TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT (BMPED-20081112AAR)
NCE-FM STATION WXMF
MARION, OHIO
CH 220A 6 KW (MAX-DA) 93 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for modification of the construction permit for NCE-FM station WXMF on channel 220A at Marion, Ohio. Station WXMF is authorized (BMPED-20081112AAR) to operate on channel 220A with a directional antenna maximum circularly polarized effective radiated power (ERP) of 5 kW, and an antenna height above average terrain (HAAT) of 103 meters.

Proposed Facility

The purpose of this modification application is to reduce the antenna height and increase the directional antenna maximum circularly polarized ERP from the authorized site. No other changes are proposed. Specifically, it is proposed to operate on reserved band channel 220 (91.9 MHz) from the existing tower with a directional antenna maximum circularly polarized ERP of 6 kW and an antenna height above average terrain (HAAT) of 93 meters. Figure 1 is a polar graph and tabulation of the proposed directional antenna horizontal plane relative field pattern.

Tower Registration

Notification to the FAA is not necessary, as there is not a proposed change in the overall height of the existing structure. The antenna structure registration number (ASRN) for the existing tower is 1015817.

City Coverage

Figure 2 is a map showing the predicted 60 dBu contour for the proposed facility. As indicated, the proposed 60 dBu will encompass 100% of the Marion city limits (obtained from the 2000 Census), which comports with Section 73.515.

The predicted 60 dBu contour was calculated in accordance with Section 73.313 of the FCC Rules. The average terrain elevations from 3 to 16 km were computed using the U.S.G.S. 30-second terrain database. The overall antenna HAAT was determined according to the provisions of Section 73.313 of the FCC Rules. The antenna radiation center HAAT and ERP in each radial direction were used in conjunction with the propagation prediction curves of Section 73.333 to determine the distances to contours.

Response to Paragraphs 15(a) and (b) – Allocation Studies

Figure 3 provides a summary of an allocation study for the proposed facility. There are no intermediate frequency (IF) related facilities in close proximity to the proposed facility. The tabulation in Figure 3 lists the results of a numerical analysis of the potential for contour overlap for all nearby co-channel and first-, second-, and third-adjacent-channel facilities. For the purposes of the numerical study, the maximum HAAT and ERP values were used in calculating the maximum distance to the predicted service and interfering contours.

Figure 4, Sheet 1, is a map depicting the predicted protected and interfering contours of those stations close enough to warrant further study pursuant to Section 73.509. This is based on the numerical analysis in Figure 3, where there is an indication of the potential for prohibited overlapping contours. As indicated in Figure 4 the proposed operation complies with the requirements of Section 73.509. Figure 4, Sheet 2, is an expanded scale map further illustrating that there would not be prohibited contour overlap with WKCO on channel 220A at Gambier, Ohio.

Figure 5 is a separation study based on the provisions of Section 73.207 for channel 220A from the proposed transmitter site. As indicated, operation on channel 220A from the proposed site will satisfy the Commission's minimum separation distance requirements, specified in Section 73.207(b) of the Rules, to all assignments.

Response to Paragraph 15(e) - TV Channel 6 Protection

It is required that noncommercial educational FM facilities provide interference protection to affected TV channel 6 facilities as defined in Section 73.525. Pursuant to Section 73.525 (a) (1), all TV channel 6 facilities within 154 kilometers of a proposed WXMF operation must be protected. The former analog operation of WSYX on channel 6 at Columbus, Ohio (BLCT-19931022KE) is the only TV or DTV channel 6 facility within 154 kilometers.[1] Therefore, in an abundance of caution a TV channel 6 protection study was conducted with respect to the former WSYX operation based on the provisions of Section 73.525.

Attached as Figure 6 is a map showing the proposed area of predicted interference to WSYX. The population within the predicted interference area was determined by a computer program, which adds the population of census enumeration districts whose centroids lie within the contour. The 2000 U.S. Census was employed. In accordance with Section 73.525 (c), the proposed WXMF operation must submit a showing indicating that the predicted interference area resulting from the proposed facility contains no more than 3,000 persons. As shown on Figure 7, the predicted area of interference contains 1,051 persons. Therefore, it appears that the proposed WXMF operation complies with Section 73.525(c).

Response to Paragraph 17 – International Borders

The proposed site is located 126 kilometers from the closest point of the Canadian border. Therefore, if necessary it is requested that the proposal be

[1] Station WSYX has terminated operation on analog channel 6 and is currently operating on DTV channel 13 (BLCDT-20030801AXM).

coordinated with Canada. It is noted that the proposal complies with the pertinent provisions of the US-Canadian FM Agreement.

WXMF/WXML 70 dBu Contours

Figure 7 is a map which demonstrates that the 70 dBu contour for the proposed WXMF operation does not overlap any portion of the 70 dBu contour of WXML on channel 211B at Upper Sandusky, OH (BLED-20070705AEZ). This analysis was based on use of the more precise USGS NED 1 arc second terrain data.[2] Using these terrain data, distances to the predicted 70 dBu contours were determined in accordance with Section 73.313 along radials every 1 degree of azimuth.

Environmental Considerations

The proposed facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin provides assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields.

The calculated power density at 2 meters above ground level at the base of the tower was calculated using the FCC's FM Model program. The FM Model was originally developed by the Environmental Protection Agency (EPA) as a tool to predict ground level power density for FM antenna systems. Figure 8 depicts the output of the FCC's FM Model Program based on the proposed NCE-FM operation utilizing an ERI 3 bay, 1-λ spaced antenna. As shown on Figure 8, the calculated power density does not exceed the recommended limit applicable to general population/uncontrolled exposure areas (200 $\mu W/cm^2$ for FM stations) at a distance located between 0-300 meters from the tower base. Therefore, the WXMF operation

[2] The NED (National Elevation Dataset) 1 arc second digitized terrain database is a product of the United States Geological Survey and has a resolution of 1 arc second (approximately 30 meters) for the coterminous United States.

will be in compliance with the FCC's requirements with regard to RFR exposure limits applicable to general population/uncontrolled areas at these locations.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, procedures will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

Finally, it is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure.

W. Jeffrey Reynolds

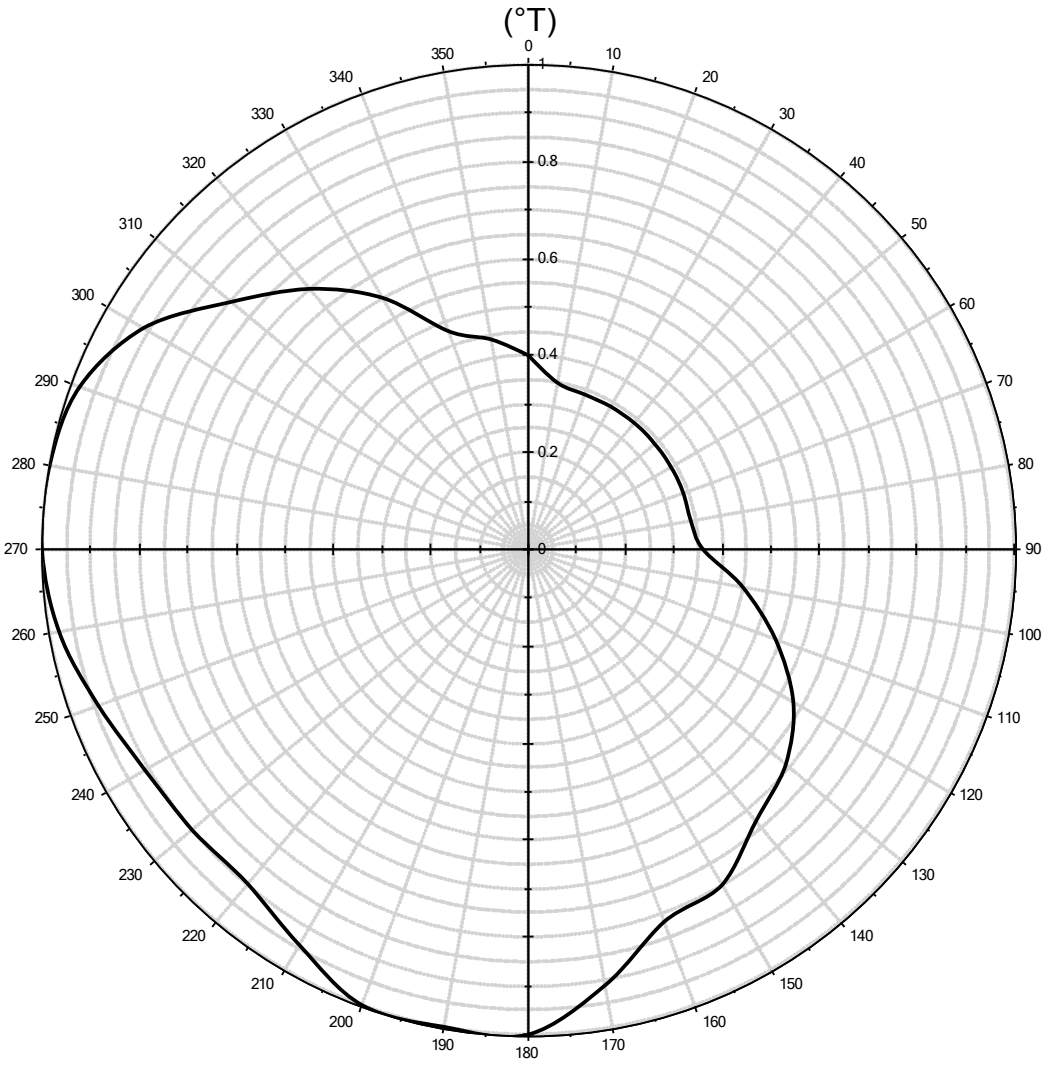
du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, FL 34237-6019
(941) 329-6000
JEFF@DLR.COM

August 3, 2009

DA Inquiry

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida

Antenna Pattern: ***Antenna ID:*** 90227



Note: display reflects rotation of 0.00°

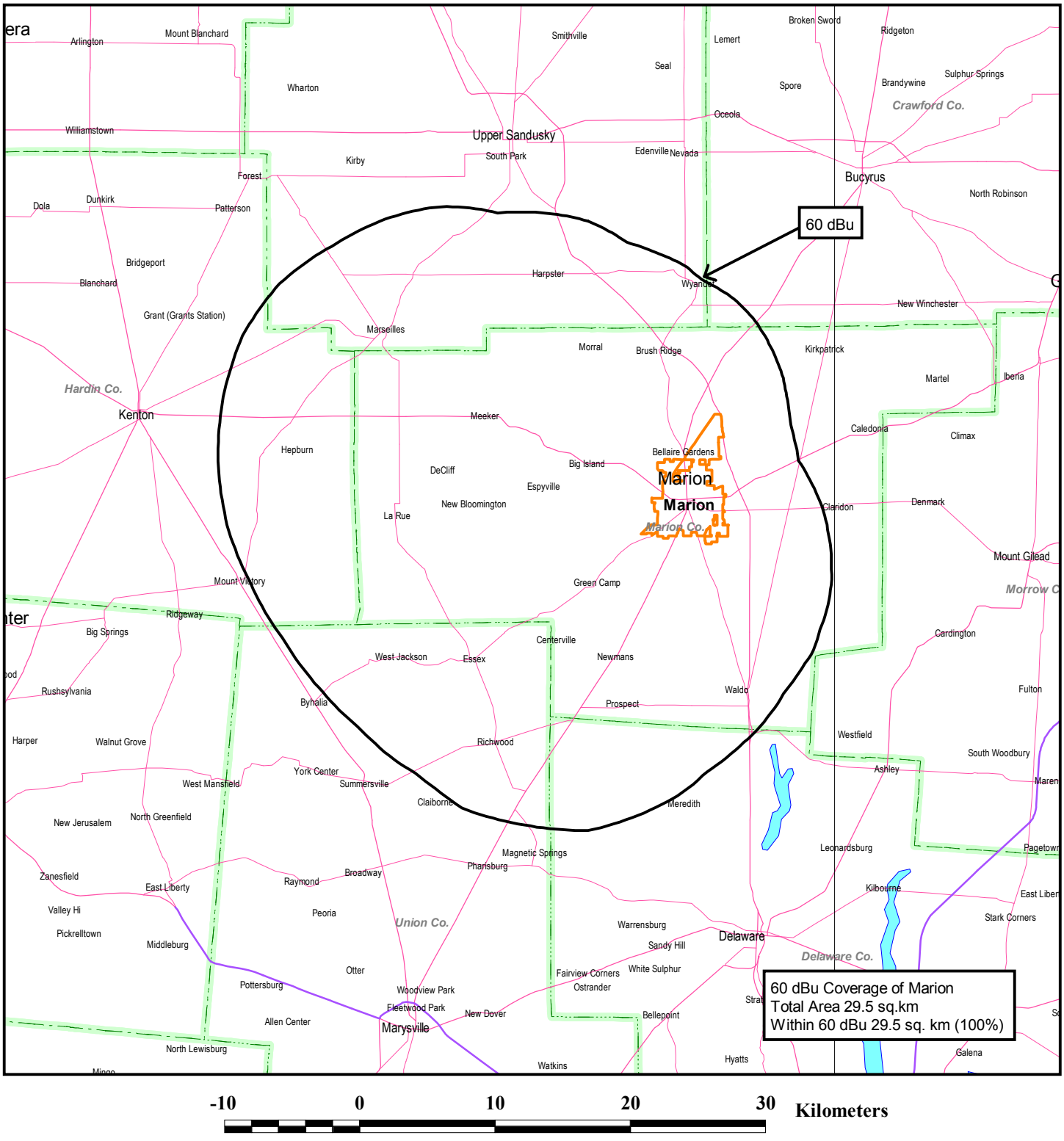
Antenna Details:

0°	0.401	***60°***	0.340	***120°***	0.630	***180°***	1.000	***240°***	0.910	***300°***	0.913
10°	0.349	***70°***	0.340	***130°***	0.691	***190°***	1.000	***250°***	0.941	***310°***	0.795
20°	0.340	***80°***	0.340	***140°***	0.730	***200°***	1.000	***260°***	0.980	***320°***	0.701
30°	0.340	***90°***	0.360	***150°***	0.798	***210°***	0.942	***270°***	1.000	***330°***	0.600
40°	0.340	***100°***	0.449	***160°***	0.818	***220°***	0.899	***280°***	1.000	***340°***	0.480
50°	0.340	***110°***	0.541	***170°***	0.913	***230°***	0.901	***290°***	0.982	***350°***	0.440

Antenna Make: ODD ***Standard Pattern:***

Antenna Model: FORM 340 ***Last Change Date:***

Figure 2



COMPLIANCE WITH SECTION 73.515

FM STATION WXMF
MARION, OHIO
CHANNEL 220A

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

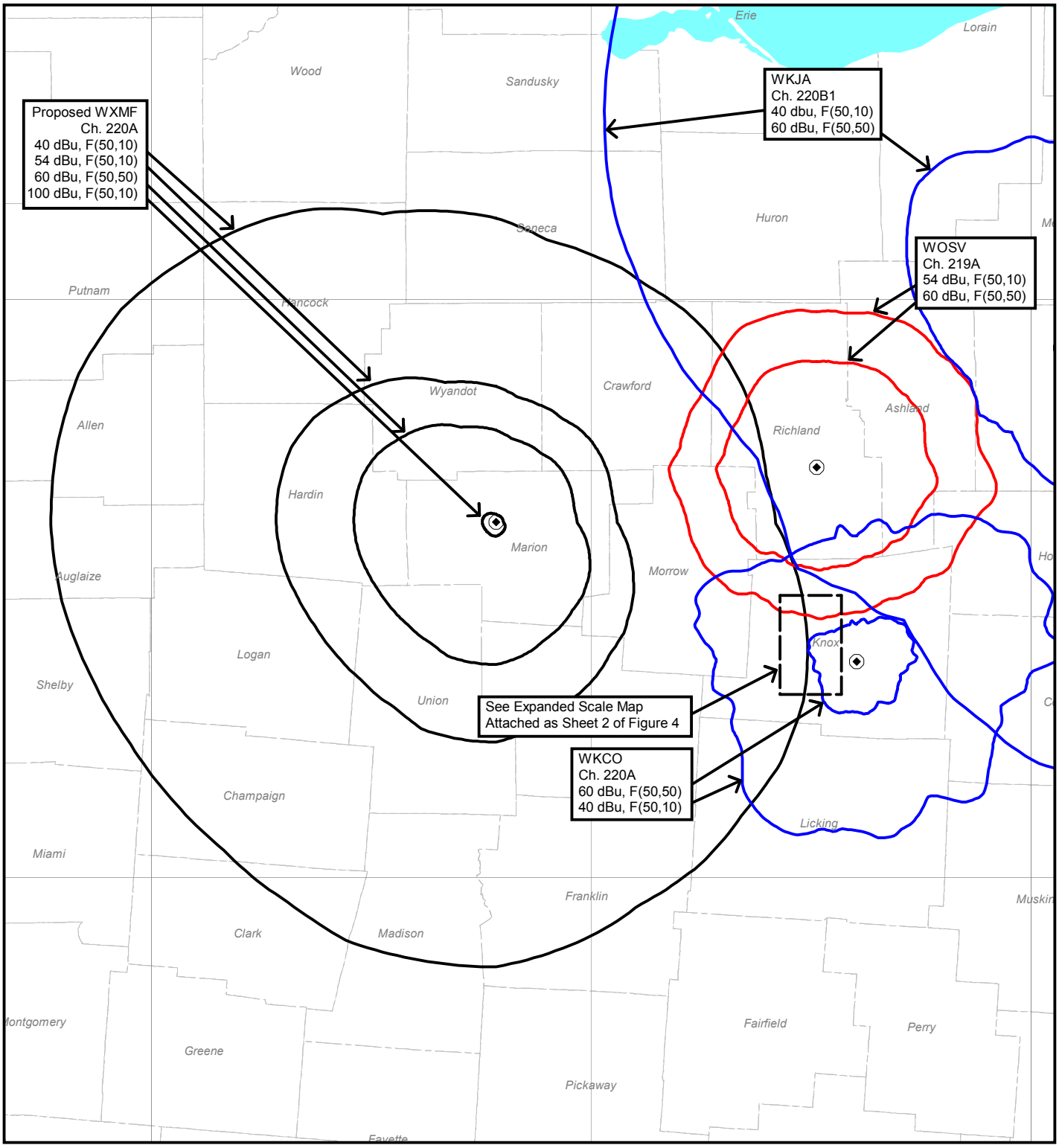
NCE-FM ALLOCATION STUDY

Job Title: WXMF HEIGHT REDUCTION — Separation Buffer: 50 km
Channel: 220 — Coordinates: 40-36-51 83-12-56
ERP = 6 kW HAAT = 97 m

Callsign ID	City St.	Status	File Number	Channel Freq	ERP(kW) HAAT(m)	DA ID	Latitude Longitude	73 215	Bear (deg)	Dist. (km)	Req. (km)
W218BL	WILLARD		BLFT	218 D	0.055	N	41-02-07	N	42.2	63.35	28.4
72476	OH	LIC	20000404ACL	91.5	66		082-42-32			34.95	Clear
W218BL	60.0 dBu	Desired = 7.2 km			Proposed 100.0 dbu		Undesired = 2.7				
Proposed	60.0 dBu	Desired = 27.9 km			W218BL 100.0 dbu		Undesired = .5				
WHKC	COLUMBUS		BLED	218 B	15.0	Y	39-56-14	N	167.6	76.96	52.2
10929	OH	LIC	20061219AAJ	91.5	238		083-01-16			24.78	Clear
WHKC	60.0 dBu	Desired = 49.5 km			Proposed 100.0 dbu		Undesired = 2.7				
Proposed	60.0 dBu	Desired = 27.9 km			WHKC 100.0 dbu		Undesired = 5.2				
WOSV	MANSFIELD		BLED	219 A	0.75	N	40-42-33	N	80.0	62.56	66.3
66184	OH	LIC	19900116KA	91.7	183		082-29-11			-3.71	Short[1]
WOSV	60.0 dBu	Desired = 23.1 km			Proposed 54.0 dbu		Undesired = 43.1				
Proposed	60.0 dBu	Desired = 27.9 km			WOSV 54.0 dbu		Undesired = 34.6				
WDEQ-FM	DE GRAFF		BLED	219 A	0.1	N	40-18-54	N	241.2	68.59	48.8
56576	OH	LIC	20030326AFT	91.7	25		083-55-23			19.84	Clear
WDEQ-FM	60.0 dBu	Desired = 5.6 km			Proposed 54.0 dbu		Undesired = 43.1				
Proposed	60.0 dBu	Desired = 27.9 km			WDEQ-FM 54.0 dbu		Undesired = 8.0				
WJIC	ZANESVILLE		BLED	219 A	6.0	Y	39-58-02	N	129.9	111.44	75.4
85074	OH	LIC	20001214AJI	91.7	122		082-12-49			36.08	Clear
WJIC	60.0 dBu	Desired = 30.9 km			Proposed 54.0 dbu		Undesired = 43.1				
Proposed	60.0 dBu	Desired = 27.9 km			WJIC 54.0 dbu		Undesired = 47.5				
WXMF	MARION		BMPED	220 A	5.0	Y	40-36-51	N	90.0	0.0	
93251	OH	CP MOD	20081112AAR	91.9	107		083-12-56				
WKCO	GAMBIER		BMLED	220 A	0.265	N	40-22-25	N	110.8	74.45	98.0
34261	OH	LIC	20060202ADC	91.9	81		082-23-45			-23.51	Short[1]
WKCO	60.0 dBu	Desired = 11.8 km			Proposed 40.0 dbu		Undesired = 86.2				
Proposed	60.0 dBu	Desired = 27.9 km			WKCO 40.0 dbu		Undesired = 40.5				
WKJA	BRUNSWICK		BNPED	220 B1	25.0	Y	40-54-56	Y	72.4	113.41	145.5
122205	OH	CP	20000118AAK	91.9	123		081-55-56			-32.14	Short[1]
WKJA	60.0 dBu	Desired = 42.4 km			Proposed 40.0 dbu		Undesired = 86.2				
Proposed	60.0 dBu	Desired = 27.9 km			WKJA 40.0 dbu		Undesired = 117.7				
W220BP	WOOSTER		BLFT	220 D	0.045	N	40-49-40	N	77.7	116.0	93.9
83675	OH	LIC	19970703TB	91.9	86		081-52-18			22.06	Clear
W220BP	60.0 dBu	Desired = 7.8 km			Proposed 40.0 dbu		Undesired = 86.2				
Proposed	60.0 dBu	Desired = 27.9 km			W220BP 40.0 dbu		Undesired = 26.0				
WGDE	DEFIANCE		BLED	220 A	6.0	Y	41-17-41	N	307.9	124.46	114.9
53713	OH	LIC	19990305KB	91.9	102		084-23-24			9.57	Close
WGDE	60.0 dBu	Desired = 28.6 km			Proposed 40.0 dbu		Undesired = 86.2				
Proposed	60.0 dBu	Desired = 27.9 km			WGDE 40.0 dbu		Undesired = 87.0				

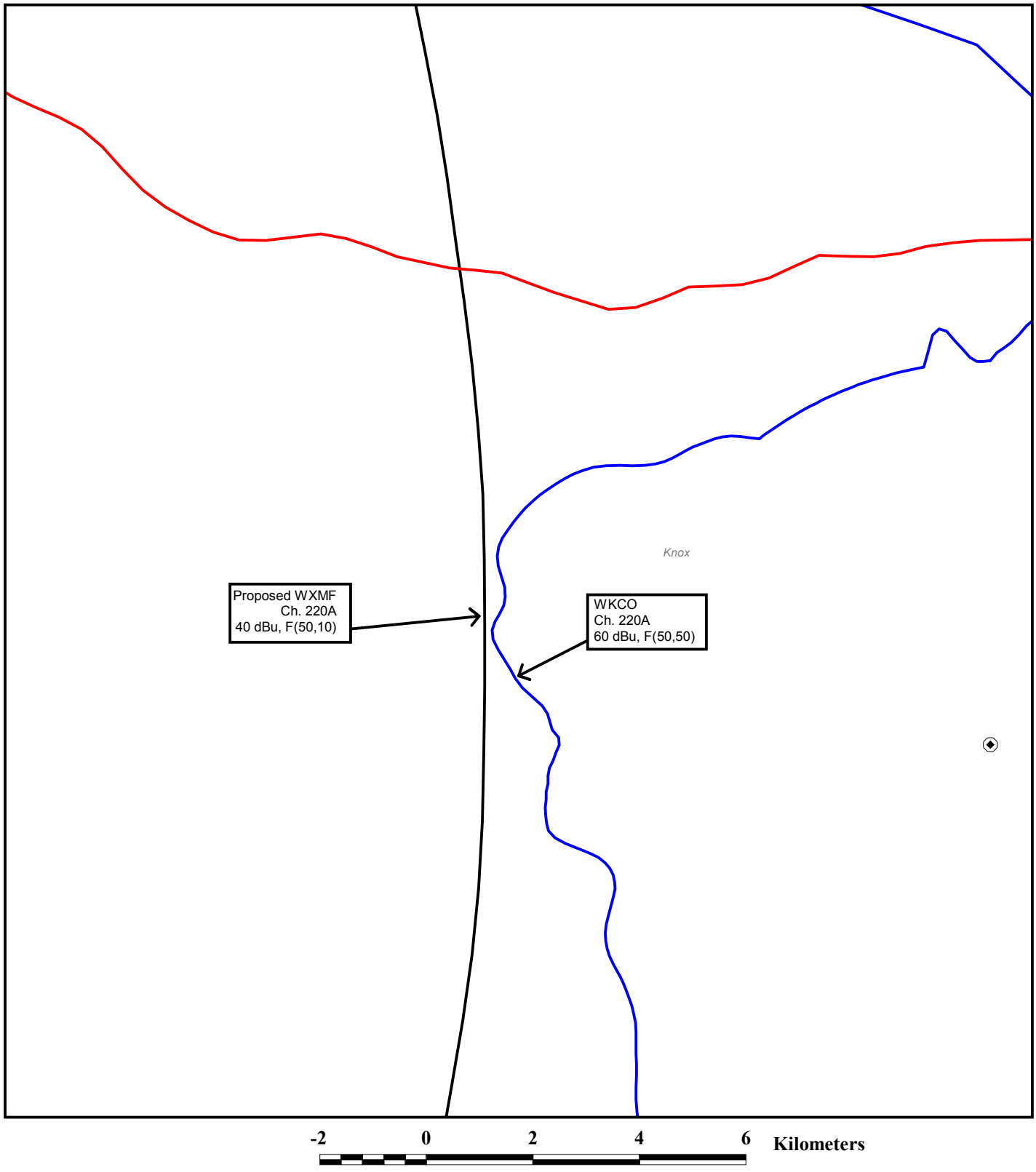
[1] No prohibited contour overlap. See Figure 4

Callsign ID	City St.	Status	File Number	Channel Freq	ERP(kW) HAAT(m)	DA ID	Latitude Longitude	73 215	Bear (deg)	Dist. (km)	Req. (km)
WMUO	GREENVILLE		BNPED	220 A	6.0	Y	40-08-21	Y	246.5	130.24	112.4
174886	OH	CP	20071019ALD	91.9	85		084-37-04			17.88	Clear
WMUO	60.0 dBu	Desired = 26.2 km			Proposed 40.0 dbu		Undesired = 86.2				
Proposed	60.0 dBu	Desired = 27.9 km			WMUO 40.0 dbu		Undesired = 84.0				
WOUH-FM	CHILLICOTH		BLED	220 A	0.75	N	39-19-46	N	166.0	146.95	112.4
50143	OH	LIC	19920709KB	91.9	240		082-48-08			34.54	Clear
WOUH-FM	60.0 dBu	Desired = 26.3 km			Proposed 40.0 dbu		Undesired = 86.2				
Proposed	60.0 dBu	Desired = 27.9 km			WOUH-FM 40.0 dbu		Undesired = 76.3				
WFGF	WAPAKONETA		BLH	221 A	3.0	N	40-39-20	N	273.8	76.23	70.1
74293	OH	LIC	19850510KC	92.1	128		084-06-54			6.15	Close
WFGF	60.0 dBu	Desired = 27.0 km			Proposed 54.0 dbu		Undesired = 43.1				
Proposed	60.0 dBu	Desired = 27.9 km			WFGF 54.0 dbu		Undesired = 41.0				
WOHF	BELLEVUE		BLH	221 A	6.0	N	41-14-19	Y	24.4	76.3	74.9
4625	OH	LIC	20031222ACL	92.1	119		082-50-16			1.36	Close
WOHF	60.0 dBu	Desired = 30.6 km			Proposed 54.0 dbu		Undesired = 43.1				
Proposed	60.0 dBu	Desired = 27.9 km			WOHF 54.0 dbu		Undesired = 47.0				
W221BG	RUDOLPH		BLFT	221 D	0.038	N	41-14-54	N	332.3	79.72	49.8
138974	OH	LIC	20070130AJR	92.1	70		083-39-33			29.88	Clear
W221BG	60.0 dBu	Desired = 6.7 km			Proposed 54.0 dbu		Undesired = 43.1				
Proposed	60.0 dBu	Desired = 27.9 km			W221BG 54.0 dbu		Undesired = 9.6				
WCOL-FM	COLUMBUS		BLH	222 B	22.0	N	39-58-16	N	167.4	73.17	72.1
25037	OH	LIC	19890808KA	92.3	265		083-01-40			1.04	Close
WCOL-FM	54.0 dBu	Desired = 68.2 km			Proposed 94.0 dbu		Undesired = 4.0				
Proposed	60.0 dBu	Desired = 27.9 km			WCOL-FM 100.0 dbu		Undesired = 6.2				
WCOL-FM	COLUMBUS		BMLH	222 B	50.0		39-56-31		167.6	76.43	59.8
25037	OH	LIC	19901121KF	92.3	94		083-01-20			16.62	Clear
WCOL-FM	54.0 dBu	Desired = 55.9 km			Proposed 94.0 dbu		Undesired = 4.0				
Proposed	60.0 dBu	Desired = 27.9 km			WCOL-FM 100.0 dbu		Undesired = 4.7				
WVKS	TOLEDO		BMLH	223 B	50.0	N	41-31-55	N	342.9	106.76	70.5
48964	OH	LIC	19961008KA	92.5	162		083-35-37			36.22	Clear
WVKS	54.0 dBu	Desired = 66.6 km			Proposed 94.0 dbu		Undesired = 4.0				
Proposed	60.0 dBu	Desired = 27.9 km			WVKS 100.0 dbu		Undesired = 6.2				
NEW	DELAWARE		BNPFT	274 D	0.17	N	40-17-47	N	160.3	37.49	10.0
139522	OH	APP	20030310BDJ	102.7	0		083-03-59			27.49	Clear



SECTION 73.509 COMPLIANCE

FM STATION WXMF
MARION, OHIO
CH 220A 6 KW (MAX-DA) 93 M



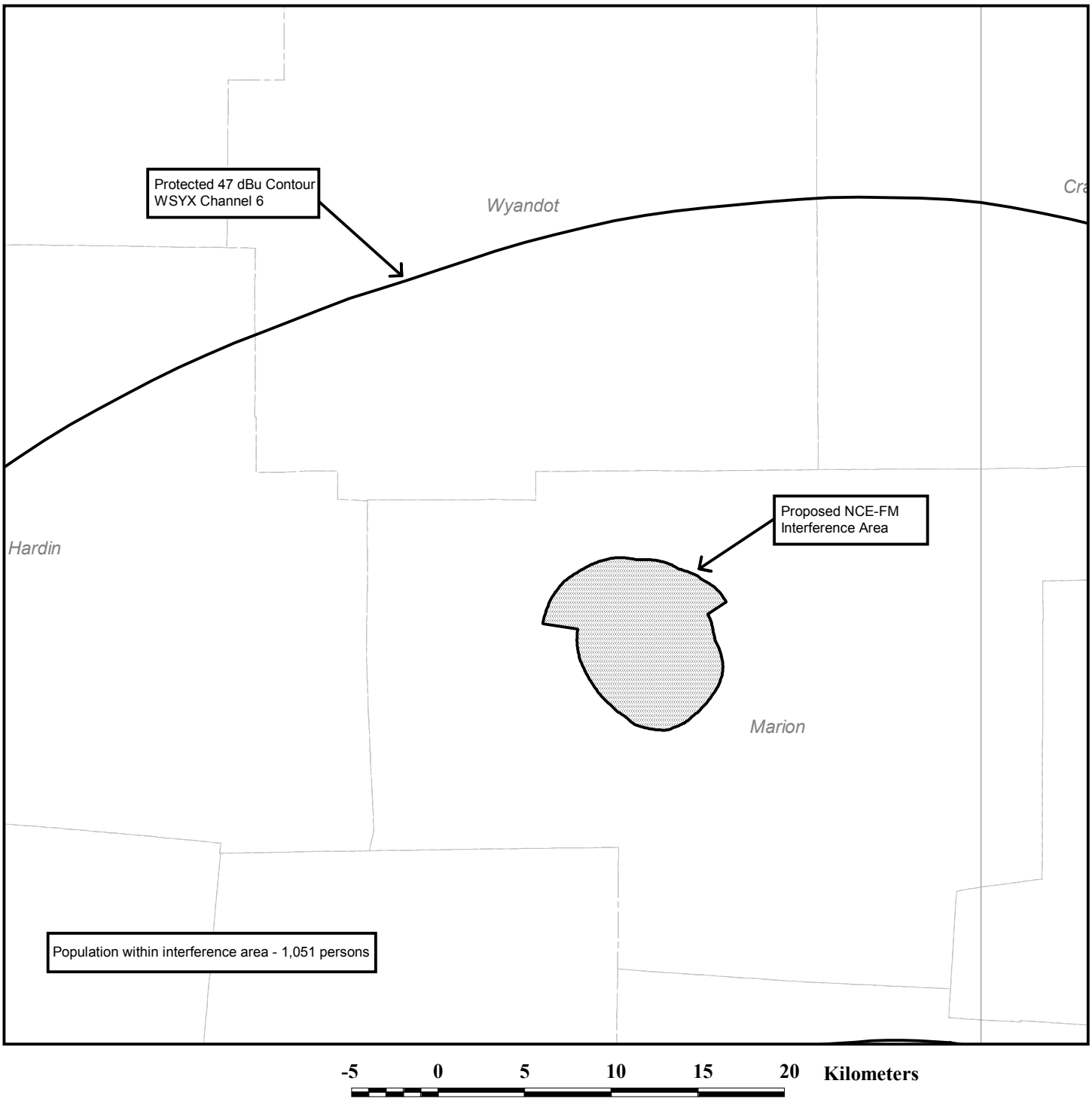
SECTION 73.509 COMPLIANCE (EXPANDED SCALE)

FM STATION WXMF
MARION, OHIO
CH 220A 6 KW (MAX-DA) 93 M

Section 73.207(a) Separation Study

Date: 09/03/2009
Channel: 220 ***Coordinates:*** 040-36-51 083-12-56 (NAD 27) ***Page:*** 1 of 1
Class: A ***Buffer Distance:*** 32 km

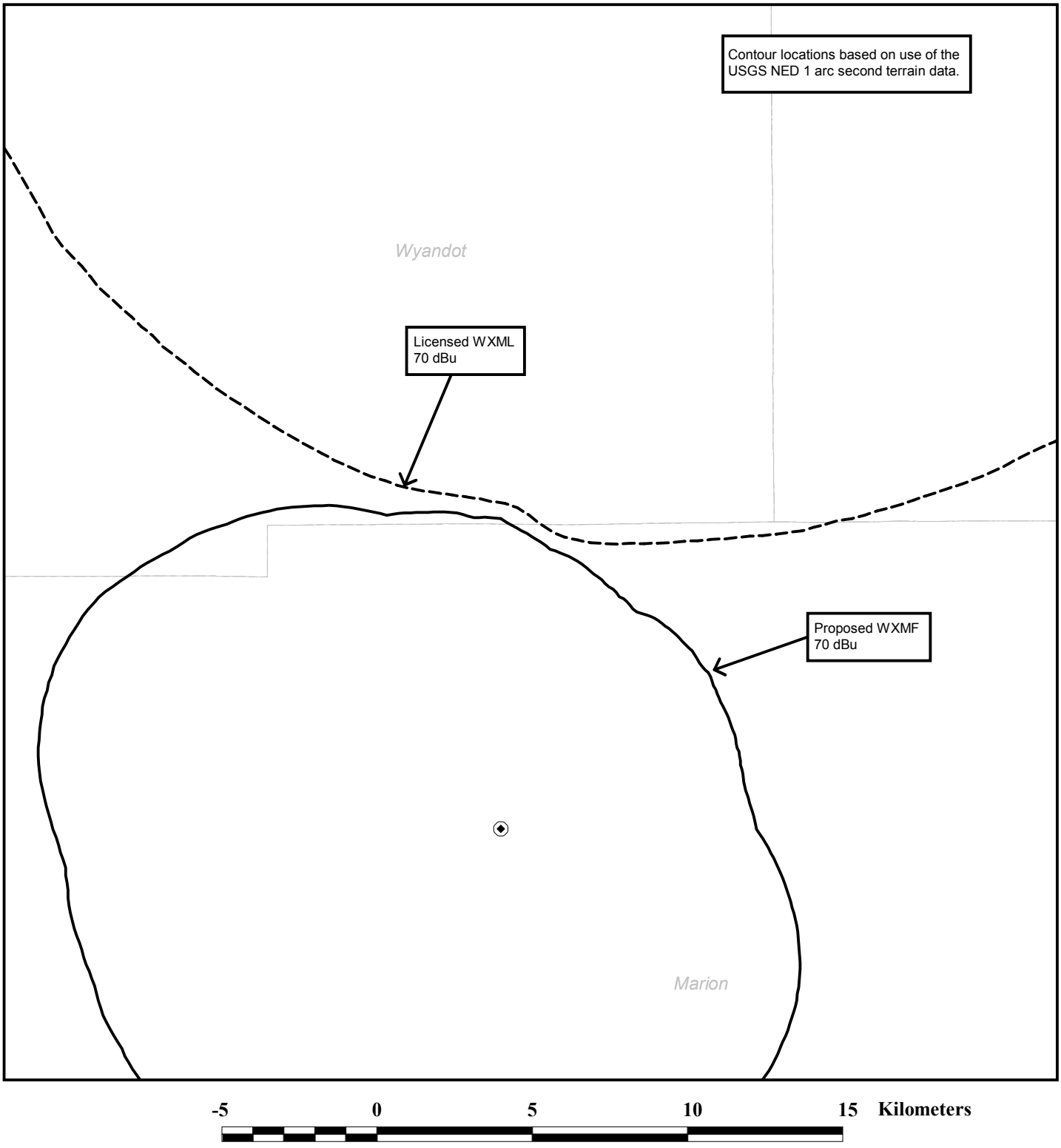
Callsign / *Fac. ID*	*Status* / *ARN*	*Chan.* / *Class*	*Serv.* / *DA*	*Freq.* / *Ant. ID*	*City*	*ERP(kW)*	*State* / *HAAT(m)*	*Latitude* / *Longitude*	*Dist.(km)* / *Bear.(deg)*	*Sep.(km)* / *73.215*	*Spacing(km)* / *Comment*
WFGF	LIC	221	FM	92.1	WAPAKONETA		OH	040-39-20	76.23	72	4.23
74293	BLH 19850510KC	A				3	100	084-06-54	273.76	***49 N***	***CLOSE***
WOHF	LIC	221	FM	92.1	BELLEVUE		OH	041-14-19	76.3	72	4.3
4625	BLH 20031222ACL	A		N		6	100	082-50-16	24.44	***49 Y***	***CLOSE***
WCOL-FM	LIC	222	FM	92.3	COLUMBUS		OH	039-58-16	73.17	69	4.17
25037	BLH 19890808KA	B		N		22	230	083-01-40	167.38	***63 N***	***CLOSE***



PREDICTED AREAS OF INTERFERENCE TO FORMER NTSC STATION WSYX CH 6

FM STATION WXMF
MARION, OHIO
CH 220A 6 KW (MAX-DA) 93 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

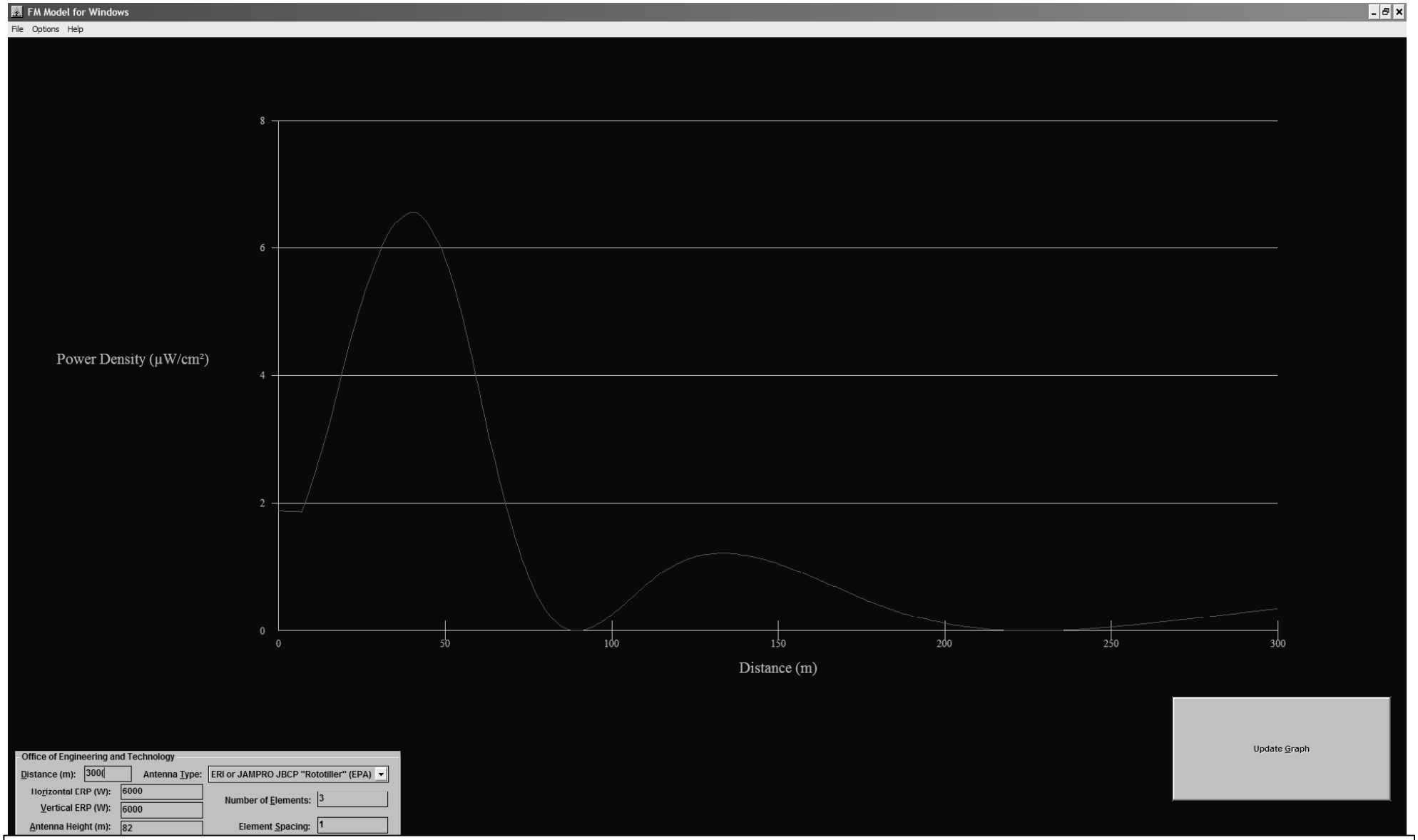


PREDICTED 70 DBU CONTOURS

FM STATION WXMF
MARION, OHIO
CH 220A 6 KW (MAX-DA) 93 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 8


FM Model for Windows
File Options Help
Power Density (µW/cm²)
8
6
4
2
0
0
50
100
150
200
250
300
Distance (m)
Update Graph
Office of Engineering and Technology
Distance (m): 300
Antenna Type: ERI or JAMPRO JBCP "Rototiller" (EPA)
Horizontal ERP (W): 6000
Vertical ERP (W): 6000
Antenna Height (m): 82
Number of Elements: 3
Element Spacing: 1