

Technical Report WZNX(FM) HD Auxiliary Application

This technical report is submitted for a modification to the auxiliary HD facility, FCC file no. BXLH-20180629ABA, for WZNX(FM) 294B1 at Sullivan, IL, FCC facility I.D. 57461. An increase in ERP to 110 watts is submitted to match 1% of the WZNX(FM) primary ERP increase to 11kW.

WZNX(FM) HD Auxiliary Analysis:

The WZNX(FM) HD1 auxiliary facility is co-located on the existing WZNX(FM) tower, ASR 1057132, at coordinates:

39 36 39N 88 41 32W NAD 27.

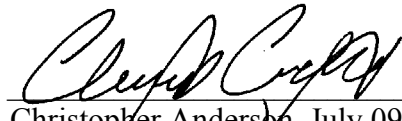
A PSI FML four bay, full wavelength-spaced, nondirectional antenna is mounted separately from the primary WZNX(FM) antenna at a COR AGL of 143 meters, 343 meters AMSL and will operate at 110 Watts ERP. The auxiliary HD facility 60 dBu contour is contained within the primary WZNX(FM) 60 dBu contour (exhibit E-1). The FCC 30 second terrain HAAT is 145 meters (exhibit E-2), which is greater than 70% of the primary WZNX(FM) HAAT of 153 meters.

RF Exposure Calculation:

The RF contribution was calculated using FMModel (exhibit E-3), and is calculated to be $0.049 \mu\text{W}/\text{cm}^2$ at a distance of 55 meters from the base of the tower, which is well below 5% of the $200 \mu\text{W}/\text{cm}^2$ maximum permissible for general public exposure allowing exclusion from consideration.

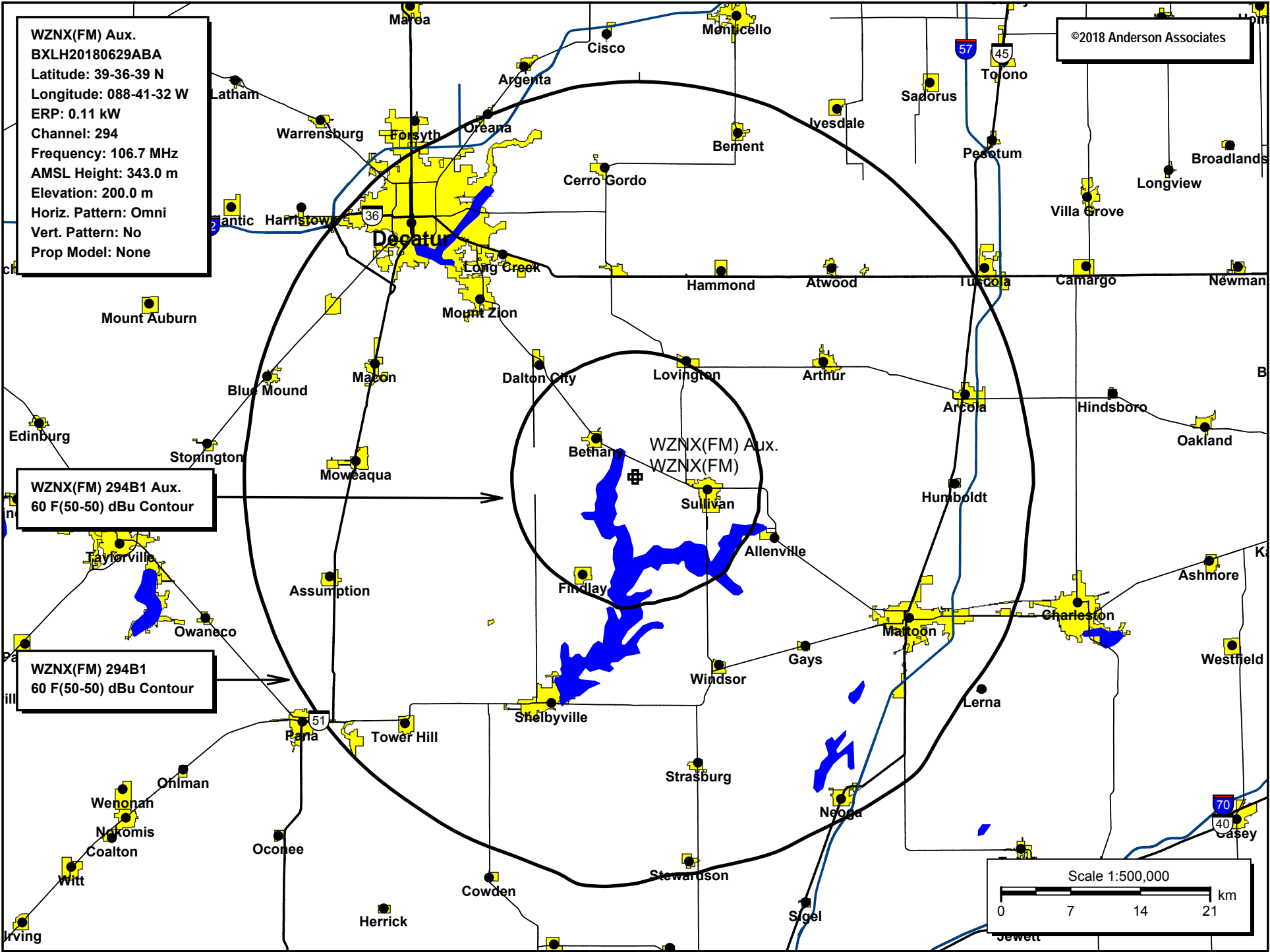
Conclusion:

It is concluded that the WZNX(FM) HD auxiliary application complies with all Commission rules and policies.



Christopher Anderson July 09, 2018
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E-1 WZN(FM) 294B1 Auxiliary 60 dBu Contour Plot



E-2 WZNX(FM) 294B1 Auxiliary HAAT Calculation

N. Lat. = 393639.0 W. Lng. = 884132.0
HAAT and Distance to Contour,
FCC, FM 2-10 Mi, 51 pts Method - FCC 30 SEC

WZNX, The Cromwell Group, Inc. Of I, BLH20180504AAI
Azi. AV EL HAAT ERP kW 60-F5

000 199.4 143.6 0.1100 12.56
045 202.2 140.8 0.1100 12.43
090 197.3 145.7 0.1100 12.66
135 189.3 153.7 0.1100 13.04
180 189.5 153.5 0.1100 13.03
225 198.2 144.8 0.1100 12.62
270 203.3 139.7 0.1100 12.38
315 201.5 141.5 0.1100 12.47

Ave El= 197.58 M HAAT= 145.42 M AMSL= 343 M

The primary WZNX(FM) 294B1 co-located antenna HAAT = 153 meters = 95%.

E-3 WZNX(FM) Auxiliary RF Calculation

FM Model



Channel Selection	Channel 294 (106.7 MHz)		
Antenna Type +	EPA Type 2: Opposed V Dipole		
Height (m)	143	Distance (m)	1000
ERP-H (W)	110	ERP-V (W)	110
Num of Elements	4	Element Spacing (λ)	1
Num of Points	1000		

E-4 WZNX(FM) 294B1/Auxiliary Tower ASR

ASR Registration 1057132

Registration Detail

Reg Number	1057132	Status	Constructed
File Number	A0067145	Constructed	11/01/1994
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	39-36-39.0 N 088-41-32.0 W	Address	2.7 MILES S.E.
City, State	KIRKSVILLE , IL		
Zip	61951	County	MOULTRIE
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
199.6	169.8
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
369.4	169.2

Painting and Lighting Specifications

FAA Chapters 3, 4, 6, 13

Paint and Light in Accordance with FAA Circular Number 70/7460-1H

FAA Notification

FAA Study	98-AGL-3159-OE	FAA Issue Date	07/23/1998
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Owner & Contact Information

FRN	0001769447	Owner Entity Type
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Owner

WSHY, INC.	P: (615)361-7560
Attention To: BAYARD H. WALTERS	F:
P.O. Box 150846	E:
NASHVILLE , TN 37215	

Contact

P:
F:
E:

Last Action Status

Status	Constructed	Received	10/08/1998
Purpose	New	Entered	10/08/1998