

Wind Power GeoPlanner™

AM and FM Radio Report

Aurora Wind Project



Prepared on Behalf of
Aurora Wind Project,
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 Aurora Wind Project in Williams and Mountrail Counties, North Dakota.

2. Summary of Results

AM Radio Analysis

Comsearch found four database records¹ for AM stations within approximately 30 kilometers of the project area, as shown in Table 1 and Figure 1. These records represent station KTGO, which broadcasts out of Tioga, North Dakota, to the south of the project, and station KEYZ, out of Williston, North Dakota, to the southwest. Both stations 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 (km)
1	KTGO	LIC	1090	1.1	Daytime	48.391111	-102.934444	0.28	2.79
2	KTGO	LIC	1090	0.006	Nighttime	48.391111	-102.934444	0.28	2.79
3	KEYZ	LIC	660	5.0	Daytime	48.238889	-103.650278	3.00	39.47
4	KEYZ	LIC	660	5.0	Nighttime	48.238889	-103.650278	3.00	39.47

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.

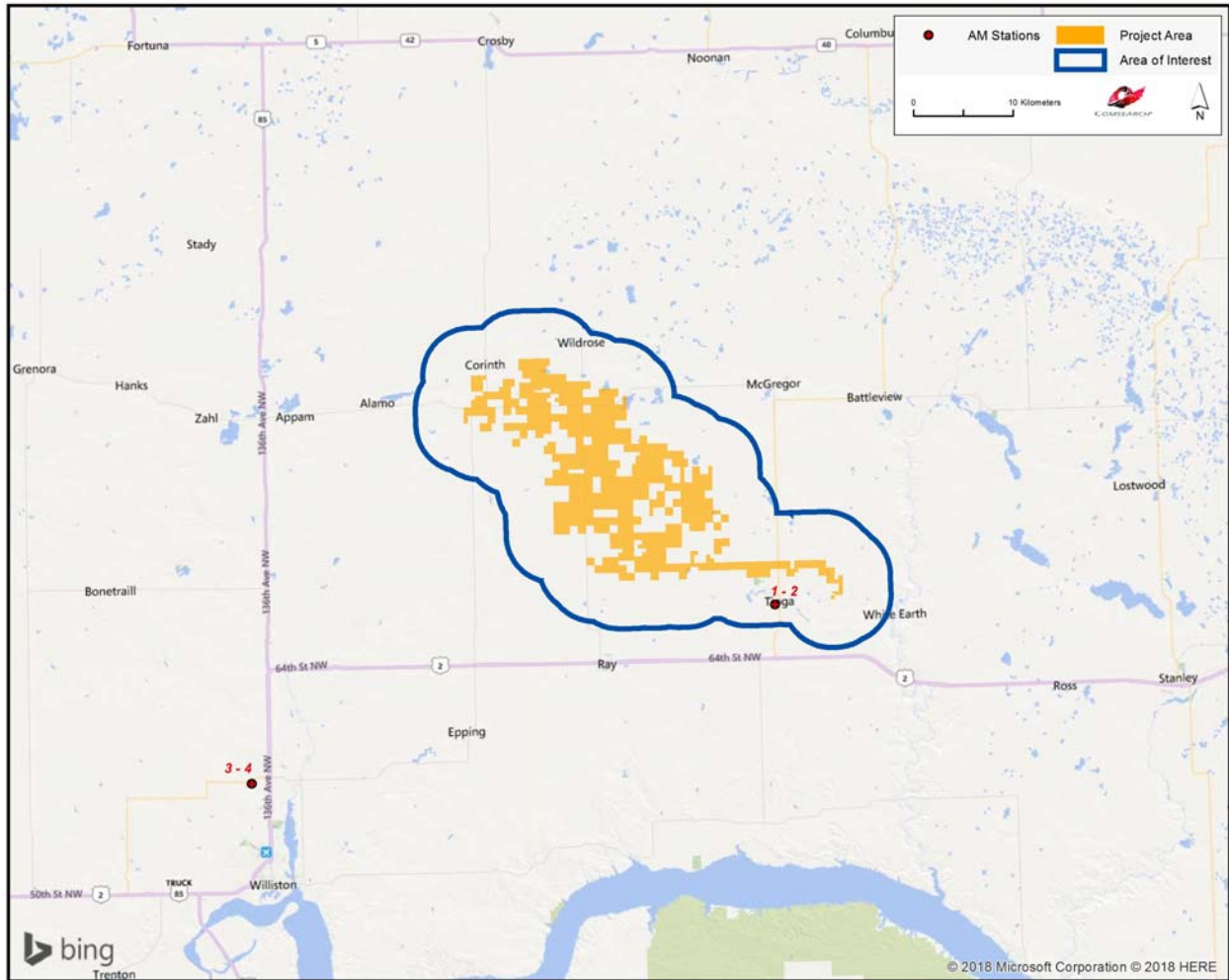


Figure 1: AM Radio Stations within 30 Kilometers of Project Area

FM Radio Analysis

Comsearch determined that there were nine database records for FM stations within approximately 30 kilometers of the Aurora Wind Project area, as shown in Table 2 and Figure 2. Only six of these stations are currently licensed and operating, four of which are translator stations 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 Project (km)
1	K220FH	LIC	FX	91.9	0.008	48.401389	-102.937222	1.63
2	K224FJ	CP	FX	92.7	0.25	48.391111	-102.934444	2.79
3	KZTW	LIC	FM	104.1	100.0	48.321667	-103.247778	12.40
4	KZTW	APP	FM	104.1	0.8	48.321667	-103.247778	12.40
5	K211FS	LIC	FX	90.1	0.05	48.155278	-103.500833	38.20
6	KNDW	LIC	FM	91.7	1.3	48.155278	-103.500833	38.20
7	K220FF	LIC	FX	91.9	0.008	48.911667	-103.295556	32.60
8	K201FJ	LIC	FX	88.1	0.062	48.110556	-103.443611	39.95
9	NEW	APP	FX	103.3	0.25	48.150000	-103.615000	44.38

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.

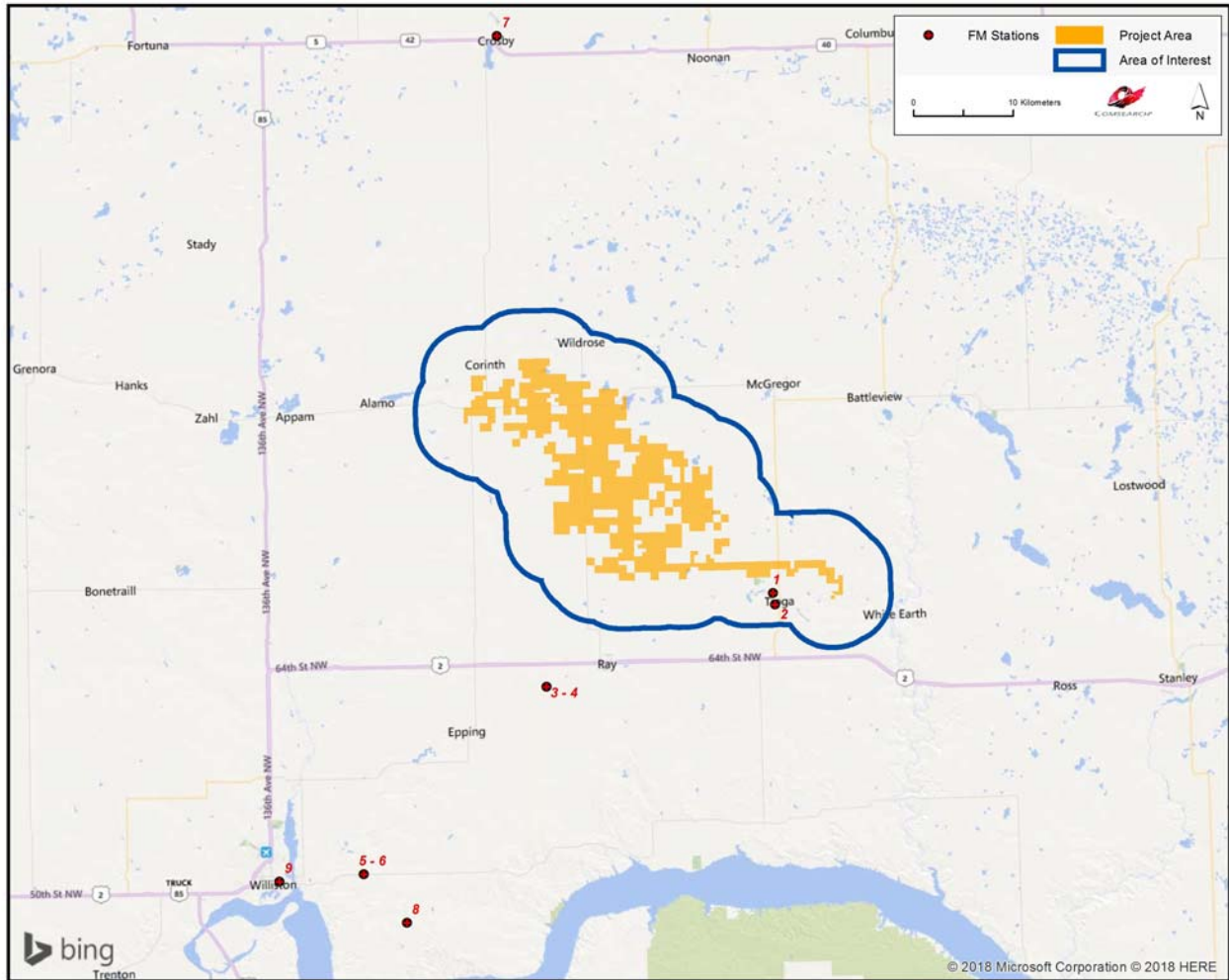


Figure 2: FM Radio Stations within 30 Kilometers of Project Area

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 AM station to the Aurora Wind Project, KTGO, is more than 2.7 kilometers from the project limit, well beyond the station's exclusion distance of 275 meters. As there were no other 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 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. The closest FM station to the Aurora Wind Project, K220FH, is more than 1.6 kilometers from the project limit. At this distance, there should be adequate separation to avoid radiation pattern distortion.

4. Recommendations

Since no impact on the licensed and operational AM or FM broadcast stations' broadcast, retransmission, or reception 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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