

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

**IN RE:**

APPLICATION OF NEW CINGULAR,  
WIRELESS PCS, LLC FOR A  
CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED  
FOR THE CONSTRUCTION,  
MAINTENANCE AND OPERATION OF A  
TELECOMMUNICATIONS FACILITY AT  
95 BALANCE ROCK ROAD, HARTLAND,  
CONNECTICUT

DOCKET NO. 408

January 27, 2011

PRE-FILED TESTIMONY OF  
DEAN E. GUSTAFSON

Q1. Please state your name and profession.

A1. Dean E. Gustafson and I am a professional soil scientist and senior wetland scientist for Vanasse Hangen Brustlin, inc. ("VHB"). VHB is located at 54 Tuttle Place in Middletown, Connecticut.

Q2. Please summarize your professional background and experience.

A2. I have a B.S. in plant and soil sciences from the University of Massachusetts. I am a professional soil scientist with over 22 years of experience in wetlands and environmental consulting. My experience includes wetlands delineation, evaluation, mitigation design, monitoring, stream restoration and permitting before local, state and federal bodies. In addition, I have experience in environmental assessment for NEPA compliance including issues related to floodplain and rare species. I have a particular expertise in wetland identification, wetland impact assessments, wetland mitigation design and oversight, and soil mapping and classification. I have provided wetland consultation for more than one hundred telecommunications facilities and have provided documentation and testimony on over 50 Connecticut Siting Council Dockets. My resume is attached which details my qualifications and experience.

Q3. What did you do to determine the existence of wetlands on or near the site of the proposed Facility?

A3. On August 25, 2010, I performed an on-site investigation of the location of the proposed Facility on the approximate 12 acre parcel owned by the Ring Mountain Hunt Club located at 95 Balance Rock Road in Hartland, Connecticut (the "Property"). I also reviewed a Site Access Map, Sheet No. C02, prepared by CHA. A previous wetland delineation performed on the

Property as documented in a Wetland & Watercourse Delineation Report, dated December 3, 2009 and prepared by Kleinfelder, was also reviewed. Based upon the on-site investigation and the review of the site map and previous wetland delineation, I completed a wetlands inspection and prepared a Wetlands Delineation Report, dated September 7, 2010. See Application, Applicant's Exhibit 1, Attachment 4.

On December 9, 2010, I identified and delineated the remainder of the wetlands located on the Property. See Applicant's Exhibit 4.

Q4. Based upon your investigation, are there any wetlands located on the Property?

A4. Yes. There are two wetland systems on the Property. These wetlands are located in proximity to two alternate Facility locations under consideration on the Property. "Site A" is proposed in the southwest portion of the Property immediately adjacent to the club house operated by the Ring Mountain Hunt Club. "Site B" is proposed in the northeast portion of the Property.

Q5. Please describe the wetland systems located on the Property.

A5. There are two wetland systems on the Property, designated Wetland A and B for descriptive purposes. Wetland A is a forested swamp located within approximately 40 feet along the north, south and east sides of the proposed Site A location. This eastern hemlock dominant swamp contains hummock-hollow microtopography and is located in a drainage divide. Flows south of the approximate location of wetland flag VHB A19 are directed to a small interior intermittent watercourse channel that flows to the south/southwest into a drainage ditch along the north side of Balance Rock Road. The drainage ditch feature flows west through a 15-inch reinforced concrete pipe (RCP) under the gravel driveway to the Ring Mountain Hunt Club building and shooting range. The outlet end of the RCP is a drainage ditch identified by VHB wetland flags AB1 through AB3, eventually discharging into Wetland B. North of wetland flag VHB A19 the wetland sheet flows to the north and across the shooting range. The eastern boundary of this wetland system was delineated on December 9, 2010 and is identified by VHB wetland flags 3-xx number sequence. A shallow seasonal intermittent watercourse was identified flowing from the adjoining Tunxis State Forest west onto the Property and into the interior of Wetland A. This approximate 3-foot wide by less than 6-inch deep seasonal stream is generally defined by wetland flags VHB 3-11 thru 3-37.

Wetland B is a forested swamp located within approximately 20 feet west of the existing gravel drive to the Ring Mountain Hunt Club building and shooting range. The wetland boundary is located along the west side of a fill slope apparently associated with the original development of the Ring Mountain Hunt Club. Some disturbance along the wetland edge was noted during the field investigation as evident by shallow fill (e.g., less than 1 foot) overlying original wetland soils in a few isolated locations. See Application, Applicant's Exhibit 1, Attachment 4 and Exhibit 4.

Q6. Please describe the functions and values provided by the wetland systems located on the Property.

A6. The wetland systems on the Property are classified as headwater forested wetland systems. As is typical of headwater wetlands, the wetlands on the Property are temporarily to seasonally flooded wetlands that discharge surface water and seasonal high groundwater to form the origin of an intermittent watercourse that starts in Wetland A, generally flowing through the interior of this wetland in a general westerly direction out to a formed drainage ditch along the north side of Balance Rock Road. This drainage ditch continues to flow along Balance Rock Road along the frontage of the Property until it passes the existing entrance into the Hunt Club. From this point it turns slightly to the northwest to generally flow through the interior of Wetland B. Also as typical of headwater wetlands, the Property's wetlands have a hydroperiod that is characterized by predictable shallow flooding associated with spring runoff and sporadic flooding associated with localized storm events. However, the gradient within the wetlands and lack of topographic depressions do not support vernal pool habitat.

Using the US Army Corps of Engineers New England District *Wetland Functions and Values, A Descriptive Approach*, the following functions and values were found to be provided by the Property wetlands either at a principal or secondary level: groundwater discharge, floodflow alteration, sediment/shoreline stabilization, wildlife habitat, sediment/toxicant retention, nutrient removal/retention/transformation and production export. The functions and values supported by the Property's wetlands are typical for forested headwater wetland systems. Headwater wetland systems are considered particularly important in water quality management as they are the first step in treating water moving from uplands to stream systems.

Q7. Did you describe the wetlands on the Property as "high-functioning", as referenced in the January 6, 2011 letter submitted by the Town of Hartland Inland Wetlands Commission?

A7. I did not describe wetlands on the Property as "high-functioning" during a November 9, 2010 site walk with the Town of Hartland Inland Wetlands Commission, or at any other time. Chairman Emerick asked me during the site walk if I considered the wetlands "high-functioning" and I responded that as a wetland scientist, I refrain from subjective terms such as low, medium or high to describe the quality or function and value of a wetland system. I did indicate to Chairman Emerick along with others at the site walk that it was my opinion the wetland systems supported several functions and values at a principal or secondary level. This method of describing the function and value characteristics of a particular wetland is widely recognized in the scientific community and is consistent with recommendations contained in US Army Corps of Engineers New England District *Wetland Functions and Values, A Descriptive Approach*.

Q8. Based upon your review of the site plans of the two alternate Facility locations, would the construction, operation and maintenance of a Facility at either location impact any wetland system?

A8. No direct impact to wetlands would occur with development of Site A. Indirect impacts to wetlands are associated with development of Site A. The proposed Facility's nearest point to wetlands (Wetland A) is approximately 50 feet from the northeast compound corner to VHB wetland flag A17; grading activities at this location will encroach to approximately 40 feet from

wetlands. The nearest point of the proposed access drive (starting at an existing gravel parking area that serves the Hunt Club) to wetlands (Wetland B) is approximately 70 feet to VHB wetland flag B4.

Indirect impacts are primarily considered short term in association with disturbance and human activity as a result of construction of Site A. Long term indirect impacts are lessened by the unmanned nature of the Facility and the low traffic it generates (typically the Facility is visited by a technician once per month). One long term indirect impact potentially resulting from the proposed Facility is the discharge of stormwater. However, this is mitigated by the use of a gravel access drive and gravel surface of the Facility that minimizes runoff and promotes infiltration. Site A is currently designed with drainage swales generally along the north and south sides of the compound and access drive. The north drainage swale empties into a small basin just on the south side of the Hunt Club building. Should the Council approve the Application and select Site A, I recommend that a comprehensive Stormwater Management Plan be developed in accordance with the Connecticut Department of Environmental Protection, 2004 Connecticut Stormwater Quality Manual. In particular, I recommend that low impact development (LID) techniques be incorporated into the Stormwater Management Plan such as use of biofiltration swales/basins, rain gardens, etc. to ensure proper treatment of not only the volume of stormwater but more importantly the quality of stormwater prior to its discharge to the receiving wetland and intermittent watercourse. The Stormwater Management Plan should be submitted with AT&T's Development and Management Plan for review by the Connecticut Siting Council, The Metropolitan District and Town of Hartland Inland Wetlands Commission.

In addition, due to the proximity of wetlands to Site A, certain precautions and protective measures are recommended to ensure no incidental direct wetland impacts occur during construction. I recommend that AT&T take precautionary steps during construction, including a comprehensive Soil Erosion and Sedimentation Control Plan developed in accordance with the Connecticut Department of Environmental Protection, 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. Should the Council approve the Application and select Site A, the Soil Erosion and Sediment Control Plan should be submitted with AT&T's Development and Management Plan for review by the Connecticut Siting Council, The Metropolitan District and Town of Hartland Inland Wetlands Commission. In order to ensure that the approved Soil Erosion and Sediment Control Plan is properly implemented prior to the start of earth work and is maintained throughout the construction period, I also recommend that an independent and qualified professional monitor the installation and maintenance of erosion and sedimentation controls to ensure that nearby wetland and watershed resources are properly protected.

Direct (both short term and long term) wetland impacts are associated with Site B as a result of the need to cross a seasonal intermittent watercourse to gain access to the proposed Facility location. The proposed crossing would result in direct impacts to the watercourse totalling approximately 310 square feet, impacting approximately 45 linear feet of the stream with a proposed 18-inch culvert and inlet protection. Indirect impacts to wetlands are also associated with development of Site B. The proposed Facility's nearest point to wetlands is approximately 40 feet south of the southern compound side generally between VHB wetland flags 3-28 to 3-31; grading activities at this location will encroach to approximately 8 feet from wetlands. In addition, the entire access drive is generally located within at least 70 feet of wetlands.

I recommend that AT&T take precautionary steps during construction, including a comprehensive Soil Erosion and Sedimentation Control Plan developed in accordance with the Connecticut Department of Environmental Protection, 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. Should the Council approve the Application and select Site B, the Soil Erosion and Sediment Control Plan should be submitted with AT&T's Development and Management Plan for review by the Connecticut Siting Council, The Metropolitan District and Town of Hartland Inland Wetlands Commission. In order to ensure that the approved Soil Erosion and Sediment Control Plan is properly implemented prior to the start of earth work and is maintained throughout the construction period, I also recommend that an independent and qualified professional monitor the installation and maintenance of erosion and sedimentation controls to ensure that nearby wetland and watershed resources are properly protected.

Should the Council approve the Application and select Site B, I recommend that a comprehensive Stormwater Management Plan be developed in accordance with the Connecticut Department of Environmental Protection, 2004 Connecticut Stormwater Quality Manual. In particular, I recommend that low impact development (LID) techniques be incorporated into the Stormwater Management Plan such as use of biofiltration swales/basins, rain gardens, etc. to ensure proper treatment of not only the volume of stormwater but more importantly the quality of stormwater prior to its discharge to the receiving wetland and intermittent watercourse. The Stormwater Management Plan should be submitted with AT&T's Development and Management Plan for review by the Connecticut Siting Council, The Metropolitan District and Town of Hartland Inland Wetlands Commission.

Although the seasonal intermittent watercourse proposed to be crossed is not anticipated to support fish, I recommend that the currently proposed design be modified to ensure that the proposed crossing does not result in a barrier to the passage of wildlife or disrupt the continuity of this small stream. The modified design is recommended to follow the Connecticut Department of Environmental Protection Inland Fisheries Division Habitat Conservation and Enhancement Program *Stream Crossing Guidelines* (February 26, 2008). In general, the proposed crossing should span at least 1.2 times the watercourse bank full width to allow for a "wildlife shelf" during bank full flow events. In addition, the box or pipe culvert should have the inverts set at least 12 inches below the stream bed elevation and the culvert should be backfilled with natural substrate material matching upstream and downstream streambed substrate. Use of rip rap or other protective material within the streambed should be avoided to prevent impeding the passage of wildlife.

Q9. From solely a wetland impact perspective, please compare the two alternate sites and determine if there is a preferred site that would result in the least amount of disturbance to wetland resources.

A9. Comparing the two alternatives from a wetland impact perspective, Site A would be considered the preferred alternative as it results in the least amount of disturbance to wetland resources. Site A will not result in any direct wetland impacts. In addition, it is located in a portion of the Property adjacent to the existing Hunt Club building and shooting range, which represents an existing development located in proximity to the property's wetland resources. As a result, the integrity of the nearby wetlands and surrounding uplands has already been degraded to a certain degree. The proximity to Balance Rock Road also compromises the integrity of the

nearby wetlands and surrounding uplands. For example, a portion of the intermittent stream flowing out of Wetland A is confined by a drainage ditch dug along the north side of Balance Rock Road. This ditch conveys both flows from the intermittent watercourse and untreated stormwater from Balance Rock Road as evident by the accumulation of road sand within the ditch and in portions of Wetland B that receives the outfall from this ditch. By proposing the Facility in this location adjacent to these existing disturbances with their associated level of existing human activity, the comparative disturbance to the wetlands and surrounding uplands is comparatively less than Site B, which is located in a heavily forested and undeveloped portion of the Property approximately 450 feet north of Balance Rock Road.

In addition to the direct wetland impacts associated with development of Site B, this location will require considerably more tree clearing, grading and drainage in proximity to and topographically upgradient of wetland resources. As a result, the indirect impacts are greater for construction of Site B than Site A due to Site B's considerably larger development footprint that increases the precautions and measures required to address erosion during construction and the larger volume of stormwater discharge, which is primarily associated with the longer access drive for Site B.

For a development of this type, a wetland impact analysis would not be considered complete unless alternate properties (available for development by a wireless telecommunications facility and a willing landlord) were considered that could satisfy the radio frequency coverage objectives of AT&T while resulting in less overall impact to wetland resources. However, based on the Site Search Summary (Applicant's Exhibit 1, Attachment 2) and additional supplemental information regarding alternate sites investigated (Applicant's Exhibits 3, 4, 7 and 8) no other alternate property is available that would satisfy AT&T's objectives.

Q10. Would you recommend additional protective measures and mitigation to minimize the impact that development of either Site A or Site B may have on wetland resources?

A10. Yes. Although no vernal pools were identified within the wetlands on the Property or in the immediate areas in the surrounding Tunxis State Forest that would result in the site wetlands being considered special amphibian breeding habitat, the wetland areas could support amphibians and other wildlife which may migrate off the site as they seek suitable breeding habitat. If indeed the Property's wetlands support such populations, the majority of migration would occur during the spring. Therefore, I would recommend that construction of either Site A or Site B observe a seasonal restriction period between March 1 and May 15 to avoid the possible conflict with migrating species. In addition, I would recommend the following protective measures be incorporated into the construction sequence to avoid wildlife conflicts: establishment of a restrictive barrier (i.e., silt fence) surrounding the construction area; an experienced professional sweep the construction zone following installation of the restrictive barrier and before construction begins to move any amphibians or other wildlife out of harm's way; provide a contractor awareness education session during the pre-construction meeting to identify the sensitivity of the nearby wetlands and watershed and what to do if they encounter amphibians or other wildlife; and, periodic wildlife sweeps by an experienced professional during the course of construction.

As additional mitigation for unavoidable wetland impacts, I recommend that for permanent stabilization of any exposed soils a minimum of 6 inches of loam and seeding with a New England Conservation/Wildlife seed mix (New England Wetlands Plants, Inc. or approved equivalent) be provided. The seed mix would provide permanent cover of native grasses, forbs, wildflowers and legumes, which would result in good erosion control and wildlife habitat value. This seed mix is designed to require no maintenance and is appropriate for cut and fill slopes and disturbed areas. In addition, I recommend that native shrubs (i.e., serviceberry, black chokecherry, gray dogwood, nannyberry, etc.) be planted along the sides of the proposed compound in disturbed areas between the compound's fence and limit of work line defined by erosion and sedimentation controls. These wildlife enhancement plantings of native shrubs would provide food, shelter and nesting habitat for a variety of small animals, in particular several avian species, which would enhance the wildlife habitat value of the buffer between the proposed Facility and nearby wetlands.

Q11. Please comment on the January 4, 2011 letter from The Metropolitan District to the Siting Council regarding AT&T's proposed facility.

A11. I prepared a memorandum dated September 8, 2010, provided in Applicant's Exhibit 1, Attachment 4, which addresses the concerns expressed in The Metropolitan District's (MDC) letter. In summary, if approved, the proposed AT&T construction project would follow an approved Soil Erosion and Sedimentation Control Plan designed in accordance with the *2002 Connecticut Guidelines For Soil Erosion and Sediment Control*. The installed erosion devices will be inspected once every seven days and after significant rainfall events of greater than one half inch to ensure that proper precautions are taken to avoid the release of sediment into nearby resource areas. These inspections will be documented on an Erosion and Sedimentation (E&S) Control Site Inspection Form and, at the completion of construction activities, submitted to MDC and Connecticut Siting Council for their records. This E&S control inspection procedure will help avoid erosion and sedimentation problems by ensuring that the erosion control devices are maintained and functioning properly, thereby protecting nearby wetland and watershed resources. In addition, the site contractor will be required to adhere to a strict spill prevention plan that will include precautions to contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in a public water supply watershed. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the site contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper disposal off site. In the unlikely event of a release, immediate notifications will be made to the MDC, the Connecticut Siting Council and appropriate local and state authorities.

The statements above are true and accurate to the best of my knowledge.

January 27, 2011  
Date

Dean E. Gustafson  
Dean E. Gustafson

CERTIFICATE OF SERVICE

I hereby certify that on this day, a copy of the foregoing was submitted electronically and by overnight mail to the Connecticut Siting Council and to:

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Dated: January 27, 2011



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Michael Libertine, VHB  
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## Dean E. Gustafson

Senior Wetland Scientist  
Professional Soil Scientist

### General Background

Mr. Gustafson is a Professional Soil Scientist and Senior Wetland Scientist with over twenty-two years of experience in the environmental field. As the leader of VHB's Middletown, Connecticut, office's Environmental Group, he manages environmental permitting, NEPA/CEPA documentation, wetlands (delineation, evaluation, mitigation design, monitoring, stream restoration, and local, state and federal permitting), water-quality investigations, coastal-zone-management studies, rare species investigations, and natural-resource and ecological evaluations. Mr. Gustafson has particular expertise in wetland identification, soil mapping, soil classification, vegetative and hydrology surveys, wetland impact assessment, wetland mitigation design and oversight. In addition, he has extensive experience in local, state, and federal wetland permitting. Furthermore, he is highly qualified in delineating wetlands according to the Federal Interagency Method's three-parameter approach and has extensive wetland mapping experience in Connecticut, Massachusetts, New York and New Jersey. Mr. Gustafson has been responsible for the mapping of all wetlands during several town-wide wetland identification and evaluation projects. In addition, he has experience in wetland quality assessments using various evaluation models including the federal Descriptive Approach, Connecticut Wetland Evaluation Method (Bulletin No. 9), and the Golet Wetland Wildlife Evaluation Method. Mr. Gustafson also has experience applying the Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands (March 2006). Mr. Gustafson has been involved in over 1,000 wetland projects in more than 170 towns throughout New England and the Northeast.

### Key Projects

#### Telecommunications Carrier Wetland Compliance Program

Project Manager for major telecommunications carrier's wetland compliance program. Responsible for wetland delineation, assessment, mitigation and alternatives analysis, habitat evaluations, vernal pool identification and assessment, design review for permit feasibility, and successful permitting of over 50 wireless telecommunications facilities with local wetland/conservation commissions in the Connecticut, Massachusetts, and Rhode Island market areas. Responsible for erosion and sediment control planning and construction monitoring for projects in Connecticut and Massachusetts that represent a potential to impact sensitive wetland resources during construction.

#### Certificate for Environmental Compatibility and Public Need, Utility Client, Connecticut

Task Manager in support of Application to the Connecticut Siting Council (CSC) for the permitting of a new 345/115 kV substation in eastern Connecticut. Responsible for natural resources inventories of existing flora and fauna, habitat evaluations, wetland delineations and local wetland permit application. Provided erosion and sediment control monitoring during construction in accordance with condition of approval from the Connecticut Siting Council. Project also required employing soil stabilization techniques for erodible steep sandy slopes.

#### National Retailer, Rocky Hill, CT

Responsible for wetland permitting of a multi-tenant retail development resulting in significant unavoidable wetland impacts and the creation of a wetland mitigation area exceeding 1 acre in size. Wetland permits were secured from the Rocky Hill Wetland Agency, CTDEP and U.S. Army Corps of Engineers for wetland impacts and wetland mitigation area.

Mr. Gustafson is a Professional Soil Scientist and Senior Wetland Scientist with Vanasse Hangen Brustlin, Inc. (VHB), and has over 22 years of experience with a wide variety of wetland environmental issues. His areas of expertise include wetland delineation and evaluation, soil erosion and sediment control, storm water BMP selection, permit preparation, local, state and federal regulatory coordination, and wetland mitigation..



**On Call Environmental Services, Northeast Utilities Transmission Group**

Task Manager in support of various Connecticut projects, including assessment and permitting of bulk power substations, transmission lines/structures, underground utility installations, and environmental investigations of existing facilities. Services include pre-acquisition due diligence activities, conducting site development feasibility assessments, natural resources inventories of existing flora and fauna, vernal pool studies and assessment, habitat evaluations, wetland delineations, site layout and design evaluations, erosion and sediment control planning, vegetative soil stabilization and storm water management BMP evaluation and selection, preparation of technical documents, coordination with State and local agencies, and permitting support.

**Luxury Residential Development, Hartford, CT**

Project manager for an award-winning luxury residential community developer. Provided project management and technical direction for wetland compliance of projects undertaken in Connecticut including wetland determination, evaluation, mitigation design and local, state and Army Corps of Engineers permitting. Assisted with planning restoration of a failed slope that occurred during construction, secured approval from the local wetland commission and monitored erosion and sediment controls to ensure that nearby wetlands and perennial stream were not adversely impacted.

**Retail Wetland Program, Various Projects, CT**

Project manager for the Connecticut office for large retail Client Fee-for-Service and Turnkey Developer Programs. Provide project management and technical direction for wetland compliance of projects undertaken in Connecticut including wetland determination, evaluation, mitigation design and local, state and Army Corps of Engineers permitting.

**Luxury Automobile Dealership, Hartford, CT**

Provided critical wetland support services in the successful approval of a new luxury automobile dealership. Services included both CT and federal wetland delineation, wetland evaluation and alternatives assessment for wetland impacts, City of Hartford and Army Corps of Engineers wetland permit preparation, and coordination with City planning staff.

**Connecticut DOT West Haven/Orange Railroad Station, Environmental Assessment**

Task manager for assessing natural resources, including wetlands, floodplain, aquatic habitats, and wildlife, associated with a proposed railroad station at one of two possible sites. Prepared technical documents in support of Draft Federal Environmental Assessment/Draft State Environmental Impact Evaluation.

**Certificates of Environmental Compatibility and Public Need, Various Sites, Connecticut**

Mr. Gustafson has served as Task Manager in support of numerous Applications to the Connecticut Siting Council (CSC) for the permitting of new electrical substations throughout Connecticut. These projects require extensive site data collection and analysis including natural resources inventories of existing flora and fauna, habitat evaluations, wetland delineation and function/value analysis, site layout analysis and wetland impact evaluation, wetland mitigation, preparation of technical documents, coordination with State and local agencies, and permitting. Environmental monitoring services for adherence to the CTDEP's General Permit for Construction Activities were also provided.

**Regulatory Permitting, Barbour Hill Substation Modifications, South Windsor, Connecticut**

Task Manager responsible for the preparation of a Petition to the Connecticut Siting Council for a determination that no Certificate of Environmental Compatibility and Public Need was required for the proposed modifications to the Barbour Hill Substation in South Windsor,

Connecticut. The project included the replacement and expansion of an existing facility and the modification of line interconnections. Responsibilities included conducting natural resource inventories, wetland delineation, and local and state permit documents.

**Certificate for Environmental Compatibility and Public Need, Utility Client, Connecticut**

Task Manager in support of Application to the Connecticut Siting Council (CSC) for the permitting of a new 345/115 kV substation in eastern Connecticut. This project required extensive coordination of numerous team members, including client's in-house discipline managers and engineers, consultants, legal counsel, VHB staff, and subcontractors. Responsible for natural resources inventories of existing flora and fauna, habitat evaluations, wetland delineations and local wetland permit application.

**Wetlands Survey and Permitting, ConnDOT Maintenance Facility.**

Performed both a state and federal wetland survey and delineation in conjunction with the submission and successful obtainment of a CTDEP Inland Wetlands and Watercourses permit and 401 Water Quality Certifications to conduct remedial activities within and adjacent to existing floodplain wetlands.

**Wetland Survey, U.S. Naval Subbase, Groton, CT**

Task Manager. Delineation of both state and federally regulated wetlands in conjunction with a remedial investigation at this Superfund site. Also assisted in developing specifications and plans for both in-kind and out-of-kind wetland mitigation for areas impacted with the proposed corrective-action activities.

**Town of Cromwell, Wetland Mapping and Inventory Project, Cromwell, CT**

Task Manager. Town wide study included the field mapping and classification/ evaluation of all the wetlands within the municipality according to the State of Connecticut Inland Wetlands and Watercourses regulations and Federal criteria (Army Corps of Engineers).

**Wetland Mapping, Correctional Institution, Somers/Enfield, CT**

Assistant Project Manager. Responsibilities included mapping wetlands according to the standards set forth by the State of Connecticut for the 1,700+ acre facility and the production of a high-intensity soil survey and wetland map of the property.

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<b>Education</b>	B.S. University of Massachusetts, Plant and Soil Sciences, 1988
	Graduate coursework, University of New Hampshire
<b>Affiliations</b>	Member, Lebanon Inland Wetlands and Watercourses Commission, since 1995.
<b>Registration</b>	Professional Soil Scientist, Society of Soil Scientists of Southern New England, since 1988.
	Connecticut Association of Wetland Scientists.
	Association of Massachusetts Wetland Scientists.
<b>Certifications</b>	OSHA Hazardous Water Operations and Emergency Response (HAZWOPER) Training (29 CFR 1910.120)