Wind Power GeoPlanner™

AM and FM Radio Report

Deer River Wind Project

Prepared on Behalf of
ATLANTIC WIND LLC

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A CommScope Company

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1. Introduction

Comsearch analyzed AM and FM radio broadcast stations whose service could potentially be affected by the proposed Deer River Wind Project in Jefferson and Lewis Counties, New York.

2. Summary of Results

AM Radio Analysis

Comsearch found six database records[1] for AM stations within approximately 30 kilometers of the project, as shown in Table 1 and Figure 1. These records represent four licensed stations: WTNY, WNER, and WATN, which broadcast from Watertown, New York, to the northwest of the project area of interest (AOI), and WZUN, out of Pulaski, to the southwest. Stations WTNY and WNER are licensed separately for daytime and nighttime operations.

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 Project AOI (km)
1	WTNY	LIC	790	1.0	Daytime	43.945556	-75.948333	3.00	9.93
2	WTNY	LIC	790	1.0	Nighttime	43.945556	-75.948333	3.00	9.93
3	WNER	LIC	1410	3.5	Daytime	43.946389	-75.947778	0.21	9.96
4	WNER	LIC	1410	0.058	Nighttime	43.946389	-75.947778	0.21	9.96
5	WATN	LIC	1240	1.0	Unlimited	43.980278	-75.936667	0.24	12.36
6	WZUN	LIC	1070	2.5	Daytime	43.605278	-76.130000	0.28	33.18

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.

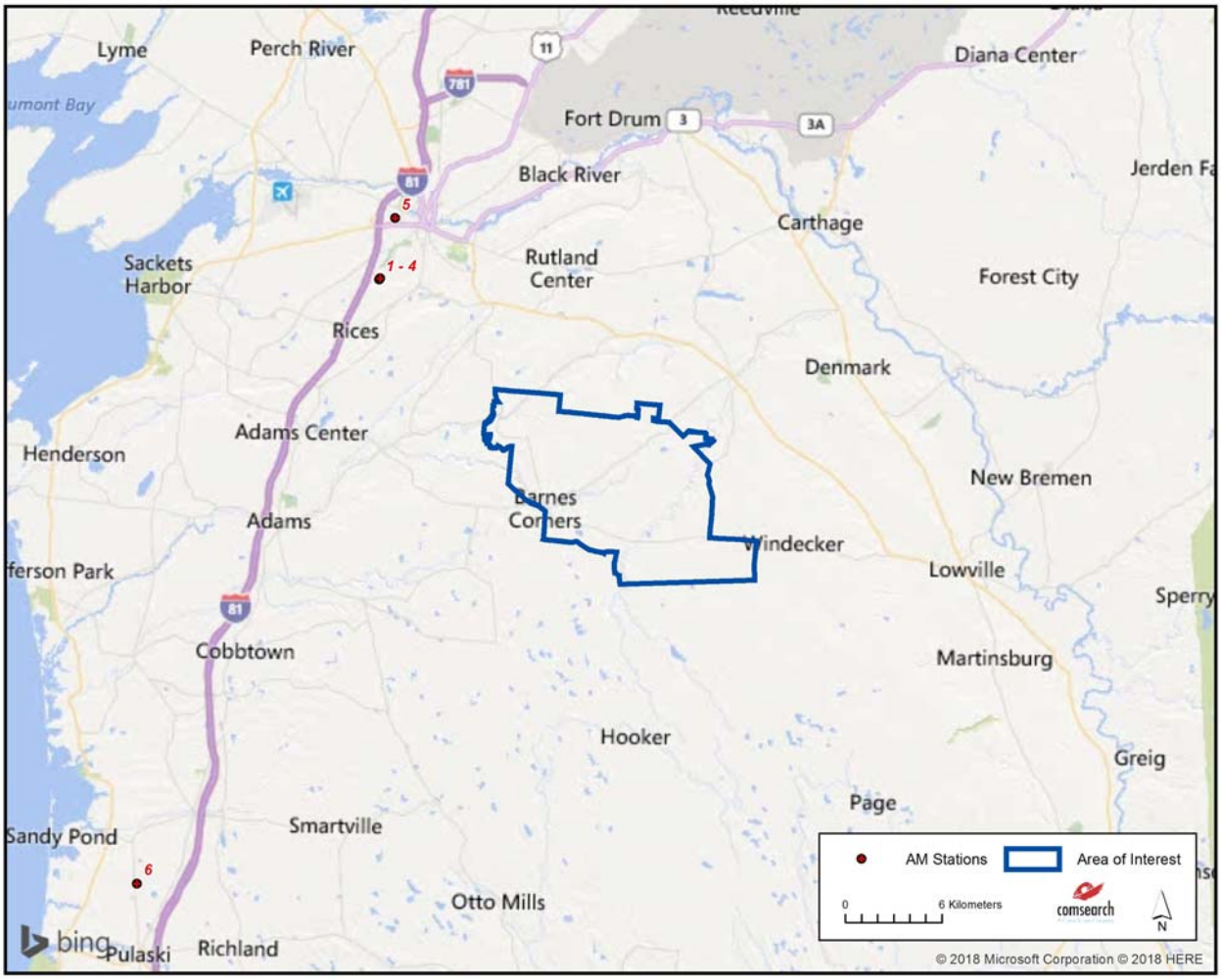

Figure 1: AM Radio Stations within 30 Kilometers of Project Area

FM Radio Analysis

Comsearch determined that there were twenty-four database records for FM stations within approximately 30 kilometers of the Deer River Wind Project AOI, as shown in Table 2 and Figure 2. Only twenty-one of these stations are currently licensed and operating, seven of which are low-power or translator stations that broadcast with limited range.

WJNY and WRVJ are the only FM stations operating within the project AOI.

ID	Call Sign	Status[5]	Service[6]	Frequency (MHz)	Transmit ERP[7] (kW)	Latitude (NAD 27)	Longitude (NAD 27)	Distance to Project AOI (km)
1	WJNY	LIC	FM	90.9	7.1	43.862222	-75.727778	-
2	WRVJ	LIC	FM	91.7	1.6	43.862222	-75.727778	-
3	WBDR	LIC	FM	106.7	1.8	43.879722	-75.719722	0.87
4	WKWV	LIC	FM	90.1	0.4	43.954167	-75.729167	8.57
5	WTOJ	LIC	FM	103.1	1.8	43.954167	-75.729167	8.57
6	WSLJ	LIC	FM	88.9	0.28	43.956333	-75.840639	8.03
7	W283CC	LIC	FX	104.5	0.065	43.956389	-75.840556	8.04
8	WCIZ-FM	LIC	FM	93.3	6.0	43.956389	-75.845833	8.00
9	WFRY-FM	LIC	FM	97.5	97.0	43.956389	-75.845833	8.00
10	WOTT	LIC	FM	94.1	21.5	43.966667	-75.803056	9.40
11	WLLG	LIC	FM	99.3	1.0	43.753333	-75.563889	7.91
12	W240EA	CP	FX	95.9	0.25	43.945556	-75.948333	9.93
13	W250CI	CP	FX	97.9	0.25	43.946389	-75.947778	9.96
14	W272BL	LIC	FX	102.3	0.043	43.976667	-75.610833	14.44
15	WXLD	LIC	FM	89.7	0.22	43.808667	-75.511528	11.49
16	W220BO	LIC	FX	91.9	0.01	43.808611	-75.511389	11.50
17	W261CP	LIC	FX	100.1	0.019	43.795833	-75.499444	12.45
18	WWTJ-LP	LIC	FL	96.9	0.071	44.041111	-75.903056	17.73
19	WEFX	LIC	FM	100.7	6.0	43.820278	-76.091389	18.63
20	WSEN	CP	FM	103.9	18.7	43.605556	-75.929444	23.40
21	WBLH	LIC	FM	92.5	6.0	44.054944	-75.954250	20.42
22	WGKV	LIC	FM	101.7	5.0	43.607778	-75.973056	24.80
23	W206BH	LIC	FX	89.1	0.013	43.636111	-75.395000	26.33
24	W252CK	LIC	FX	98.3	0.16	43.698333	-75.324167	28.15

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.

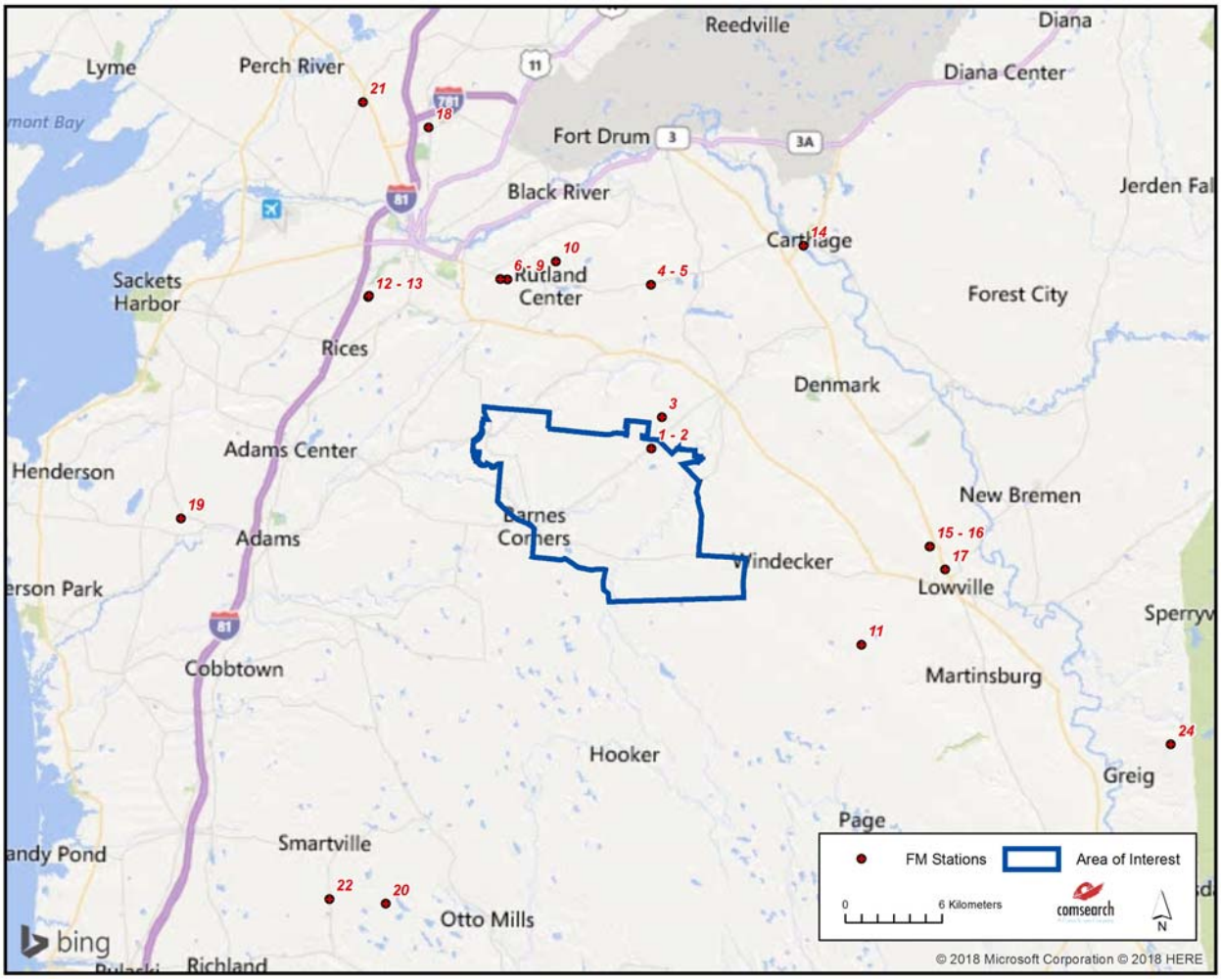

Figure 2: FM Radio Stations within 30 Kilometers of Project Area

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 Deer River Wind Project, WTNY, is more than 9.9 kilometers from the limit of the project AOI. 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 effect of wind turbines on FM radio coverage and reception is expected to be minimal as long as the turbines are sited in the far-field region of the broadcast antennas and line-of-sight to the populations served by the FM stations is maintained. All of the wind turbines in the Deer River Wind Project should be sited in the far-field region of an existing FM antenna in order to minimize the risk of distorting its radiation pattern. For FM frequencies, this translates to a minimum separation distance of 450 meters between the tip of the wind turbine blade and the FM antenna location. FM stations WJNY and WRVJ, which are located inside the project area, are the only local FM stations in potential range of impact as described above.

4. Recommendations

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

With regard to FM stations WJNY and WRVJ, any wind turbines in close proximity should be placed at lower ground elevations relative to the WJNY and WRVJ towers, such that the maximum height reached by the rotating blades remains below the height of the station antennas. If this is not possible, Comsearch recommends that field strength measurements of the actual FM coverage be taken before and after the construction of the project. In the event that significant audio distortion is observed for WJNY or WRVJ, one option is to raise the station's broadcast antenna on the same tower in order to clear the obstructing wind turbines, provided that the tower has sufficient height and space. The new antenna height would need to be above the maximum blade height of the surrounding wind turbines. As an alternative, an auxiliary broadcast antenna could be installed on a different tower in order to compensate for lost coverage.

Any relocation of a station's antenna or changes to its operation will require costs for hardware, space acquisition, administration, planning, lost operation time and coordination with the FCC. Project personnel should contact the FM station to discuss the potential impact of the wind turbines and the options for mitigation, if necessary.

5. Contact

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