

*Proposed Wireless
Telecommunications Facility*

Waterford Northeast
164 Old Colchester Road
Waterford, Connecticut

Prepared for



Prepared by

VHB/Vanasse Hangen Brustlin, Inc.
54 Tuttle Place
Middletown, CT 06457

November 2010

Visual Resource Evaluation

Cellco Partnership, dba Verizon Wireless, seeks approval from the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for the construction of a wireless telecommunications facility ("Facility") in the northeast portion of the Town of Waterford, Connecticut. The potential candidate site that is the subject of this report would be located on property at 164 Old Colchester Road (identified herein as the "host property"), in Waterford. This Visual Resource Evaluation was conducted to evaluate the visibility of the proposed Facility within a two-mile radius ("Study Area"). The Study Area also includes land located within the neighboring municipalities of Montville, Connecticut to the north and Ledyard, Connecticut to the east. Attachment A contains a map that depicts the location of the proposed Facility and the limits of the Study Area.

Project Introduction

The proposed Facility includes the installation of a 150-foot tall monopole tower with associated ground equipment to be located at its base. Both the monopole and ground equipment would be situated within a fence-enclosed compound. The proposed Facility would be located at a ground elevation of approximately 106 feet Above Mean Sea Level (AMSL). Access to the Facility would be provided via a proposed, 12-foot wide gravel drive that would extend to the proposed compound area in a southwesterly direction from an existing, paved driveway currently located on the host property.

Site Description and Setting

The host property consists of approximately 12.84 acres of land and is currently occupied by a single-family dwelling. The proposed Facility would be located on a lightly wooded, undeveloped portion of the host property, approximately 325 feet to the southeast of the existing residence. Land use within the general vicinity of the proposed Facility is comprised of undeveloped woodlands, the Interstate 395 traffic corridor, medium-density residential development and several overhead electrical utility rights of way and their associated infrastructure. In addition to Interstate 395, which is located within close proximity to the host property, segments of Route 32 and Route 163 are also contained within the Study Area. In total, the Study Area features approximately 84 linear miles of roadways.

The topography within the Study Area is generally characterized by gently rolling hills with ground elevations that range from approximately sea level to approximately 406 feet AMSL. The Study Area contains approximately 309 acres of surface water, which includes Miller Pond located approximately 400 feet to the west of the proposed Facility; Smith Cove located roughly 1.41-miles to the southeast; Lake Cuheca situated roughly 0.64-mile to the southwest and portions of the Thames River which is located approximately 1.88-miles to the east. The tree cover within the Study Area consists mainly of mixed deciduous hardwood species that occupy approximately 6,032 acres of the 8,042-acre study area (75%). The average tree canopy height throughout the Study Area was determined to be approximately 65 feet.

METHODOLOGY

To evaluate the visibility associated with the proposed Facility, VHB used the combination of a predictive computer model and in-field analysis. The predictive model provided a preliminary assessment of potential visibility throughout the entire study area, including private property and other areas inaccessible for direct observations. A "balloon float" and Study Area reconnaissance were subsequently conducted for field verification to back-check the initial computer modeling results, to obtain location and height representations, and to provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

Visibility Analysis

VHB uses ArcGIS® Spatial Analyst, a computer modeling tool developed by Environmental Systems Research Institute, Inc., to calculate the areas from which at least the top of the proposed Facility is expected to be visible. Project- and Study Area-specific data were incorporated into the computer model, including Facility height, its ground elevation, underlying and surrounding topography and existing vegetation. Information used in the model included Connecticut LiDAR¹-based digital elevation data and model and a digital forest (or tree canopy) layer developed for the Study Area. The LiDAR-based Digital Elevation Model (DEM) represents ten-foot spatial resolution elevation information for the state of Connecticut that was derived through the spatial interpolation of airborne LiDAR-based data collected in the year 2000 and has a horizontal resolution of ten (10) feet. The data was edited in 2007 and made available by the University of Connecticut through its Center for Land Use Education and Research (CLEAR). To create the forest layer, mature trees and woodland areas depicted on aerial photographs (ranging in dates from 2004 to 2008) were manually digitized (hand traced) in ArcGIS®, creating a geographic data layer for inclusion in the computer model. The black and white, digital aerial photographs, obtained from the Connecticut Department of Transportation, were flown in the spring of 2004 and selected for use in this analysis because of their image quality and depiction of pre-leaf emergence (i.e., "leaf-off") conditions. These photographs are half-foot pixel resolution. The more recent aerial photographs (2006 and 2008) were overlaid and evaluated to identify any new development resulting in the removal of trees.

Once the specific data layers were entered, the ArcGIS® Spatial Analyst Viewshed tool was applied to achieve an estimate of locations where the proposed Facility could be visible. First, only topography was used as a possible visual constraint; the tree canopy was omitted to evaluate potential visibility with no intervening vegetative screening. The initial omission of this data layer resulted in an excessively conservative prediction, but it provided an opportunity to identify areas within potential direct lines of sight of the Facility.

¹ LiDAR is an acronym for Light Detection and Ranging. It is a technology that utilized lasers to determine the distance to an object or surface. LiDAR is similar to radar, but incorporates laser pulses rather than sound waves. It measures the time delay between transmission and reflection of the laser pulse.

The forest data layer was then overlaid and built into the DEM, using a conservative average tree canopy height of 50 feet, to establish a baseline assessment of intervening vegetation. The resultant preliminary viewshed map was used during the in-field activities (described further below) to compare the outcome of the initial computer modeling with observations of the balloon float to identify deviations. Information obtained from the field reconnaissance was ultimately incorporated into the model to refine the viewshed map.

The average tree canopy height, in this case 65 feet, was determined based on information collected in the field using a combination of a hand-held laser range finder and comparative observations. The revised average tree canopy height of 65 feet was then incorporated into the model and the results displayed on the viewshed map. The forested areas were overlaid on the DEM with a height of 65 feet added to the base elevation and the visibility within the Study Area calculated.

As a final step, the forested areas were extracted from the areas of visibility, using a conservative assumption that a person standing within the forest will not be able to view the proposed Facility beyond a distance of approximately 500 feet. Depending on the density of the intervening tree canopy and understory of the surrounding woodlands, it is assumed that some locations within this distance could provide visibility of at least portions of the proposed Facility at any time of the year. In "leaf-on" conditions, this distance may be overly conservative for most locations. However, for purposes of this analysis, it was reasoned that forested land beyond 500 feet of the proposed Facility would consist of light-impenetrable trees of a uniform height.

Also included on the map is a data layer, obtained from the State of Connecticut Department of Environmental Protection ("CTDEP"), which depicts various land and water resources such as parks and forests, recreational facilities, dedicated open space, CTDEP boat launches and other categories. Lastly, based on both a review of published information and discussions with municipal officials in Waterford it was determined that there are no locally- or state-designated scenic roadways located within the Study Area.

Balloon Float and Study Area Reconnaissance

On November 12, 2010 Vanasse Hangen Brustlin Inc., (VHB) conducted a balloon float to further evaluate the potential viewshed within the Study Area. The balloon float consisted of raising and maintaining an approximate four-foot diameter, helium-filled balloon at the proposed site location at a height of 150 feet. Once the balloon was secured, VHB staff conducted a drive-by reconnaissance along the roads located within the Study Area with an emphasis on nearby residential areas and other potential sensitive receptors in order to evaluate the results of the preliminary viewshed map and to document where the balloon was, and was not, visible above and/or through the tree canopy. During the balloon float, the temperature was approximately 60 degrees Fahrenheit with occasional breezes and sunny skies.

Photographic Documentation

During the balloon float, VHB personnel drove the public road system within the Study Area to inventory those areas where the balloon was and was not visible. The balloon was photographed from a number of different vantage points to document the actual view towards the proposed Facility. Several locations where the balloon was not visible are also included. The locations of the photos are described below:

View	Location	Orientation	Dist. To Site	Visibility
1	Old Colchester Road	Southwest	± 0.18-Mile	Year-Round
2	Vauxhall Street Extension at Interstate 395 Overpass	Northeast	± 1.32-Mile	Year-Round
3	Interstate 395	Southwest	± 1.10-Mile	Year-Round
4	Pedestrian bridge over Interstate 395	Northeast	± 0.44-Mile	Year-Round
5	Adjacent to #120 Moxley Road	Southwest	± 1.10-Mile	Non-Visible
6	Old Colchester Road	Northwest	± 0.50-Mile	Non-Visible
7	Miller Pond	Northeast	± 0.50-Mile	Non-Visible
8	Miller Pond	Northeast	± 0.37-Mile	Non-Visible

Photographs of the balloon from the view points listed above were taken with a Nikon D-80 digital camera body and fixed Nikon 50 mm lens. "The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm."¹

The locations of the photographic points are recorded in the field using a GPS-enabled tablet computer and were subsequently plotted on the maps contained in the attachments to this document.

Photographic Simulation

Photographic simulations were generated for the representative locations where the balloon was visible during the in-field activities. The photographic simulations portray a scaled rendering of the proposed Facility from these locations, with four wireless service providers represented. Using field data, site plan information and 3-dimension (3D) modeling software, a spatially referenced model of the site area was generated. Geographic coordinates (latitude and longitude) were collected in the field for all of the photograph locations via GPS and later used to generate virtual camera positions within the spatial 3D model. Photo simulations were then created using a combination of renderings generated in the 3D model and photo rendering software programs. The balloon was included in the photographs to provide a visual marker and to cross-reference the height and proportions of the proposed Facility. A photolog map and the simulations are contained in Attachment A.

¹ Warren, Bruce. *Photography*, West Publishing Company, Eagan, MN, c. 1993, (page 70).

CONCLUSIONS

Based on this analysis, areas from where the proposed 150-foot tall Facility would be visible above the tree canopy comprise approximately 13 acres. As depicted on the attached viewshed map, the majority of year-round visibility associated with the proposed Facility would occur over open water on portions of Miller Pond and along select portions of the Interstate 395 traffic corridor. A small area of year-round visibility is also anticipated along Old Colchester Road within the immediate vicinity of the host property. Potential year-round views from this area would be limited to the uppermost portion of the proposed Facility (approximately five \pm feet of the monopole and/or antennas). VHB estimates that at least partial year-round views of the proposed Facility may be achieved from portions of two residential properties within the Study Area, both of which are located along Old Colchester (#152 and #164, host property). This information is summarized in the table below. Overall, potential year-round views of the proposed Facility would be limited to the areas described above by a combination of the intervening topography and vegetation contained within the Study Area.

The viewshed map also depicts several additional areas where seasonal (i.e. during "leaf off" conditions) views are anticipated. These areas comprise approximately 32 acres and are located within the immediate vicinity of the proposed Facility, including select portions of Old Colchester Road and Interstate 395. VHB estimates that limited seasonal views of the proposed Facility may be achieved from portions of approximately two additional residential properties located along Old Colchester Road (#156 and #158). This information is summarized in the table below.

Location	*Number of Residential Properties With Potential Year-Round Visibility (Leaf-On)	*Number of Residential Properties With Potential Seasonal Visibility (Leaf-Off)
Old Colchester Road	2	2
TOTAL:	2	2

*Indicates potential year-round or seasonal visibility from portions of the properties listed in the table above. Potential visibility on a "residential property" does not necessarily mean that the property is developed with a home or views would be achieved from within residential dwellings, exterior decks, porches or patios that might be located on such properties. Further, it may be possible to view the Facility from within portions of the shaded areas indicating potential visibility, but not necessarily from all locations within those shaded areas.

Attachment A

Study Area Map, Balloon Float Photographs, and Photographic Simulations

Photolog Map



| Photographic Documentation



J:\1479_56\graphics\FIGURES\1479_56-Photos.m

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	OLD COLCHESTER ROAD	SOUTHWEST	0.18 MILE +/-	YEAR-ROUND

Photographic Simulation



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	OLD COLCHESTER ROAD	SOUTHWEST	0.18 MILE +/-	YEAR-ROUND

| Photographic Documentation



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	VAUXHALL STREET EXTENSION AT INTERSTATE 395 OVERPASS	NORTHEAST	1.32 MILES +/-	YEAR-ROUND

Photographic Simulation



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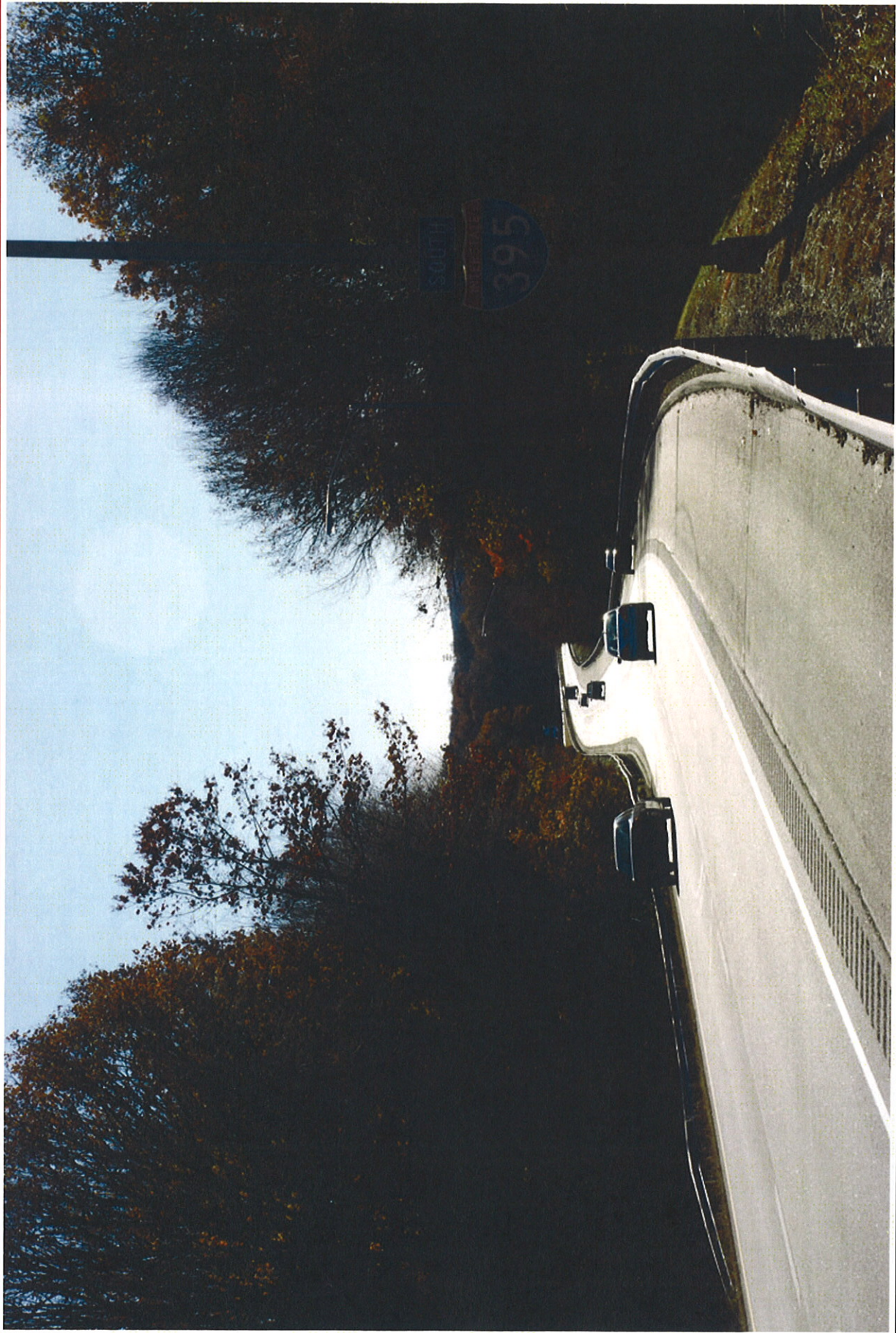
VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	VAUXHALL STREET EXTENSION AT INTERSTATE 395 OVERPASS	NORTHEAST	1.32 MILES +/-	YEAR-ROUND



J:\1479.56\graphics\FIGURES\1479.56-Photos.m

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	INTERSTATE 395	SOUTHWEST	1.10 MILES +/-	YEAR-ROUND

Photographic Simulation



J:\41479.56\graphics\FIGURES\41479.56-Photosim

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	INTERSTATE 395	SOUTHWEST	1.10 MILES +/-	YEAR-ROUND



J:\41479.56\graphics\FIGURES\41479.56-Photoism

VIEW		LOCATION		ORIENTATION	DISTANCE TO SITE	VISIBILITY
4		PEDESTRIAN BRIDGE OVER INTERSTATE 395		NORTHEAST	0.44 MILE +/-	YEAR-ROUND

Photographic Simulation



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	PEDESTRIAN BRIDGE OVER INTERSTATE 395	NORTHEAST	0.44 MILE +/-	YEAR-ROUND

| Photographic Documentation



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	ADJACENT TO #120 MOXLEY ROAD	SOUTHWEST	1.10 MILES +/-	NON-VISIBLE

| Photographic Documentation



EXISTING AT&T TELECOMMUNICATIONS FACILITY

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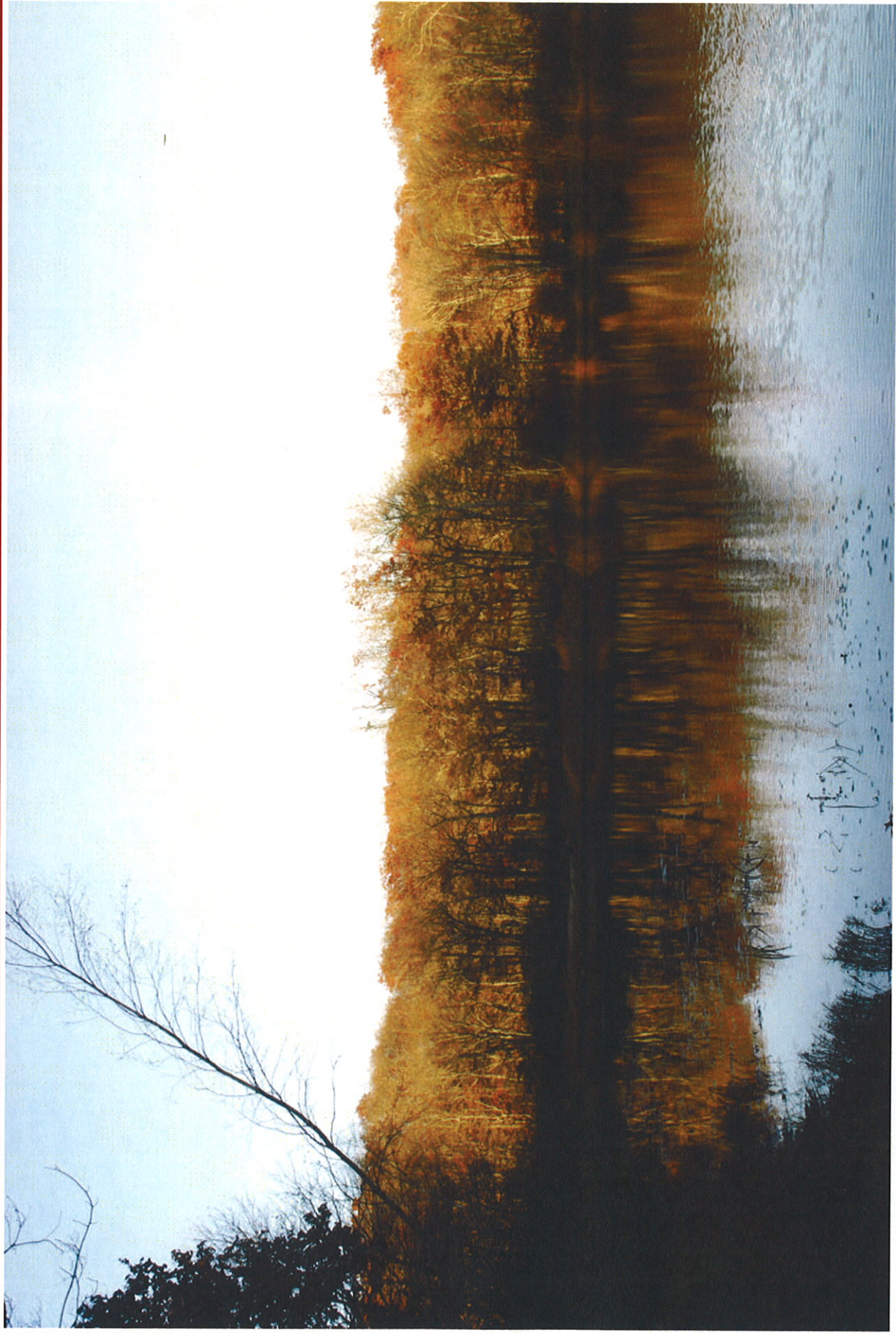
VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	OLD COLCHESTER ROAD	NORTHWEST	0.50 MILE +/-	NON-VISIBLE

| Photographic Documentation



J:\1479_56\graphics\FIGURES\1479_56_Photos.m

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	MILLER POND	NORTHEAST	0.50 MILE +/-	NON-VISIBLE



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
8	MILLER POND	NORTHEAST	0.37 MILE +/-	NON-VISIBLE

Attachment B

Viewshed Map

Viewshed Analysis
**Proposed Verizon Wireless
 Telecommunications Facility**
Waterford NE
164 Old Colchester Road
Waterford, Connecticut

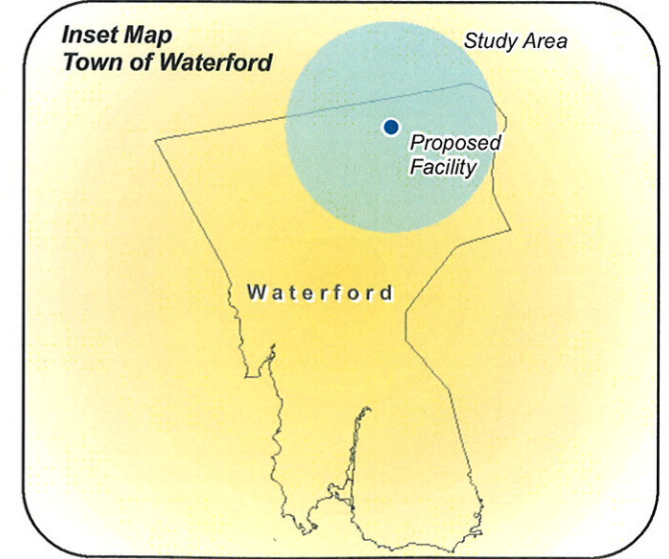
NOTE:
 - Viewshed analysis conducted using ESRI's Spatial Analyst.
 - Proposed Facility height is 150 feet.
 - Existing tree canopy height estimated at 65 feet.
 - Study Area is comprised of a two-mile radius surrounding the proposed facility and includes 8,042 acres of land.

DATA SOURCES:
 - Digital elevation model (DEM) derived from Connecticut LiDAR-based Digital Elevation Data (collected in 2000) with a 10-foot spatial resolution produced by the University of Connecticut and the Center for Land Use Education and Research (CLEAR); 2007
 - Forest areas derived from 2006 digital orthophotos with 1-foot pixel resolution; digitized by VHB, 2010
 - Base map comprised of Uncasville (1970) and Montville (1983), USGS Quadrangle Maps
 - Municipal and Private Open Space data layer provided by CT DEP, 1997
 - Federal Open Space data layer provided by CT DEP, 2004
 - CT DEP Property data layer provided by CT DEP, Dec 2009
 - CT DEP boat launches data layer provided by CT DEP, Dec 2009
 - Scenic Roads layer derived from available State and Local listings

Map Compiled November, 2010

Legend

- Proposed Tower Location
- Balloon is not visible
- Balloon visible above trees
- Seasonal Visibility (Approximately 32 acres)
- Year-Round Visibility (Approximately 13 acres)
- Protected Municipal and Private Open Space (CT DEP, 1997)
- Cemetery
- Preservation
- Existing Preserved Open Space
- Recreation
- General Recreation
- School
- Uncategorized
- CT DEP Property (CT DEP, Dec 2009)
- State Forest
- State Park
- DEP Owned Waterbody
- State Park Scenic Reserve
- Historic Preserve
- Natural Area Preserve
- Fish Hatchery
- Flood Control
- Other
- State Park Trail
- Water Access
- Wildlife Area
- Wildlife Sanctuary
- Federal Open Space (CT DEP, 2004)
- Boat Launches (CT DEP, Dec 2009)
- Scenic Road (State and Local)
- Town Line



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USEFWS
INFORMATION

Transportation
Land Development
Environmental
Services



Vanasse Hangen Brustlin, Inc.

54 Tuttle Place
Middletown, Connecticut 06457
860 632-1500
FAX 860 632-7879

Memorandum

To: Ms. Alexandria Carter
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

Date: March 3, 2011

Project No.: 41479.56

From: Matthew Davison
Registered Soil Scientist
CT Certified Forester 193

Re: USF&WS Compliance Determination
Waterford NE Facility
146 Old Colchester Road
Waterford (Quaker Hill), CT

The following Site was evaluated with respect to possible federally-listed, threatened or endangered species in order to determine if the proposed communications facility would result in a potential adverse effect to federally-listed species. This evaluation was performed in accordance with the January 3, 2011 policy statement of the United States Department of the Interior Fish and Wildlife Service (USFWS) New England Field Office. A copy of this policy statement is enclosed for reference

Project Site:

State: Connecticut
County: New London County
Address: 146 Old Colchester Road, Waterford, CT
Latitude/Longitude Coordinates: N41°24'51.666" W72°07'49.621"
Size of Property: ±51 acres
Watershed: Smith Cove (basin # 3006)

The following federally listed endangered and threatened species occur in Waterford, CT according to the USFWS January 3, 2011 policy.

Common Name	Species	Status	General Location/Habitat	Towns
Piping Plover	<i>Haliaeetus leucocephalus</i>	T	Coastal Beaches	Old Lyme, Waterford, Groton and Stonington
Roseate Tern	<i>Sterna dougallii dougallii</i>	E	Coastal beaches, Islands and the Atlantic Ocean	East Lyme and Waterford
Small whorled pogonia	<i>Isotria medeoloides</i>	T	Forests with somewhat poorly	Waterford

Common Name	Species	Status	General Location/Habitat	Towns
			drained soils and/or a seasonally high water table.	
* Note: Bald Eagle was officially delisted in the lower 48 states from the List of Endangered and Threatened Wildlife (Federal Register, July 9, 2007).				

Piping Plover

The piping plover is a migratory breeder in Connecticut, arriving in March and nesting only at coastal sandy beaches, often in association with Least Terns¹.

The subject property does not contain any coastal sandy beaches. It is located within an undeveloped parcel that is dominated by upland hardwood forest. The nearest coastal beach area is located approximately 3,980 feet to the south. Piping plovers prefer isolated, sandy beaches with access to mudflats for feeding. In addition to being a federally-listed threatened species, piping plover is a Connecticut Department of Environmental Protection (CTDEP)-listed threatened species. Vanasse Hangen Brustlin Inc. completed and submitted a Natural Diversity Data Base (NDDDB) Review Request Form and supporting materials to the CTDEP to determine if a potential conflict exists between the proposed facility and any species or natural community of concern. A response letter from CTDEP, dated November 29, 2010, indicated that the proposed facility would not conflict with any known Federal or State Endangered, Threatened or Special Concern Species. A copy of the CTDEP NDDDB response letter is attached. Therefore, the proposed development will not result in an adverse affect to this listed species.

Roseate Tern

Roseate Terns are exclusively marine and typically nest with Common Terns in various habitats on offshore islands or mainland beaches. Roseate terns prefer sandy, gravelly, or rocky areas with shelter provided by vegetation, debris or rocks².

The subject property does not contain any coastal sandy beaches or offshore islands. The nearest coastal beach area is located approximately 3,980 feet to the south. . In addition to being a federally-listed threatened species, roseate tern is a Connecticut Department of Environmental Protection (CTDEP)-listed endangered species. Vanasse Hangen Brustlin Inc. completed and submitted a Natural Diversity Data Base (NDDDB) Review Request Form and supporting materials to the CTDEP to determine if a potential conflict exists between the proposed facility and any species or natural community of concern. A response letter from CTDEP, dated November 29, 2010, indicated that the proposed facility would not conflict with any known Federal or State Endangered, Threatened or Special Concern Species. A copy of the CTDEP NDDDB response letter is attached. Therefore, the proposed development will not result in an adverse affect to this listed species.

Small Whorled Pogonia

Small whorled pogonia is a small, perennial orchid of deciduous forests with a grayish-green, smooth stem up to 30 cm tall that bears at its summit a whorl of 5-6 light-green, elliptical, pointed leaves and 1-2 yellow-green flowers that bloom from late spring to early summer³. Habitat requirements for this species include flats or slope bases having a moderate to light shrub layer and a relatively open canopy. Soil

¹ *The Atlas of Breeding Birds of Connecticut*. Louis R. Bevier, Editor. State Geological and Natural History Survey of Connecticut Bulletin 113. Pgs. 126-127.

² *The Atlas of Breeding Birds of Connecticut*. Louis R. Bevier, Editor. State Geological and Natural History Survey of Connecticut Bulletin 113. Pgs. 148-149.

³ NatureServe. www.natureserve.org. *Isotria medeoloides*. (Flora of North America 2002)

characteristics consistently found within this species' habitat include a sandy loam textured soil type having a fragipan or restrictive layer below the soil surface, allowing for lateral water movement⁴.

Habitat requirements for small whorl pogonia include flats or slope bases having a moderate to light shrub layer and a relatively open canopy.⁵ Soil characteristics consistently found within this species' habitat include a sandy loam textured soil type having a fragipan or restrictive layer below the soil surface, allowing for lateral water movement.⁶ Soils at most sites are highly acidic and nutrient poor, with moderately high soil moisture values.⁷

The proposed Facility would be located within a mature upland hardwood forest containing a closed canopy. Habitat requirements for small whorled pogonia include a relatively open tree canopy. The proposed access road will follow an existing woods road which is subject to repeated disturbance. Soils underlying and surrounding the project area were field classified as Charlton-Chatfield complex (soil symbol - 73), consisting of well drained, deep (greater than 60 inches to restrictive layer) and moderately shallow (20 to 40 inches to restrictive layer) glacial till soils. The minimum depth to seasonal water table, when present, is greater than 6 feet. Therefore, the soils located in the project area do not provide the appropriate characteristics, particularly from a textural (e.g., too fine) and moisture level (e.g., too dry), to support small whorl pogonia habitat. In addition, the NDDDB Program was contacted to determine the impact of proposed development project on state listed species and it was determined that "...there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question."; see attached CTDEP letter dated November 29, 2010. The small whorled pogonia is a State Endangered species. Therefore, the proposed development will not result in an adverse impact to this listed species.

Bald Eagle

The bald eagle has been delisted and maintains protection under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA). No bald eagle nests, roosting or foraging areas were observed on the subject property. In addition, the NDDDB Program was contacted to determine the impact of proposed development project on state listed species and it was determined that "...there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question."; see attached CTDEP letter dated November 29, 2010. The bald eagle is a State Threatened species. Therefore, the proposed telecommunications facility will not result in disturbance⁸ to Bald Eagles.

⁴ National Heritage & Endangered Species Program, Division of Fisheries & Wildlife, Massachusetts Rare and Endangered Plants-Small Whorled Pogonia

⁵ National Heritage & Endangered Species Program, Division of Fisheries & Wildlife, Massachusetts Rare and Endangered Plants-Small Whorled Pogonia

⁶ National Heritage & Endangered Species Program, Division of Fisheries & Wildlife, Massachusetts Rare and Endangered Plants-Small Whorled Pogonia

⁷ von Oettingen, S.L. (1992). Small Whorled Pogonia (*Isotria medeoloides*) Recovery Plan. New England Field Office U.S. Fish and Wildlife Service.

⁸ "Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." (Eagle Act)



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Inland Fisheries Division
Natural Diversity Data Base
79 Elm Street, 6th Floor
Hartford, CT 06106-5127



November 29, 2010

Coreen Kelsey
VHB Inc.
54 Tuttle Place
Middletown, CT 06457

Subject: Cell Tower-Waterford NE
Quaker Hill at 146 Old Colchester
Road

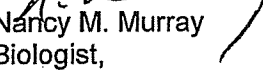
Dear Ms. Kelsey:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided and listed above. According to our information, there are no state listed species within the project area.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the proposed project has not been initiated within 12 months of this review, contact the NDDB for an updated review.

Please contact me if you have any questions (nancy.murray@ct.gov; 860-424-3589). Thank you for consulting the Natural Diversity Data Base and continuing to work with us to protect State listed species.

Sincerely


Nancy M. Murray
Biologist,
NDDB Program Coordinator

SIMS 6222





**USFWS January 3, 2011
Telecommunications Policy Statement
and Federally-Listed Endangered and
Threatened Species in Connecticut
USFWS January 3, 2011
No Known Federally-Listed or
Endangered Species Letter**



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

January 3, 2011

To Whom It May Concern:

The U.S. Fish and Wildlife Service's (Service) New England Field Office has determined that individual project review for certain types of activities associated with communication towers is **not required**. These comments are submitted in accordance with provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Due to the rapid expansion of the telecommunication industry, we are receiving a growing number of requests for review of **existing** and **new** telecommunication facilities in relation to the presence of federally-listed or proposed, threatened or endangered species, critical habitat, wilderness areas and/or wildlife preserves. We have evaluated our review process for proposed communications towers and believe that individual correspondence with this office is not required for the following types of actions relative to **existing** facilities:

1. the re-licensing of existing telecommunication facilities;
2. audits of existing facilities associated with acquisition;
3. routine maintenance of existing tower sites, such as painting, antenna or panel replacement, upgrading of existing equipment, etc.;
4. co-location of new antenna facilities on/in existing structures;
5. repair or replacement of existing towers and/or equipment, provided such activities do not significantly increase the existing tower mass and height, or require the addition of guy wires.

In order to curtail the need to contact this office in the future for individual environmental review for **existing** communication towers or antenna facilities, please note that we are not aware of any federally-listed, threatened or endangered species that are being adversely affected by any existing communication tower or antenna facility in the following states: Vermont, New Hampshire, Rhode Island, Connecticut and Massachusetts. Furthermore, we are not aware of any **existing** telecommunication towers in federally-designated critical habitats, wilderness areas or wildlife preserves. Therefore, no further consultation with this office relative to the impact of the above referenced activities on federally-listed species is required.

January 3, 2011

Future Coordination with this Office Relative to New Telecommunication Facilities

We have determined that proposed projects are not likely to adversely affect any federally-listed or proposed species when the following steps are taken to evaluate new telecommunication facilities:

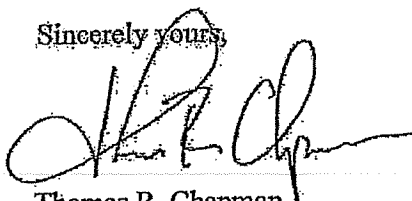
1. If the facility will be installed within or on an existing structure, such as in a church steeple or on the roof of an existing building, no further coordination with this office is necessary. Similarly, new antennas or towers in urban and other developed areas, in which no natural vegetation will be affected, do not require further review.
2. If the above criteria cannot be met, your review of our lists of threatened and endangered species locations within Vermont, New Hampshire, Rhode Island, Connecticut and Massachusetts may confirm that no federally-listed endangered or threatened species are known to occur in the town or county where the project is proposed.
3. If a listed species is present in the town or county where the project is proposed, further review of our lists of threatened and endangered species may allow you to conclude that suitable habitat for the species will not be affected. Based on past experiences, we anticipate that there will be few, if any, projects that are likely to impact piping plovers, roseate terns, bog turtles, Jesup's milk-vetch or other such species that are found on coastal beaches, riverine habitats or in wetlands because communication towers typically are not located in these habitats.

For projects that meet the above criteria, there is no need to contact this office for further project review. A copy of this letter should be retained in your file as the Service's determination that no listed species are present, or that listed species in the general area will not be affected. Due to the high workload associated with responding to many individual requests for threatened and endangered species information, we will no longer be providing response letters for activities that meet the above criteria. This correspondence and the species lists remain valid until January 1, 2012. Updated consultation letters and species lists are available on our website:

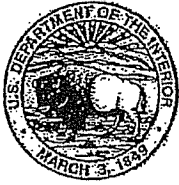
(<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm>)

Thank you for your cooperation, and please contact Mr. Anthony Tur of this office at 603-223-2541 for further assistance.

Sincerely yours,



Thomas R. Chapman
Supervisor
New England Field Office



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

January 3, 2011

To Whom It May Concern:

This project was reviewed for the presence of federally-listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

(<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm>)

Based on the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service (Service) are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required.

This concludes the review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Anthony Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN CONNECTICUT**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Fairfield	Piping Plover	Threatened	Coastal Beaches	Westport, Bridgeport and Stratford
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	Westport and Stratford
	Bog Turtle	Threatened	Wetlands	Ridgefield and Danbury.
Hartford	Dwarf wedgemussel	Endangered	Farmington and Podunk Rivers	South Windsor, East Granby, Simsbury, Avon and Bloomfield.
Litchfield	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Sharon.
	Bog Turtle	Threatened	Wetlands	Sharon and Salisbury.
Middlesex	Roseate Tern	Endangered	Coastal beaches, islands and the Atlantic Ocean	Westbrook and New London.
	Piping Plover	Threatened	Coastal Beaches	Clinton, Westbrook, Old Saybrook.
	Puritan Tiger Beetle	Threatened	Sandy beaches along the Connecticut River	Cromwell, Portland
New Haven	Bog Turtle	Threatened	Wetlands	Southbury
	Piping Plover	Threatened	Coastal Beaches	Milford, Madison and West Haven
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	Branford, Guilford and Madison
	Indiana Bat	Endangered	Mines, Caves	
New London	Piping Plover	Threatened	Coastal Beaches	Old Lyme, Waterford, Groton and Stonington.
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	East Lyme and Waterford.
	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Waterford
Tolland	None			

-Eastern cougar, gray wolf, Indiana bat, Seabeach amaranth and American burying beetle are considered extirpated in Connecticut.

-There is no federally-designated Critical Habitat in Connecticut.

7/31/2008

Transportation
Land Development
Environmental
Services



Vanasse Hangen Brustlin, Inc.

54 Tuttle Place
Middletown, Connecticut 06457
860 632-1500
FAX 860 632-7879

Memorandum

To: Ms. Alexandria Carter
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

Date: May 4, 2011

Project No.: 41479.56

From: Matthew Davison
Registered Soil Scientist
CT Certified Forester 193

Re: USF&WS Compliance Determination
Waterford NE Facility
164 Old Colchester Road
Waterford (Quaker Hill), CT

The following Site was evaluated with respect to possible federally-listed, threatened or endangered species in order to determine if the proposed communications facility would result in a potential adverse effect to federally-listed species. This evaluation was performed in accordance with the January 3, 2011 policy statement of the United States Department of the Interior Fish and Wildlife Service (USFWS) New England Field Office. A copy of this policy statement is enclosed for reference.

Project Site:

State: Connecticut
County: New London County
Address: 164 Old Colchester Road, Waterford, CT
Latitude/Longitude Coordinates: N41°24'55.999" W72°07'58.863"
Size of Property: ±12.84 acres
Watershed: Smith Cove (basin # 3006)

The following federally listed endangered and threatened species occur in Waterford, CT according to the USFWS January 3, 2011 policy.

Common Name	Species	Status	General Location/Habitat	Towns
Piping Plover	<i>Haliaeetus leucocephalus</i>	T	Coastal Beaches	Old Lyme, Waterford, Groton and Stonington
Roseate Tern	<i>Sterna dougallii dougallii</i>	E	Coastal beaches, Islands and the Atlantic Ocean	East Lyme and Waterford

Common Name	Species	Status	General Location/Habitat	Towns
Small whorled pogonia	<i>Isotria medeoloides</i>	T	Forests with somewhat poorly drained soils and/or a seasonally high water table.	Waterford

* Note: Bald Eagle was officially delisted in the lower 48 states from the List of Endangered and Threatened Wildlife (Federal Register, July 9, 2007).

Habitat Description

The Facility is proposed within a residential property that is currently occupied by a single-family dwelling. The proposed access road will follow an existing paved driveway before diverging onto an existing gravel drive a short distance to the proposed Facility location. The Facility would be located within a disturbed area that has been subject to recent clearing and grading. Various emergent and shrub species typical of recently disturbed landscapes have colonized this area.

Piping Plover

The piping plover is a migratory breeder in Connecticut, arriving in March and nesting only at coastal sandy beaches, often in association with Least Terns¹.

The subject property does not contain any coastal sandy beaches. The nearest coastal beach area is located approximately 4,800 feet to the south. Piping plovers prefer isolated, sandy beaches with access to mudflats for feeding. In addition to being a federally-listed threatened species, piping plover is a Connecticut Department of Environmental Protection (CTDEP)-listed threatened species. Vanasse Hangen Brustlin Inc. completed and submitted a Natural Diversity Data Base (NDDB) Review Request Form and supporting materials to the CTDEP to determine if a potential conflict exists between the proposed Facility and any species or natural community of concern. A response letter from CTDEP, dated April 13, 2011, indicated that they did not anticipate negative impacts to state listed species resulting from the proposed activities at the site. A copy of the CTDEP NDDB response letter is attached. Therefore, the proposed development will not result in an adverse affect to this listed species.

Roseate Tern

Roseate Terns are exclusively marine and typically nest with Common Terns in various habitats on offshore islands or mainland beaches. Roseate terns prefer sandy, gravelly, or rocky areas with shelter provided by vegetation, debris or rocks².

The subject property does not contain any coastal sandy beaches or offshore islands. The nearest coastal beach area is located approximately 4,800 feet to the south. In addition to being a federally-listed threatened species, roseate tern is a Connecticut Department of Environmental Protection (CTDEP)-listed endangered species. Vanasse Hangen Brustlin Inc. completed and submitted a Natural Diversity Data Base (NDDB) Review Request Form and supporting materials to the CTDEP to determine if a potential conflict exists between the proposed Facility and any species or natural community of concern. A response letter from CTDEP, dated April 13, 2011, indicated that they did not anticipate negative impacts to state listed species resulting from the proposed activities at the site. A copy of the CTDEP NDDB response letter is attached. Therefore, the proposed development will not result in an adverse affect to this listed species.

¹ *The Atlas of Breeding Birds of Connecticut*. Louis R. Bevier, Editor. State Geological and Natural History Survey of Connecticut Bulletin 113. Pgs. 126-127.

² *The Atlas of Breeding Birds of Connecticut*. Louis R. Bevier, Editor. State Geological and Natural History Survey of Connecticut Bulletin 113. Pgs. 148-149.

Small Whorled Pogonia

Small whorled pogonia is a small, perennial orchid of deciduous forests with a grayish-green, smooth stem up to 30 cm tall that bears at its summit a whorl of 5-6 light-green, elliptical, pointed leaves and 1-2 yellow-green flowers that bloom from late spring to early summer³. Habitat requirements for this species include flats or slope bases having a moderate to light shrub layer and a relatively open canopy. Soil characteristics consistently found within this species' habitat include a sandy loam textured soil type having a fragipan or restrictive layer below the soil surface, allowing for lateral water movement⁴. Habitat requirements for small whorl pogonia include flats or slope bases having a moderate to light shrub layer and a relatively open canopy.⁵ Soil characteristics consistently found within this species' habitat include a sandy loam textured soil type having a fragipan or restrictive layer below the soil surface, allowing for lateral water movement.⁶ Soils at most sites are highly acidic and nutrient poor, with moderately high soil moisture values.⁷

The proposed Facility would be located within a disturbed area that has been subject to clearing and grading associated with the existing on-site residence. The proposed access road will follow existing paved and gravel access drives. Soils underlying and surrounding the project area were field classified as Charlton-Chatfield complex (soil symbol – 73), consisting of well drained, deep (greater than 60 inches to restrictive layer) and moderately shallow (20 to 40 inches to restrictive layer) glacial till soils. The minimum depth to seasonal water table, when present, is greater than 6 feet. Therefore, the soils located in the project area do not provide the appropriate characteristics, particularly from a textural (e.g., too fine) and moisture level (e.g., too dry), to support small whorl pogonia habitat. In addition, the NDDB Program was contacted to determine the impact of proposed development project on state listed species and it was determined that "...we do not anticipate negative impacts to State-listed species resulting from your proposed activity at the site"; see attached CTDEP letter dated April 13, 2011. The small whorled pogonia is a State Endangered species. Therefore, the proposed development will not result in an adverse impact to this listed species.

Bald Eagle

The bald eagle has been delisted and maintains protection under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA). No bald eagle nests, roosting or foraging areas were observed on the subject property. In addition, the NDDB Program was contacted to determine the impact of proposed development project on state listed species and it was determined that "...we do not anticipate negative impacts to State-listed species resulting from your proposed activity at the site"; see attached CTDEP letter dated April 13, 2011. The bald eagle is a State Threatened species. Therefore, the proposed telecommunications facility will not result in disturbance⁸ to Bald Eagles.

³ NatureServe. www.natureserve.org. *Isotria medeoloides*. (Flora of North America 2002)

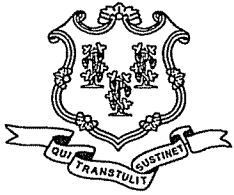
⁴ National Heritage & Endangered Species Program, Division of Fisheries & Wildlife, [Massachusetts Rare and Endangered Plants-Small Whorled Pogonia](#)

⁵ ibid

⁶ ibid

⁷ von Oettingen, S.L. (1992). Small Whorled Pogonia (*Isotria medeoloides*) Recovery Plan. New England Field Office U.S. Fish and Wildlife Service.

⁸ "Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." (Eagle Act)



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Inland Fisheries Division
Habitat Conservation and Enhancement
Natural History Survey-Natural Diversity Data Base
79 Elm Street, 6th Floor
Hartford, CT 06106-5127

April 13, 2011

Coreen Kelsey
Environmental Coordinator
Vanasse Hangen Brustlin, Inc.
54 Tuttle Place
Middletown, CT 06457
(860) 632-1500 ext 2306

Subject: NDDDB Request #201102141
Communications Tower; 164 Old Colchester Rd
Quaker Hill, CT


Dear Coreen Kelsey,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided. Based on our current records, we do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the CT Department of Environmental Protection Bureau of Natural Resources and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have any questions (nancy.murray@ct.gov; 860-424-3589). Thank you for consulting the Natural Diversity Data Base and continuing to work with us to protect State listed species.

Sincerely


Nancy M. Murray
Biologist,
NDDDB Program Coordinator





**USFWS January 3, 2011
Telecommunications Policy Statement
and Federally-Listed Endangered and
Threatened Species in Connecticut
USFWS January 3, 2011
No Known Federally-Listed or
Endangered Species Letter**



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

January 3, 2011

To Whom It May Concern:

The U.S. Fish and Wildlife Service's (Service) New England Field Office has determined that individual project review for certain types of activities associated with communication towers is **not required**. These comments are submitted in accordance with provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Due to the rapid expansion of the telecommunication industry, we are receiving a growing number of requests for review of **existing** and **new** telecommunication facilities in relation to the presence of federally-listed or proposed, threatened or endangered species, critical habitat, wilderness areas and/or wildlife preserves. We have evaluated our review process for proposed communications towers and believe that individual correspondence with this office is not required for the following types of actions relative to **existing** facilities:

1. the re-licensing of existing telecommunication facilities;
2. audits of existing facilities associated with acquisition;
3. routine maintenance of existing tower sites, such as painting, antenna or panel replacement, upgrading of existing equipment, etc.;
4. co-location of new antenna facilities on/in existing structures;
5. repair or replacement of existing towers and/or equipment, provided such activities do not significantly increase the existing tower mass and height, or require the addition of guy wires.

In order to curtail the need to contact this office in the future for individual environmental review for **existing** communication towers or antenna facilities, please note that we are not aware of any federally-listed, threatened or endangered species that are being adversely affected by any existing communication tower or antenna facility in the following states: Vermont, New Hampshire, Rhode Island, Connecticut and Massachusetts. Furthermore, we are not aware of any **existing** telecommunication towers in federally-designated critical habitats, wilderness areas or wildlife preserves. Therefore, no further consultation with this office relative to the impact of the above referenced activities on federally-listed species is required.

January 3, 2011

Future Coordination with this Office Relative to New Telecommunication Facilities

We have determined that proposed projects are not likely to adversely affect any federally-listed or proposed species when the following steps are taken to evaluate new telecommunication facilities:

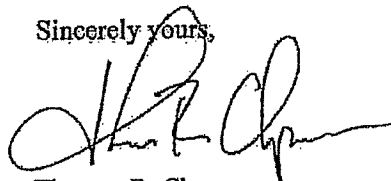
1. If the facility will be installed within or on an existing structure, such as in a church steeple or on the roof of an existing building, no further coordination with this office is necessary. Similarly, new antennas or towers in urban and other developed areas, in which no natural vegetation will be affected, do not require further review.
2. If the above criteria cannot be met, your review of our lists of threatened and endangered species locations within Vermont, New Hampshire, Rhode Island, Connecticut and Massachusetts may confirm that no federally-listed endangered or threatened species are known to occur in the town or county where the project is proposed.
3. If a listed species is present in the town or county where the project is proposed, further review of our lists of threatened and endangered species may allow you to conclude that suitable habitat for the species will not be affected. Based on past experiences, we anticipate that there will be few, if any, projects that are likely to impact piping plovers, roseate terns, bog turtles, Jesup's milk-vetch or other such species that are found on coastal beaches, riverine habitats or in wetlands because communication towers typically are not located in these habitats.

For projects that meet the above criteria, there is no need to contact this office for further project review. A copy of this letter should be retained in your file as the Service's determination that no listed species are present, or that listed species in the general area will not be affected. Due to the high workload associated with responding to many individual requests for threatened and endangered species information, we will no longer be providing response letters for activities that meet the above criteria. This correspondence and the species lists remain valid until January 1, 2012. Updated consultation letters and species lists are available on our website:

(<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm>)

Thank you for your cooperation, and please contact Mr. Anthony Tur of this office at 603-223-2541 for further assistance.

Sincerely yours,



Thomas R. Chapman
Supervisor
New England Field Office



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

January 3, 2011

To Whom It May Concern:

This project was reviewed for the presence of federally-listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm>

Based on the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service (Service) are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required.

This concludes the review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Anthony Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN CONNECTICUT**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Fairfield	Piping Plover	Threatened	Coastal Beaches	Westport, Bridgeport and Stratford
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	Westport and Stratford
	Bog Turtle	Threatened	Wetlands	Ridgefield and Danbury.
Hartford	Dwarf wedgemussel	Endangered	Farmington and Podunk Rivers	South Windsor, East Granby, Simsbury, Avon and Bloomfield.
Litchfield	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Sharon.
	Bog Turtle	Threatened	Wetlands	Sharon and Salisbury.
Middlesex	Roseate Tern	Endangered	Coastal beaches, islands and the Atlantic Ocean	Westbrook and New London.
	Piping Plover	Threatened	Coastal Beaches	Clinton, Westbrook, Old Saybrook.
	Puritan Tiger Beetle	Threatened	Sandy beaches along the Connecticut River	Cromwell, Portland
New Haven	Bog Turtle	Threatened	Wetlands	Southbury
	Piping Plover	Threatened	Coastal Beaches	Milford, Madison and West Haven
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	Branford, Guilford and Madison
	Indiana Bat	Endangered	Mines, Caves	
New London	Piping Plover	Threatened	Coastal Beaches	Old Lyme, Waterford, Groton and Stonington.
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	East Lyme and Waterford.
	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Waterford
Tolland	None			

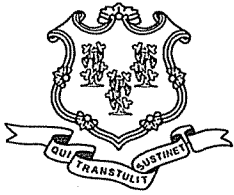
-Eastern cougar, gray wolf, Indiana bat, Seabeach amaranth and American burying beetle are considered extirpated in Connecticut.

-There is no federally-designated Critical Habitat in Connecticut.

7/31/2008

DEP

CORRESPONDENCE



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Inland Fisheries Division
Natural Diversity Data Base
79 Elm Street, 6th Floor
Hartford, CT 06106-5127



November 29, 2010

Coreen Kelsey
VHB Inc.
54 Tuttle Place
Middletown, CT 06457

Subject: Cell Tower-Waterford NE
Quaker Hill at 146 Old Colchester
Road

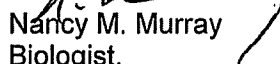
Dear Ms. Kelsey:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided and listed above. According to our information, there are no state listed species within the project area.

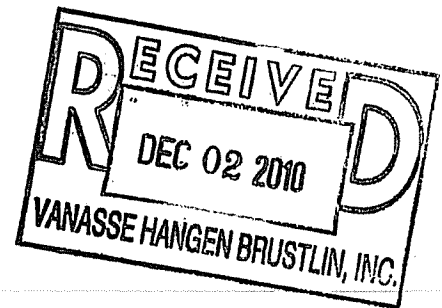
Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the proposed project has not been initiated within 12 months of this review, contact the NDDB for an updated review.

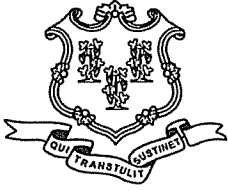
Please contact me if you have any questions (nancy.murray@ct.gov; 860-424-3589). Thank you for consulting the Natural Diversity Data Base and continuing to work with us to protect State listed species.

Sincerely


Nancy M. Murray
Biologist,
NDDB Program Coordinator

SIMS 6222



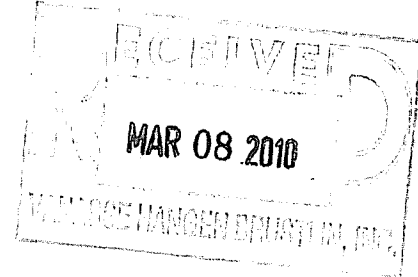


STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



February 26, 2010

Ms. Coreen Kelsey
VHB
54 Tuttle Place
Middletown, CT 06457



Re: 164 Old Colchester Road, Quaker Hill

Dear Ms. Kelsey:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided and listed above. According to our information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species at the site in question.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Environmental and Geographic Information Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions regarding this information (424-3585). Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

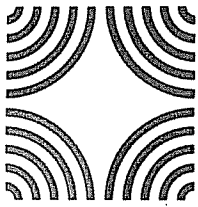
Nancy Murray
Biologist/Senior Environmental Analyst NDDDB
Program Coordinator

NM/blm

cc: NDDDB #17513

SHPO

DETERMINATION



March 25, 2011

David Bahlman
Division Director
Deputy State Historic Preservation Officer

Historic Preservation
and Museum Division

One Constitution Plaza
Second Floor
Hartford, Connecticut
06103

860 256 2800
860 256.2763 (fx)

Ms. Coreen Kelsey
Environmental Coordinator
VHB, Inc.
54 Tuttle Place
Middletown, CT 06457

Subject: Proposed Verizon Wireless Telecommunications Facility,
146 Old Colchester Road, Waterford, Connecticut.

Dear Ms. Kelsey:

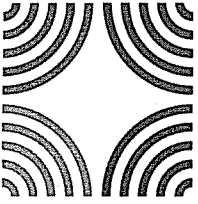
The State Historic Preservation Office has reviewed the above-named project. The project consists of the construction of a ±130-foot tall monopole telecommunications tower and associated ground facilities in Waterford, Connecticut. The facilities will be constructed in a 50' by 50' fence-enclosed compound. Access to the facilities will be provided by a 20-foot wide access and utility easement extending northeastward from the tower to Old Colchester Road. SHPO has previously commented on an alternate location for this tower, noting that in our opinion the facilities then proposed for 164 Old Colchester Road would have no adverse effect on historic properties.

SHPO finds that the archaeological investigations undertaken by Heritage Consultants, LLC, are in compliance with our *Environmental Review Primer for Connecticut's Archaeological Resources*. Heritage recovered no artifacts or other evidence of archaeological resources within the area of potential (direct) effects during their survey of the proposed facilities at 146 Old Colchester Road. As previously noted by SHPO in regards to the nearby architectural resources, it is our opinion that the Colonial Revival Style house at 116 Old Colchester Road lacks integrity and is therefore not eligible for listing in the National Register of Historic Places. Based on the information that you have provided, SHPO expects that the proposed construction of telecommunications facilities at 146 Old Colchester Road will have no adverse effect on historic properties.

This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking. This comment is provided in accordance with the National Historic Preservation Act.

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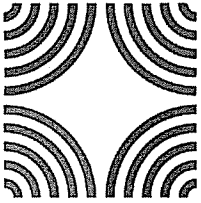


Kelsey – Telecommunications Facilities at 146 Old Colchester Rd, Waterford
March 25, 2011
(Page 2/2)

For further information, please contact Daniel Forrest, Staff Archaeologist, at
(860) 256-2761 or Daniel.Forrest@ct.gov.

Sincerely,

David Bahlman
Deputy State Historic Preservation Officer



June 16, 2010

Historic Preservation
and Museum Division

One Constitution Plaza
Second Floor
Hartford, Connecticut
06103

860.256.2800
860.256.2763 (f)

Ms. Coreen Kelsey
Environmental Coordinator
VHB, Inc.
54 Tuttle Place
Middletown, CT 06457

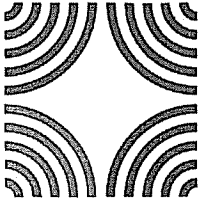
Subject: Proposed Verizon Wireless Telecommunications Facility, 164 Old Colchester Road, Waterford, Connecticut.

Dear Ms. Kelsey:

The State Historic Preservation Office has reviewed the above-named project. The project consists of the construction of a ±150-foot tall monopole telecommunications tower and associated ground facilities in Waterford, Connecticut. The facilities will be constructed in a 50' by 58' fence-enclosed compound. Access to the facilities will be provided by an access and utility easement extending across the roughly 1,100 feet separating the ground facilities from Old Colchester Road. SHPO had previously reviewed the potential effects of this project on a historic property at 116 Old Colchester Road. A Colonial-Revival style house listed on the National Register of Historic Places at this address would be within the viewshed of the new telecommunications tower; however, SHPO believes that the house at 116 Old Colchester Road has been modified to a significant degree and no longer retains its architectural integrity. For this reason, it is SHPO's opinion that this project will have no adverse effect on architectural resources within the Area of Potential Effects (APE). Based on our review of the submitted "Phase I Cultural Resources Reconnaissance Survey" report prepared by Heritage Consultants, LLC, SHPO finds that the archaeological investigations undertaken by Heritage are in compliance with our *Environmental Review Primer for Connecticut's Archaeological Resources*. We note that the majority of the APE for direct effects has been subject to significant prior ground disturbance. Heritage found no intact natural soils during a subsurface survey and recovered no artifacts or other evidence of archaeological resources within the APE. Based on the information that you have provided, SHPO expects that the proposed undertaking will have no adverse effect on significant architectural resources and no effect on archaeological resources listed on or eligible for the National Register of Historic Places.

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Telecommunications Facilities at 164 Old Colchester Rd, Waterford
June 16, 2010
(Page 2/2)

This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking. This comment is provided in accordance with the National Historic Preservation Act.

For further information, please contact Mr. Daniel Forrest, Staff Archaeologist, at (860) 256-2761 or Daniel.Forrest@ct.gov.

Sincerely,

David Bahlman
Deputy State Historic Preservation Officer

cc: Bellantoni/OSA

General Power Density

Site Name: Waterford NE Site # 1
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	3	442	1326	130	0.0282	1.0	2.82%
VZW Cellular	869	9	361	3249	130	0.0691	0.579333	11.93%
VZW 700	757	1	622	622	130	0.0132	0.497333	2.66%

Total Percentage of Maximum Permissible Exposure

17.42%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

General Power Density

Site Name: Waterford NE Site # 2
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	3	422	1266	150	0.0202	1.0	2.02%
VZW Cellular	869	9	351	3159	150	0.0505	0.579333	8.72%
VZW 700	757	1	606	606	150	0.0097	0.497333	1.95%

Total Percentage of Maximum Permissible Exposure

12.69%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.