 2018. On July 17, 2018, in compliance with Condition 7 of the Declaratory Ruling, BNE requested a three-year extension of the construction completion deadline to September 23, 2021. In its request, BNE stated that it had entered into additional power purchase agreements (PPAs) with Eversource and United Illuminating (UI) for T3 on June 20, 2017. The Council granted BNE's request for a three-year extension of the construction completion deadline for T3 on August 31, 2018.

### **January 9, 2020 D&M Plan Modification**

On January 9, 2020, BNE submitted a modification to the approved D&M Plan to relocate T3 1,715 feet south of the initial T3 location and to construct, maintain and operate an Enercon 4.2-138 MW (E-4.2) turbine with a 128m hub height and 138m rotor diameter (tip height of 646 feet) due to changes in GE's product line that rendered the Council-approved GE-2.85 turbine no longer available. For the relocation of T3, BNE entered into two option agreements to purchase approximately 36 additional acres to the south of the existing site.<sup>9</sup> Copies of the D&M Plan Modification were served on all Parties and Intervenors. On March 4, 2020, 55 days after receiving notice of the D&M Plan Modification, Fairwind objected claiming no statute or regulation allows for project modifications in the D&M Plan process and the wind regulations apply to WCS. The same Fairwind objection to BNE's November 5, 2013 D&M Plan Modification was overruled on December 17, 2013.<sup>10</sup>

BNE provided notice to the abutting properties to the south, east and west of the 53 Flagg Hill Road, Colebrook parcel on January 31, 2020. Comments were received from three abutters and three neighbors relative to the applicability of the wind regulations and concerns about Beckley Bog, vernal pools, setbacks, noise, visibility, water quality and lighting.<sup>11</sup> Each concern is addressed below.

On January 24, 2020, the Council issued interrogatories to BNE. BNE submitted responses to the interrogatories on February 21, 2020 and February 25, 2020. The Council issued a second set of interrogatories to BNE on February 25, 2020. BNE submitted responses to the second set of interrogatories on March 2, 2020 and March 5, 2020.

### ***T3 Power Purchase Agreements***

T3 was selected through a DEEP Request for Proposals for Class I renewable energy sources with a nameplate capacity rating of more than 2 MW and less than 20 MW to enter into long-term PPAs with the

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<sup>9</sup> BNE has options to purchase 27.21 acres at 53 Flagg Hill Road and 9.27 acres at 45 Flagg Hill Road in Colebrook.

<sup>10</sup> Fairwind omits any reference to its same objection regarding the November 5, 2013 D&M Plan Modification being overruled and omits any reference to the November 2, 2012 D&M Plan Modification when BNE purchased additional acreage on Flagg Hill Road that resulted in new abutters and relocation of the access road and turbines.

<sup>11</sup> The three abutters that submitted comments are the owners of 319 Beckley Road in Norfolk and a parcel on Skinner Road in Winchester; the owners of 246 Danbury Quarter Road in Winchester; and the Nature Conservancy. The three neighbors that submitted comments are the owners of 10 Schoolhouse Road in Norfolk; the owners of 324 Beckley Road in Norfolk; and the owners of 289 Grantville Road in Norfolk.

electric distribution companies. Per BNE's PPAs, approximately 80 percent of the electricity and renewable energy certificates will be sold to Eversource and 20 percent will be sold to UI. The PPAs total 3.83 MW maximum capacity output. The Public Utilities Regulatory Authority approved BNE's PPAs on September 7, 2017. The PPAs have a 20-year term, and there is no option for any renewal. At the end of the PPA terms, BNE will seek other revenue mechanisms to maximize the useful life of T3.

### *Interconnection*

BNE is currently working with Eversource to conduct the interconnection studies needed to accommodate T3. Upon completion of the interconnection studies, BNE expects to enter into an Interconnection Agreement with Eversource for T3. An ISO-NE transmission study is also required.

The existing electrical connection for WCS to the distribution system on Flagg Hill Road is 23 kilovolts (kV). To accommodate T3, approximately 5.5 miles of three-phase 23-kV distribution would be upgraded, resulting in a 27-kV connection to the existing Riverton Substation. Eversource would be responsible for the required distribution upgrades.

The electrical output of T3 would be three-phase 27-kV. The on-site underground electrical interconnection would require two 5-inch polyvinyl chloride (PVC) conduits (one for the 27-kV generator line itself and one for a spare) and one 3-inch PVC conduit (for fiber optics and controls) to be located within a concrete duct bank. The duct bank will be installed within the arch bridge to cross the on-site watercourse/wetland area. The electrical interconnection route would run underground roughly parallel to the access drive to T3. In the vicinity of the existing access route for T1 and T2, the interconnection route would then turn northwest and run east of the existing access to T2 before finally turning to the northeast to reach an existing utility equipment pad area directly off of Flagg Hill Road and connect to electric distribution on Flagg Hill Road. No new transformers would need to be installed because the output line voltage from T3 would match the (upgraded) line voltage of 27-kV.

### *Output*

The E-4.2 output would be limited to 3.83 MW (at the point of interconnection) to comply with the terms of the PPAs. Thus, BNE would limit the maximum capacity of T3 by 8.8%, but the power curve of the E-4.2 would remain the same up to the 3.83 MW PPA limit. BNE projects an annual capacity factor of approximately 37.6 percent, resulting in a projected annual electricity production of 13,845 MWh. While the projected capacity factor for T3 was slightly reduced due to the capacity limit of 3.83 MW, T3 is still projected to generate more Class I renewable energy on an annual basis than the pair of existing GE 2.85s. This is due to the E-4.2's higher capacity factor (i.e. 37.6 percent vs roughly 29.1 percent) than the GE-2.85 and the E-4.2's greater capacity than the GE-2.85.

The E-4.2 has a blade heating system that improves T3's energy production (and effectively, its capacity factor) because it would minimize icing, and during an ice shutdown, the heaters would speed the thawing process and thus shorten the duration of such ice-related shutdown. Since the noise reduction mode would result in a capacity limit of 3.5 MW and thus a lower capacity factor, BNE does not expect to utilize the noise reduction mode in order to comply with DEEP Noise Control Standards at the nearest residential receptors.

A battery storage component could be incorporated in the future for the electrical output from WCS.

### ***T3 Model Selection***

Based on wind speed, extreme gusts and turbulence, the International Electrotechnical Commission establishes standard wind classes. Wind class determines what turbine model is suitable for the normal wind conditions of a particular site. For example, a turbine installed at a Class III (low wind) site will need a larger rotor to capture the same amount of energy as a similar turbine installed at a Class II (medium wind) site. WCS is a Class IIIA site. It has low wind speed and high turbulence intensity.

The turbulence intensity and size of the WCS site are limiting factors in turbine model selection. Turbine manufacturers determine the suitability of a model for a site with high turbulence intensity. Some turbine manufacturers, such as Siemens and Vestas, have minimum project size requirements. BNE initially considered the GE 5.3-158 MW (GE-5.3) turbine, but it was rejected due to site suitability and size. The GE-5.3 is available with hub heights of 101m - 161m and a rotor diameter of 158m. It is considerably larger than the E-4.2. Specifically, the GE-5.3's 158m rotor would sweep out an area of about 19,600 square meters, or about 31 percent more than the E-4.2's 138m rotor that would sweep out an area of about 15,000 square meters. Furthermore, the GE-5.3 would require a hub height of 151m at WCS, resulting in a tip height of 755 feet, which is 17 percent greater than the tip height of the E-4.2.

BNE also considered the E-4.2 and the Enercon 3.5-138 MW (E-3.5) turbine models. The E-4.2 and E-3.5 are available with hub heights of 80m - 160m and a rotor diameter of 138m. Like the E-4.2, the E-3.5 is suitable for the WCS site, but it is the same size as the E-4.2 and produces less energy due to its capacity being 0.7 MW less than the E-4.2. Taking into account all of the foregoing factors, BNE selected the E-4.2 for the T3 model.

### ***Public Safety***

#### **Operations Management**

T3 has a projected operational life of 25 years. Like T1 and T2, it would have emergency stop buttons located within the tower base and within the nacelle to stop T3 in the event of an emergency. T3 would also have an automatic fire suppression system and handheld fire extinguishers, as well as the ability to be shut-down and de-energized in the event of a fire. When T1 and T2 were constructed, BNE hosted a tour with local emergency responders. When T3 is constructed, BNE will also host a tour with local emergency responders.

Access to T3, including the bridge crossing, is able to accommodate construction vehicles and emergency responders. Construction of T3 would comply with the National Electric Code, the National Electrical Safety Code and all applicable National Fire Protection Association codes and standards. Like T1 and T2, T3 will be self-contained and locked on the restricted access WCS site, as well as monitored by security cameras. Also like T1 and T2, mechanical and electrical maintenance of T3 would generally be scheduled every six months for approximately one and a half days.

#### **Aviation Safety**

BNE notified the Federal Aviation Administration (FAA) of T3 and associated temporary construction structures. It expects a FAA determination within the next few months.

Per FAA requirements, T1 and T2 have one flashing red light on their nacelles that is illuminated at night and flashes simultaneously. T3 requires a FAA lighting scheme with two flashing red lights on opposite sides of its nacelle. T3's FAA lighting scheme will be configured to flash simultaneously with T1 and T2. The FAA determined that wind turbines painted white demonstrate the most effective method for providing daytime conspicuity and red flashing, strobe or pulsed obstruction lights installed as high as possible on the nacelle demonstrate the most effective method for providing nighttime conspicuity.

#### Setbacks

Pursuant to Condition 2(a) of the Declaratory Ruling, BNE submitted a detailed site plan demonstrating the location and rotor diameter of T1 ensures the rotating blades are confined to the host property that was approved by the Council on November 22, 2011. In its D&M Plan Modification, BNE submitted a detailed site plan demonstrating the location and rotor diameter of T3 ensures the rotating blades are confined to the host property by a distance of 1.1 times the length of the blade from the property lines. See Attachment A. The distance from the initial T3 location to the Nature Conservancy (TNC) property line is 235 feet to the west. The distance from relocated T3 to TNC's property line is 324 feet to the west.

Industry setback standard considerations include adjoining population density, usage frequency of adjoining roads, land availability and proximity to publicly accessed areas and buildings. Objects of concern within the setback distance are public use areas, residences, office buildings, public buildings, parking lots, public and private roads, railroads and sensitive above ground services, such as pipelines and electric transmission lines. The GE setback distance for blade failure, ice throw, tower collapse, rotor sweep and falling objects is 1.1 times the blade tip height from objects of concern within the setback distance. The setback distance is calculated from the center of the tower. T1 and T2 comply with this setback distance.

The wind regulations allow for a setback of no less than 1.5 times the wind turbine height to a residence.<sup>12</sup> Under RCSA §16-50j-2a, "wind turbine height" means the measurement from ground level to the tip of the blade of a wind turbine in the vertical position, also referred to as "tip height." The nearest residence to T3 is located at 319 Beckley Road in Norfolk approximately 1,027 feet to the southwest. For the E-4.2, this gives an effective setback of about 1.6 times the wind turbine height to the residence, which conservatively exceeds industry setback standards. The second nearest residence to T3 is located at 324 Beckley Road in Norfolk approximately 1,600 feet to the southwest. For the E-4.2, this gives an effective setback of about 2.5 times the wind turbine height to the residence. All other residences are greater than 2,050 feet from T3.

#### Shadow Flicker

"Shadow flicker" describes the alternating pattern of light and dark that occurs when wind turbine blades sweep through the path of sunlight low in the sky. It is measurable to a high degree of predictability. In its Declaratory Ruling, the Council found that shadow flicker is a potential annoyance rather than a health threat and committed to work with property owners and BNE to determine reasonable mitigations on a case-by-case basis.

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<sup>12</sup> Regulations of Connecticut State Agencies §16-50j-95(a) (2014).

The wind regulations require submission of an evaluation of shadow flicker and allow for shadow flicker to occur more than 30 total annual hours at any off-site occupied residential structure.<sup>13</sup> In its D&M Plan Modification, BNE submitted an evaluation of shadow flicker.

The Petition 983 shadow flicker evaluation determined 7 residential structures would experience some shadow flicker ranging from 10 to 48 hours per year. See Attachment B. The shadow flicker evaluation for T3 confirmed that shadow flicker beyond approximately 1.25 miles from T3 would be negligible as shadow flicker diminishes with distance. Taking into account the direction of the sun, shadow flicker is expected at the following residential structures: 31 total annual hours at 29A Flagg Hill Road in Colebrook; 30.5 total annual hours at 8 Flagg Hill Road in Colebrook; and 6 total annual hours at 129 Grantville Road in Norfolk. The two closest residences at 319 and 324 Beckley Road in Norfolk will not receive any shadow flicker due to their location southwest of T3.<sup>14</sup>

#### Ice Throw

Pursuant to Condition 2(i) of the Declaratory Ruling, BNE submitted an Ice Safety Management Plan (ISMP) that was approved by the Council on November 22, 2011. The wind regulations require the submission of an evaluation of ice throw and the turbine manufacturer's technical documentation relating to recommended ice throw setback distances and installed ice monitoring devices and sensors.<sup>15</sup> In its D&M Plan Modification, BNE submitted an evaluation of ice throw, technical documentation relating to recommended ice throw setback distances and installed ice monitoring devices and sensors, and a modified ISMP. See Attachment C.

The E-4.2 has an ice detection system and a blade heating system to melt ice. Enercon conducted a site-specific ice risk assessment for T3. It concluded that with employment of the ice detection system and blade heating system, the ice throw probability from T3 to the nearest residence is null and ice drop will not extend beyond the length of the blades. This is consistent with turbine manufacturers' technical documentation relating to recommended ice throw setback distances, including GE's ice throw setback of 711 feet from the nearest residence. The nearest residence to T3 is 1,027 feet. Under the modified ISMP, the blade heating system will operate when temperature and relative humidity are within defined thresholds for icing. If icing is detected, T3 will automatically shutdown until all of the ice is melted and T3 can be safely restarted.

The combination of compliance with manufacturers' recommended ice throw setback distances, employment of the E-4.2 ice detection system and blade heating system, and implementation of the modified ISMP mitigates ice throw probability from T3.

#### Noise

Pursuant to Condition 2(j) of the Declaratory Ruling, BNE established a post-construction noise monitoring protocol that was approved by the Council on November 22, 2011. The wind regulations

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<sup>13</sup> Regulations of Connecticut State Agencies §16-50j-95(c) (2014).

<sup>14</sup> Identified as X and Y, respectively, on Attachment B, Petition 983 Probable Case Shadow Flicker Analysis.

<sup>15</sup> Regulations of Connecticut State Agencies §16-50j-94(e) (2014).

require an evaluation of noise.<sup>16</sup> In its D&M Plan Modification, BNE submitted an evaluation of noise from all three WCS turbines. Like shadow flicker, noise diminishes with distance.

The Petition 983 noise evaluation predicted cumulative noise levels from all 3 turbines would range from 32-49 dBA. The residence located at 319 Beckley Road in Norfolk is identified as Receptor Location 7 (R7) in the Petition 983 noise evaluation. See Attachment D. Cumulative noise levels at this location from all 3 turbines were predicted to be a maximum of 39 dBA.<sup>17</sup> This level is below the DEEP standard of 51 dBA. Short-term and long-term post-construction noise monitoring studies of WCS were performed for a period of one year. Monitoring Location 3 (M3) in the post-construction noise monitoring studies conducted during the first year of WCS operation is located between the turbines and the property line of 319 Beckley Road in Norfolk. Noise levels from T1 and T2 at M3 varied from approximately 36 dBA to 46 dBA. This range is below the DEEP standard of 51 dBA. The final noise measurement study concluded that compliance verified at the M3 location proves compliance at R7 as it is approximately 1,265 feet further away from the turbines than the M3 monitoring location.

The T3 noise evaluation predicts cumulative noise levels from all 3 turbines would range from 39-48 dBA. Cumulative noise levels from all 3 turbines at 319 Beckley Road in Norfolk are predicted to be a maximum of 45.4 dBA. Cumulative noise levels from all 3 turbines at 324 Beckley Road in Norfolk are predicted to be a maximum of 38.8 dBA. These levels are below the DEEP standard of 51 dBA.

The T3 noise evaluation concludes that cumulative noise levels from all 3 turbines without the utilization of noise reduction mode will comply with the DEEP Noise Control Standards at the nearest residential receptors. The E-4.2 is comparable in noise characteristics to the GE-1.6 turbines originally modeled and approved by the Council. Its maximum worst-case noise level is 106 dBA at a hub height of 128m and at an operational wind speed of 12m per second. Like T1 and T2, the E-4.2 utilizes serrated blades that enable improved turbine acoustics. The E-4.2 also has the capability to operate in a noise reduction mode at a reduced power output of 3.5 MW.

In compliance with the Declaratory Ruling, with the addition of T3 equipped with serrated blades and the capability to operate at reduced sound outputs, if necessary, cumulative noise levels of all 3 turbines at WCS are expected to comply with the DEEP Noise Control Standards at the nearest residential receptors.

#### Decommissioning

Pursuant to Condition 2(l) of the Declaratory Ruling, BNE submitted a Decommissioning Plan that was approved by the Council on November 22, 2011. The wind regulations require submission of a Decommissioning Plan.<sup>18</sup> T3 does not require any revisions to the approved Decommissioning Plan.

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<sup>16</sup> Regulations of Connecticut State Agencies §16-50j-94(d) (2014).

<sup>17</sup> Near 324 Beckley Road in Norfolk is identified as Monitoring Location 2 in the Petition 983 noise evaluation. Cumulative noise levels at this location from all 3 turbines were predicted to be a maximum of 37 dBA.

<sup>18</sup> Regulations of Connecticut State Agencies §16-50j-94(i) (2014).

## *Environment and Natural Resources*

### Air and Water Quality Standards

T3 would comply with DEEP air quality standards as it would produce no emissions during operation.

Pursuant to Conditions 2(d) - (g) of the Declaratory Ruling, BNE submitted an Erosion and Sedimentation Control Plan, a Stormwater Management Plan, Drainage Calculations and provisions for crossing Wetland 1 that were approved by the Council on November 22, 2011. With its D&M Plan Modification, BNE submitted an Erosion Control Plan, Stormwater Management Plan, Stormwater Pollution Prevention Plan, Drainage Calculations and provisions for crossing Wetland 1.

Pursuant to CGS §22a-430b, DEEP has exclusive jurisdiction over stormwater management. Construction of T3 requires a General Permit. On December 31, 2019, DEEP published notice of intent to reissue the General Permit that will become effective on September 30, 2020. Construction of T3 will comply with the proposed reissued General Permit. BNE held a conference call with the DEEP Stormwater Division on February 7, 2020 and a meeting on March 4, 2020. DEEP staff is currently reviewing BNE's General Permit registration.

The DEEP General Permit will ensure there are no construction-related impacts to on-site and off-site water quality. All aspects of construction phasing, erosion and sedimentation control methods, temporary and permanent stormwater control features, and on-site monitoring and reporting requirements are reviewed and approved by DEEP as part of the General Permit registration. No site construction activities can occur until the General Permit is issued.

As part of the DEEP General Permit and Condition 2(k) of the Council's Declaratory Ruling, BNE is required to retain an independent third party inspector to monitor on-site erosion and sedimentation controls and report to DEEP during construction.

### Wetlands and Wildlife

Pursuant to Conditions 2(b) and (h) of the Declaratory Ruling, BNE submitted a conservation easement and Wetland and Wildlife Restoration Plan (WWRP) that were approved by the Council on November 22, 2011. The wind regulations require the submission of a natural resources evaluation report.<sup>19</sup> The 26.58-acre conservation easement protects the site's natural resources for the life of WCS. The WWRP provides for restoration of disturbed areas with a native seed mix for erosion control and wildlife habitat value and maintains portions of the restored areas as permanent meadow. The final bi-weekly environmental monitoring report concluded construction of T1 and T2 was completed in conformity with the WWRP. Construction of T3 does not require any revisions to the approved conservation easement or WWRP.

T3 is not within a DEEP Natural Diversity Database (NDDDB) area nor is it within ¼ mile of a DEEP NDDDB area.<sup>20</sup> Beckley Bog is a National Natural Landmark located in the Town of Norfolk. It is approximately 2,900 feet to the west of the initial location of T3 and approximately 3,100 feet west of

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<sup>19</sup> Regulations of Connecticut State Agencies §16-50j-94(h) (2014).

<sup>20</sup> BNE completed ongoing comprehensive wildlife surveys of the WCS site. In 2010, DEEP NDDDB identified Great St. John's-wort, a state special concern plant, growing in an off-site wetland east of the WCS site. DEEP recommended utilization of erosion and siltation control mechanisms to prevent negative impacts to the habitat.

relocated T3. Similar to the construction of T1 and T2, there will be no impacts to this natural resource from construction of T3.

Access to the initial T3 location required approximately 4,250 square feet of disturbance within the Wetland 1 boundary. Access to relocated T3 would require approximately 2,320 square feet of disturbance within the Wetland 1 boundary. This is a 45% reduction in wetland disturbance. The initial approved wetland crossing location for T3 was approximately 500 feet from the nearest vernal pool and within the 750 foot Critical Terrestrial Habitat (CTH). The relocated wetland crossing location for T3 is approximately 930 feet from the nearest vernal pool and completely outside of the CTH. In compliance with the 2015 U.S. Army Corps of Engineers (ACOE) Best Management Practices (BMPs) for Vernal Pools, maintenance of an uninterrupted directional corridor and use of a bridge for the wetland crossing maintains connectivity between the vernal pools and upland areas. BNE will retain a third party environmental monitor to ensure establishment of appropriate environmental safeguards protective of amphibian and reptile species during construction activities.

In compliance with Condition 4 of the Declaratory Ruling, BNE submitted bird and bat fatality monitoring reports for a period of three years after commencement of operation of T1 and T2. The studies concluded the average annual mortality results of 6 birds and 4 bats over the three year study period are significantly below the WCS predicted average annual mortality rates of 40 birds and 113 bats. Based on the results of the studies and consistent with Condition 4 of the Declaratory Ruling, on November 22, 2019, the Council determined that mitigation measures to reduce bird and/or bat mortality at T1 and T2 are unnecessary. The E-4.2 also offers a bat protection feature that can be installed post-construction.

With the employment of the established post-construction bird and bat fatality monitoring protocol for T3 and subsequent mitigation measures, including, but not limited to, the bat protection feature, if necessary, bird and bat mortality results are expected to be below the WCS predicted average annual mortality rates.

#### Visibility

The wind regulations require an evaluation of visibility.<sup>21</sup> In Petition 983, BNE performed a viewshed analysis of WCS using a 5 mile radius. The initial analysis determined the three approved turbines would be at least partially visible year-round from approximately 457 acres and seasonally visible (leaf-off) from approximately 1,327 acres. See Attachment E.

In its D&M Plan Modification, BNE performed a viewshed analysis of T3 using a 5 mile radius. The analysis determined that T3 would be at least partially visible year-round from approximately 541 acres and seasonally visible (leaf-off) from approximately 1,339 acres. Most of the year-round visibility of T3 would occur along portions of Route 44, over open water and open fields. Seasonal visibility of T3 would occur mostly on the existing WCS property and extend onto surrounding properties. See Attachment E.

For areas within a one mile radius, viewshed mapping indicates T3 would be visible year-round from areas that were previously determined to have visibility of the three initial turbine locations, including areas along Route 44, Flagg Hill Road, Beckley Road, open areas and waterbodies. New areas of visibility within a one-mile radius of T3 include, but are not limited to, areas along Route 44 near

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<sup>21</sup> Regulations of Connecticut State Agencies §16-50j-94(c) (2014).

Greenwoods Turnpike, the area adjacent to T3, Beckley Pond and Beckley Bog, and open field areas along Beckley Road in Norfolk and at the end of Marchone Road in Winchester.

The closest residence to T3, 319 Beckley Road in Norfolk, is expected to have year-round views of T3 across an open field area with the hub visible from most of the property. Seasonal views of T3 would also occur from wooded areas on the property. The property at 324 Beckley Road in Norfolk is expected to have a mix of year-round and seasonal views of the T3 hub from the eastern portion of the property and mostly seasonal views from the western portion of the property. The residence on this property appears to face T3 and would be expected to have seasonal views.

The State Historic Preservation Office determined that WCS would have no adverse effects upon any historic or cultural resources, including the Rock Hall property in Colebrook, a property listed on the National Register of Historic Places. The D&M Plan Modification viewshed analysis indicates T3 would not be visible from the Rock Hall property.

### *T3 Construction*

T3 is located on a small hill in the southwest corner of the 53 Flagg Hill Road parcel. Access to T3 will be from a new 20 to 30-foot wide gravel access drive extending approximately 2,650 feet from the existing T1 and T2 access drive. The new access drive will extend southwest from the existing drive, crossing through the 45 Flagg Hill Road parcel and into the 53 Flagg Hill Road parcel, ascending the southeast side of the hill to the T3 site. Due to hilly terrain, the access drive will be constructed with 2:1 side slopes and grades of up to 10 percent.

Runoff along the access road will be directed into riprap lined swales with underlying infiltration trenches or grass lined swales when slope conditions permit. Two storm water detention basins and level spreaders will be installed along the access drive to control runoff discharge.

A span arch bridge will be installed in the middle section of the access drive to facilitate the crossing of a watercourse. The watercourse, with bordering wetlands, extends from the southern end of Wetland 1 located on the 45 Flagg Hill Road parcel to another, wider wetland area located in the central portion of the 53 Flagg Hill Road parcel. The bridge will have a span of 30 feet and is located at the narrowest point of the watercourse/wetland area. The bridge design conforms to ACOE Stream Crossing BMPs that recommend span crossings to minimize disruption to watercourses by eliminating the need for culverts that have the potential to impound water and concentrate flows. The ACOE guidelines are consistent with DEEP BMPs and guidelines. In addition to maintaining natural watercourse flow, the bridge will allow wildlife to follow the watercourse unimpeded. The arch bridge, as recommended by the ACOE, will have a span that is 1.2 times wider than the full stream width, allowing for uninterrupted flow of a 50-year frequency storm.

The T3 location will be graded to create a level ground elevation of approximately 1,492 feet above mean sea level. An approximate 200-foot by 232-foot gravel pad will be established for construction equipment and a turbine assembly area. The gravel pad will have a slight pitch to direct runoff southwest to a stormwater detention basin.

Site construction will disturb an 8.45 acre area and will require 13,780 cubic yards of cut and 13,200 cubic yards of fill. Approximately 7.20 acres of forest will be cleared and grubbed for construction.

Stumps will be removed from the site. Approximately 2,320 square feet of wetlands will be impacted by construction, mostly in the area of the watercourse/wetland crossing.

Construction sequencing includes the clearing, grubbing and construction of the new access road to the bridge site, followed by bridge construction. Once the bridge is completed, the remaining access road and turbine pad area will be constructed. Construction activities will comply with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control*. Provisions have been made for soil stockpiles, temporary sediment traps and a temporary mat crossing of the watercourse/wetland area to facilitate bridge construction.

Consistent with the existing WWRP, once site work is completed, disturbed upland areas will be restored with a New England Conservation/Wildlife Mix, a native herbaceous seed mixture that will facilitate growth of a permanent cover of grasses, forbs, wildflowers and legumes. This seed mixture will provide erosion control and wildlife habitat value. Portions of the restoration area will be maintained as a permanent meadow.

BNE expects to complete construction by the end of 2020. Typical construction hours and days of the week will be 7:30 AM to 4:00 PM, Monday through Friday.

### **Conclusion**

WCS is an existing distributed energy resource facility as defined in CGS §16-1(a)(49). CGS §16a-35k establishes the state's energy policy, including the goal to "develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practicable extent." The 2018 Comprehensive Energy Strategy identifies Strategy No. 3 as, "Grow and sustain renewable and zero-carbon generation in the state and region." Governor Lamont's 2019 Executive Order 3 declares the state's goal to reach 100% carbon free electricity by 2040. WCS contributes to fulfilling the state's clean energy goals as a zero emission Class I renewable energy source. Additionally, WCS has the capability to incorporate battery storage in the future, which would maximize Class I renewable source electricity production.

In its Declaratory Ruling, the Council did not restrict the height, type or location of the three approved turbines on the WCS site. Inclusive of BNE's November 2, 2012 and November 5, 2013 D&M Plan modifications referenced herein, established Council precedent exists for approving the use of different turbine models and relocation of approved turbines through a D&M Plan modification. In 2000, the Council approved a D&M Plan modification to relocate an approved electric generating facility by 500 feet. This modification was upheld on appeal.<sup>22</sup> In 2001, the Council approved a D&M Plan modification to change approved turbine models and relocate an approved electric generating facility. This modification required all of the buildings to be rotated 90 degrees counterclockwise and construction of two taller buildings as opposed to one shorter building.<sup>23</sup> In 2017, the Council approved a D&M Plan modification to make layout changes to a section of approved solar arrays and increase clearing limits to minimize shading effects.<sup>24</sup> In 2018, the Council approved a D&M Plan modification to make layout changes to two sections of approved solar arrays.<sup>25</sup> In 2019, the Council approved a D&M Plan

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<sup>22</sup> Council Docket 192, Towantic Energy Center, Oxford; *Town of Middlebury v. Conn. Siting Council*, *supra* note 3.

<sup>23</sup> Council Docket 190, Meriden Gas Turbines, LLC, Meriden.

<sup>24</sup> Council Petition 1234, DG Connecticut Solar, LLC, North Canaan.

<sup>25</sup> Council Petition 1247, C-TEC Solar, Thompson.

modification to change the solar inverter model, adjust fence locations and install additional higher wattage solar panels in different locations than the locations identified in the Declaratory Ruling.<sup>26</sup>

The January 9, 2020 D&M Plan Modification, and supporting materials dated February 21, 2020, February 26, 2020, March 2, 2020 and March 5, 2020, are consistent with the Council's June 2, 2011 Declaratory Ruling and the Council's October 21, 2011, November 22, 2011, February 7, 2013 and December 17, 2013 D&M Plan and D&M Plan modification approvals.

Pursuant to Regulations of Connecticut State Agencies §16-50j-62(b), the Council's June 2, 2011 Declaratory Ruling and the Council's October 21, 2011, November 22, 2011, February 7, 2013 and December 17, 2013 D&M Plan and D&M Plan modification approvals, the request to relocate Turbine 3 (T3) and to construct, maintain and operate an Enercon 4.2-138 MW wind turbine at Wind Colebrook South is hereby approved with the following conditions:

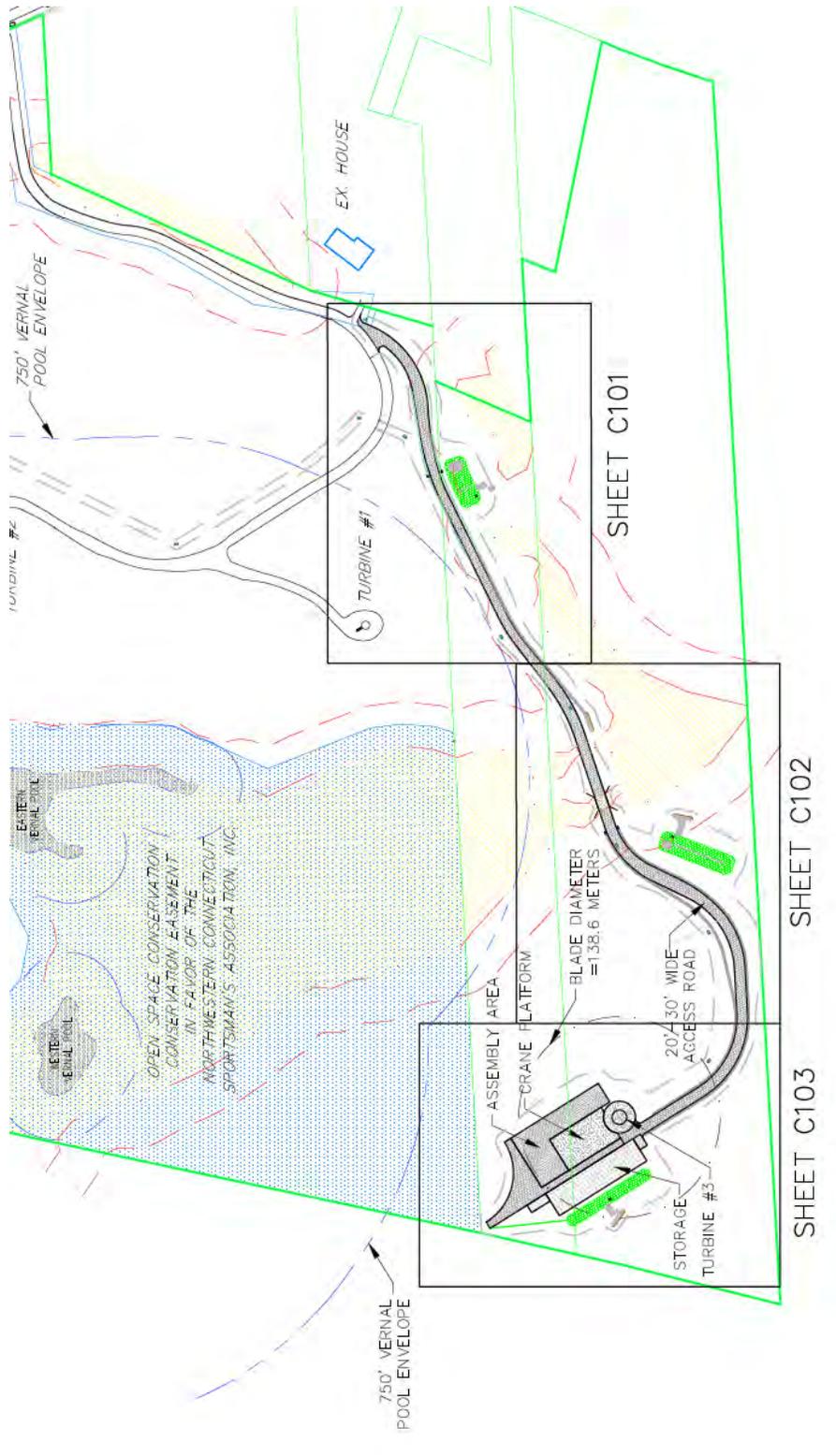
1. Submission of a final site plan that includes, but is not limited to, details for crossing Wetland 1, extent of vegetative clearing, grading, wetland buffers, access roads, turbine foundation, equipment and material laydown and staging area, electrical interconnection, fencing, equipment pad, and post-construction stormwater controls, as designed in the DEEP-approved Stormwater Pollution Control Plan (SWPCP);
2. Submission of a copy of the DEEP General Permit and DEEP-approved SWPCP prior to commencement of construction;
3. Retention of a third party monitor to ensure establishment of appropriate environmental safeguards protective of amphibian and reptile species during construction consistent with Note 5 under "WCS Third Party Environmental Inspections" on Sheet C600 of the D&M Plan Modification;
4. Submission of the final FAA determination(s);
5. Written notice of commencement of site clearing, foundation construction, T3 installation, completion of remediation, and commencement of T3 operation;
6. Performance of a post-construction noise monitoring protocol consistent with the existing WCS protocol describing locations, frequency and methods to be employed for a post-construction noise study of all three turbines. Upon review of the subsequent noise study, the Council will evaluate and determine if any mitigation measures should be employed, including turbine operations management;
7. Performance of post-construction monitoring of bats and birds consistent with the existing WCS protocol to document any mortality from T3 operations. An annual summary of the study results shall be submitted to the Council for a period of three years with the first report due one year after commencement of T3 operation. At the end of the three-year study period, the Council will evaluate and determine if any mitigation measures should be employed to reduce bat and/or bird mortality; and
8. Submission of a first year operating report within three months after the conclusion of the first year of operation that includes a discussion of the number of hours of operation, wind speeds, and the amount of generation produced by T3.

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<sup>26</sup> Council Petition 1234, DG Connecticut Solar, LLC, North Canaan.

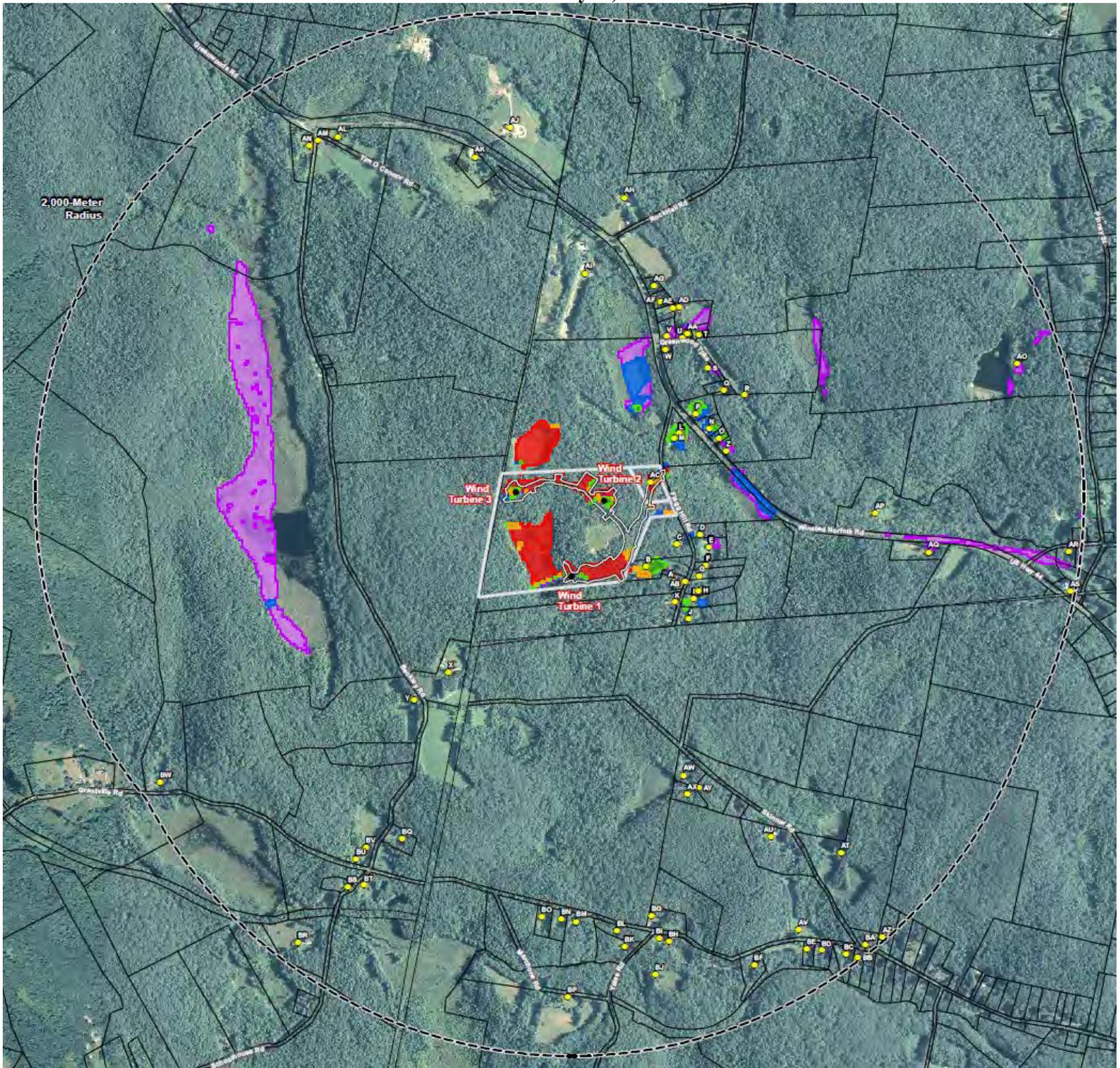
**Attachment A**

**Site Plan**



# Attachment B

## Shadow Flicker Analysis, March 2011



- Legend**
- Receptor
  - Proposed Wind Turbine Location
  - ▭ Proposed Clearing Limits & Access Road
  - 2,000-Meter (1.24 - Miles) Radius
  - ▭ Approximate Project Site Boundary
  - ▭ Approximate Assessor Parcel Boundary
- Probable Case Shadow Flicker Hours Per Year**
- < 10
  - 10 - 20
  - 20 - 30
  - 30 - 40
  - > 40

Base Map Source: 2010 aerial photography with 1-meter resolution.

Modified Ice Safety Management Plan, February 2020

**ICE SAFETY MANAGEMENT PLAN  
WIND COLEBROOK SOUTH TURBINE 3**

BNE will implement best practices and utilize the advanced capabilities of the Enercon 4.2 to enhance safety and minimize the potential for ice throw. Below are the step-by-step procedures that BNE would follow for Turbine 3 in the event of potential turbine blade icing, and the techniques that would be employed prior to restart:

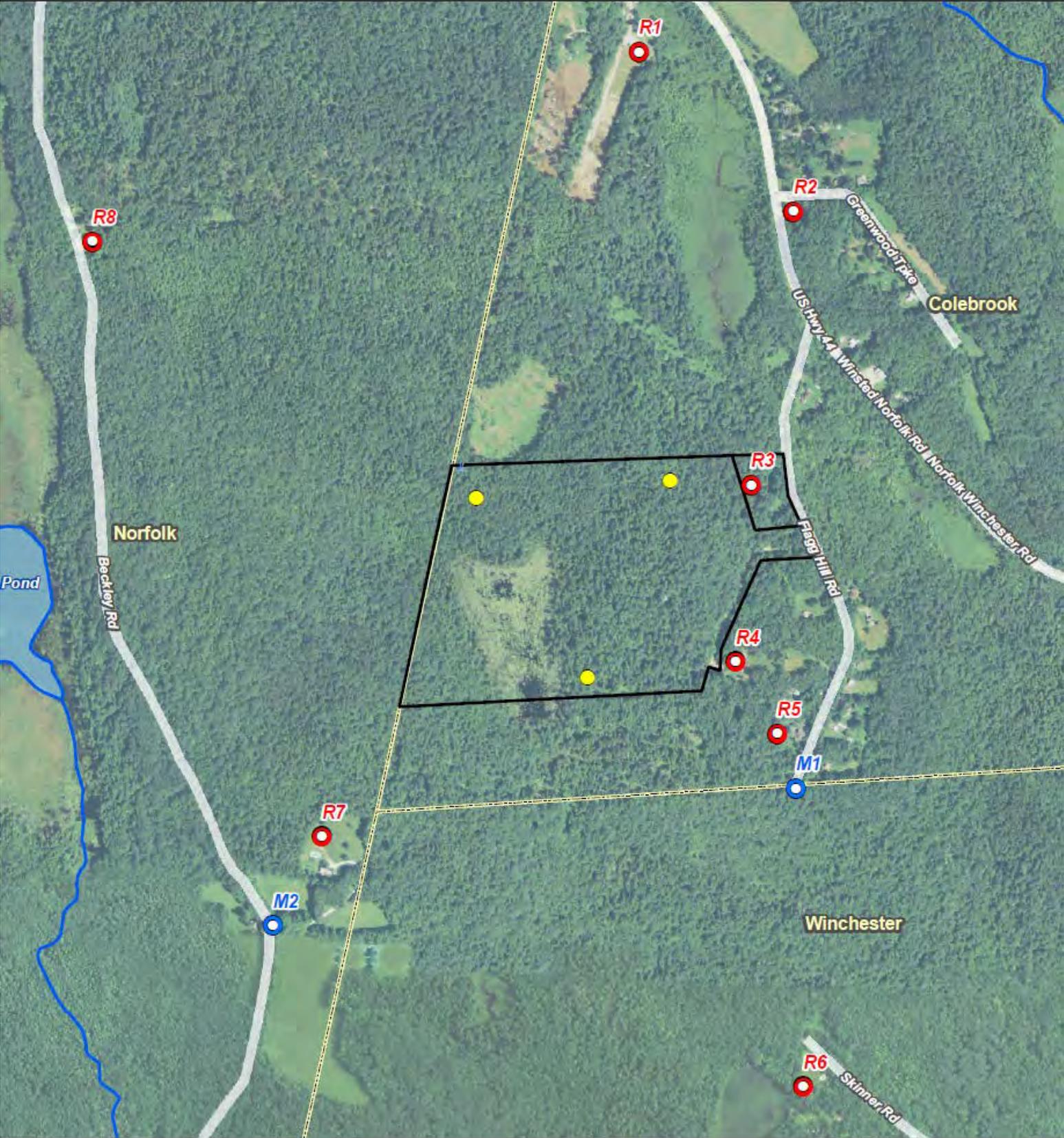
- Wind Colebrook South will be monitored 24 hours per day, 7 days per week. The turbines are expected to be monitored remotely by Enercon and by onsite personnel during regular business hours and icing events.
- During winter months when there is a potential for an icing event, BNE will restrict access to the site and place fences and warning signs as appropriate for the protection of site personnel and the public.
- BNE and Enercon will be continuously monitoring weather forecasts for conditions which are favorable to producing icing events.
- The Enercon 4.2 is equipped with an ice detection system, which is based on a specially developed and patented characteristic curve analysis method. During operation, the ice detection system compares current operating data such as wind, power and blade angle with the recorded long-term mean values to determine if ice build-up on the wind turbine has changed the aerodynamic properties.
- If ice build-up is detected, the wind turbine will automatically shut down to reduce icing and prevent ice throw. The turbine can also be shut down remotely and manually on-site.
- BNE will also employ the optional blade heating system to reduce icing, prevent ice throw and enhance safety. The blade heating system will only operate after icing is detected and the wind turbine is automatically shut down. The blade heating system will automatically switch on until the ice is melted.
- The turbine can be restarted when the ice is melted in accordance the re-start procedure.

**Re-start procedure:**

- If the turbine is shut down due to icing, BNE will be responsible for monitoring the turbine to ensure the blade heating system has melted all ice from the blades before the turbine can resume normal operating conditions.
  - BNE will thoroughly inspect the turbine to ensure that there is no remaining ice on the blades prior to restart.
-

- The turbine will remain shut-down until BNE can assess the operating conditions of the turbine. At that time, BNE may restart the turbine provided that the area affected by possible ice falling is appropriately monitored to prevent injury to people in the area or damage to property. A designated technician will be present at the turbine site before and after the iced turbine is started up. This individual will assess the suitability of restarting the iced turbine for any potential impact to adjacent individuals or property.
- In extreme conditions, BNE will curtail or shut down the turbine in advance of subjecting the turbine to ice build-up on the turbine blades and risk of ice throw. Depending on the wind direction and conditions of the icing event, the turbine may be manually positioned (by yawing) out of the upwind position to reduce direct ice build-up on the turbine and blades. The turbine will remain shut-down until weather conditions improve. BNE will thoroughly inspect and validate the turbine to ensure that there is no remaining ice on the blades prior to restart. A designated technician will be present at the turbine site before and after the turbine is started up to ensure safe operations.

**Attachment D**  
**Noise Monitoring and Receptor Locations, November 2010**



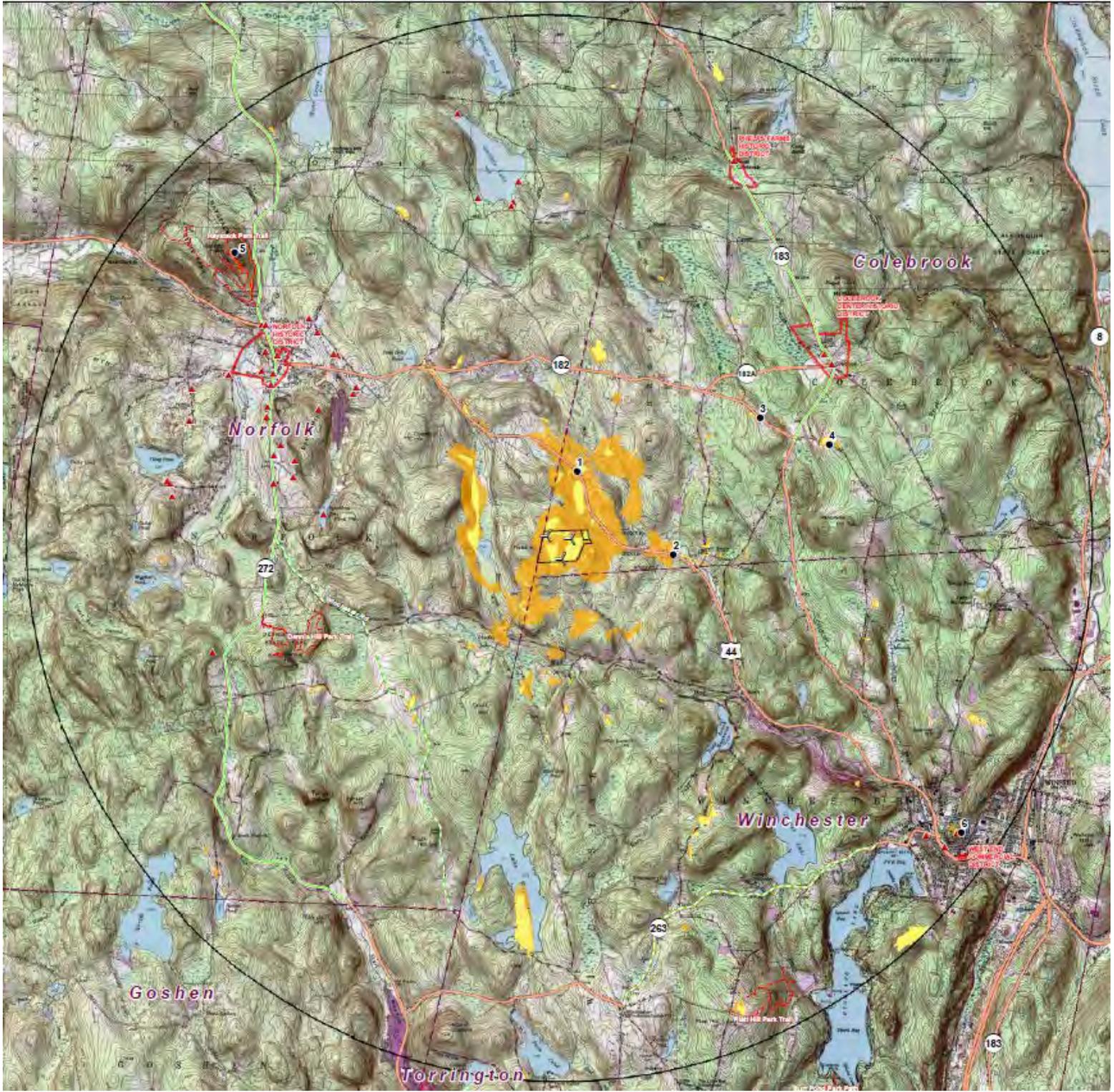
**Legend**

-  Receptor Location
-  Monitoring Location
-  Proposed 1.6MW Wind Turbine Location
-  Property Boundary
-  Town Boundary

Base Map Source: 2008 aerial photograph with 1-meter resolution.

**Attachment E**

**Viewshed analysis of WCS facility within a 5 mile radius compiled in March 2011**

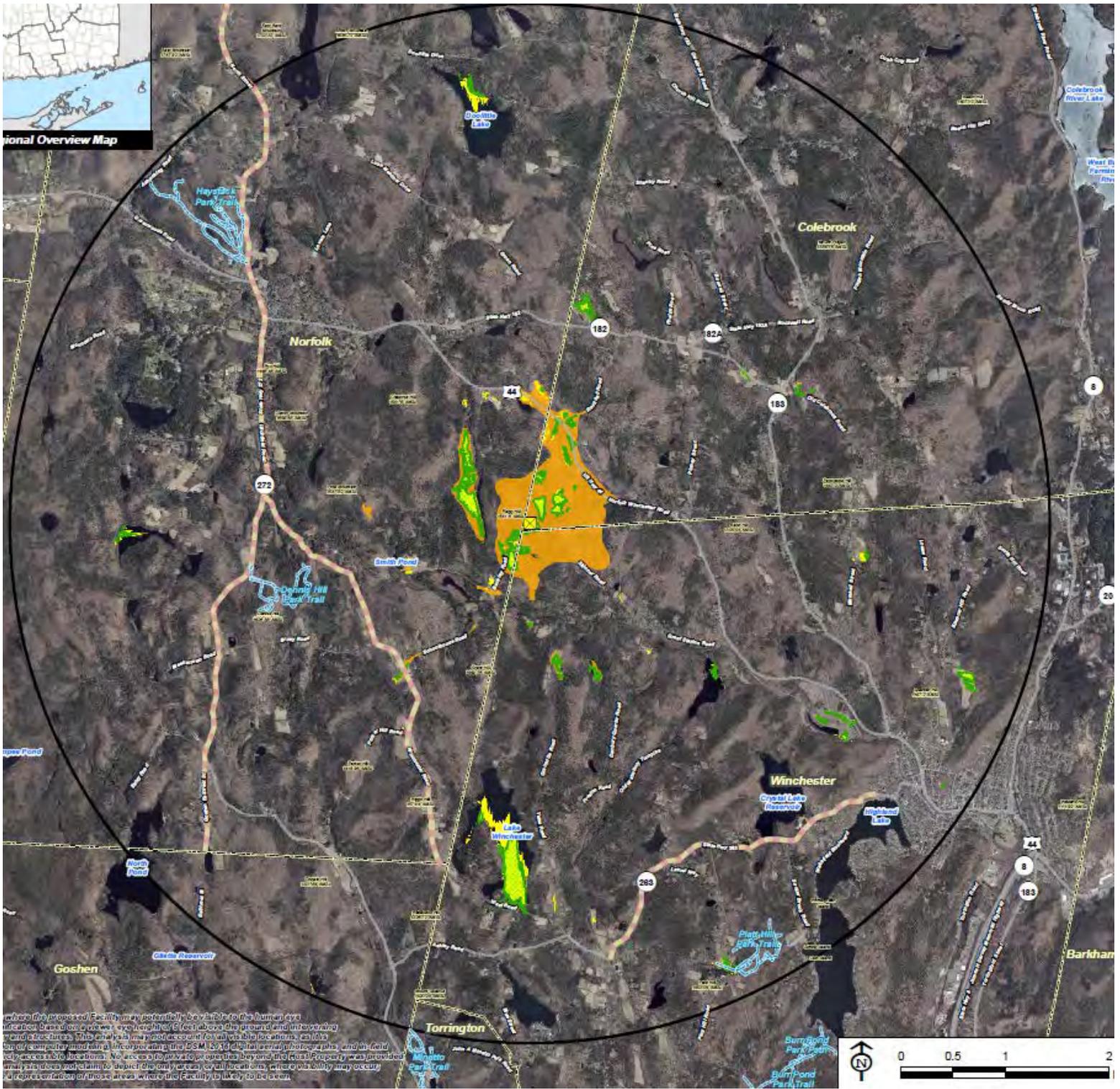


**Legend**

	Proposed Wind Turbine Location		Wind Turbine 100 Meter Hub Height Year-Round Visibility (+/- 254 acres)
	Photo Locations		Wind Turbine 100 Meter Hub Height Seasonal Visibility (+/- 1,327 acres)
	5-Mile Study Area		Scenic Highway
	Site Property Boundary		Scenic Local Road
	National Register Listed Historic Site		Trails
	National Register Listed Historic District		Town Line



Viewshed analysis of T3 within a 5-mile radius compiled in February 2020



**Legend**

- Proposed Wind Turbine Location
- Study Area (5-Mile Radius)
- Predicted Year-Round Visibility - 128 Meter Wind Turbine Hub Height (204 Acres)
- Predicted Year-Round Visibility - 138 Meter Diameter Wind Turbine Blade Height Above Proposed Hub (337 Acres)
- Predicted Seasonal Views - Wind Turbine Hub and Blade (798 acres)
- Municipal Boundary
- Trail
- Scenic Highway

# **EXHIBIT B**



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January 11, 2011

Connecticut Siting Council  
Attn: Hon. David Caruso, Chair  
10 Franklin Square  
New Britain, CT 06051

**Re: Petition No. 983, BNE Energy, Wind Project, Colebrook**

Dear Judge Caruso:

FairwindCT, Inc., a Connecticut non-profit corporation run by Colebrook residents and comprised of residents of Colebrook, Norfolk, Winchester and other surrounding towns, opposes the siting of industrial wind turbine projects in close proximity to residential areas in Connecticut, and specifically opposes the two industrial wind turbine projects that are proposed for residential areas in Colebrook and are currently pending before the Connecticut Siting Council (the "Council").

BNE Energy, Inc. ("BNE") has filed two petitions with the Council asking for declaratory rulings approving two industrial wind turbine sites located less than one half mile apart on land that is zoned residential. The effects of these proposed industrial facilities will be dramatic and they will be cumulative. Despite the obvious scope of these petitions, which Judge Caruso acknowledged at a recent Council meeting, BNE asks the Council to consider its petition for Wind Colebrook South in a vacuum, based on only preliminary assessments on the project's impact on the environment and the health, safety and general quality of life of nearby residents. BNE also asks the Council to approve its petition in the complete absence of any applicable regulations. FairwindCT submits that the Council must consider the broader implications of not only the combined impact of the two petitions, but also of considering projects of this scope without any established regulations for guidance.

FairwindCT, Inc. hereby seeks party status in the Petition of BNE Energy Inc. for a Declaratory Ruling for the Location, Construction and Operation of a 4.8 MW Wind Renewable Generating Project on Flagg Hill Road in Colebrook, Connecticut ("Wind Colebrook South") dated December 6, 2010.

Request for Party Status

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**Contact information for proposed party**

Proposed party: FairwindCT, Inc.  
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Email: info@fairwindct.com

**Contact information for representatives of proposed party:**

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Emily A. Gianquinto  
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**I. Manner in which proposed party claims to be substantially and specifically affected**

FairwindCT, Inc. ("FairwindCT"), is a Connecticut non-profit corporation formed and run by Colebrook residents for the purpose of promoting conservation and natural beauty, protecting the environment, personal health and biological values, preserving historical sites, promoting consumer interests and promoting the orderly development of Colebrook and the surrounding area. To accomplish its purposes, FairwindCT is educating the general public and the community about industrial wind energy projects, lobbying for wind energy regulations and advocating for the protection of the environment and the health, safety, and quality of life of Connecticut residents. FairwindCT's members live in Colebrook, Norfolk, Winchester and other Connecticut towns.

The proposed facility, Wind Colebrook South, will substantially and specifically affect FairwindCT because it will have an immediate negative impact on the area surrounding the planned site at Flagg Hill Road. Wind Colebrook South will be an industrial facility located in a residential area that abuts the first Nature Conservancy property in Connecticut, a sportsman's group with more than 600 members and several residences. The petitioner, BNE Energy Inc. ("BNE"), proposes to clear at least 2.69 acres of forested land and "disturb" more than 11 acres of land, build access roads over and adjacent to wetlands areas, and construct industrial wind

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turbines, which will be 200 feet taller than the Statue of Liberty and will have a blade diameter that will stretch nearly the length of a football field, in an area that is primarily preserved in its natural state.

These actions will harm the environment, destroy natural beauty and set back the conservation efforts that local residents and the State of Connecticut have worked to promote for decades. The industrial turbines will result in wildlife casualties, especially for the bird and bat populations. The bat population is particularly vulnerable to any additional casualties because it has been and continues to be decimated by White Nose Syndrome. The recommendations of the U.S. Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee ("Wind Turbine Guidelines Advisory Committee"), submitted to the Secretary of the Interior in March 2010, state: "As with all responsible energy development, wind energy projects should adhere to high standards for environmental protection." BNE's proposed facility does not adhere to any standards for environmental protection, let alone high standards.

The proposed industrial facility will also have adverse effects on natural and historic resources in the immediate area, including Rock Hall, which is on the National Register of Historic Places, and the Beckley Bog property (also known as the Frederick C. Walcott Preserve), which, as noted above, was the first property acquired by The Nature Conservancy in Connecticut and was designated as a National Natural Landmark in 1977. BNE is apparently unconcerned with those negative effects, since it not only failed to inform the Council of the existence of those sites in its petitions, but is also opposing the party status applications of the owners of Rock Hall in part on the grounds that "the issue of whether the proposed project will have an adverse effect on the [Rock Hall] property is irrelevant to the Council's decision making criteria." (See Objection to Request for Party Status, dated Jan. 5, 2011, ¶ 8 (filed in Petition Nos. 983 and 984).)

Wind Colebrook South also poses significant threats to the health and safety of residents who live in close proximity to the proposed sites. Studies of similar projects have shown that people living in proximity to industrial wind turbines suffer from ailments including headaches, tinnitus, nausea, sleep deprivation, dizziness, vertigo, ear pressure or pain, irritability, fatigue, memory and concentration problems, racing heartbeats, visual blurring and panic episodes. These symptoms have been attributed to the noise, vibration and shadow flicker caused by the industrial turbines. The shadow flicker may also impact drivers on nearby Route 44, which is traveled at all times of day. GE's own literature warns that the massive rotating blades of the industrial wind turbines can throw ice at least several hundred meters, and recommends that industrial turbines be sited "a safe distance from any occupied structure, road, or public use area." FairwindCT submits that the turbines proposed for Wind Colebrook South are not sited a safe distance from houses, roads or lands held in the public trust, and cannot be sited safely given the small size of the property.

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Industrial wind turbines also pose other safety risks. Similar turbines have caught on fire. If that occurred in Colebrook, the town's all-volunteer fire companies do not have either the fire safety equipment that could reach the top of the 328-foot turbine hub or the necessary training to suppress a fire at that height. Nor could the town alone control a fire that might spread through the heavily forested area surrounding Wind Colebrook South. Blades from similar turbines have dislodged and traveled several hundred feet from the hub. Turbines have collapsed. In BNE's petition, its wind assessment consultant states that the turbine model chosen by BNE "does not meet fall zone requirements from the project boundary." (See Petition No. 983, Ex. M, Colebrook, CT Wind Assessment, page 4.) These safety concerns show the need for appropriate regulation of the siting of these industrial projects and their incompatibility with residential areas.

Approval of BNE's petition to site an industrial wind turbine project on a property zoned residential with no regulation and in the absence of appropriate setbacks will also negatively impact the property values in Colebrook and the surrounding area. People choose to live in the northwestern corner of Connecticut for its peaceful, quiet way of life and beautiful, picturesque surroundings in historic towns. The residents of these communities, and of most of the Northwest corner of Connecticut, have spent decades conserving and protecting the natural beauty of the area, open space, and wildlife and game habitat. Industrial wind turbine projects, with their accompanying noise, visual impact and associated health and safety concerns, will depress real estate values in the area. The proposed project will also negatively impact the area's ability to attract tourists, who come to Colebrook and surrounding towns to enjoy quaint New England getaways in the Litchfield Hills. Much of the area's appeal to tourists stems from its natural beauty and peaceful surroundings. If the Council approves Wind Colebrook South, the tourism industry in Northwest Connecticut will suffer a dramatic downturn.

Based on these and other concerns, some of which are detailed below, FairwindCT asks the Council to deny BNE's petition. Alternatively, FairwindCT asks the Council to defer BNE's petition, impose a statewide moratorium on industrial wind turbine projects and adopt regulations providing for appropriate setbacks and other siting criteria, including environmental siting standards, that will protect the health and safety of Connecticut's residents and preserve its natural and historic resources.

## **II. Contention of the petitioner**

FairwindCT contends that industrial wind turbine facilities are, as a general matter, inappropriate for residentially zoned areas. More specifically, FairwindCT contends that the BNE's proposed facility is fundamentally incompatible with the area surrounding Wind Colebrook South. FairwindCT's contentions regarding the Wind Colebrook South petition can be summarized as follows:

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Point I. The Council should not consider petitions for declaratory rulings before it has engaged in the rule-making process and adopted appropriate regulations that will balance the State's goal of increasing renewable energy resources with the interests of its residents and the goals of the State Plan for Conservation and Development. The Council has never before considered industrial wind turbine projects. The State has no law or regulation specific to this technology. BNE claims that its only burden before the Council is to "establish that the proposed project complies with air and water quality standards of the Department of Environmental Protection." (See Objection to Request for Party Status, dated Jan. 5, 2011, ¶ 8 (filed in Petition Nos. 983 and 984).) BNE is asking the Council to approve these petitions with no consideration of the environmental, health, safety and economic effects of the proposed industrial use.

BNE Energy has never before constructed an industrial wind turbine project. BNE's inexperience with these projects is of particular concern given its lack of attention to detail in proceeding with its agenda of siting industrial wind turbines throughout Northwest Connecticut. BNE failed to inform the Council that Wind Colebrook South is within 1.5 miles of Rock Hall, a historic residence that is on the National Register of Historic Places, and is adjacent to the Beckley Bog, a National Natural Landmark. State and federal agencies are required to give special consideration to the potential adverse effects of projects funded by state and federal money on historic and natural resources. BNE's apparent disregard for the adverse effect of its activities on natural resources is echoed in its recent clear-cutting of 2.3 acres of state forest in North Canaan, where it is preparing to install a meteorological tower.

In light of these facts, FairwindCT asks that the Council either reject or defer BNE's petition until such time as the Council has had time to consider all aspects of siting nearly 500-foot tall rotating structures in residential areas. The residents of Colebrook and the surrounding area should not be used as guinea pigs in BNE's experiment. To proceed in the absence of any regulation at all is to risk the health, safety and welfare of the State's citizens. Moreover, all of Connecticut's citizens deserve the opportunity to be heard on these issues, which will only happen if the Council denies or defers BNE's petitions and initiates rule-making.

Point II. The Wind Colebrook South petition should be denied because industrial wind turbines should not be sited in proximity of residences. The experiences of other communities in the United States and in Europe, where industrial wind turbines have been sited for decades, show that this technology and residences are incompatible with each other. Living in proximity to industrial wind turbines endangers residents' health and safety and infringes on their property rights. Residents living in proximity to similar projects are subjected to constant audible noise, measurable infrasound noise and what is known as a shadow flicker, which results from the sun passing through the rotating blades of the turbines. Documented effects on residents include sleep deprivation, headaches, tinnitus, lapses in concentration and memory, nausea, dizziness,

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vertigo, ear pressure or pain, irritability, fatigue, racing heartbeats, visual blurring and panic episodes.

Resident safety is also an issue, as BNE proposes to site its massive structures close to property lines, in violation of the manufacturer's own recommended "fall zone requirements." (See Petition No. 983, Ex. M, Colebrook, CT Wind Assessment, page 4.) If a fire starts in the hub of one of BNE's turbines, no firefighting equipment in the area can reach it – basically, the fire must burn itself out, which may result in the collapse of the entire structure and may cause fire as burning debris falls. Massive industrial wind turbines are known to throw ice hundreds of feet from their blades. Those blades, each of which is more than 160 feet long, have been thrown hundreds of feet from turbine hubs. These safety risks have prompted turbine manufacturers to recommend safety zones of more than 1000 feet from each turbine. The turbines proposed for Wind Colebrook South do not meet even that minimum, manufacturer-recommended safety setback requirement.

In short, BNE's brief and detail-free description of why its project is "fully expected" to "be reliable and safe" and will "meet or exceed all health and safety requirements applicable for electric power generation" is contradicted by past safety incidents with similar industrial wind turbine projects and by GE's own safety recommendations. (See Petition No. 983, page 12-15.)

Point III. The Wind Colebrook South petition should be denied because the project contradicts both the State Conservation and Development Policies Plan and Colebrook's Plan of Conservation and Development. (See id., page 15.) The project also violates Colebrook's local zoning and inland-wetland regulations.

BNE claims that Wind Colebrook South is consistent with the State Conservation and Development Policies Plan because the area of Colebrook in which BNE wants to site its industrial wind turbines is "either a 'conservation area,' a 'preservation area' or 'rural lands.'" (Petition No. 983, page 16.) According to BNE, Wind Colebrook South complies with State policies associated with such land because its industrial facility will be a use "compatible with the identified conservation value," is "directly consistent with the preservation value" and will "[p]rotect the rural character of these areas." (Id., pages 16-17.) BNE believes that its industrial use of residential, rural conservation land is more consistent with State goals than "the development of multiple residences that could be approved on the Property." (Id., page 17.)

The development of "multiple residences" has not been proposed for that area, a fact acknowledged by BNE. (See id., page 19 ("BNE has consulted with the Town of Colebrook and the Project will not interfere with any existing or future development plans known in the area.")) In fact, under present zoning designation, the two lots comprising the Wind Colebrook South site could only accommodate two houses, one of which is already built on the site. Moreover, were a subdivision proposed for the property, the town of Colebrook, not the Siting Council, would

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have authority to approve or deny those plans. BNE insists that local officials have no such control over Wind Colebrook South, which will include not only three massive turbine structures, but also an “electrical collector yard,” “[a]dditional equipment” to be installed “as needed,” an “ancillary building” to include storage space, office space, an “education” area and restroom facilities, a septic system, a new driveway and multiple new access roads. This type of industrial development is not consistent with either rural, conservation or preservation designations.

Wind Colebrook South is likewise inconsistent with Colebrook’s Plan of Conservation and Development. BNE acknowledges that the town’s Plan “recognizes the rural character of Colebrook” and “emphasizes the importance of controlled growth and protecting environmental resources including forest land and habitat” – but then makes the incredible statement that this large-scale industrial facility, which will involve construction of a road over a wetland, will kill birds and bats, will likely have adverse effects on soil and habitat and will require the permanent clear-cutting of at least 2.69 acres and the “disturbance” of more than 11 acres of land, satisfies those goals. (See Petition No. 983, pages 17-19 & Ex. I, page 17.)

Wind Colebrook South also violates local zoning and wetlands regulations. The industrial project is proposed for property that is zoned R-2, which means that it is zoned for residential use and that lots must be a minimum of two acres to permit the construction of single-family residences, and must meet certain frontage, access and additional lot size requirements, in the case of interior lots. The permitted uses of R-2 zone not only do not include wind turbines, but they also do not include any electrical generation or industrial use at all. Thus, the siting of this industrial project in an R-2 zone would expressly violate Colebrook’s zoning regulations. BNE’s claim that it satisfies the regulations because its project would comply with the minimum setback requirements applicable to residences is ludicrous. The 50- and 30-foot setbacks detailed for R-2 zones are applicable to homes and related residential structures. They do not permit the siting a 492-foot tall industrial wind turbine only 50 feet from a property line in a residential area, and for BNE to suggest that it should be permitted to put such a massive structure only 50 feet from a property line is simply irresponsible, and yet another reason for the Council to deny or defer this petition and initiate the rule-making process to establish appropriate setback guidelines for industrial projects of this type and scope.

Wind Colebrook South would also violate Colebrook’s wetlands regulations. BNE acknowledges that its project involves “Regulated Activity” and will “permanently impact” more than 4700 square feet of wetlands and will “temporarily impact” more than 200 additional square feet of wetlands, but does not describe how those impacts satisfy Colebrook’s wetlands regulations. In fact, they do not. Although details of BNE’s plans for construction in and around the wetlands areas on its property are not clear in the petition, it is clear that BNE proposes to construct a wetlands crossing – what appears to be either a paved or gravel road – over the largest wetlands on the site. That is a Regulated Activity that will have a “Significant Impact”

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on a wetland. Under Section 6 of the wetlands regulations, BNE is required to obtain a permit from the Colebrook Inland-Wetlands Agency in order to conduct a Regulated Activity. It has not obtained such a permit, nor has it applied for such a permit. BNE has therefore not complied with Colebrook's wetlands regulations.

Point IV. The Wind Colebrook South petition should be denied because the project will have significant adverse effects on the environment. BNE claims in its petition that its project "will result in significant environmental benefits," "offers significant . . . environmental . . . benefits to the citizens of the Town of Colebrook and the State of Connecticut" and offers "[s]ignificant environmental benefits with minimal impact to the land." (Petition No. 983, pages 2-3, 11-12.) That claim is likely absurd, but the paucity of data provided by BNE in support of its petition makes it nearly impossible to assess its validity.

As a whole, the studies and data provided by BNE in its attempt to establish that Wind Colebrook South will have no adverse impact on the environment are preliminary and therefore inadequate. For example, the bat acoustic study submitted as Exhibit K is only an "interim report" – the study was apparently to continue through October 2010, but BNE has not provided a final report to the Council. BNE's consultant, Western EcoSystems Technology, Inc. ("Western EcoSystems"), expressly states in its report that the results reported are subject to change. The bat study is not only preliminary, however, but likely significantly flawed, since Western EcoSystems notes that "substantial differences" in bat detection rates between different recording stations require "further investigation of detector functionality . . . to ensure differences are not the result of equipment malfunction." (Ex. K to Petition No. 983, page 13.) In short, BNE's own expert is unsure of the validity of the data it collected, but BNE asks the Council to rely on that data to assess environmental impact. Moreover, Western EcoSystems did not conduct any mist netting to actually capture and record the species of bats in the area. Instead, Western EcoSystems relies solely on the results of its sound recordings, which it acknowledges do not identify individual bats or even individual species of bats.

BNE's breeding bird study suffers from similar flaws. Western EcoSystems spent a total of three days in very late June and early July 2010 making observations on the Wind Colebrook South property. The timing of Western EcoSystems' "final report," late in the birding season, means that its observations lack value because (1) the vegetation would have been very dense, preventing effective identification at the observation points located in deciduous forest dominated areas, and (2) many birds would have already been in nesting mode, particularly given the extremely hot summer Connecticut experienced. Western EcoSystems' surveys were conducted after the peak birding season. Although there were 12 survey points occupied on each day, a biologist was located at each survey point for only 5 minutes each day – meaning that the total observation period for this study was approximately three hours. The superficial nature of this "study" explains its sparse findings of only 39 species of birds and 461 unique individuals. It also explains the significant percentage of unidentified birds recorded by Western EcoSystems.

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Furthermore, Western EcoSystem's biologists reported no raptor observations in an area known to be frequented by birds of prey. (See Ex. L to Petition No. 983, page 1.) The Council cannot rely on such a preliminary and incomplete study to determine the effect of Wind Colebrook South on the bird population.

Another example of the preliminary nature of BNE's data can be found in its terrestrial wildlife habitat and wetland impact analysis. BNE's environmental consultant, VHB, conducted one of its two wetland delineation report field studies in late January, when the snow depth was 2 to 6 inches and the frost depth was zero to 3 inches. The second field study was conducted in mid-March, when snow depths of up to 3 inches were reported. Both field studies were conducted before the vernal pool season, so VHB's statement that no vernal pool habitats were identified on the Wind Colebrook South property is hardly surprising. (See Ex. I to Petition No. 983, page 4.) Nearly all of VHB's discussion of wildlife on the property is based on a "desktop wildlife evaluation" instead of actual observation – which explains VHB's extensive discussion of wildlife species that "may" live on the property or are "likely" to live on the property. (See id., page 8.) VHB's analyses may be adequate for a preliminary feasibility or planning level study, but do not provide the Council with the data necessary to analyze the actual wildlife and habitat impact of BNE's proposed industrial sites.

Point V. BNE's petition should be denied based on its failure to provide the Council with reliable and accurate information. These failures can only be seen as part of BNE's attempt to get the Council to "rubber stamp" a project of unprecedented scope with little to no scrutiny. Among BNE's failures and misrepresentations are the following:

- Failure to file a single petition for both Wind Colebrook South and Wind Colebrook North. The Council cannot decide the individual petitions without consideration of the other. Instead, it must assess the cumulative impact of all six industrial wind turbines on the area. Any representations by BNE about visual impact, noise, safety, vibration, environmental effects and other impacts of Wind Colebrook South are at best disingenuous and at worst deliberately misleading. The recommendations of the Wind Turbine Guidelines Advisory Committee stress the importance of reviewing such cumulative impacts and state that "[c]onsideration of cumulative impacts should be incorporated into the wind energy planning process as early as possible to improve decisions." Federal agencies are required to include cumulative impact analyses in their NEPA reviews of projects. The Council should similarly require BNE to provide maps and studies of the cumulative impact of both of its Colebrook petitions on the surrounding area, including the increased environmental effects, noise levels, visual impacts, economic impacts and safety risks.

- Failure to identify a historic residence on the National Register of Historical Places within less than 1.5 miles of Wind Colebrook South. The residence, known as Rock Hall, is within the Area of Potential Effect ("APE"), which is a minimum standard established by the

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Federal Communication Commission for use in assessing the impact of stationary towers on nearby historic structures. The APE is effectively a presumption that towers more than 400 feet tall have an adverse effect on such structures, and was adopted pursuant to Section 106 of the National Historic Preservation Act. BNE cannot rebut the presumption that its massive rotating football field-sized industrial turbines will have a substantial adverse effect on Rock Hall. Michael and Stella Somers, owners of Rock Hall, have separately filed for party status in this petition and in Petition No. 984.

- Failure to amend its petition following the State Historic Preservation Office's letters informing BNE and the Council of the existence of Rock Hall in proximity to both of BNE's proposed facilities. The SHPO has requested that BNE's consultant provide it with "photographic views, photosimulations, and a visual analysis for Rock Hall, 19 Rock Hall Road in Colebrook, so we may have an opportunity to revise our comments." BNE's "no effect" stamp from the SHPO for this project is therefore subject to revision.

- Failure to expressly inform the Council of the proximity of a National Natural Landmark. The Nature Conservancy property adjacent to the western border of Wind Colebrook South was designated a National Natural Landmark in 1977 because it includes the Beckley Bog, also known as the Frederick C. Walcott Preserve. According to the National Park Service, the Beckley Bog is "the most southerly sphagnum-heath-black spruce bog in New England. It is a rare relic of the early post-Pleistocene. Peat moss underlies the quaking, floating bog mat to a maximum depth of 50 feet." The nature of this landmark, which is naturally unstable and constantly moving, and the types of birds and other wildlife it attracts renders it especially vulnerable to both the blasting that BNE is likely to need to do to install its industrial turbines and to the infrasound noise and vibration caused by industrial wind turbines. A three-sentence discussion of this natural resource is buried in a nearly 100-page exhibit to the petition.

- Misrepresenting its relationship with the local community. BNE told the Council that it has established a "good relationship with the Colebrook community" through a "multi-faceted communications approach" that allegedly included regular discussions with local officials, an informational filing at the Town Hall and public access to information on BNE's website. (Petition No. 983, page 5.) BNE has not established any relationship with the Colebrook community, let alone a good relationship. Until the public information meeting BNE held in town on November 10, 2010 (less than one month before filing this petition with the Council), the majority of Colebrook residents, including those living in proximity to the proposed projects, were unaware of BNE's plans to site six 1.6 MW turbines standing 492 feet tall as close as 800 feet to several homes. Even at the public meeting, BNE's representatives provided no detail of its plans. Colebrook's First Selectman, who supported BNE's proposal as a way to bring in tax revenue to the town, was not even aware that BNE was planning to build

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turbines on two sites in town until days before that meeting in November. BNE has not at any time provided a forum for Colebrook residents to voice their opposition to this project.

- Failure to provide approval from the Federal Aviation Administration for the larger turbines that BNE is asking the Council to approve. In fact, BNE has not even finally selected the turbine model it plans to use at this site, yet asks the Council to approve its project by declaratory ruling.

- Failure to adequately measure and predict noise levels. The noise study provided by BNE's consultant establishes sound levels in Colebrook based on two days of data in the spring of 2010. That data is not adequate to provide an accurate picture of the average noise level in the surrounding area. BNE's noise analysis is also devoid of any consideration of the cumulative noise caused by siting six industrial wind turbines within less than one half mile of each other.

- Inaccurate representation of the project site as not supporting state-listed species. In fact, BNE's data documents the actual presence of the Red Bat, Hoary Bat, and Northern Leopard Frog at the site, as well as the potential presence of the Silver-haired Bat and Indiana Bat on the site, and the confirmed presence of Great St. John's Wort immediately adjacent to the site.

- Failure to conduct on-site surveys for mammals, reptiles, amphibians, or plants.

- Reliance on data collected on a snow-covered site to support the representation that no vernal pools or significant amphibian habitat is present at the site.

- Failure to conduct a fish survey at the site, despite the presence of at least a semi-permanent pond.

- Failure to provide a Stormwater Pollution Prevention Plan (SWPPP) that meets the requirements of the CT DEP's Stormwater General Permit. Specifically, the SWPPP suffers from significant defects, including the following: it was not designed by a registered Professional Engineer licensed in Connecticut; it lacks a site map showing location of major structural and non-structural controls areas that will be vegetated following construction, or pre and post construction locations of stormwater discharges; no phasing plan was submitted; it contains inaccurate information with respect to wetland permitting requirements; no construction sequence was submitted; it does not include a description of the controls and measures that will be performed for each major activity identified in the sequencing; the timing of such controls and measures; it does not include post construction measures designed to remove 80% of the suspended solids and floatables or velocity dissipation devices necessary to maintain non-erosive flow velocities and protection of the natural physical and biological characteristics of the

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receiving watercourse.

**III. Relief sought by the petitioner**

FairwindCT requests that the Siting Council deny BNE's petition for a declaratory ruling regarding Wind Colebrook South. It further asks the Council to impose a moratorium on all industrial wind generation projects in areas zoned residential or which are located within 1.5 miles of historic structures or National Natural Landmarks until appropriate laws and regulations may be put in place by the State, the Council and local regulatory bodies.

**IV. Statutory or other authority therefore**

FairwindCT is entitled to party status in this proceeding pursuant to Sections 4-177a, 16-50l, 16-50n, 22a-19 and 22a-20 of the Connecticut General Statutes and Sections 16-50j-13 through 17 of the Regulations of the Connecticut Siting Council.

**V. Nature of the evidence that the petitioner intends to present**

FairwindCT will present evidence including but not limited to:

- studies, surveys and expert opinion regarding the deleterious visual and noise effects of siting wind turbines in close proximity to residential buildings, including but not limited to negative health effects such as headaches, sleep disturbances, nausea, dizziness and tinnitus;
- studies, surveys and expert opinion regarding the preliminary and incomplete nature of the evidence provided by BNE regarding the environmental effects of its proposed industrial wind turbines on nearby wetlands and other natural resources, wildlife including but not limited to rare wetland plants, amphibians, bats and birds;
- studies, surveys and expert opinion regarding the deleterious safety effects of siting wind turbines in residential areas, including the potential for fire, ice throw and turbine collapse;
- studies, surveys and expert opinion regarding the deleterious economic effects of siting wind turbines in residential Colebrook, including the adverse effects on real estate values and the local tourism industry;
- studies, surveys and expert opinion regarding the inefficiency and unreliability of industrial wind power;

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- testimony by residents living in proximity to the proposed sites about the adverse effect the industrial wind turbines will have on their lives;
- testimony by Michael and Stella Somers regarding Rock Hall, a property on the National Register of Historic Places, including its historic status, their work restoring the property, their investment in the property and the expected impact of siting industrial wind turbines in proximity to their property on their business and the continued commercial viability of Rock Hall.

**VI. Other comments for the Siting Council's consideration**

FairwindCT asks that the Council hold public hearings on BNE's petition for declaratory ruling in Colebrook or one of the surrounding towns, so that local residents will have the opportunity to voice their opinion on the proposed industrial facilities. Industrial wind projects do not belong in residential areas, and the residents who will be affected by BNE's proposed industrial projects deserve to be heard on this important issue.

Very truly yours,

REID and RIEGE, P.C.



Emily A. Gianquinto

cc: Carrie L. Larson, Esq.  
Paul Corey  
Richard T. Roznoy, Esq.

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

**Petition of BNE Energy Inc. for a  
Declaratory Ruling for the Location,  
Construction and Operation of a 4.8 MW  
Wind Renewable Generating Project on  
Flagg Hill Road in Colebrook,  
Connecticut (“Wind Colebrook South”)**

**Petition No. 983**

**February 24, 2011**

**NOTICE OF INTERVENTION AS A PARTY**

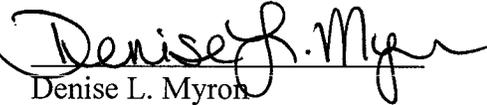
FairwindCT, Inc. (“FairwindCT”) hereby intervenes in this matter pursuant to General Statutes § 22a-19 and states:

1. FairwindCT is a Connecticut non-profit corporation which is located in Colebrook, Connecticut.
2. FairwindCT is authorized by General Statutes § 22a-19(a) to intervene as a party in this proceeding on the filing of a verified pleading, which statute states, in relevant part:

In any administrative, licensing or other proceeding, and in any judicial review thereof made available by law the Attorney General, any political subdivision of the state, any instrumentality or agency of the state or of a political subdivision thereof, any person, partnership, corporation, association, organization or other legal entity may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.

3. BNE Energy, Inc. (“BNE”) has filed a Petition for a Declaratory Ruling for the Location, Construction and Operation of a 4.8 MW Wind Renewable Generating Project on Flagg Hill Road in Colebrook, Connecticut (“Wind Colebrook South”).

4. This proceeding involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing, or destroying the public trust in the air, water or other natural resources (including acoustic and light) of the state.
5. Wind Colebrook South will unreasonably impair and/or destroy the public trust in the air surrounding the project and the wetlands and watercourses on the proposed site.
6. Wind Colebrook South will also unreasonably impair and/or destroy the public trust in natural resources by causing the clear cutting of acres of land, disturbing or destroying wetlands and watercourses and the wildlife habitat, and killing birds and bats.
7. The plans submitted to the Siting Council indicate that Wind Colebrook South will involve Regulated Activities, and BNE has not received or applied for the required permits approving such activities.
8. The Siting Council has authority over BNE's petition for a declaratory ruling under Section 16-50k of the General Statutes and is holding proceedings regarding that petition.

By:   
Denise L. Myron  
Nicholas J. Harding  
Emily A. Gianquinto  
Reid and Riege, P.C.  
One Financial Plaza, 21st Floor  
Hartford, CT 06103  
Tel. (860) 278-1150  
Fax. (860) 240-1002

**CERTIFICATION**

I hereby certify that a copy of the foregoing document was delivered by first-class mail to the following service list on the 24th day of February, 2011:

Carrie L. Larson, Esq.  
Paul Corey  
John R. Morissette  
Christopher R. Bernard  
Joaquina Borges King  
Thomas D. McKeon  
David M. Cusick  
Richard T. Roznoy  
Kristin M. and Benjamin C. Mow  
David R. Lawrence and Jeannie Lemelin

  
Denise L. Myron

**VERIFICATION**

I, Joyce Hemingson, being duly sworn, depose and say that I have read the foregoing Notice of Intervention, which amends FairwindCT's Request for Party Status, and that the allegations contained in the Notice of Intervention and the Request for Party Status are true to the best of my knowledge.

By: Joyce Hemingson  
Joyce Hemingson, President, FairwindCT, Inc.

Subscribed and sworn to before me this 18<sup>th</sup> day of February, 2011.

Carol Anderson  
Notary Public / Commissioner of the Superior Court

My Commission Expires: April 30, 2011

# EXHIBIT C

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

**Petition of BNE Energy Inc. for a  
Declaratory Ruling that no Certificate of  
Environmental Compatibility and Public Need  
is Required for the Construction, Maintenance,  
and Operation of a 4.8 MW Wind Renewable  
Generating Facility Located on Flagg Hill Road  
in Colebrook, Connecticut (“Wind Colebrook South”).**

**Petition No. 983**

**March 3, 2020**

**REQUEST FOR PARTY STATUS AND NOTICE  
OF CEPA INTERVENTION BY JULIA AND JONATHAN GOLD**

Julia and Jonathan Gold are the owners of property located at 319 Beckley Road in Norfolk, Connecticut and adjacent property located on Skinner Road in Winchester, Connecticut (collectively, the “Gold Property”). Based on the “modification” BNE Energy, Inc. (“BNE”) has proposed to make to its Development and Management (“D&M”) Plan, the Gold Property would abut the new site for the project, as it sits right on the Norfolk-Colebrook town line and the Colebrook-Winchester town line, adjacent to the southernmost new Flagg Hill Road property that BNE proposes to acquire and “merge” into its current project site.

The Golds seek party status in the Petition of BNE Energy Inc, (“BNE”) for a Declaratory Ruling for the Location, Construction and Operation of a 4.8 MW Wind Renewable Generating Project on Flagg Hill Road in Colebrook, Connecticut (“Wind Colebrook South”) D&M Plan Modification, filed January 9, 2020. The Golds also hereby intervene in this proceeding under the Connecticut Environmental Protection Act (“CEPA”).

As abutters only to the new project site proposed by BNE, rather than the site previously approved by the Council, this is the first opportunity for the Golds to weigh in on the project, which BNE now seeks to “modify” to site a 646-foot high turbine less than 350 feet from one of the Golds’ property lines and just 523 feet from another. BNE is essentially asking the Council to

approve a taking of the Gold Property in a proceeding that the Golds only received notice of a few weeks ago, and BNE only revealed the exact proximity of the turbine to abutters by way of interrogatory responses 11 days ago. The Council must permit the Golds to participate in this proceeding.

**Contact information for proposed party:**

Proposed party: Julia and Jonathan Gold  
Mailing Address: 10 Tall Pines Lane, Seekonk, MA 02771  
Phone: 401-743-4630  
Email: julialeahgold@gmail.com

**Contact information for representative of proposed party:**

Name: Emily Gianquinto  
Address: 21 Oak Street, Suite 601, Hartford, CT 06106  
Phone: (860) 785-0545  
Email: emily@eaglawllc.com

**I. Manner in which proposed party claims to be substantially and specifically affected**

The proposed “modification” will substantially and specifically affect the Golds because, according to BNE’s own submissions in response to the Council’s first set of interrogatories, the third turbine would be located within approximately 1,027 feet of their home, just 321 feet of one of their property lines, and 521 feet from their other property line. A significant portion of the Gold Property is located within the setback area identified by a comparable turbine manufacturer cited by BNE, which on its face should result in the denial of the “modification.”

The proximity of the Gold Property to the third turbine location now being proposed by BNE is not included anywhere in BNE’s initial request for modification of its D&M Plan, and was revealed only in BNE’s February 21, 2020 responses to the interrogatories issued by the Council. In Exhibit A to those interrogatory responses, the Adjacent Property Owners Location Map, the Gold Property is clearly marked as directly adjacent to the proposed turbine location. In Exhibit C to those interrogatory responses, in what BNE calls the “Enercon Ice Risk Assessment,” the Golds’

residence, barn and pool, driveway and a very small “walking area” – though not their property lines – are clearly marked in Figure 1, and it appears that much of the Gold Property is within the “ice fall/throw probability” zone in Figure 2 (both drawings are reproduced below).



Figure 1: Areas considered for the ice throw analysis

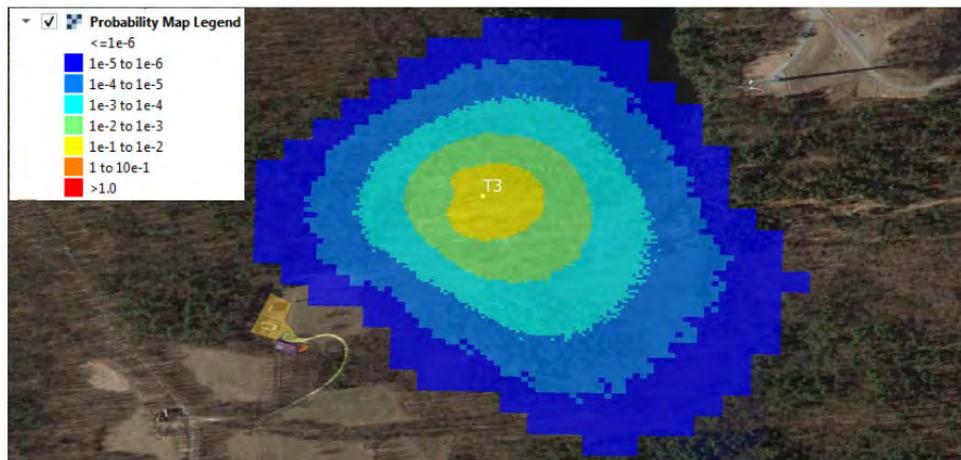


Figure 2: Ice fall/throw probability results (hits/m2/year)

In the above figures, one of the Golds’ property lines is located approximately halfway between the location of the turbine and the edge of the Golds’ house. The idea of such a small “walking area” ignores the reality of the Golds’ use of their property, including the large field area that is

visible in Figure 1 and their regular use of the entire property, which includes several walking trails. Notably, the Golds were not made aware of any of those affects until February 21, 2020, when BNE submitted responses to the Council’s interrogatories.

In sum, the Golds’ property rights and the health and safety of their family will therefore clearly be substantially and specifically affected by the Council’s decision with respect to BNE’s request.

## **II. Contention of the proposed party**

The Golds contend that the proposed “modification” BNE submitted is so substantially different from the project described in its petition and even from the D&M Plan approved by the Council in December 2013 that it is in substance a new project — a new proposal to construct a new wind turbine facility on an entirely different site. The proposed “modification” would add two new parcels of land to the site, and in doing so, would increase the size of the project site by more than 37 acres. (BNE Narrative at 1.) The added parcels bring into the mix different abutters, implicating the due process rights of the Golds and others like them—property owners who suddenly and without notice find themselves immediately adjacent to a parcel of land that may host a wind turbine that was never before proposed, reviewed or approved by the Council. That alone is such a significant and fundamental change that demonstrates this proposal is not a mere “modification” but instead a new project that requires full review by the Council.

Accordingly, the “modification” is not properly before the Siting Council, as it only has jurisdiction over siting energy projects pursuant to statute. At present, the Council simply lacks jurisdiction over the proposed project because of the scope of the “modification.” The Council exists to *site* projects, and it already did so. It issued a decision and order, opinion and findings of fact siting a three-wind turbine project on a 19.74-acre property located at 29 and 17 Flag

Hill Road. It did *not* site a three-wind turbine project on a 116.64-acre site located at 29, 17, 45 and 53 Flagg Hill Road. This “modification” requires the filing of a new petition, which would not only ensure the Council had jurisdiction to consider it, but would ensure that all interested parties have appropriate due process protections and that the Council has the information necessary to fulfill its obligation of balancing the need for adequate and reliable public utility services at the lowest reasonable cost to consumers with the need to protect the environment and ecology of the state and to minimize damage to the scenic, historic, and recreational values while also assuring the welfare and protection of the people of the state. Significantly, the project being proposed by BNE would not be sited under the state’s wind regulations, as it does not even come close to complying with, among other things, the regulatory setback requirements.

The Council does not have the authority to site this new project by way of a “modification” in the D&M process. “[T]he D & M plan functions to ‘fill up the details’ in the siting council's final decision. ...The D & M plan cannot provide a substitute for matters not addressed during the application process.” *Middlebury v. Conn. Siting Council*, No. CV010508047S, 2002 WL 442383, at \*5 (Feb. 27, 2002, Cohn, J.). Here, the Golds contend that BNE is trying to use the D&M modification to bootstrap the Council’s approval over a host of matters that were neither presented nor addressed during the initial proceeding, including the impact of the project on additional abutters, the environmental impact on two new parcels of land and the properties that abut them, the impacts with respect to shadow flicker, noise, viewshed and ice throw, and more. One simple example is BNE’s claims with respect to the impact of the new turbine on vernal pools and wetlands on the original Wind Colebrook South site. BNE claims that the impact will be decreased from the previously approved D&M Plan because a third turbine will be placed further away from the two high-value vernal pools located at 29

Flagg Hill Road. However, the Golds believe that their property contains vernal pools, and if that is true, the impacts caused by BNE's new proposed location would actually be greater. The same is true for wetlands. BNE claims the new turbine would reduce the impact on wetlands, but that claim is made without providing any information on the wetlands that may be present on the two new parcels of land or on the new abutters' properties. None of these issues were considered during the petition process because none of these land parcels were included in the Wind Colebrook South site or were adjacent to it. The required evaluations were simply not done.

The Golds also contend that BNE's proposed modification would have significant adverse impacts on their ability to enjoy and use the Gold Property. They purchased the Gold Property aware that two turbines were located at 29 Flagg Hill Road, and aware that a third turbine may be added to that same piece of property at some point in the future. Now, BNE is proposing to install a turbine at 45 Flagg Hill Road and 53 Flagg Hill Road, so that the third turbine would be sited just 523 feet from one of their property lines and 321 feet from another property line. The proximity of the new turbine to the Gold Property conflicts with BNE's submitted manufacturer setback requirements and would not be permissible under the wind regulations, which would require a distance of at least 971 feet from the Gold Property lines.<sup>1</sup>

The "ice throw risk assessment" provided by BNE in response to the Council's interrogatories (at Exhibit C) is of limited assistance in assessing safety, because it does not include property lines, but even without the property lines, it does appear that much of the Golds' 319 Beckley Road property, at least, will be in the potential ice fall zone. With the nearly non-existent setback BNE has proposed for the third turbine, the Golds and their children will be

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<sup>1</sup> The wind regulations require that turbines be sited at least 1.5 times the wind turbine height from any property lines. Regs. § 16-50j-95(a)(1)(B). Here, the wind turbine height is 197.3 meters (128 hub height + (183.6 blade diameter/2)). Under the regulations, then, the turbine must be at least 295.95 meters, or just under 971 feet, from adjacent property lines.

unable to enjoy significant swaths of the Gold Property. The 319 Beckley Road property includes a home, a pool and a barn that the Golds plan to convert for residential use. That plan is based on the special needs of one of their minor children, who is deaf and severely autistic, requiring 24-hour care. The Golds' plan to renovate the barn to enable their son and his caretaker to live in the barn when he reaches the age of majority. As the barn is even closer to the property line than the house, use of the barn would not be safe if the Council disregards even the BNE submitted manufacturer's setback requirements (for a different kind of turbine) and approves BNE's proposed "modification."

The Gold family, and particularly their special needs son, spend a great deal of time in the wooded areas on the Gold Property. Their son is especially calm when surrounded by nature, and can spend hours at a time sitting under trees, focused on handling tree branches or other natural material. He often spends hours of time at the edges of the Gold Property – areas that would become unsafe were the Council to approve BNE's proposed "modification." The Golds have built a campsite on their property that is also closer to the property line than to their house, and it too would become unsafe for use. BNE's claim that it would be putting this new turbine "further away in the woods" and "further in the woods from the homes located on Flagg Hill Road and Route 44" (BNE narrative at 3-4) ignores the significant impact on the Golds and their neighbors in both Norfolk and Winchester. These are the types of impacts minimum setback requirements were intended to avoid.

The Golds are also concerned about the noise associated with the turbine, and note that the evaluation submitted by BNE with its interrogatory responses does not include any assessment of noise levels at their property lines, as would be required by the wind regulations. *See* Regs. § 16-50j-94(d). Similarly, the viewshed analysis submitted by BNE in response to the interrogatories

does not appear to show how the Golds' view will be impacted by the siting of the new turbine in such close proximity to their property, especially given the significant increase in the height of this new turbine in comparison to the turbine originally approved by the Council. And although BNE claims that the Gold Property would not be impacted by shadow flicker, it did not submit any evidence supporting that claim, instead asserting that a consultant did some kind of unspecified work to reach that conclusion. Nor has BNE submitted any technical documentation from the manufacturer of the new kind of turbine proposed (Enercon) with respect to siting its turbines, including setback recommendations, noise level data and the like.

If the Council refuses to reject the proposed "modification" so that BNE would be forced to file a new petition, thereby ensuring that all required information is on the record and available to parties, the Golds should at least be entitled to participate in this late stage of the petition proceeding and to ask questions of BNE. It is simply unreasonable and unfair to permit BNE to use the Council's approval of a different project on different pieces of property more than eight years ago to avoid regulatory requirements now applicable to siting wind turbines, violate abutters' due process rights and fundamentally change the project in this manner. BNE's proposed "modification" should be rejected and BNE should be directed to file a new petition for declaratory ruling for its proposed new single-turbine facility. That is the only way the Council will be able to fairly assess the project under the standards applicable to siting wind turbines, and the new abutters will have an adequate opportunity to review the potential impacts of the project. Moreover, it is the only way to ensure that the new abutters, including the Golds, are provided with due process.

### **III. Relief sought by the proposed party**

With respect to the proposed D&M “modification,” the Golds intend to argue that BNE is improperly attempting to circumvent the regulatory framework that applies to wind energy development projects by asking the Council to bootstrap this third turbine into its existing project. The modification process cannot be used for this purpose. This is a proposal for a turbine to be located on two new properties, to be accessed by a brand-new road, to abut new residential properties and a new town, and to include significantly different technology, such as a much taller turbine manufactured by a different company and capable of generating more energy. An objective comparison between the turbine project originally approved by the Council and the turbine project described in the “modification” confirms that it is a new project at its core – labeling it a “modification” cannot obscure that conclusion.

All of these facts and more demonstrate that the Council should deny BNE’s proposed “modification” and it should be required either to build the third turbine on the site previously approved, or to come back to the Council with a properly filed petition that would permit the Council to consider the project as a whole and allow all interested parties to fully participate in a hearing, present evidence, and exercise any right to appeal from the Council’s decision, if an appeal is warranted. If the Council permits BNE to proceed with this proposed “modification,” it will deny the Golds and other interested parties their due process rights, and in the case of the Golds, that denial will essentially result in a taking of their property given that a significant portion of their property sits within the setback area that BNE specifically identified, based on the manufacturer specification from a comparable unit. Indeed, the new turbine would be sited so close to the Gold Property that were it to fall, more would land on the Gold Property than at 53 and 45 Flagg Hill Road.

Should the Council reject BNE's request to modify its D&M Plan and require it to submit a new petition, the Golds would seek in that hearing to ensure that BNE's petition complies with the wind regulations and does not interfere with or contravene their property rights.

**IV. Statutory or other authority therefore**

The Golds are entitled to party status pursuant to Sections 4-177a, 16-50l, 16-50n, 22a-14 through 22a-20 of the Connecticut General Statutes and Sections 16-50j-13 through 17, 16-50j-40 and 16-50j-43 of the Regulations of the Siting Council.

In particular, as abutters to the two new Flagg Hill Road properties that BNE proposes to acquire and "merge" into its own Flagg Hill Road property, the Golds would unquestionably be required to receive notice of the filing *had BNE actually filed a new petition*. See Conn. Gen. Stat. §§ 16-50l(b), 16-50n(a); Regs. § 16-50j-40(a). The Golds are also requesting party status as intervenors under the Connecticut Environmental Protection Act ("CEPA"), which permits any person to "intervene as a party upon the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." See Conn. Gen. Stat. §§ 22a-19, 22a-20.

**V. Nature of the evidence that the petitioner intends to present**

If granted party status, the Golds intend to present evidence including, but not limited to:

- Testimony by the Golds about matters concerning their property; its proximity to the new turbine that BNE proposes to install; the impact that such installation in violation of setback recommendations and the State of Connecticut's regulations concerning wind turbine facilities would have on their family's safe use and enjoyment of their property; their plans for the development of the barn on their

property into a residence for use by their severely autistic and deaf minor child when he reaches the age of majority;

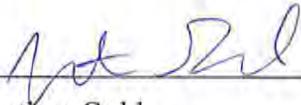
- Testimony by an appropriate expert about the adverse impact of the proposed new development on the vernal pools and wetlands located on the Gold Property;
- Evidence, whether by testimony or otherwise, that the proposed “modification” will unreasonably impair and/or destroy the public trust in the water of the state and in the natural resources of the state by causing the clear cutting of acres of land, thereby disturbing or destroying wetlands and watercourses and wildlife habitats; and
- Evidence, whether by testimony or otherwise, of the numerous ways in which BNE’s “modification” is actually an attempt to avoid the application of the wind regulations, which would result in siting a third turbine in unsafe proximity to residential property and would permit BNE to escape its burdens with respect to environmental, noise and visual surveys that now apply to wind turbine facilities.

**PROPOSED PARTY  
JULIA AND JONATHAN GOLD**

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**VERIFICATION**

I, Jonathan Gold, being duly sworn, depose and say that I have read the foregoing Request for Party Status and Notice of Intervention, and that the allegations contained therein are true to the best of my knowledge.

By:   
Jonathan Gold

Subscribed and sworn to before me this 3rd day of March, 2020.



  
Notary Public / Commissioner of the Superior Court  
My Commission Expires:

## CERTIFICATION

I hereby certify that a copy of the foregoing document was delivered by first-class mail and e-mail to the following service list:

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/s/ Emily A. Gianquinto  
Emily Gianquinto

# **EXHIBIT D**

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

**Petition of BNE Energy Inc. for a  
Declaratory Ruling that no Certificate of  
Environmental Compatibility and Public Need  
is Required for the Construction, Maintenance,  
and Operation of a 4.8 MW Wind Renewable  
Generating Facility Located on Flagg Hill Road  
in Colebrook, Connecticut (“Wind Colebrook South”).**

**Petition No. 983**

**March 4, 2020**

**REQUEST FOR PARTY STATUS AND NOTICE  
OF CEPA INTERVENTION BY GRANT SWAMP GROUP**

The Grant Swamp Group (“GSG”) is the owner of property located at 246 Danbury Quarter Road in Winchester, Connecticut (the “GSG Property”). Based on the “modification” BNE Energy, Inc. (“BNE”) has proposed to make to its Development and Management (“D&M”) Plan, the GSG Property would abut the new site for the project, as it sits right on the Colebrook-Winchester town line, adjacent to the southernmost new Flagg Hill Road property that BNE proposes to acquire and “merge” into its current project site.

GSG hereby seeks party status in the Petition of BNE Energy Inc, ("BNE") for a Declaratory Ruling for the Location, Construction and Operation of a 4.8 MW Wind Renewable Generating Project on Flagg Hill Road in Colebrook, Connecticut (“Wind Colebrook South”), including its D&M Plan Modification, filed January 9, 2020. GSG also hereby intervenes in this proceeding under the Connecticut Environmental Protection Act (“CEPA”).

As an abutter only to the new project site proposed by BNE, rather than the site previously approved by the Council, this is the first opportunity for GSG to weigh in on the project, which BNE now seeks to “modify” to site a 646-foot high turbine on entirely different parcels of land. GSG only received notice of the proposed new site a few weeks ago, and BNE

only revealed the exact proximity of the turbine to abutters by way of interrogatory responses 11 days ago. The Council must permit GSG to participate in this proceeding.

**Contact information for proposed party:**

Proposed party: Grant Swamp Group  
Mailing address: c/o Adair Mali, 458 Winchester Road, Norfolk CT 06058  
Phone: (860) 542-5806  
Email: toucan22@gmail.com

**Contact information for representative of proposed party:**

Name: Emily Gianquinto  
Address: 21 Oak Street, Suite 601, Hartford, CT 06106  
Phone: (860) 785-0545  
Email: emily@eaglawllc.com

**I. Manner in which proposed party claims to be substantially and specifically affected**

The proposed “modification” will substantially and specifically affect GSG because, according to BNE’s own submissions in response to the Council’s first set of interrogatories, the third turbine would be located on a piece of property that abuts the GSG Property.

The proximity of the GSG Property to the third turbine location now being proposed by BNE is not included anywhere in BNE’s initial request for modification of its D&M Plan, and was revealed only in BNE’s February 21, 2020 responses to the interrogatories issued by the Council. In Exhibit A to those interrogatory responses, the Adjacent Property Owners Location Map, the GSG Property is clearly marked as directly adjacent to the new proposed turbine site, though to date, BNE still has not provided measurements of the proximity of the turbine to the GSG Property line. As an abutter, GSG’s property rights will clearly be substantially and specifically affected by the Council’s decision with respect to BNE’s request. GSG’s focus on conservation, described in more detail below, also gives it an interest in the proceeding, both as a party and as a CEPA intervenor.

## **II. Contention of the proposed party**

GSG contends that the modification BNE submitted is so substantially different from its petition and even from the D&M Plan approved by the Council in December 2013 that it is in substance a new project — a new proposal to construct a new wind turbine facility on an entirely different site. The proposed “modification” would add two new parcels of land to the site, and in doing so, would increase the size of the project site by more than 37 acres. (BNE Narrative at 1.) The added parcels bring into the mix different abutters, implicating the due process rights of GSG and others like them – property owners who suddenly find themselves immediately adjacent to a parcel of land that may host a wind turbine that was never before proposed, reviewed or approved by the Council. That alone is such a significant and fundamental change that demonstrates this proposal is not a mere “modification” but instead a new project that requires full review by the Council.

Accordingly, the “modification” is not properly before the Siting Council, as it only has jurisdiction over siting energy projects pursuant to statute. At present, the Council simply lacks jurisdiction over the proposed project because of the scope of the “modification.” The Council exists to *site* projects, and it already did so. It issued a decision and order, opinion and findings of fact siting a three-turbine project on a 79.74-acre property located at 29 and 17 Flagg Hill Road. It did *not* site a three-turbine project on a 116.64-acre site located at 29, 17, 45 and 53 Flagg Hill Road. This so-called “modification” is a thinly disguised new facility and as such requires the filing of a new petition. This would require the filing of a new petition, which would not only ensure the Council had jurisdiction to consider it, but would ensure that all interested parties have appropriate due process protections and that the Council has the information necessary to fulfill its obligation of balancing the need for adequate and reliable public utility services at the lowest

reasonable cost to consumers with the need to protect the environment and ecology of the state and to minimize damage to the scenic, historic, and recreational values while also assuring the welfare and protection of the people of the state. Significantly, the project being proposed by BNE would not be permissible under the state's wind regulations, as it does not even come close to complying with, among other things, the regulatory setback requirements.

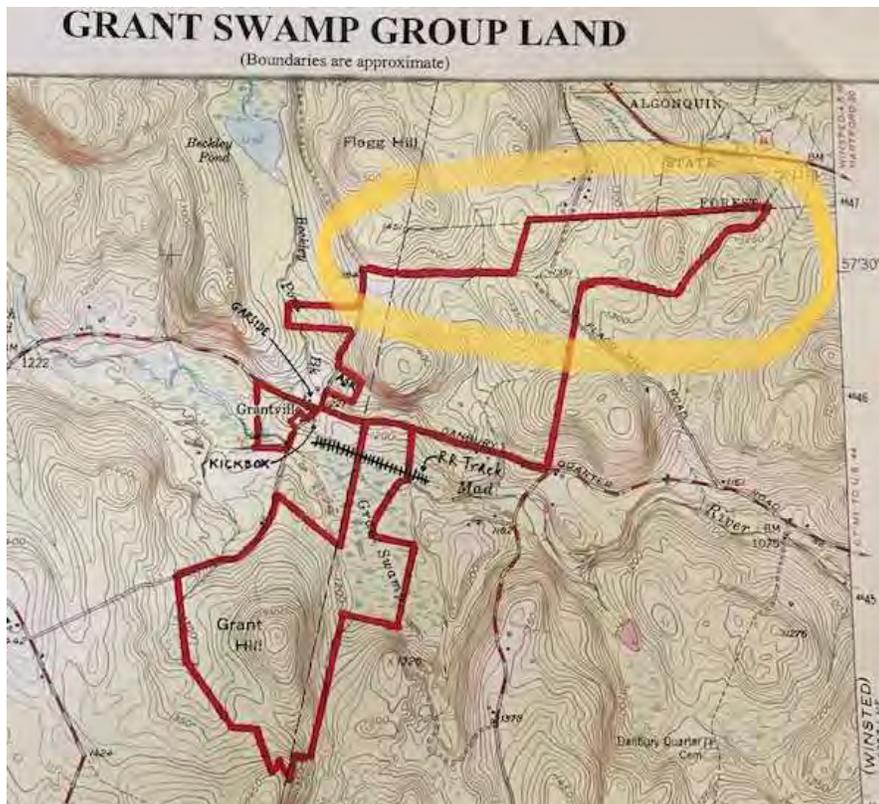
The Council does not have the authority to site this new project by way of a "modification" in the D&M process. "[T]he D & M plan functions to 'fill up the details' in the siting council's final decision. ...The D & M plan cannot provide a substitute for matters not addressed during the application process." *Middlebury v. Conn. Siting Council*, No. CV010508047S, 2002 WL 442383, at \*5 (Feb. 27, 2002, Cohn, J.). Here, GSG contends that BNE is trying to use the D&M modification to bootstrap the Council's approval over a host of matters that were neither presented nor addressed during the initial proceeding, including the impact of the project on additional abutters, the environmental impact on two new parcels of land and the properties that abut them, the impacts with respect to shadow flicker, noise, viewshed and ice throw, and more.

One simple example is BNE's claims with respect to the impact of the new turbine on vernal pools and wetlands on the original Wind Colebrook South site. BNE claims that the impact will be decreased from the previously approved D&M Plan because a third turbine will be placed further away from the two high-value vernal pools located at 29 Flagg Hill Road. However, the GSG partners believe that the GSG Property is home to vernal pools, which could mean the impacts would actually be greater. The same is true for wetlands. BNE claims the new turbine would reduce the impact on wetlands, but that claim is again made without providing any information on the wetlands present at 45 and 53 Flagg Hill Road or on any new abutters' properties. The GSG Property certainly contains wetlands. None of these issues were addressed

during the petition process because (1) 45 and 53 Flagg Hill Road were not included in the originally proposed and approved 79.74-acre Wind Colebrook South site; and (2) were not immediately adjacent to the originally proposed and approved 79.94-acre Wind Colebrook site.

GSG also contends that BNE’s proposed modification would have significant adverse impacts on its partners’ ability to enjoy and use the GSG Property and would interfere with the partnership’s focus on conservation. The GSG partners are four siblings: Adair Mali, Peter Mali, Taylor Mali and Kate Pingeon. The original partnership was formed in 1964, and the current partners have been the sole partners since 1999.

As shown in the below map, GSG owns approximately 600 acres in Winchester and Norfolk, outlined in red. The GSG Property, i.e., the portion of GSG’s land holdings that abuts the site of the proposed “modification,” is roughly the northern third of that acreage, circled in yellow. (Boundaries are approximate.)



GSG is strongly conservation oriented. In 1994, it donated 45 acres to The Nature Conservancy (“TNC”) to expand and protect the Beckley Bog, the southernmost sphagnum heath bog in New England and a National Natural landmark. This 45-acre parcel provides an upland buffer for the bog, helping TNC to maintain it in its natural state. In 2008, GSG put 207 acres that it owns on Grant Hill Road into a conservation easement with the Norfolk Land Trust. That area is approximately the southernmost third of the property shown on the map above. The easement protects approximately 20 acres of wetlands, preserves over 5,000 feet of scenic forest views along public roads, and helps protect the upper watershed of the Town of Winsted’s public water supply.

GSG owns land along Schoolhouse Road, Beckley Road, and Danbury Quarter/Grantville Road that it has chosen not to develop, preferring to leave it in its natural state. This is a departure from the development pattern along Danbury Quarter Road, with many houses on small lots. Undeveloped land adjacent to the roads is an important part of South Norfolk’s rural character and to protecting the unique wildlife habitats present in this corner of the state.

The GSG Property, which borders the new proposed site for a third turbine, is the northernmost piece of GSG’s overall property holdings. It is predominantly forested. In 2016, GSG hired Scotland Hardwoods to do a timber cut to improve the quality of the forest. An old road (Skinner Road) cuts through part of the forest, making a nice walking path that the GSG partners and their guests use for recreation. The GSG partners planted an orchard on the GSG Property, consisting of mostly peaches, directly south of the property owned by Julia and Jonathan Gold (who are also immediately adjacent to new site BNE is asking the Council to approve). The GSG partners and their guests regularly forage for edible mushrooms in those woods.

The GSG partners have always enjoyed that the woods in that part of their property feel remote and wild. Although GSG is focused on conservation, each of the partners have at times also considered building a house on some part of the GSG Property, in proximity to the features discussed above; that is no longer an option. The installation of the two turbines at 27 and 19 Flagg Hill Road in 2015 has also already changed the GSG partners' enjoyment of the GSG Property. They have all spent less time there, because on windy days, when the turbines are spinning faster, their presence disturbs the remote and wild feel of the area. That impact would be significantly magnified and would further interfere with GSG's property rights were the Council to permit BNE to site a third turbine immediately adjacent to the GSG Property.

GSG notes that the proposed location of the new turbine is so close to property lines that it would not be permissible under the wind regulations. BNE's interrogatory responses indicated that the turbine would be sited just 523 feet from one property lines and 321 feet from another property line. The wind regulations would require a distance of approximately 971 feet from property lines.<sup>1</sup> GSG still does not know, based on BNE's submission or its interrogatory responses, how far the new turbine would be located from the GSG Property line.

Overall, the BNE submission, even as supplemented by the contents of its interrogatory responses, simply does not provide GSG – or any interested party, let alone the Council – with enough information to otherwise assess the impacts of the “modification.” As noted above, there is nothing in the submission about setbacks to other property lines. There is nothing about the wetlands or vernal pools or wildlife that may be present at 53 and 45 Flagg Hill Road, or on any of the abutters' properties, including the GSG Property. The “ice throw risk assessment”

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<sup>1</sup> The wind regulations require that turbines be sited at least 1.5 times the wind turbine height from any property lines. Regs. § 16-50j-95(a)(1)(B). Here, the wind turbine height is 197.3 meters (128 hub height + (183.6 blade diameter/2)). Under the regulations, then, the turbine must be at least 295.95 meters, or just under 971 feet, from adjacent property lines.

provided by BNE in response to the Council's interrogatories is of little assistance in assessing safety, as it does not include property lines, but it does appear that a significant portion of a residential property owned by GSG's neighbors will be in the potential ice fall zone. The cursory noise evaluation submitted by BNE with its interrogatory responses does not include any assessment of noise levels at any property lines, as would be required by the wind regulations. *See* Regs. § 16-50j-94(d). Similarly, the viewshed analysis submitted by BNE in response to the interrogatories does not appear to show how the view from the GSG Property will be impacted by the siting of the new turbine in such close proximity, especially given the significant increase in the height of this new turbine. BNE did not submit a shadow flicker analysis and instead responded to interrogatories on that issue by claiming that a consultant did some kind of work and determined that the flicker would be negligible. Nor has BNE submitted any technical documentation from the manufacturer of the new turbine with respect to siting its turbines, including setback recommendations, noise level data and the like.

If the Council refuses to reject this "modification" so that BNE would be forced to file a new petition, thereby ensuring that all of this information is on the record and available to parties, GSG should at least be entitled to participate in this late stage of the petition proceeding and to ask questions of BNE. It is simply unreasonable and unfair to permit BNE to use the Council's approval of a project on different pieces of property more than eight years ago to avoid the regulatory requirements, violate abutters' due process rights and fundamentally change the project in this manner. BNE's proposed "modification" should be rejected and it should be directed to file a new petition for declaratory ruling for its proposed new single-turbine facility. That is the only way the Council and the new abutters will have an adequate opportunity to

review the potential impacts of the project, and it is the only way to ensure that the new abutters, including GSG, are provided with due process.

### **III. Relief sought by the proposed party**

GSG seeks to have the Council reject the proposed D&M “modification.” GSG intends to argue that BNE is improperly attempting to circumvent the regulatory framework that applies to wind energy development projects by asking the Council to piggyback this third turbine into its existing project. The “modifications” are nothing of the kind. This is a proposal for a turbine to be located on two new properties, to be accessed by a brand-new road, to abut new residential properties and a new town, and to include significantly different technology, such as a much taller turbine manufactured by a different company and capable of generating more energy. All of these facts and more demonstrate that BNE’s proposal should be rejected and it should be required to come back to the Council with a properly filed petition that would permit all interested parties to fully participate in a hearing, present evidence and to have the right to appeal from the Council’s decision if that is warranted. If the Council permits BNE to proceed with this “modification,” it will be denying GSG and other interested parties of their due process rights.

### **IV. Statutory or other authority therefore**

GSG is entitled to party status pursuant to Sections 4-177a, 16-50l, 16-50n, 22a-14 through 22a-20 of the Connecticut General Statutes and Sections 16-50j-13 through 17, 16-50j-40 and 16-50j-43 of the Regulations of the Siting Council. In particular, as abutter to the two new Flagg Hill Road properties that BNE proposes to acquire and “merge” into its own Flagg Hill Road property, GSG would unquestionably be required receive notice of the filing *had BNE actually filed a new petition*. See Conn. Gen. Stat. §§ 16-50l(b), 16-50n(a); Regs. § 16-50j-40(a).

GSG is also requesting party status as an intervenor under the Connecticut Environmental Protection Act (“CEPA”), which permits any person to “intervene as a party upon the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” *See* Conn. Gen. Stat. §§ 22a-19, 22a-20.

V. **Nature of the evidence that the petitioner intends to present**

If granted party status, GSG intend to present evidence including, but not limited to:

- Testimony by GSG partners about matters concerning GSG and its conservation efforts; the GSG Property; its proximity to the new turbine that BNE proposes to install; the impact that such installation in violation of setback recommendations and the State of Connecticut’s regulations concerning wind turbine facilities would have on their safe use and enjoyment of the GSG Property and their conservation goals;
- Testimony by an appropriate expert about the adverse impact of the proposed new development on the wetlands and other natural resources located on the GSG Property;
- Evidence, whether by testimony or otherwise, that the proposed “modification” will unreasonably impair and/or destroy the public trust in the water of the state and in the natural resources of the state by causing the clear cutting of acres of land, thereby disturbing or destroying wetlands and watercourses and wildlife habitats; and

- Evidence, whether by testimony or otherwise, of the numerous ways in which BNE’s “modification” is actually an attempt to avoid the application of the wind regulations, which would result in siting a third turbine in unsafe proximity to residential property and would permit BNE to escape its burdens with respect to environmental, noise and visual surveys that now apply to wind turbine facilities.

**PROPOSED PARTY  
GRANT SWAMP GROUP**

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**VERIFICATION**

I, Adair Mali, being duly sworn, depose and say that I am a partner of the Grant Swamp Group and therefore authorized to act on its behalf, that I have read the foregoing Request for Party Status and Notice of Intervention, and that the allegations contained therein are true to the best of my knowledge.

By: Adair P. Mali

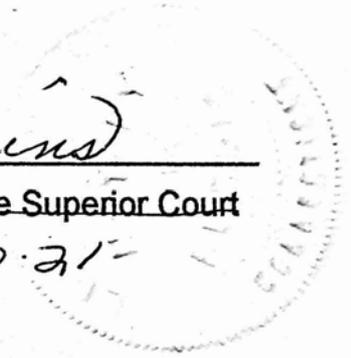
Adair Mali

Subscribed and sworn to before me this 4 day of March, 2020.

Linda A Perkins

Notary Public / Commissioner of the Superior Court

My Commission Expires: 4-30-21



**CERTIFICATION**

I hereby certify that a copy of the foregoing document was delivered by first-class mail  
and e-mail to the following service list:

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*/s/ Emily A. Gianquinto*  
\_\_\_\_\_  
Emily Gianquinto

# **EXHIBIT E**

**DECLARATION REGARDING NOTICE**

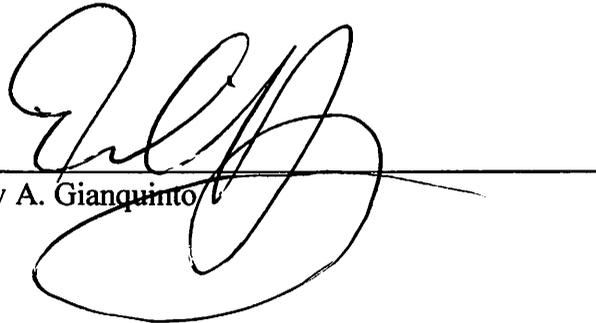
I, Emily A. Gianquinto, hereby declare under penalty of perjury pursuant to 28 U.S.C. § 1746 that the following is true and correct:

1. I am an attorney and the owner of EAG Law LLC.
2. I am over the age of 18, and I understand the obligation of an oath.
3. I am counsel for petitioners FairWindCT, Inc., Jonathan and Julia Gold, and the Grant Swamp Group.
4. On June 1, 2020, petitioners gave notice of the substance of this petition, and of the opportunity to file comments and to request intervenor or party status under R.C.S.A. § 16a-50j-13 through § 16a-50j-17, to all persons known to have an interest in the subject matter of the petition, as well as to the chief elected officials of the towns of Colebrook, Winchester/Winsted and Norfolk. Such notice was served, via first-class, certified mail, upon the parties in the attached list.
5. In addition, on June 1, 2020, petitioners provided by email a complete copy of the petition and all exhibits to each entity and individual on the attached list for whom they had an email address.

I certify under penalty of perjury that the foregoing is true and correct.

Executed on this 1st day of June, 2020.

Emily A. Gianquinto

A handwritten signature in black ink, appearing to read 'Emily A. Gianquinto', is written over a horizontal line. The signature is stylized and cursive.

## INTERESTED PARTIES

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Mayor Althea Candy Perez  
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The Nature Conservancy of Connecticut, Inc.  
55 Church Street, Floor 3  
New Haven, CT 06510-3029; and  
ATTN: Legal Dept.  
4245 North Fairfax Drive  
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wnstddoc@yahoo.com

# **EXHIBIT F**

## **EXHIBIT A**

### **DESCRIPTION OF FACILITY**

**Facility:** Wind Colebrook South Phase II is a one turbine wind-powered electrical generation project with an expected capacity of 3.83 MW located on approximately 79.74 acres at 17 and 29 Flagg Hill Road in Colebrook, Connecticut 06021.

**Operational Limitations:** Facility will only operate when the wind resources exceed the minimum wind speed at which the turbine blades will rotate and begin to produce electricity, and when the wind resources do not exceed the maximum wind speed at which the turbine blades will stop rotating to avoid damage to the turbine and no longer produce electricity. Minimal time is required for start-up of the Facility and no limits exist with regard to the number of scheduled start-ups per Contract Year.

**Delivery Point:** Settlement in the ISO-NE energy market system will occur when Energy is supplied into Buyer's ISO-NE settlement account at the ISO New England pricing node ("pnode") for the Facility established in accordance with ISO-New England Rules. The Delivery Point is the ISO New England Pool Transmission Facilities ("PTF") in the vicinity of the referenced pnode. Seller shall be responsible for (1) all non-PTF and/or distribution system losses, (2) all transmission and/or distribution interconnection charges associated with the Facility, and (3) the cost of Delivery of the Products to the Delivery Point, including all related administrative fees and non-PTF and/or distribution wheeling charges. In addition Seller shall also be responsible to apply for and schedule all such services.

**Proposed Facility Size:** 3.83 MWs (AC)

# EXHIBIT G

**EXHIBIT B**

**SELLER'S CRITICAL MILESTONES**

**Required Permits and Authorizations for the Construction of the Facility (Section 3.1(a))**

<b>Agency</b>	<b>Description of Permit/Authorization</b>
<b>Federal</b>	
1. U.S. Army Corps of Engineers	Category 2 General Permit
2. Federal Aviation Administration	Determination of No Hazard
<b>State</b>	
1. Connecticut Siting Council	Petition for Declaratory Ruling
2. Department of Energy and Environmental Protection	General Permit
<b>Local</b>	
1. Town of Colebrook	Building Permit

**Additional Required Permits and Authorizations in accordance with Section 3.4(b)**

<b>Agency</b>	<b>Description of Permit/Authorization</b>
<b>Federal</b>	
Not Applicable	
<b>State</b>	
1. Public Utilities Regulatory Authority	Class I RPS Qualification
<b>Local</b>	
Not Applicable	

**Real Estate Under Site Control for Facility and Interconnection in accordance with Sections 3.1(a) and 3.4(b)**

<b>Owner</b>	<b>Agreement Type</b>	<b>Land Use</b>	<b>Acreage</b>
Wind Colebrook South LLC	Ownership	Turbine, related equipment	79.74 acres

# EXHIBIT H



- Ecology
- Soil & Wetland Studies
- Water Quality Monitoring • GPS
- Environmental Planning & Management
- Ecological Restoration & Habitat Mitigation
- Aquatic, Wildlife and Listed Species Surveys
- Application Reviews • Permitting & Compliance

May 31, 2020

VIA E-MAIL

Julia and Jonathan Gold  
Grant Swamp Group  
FairWindCT, Inc.  
c/o Emily Gianquinto  
EAG Law LLC  
21 Oak Street, Suite 601  
Hartford, CT 06106

**RE:**     *REVIEW OF BNE ENERGY INC. "WIND COLEBROOK SOUTH"  
CSC PETITION NO. 983*  
Flagg Hill Road, Colebrook, CT

*REMA Job # 20-2269-CLB4*

Dear Ms. Gianquinto:

At the request of Julia and Jonathan Gold, Grant Swamp Group, and FairWindCT, Inc., REMA ECOLOGICAL SERVICES, LLC (REMA), has conducted a review of pertinent documents regarding the above-referenced petition. These documents were obtained at the Connecticut Siting Council's (CSC) website, and included documentation from the original 2011 CSC proceedings as well as documentation associated with the more recent D&M Plan Modification (3/6/2020) regarding the relocation of Turbine 3 (T3). As part of our review, on April 8, 2020, REMA also viewed the subject site for the T3 relocation from its perimeter.

In summary, REMA finds that the necessary natural resource inventories and characterizations are lacking, including those associated with wetlands, vernal pool habitats, and wildlife. As a result, the submitted modification plans with respect to the new siting of T3 are incomplete, and adequate protection of natural resources is lacking or uncertain. Moreover, based on our findings, it is probable that a review by the U.S. Army Corps of Engineers will be required.



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The following summarize our findings:

1. Wetland delineations are incomplete: According to the submitted plans by Civil 1, dated November 15, 2019, and revised through December 17, 2019, wetland delineations downstream of the proposed riparian wetland corridor crossing have not been completed to the southern property boundary. On the western side of the wetland corridor, the last-surveyed wetland boundary marker (i.e., 6-81) is roughly 224 feet from the southern property boundary (see plan sheet C102, attached with annotation), while on the eastern side, no wetland boundaries have been delineated. The plans show dashed lines of where wetland boundaries are assumed, but based on our observations on April 8, 2020, and the simple reading of topography, these assumptions are grossly inaccurate. These incomplete delineations call into question the siting of proposed “Stormwater Renovation Area B,” which includes a large stormwater detention basin to the southeast of T3 and southwest of the proposed wetlands crossing. It is entirely possible that as proposed, the outlet for this stormwater management area would be located within or very close to a wetland area that has not been delineated, such that it could not be constructed without an additional direct impact upon regulated and jurisdictional wetlands.
2. Wetland delineations are not substantiated or verified: The delineated wetland boundaries in the vicinity of the two proposed wetland impact areas have not been verified. There is no documentation found in the record that substantiates these delineations. There is no Soil Scientist’s Report or Wetland Delineation Report, and no verification of jurisdictional wetland boundaries (i.e., federal wetland boundaries) at the proposed impact areas, using the standard U.S. Army Corps of Engineers data forms (i.e., Wetland Determination Data Form – Northcentral and Northeast Region). In fact, in looking at the wetland boundaries on the plans, as well as the topography, the disconnect between wetlands to the north and wetlands to the south between Stations 11+00 and 12+00 on the access road just to the northeast of the wetlands crossing, does not appear plausible (see plan sheet C102, attached). In all likelihood, this is not a discontinuous wetland area, rather the northern and southern lobes of the delineated wetlands are connected. As such, there is no way to verify BNE’s claimed wetlands activity of approximately 2,300 square feet, and our review indicates the impact could be much higher.
3. Wetland inventory and characterization is lacking: Whereas documentation for the original petition included a “Terrestrial Wildlife Habitat & Wetland Impact Analysis” (i.e., Exhibit I, Volume Three, dated 12/6/2010), which described soils, geology, vegetation, habitat structure, and wildlife, none of this pertinent information was provided for those natural resources associated with the relocation of T3 to new parcels of land never surveyed or inventoried during the siting process. Without these types of natural resource information, especially in regards to regulated/jurisdictional wetlands and watercourses, it is impossible to analyze the



potential for short-term and long-term adverse impacts to natural resources. We should note that during our April 8, 2020 field investigation, among several observed wildlife species, most of them avians, we noted drumming rough grouse on the subject site. This species has been in steady decline since the 1960s and has become increasingly uncommon. Our observation of the drumming rough grouse is an example of the need to conduct on-site surveys/wildlife inventories in order to assess development impacts. Other avians observed during our field visit included: red-shouldered hawk, hairy woodpecker, black-throated green warbler, black-capped chickadee, tufted titmouse, yellow-bellied sapsucker, common raven (flyover), pileated woodpecker, ruby-crowned kinglet, white-breasted nuthatch, eastern phoebe, pine warbler, red-bellied woodpecker, and hermit thrush. Being early April only a few of the neotropical migrants would have arrived or be readily observed.

4. A productive vernal pool habitat was missed: During our site visit to the parcels owned by the Golds, which directly abut the subject site to the south, REMA documented a productive vernal pool habitat that appears to straddle the property boundary (see Figure A, attached, and compare with plan sheet C102). According to the Calhoun and Klemens (2004)<sup>1</sup> methodology, this is a “cryptic vernal pool” and would receive a Tier I designation, meaning it is worthy of conservation.

This habitat is embedded with the riparian wetland corridor, and has resulted through the long-term use of these wetlands by beaver. Over the course of several years, a roughly 2-foot high “beaver dam” has allowed a relatively flat wooded wetland area to flood, creating “seasonally flooded” to “semi-permanently flooded” hydrologic regimes. The dam is fairly stable and appears to have become a more or less permanent feature (e.g., vegetation is now growing on it). Even though a stream flows into this area from the north, flow velocities are dissipated within this shallow flooded area, which is approximately 8,000 square feet in size. During our April 8, 2020 in-field investigation, we observed wood frog (*Lithobates sylvaticus*) egg masses in three distinct areas within the “pool,” including one sizeable “raft” containing 70+ egg masses (see Photos 1 through 5, attached). At the time, no spotted salamander (*Ambystoma maculatum*) egg masses were observed, but based on recent weather patterns, elevation, and cold micro-climate, it would not have been unusual for spotted salamander egg deposition to have taken place after our site visit. In fact, the property owner reported having consistently observed spotted salamanders in this area for some time, and on May 9, 2020, she provided me with a photo of a spotted salamander she found in the vicinity of the documented vernal pool habitat (see Photo 6, which also shows a red-backed salamander).

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<sup>1</sup> Calhoun, A. J. K. and M. W. Klemens. 2002. **Best Development Practices (BDPs) for Conserving Pool-breeding Amphibians in Residential and Commercial Developments in the Northeastern United States.** MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, NY.



We should note that the observed wood frog egg masses were not observed within the central flow path of the stream through this area. They all had been deposited in protected areas outside the flow path, which would ensure that they are not dislodged and washed away. Furthermore, the fact that more than 70 wood frog egg masses were observed would indicate that this particular breeding habitat has been utilized successfully for a protracted period of time.

5. Potential Habitat for the Threatened Spring Salamander occurs along the riparian wetland corridor: According to an April 20, 2011 “Herpetological Assessment” conducted by Michael W. Klemens, PhD. for the original BNE petition, suitable habitat for spring salamander (*Gyrinophilus porphyriticus*) occurs in the general vicinity of the site. During our April 8, 2020 field visit, we noted seepage areas adjacent to the perennial stream, with a canopy of eastern hemlock, providing a cool microclimate preferred by this threatened species. This area occurs just to the north of the Golds’ property boundary. As noted by Dr. Klemens in the aforementioned 2011 report, “all construction activities near to or draining into this stream should pay special attention to the adverse effects of siltation to this delicate system and to the spring salamander, there should not be any crossings of this stream corridor...” As further discussed in the following finding, should spring salamander utilize the seepage areas and stream, it will be vulnerable to siltation during and after construction of the access roadway and stormwater renovation areas.
  
6. The plans do not afford protection of vernal pool habitat: The documented vernal pool habitat is within a stream wetland corridor that will be crossed by a proposed 24-foot wide access roadway, roughly 300 feet upstream. According to the site plans submitted by BNE, the wetlands crossing as proposed is located at the intersection of 10% slopes of the access road to the west and more than 6% slopes of the access road to the east. In fact, the construction of the access road to the west of the wetland crossing will entail existing slopes in excess of 20% (see plan sheet C502, attached with annotation). The proximity of the crossing and the topography of the access road at the crossing put this vernal pool habitat in a very vulnerable position not only during the construction phase, but also post-construction. Moreover, the proposed “Stormwater Renovation Area B,” located to the southwest of that wetlands crossing, is in such close proximity that it will act as a decoy vernal pool habitat, potentially disrupting the breeding ecology of obligate vernal pool amphibians. That is the reason why CT DEEP’s Stormwater Quality Manual (2004) requires that stormwater ponds and stormwater wetlands be located at least 750 feet away from vernal pools (see Chapter 11 of manual), and why the construction of roads within the critical terrestrial habitat (CTH) zone should follow the standard of avoiding the creation of water-filled ruts that could likewise act as decoys. In the case of the aforementioned stormwater renovation area, the vernal pool habitat is roughly 275 feet away, which will violate those standards and accepted best



management practices and place this valuable habitat at significant risk of adverse impacts.

7. **Figures:** As part of our review, we also generated several figures, which show the T3 relocation site in relationship to abutting properties, and illustrate some of the public safety concerns, such as ice throw. Figure B shows the original and new project area, the 2013 approved T3 location and proposed 2020 T3 location, and original and new abutting properties, and was generated by overlaying tax assessor maps onto a Google Earth view and using the developer's project boundaries as provided in the D&M Plan modification. In Figure C, we took the developer's ice throw risk assessment modeling for the relocated T3 and added property lines based on tax assessor maps. In Figure D concerning setbacks, we took the same Google Earth image, overlaid with the same tax assessor maps to show property boundaries, and included circles showing the setback area that would be required by the Connecticut wind regulations and the GE setback documents relied upon by the developer in its D&M Plan modification submissions.

## Conclusion

It is our professional opinion, based on the foregoing, our site investigation, and careful review of the relevant documents, that the D&M Plan Modification for Petition No. 983 does not comply with Connecticut's standards for the protection of natural resources, especially regulated wetlands and watercourses. The submitted materials are incomplete and do not afford a robust analysis of potential impacts to ecological resources. Finally, with the documented presence of a Tier I vernal pool habitat, we would recommend that the U.S. Army Corps of Engineers review this proposal.

Please feel free to contact our office with any questions on the above.

Respectfully submitted,

**REMA ECOLOGICAL SERVICES, LLC**

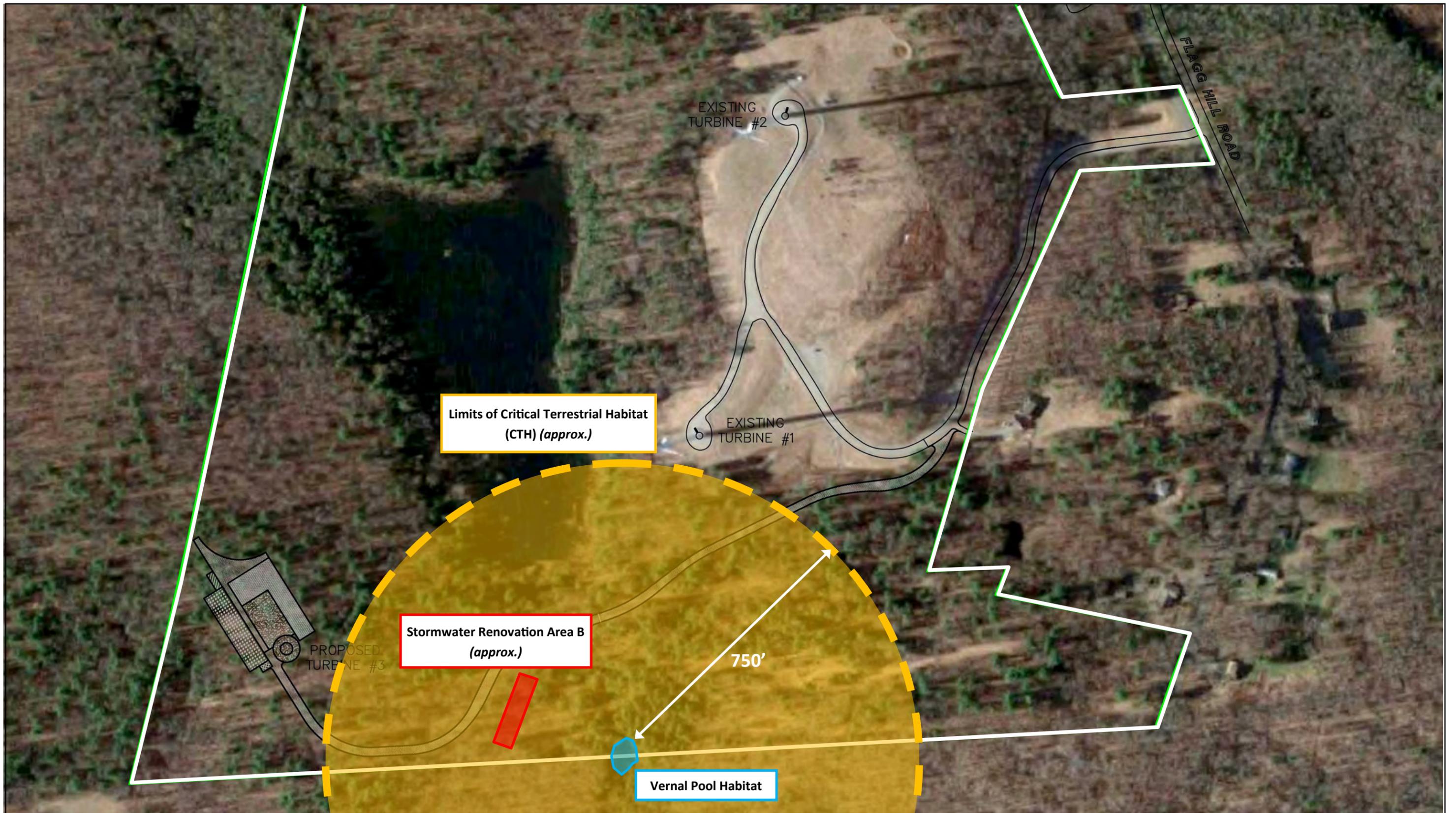
A handwritten signature in black ink, appearing to read "George T. Logan".

George T. Logan, MS, PWS, CSE  
Registered Soil Scientist, Professional Wetland Scientist  
Certified Senior Ecologist, Wildlife Biologist

Attachments: Plan Sheets C102 and C502; Figures A to D, Photos 1 to 6; Professional Resume







Limits of Critical Terrestrial Habitat  
(CTH) (approx.)

Stormwater Renovation Area B  
(approx.)

Vernal Pool Habitat

EXISTING  
TURBINE #2

EXISTING  
TURBINE #1

PROPOSED  
TURBINE #3

FLAGG HILL ROAD

750'

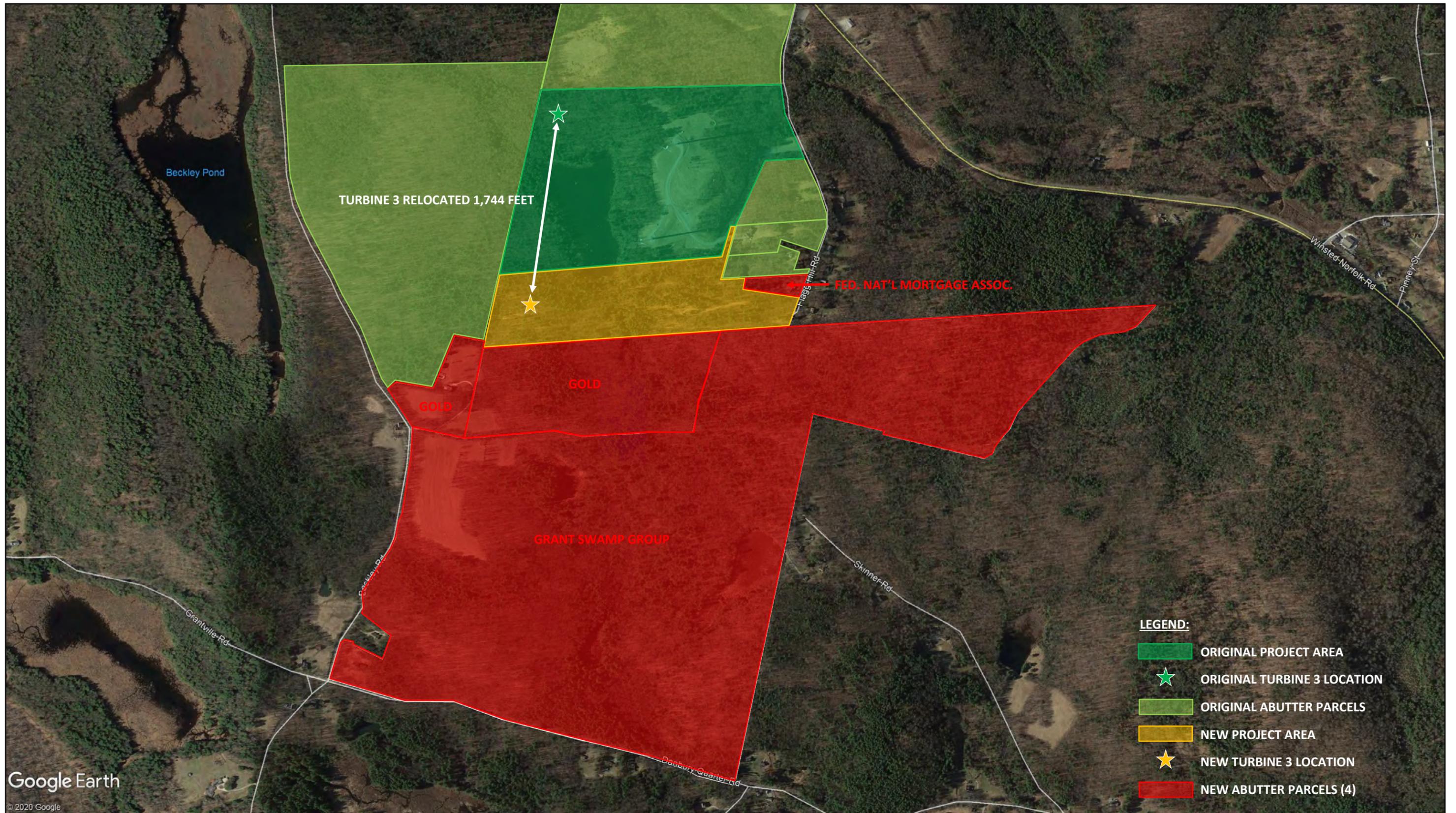


APPROXIMATE SCALE  
750 FEET

**FIGURE A:**  
LOCATION OF TURBINE T-3 AND VERNAL POOL HABITAT  
*(as seen on 2018 aerial photograph)*

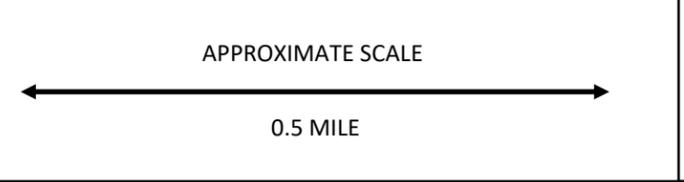
REFERENCES:  
PREPARED BY:  
IMAGERY SOURCE:

REMA ECOLOGICAL SERVICES, LLC  
BNE D&M PLANS (C002)



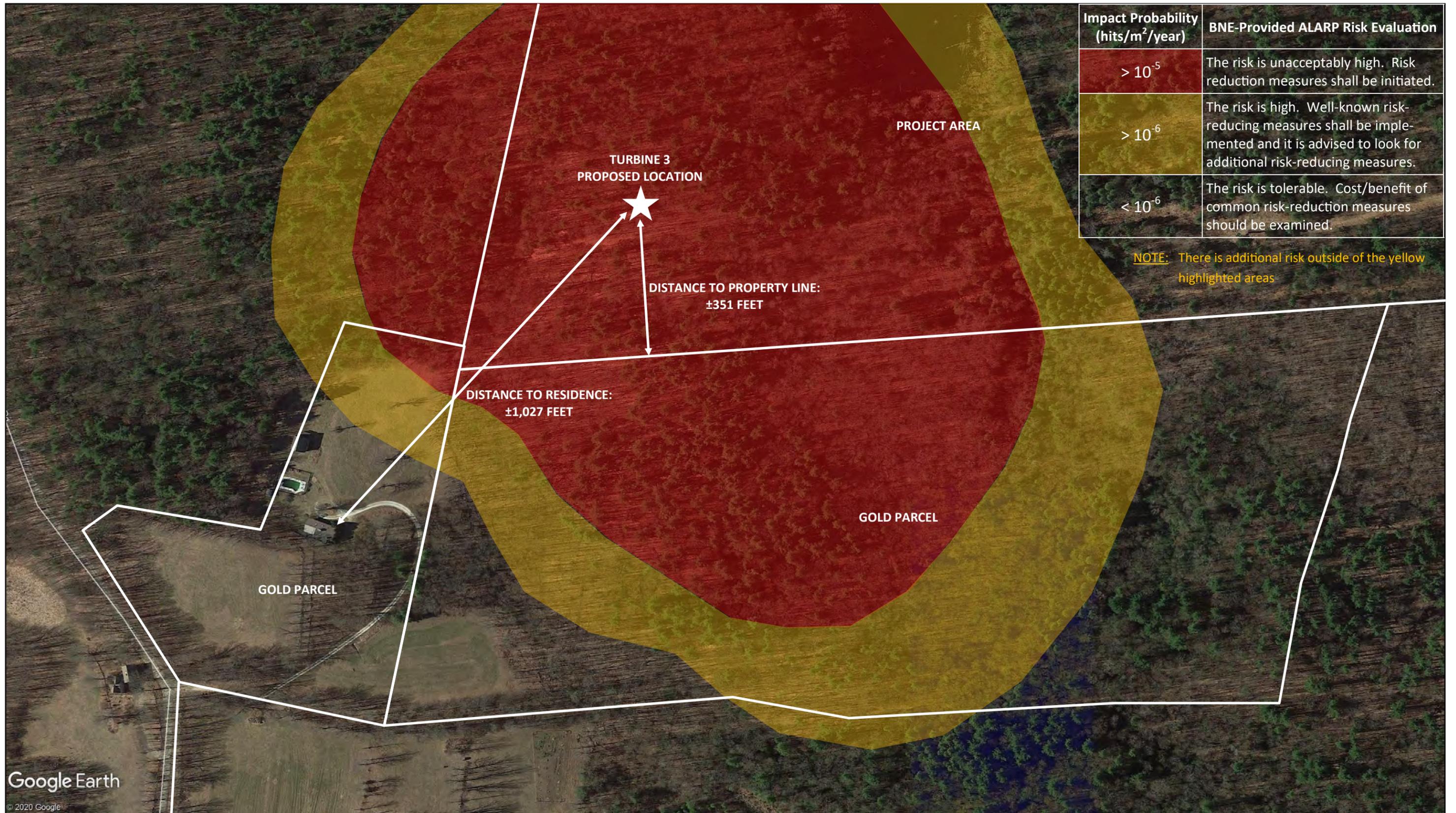
Google Earth

© 2020 Google



**FIGURE B:**  
**NEW ABUTTER PARCELS**  
**FROM 2020 PROJECT EXPANSION**

REFERENCES:	
PREPARED BY:	REMA ECOLOGICAL SERVICES, LLC
IMAGERY SOURCE:	GOOGLE EARTH (APRIL 2018)
PARCEL BOUNDARIES:	COLEBROOK, WINCHESTER, NORFOLK TAX ASSESSORS
PROJECT BOUNDARIES:	BNE 2020 REVISED D&M PROJECT PLANS

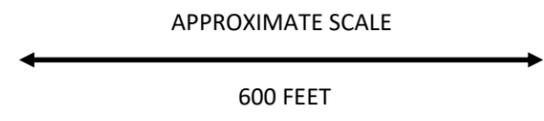


Impact Probability (hits/m <sup>2</sup> /year)	BNE-Provided ALARP Risk Evaluation
> 10 <sup>-5</sup>	The risk is unacceptably high. Risk reduction measures shall be initiated.
> 10 <sup>-6</sup>	The risk is high. Well-known risk-reducing measures shall be implemented and it is advised to look for additional risk-reducing measures.
< 10 <sup>-6</sup>	The risk is tolerable. Cost/benefit of common risk-reduction measures should be examined.

**NOTE:** There is additional risk outside of the yellow highlighted areas

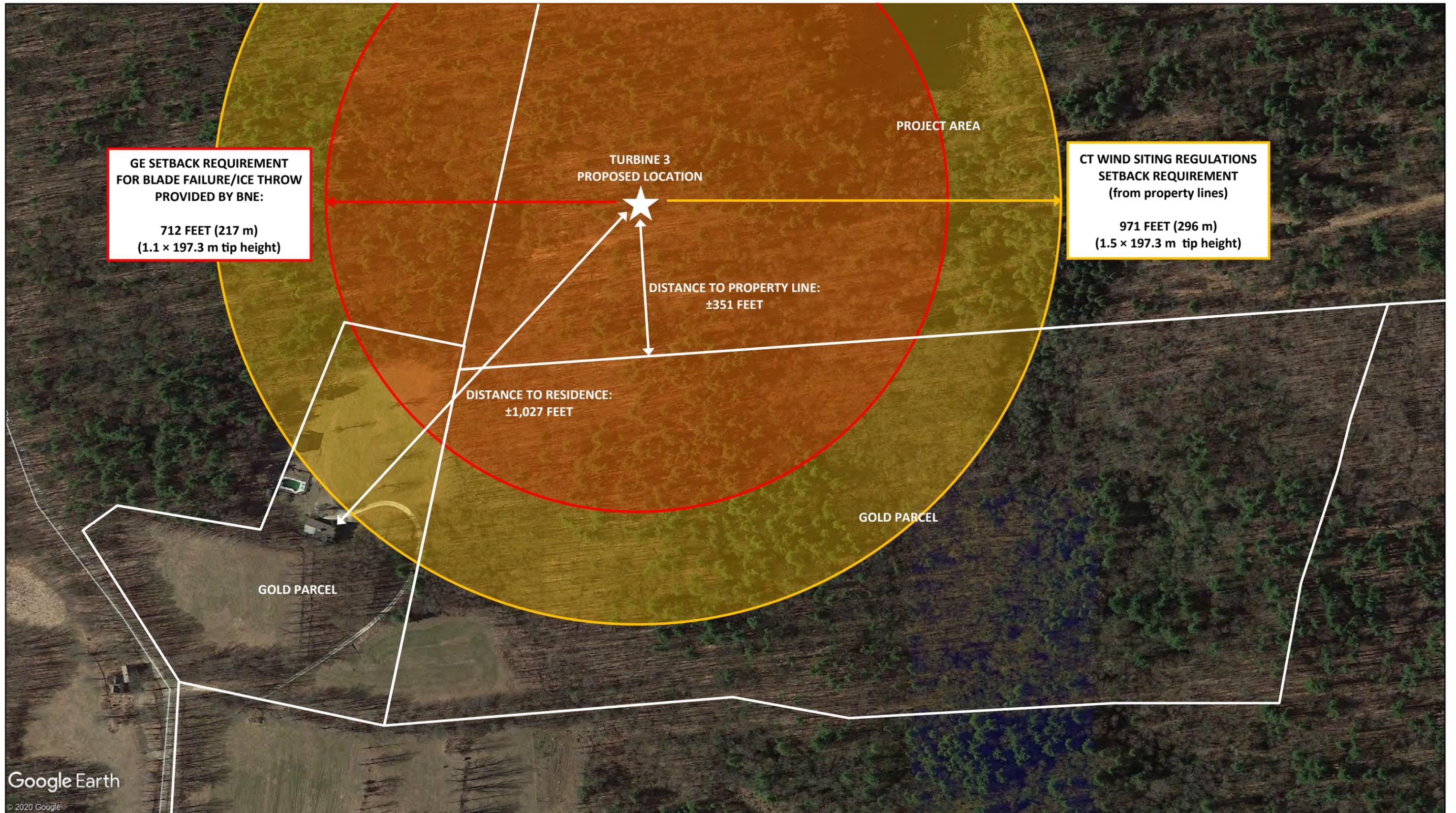
Google Earth

© 2020 Google



**FIGURE C:**  
**MODELED ICE THROW RISK TO ABUTTER PARCELS**  
**FROM 2020 PROJECT EXPANSION**

**REFERENCES:**  
 PREPARED BY: REMA ECOLOGICAL SERVICES, LLC  
 IMAGERY SOURCE: GOOGLE EARTH (APRIL 2018)  
 PARCEL BOUNDARIES: COLEBROOK, WINCHESTER, NORFOLK TAX ASSESSORS  
 RISK MODELING: 2/21/2020 BNE RESPONSE TO COUNCIL INTERROGATORIES



<p>Google Earth</p> <p>© 2020 Google</p> <p>NORTH</p>	<p>APPROXIMATE SCALE</p> <p>← 600 FEET →</p>	<p><b>FIGURE D:</b>  <b>SETBACK REGULATIONS AND SPECIFICATIONS</b>  <b>FROM PROPERTY LINES</b></p>	<p><b>REFERENCES:</b>          PREPARED BY: REMA ECOLOGICAL SERVICES, LLC          IMAGERY SOURCE: GOOGLE EARTH (APRIL 2018)          PARCEL BOUNDARIES: COLEBROOK, WINCHESTER, NORFOLK TAX ASSESSORS          SETBACK REQUIREMENT: 1/9/2020 BNE REVISED D&amp;M PROJECT PLANS, EXHIBIT F</p>
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*Photo 1:* Perennial watercourse entering vernal pool habitat from the north; facing southeasterly



*Photo 2:* Flagging indicating approximate property boundary (typical).



*Photo 3:* Vernal pool habitat area (western portion); facing southeasterly



*Photo 4:* Vernal pool habitat (northern portion); facing southeasterly



*Photo 5: Large raft of wood frog egg masses; facing southeasterly*



*Photo 6: Spotted salamander (with redback salamander) in the vicinity of the vernal pool habitat (photo by Julia Gold)*

# PROFESSIONAL RESUME

*George T. Logan, MS, PWS, CSE*

**Principal Environmental Scientist/Senior Ecologist**

## EDUCATION:

M.S. Natural Resources, *Wildlife Management & Conservation Biology*,  
University of Rhode Island, Kingston, R.I., 1989.

B.S. Natural Resources, *Wildlife Management & Wetlands Ecology*,  
University of Rhode Island, Kingston, R.I., 1986.

### ***Continuing Education***

The Transportation Project Development Process: Training in the  
PennDOT Environmental Impact Statement Handbook, Harrisburg,  
PA, January 1994

Rapid Bioassessment Protocols of Aquatic Systems (EPA Protocols),  
Wetland Training Institute, Williamsport, PA, August 3-6, 1993

## CERTIFICATIONS: *(current)*

Certified Senior Ecologist (2005, 2014) - Ecological Society of America  
Certified Professional Wetland Scientist (No. 581) (1994) - Society of  
Wetland Scientists

Registered Soil Scientist (1989) - Society of Soil Scientists of Southern  
New England

Certified Associate Wildlife Biologist (1989) – The Wildlife Society

## EXPERIENCE:

Mr. Logan is the Co-Owner and *Principal Environmental Scientist and Senior Ecologist* for Rema Ecological Services, LLC. He specializes in tidal and inland wetland delineations and evaluation, permitting, wetland mitigation design, implementation and monitoring, and the preparation of environmental compliance documents in accordance with national (NEPA), state (e.g., CEPA, MEPA), and local criteria and guidelines. He also provides design, construction supervision and implementation for a wide variety of habitat restoration and enhancement projects. Mr. Logan performs watershed-wide and surface water quality evaluations and provides guidance in the design of stormwater Best Management Practices (BMPs), including stormwater wetlands and bioretention basins, as well as for LID (low impact development) practices.

Mr. Logan has over 32 years of experience as a wildlife biologist/ecologist conducting wildlife habitat evaluations and focused avian, mammalian, invertebrate, and herpetofaunal surveys using both active and passive methods. He frequently conducts targeted surveys for sensitive, rare, and “listed” species (i.e., endangered, threatened, special concern), and aquatic biosurveys to assess the biodiversity and biotic health of ponds, lakes, vernal pools, rivers, and streams. Mr. Logan has extensive experience in performing herpetological surveys, including over 240 vernal pool investigations and evaluations.

Mr. Logan has participated in nearly 2,700 individual projects in New England and the Mid-Atlantic States and in 161 of 169 municipalities in Connecticut.



## Professional Resume: *(continued)*

*George T. Logan, MS, PWS, CSE*

### PROFESSIONAL AFFILIATIONS:

Society of Soil Scientists of Southern New England  
Society of Wetland Scientists  
Association of Massachusetts Wetland Scientists  
Ecological Society of America  
The American Birding Association  
The Wildlife Society  
Soil & Water Conservation Society  
Connecticut Association of Wetland Scientists (CAWS) (*Past-President,  
Charter member*)

### PUBLICATIONS: *(selected)*

Logan, G.T. & S.N. Gadwa. 1999. Quinnipiac River Watershed Association Stream Study. Water Quality in the Quinnipiac River. Proceedings of a Symposium on the Impact of Nonpoint Source Pollution in the Quinnipiac River Watershed, pp. 66-70.

Logan, G.T. & S.N. Gadwa. 1998. Stream Biosurveys: A *Primer*. Quinnipiac River Watershed Association Educational Series for the Adopt-the-River Programs.

Pawlak, E.M. & G.T. Logan. 1996. Town of Cromwell Wetland Evaluation Project. Connecticut Association of Conservation and Inland Wetlands Commissions. The Habitat, Vol. 10:1

Logan, G.T., F.B. Titlow & D.G. Schall. 1995. The Scientific Basis for Protecting Buffer Zones. Proceedings of the 16th Annual Meeting of the Society of Wetland Scientists.

Pawlak, E.M. & G.T. Logan. 1995. Town of Cromwell Wetland Buffer Zone Designation Methodology. Proceedings of the 16th Annual Meeting of the Society of Wetland Scientists.

Logan, G.T., J.H. Brown, Jr., T.P. Husband & M.C. Nicholson. 1994. Conservation Biology of the Cretan Agrimi (*Capra aegagrus cretensis*). Biologia Gallo-Hellenica, Vol. 21, pp. 51-57.

Nicholson, M.C., T.P. Husband, J.H. Brown, Jr. and G.T. Logan. 1994. Implications of behavior on the management of the Cretan Agrimi (*Capra aegagrus cretensis*). Biologia Gallo-Hellenica, Vol. 21, pp. 45-50.

### WORKSHOPS & CONFERENCES: *(selected)*

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. Corps Training Workshop. May 2011. (*sponsor, participant*)

Vernal Pools: *The Jewels of the Forest*. Technical Workshop for the Town of Southwick Conservation Commission. January 2005. (*Guest Lecturer*)

## Professional Resume: *(continued)*

*George T. Logan, MS, PWS, CSE*

### WORKSHOPS & CONFERENCES: *(selected)*

The Importance of Habitat Edges. Riverside Landscaping Conference. The Rivers Alliance of Connecticut. June 1998. *(Guest Lecturer)*

Riparian Buffer Function, Performance & Limitations. Urban Riparian Buffers Conference & Technical Training Session. April 1999. *(Guest Lecturer)*

Sedimentation and Erosion Control Review Session. USDA. Natural Resource Conservation Service and CPESC (Certified Professionals in Erosion Control), Concord, NH. September 2001.

Buffer Strips as Storm Water Quality Controls. EnviroExpo, Boston. May 1999. *(Guest Speaker)*

Identifying Wetland Soils, Fauna and Flora. Municipal Inland Wetland Staff Technical Workshops. June 1999. *(Guest Speaker)*

Water Quality in the Quinnipiac River: A Symposium on the Impact of Non Point Source Pollution in the Quinnipiac River Watershed. November 1998. *(Presenter)*

Our Hidden Wetlands: Vernal Pools in Connecticut. Co-sponsored by CT DEP and the Center for Coastal and Watershed Systems. November 1997 and January 1998 *(Workshop Leader)*

Aquatic Invertebrate & Stream Ecology Workshop. Quinnipiac River Watershed Association Workshop Series. September 1997, May 1998, June 1999, January 2000 *(Workshop Leader)*

The Massachusetts Association of Conservation Commissions Third Annual Conference: Wetland Buffer Zones, March 1996 *(Guest Lecturer)*

16th Annual Conference of the Society of Wetland Scientists: Wetland Understanding, Wetland Education, May 1995 *(Presenter)*

Quinnipiac River Watershed Association Forum on Non-Point Pollution: Significance of Wetlands and Wetland Buffers, October 1992 *(Guest Lecturer)*

The Massachusetts Association of Conservation Commissions Second Annual Conference, April 1995 *(Guest Lecturer)*

The Society of Soil Scientists of Southern New England Riparian Buffer Zone Conference, November 1994 *(Presenter)*

## Professional Resume: *(continued)*

*George T. Logan, MS, PWS, CSE*

### SUPPLEMENTARY INFORMATION:

1996 to present

**Rema Ecological Services, LLC**  
**Principal Environmental Scientist/Ecologist, Co-Owner**

- Founded the company to provide natural resources management, environmental planning, compliance and permitting services, and client advocacy throughout the Northeast.
- Has participated in over 2,300 individual projects since the company's inception, including six gas-fired, combined-cycle power plant projects, 8 utility-scale solar projects, over 35 bridge projects, numerous municipal projects, including over 20 new schools, several higher education projects, numerous wetland replacement projects, several new golf courses, and many large residential, industrial and commercial endeavors.
- Was the Interim Environmental Planner for the Town of Waterford, Connecticut, during a ten-month tenure. Responsibilities included providing procedural and technical support to the town's Conservation Commission (a.k.a. Inland Wetlands and Watercourses Agency), and working closely with Planning Department staff.

1994 to 1996

**Fugro East, Inc. (Currently AECOM)**  
**Senior Project Manager/Environmental Scientist**

- Office Manager for the firm's Connecticut office, responsible for day-to-day operations, marketing, and business development.
- Wetland delineations in accordance with state and federal criteria.
- Natural resource inventories of upland, wetland and aquatic ecosystems, specializing in wildlife habitat assessments.
- Preparation of environmental compliance documentation for over 100 projects including large-scale commercial development.

1993 to 1994

**A.D. Marble & Company, Inc.**  
**Senior Environmental Planner/Wildlife Biologist**

- Participated in the management of major transportation improvement projects and in the preparation of environmental documents in accordance with the National Environmental Policy Act (NEPA) while continuing involvement in the collection of baseline field data.
- Application of the Pennsylvania Department of Environmental Resources (PADER) hierarchical methodology for the selection of suitable wetland replacement sites.
- Field verification of Threatened, Endangered or Special Concern species listed by the Pennsylvania Game Commission.
- Wetland boundary identification in accordance with the unified PADER and U.S. Army Corps of Engineers (USACOE) methodology.
- Participated in nearly 30 projects, mostly for major transportation corridors, such as the rehabilitation of the I-95 corridor in PA.

## Professional Resume: *(continued)*

*George T. Logan, MS, PWS, CSE*

### SUPPLEMENTARY INFORMATION *(continued)*:

1989 to 1993

#### **Soil Science & Environmental Services, Inc. Wildlife Biologist-Ecologist & Soil Scientist**

- Project Manager responsible for field operations and report preparation for nearly 300 individual projects in over 75 towns in New England, including one town-wide wetland mapping, inventory and evaluation project (Town of Cromwell).
- Wetland boundary delineation according to state and federal criteria (e.g., Connecticut and Massachusetts Statutes, U.S. Army Corps of Engineers methodologies).
- Ecosystem analyses and biological inventories of upland areas, tidal and inland wetlands, estuaries, streams, rivers, ponds and lakes.
- Environmental impact evaluations, including site plan review, analyses of proposed impacts and design of mitigation strategies.
- Local, state and federal permitting for impacts to natural resources, including wetlands.
- Implementation of water quality monitoring programs for streams and rivers.
- Design, construction supervision, and monitoring of wetland enhancement, restoration and creation.
- Aquatic biosurveys of streams and rivers utilizing standardized methods (e.g., EPA Rapid Bioassessment Protocols).
- Detailed faunal surveys and censuses using both active and passive methods (e.g. direct and indirect observation, live-trapping, point count avian censuses, pellet counts, etc.).
- Expert witness testimony for court and administrative proceedings.

1988 to 1989

#### **Independent Contracts Soil & Wetland Scientist**

- *Summer of 1988*: Was hired by the Town of Canton, CT, to identify, inventory, and evaluate wetlands and watercourses within the entire municipality. Was responsible for amending the municipality's *Official Wetland and Watercourses Map*.
- *Spring of 1988*: Was hired by the Connecticut Chapter of the Nature Conservancy to determine and report on the historic expansion of invasive plants (*Phragmites australis*, *Lythrum salicaria*) on eight TWC preserves. Scope included site visits, remote sensing using archived aerial photographs, and report.

#### **TECHNICAL REPORTS:**

Mr. Logan has completed several hundred comprehensive studies (e.g., Wetlands Assessments, Ecological Evaluations, Environmental Impact Analyses/Statements, Vernal Pool Investigations, Listed-Species Surveys & Management Plans, Aquatic Vegetation Surveys), and a variety of other specialized studies. A representative list, or examples of these technical reports can be provided upon request.

# **EXHIBIT I**

Robert W. Rand, ASA, INCE  
RAND ACOUSTICS  
1085 Tantra Park Circle  
Boulder, CO 80305

E-mail: rrand@randacoustics.com  
Telephone: 207-632-1215

October 10, 2016

FairWindCT, Inc.  
PO Box 225  
Colebrook, CT 06021

Joyce C. Hemingson, President

Re: Peer Review of Quin Noise Compliance Measurement Studies Jan-Feb 2016  
Wind Colebrook South, Colebrook, CT

On your request I respectfully provide this review of the Howard Quin Noise Compliance Measurement Studies Jan-Feb 2016 for the Wind Colebrook South wind turbine facility in Colebrook, CT.

This report presents:

1. Reviewer's qualifications,
2. Documents reviewed, and
3. Review Findings
4. Detail analysis

## **1 Reviewer's Qualifications**

Robert W. Rand, ASA, INCE, is the principal investigator at Rand Acoustics. I am a Member of the Institute of Noise Control Engineers (INCE) since 1993 and a Member of the Acoustical Society of America (ASA). I am a principal acoustic investigator with over thirty-five years of experience providing environmental and technical consulting services to power generation, commerce, industry, regulatory agencies, and communities. My breadth of experience far surpasses equivalent requirements for Board Certification in INCE, and includes large-scale industrial noise control, environmental impact assessment, interior acoustics, and electro-acoustics, with ten years working in multiple forms of electric power generation, gas transmission, and process facilities in the Noise Control Group at Stone & Webster Engineering Corporation in Boston, Massachusetts. I have conducted environmental acoustic analyses, project engineering and cost analyses, permitting reviews, acoustic testing, noise control design, and operations monitoring activities for power generation and commercial projects. I have provided a independent acoustic consultancy to industry, commercial, and

community clients since 1996. For the last seven years since Spring 2009 I have been investigating wind turbine noise with site noise measurements and analysis, and I have provided reports and expert testimony at a number of hearings, including federal, state and local governments. A copy of my biography, work history, cases where I have been accepted as an expert witness in the field of acoustics, and a list of papers published is available separately.

INCE Members are required to "hold paramount the safety, health and welfare of the public." I am also required by the INCE Canon of Ethics to "approve only noise control engineering studies, reports, or work which, to the best of their knowledge and belief, is safe for public health, property, and welfare and in conformance with accepted practice."

## **2 Documents reviewed**

Two Quin reports were reviewed, titled "Wind Colebrook South Monthly Noise Compliance Measurement Study, Colebrook, Connecticut, January, 2016" and "Wind Colebrook South Monthly Noise Compliance Measurement Study Colebrook, Connecticut February, 2016". Both were prepared by for BNE Energy 17 Flagg Hill Road Colebrook, CT 06021 by Dr. Howard Quin, 17 Birchwood Ave Sudbury, MA. These two reports presented short term monitoring data. Long term monitoring data at L1 were described as being presented in a separate report which was not available.

Documents relevant to the project were reviewed, including,

- Engineering site plan drawings, Civil 1, August 26, 2011
- Colebrook South Post Construction Noise Monitoring Program (Petition 983), related to testing for three GE1.6MW turbines, October 25, 2011
- Connecticut Siting Council to Pullam & Conley, LLC, November 22, 2011
- Connecticut Siting Council to Pullam & Conley, LLC, February 13, 2013
- Connecticut Siting Council to BNE Energy, Inc., December 17, 2013
- Bean--BNE Energy, INC. Easement (re 29 Flagg Rd), July 29, 2013
- Corey/Zupkus--Hirtle Easement (re 29 Flagg Rd), July 29, 2013
- Bean--Hirtle Warranty Deed, July 29, 2013
- Hirtle--Corey/Zupkus Quit-Claim, July 29, 2013
- Petition 983 Exhibit M Wind Colebrook South Noise Monitoring and Receptor Location map
- Project maps and town lot line data from public records and personal communications.

### **3 Review Findings**

#### 3.1 Peer review comments are summarized as follows

**I am unable to approve the Quin reports. The Quin reports' survey methods, analyses, and conclusions of compliance with CT DEEP regulations appear deficient. In my professional opinion the Quin reports should not be relied on for the intended purpose.**

3.1.1. The Quin reports incorrectly stated the State of Connecticut regulatory requirements for the project.

3.1.2. The Quin reports failed to disclose the maximum noise levels at each location.

3.1.3. The Quin reports omitted the wind turbine SCADA data including operating power output, yaw, and rpm of each facility turbine at regular intervals such as 10-minute or shorter during the testing. It is impossible to determine whether the facility was operating correctly and at the loudest or worst-case noise emissions during the Quin testing.

3.1.4. The Quin measurement locations appeared to stray significantly from CT DEEP regulatory measurement location requirements.

3.1.5. Measurements were taken upwind during the majority of the testing, which could influence results lower compared to downwind due to acoustic shadow. Measurement should be taken downwind to assure compliance under worst case conditions.

3.1.6. The Quin measurement location M1 appears to be away from the closest property line location. Extrapolating study noise levels to the apparent nearest DEEP-compliant location at the property line, the facility appears certain to exceed regulatory limits. This conclusion is buttressed by independently-acquired operating noise data at another, smaller-turbine site.

3.1.7. Long term monitoring data were not provided in the January and February reports. The reports indicated long term data would be acquired one week per season. A one-week period per quarter would not normally be considered a "long term monitoring" program. Survey precision based on duration and locations could be assessed using ANSI S12.9 Part 4.

Details for the opinions listed above are attached as Section 4.

### 3.2 Apparent omission for CT State law Sec. 22a-69-3.4

The Quin reports didn't assess for CT State law Sec. 22a-69-3.4,

**Sec. 22a-69-3.4.      Infrasonic and ultrasonic**  
No person shall emit beyond his/her property infrasonic or ultrasonic sound in excess of 100 dB at any time.  
(Effective June 15, 1978)

Large industrial wind turbines are known to emit infrasonic pressure pulsations. In the December 24, 2012 report for the noise study at Shirley, Wisconsin, "A Cooperative Measurement Survey and Analysis of Low Frequency and Infrasound at the Shirley Wind Farm in Brown County, Wisconsin" pressure pulsations occurring at infrasonic rates were documented. That report's Appendix A, Table 4. Statistical Sound Levels for All 10-minute Tests, shows "LZ" (full range) and "L0.5-100" (band-limited) maximum levels due to pressure pulsations arriving at home R1 (3500 feet from the nearest turbine), on 12/4/12, 19:15:33 pm exceeded 100 dB with maximum ("L1") levels of 112.9 and 104.1 dB respectively. The report is publicly available for review [1].

The overall maximum pulse levels documented at Shirley exceed 100 dB and, the metrics reported in the Shirley report cover a wider frequency range, 0.5-10000 Hz and 0.5-100 Hz, compared to the specific infrasonic range of 0.5-20 Hz. However the distance from nearest turbine to R1 at Shirley is also much larger than for the nearest property lines at Wind Colebrook South (3500 feet at Shirley compared to an apparent 165 feet for the Wind Colebrook South southern turbine, see later discussion in this report). Considering the much shorter distance to the property lines at the Wind Colebrook South, and the properties of acoustic divergence (sound is louder closer to the source), it appears possible that the 100 dB infrasonic noise limit could be exceeded by Wind Colebrook South infrasonic pressure pulsations when measured in the specific infrasonic frequency range of 0.5-20 Hz.

It appears then that the study should have assessed whether the Wind Colebrook South facility is in compliance with Sec. 22a-69-3.4 infrasonic maximum, do-not-exceed noise limits by measuring and documenting infrasonic noise levels on the Wind Colebrook South facility property lines. Infrasonic-range noise surveys require specialized knowledge, experience, instrumentation and analysis to perform successfully, using infrasonic-capable acoustic

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1 [http://www.psc.wi.gov/apps35/ERF\\_view/viewdoc.aspx?docid=178200](http://www.psc.wi.gov/apps35/ERF_view/viewdoc.aspx?docid=178200) accessed 10 October 2016.  
2 Hessler, D., "Assessing Sound Emissions from Proposed Wind Farms & Measuring the Performance of Completed Projects", National Association of Regulatory Utility Commissioners (NARUC), DOE DE-

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October 10, 2016  
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instrumentation with frequency response 0.5-20 Hz and pulsation time history analysis.

Thank you for your consideration of this letter. If you have any questions, please contact me.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read 'R. Rand', is written over a horizontal line.

Robert W. Rand, ASA, INCE

#### 4. Detail analysis

Opinions provided in this expert report are based on experience and founded on the INCE Canon of Ethics and on best practices for designing facilities. Based on direct professional experience in power generation facility design, best practices are **to comply fully with all existing noise regulations pertaining to the project and, design to be good acoustic neighbors (prevent complaints)**. Opinions herein are given to a reasonable degree of scientific certainty. These opinions are based on the information available at the time of drafting this report. I reserve the right to supplement or revise should additional information come to light.

##### 4.1. Opinion: The reports incorrectly state the terms of regulatory requirements for the project.

Basis: In both Quin reports "Section 1 Noise Standards and Criteria", the Quin reports assert equally that

*"The noise monitoring program was conducted to demonstrate that the operation of the wind turbines at Colebrook South will meet the Connecticut Department of Energy and Environmental Protection's (DEEP) noise control regulations (Title 22a, §§ 22a-69-1 to 22a-69-7), which are contained in the Regulations of Connecticut State Agencies."*

The reports include a "Table 1" which asserts the Regulations of Connecticut require an "L90" measurement.

Table 1				
Noise Zone Standards, L90 (dBA)				
	Class A Daytime	Class A Nighttime	Class B	Class C
Emitter Zone				
Class A (Residential)	55	45	55	62
Class B (Commercial)	55	45	62	62
Class C (Industrial)	61	51	66	70

Source: Control of Noise (Title 22a, Section 22a-69-1 to 22a-69-7.4), Regulations of Connecticut

Note the Quin report use of the phrase "L90 (dBA)" in Table 1. However the Connecticut Department of Energy and Environmental Protection's (DEEP) noise control regulations (Title 22a, §§ 22a-69-1 to 22a69-7) specifically state, in 22a-69-3.5. *Noise zone standards,*

<b>Sec. 22a-69-3.5. Noise zone standards</b>				
(a) No person in a Class C Noise Zone shall emit noise exceeding the levels stated herein and applicable to adjacent Noise Zones:				
	<i>Receptor</i>			
	<i>C</i>	<i>B</i>	<i>A/Day</i>	<i>A/Night</i>
<i>Class C Emitter to</i>	70 dBA	66 dBA	61 dBA	51 dBA
Levels emitted in excess of the values listed above shall be considered excessive noise.				

The CT DEEP standards do not mention "L90" in the standards. The CT DEEP noise standards are known as "absolute" or "not-to-exceed" noise regulations. As such, the Lmax or L01 (the Maximum level or the level exceeded only 1 percent of the time) should be used to evaluate compliance. The L90 is the noise level exceeded 90 percent of the time and is typically used to assess the "background" sound level. In practice, wind turbine facility maximum (Lmax or L01) noise levels are louder than L90 by a few or by many decibels. If facility noise emissions fluctuate, the L90 is noticeably lower than the L01 or Lmax that should be used to assess for compliance.

The CT DEEP standards stipulate the absolute, not-to-exceed limits, which are not L90, but rather the Lmax or L01 measurement metric provides the maximum sound level. The Quin surveys should have provided the Lmax or L01 to assess compliance. Using L90 minimizes reported noise impacts by reporting the quieter lower level L90, not the actual audible maximum wind turbine noise level. The conclusion is that the Quin regulatory reference differed from regulatory requirements. This appears to constitute a professional error.

**4.2. Opinion: The Quin reports failed to disclose the maximum noise levels at each location.**

Basis: The Quin January 2016 report Table 1 under reports wind turbine sound levels with L15 (the level exceeded 15 percent of the time), which is lower than the L01 or Lmax. The Quin January report Figures present the lower average "average" sound levels, not the L01 or Lmax.

The Quin February 2016 report had no Table of results. It showed L90, Leq, and L10 (the level exceeded 10 percent of the time) in Figures, but not the L01 or Lmax.

The omissions of Lmax or L01 levels appear to constitute professional omissions.

**4.3. Opinion: The Quin reports omitted the SCADA data including operating power output, yaw, and rpm of each facility turbine at regular intervals such as 10-minute or shorter during the testing. It is impossible to determine whether the facility was operating correctly and at the loudest or worst-case noise emissions during the Quin testing.**

Basis: No operating power output data were found in the reports. The report provided information on wind speeds but not power output. Wind turbine blades can be feathered or turbines idled or turned slower during windy conditions. The SCADA power output data is essential for review to identify where on the turbine power curve the noise is being generated and if it representative of worst-case or highest-output operating conditions.

The report omissions of turbine power output during testing appear to constitute professional omissions. Comprehensive documentation would include the operating power output (kw) and other SCADA data including hub height wind speed (m/s) and direction (degrees, True North) listed for each turbine with 10-minute or shorter intervals such as 1-minute.

**4.4. Opinion: The Quin measurement locations appeared to stray significantly from CT DEEP regulatory measurement location requirements.**

Basis: Connecticut measurement procedures (Connecticut Noise Related Statutes And Regulations, Statutes Chapter 442, Sec. 22a-69-4) state,

(g) Measurements taken to determine compliance with Section 3 shall be taken at about one foot beyond the boundary of the Emitter Noise Zone within the receptor's Noise Zone. The Emitter's Noise Zone includes his/her individual unit of land or group of contiguous parcels under the same ownership as indicated by public land records. The Emitter's Noise Zone also includes contiguous publicly dedicated street and highway rights-of-way, railroads rights-of-way and waters of the State.

The Quin measurement locations do not appear to conform to the State requirements. Taking the measurement GPS locations as stated in the Quin reports, these were charted in Google Earth and compared to the Emitter Noise Zone as understood from the reports and other information provided separately on project and town maps and confirmations of property line from personal communications. These are shown in Figure 1 below.

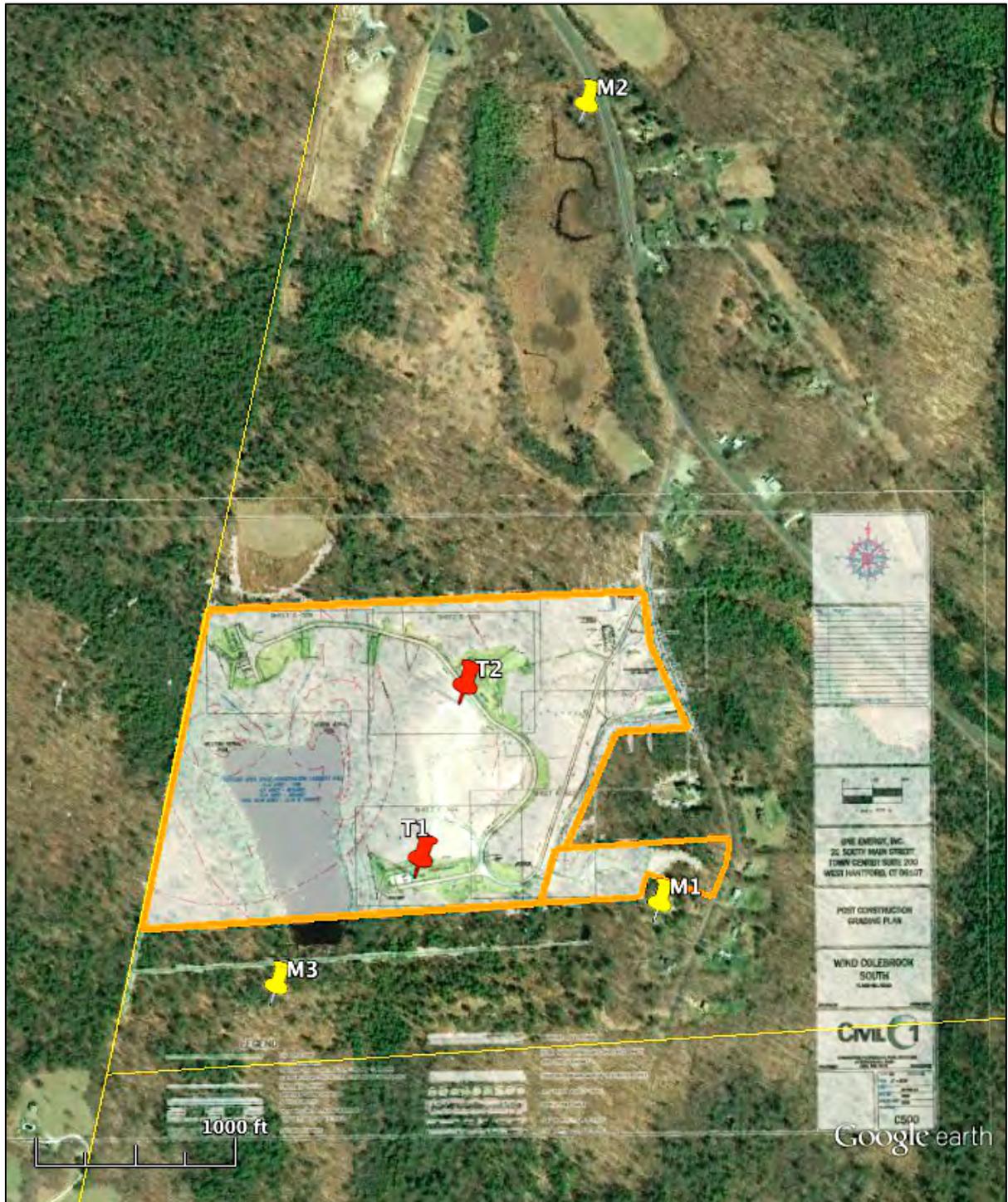


Figure 1. Compilation of project property line, turbines T1 and T2 and measurement locations M1, M2, and M3 information. (All property lines and ownership information taken as best available at the time of this peer review. Project map shows older interior site layout, however, project boundaries are understood to be representative of the facility property including easement and quit claim sales.)

The Quin M1, M2, nor M3 locations do not appear to conform to the State requirement of

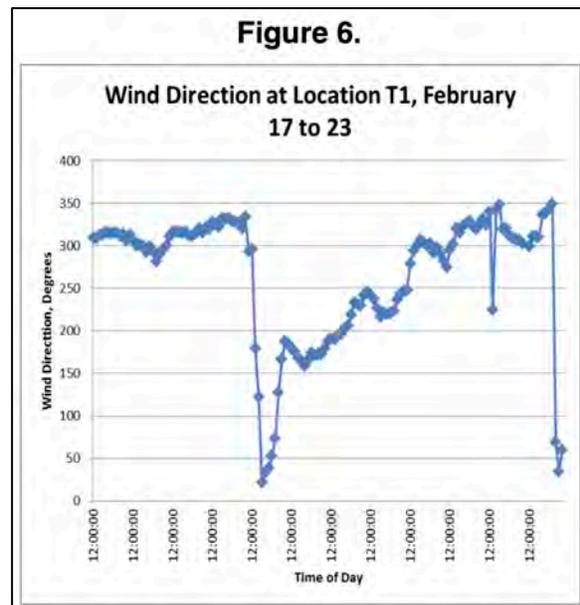
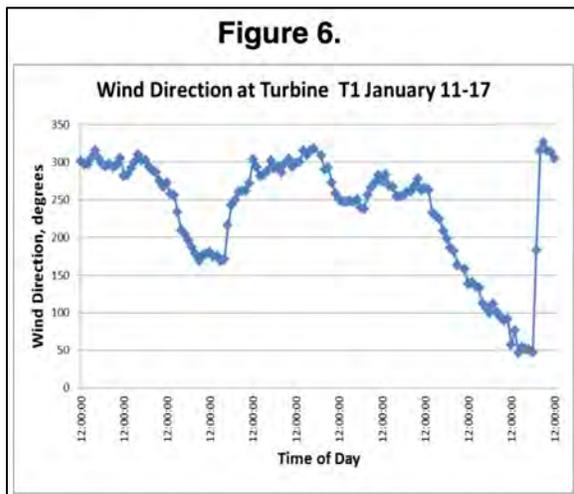
*"at about one foot beyond the boundary of the Emitter Noise Zone within the receptor's Noise Zone"*. The measurement locations appear to be much further away from the most probable locations needed to be State-compliant for nearby residential locations. No satisfactory explanation is given for the reader to understand how these locations had to be used as compared to locations consistent with State law.

Departures from State of Connecticut measurement location requirements appear to constitute professional errors.

**4.5 Opinion: Measurements were taken upwind during the majority of the testing, which could influence results downwards. Measurement should be taken downwind to assure compliance under worst case conditions.**

Basis: Winds tend to lift noise away from the ground upwind and push noise downward toward the ground downwind. The international standard for wind turbine noise measurements, IEC 61400-11 defines measurement locations be taken within 45 degrees of downwind. The report wind direction data were examined to see if a downwind condition was present during the testing.

The closest measurement location M3 is approximately southwest or 225 degrees relative to T1. As seen in the Quin January report Figure 6, the wind direction at T1 is generally from 320 (NW) to 180 (S). These wind directions place M3 in an upwind location. Wind was observed to swing through the downwind 225-degree direction on January 17. Based on this, it appears that only measurements on January 17-19 during the downwind condition could be considered workable for compliance testing at M3. Similarly, for the February testing, a downwind condition is seen on February 23-24 and not on other dates.



Note: Reports Figure 6 for Quin January and February reports, respectively.

To prevent confusion, the reports should have clearly identified the downwind direction for each location and clearly indicated upwind, downwind, or crosswind conditions for each part of the testing.

**4.6. Opinion: The Quin measurement location M1 appears to be away from the closest property line location. Extrapolating study noise levels to the apparent nearest DEEP-compliant location at the property line, the facility appears certain to exceed regulatory limits. This conclusion is buttressed by independently-acquired operating noise data at another, smaller-turbine site.**

Basis: The State-compliant location was determined by visual inspection in Google Earth after scaling in the project property line map. The closest State-compliant measurement location was determined to be approximately 165 feet south of T1, notated here as "PL-South". The distance from T1 to M3 was determined to be approximately 950 feet.



Figure 2. M3 location compared to probable State-compliant location at closest property line. The distance difference is approximately 948 feet versus 165 feet. (Distances rounded to nearest 5 feet.)

Assuming a standard acoustical hemispherical divergence factor of 6 dB per doubling of distance for power generation noise sources, using the equation  $20 \cdot \log(d1/d2)$ , where d1 and d2 are the two distances in similar units (feet), the expected difference between the sound levels at M3 and PL-1 is  $20 \cdot \log(950/165) = 15$  dB. Based on this analysis, the sound levels at the State-compliant location estimated at PL-South could be 15 dB higher than at

the Quin report M3 location.

A 15 dB difference is significant. It suggests that for assessing compliance with the maximum allowed 51 dBA absolute limit, the levels at the Quin M3 location should not exceed 36 dBA. However the Quin reports show levels at M3 exceeded 36 dBA most of the time regardless of the metric used by Quin, L90, Leq, or other, although the Lmax should have been reported. The conclusion is that the turbine facility sound levels at the nearest property line appear certain to exceed the State noise limit of 51 dBA.

This conclusion of certainty for non-compliance for maximum noise levels is based on the best available information about property line locations at the time of this report.

The very significant ratio of maximum to average noise levels is typical of wind turbine noise emissions and well known by other acoustic investigators, including wind industry acoustical consultants. For example, a 2011 report to the Minnesota Public Utilities Commission funded by the U.S. Department of Energy, prepared by Hessler Associates, analyzing their many years of experience developing and monitoring wind turbine projects, documented short-term increases of 15 to 20 dB over average [2]:

*"Extensive field experience measuring operational projects indicates that sound levels commonly fluctuate by roughly +/- 5 dBA about the mean trend line and that short-lived (10 to 20 minute) spikes on the order of 15 to 20 dBA above the mean are occasionally observed when atmospheric conditions strongly favor the generation and propagation of noise."*

The possibility of maximum noise levels exceeding 51 dBA at the nearby property lines becomes apparent by examining field measurements of smaller, quieter GE1.5sle turbines at Vinalhaven, Maine in 2010 (shown in Figure 3 below, data acquired during independent investigations by Rand Acoustics).

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2 Hessler, D., "Assessing Sound Emissions from Proposed Wind Farms & Measuring the Performance of Completed Projects", National Association of Regulatory Utility Commissioners (NARUC), DOE DE-OE-0000123, Hessler Associates, October 2011.

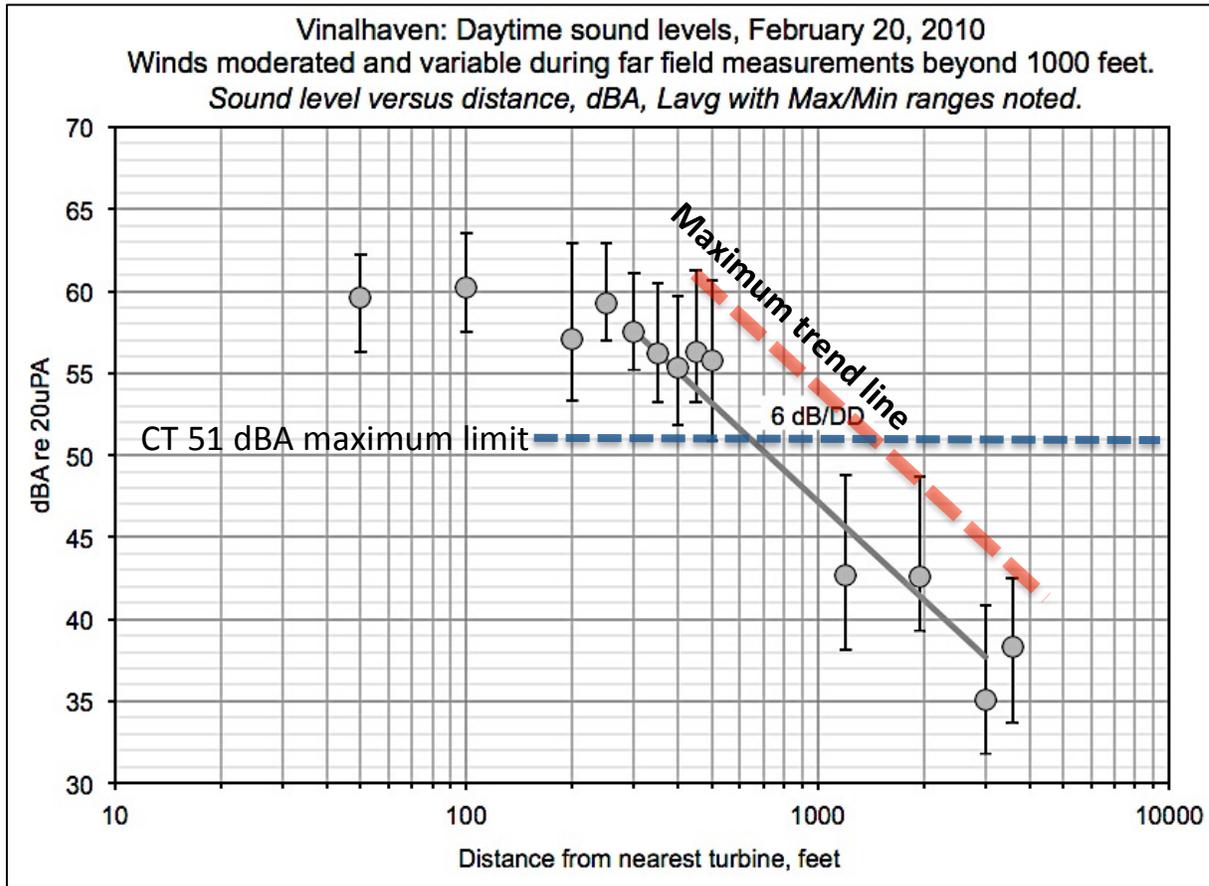


Figure 3. Rand Acoustics wind turbine noise data acquisition, Vinalhaven. Two GE1.5sle wind turbines operating in moderate winds, February 20, 2010. Data obtained near-field to one turbine and walked away picking up noise from both turbines out around 400-600 feet and beyond. Wind turbine noise dominated the measurements and the data shown represent turbine-only noise. Maximum trend line (RED dashed) follows noise maxima measured during survey. Connecticut 51 dBA not-to-exceed noise limit shown (BLUE dashed), with maximum noise level trend of the GE1.5sle turbines operating in moderate-winds complying with the Connecticut 51 dBA not-to-exceed noise limit only at 1400+ft.

Maximum sound levels measured in the 50-500 feet range from the nearest turbine ranged from 61-68 dBA. Interpolated maximum sound levels (following the Vinalhaven maximums with a trend line) exceed 51 dBA out to 1400+ feet under moderate winds. It is expected that the much larger 2.85MW Wind Colebrook South turbines would be equally loud or louder at full power than the smaller Vinalhaven turbines under moderate winds at similar distances to nearest Connecticut State-compliant property line measurement locations.

The conclusion from this analysis is that, 1) the reports do not provide assurance that the facility is in compliance with State of Connecticut regulatory limits at the nearest property line and, 2) maximum facility wind turbine noise levels may greatly exceed the non-maximum noise levels furnished in the Quin reports.