Transportation
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Services

Vanasse Hangen Brustlin, Inc.

Six Bedford Farms Drive, Suite 607
Bedford, New Hampshire 03110-6532
Telephone 603 644-0888
Fax 603 644-2385
www.vhb.com

Memorandum

To: Mark Kern, USEPA
Erika Mark, USACOE
Lori Sommer, NHDES

Date: July 28, 2010

Project No.: 52036.00 (VHB)
2010-00745 (NHDES Wetlands)

From: Peter J. Walker
Director, Environmental Services

Re: Groton Wind, LLC
Mitigation Package

As a follow up to our memorandum dated July 20, 2010 and my subsequent discussions with you and others, Iberdrola Renewables is proposing to clarify and update the components of the proposed mitigation package for their wind farm development in Groton.

The most significant change in the package relates to the size of the direct financial payment made by Iberdrola and to whom this payment would be made. Rather than a $20,000 donation to the Forest Society, we now propose a $150,000 donation to the NH Aquatic Resource Mitigation Fund.

We sincerely hope that the updated package will satisfy both state and federal agency requirements and will allow the project to be processed under a Statewide Programmatic General Permit. While my discussions with Mark Kern and Ruth Ladd indicate their general acceptance of the revised proposal, I would be happy to discuss the package with any of you or to facilitate a meeting or conference call to resolve this issue if there are any remaining questions.

Components of the revised package are as follows:

Mitigation Component 1. Technical Assistance to the Forest Society

As you know, the Society for the Protection of NH's Forests is currently working to protect approximately 6,578 acres of working forest in Groton, Hebron, Plymouth, Dorchester, and Rumney, known as the "Green Acre Woodlands Project." Groton Wind's role in the project will be to support the Forest Society's efforts by providing technical assistance in the form of the following items:

1. Paper and digital ALTA[1] property survey maps (certified) of approximately 3,385 acres of the total 6,578 acre project, including additional lands that are not part of the current Forest Legacy Program grant but which the Forest Society has expressed an interest in future conservation.

[1] An ALTA survey is a boundary survey prepared to a set of minimum standards that have been jointly prepared and adopted by the American Land Title Association (ALTA) and the American Congress on Surveying and Mapping. Additionally, an ALTA survey shows improvements, easements, rights-of-way, and other elements impacting the ownership of land. An ALTA Survey is required to insure the title to the land and improvements to the highest level.

2. Title research on approximately 3,385 of the total 6,578 acres following ALTA standards.

3. Ecological and environmental data relating to the project including:
   - Wildlife Habitat Evaluation
   - ASTM Phase I Environmental Site Assessment
   - Topographic Mapping (2 ft contours)
   - Site Specific GIS Mapping
   - Environmental base mapping appropriate for incorporation into a baseline documentation report.

As outlined in our July 20 memorandum, the estimated value of this technical information is approximately $156,000 for the survey components alone, with the ecological and environmental data adding an additional $125,000.

Please note that this revised mitigation proposal no longer includes a financial contribution to the Forest Society in support of the project. Instead, an in-lieu fee payment of $150,000 is proposed, as outlined below.

Mitigation Component 2. Groton Hollow Road Stream Crossing Upgrades

Nine existing stream crossings will be upgraded along Groton Hollow Road to benefit riparian conditions in the Clark Brook watershed. The existing stream culverts have an impact on the stream hydrology because they are often undersized, which increases the likelihood of ponding upstream and erosion and sedimentation downstream. In some cases, undersized culverts or sub-standard installations can create barriers to the passage of stream organisms, including potentially native brook trout that have been observed in Clark Brook. These new crossings will be appropriately sized to accommodate flows for their drainage area, will be more consistent with natural physical stream processes and will help to improve the connectivity of the riparian habitat associated with Clark Brook. **Table 1** lists the nine specific stream crossings for which mitigation credit is requested.

Table 1. Stream Crossing Mitigation

Crossing ID[1]	Stream ID	Cowardin Class.	Road Sta.	Drainage Area (ac)	Design Storm	Existing Crossing[2]	Proposed Crossing[3]
102	GH-128	R3RB1H	67+31	30	50 yr	24" CMP	49"x 33" CMP Arch
109	GH-122	R4SB3C	95+38	26.5	50 yr	24" CMP	42"x 29" CMP Arch
112	GH-119	R2UB1H	109+30	47.5	50 yr	12" CMP	9' x 3' Steel Box
114	GH-118	R3UB1H	127+78	57.2	50 yr	18" CMP	9' x 3' Steel Box
115	GH-112	R4SB3E	137+65	22.2	50 yr	12" CMP	35"x 24" CMP Arch
116	GH-110A/B	R3UB1H	142+31	110.6	50 yr	43" CIP	83"x 57" CMP Arch
217	EA-103	R2UB1H	6+24	235.1	100 yr	Log Bridge	17.3' x 3.8' Steel Box
218A	GH-103 C	R2UB1H	169+00	282.2	100 yr	Log Bridge	17.3' x 3.8' Steel Box
219	GH-105	R3RB2H	163+23	81.9	50 yr	43" CMP	9' x 3' Steel Box
220	GH-107	R4SB5G	157+87	16.8	25 yr	12" CMP	21"x 15" CMP Arch
221	GH-108	R3UB1H	154+15	125.6	50 yr	41" CIP	9' x 3' Steel Box

Notes:
1 Crossing ID corresponds to the project site plans.
2 CMP = Corrugated Metal Pipe; CIP = Cast Iron Pipe
3 CMP Arch – Arch Span/Corrugated Metal Pipe; Project Plans allow the contractor to place either structural steel arch plate or pre-cast section concrete spans for the three streams where "Steel Boxes" are noted.

Cumulatively, these culvert crossings will improve conditions in more than 1,000 acres of the Clark Brook watershed, including more than two stream miles. The details of each stream crossing upgrade are depicted in the project plans.

We believe there has been some confusion as to whether these stream crossing upgrades are appropriate as mitigation. We wish to stress the following:

- The recently adopted NHDES stream crossing rules apply only to projects proposed after their effective date (May 12, 2010), and therefore *do not* apply to the Groton Wind project. Our use of the new guidelines is on a voluntary basis.

- Engineering constraints alone do not require these culvert upgrades. Rather, Groton Wind could choose the much less costly option of simply extending each of the existing culverts. This would provide a comparable level of access for the construction and operation of their project at a substantial savings relative to the full upgrade option.[2]

With these two factors in mind, we believe it is appropriate to treat the stream upgrades as mitigation under both RSA 482-A and the Clean Water Act, Section 404.

As reported in our July 20 memorandum, the total economic value of these stream crossing upgrades is approximately $251,000. This is the incremental cost *above and beyond the cost for culvert extensions.*

Mitigation Component 3. In-lieu Fee Payment

Groton Wind, LLC will make a payment of $150,000 into the NH Aquatic Resource Mitigation Fund to support the preservation and restoration of wetlands in the Pemigewasset River Watershed. This financial commitment represents a significant increase relative to the original mitigation proposal contained in the project wetland permit application and would be used by the ARM Fund to increase wetland functional values in the watershed.

cc: Ruth Ladd, USACOE
Maria Tur, USFWS
Craig Rennie, NHDES
Phil Trowbridge, NHDES
Ed Cherian, Iberdrola
Kristen Goland, Iberdrola
Susan Geiger, Orr & Reno
Nancy Rendall, VHB

[2] In our July 20 memo, we deleted our request for mitigation credit for upgrade of the two log bridge crossings on Groton Hollow Road, Crossings 217 and 218A. Although a planned engineering evaluation of these bridges has not yet been completed, it is likely that these two crossings must be replaced in order provide safe access to construction equipment for the wind farm project. If the engineering evaluation concludes that these existing bridges are in fact safe, then they may remain in place.