

# Wind Power GeoPlanner™

## Communication Tower Study

Bluestone Wind Project



Prepared on Behalf of  
Bluestone Wind, LLC

May 3, 2018



**COMSEARCH**  
A CommScope Company



## **Table of Contents**

<b>1. Introduction</b>	<b>- 1 -</b>
<b>2. Summary of Results</b>	<b>- 1 -</b>
<b>3. Discussion of Separation Distances</b>	<b>- 5 -</b>
<b>4. Conclusions</b>	<b>- 5 -</b>
<b>5. Contact Us</b>	<b>- 6 -</b>

## **1. Introduction**

This Communication Tower Study was performed for the Bluestone Wind Project in Broome County, New York to identify the tower structures as well as FCC-licensed communication antennas that fall within the project area plus an extended 2-mile buffer from the project boundary. This information is useful in the planning stages of the wind energy facilities to identify turbine setbacks and to prevent disruption to the services provided by the tenants on the towers. This data can be used in support of the wind energy facilities communications needs in addition to avoiding any potential impact to the current communications services provided in the region.

## **2. Summary of Results**

The communication towers and antennas in the study area were derived from a variety of sources including the FCC's Antenna Structure Registration (ASR) database, Universal Licensing System (ULS), national and regional tower owner databases, and the local planning and zoning boards. The data<sup>1</sup> was imported into GIS software and the structures mapped in the wind energy area of interest. Each tower location is identified with a unique ID number associated with detailed structure and contact information provided in a spreadsheet attachment.

Six tower structures and thirty-nine communication antennas were identified within the project area plus an extended 2-mile buffer from the project boundary using the data sources described in our methodology above. The structures identified contain six of the thirty-nine communication antennas. The remaining antennas may be located on a variety of structure types such as guyed towers, monopoles, silos, rooftops or portable structures. The specific type of structure would normally need to be determined by an on-site visit.

Detailed information about the tower structures and communication antennas is provided in Table 1 and Table 2 including location coordinates, structure height above ground level, and owner-operator name<sup>2</sup>.

A discussion of turbine setback distances is provided in section three.

---

<sup>1</sup> Comsearch makes no warranty as to the accuracy of the data included in this report beyond the date of the report. The data provided in this report is governed by Comsearch's data license notification and agreement located at [http://www.comsearch.com/files/data\\_license.pdf](http://www.comsearch.com/files/data_license.pdf).

<sup>2</sup> Please note that this report analyzes all known operators on the towers from data sources available to Comsearch. Unidentified operators may exist on the towers due to unlicensed or federal government systems, mobile phone operators with proprietary locations, erroneous data on the FCC license, and other factors beyond our control.

Tower ID	ASR Number	Owner	Structure Height AGL (m)	Latitude (NAD83)	Longitude (NAD83)
Tower001	N/A	American Tower	60.4	42.04060278	-75.52681944
Tower002	N/A	American Tower	36.1	42.04630083	-75.54440000
Tower003	N/A	SBA	30.8	42.05972222	-75.42202433
Tower004	N/A	Crown Castle	54.9	42.07565000	-75.60605800
Tower005	1006147	Crown Castle	76.8	42.09600000	-75.60350000
Tower006	1005517	American Tower	95.4	42.13083333	-75.42947222

Table 1: Summary of Tower Structures

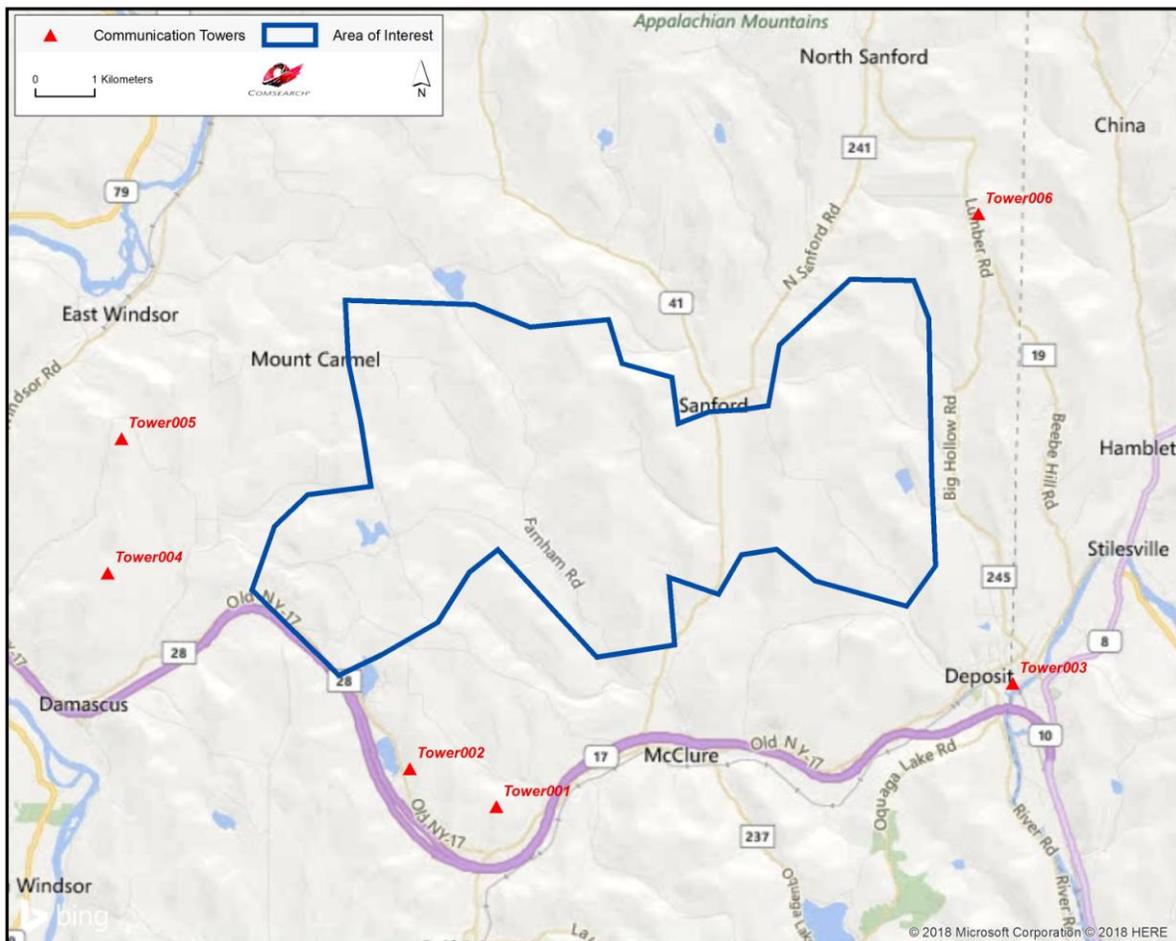


Figure 1: Towers within or near the Area of Interest



ID	Tower ID	Callsign	Service Type	Licensee	Antenna Height AGL (m)	Latitude (NAD83)	Longitude (NAD83)
1		WQXL756	Land Mobile	DELAWARE OTSEGO CORPORATION/ NEW YORK SUSQUEHANNA & WESTERN RAILROAD	12.2	42.05166667	-75.44194444
2		WNVD201	Land Mobile	New York, State of	4.0	42.05758333	-75.49016667
3	Tower003	WQVY853	Microwave	T-Mobile License LLC	24.38	42.05972222	-75.42202778
4	Tower003	WQDB435	Land Mobile	NPCR, Inc.	31.1	42.05972222	-75.42202778
5		KIR720	Land Mobile	DEPOSIT, VILLAGE OF	12.0	42.06063889	-75.42488889
6		WQYD776	Microwave	T-Mobile License LLC	57.91	42.06197222	-75.56991667
7		WQDX581	Land Mobile	Deposit Central Schools	33.5	42.06197222	-75.56994444
8		WQIW290	Land Mobile	NEW YORK STATE ELECTRIC & GAS CORPORATION	61.0	42.06197222	-75.56994444
9		WQPV652	Land Mobile	BROOME, COUNTY OF	31.0	42.06202778	-75.57000000
10		WQRN496	Land Mobile	BROOME, COUNTY OF	31.0	42.06202778	-75.57000000
11		WQZF733	Land Mobile	Broome County Emergency Services	33.5	42.06205556	-75.56994444
12		WQZF734	Land Mobile	Broome County Emergency Services	33.5	42.06205556	-75.56994444
13		WQZF733	Microwave	Broome County Emergency Services	33.53	42.06205556	-75.56994444
14		WPLY807	Land Mobile	BROOME, COUNTY OF	46.0	42.06230556	-75.56936111
15		KKL552	Land Mobile	BROOME, COUNTY OF	31.0	42.06230556	-75.56908333
16		KKL552	Land Mobile	BROOME, COUNTY OF	23.0	42.06230556	-75.56908333
17		KKL552	Land Mobile	BROOME, COUNTY OF	3.1	42.06230556	-75.56908333
18		WDT328	Land Mobile	BROOME, COUNTY OF	18.0	42.06230556	-75.56908333
19		WNVC996	Land Mobile	New York, State of	6.0	42.06230556	-75.56908333
20		KED639	Land Mobile	BROOME, COUNTY OF	31.0	42.06230556	-75.56908333
21		KSJ590	Land Mobile	STATE OF NEW YORK DIVISION OF STATE POLICE	47.0	42.06230556	-75.56908333
22		WNAZ708	Land Mobile	BROOME, COUNTY OF	24.0	42.06230556	-75.56908333
23		WNQR312	Land Mobile	WINDSOR CENTRAL SCHOOL DISTRICT	43.3	42.06230556	-75.56908333
24		WPIW501	Land Mobile	New York State Electric & Gas Corporation	30.0	42.06230556	-75.56908333
25		WPIZ922	Land Mobile	New York State Electric & Gas Corporation	30.0	42.06230556	-75.56908333
26		WQXU815	Land Mobile	Broome, County of	54.9	42.06230556	-75.56908333
27		WQRY386	Land Mobile	CONWAY, ROBERT, J: CONWAY, THOMAS, J	59.4	42.06233333	-75.56894444
28		WQXU815	Land Mobile	Broome, County of	12.2	42.06269444	-75.42255556
29		WQDX581	Land Mobile	Deposit Central Schools	18.3	42.06663889	-75.41891667
30		KEG470	Land Mobile	BINGHAMTON VOLUNTEER FIRE CO INC	21.0	42.06675000	-75.54963889
31		KBL394	Land Mobile	DELAWARE COUNTY	18.0	42.07258333	-75.40294444

ID	Tower ID	Callsign	Service Type	Licensee	Antenna Height AGL (m)	Latitude (NAD83)	Longitude (NAD83)
32	Tower004	WQTG897	Microwave	Uniti Fiber PEG, LLC	32	42.07613889	-75.60583333
33		WNZS287	Land Mobile	DEPOSIT, VILLAGE OF	18.0	42.09452778	-75.44655556
34	Tower005	KNKA578	Cellular	Bell Atlantic Mobile Systems of Allentown, Inc.		42.09600000	-75.60350000
35	Tower005	WMM872	Microwave	Binghamton MSA Limited Partnership(NY)	74.98	42.09600000	-75.60350000
36		WQPV652	Land Mobile	BROOME, COUNTY OF	54.9	42.12913889	-75.42950000
37		WQRN496	Land Mobile	BROOME, COUNTY OF	54.9	42.12913889	-75.42950000
38	Tower006	WRAK568	Land Mobile	REPEATER NETWORK LLC	94.5	42.13083333	-75.42947222
39		WQUI560	Land Mobile	Binghamton Psychiatric Center	21.0	42.13341667	-75.54963889

Table 2: Summary of Communication Antennas

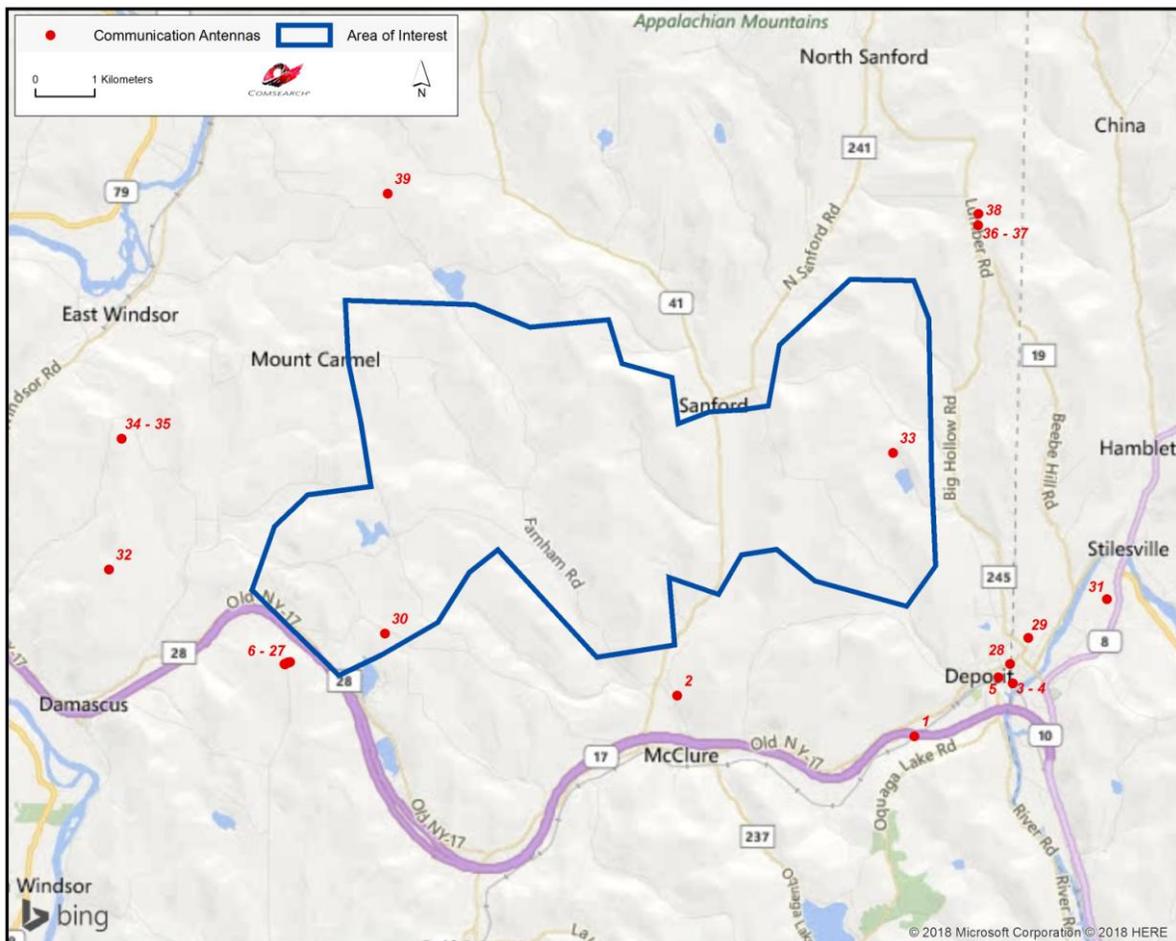


Figure 2: Communication Antennas within or near the Area of Interest

### **3. Discussion of Separation Distances**

In planning the wind energy turbine locations, a conservative approach would dictate not locating any turbines in close proximity to existing tower structures to avoid any possible impact to the communications services provided by the structures. Reasonable distance between communication towers and wind turbine towers is a function of two things: (1) the physical turning radius of the wind turbine blades and (2) the characteristics of the communication systems on the communication tower.

Since wind turbine blades can rotate 360°, the first consideration of separation distance to other structures is clearance of the blades. If the blade radius is 50 meters, then a separation distance greater than 50 meters is necessary. From a practical standpoint, a setback distance greater than the maximum height of the turbine is necessary to insure a “fall” safety zone in the unlikely event of a turbine tower failure. Setback requirements for “fall” safety are typically specified by the local zoning ordinances.

The required separation distance based on the characteristics of the communication systems will vary depending on the type of communication antennas that are installed on the tower. For example, AM broadcast antennas should be separated by distances that allow for normal coverage which can extend up to 3 kilometers. For land mobile and mobile phone systems, setback distances are based on FCC interference emission limits from electrical devices in the land mobile and mobile phone frequency bands.

Finally, the tower structures identified could be a potential benefit in support of communications network needs for the wind energy facility. An example would be the implementation of a Supervisory Control and Data Acquisition (SCADA) system that monitors and provides communications access to the wind energy facility.

### **4. Conclusions**

Our study identified six tower structures and thirty-nine communication antennas within the project area plus an extended 2-mile buffer from the project boundary. They are used for microwave, land mobile and cellular services in the area.



## **5. Contact Us**

For questions or information regarding the Communication Tower Study, please contact:

Contact person: David Meyer  
Title: Senior Manager  
Company: Comsearch  
Address: 19700 Janelia Farm Blvd., Ashburn, VA 20147  
Telephone: 703-726-5656  
Fax: 703-726-5595  
Email: [dmeyer@comsearch.com](mailto:dmeyer@comsearch.com)  
Web site: [www.comsearch.com](http://www.comsearch.com)