Transportation
Land Development
Environmental
Services

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Memorandum

To: Ms. Alexandria Carter
Verizon Wireless
99 East River Drive
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Date: April 2, 2010

Project No.: 41479.42

From: Dean Gustafson
Professional Soil Scientist

Re: Wetlands Evaluations
Potential Alternate Site Locations
East Woodstock Facility
445 Prospect Street
Woodstock, Connecticut

Vanasse Hangen Brustlin, Inc. (VHB) conducted a field visit on March 19, 2010 to investigate four potential alternate site locations based on discussions with the Connecticut Siting Council at its Public Hearing on March 11, 2010 for Docket No. 397. During that hearing, potential alternate locations for the proposed Verizon Wireless East Woodstock facility (Facility) were identified in the eastern portion of the Rich Farm property and in a location just to the northeast of the Alternate Site Location (located near the property owner's barn) along the same elevation in the farm field. The main purpose was to determine if these alternatives could further minimize visual impacts while satisfying the radio frequency coverage objectives. An Alternate Sites Evaluation Map is attached depicting the locations of four potential alternate sites that were investigated. Photographs are provided in the attached Photolog Documentation. Provided below is a brief discussion of each alternative location and their associated wetland constraints.

Potential Alternative Site Locations A, B & C

All of these potential site locations share a similar proposed access route. An existing farm road provides access to the eastern portion of the Rich Farm along the southern property boundary from Prospect Street (Photos 1 & 2). This dirt access drive is generally 10 to 12 feet wide, with the narrowest portion traversing an existing wetland crossing along the southern property boundary. A wetland delineation was performed in proximity to anticipated development areas associated with all three of these potential alternate sites (A, B & C) in order to more fully evaluate possible wetland impacts. Wetland flags WF 3-51 to 3-65 and WF 3-66 to 3-77 define the wetland limits to the north and south, respectively, of the existing farm access. Some relatively minor temporary and permanent wetland impacts would likely be required to improve the existing wetland crossing. In addition, as the existing access road turns north once it moves beyond the wetland crossing it crosses a narrow intermittent watercourse and wetland system that is draining a forested wetland system to the west (Photos 4 & 5). Wetland flag series WF 3-22 to 3-42 and WF 3-43 to 3-50 represent the limits of this wetland system. The existing farm road crossing consists of a stone and cobble base with a slight depression where the intermittent watercourse flows through.

In total, improvements to this existing access would result in approximately 2,500 square feet of wetland impact. The existing farm road is fairly level with some areas of moderate grade. Improvements to this road are feasible from a construction perspective. Total wetland impacts would consist of both temporary and permanent impacts isolated to exiting disturbed wetland edges. Further detailed design analysis could likely result in additional minimization of wetland impacts. Regardless, the resultant wetland impact would not likely be considered a significant adverse impact to wetland resources. This conclusion is based on the fact that an existing wetland crossing would be improved and wetland impacts would be isolated to existing disturbed wetland edges.

The first potential alternative site reviewed is identified as Potential Alternative Site Location C, located in an open old hayfield in the southeast corner of the site, just south of the intermittent watercourse crossing (Photo 3). Although this location is feasible from a construction and wetland impact standpoint, it is less than 400 feet north of two homes (399 & 401 Prospect Street). These homes were clearly visible through the trees from this field at the time of the site inspection and would have at least seasonal visibility to the base of a tower facility at this location. Therefore, due to visibility concerns this location was deemed not feasible.

As you follow the existing farm road further north beyond the intermittent watercourse crossing, a second larger old hayfield is encountered (Photo 6). A windrow of trees is located along the west side of this field with the perennial stream outfall from the farm pond (Prospect Street Pond) and bordering wetland system flowing south within 50 to 100 feet of the tree line. At the north end of this field, Potential Alternate Site Location B was selected and evaluated (Photo 7). The area is fairly level and is underlain by Canton and Charlton soils (soil symbol – 61), which are well drained friable glacial till soils. These soils are not classified as Prime Farmland or Farmland of Statewide Importance Soils; refer to attached Farmland Classification Soil Map. Wetlands are located approximately 50 feet to the northwest (pond/stream wetland system) and to the northeast, an area that provides cryptic type vernal pool habitat. Chorusing wood frogs and observation of adult wood frogs were noted during the field inspection. No disturbance to mature upland forest habitat would be required for development of Potential Alternate Site Location B. Drainage from this location would flow to the south/southeast away from the nearest wetland systems, eventually making its way into the wetland system to the south after traveling more than 250 feet through the hayfield. In addition, if this location was selected as the preferred alternative, seasonal restrictions (i.e., no construction between March 1 and May 15) along with special precautions during construction (i.e., amphibian sweeps, erosion and sedimentation control inspections, contractor awareness program, etc.) would be recommended to avoid temporary impacts to the nearby special aquatic habitat during construction.

A third site was investigated further north of Location B, identified as Potential Alternate Site Location A in a predominately mature white pine forest (Photo 8) that separates the farm pond from the vernal pool wetland. The western third of this upland habitat contains relatively steep slopes down to the pond (Photo 9) while the eastern side is relatively level with a slight pitch to the east into the vernal pool wetland (Photo 10). In order to avoid the steep slope section, positioning a Facility in this part of the property would require development and grading right to the wetland edge, and possibly into the vernal pool wetland system. In addition, several large mature white pines would need to be removed to make room for a Facility in this location. Due to the importance of the mature forested upland habitat supporting the adjoining vernal pool habitat and the potential for direct impact to the vernal pool wetland, this alternate location was not deemed feasible.

Potential Alternate Site Location D

Potential Alternate Site Location D is located partly between the Currently Proposed Site Location and the Alternate Site Location and slightly to the east in the northwest portion of the Rich Farm. The primary intent of investigating a Facility in this location was to determine if additional visual

buffering could be afforded to a 2.52-acre parcel that was retained by Arthur and Phyllis Kuper (for a possible future residence) from the farmland preservation restriction that encumbers the remainder of their farm. Although Potential Alternate Site Location D is located further from the Kuper parcel than the Currently Proposed Site Location, it is located closer than the Alternate Site Location near one of the barns on the Rich Farm. In addition, Location D is positioned in the middle of a currently cultivated hayfield which is classified as Farmland of Statewide Importance; an access drive would also cut through the middle of the hayfield and designated soils. This location also contains moderately steep slopes (e.g., 10 to 15 %) which would require extensive grading for the Facility and access road. Since this location does not provide additional visual buffering to the Kuper parcel than the Alternate Site Location, would require impact to an actively cultivated hayfield classified as Farmland of Statewide Importance and would require extensive grading for a Facility and access road to this location, Potential Alternate Site Location D was not deemed feasible.

Based on the results of this investigation, Potential Alternate Site Location B was considered the preferred alternative and a subsequent preliminary visual analysis was performed on March 19, 2010. The results of this preliminary visual analysis are presented under separate cover.

Enclosures

Vanasse Hangen Brustlin, Inc.
PHOTOLOG DOCUMENTATION
Proposed East Woodstock Verizon Wireless Facility – Alternatives Analysis
445 Prospect Street, Woodstock, Connecticut
March 19, 2010

Photo 1: View of existing farm road along south property boundary (stone wall), looking west to Prospect Street in background.

Photo 2: View of existing farm road, looking east from Prospect Street.

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PHOTOLOG DOCUMENTATION
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Photo 3: View of south old hayfield at Potential Alternate Site Location C, looking east from existing farm road.

Photo 4: View of intermittent watercourse crossing of existing farm road, looking south.

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Photo 5: Close view of intermittent watercourse crossing, looking west along flow direction.

Photo 6: View of north old hayfield at Potential Alternate Site Location B (balloons visible), looking north from farm road.

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Photo 7: Close view of Potential Alternate Site Location B (north edge of Facility just south of tree line), looking north/northeast.

Photo 8: View of Potential Alternate Site Location A (mature white pine forest), looking south.

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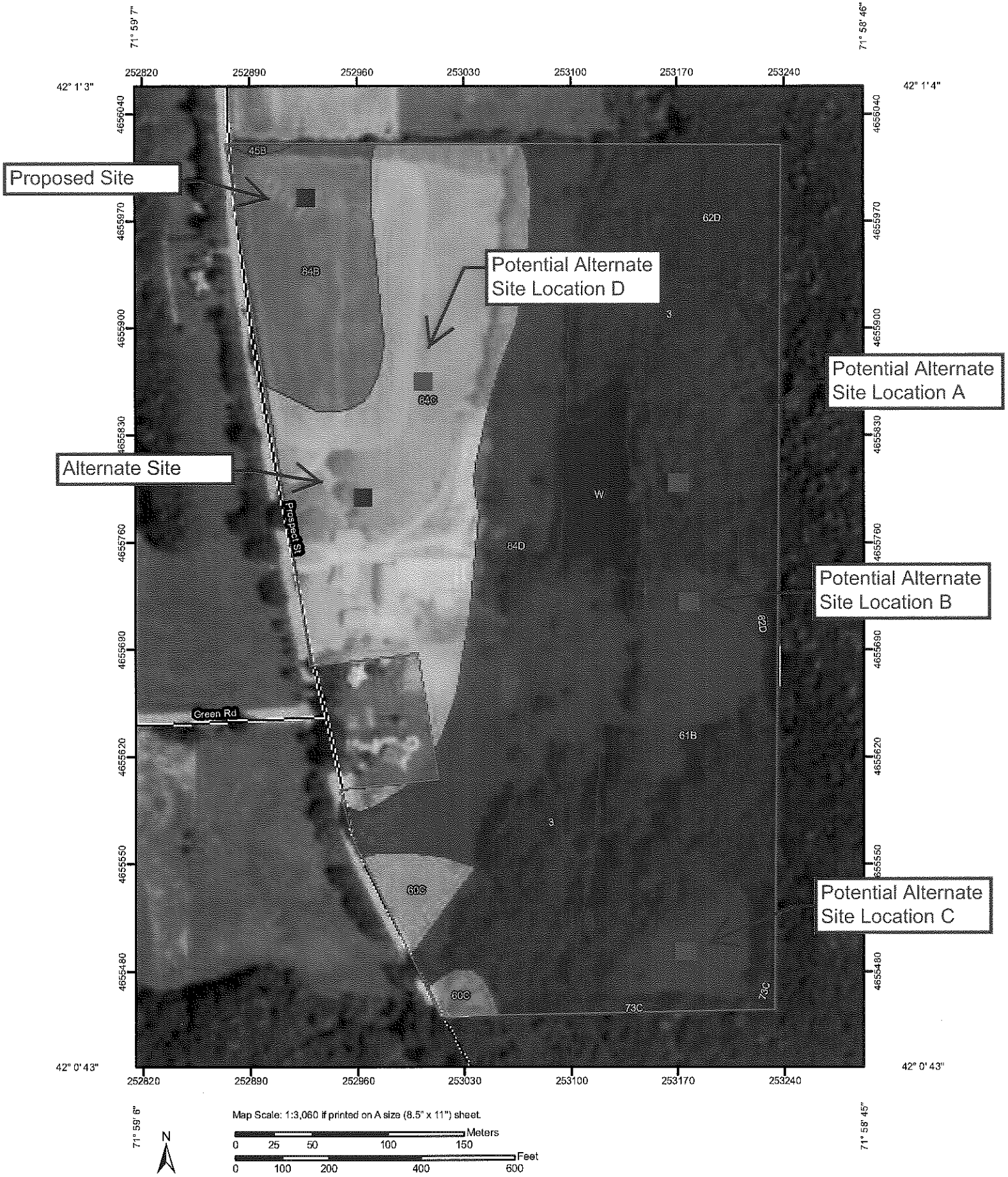
Photo 9: View of slope down to pond (to the right) at Potential Alternate Site Location A, looking south/southwest.

Photo 10: View of vernal pool habitat adjacent to Potential Alternate Site Location A, looking northeast.

Farmland Classification—State of Connecticut
(Verizon Wireless East Woodstock Facility, 445 Prospect St., Woodstock, CT)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:3,060 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 7, Dec 3, 2009

Date(s) aerial images were photographed: 7/17/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — State of Connecticut				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, extremely stony	Not prime farmland	8.5	20.3%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	All areas are prime farmland	0.1	0.1%
60C	Canton and Charlton soils, 8 to 15 percent slopes	Farmland of statewide importance	0.9	2.2%
61B	Canton and Charlton soils, 3 to 8 percent slopes, very stony	Not prime farmland	9.8	23.3%
62D	Canton and Charlton soils, 15 to 35 percent slopes, extremely stony	Not prime farmland	2.4	5.7%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	Not prime farmland	0.2	0.4%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	All areas are prime farmland	3.5	8.3%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	Farmland of statewide importance	9.3	22.1%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	Not prime farmland	6.0	14.3%
W	Water	Not prime farmland	1.4	3.4%
Totals for Area of Interest			**41.9**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The majority of soil attributes are associated with a component of a map unit, and such an attribute has to be aggregated to the map unit level before a thematic map can be rendered. Map units, however, also have their own attributes. An attribute of a map unit does not have to be aggregated in order to render a corresponding thematic map. Therefore, the "aggregation method" for any attribute of a map unit is referred to as "No Aggregation Necessary".

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.