

Wind Power GeoPlanner™

AM and FM Radio Report

GSG Repower



Prepared on Behalf of
GSG Wind, LLC

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COMSEARCH
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 GSG Repower project in Lee & LaSalle Counties, Illinois.

2. Summary of Results

AM Radio Analysis

Comsearch found four database records¹ for AM stations within approximately 30 kilometers of the project, as shown in Table 1 and Figure 1. The closest station to the area of interest (AOI) is WIXN, which broadcasts out of Dixon, IL, located to the northwest of the project, 26.5 km from the nearest proposed turbine location.

ID	Call Sign	Status ²	Frequency (kHz)	Transmit ERP ³ (kW)	Operation Time	Latitude (NAD 83)	Longitude (NAD 83)	Required separation distance	Distance to the nearest turbine (km)
1	WIXN	LIC	1460	1.0	Daytime	41.827256	-89.486492	2.05	26.50
2	WIXN	LIC	1460	0.023	Nighttime	41.827256	-89.486492	2.05	26.50
3	WRHL	LIC	1060	0.25	Daytime	41.923361	-89.058428	2.83	29.86
4	WRHL	LIC	1060	0.05	Nighttime	41.923361	-89.058428	2.83	29.86

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.

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.

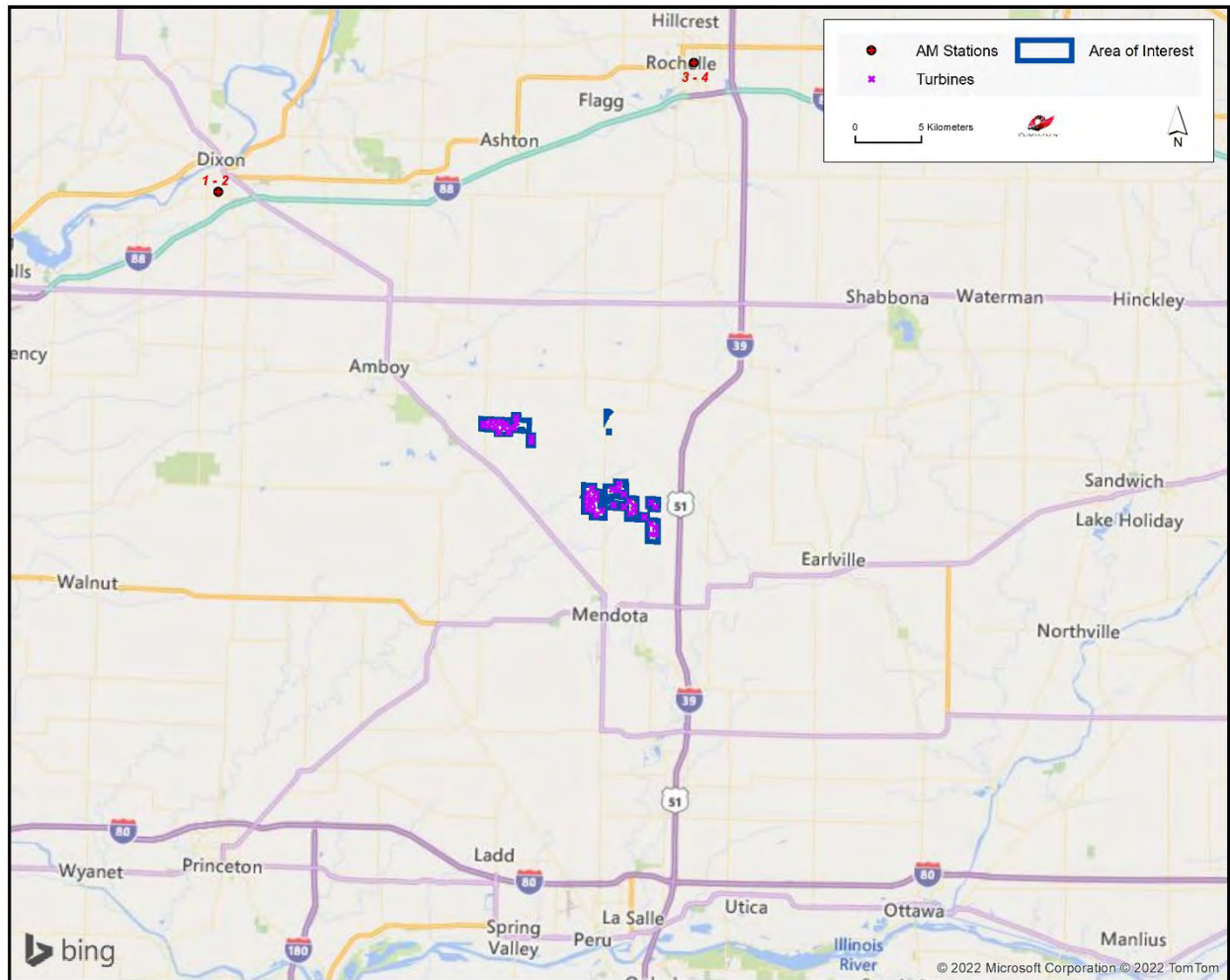


Figure 1: AM Radio Stations within 30 Kilometers of Project Area

FM Radio Analysis

Comsearch determined that there were ten database records for FM stations within a 30-kilometer radius of the GSG Repower project, as shown in Table 2 and Figure 2. All of the stations are currently licensed and operating, two of which are translator stations and one is a low power station that operate with limited range. The closest station is WMKB, which is currently licensed out of Earlville, Illinois, located in the northeast corner of the project AOI, 0.40 km from the nearest turbine location. The next closest station, WGLC-FM, is 7.73 km from the nearest turbine.

ID	Call Sign	Status ⁴	Service ⁵	Frequency (MHz)	Transmit ERP ⁶ (kW)	Latitude (NAD 83)	Longitude (NAD 83)	Distance to the nearest turbine (km)
1	WMKB	FM	LIC	102.9	2.15	41.621139	-89.088972	0.40
2	WGLC-FM	FM	LIC	100.1	2.5	41.535528	-89.107278	7.73
3	WAED	FM	LIC	88.5	0.8	41.743639	-88.934250	18.35
4	WNIW	FM	LIC	91.3		41.413083	-89.276194	25.29
5	WAJK	FM	LIC	99.3	11.0	41.413083	-89.276194	25.29
6	WLPL-LP	FL	LIC	104.3	0.1	41.852639	-89.450278	26.29
7	WRCV	FM	LIC	101.7	6.0	41.824750	-89.497583	27.05
8	W236DM	FX	LIC	95.1	0.25	41.824750	-89.497611	27.05
9	WYOT	FM	LIC	102.3	6.0	41.922528	-89.058417	29.77
10	W228DT	FX	LIC	93.5	0.25	41.922806	-89.057583	29.83

Table 2: FM Radio Stations within 30 km

ID	Call Sign	Status ⁷	Frequency (MHz)	Antenna Make	Antenna Model	Antenna Size (m)	Recommended Minimum Separation Distance ⁸ (km)
1	WMKB	LIC	102.9	ERI	LPX-3E	8.74	0.0524

Table 3: FM Radio Stations within 2 km of the Project Area with Separation Distances

⁴ LIC = Licensed and operational station; APP = Application for construction permit; CP=Construction permit granted; CP MOD = Modification of construction permit.

⁵ FM = FM broadcast station; FX = FM translator station; FS = FM auxiliary (backup) station; FL = low power FM station, FB = FM booster station.

⁶ ERP = Transmit Effective Radiated Power.

⁷ LIC = Licensed and operational station; APP = Application for construction permit; CP=Construction permit granted; CP MOD = Modification of construction permit.

⁸ Recommended minimum separation distance is based on the far field distance of the antenna or 1.5 km if no antenna information is available and includes separation from both the turbine towers and blades.

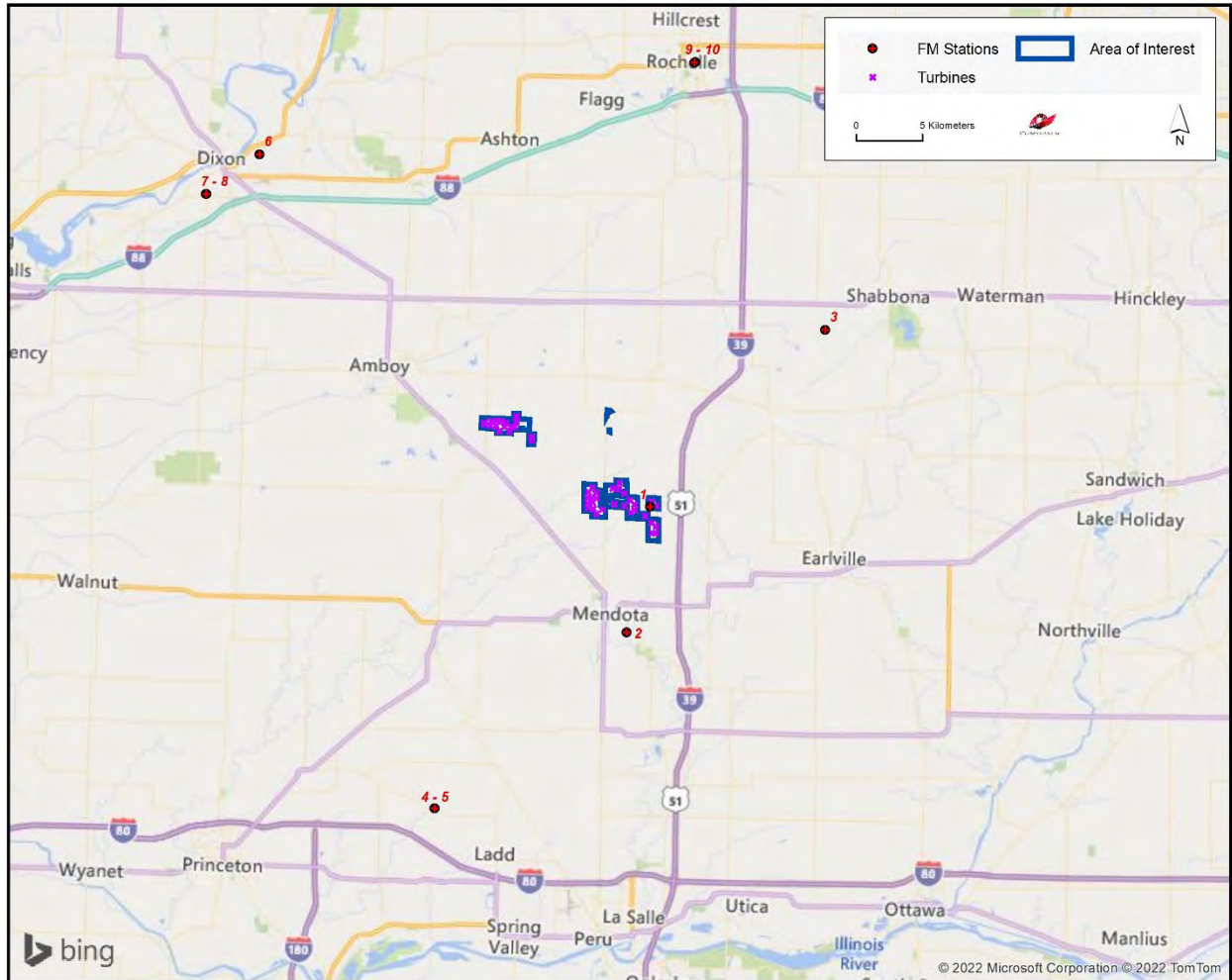


Figure 2: FM Radio Stations within 30 km

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 AM station (WIXN) is located 26.5 km from the nearest turbine location. As there were no stations found within 3 kilometers of the 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 sensitive to interference due to wind turbines, especially when large objects (e.g., wind turbines) are located in the far field region of the radiating antenna to avoid the risk of distorting its radiation pattern. Station WMKB is the nearest FM station to a turbine location at 0.40 km away. Based on the licensed antenna information, WMKB requires a minimum separation distance of 0.0524 km from the station and any turbine tower and blade. Based on the 0.40 km separation distance and considering the recommended minimum separation distance of 0.0524 km and the turbine blade size of 0.077 km, there should be adequate separation to avoid radiation pattern distortion. All other FM stations are located 7.73 km or further from the nearest turbine location and would not be impacted by the wind project.

4. Recommendations

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

5. Contact

For questions or information regarding the AM and FM Radio Report, 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
Web site: www.comsearch.com