

Wind Power GeoPlanner™

AM and FM Radio Report

High Bridge Wind Farm



Prepared on Behalf of
Calpine Corporation

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1. Introduction

Comsearch analyzed AM and FM radio broadcast stations whose service could potentially be affected by the proposed High Bridge Wind Farm project in Chenango County, New York.

2. Summary of Results

AM Radio Analysis

Comsearch found three database records¹ for AM stations within approximately 30 kilometers of the project, as shown in Table 1 and Figure 1. These records represent station WCHN, which broadcasts out of Norwich, New York, to the north of the project area of interest (AOI), and station WCDO, out of Sidney, to the south. WCHN is licensed separately for daytime and nighttime operations, with a higher transmit power permitted during daytime hours.

ID	Call Sign	Status ²	Frequency (kHz)	Transmit ERP ³ (kW)	Operation Time	Latitude (NAD 27)	Longitude (NAD 27)	Required Separation Distance ⁴ (km)	Distance to Nearest Turbine (km)
1	WCHN	LIC	970	1.0	Daytime	42.506389	-75.492778	0.31	5.26
2	WCHN	LIC	970	0.034	Nighttime	42.506389	-75.492778	0.31	5.26
3	WCDO	LIC	1490	1.0	Unlimited	42.323333	-75.382500	0.20	8.84

Table 1: AM Radio Stations within 30 Kilometers of Project Area

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 AM/FM station's FCC license and governed by Comsearch's data license notification and agreement located at http://www.comsearch.com/files/data_license.pdf. The coordinates provided for AM station KVWC were adjusted slightly based on aerial imagery.

² LIC = Licensed and operational station; APP = Application for construction permit; CP=Construction permit granted; CP MOD = Modification of construction permit.

³ ERP = Transmit Effective Radiated Power.

⁴ The required separation distance is based on the lesser of 10 wavelengths or 3 kilometers for directional antennas and 1 wavelength for non-directional antennas.

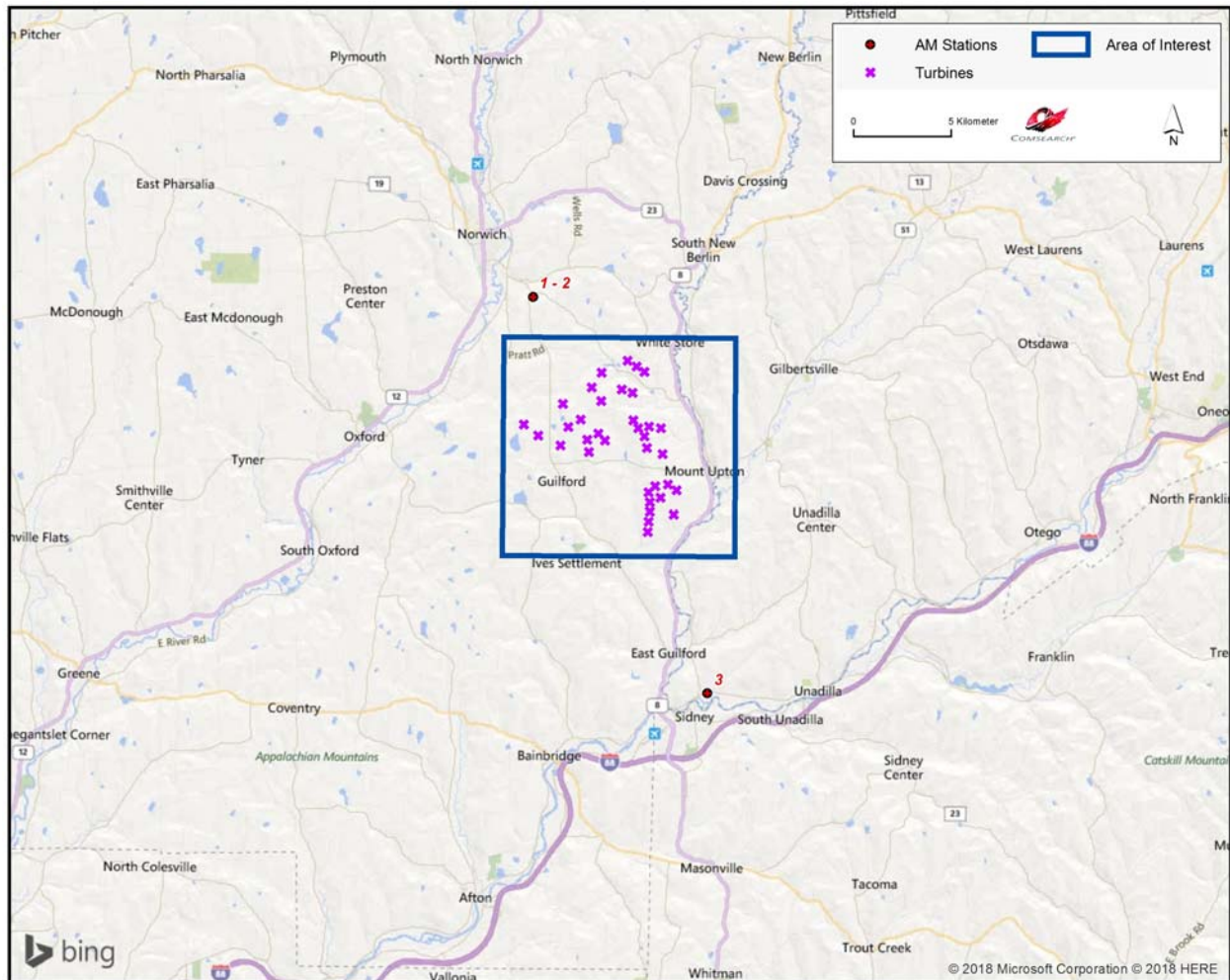


Figure 1: AM Radio Stations within 30 Kilometers of Project Area

FM Radio Analysis

Comsearch determined that there were twenty-two database records for FM stations within approximately 30 kilometers of the High Bridge Wind Farm project AOI, as shown in Table 2 and Figure 2. Only twenty of these stations are currently licensed and operating, ten of which are low-power stations or translators that broadcast with limited range.

ID	Call Sign	Status ⁵	Service ⁶	Frequency (MHz)	Transmit ERP ⁷ (kW)	Latitude (NAD 27)	Longitude (NAD 27)	Distance to Nearest Turbine (km)
1	WSQN	LIC	FM	88.1	0.85	42.436944	-75.513889	1.73
2	WSQN	CP	FM	88.1	4.5	42.436944	-75.513889	1.73
3	WBKT	LIC	FM	95.3	0.47	42.435556	-75.513056	1.79
4	W249AS	LIC	FX	97.7	0.005	42.501944	-75.484167	4.42
5	W293BE	LIC	FX	106.5	0.01	42.489167	-75.506389	4.48
6	W210BL	LIC	FX	89.9	0.019	42.506389	-75.492778	5.26
7	W232AT	LIC	FX	94.3	0.007	42.506389	-75.492778	5.26
8	WCIJ	LIC	FM	88.9	5.0	42.390833	-75.328056	6.50
9	WKXZ	LIC	FM	93.9	26.0	42.547500	-75.452500	7.98
10	W222CR	CP	FX	92.3	0.25	42.541111	-75.525833	9.95
11	WCDO-FM	LIC	FM	100.9	1.9	42.292500	-75.367500	12.49
12	W213BL	LIC	FX	90.5	0.01	42.423333	-75.085833	26.07
13	W250BE	LIC	FX	97.9	0.13	42.423333	-75.085833	26.07
14	WZOZ	LIC	FM	103.1	2.0	42.424444	-75.076667	26.82
15	W211CE	LIC	FX	90.1	0.25	42.456389	-75.076944	27.13
16	W232AS	LIC	FX	94.3	0.008	42.456389	-75.076944	27.13
17	W257BL	LIC	FX	99.3	0.25	42.456389	-75.076944	27.13
18	WRHO	LIC	FM	89.7	0.27	42.457222	-75.073611	27.42
19	WONY	LIC	FM	90.9	0.18	42.467222	-75.061111	28.63
20	WSRK	LIC	FM	103.9	1.4	42.423889	-75.042500	29.63
21	WSQC-FM	LIC	FM	91.7	2.3	42.424167	-75.042500	29.63
22	WJIH-LP	LIC	FL	95.9	0.1	42.446250	-75.041917	29.84

Table 2: FM Radio Stations within 30 Kilometers of Project Area

⁵ LIC = Licensed and operational station; APP = Application for construction permit; CP=Construction permit granted; CP MOD = Modification of construction permit.

⁶ FM = FM broadcast station; FX = FM translator station; FL = Low-power FM station; FS = FM auxiliary (backup) station; FB = FM booster station.

⁷ ERP = Transmit Effective Radiated Power.

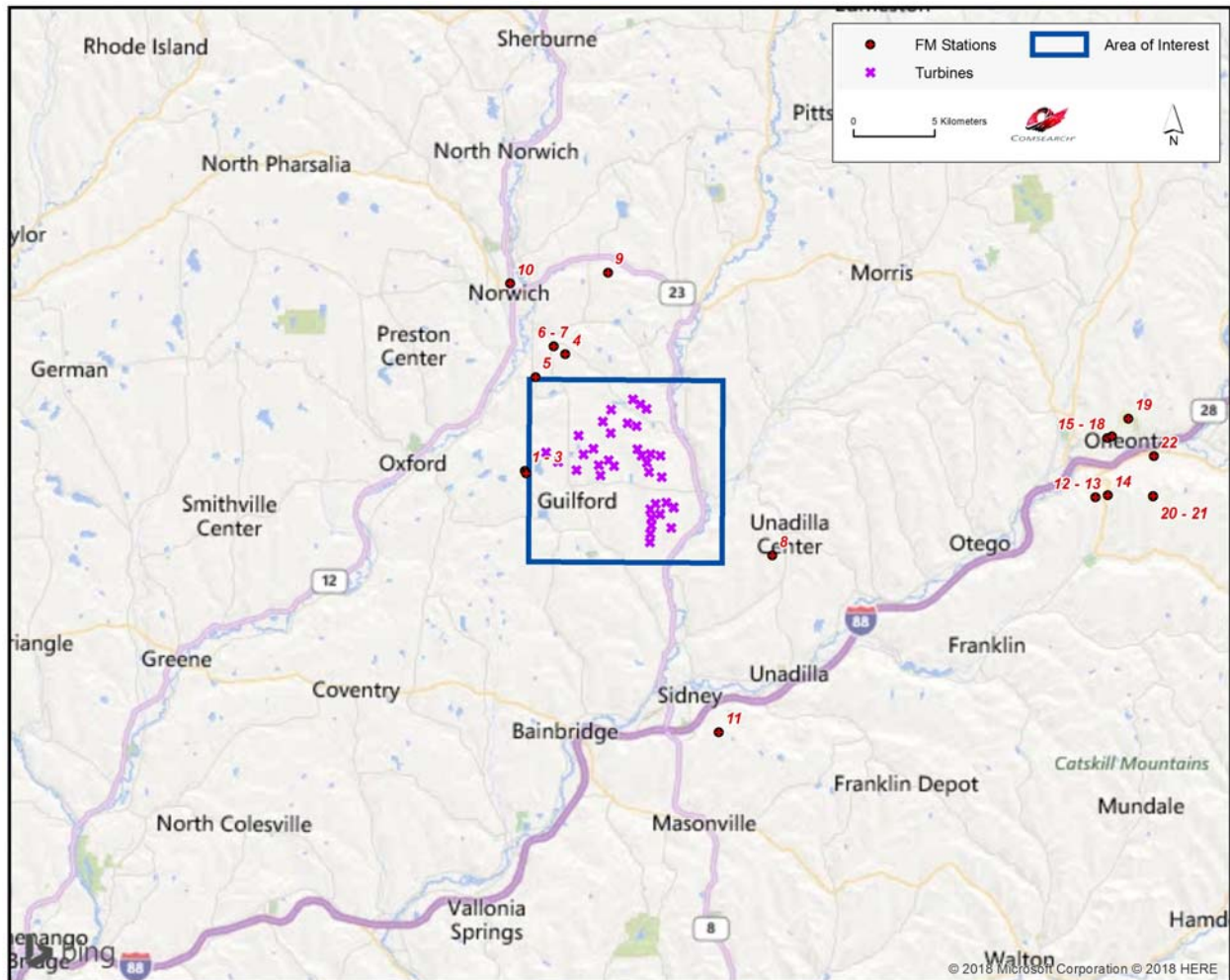


Figure 2: FM Radio Stations within 30 Kilometers of Project Area

3. Impact Assessment

The exclusion distance for AM broadcast stations varies as a function of the antenna type and broadcast frequency. For directional antennas, the exclusion distance is calculated by taking the lesser of 10 wavelengths or 3 kilometers. For non-directional antennas, the exclusion distance is simply equal to 1 wavelength. Potential problems with AM broadcast coverage are only anticipated when AM broadcast stations are located within their respective exclusion distance limit from wind turbine towers. The closest operational AM station to the High Bridge Wind Farm project, WCHN, is more than 5.2 kilometers from the nearest project turbine. As there were no stations found within 3 kilometers of project, which is the maximum possible exclusion distance based on a directional AM antenna broadcasting at 1000 KHz or less, the project should not impact the coverage of local AM stations.

The coverage of FM stations is generally not susceptible to interference caused by wind turbines, especially when large objects, such as wind turbines, are sited in the *far field* region of the radiating FM antenna in order to avoid the risk of distorting the antenna's radiation pattern. However, at distances less than 450 meters, radiation pattern distortion can become a factor. Signal attenuation is also possible but is difficult to quantify without precise field measurements. The closest FM station to the High Bridge Wind Farm project, WSQN, is approximately 1.7 kilometers from the nearest turbine, which should provide adequate separation to avoid radiation pattern distortion.

4. Recommendations

Since no impact on the licensed and operational AM or FM broadcast stations was identified in our analysis, no recommendations or mitigation techniques are required for this project.

5. Contact

For questions or information regarding the AM and FM Radio Report, please contact:

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