

# Wind Power GeoPlanner™

## Communication Tower Study

Baron Wind Farm



Prepared on Behalf of  
Baron Winds LLC

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**COMSEARCH**  
A CommScope Company

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## 1. Introduction

This Communication Tower Study was performed for the Baron Wind Farm project in Struben County, NY to identify the tower structures as well as FCC-licensed communication antennas that exist within the project area. 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.

Two tower structures and four communication antennas were identified within the Baron Wind Farm project area using the data sources described in our methodology above. The structures found were identified using aerial imagery, neither of which are registered with the FCC. These tower sites contain a licensed microwave and a licensed FM antenna. Tower001 may also contain a licensed Land Mobile antenna which is licensed close to the tower site. The remaining 3650 MHz antenna (ID 3) appears to be located at an electrical power substation.

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>. The FM antenna was found to have inaccurate coordinates in the FCC license. The coordinates have been corrected using aerial imagery.

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

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<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.



ID	Tower ID	Callsign	Service Type	Licensee	Antenna Height AGL (m)	Latitude (NAD83)	Longitude (NAD83)
1		KED916	Land Mobile	State Of NY Division Of State Police	24/36	42.473111	-77.532778
2	Tower001	WCIK	FM	Family life ministries, inc.	56.0	42.471441	-77.534093
3		WQSG754	Microwave (3650 MHz)	Avangrid Networks, Inc.	unknown	42.439722	-77.530139
4	Tower002	WQSX432	Microwave	Uniti Fiber LLC	44.2	42.433667	-77.568083

*Table 2: Summary of Communication Antennas*

### 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 two tower structures and four communication antennas within the project area. They are used for microwave, FM and land mobile services in the area. Detailed impact assessments should be performed for each service type.

## **5. Contact Us**

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

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