

Wind Power GeoPlanner™

Land Mobile & Emergency Services Report

Cassadaga



Prepared on Behalf of
Cassadaga Wind LLC

February 27, 2015



COMSEARCH
A CommScope Company

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1. Introduction

An assessment of the emergency services in the Cassadaga wind energy project area was performed by Comsearch to identify potential impact from the planned turbines. We evaluated the registered frequencies for the following types of first responder entities: police, fire, emergency medical services, emergency management, hospitals, public works, transportation and other state, county, and municipal agencies. We also identified all industrial and business land mobile radio (LMR) systems and commercial E911 operators within the proposed wind energy facility boundaries. This information is useful in the planning stages of the wind energy facility because the data can be used in support of facility communications needs and to evaluate any potential impact on the emergency services provided in that region. An overview of the project area, which is located in Chautauqua County, New York, appears in Figure 1.



Figure 1: Area of Interest (AOI)

2. Summary of Results

Our land mobile and emergency services incumbent data¹ was derived from the FCC's Universal Licensing System (ULS) and the FCC's Public Safety & Homeland Security bureau. We identified both site-based licenses as well as regional area-wide licenses designated for public safety use.

Site-Based Licenses

The site-based licenses were imported into GIS software and geographically mapped relative to the wind energy project area of interest as defined by the customer. Each site on the map was given an ID number and associated with site information in a data table. A depiction of the fixed-site licenses in and around the project area appears in Figure 2.

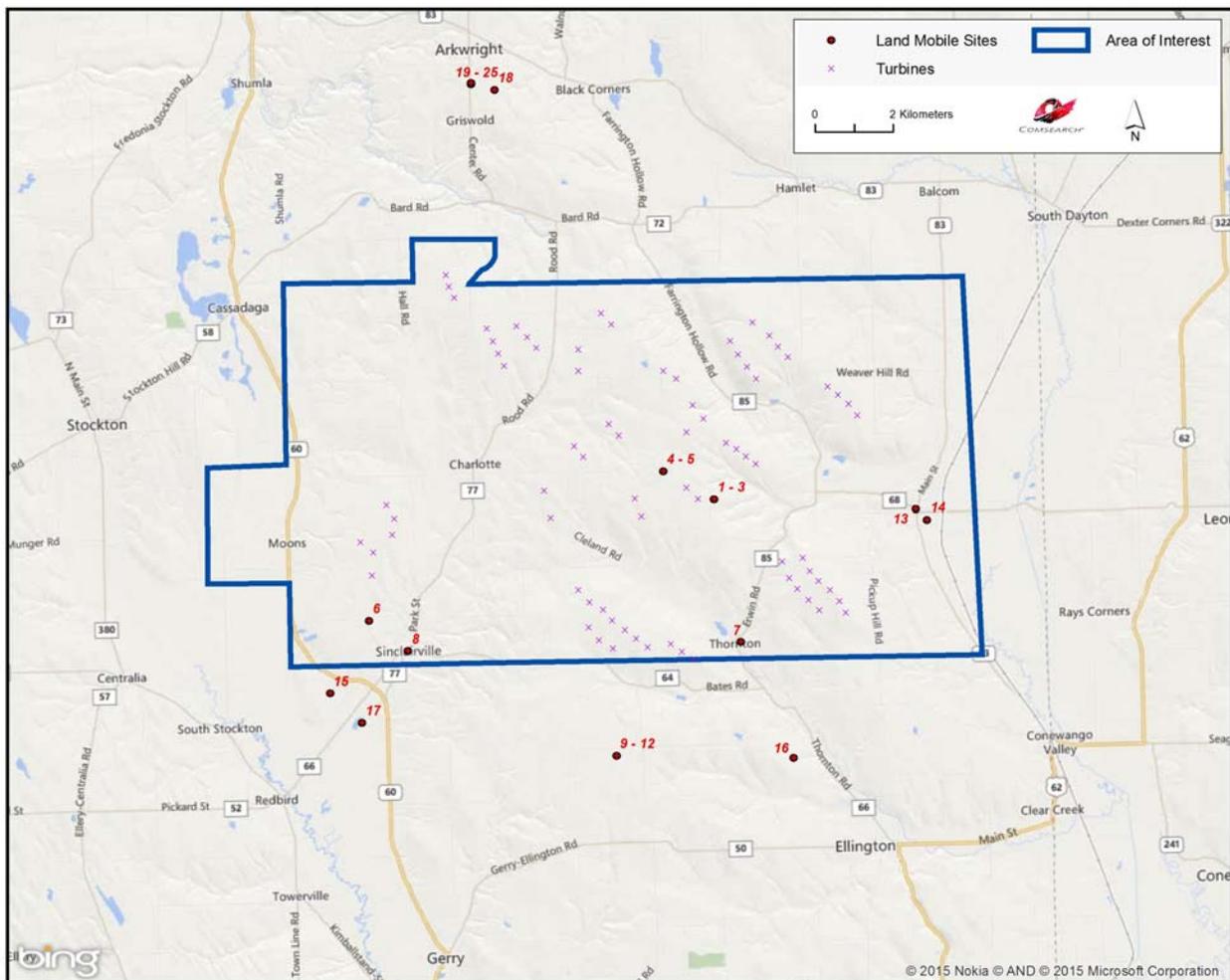


Figure 2: Land Mobile & Emergency Service Sites near Area of Interest

¹ Comsearch makes no warranty as to the accuracy of the data included in this report beyond the date of the report. The data presented in this report is derived from the land mobile station's FCC license and governed by Comsearch's data license notification and agreement located at http://www.comsearch.com/files/data_license.pdf

Figure 2 identifies twenty-five site-based licenses near the Cassadaga wind energy project area of interest. Specific information about these sites is provided in Table 1.

ID	Call Sign	Frequency Band (MHz)	Licensee	Antenna Height AGL (m)	Latitude (NAD83)	Longitude (NAD83)	Distance to Nearest Turbine (km)
1	WQUE640	150-174	Chautauqua, County of	74.1	42.297500	-79.163056	0.40
2	WQUZ436	150-174	Chautauqua, County of	74.1	42.297500	-79.163056	0.40
3	WQUZ756	150-174	Chautauqua, County of	74.1	42.297500	-79.163056	0.40
4	KED908	25-50, 150-174	New York Division of State Police	27.0	42.304222	-79.178667	0.74
5	WPMW661	220-222	New York Division of State Police	27.0	42.304222	-79.178667	0.74
6	WQAR919	800/900	NPCR, Inc.	83.8	42.271111	-79.271111	1.17
7	WNIX731	150-174	National Ski Patrol System, Inc.	9.0	42.264500	-79.155611	1.28
8	KYS866	25-50	Sinclairville Volunteer Fire Co.	17.0	42.263944	-79.259222	2.15
9	KJU947	150-174	New York Department of Environmental Conservation	43.0	42.238667	-79.195056	2.77
10	KJU947	150-174	New York Department of Environmental Conservation	49.0	42.238667	-79.195056	2.77
11	KNCN264	150-174	New York Department of Environmental Conservation	30.0	42.238667	-79.195056	2.77
12	WNID702	150-174	New York Department of Environmental Conservation	30.0	42.238667	-79.195056	2.77
13	KBW774	25-50	Cherry Creek Fire District	11.0	42.294222	-79.100306	2.84
14	WNRA948	25-50	Steuben Rural Electric Cooperative, Inc.	15.0	42.291722	-79.096972	3.05
15	KVR745	25-50	Cassadaga Valley Central School System	30.0	42.254500	-79.283667	3.22
16	WNCU997	450-470	Don Frame Trucking, Inc.	58.0	42.237278	-79.140056	3.61
17	WPDQ581	450-470	Tri James Services, Inc.	6.0	42.247556	-79.273944	3.80
18	WPLR869	450-470	Faith Broadcasting Network, Inc.	323.0	42.393389	-79.228667	4.93
19	KAN682	450-470	Chautauqua County EMS	58.0	42.394778	-79.235889	4.95

ID	Call Sign	Frequency Band (MHz)	Licensee	Antenna Height AGL (m)	Latitude (NAD83)	Longitude (NAD83)	Distance to Nearest Turbine (km)
20	KEB392	150-174	Chautauqua, County of	58.0	42.394778	-79.235889	4.95
21	KEB909	25-50	Chautauqua, County of	46.0	42.394778	-79.235889	4.95
22	WPVX592	150-174	Chautauqua, County of	45.7	42.395056	-79.235889	4.99
23	WQUD320	150-174	Chautauqua, County of	50.3	42.395056	-79.235889	4.99
24	WQUU282	150-174	Chautauqua, County of	50.3	42.395056	-79.235889	4.99
25	WQVE292	150-174	Chautauqua, County of	50.3	42.395056	-79.235889	4.99

Table 1: Land Mobile & Emergency Service Sites in Area of Interest

Area-Wide Licenses

The regional area-wide licenses are compiled from FCC data sources and identified for each county in the wind project area. The Chautauqua wind energy project is located in Chautauqua County, New York, part of Public Safety Region #55, which contains all of the counties in Western New York and the Finger Lakes region. The regional public safety operation is overseen by the entity listed below.

Steven C. Sharpe

Chairperson

Genesee County Director of Emergency Communications

165 Park Road

Batavia, NY 14020

phone: 585-345-3000 ext. 3400

fax: 585-343-9129

email: ssharpe@co.genesee.ny.us

The chairperson for Region #55 is a representative for all public safety entities in the region and is responsible for coordinating current and future public safety use in the wireless spectrum. In the bands licensed by the FCC for area-wide first responders, which include 220 MHz, 700 MHz, 800 MHz and 4.9 GHz, as well as the traditional Part 90 public safety pool of frequencies, twenty-six licenses were found for the State of New York and ten for the County of Chautauqua (see Table 2). These area-wide licenses are designated for mobile use only.

ID	Licensee	Area of Operation	Frequency Band (MHz)
1	American National Red Cross	Statewide: New York	25-50, 450-470
2	Bergen Volunteer Fire Department	Statewide: New York	150-174
3	Busti, Town of	Countywide: Chautauqua	150-174
4	Busti Volunteer Fire Department, Inc.	Countywide: Chautauqua	25-50, 450-470
5	Cassadaga Valley Central School System	Countywide: Chautauqua	25-50
6	Central Islip Hauppauge Volunteer Ambulance, Inc.	Statewide: New York	150-174
7	Chautauqua, County of	Countywide: Chautauqua	25-50, 150-174, 450-470, 800/900, 2450-2500, 4940-4990
8	Chautauqua County Airport (Jamestown)	Countywide: Chautauqua	150-174
9	Chautauqua County DPF	Countywide: Chautauqua	25-50
10	Clymer, Town of	Countywide: Chautauqua	150-174
11	Dewittville Fire District	Countywide: Chautauqua	25-50
12	Erie, County of	Statewide: New York	25-50, 150-174, 421-430, 450-470
13	Massasauga Search and Rescue, Inc.	Statewide: New York	150-174
14	Mayville, Village of	Countywide: Chautauqua	450-470
15	National Ski Patrol System, Inc.	Statewide: New York	150-174
16	New York, City of	Statewide: New York	450-470, 800/900, 4940-4990
17	New York City Police Department	Statewide: New York	150-174
18	New York, State of	Statewide: New York	0-10, 25-50, 150-174, 220-222, 450-470, 800/900, 4940-4990
19	New York State Department of Corrections And Community Supervision	Statewide: New York	150-174, 450-470, 4940-4990
20	New York State Department of Environmental Conservation	Statewide: New York	25-50, 150-174
21	New York State Department of Health, Bureau of EMS	Statewide: New York	25-50, 150-174, 450-470
22	New York State Department of Transportation	Statewide: New York	0-10, 4940-4990
23	New York State Division of State Police	Statewide: New York	25-50, 150-174, 450-470, 800/900, 2450-2500

ID	Licensee	Area of Operation	Frequency Band (MHz)
24	New York State Emergency Management Office	Statewide: New York	0-10, 25-50, 150-174, 220-222, 4940-4990
25	New York State Office of Parks, Recreation, and Historic Preservation	Statewide: New York	450-470
26	New York State Office of Parks, Recreation, and Historic Preservation - Albany	Statewide: New York	150-174
27	New York State Office of Parks, Recreation, and Historic Preservation - Long Island Region	Statewide: New York	150-174
28	New York State Office of Parks, Recreation, and Historic Preservation - Niagara Region	Statewide: New York	150-174
29	Niagara Frontier Search And Rescue	Statewide: New York	150-174
30	Northeast Mobile Search And Rescue, Inc.	Statewide: New York	150-174
31	Northeastern Forest Fire Protection Compact	Statewide: New York	25-50, 150-174
32	Ossining, Village of	Statewide: New York	25-50, 450-470
33	Sherman Central School District	Countywide: Chautauqua	150-174
34	Triborough Bridge And Tunnel Authority	Statewide: New York	4940-4990
35	Western New York Search Dogs, Inc.	Statewide: New York	150-174
36	Woodbury, Town of	Statewide: New York	4940-4990

Table 2: Regional Licenses

E911 Operators

Wireless operators are granted area-wide licenses from the FCC to deploy their cellular networks, which often include handsets with E911 capabilities. Since mobile phone market boundaries differ from service to service, we disaggregated the carriers' licensed areas down to the county level. We have identified the type of service for each carrier in Chautauqua County in Table 3.

Mobile Phone Carrier	County	State	Service ²
AT&T	Chautauqua	NY	AWS, CELL, PCS
Blue Wireless	Chautauqua	NY	PCS
Sprint	Chautauqua	NY	PCS
T-Mobile	Chautauqua	NY	AWS, PCS
Verizon	Chautauqua	NY	AWS, CELL, PCS

Table 3: Mobile Phone Carriers in Area of Interest with E911 Service

² AWS: Advanced Wireless Service at 1.7/2.1 GHz
CELL: Cellular Service at 800 MHz
PCS: Personal Communication Service at 1.9 GHz

3. Impact Assessment

The first responder, industrial/business land mobile sites, area-wide public safety, and commercial E-911 communications as described in this report are typically unaffected by the presence of wind turbines, and we do not anticipate any significant harmful effect to these services in the Cassadaga wind energy project area. Although each of these services operates in different frequency ranges and provides different types of service including voice, video and data applications, there is commonality among these different networks in regards to the impact of wind turbines on their service. Each of these networks is designed to operate reliably in a non-line-of-sight (NLOS) environment. Many land mobile systems are designed with multiple base transmitter stations covering a large geographic area with overlap between adjacent transmitter sites in order to provide handoff between cells. Therefore, any signal blockage caused by the wind turbines does not materially degrade the reception because the end user is likely receiving signals from multiple transmitter locations. Additionally, the frequencies of operation for these services have characteristics that allow the signal to propagate through wind turbines. As a result very little, if any, change in their coverage should occur when the wind turbines are installed.

When planning the wind energy turbine locations in the area of interest, a conservative approach would dictate not locating any turbines within 77.5 meters of land mobile fixed-base stations to avoid any possible impact to the communications services provided by these stations. This distance is based on FCC interference emissions from electrical devices in the land mobile frequency bands. As long as the turbines are located more than 77.5 meters from the land mobile stations, they will meet the setback distance criteria for FCC interference emissions in the land mobile bands.

4. Recommendations

In the event that a public safety entity believes its coverage has been compromised by the presence of the wind energy facility, it has many options to improve its signal coverage to the area through optimization of a nearby base station or even adding a repeater site. Utility towers, meteorological towers or even the turbine towers within the wind project area can serve as the platform for a base station or repeater site.



5. Contact

For questions or information regarding the Land Mobile & Emergency Services Report, please contact:

Contact person:	Denise Finney
Title:	Account Manager
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5650
Fax:	703-726-5595
Email:	dfinney@comsearch.com
Web site:	www.comsearch.com