

CH 6 TV Protection Study

WMWK currently operates on CH 201 co-located at the WITI CH 6 TV site. The minor modification proposes to relocate WMWK to a site that is 26.03 km from its existing location, and increase the ERP to 1.0 kW vertical-only (DA) at a COR AMSL of 420 meters. Per Section 73.525, the maximum permissible vertically polarized ERP of 1.0 kW (DA) was calculated by multiplying the maximum horizontally polarized ERP of .025 kW (DA) by 40, as the FM predicted interference area lies entirely outside the limits of a city of 50,000 persons or more.

There are two CH 6 TV stations that are within the required study distance of 265 km for FM CH 201, WITI-TV, Milwaukee, WI, and KWQCTV, Davenport, IA. WMWK's proposed modification is within the 47 dBu of WITI TV, however, WMWK will have no overlap with KWQCTV.

Pages 2 - 5 of this Exhibit contain information on WITI-TV, and pages 6 - 7 contain information on KWQCTV.

CH 6 TV Protection Study

WITI LI 06Z 1C Dom 100.000 kW 305 M HAAT V
 Milwaukee WI 511M COR AMSL
 Lat= 43 05 26, Lng= 87 53 50
 Witi License,inc. BLCT19990129KT
 Fac ID# 73107, Cutoff Date= 991126
 Dist.=26.00047 km, Azi=59.0°, Rev Azi=239.2°

Direct line HAAT Grade B, 47 dBu= 102.98 km & Grade A= 53.89 km

Distance from reference to Grade B = -76.98 km
 Cutoff Dist from Full Service= 265
 Maximum Co-located power= 1.1 kW
 WITI Signal Contour at Reference location = 83.2 dBu
 CH. 201, U/D ratio = -6.0 dB, Maximum FM signal = 77.2 dBu , add 6 dB if within angle.

TV/FM D to U values

47.0	48.0	55.0	53.7	63.0	59.4	71.0	66.1	79.0	73.4	87.0	80.7
48.0	48.7	56.0	54.4	64.0	60.1	72.0	67.0	80.0	74.3	88.0	81.7
49.0	49.3	57.0	55.1	65.0	60.9	73.0	67.9	81.0	75.2	89.0	82.6
50.0	50.0	58.0	55.7	66.0	61.7	74.0	68.7	82.0	76.1	90.0	83.5
51.0	50.7	59.0	56.4	67.0	62.6	75.0	69.7	83.0	77.0	91.0	83.5
52.0	51.5	60.0	57.1	68.0	63.4	76.0	70.6	84.0	77.9	92.0	83.5
53.0	52.2	61.0	57.9	69.0	64.3	77.0	71.5	85.0	78.9	93.0	83.5
54.0	52.9	62.0	58.6	70.0	65.2	78.0	72.4	86.0	79.8	94.0	83.5

Tabulation of the HAAT & distances to WITI TV CH 6 80 dBu – 85 dBu protected contours, 220 - 260 degrees

Azimuth	HAAT (m)	80 dBu (km)	81 dBu (km)	82 dBu (km)	83 dBu (km)	84 dBu (km)	85 dBu (km)
220	299.7	31.22	29.56	28.00	26.54	25.15	23.83
225	296.6	31.05	29.41	27.86	26.41	25.03	23.71
230	295.0	30.97	29.33	27.79	26.34	24.96	23.65
235	295.2	30.98	29.34	27.80	26.35	24.97	23.66
240	292.4	30.84	29.20	27.67	26.23	24.86	23.55
245	289.9	30.71	29.08	27.56	26.12	24.76	23.46
250	290.6	30.74	29.11	27.59	26.15	24.78	23.48
255	290.7	30.75	29.12	27.60	26.16	24.79	23.49
260	288.6	30.64	29.02	27.50	26.06	24.70	23.40

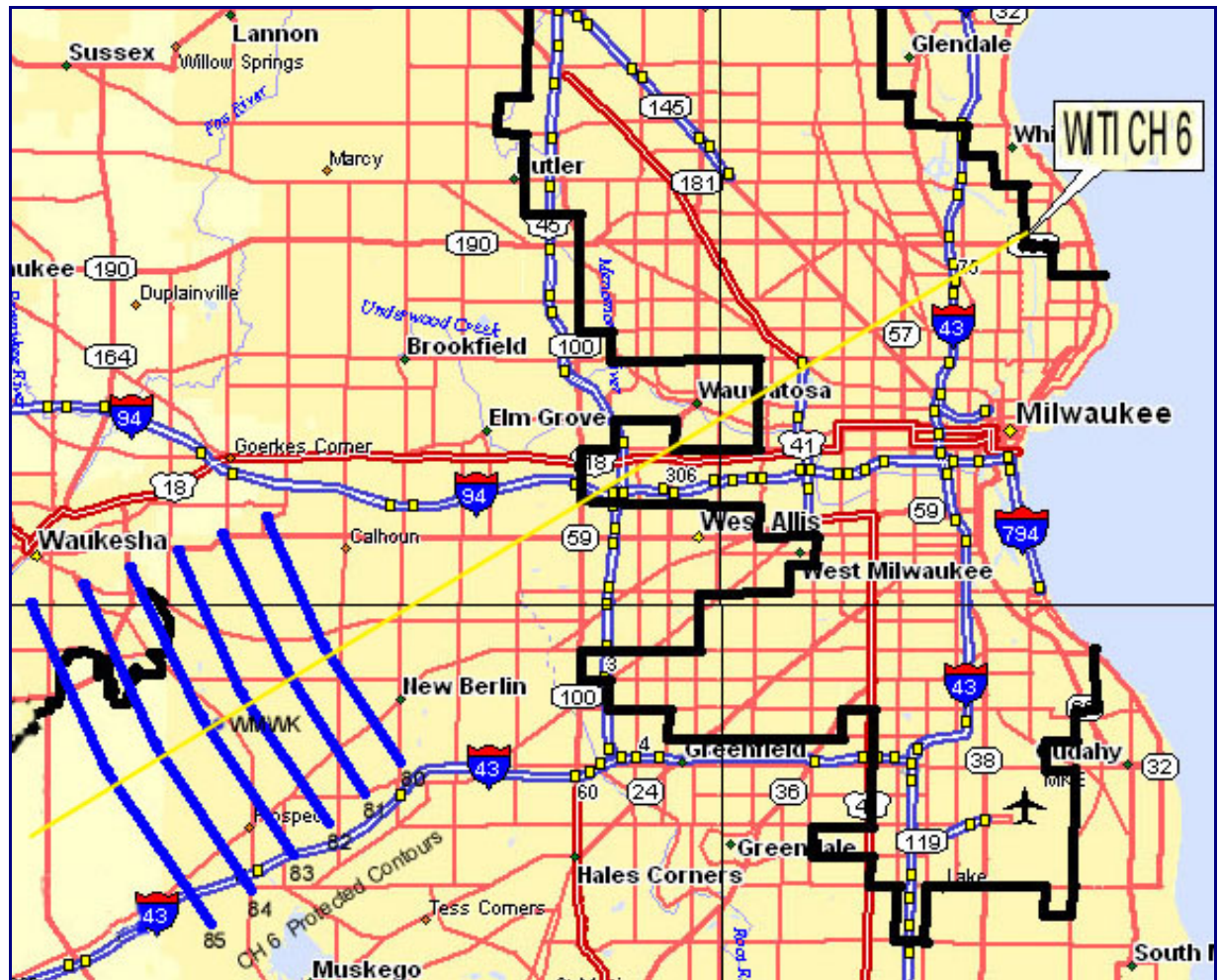
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Below is the tabulation of the CH 6 protected contours and the corresponding FM interference contours and distances resulting in the FM predicted interference area:

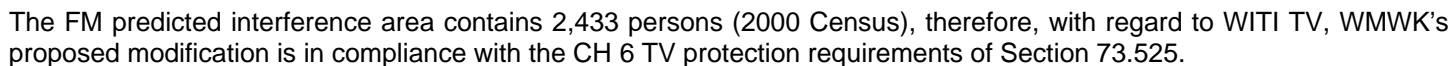
Azimuth	CH 6 dBu	FM Int. dBu	FM ERP	Study ERP*	FM HAAT	FM Dist.
0	82.0	76.1	1.0	.025	163.0	3.39
10	81.0	75.2	1.0	.025	152.2	3.50
20	81.0	75.2	1.0	.025	159.7	3.58
30	81.0	75.2	1.0	.025	165.7	3.64
40	80.0	74.3	1.0	.025	169.5	3.92
50	80.0	74.3	1.0	.025	174.3	3.97
60	80.0	74.3	1.0	.025	176.4	3.99
70	80.0	74.3	1.0	.025	176.9	3.99
80	80.0	74.3	1.0	.025	177.7	4.00
90	81.0	75.2	1.0	.025	172.9	3.71
100	81.0	75.2	1.0	.025	170.4	3.69
110	81.0	75.2	1.0	.025	173.1	3.72
120	82.0	76.1	1.0	.025	169.7	3.45
130	82.0	76.1	.631	.016	170.0	2.98
140	82.0	76.1	.400	.010	169.2	2.55
150	83.0	77.0	.280	.007	174.1	2.11
160	83.0	77.0	.280	.007	175.5	2.12
170	83.0	77.0	.280	.007	169.2	2.09
180	83.0	77.0	.280	.007	160.7	2.06
190	84.0	77.9	.280	.007	154.9	1.89
200	84.0	77.9	.280	.007	152.7	1.88
210	84.0	77.9	.280	.007	147.1	1.86
220	84.0	77.9	.280	.007	153.4	1.88
230	84.0	77.9	.280	.007	155.4	1.89
240	84.0	77.9	.280	.007	172.8	1.95
250	84.0	77.9	.280	.007	168.2	1.93
260	84.0	77.9	.280	.007	167.6	1.93
270	84.0	77.9	.280	.007	160.5	1.91
280	84.0	77.9	.280	.007	157.4	1.90
290	84.0	77.9	.280	.007	154.9	1.89
300	84.0	77.9	.280	.007	141.1	1.84
310	83.0	77.0	.280	.007	146.0	2.00
320	83.0	77.0	.280	.007	148.6	2.01
330	83.0	77.0	.280	.007	154.9	2.04
340	83.0	77.0	.400	.010	151.5	2.29
350	82.0	76.1	.631	.016	154.6	2.87

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Overview map of WITI TV location, WMWK FM proposed location, & CH 6 protected contours



CH 6 protected contours & FM Predicted Interference Area plotted on US Census Bureau Map



CH 6 TV Protection Study

KWQCTV is located within the required study distance of 265 km for FM CH 201. Using a maximum horizontally polarized ERP for this study of .025 kW (DA) , WMWK's 48 dBu interfering contour does not overlap KWQCTV's 47 dBu protected contour, therefore, WMWK's proposed minor modification is in compliance with Section 73.525 of the Commission's rules.

Below is information on KWQCTV, and page 7 contains a tabulation of KWQCTV's 47 dBu protected contour and WMWK's 48 dBu interfering contour, showing the lack of overlap.

KWQCTV LI 06+ 2C Dom 100.000 kW 408 M HAAT V H
 Davenport IA 611M COR AMSL
 Lat= 41 32 49, Lng= 90 28 35
 Young Broadcasting Of Dave BLCT19821108KN
 Fac ID# 6885, Cutoff Date= 831129
 Dist.=247.3663 km, Azi=230.9°, Rev Azi=49.4°

Direct line HAAT Grade B, 47 dBu= 111.92 km & Grade A= 61.07 km

Distance from reference to Grade B = 135.44 km

Cutoff Dist from Full Service= 265

Maximum Co-located power= 1.1 kW

KWQCTV Signal Contour at Reference location = 18.7 dBu

CH. 201, U/D ratio = 1.0 dB, Maximum FM signal = 48.0 dBu , add 6 dB if within angle.

TV/FM D to U values

47.0	48.0	55.0	53.7	63.0	59.4	71.0	66.1	79.0	73.4	87.0	80.7
48.0	48.7	56.0	54.4	64.0	60.1	72.0	67.0	80.0	74.3	88.0	81.7
49.0	49.3	57.0	55.1	65.0	60.9	73.0	67.9	81.0	75.2	89.0	82.6
50.0	50.0	58.0	55.7	66.0	61.7	74.0	68.7	82.0	76.1	90.0	83.5
51.0	50.7	59.0	56.4	67.0	62.6	75.0	69.7	83.0	77.0	91.0	83.5
52.0	51.5	60.0	57.1	68.0	63.4	76.0	70.6	84.0	77.9	92.0	83.5
53.0	52.2	61.0	57.9	69.0	64.3	77.0	71.5	85.0	78.9	93.0	83.5
54.0	52.9	62.0	58.6	70.0	65.2	78.0	72.4	86.0	79.8	94.0	83.5

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Tabulation of KWQCTV CH 6 47 dBu protected contour and WMWK FM 48 dBu interfering contour

Protected 47 dBu				Interfering 48 dBu				
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
030.0	100.0000	0394.9	110.9	245.5	000.0070	0168.0	147.2	00.2
031.0	100.0000	0395.5	111.0	244.9	000.0070	0168.7	146.1	00.4
032.0	100.0000	0395.9	111.0	244.3	000.0070	0169.6	145.0	00.6
033.0	100.0000	0396.0	111.0	243.6	000.0070	0169.6	144.0	00.8
034.0	100.0000	0396.2	111.0	242.9	000.0070	0170.9	143.1	01.0
035.0	100.0000	0396.6	111.1	242.2	000.0070	0172.1	142.1	01.2
036.0	100.0000	0397.3	111.1	241.5	000.0070	0172.1	141.2	01.4
037.0	100.0000	0398.1	111.2	240.8	000.0070	0172.7	140.4	01.5
038.0	100.0000	0398.7	111.3	240.1	000.0070	0172.8	139.6	01.7
039.0	100.0000	0398.7	111.3	239.3	000.0070	0172.6	138.9	01.8
040.0	100.0000	0398.2	111.2	238.6	000.0070	0172.6	138.4	01.9
041.0	100.0000	0398.0	111.2	237.8	000.0070	0172.2	137.8	02.0
042.0	100.0000	0398.6	111.2	237.0	000.0070	0171.7	137.3	02.1
043.0	100.0000	0399.8	111.4	236.2	000.0070	0170.7	136.7	02.2
044.0	100.0000	0401.2	111.5	235.5	000.0070	0169.2	136.2	02.3
045.0	100.0000	0402.5	111.6	234.6	000.0070	0169.2	135.8	02.3
046.0	100.0000	0403.5	111.7	233.8	000.0070	0167.3	135.4	02.4
047.0	100.0000	0404.2	111.7	233.0	000.0070	0164.7	135.1	02.4
048.0	100.0000	0404.9	111.8	232.2	000.0070	0161.5	134.9	02.3
049.0	100.0000	0405.8	111.9	231.4	000.0070	0158.2	134.8	02.3
050.0	100.0000	0407.0	112.0	230.5	000.0070	0158.2	134.6	02.3
051.0	100.0000	0408.2	112.1	229.7	000.0070	0155.4	134.6	02.2
052.0	100.0000	0409.1	112.2	228.9	000.0070	0153.5	134.6	02.2
053.0	100.0000	0409.7	112.2	228.0	000.0070	0152.5	134.7	02.1
054.0	100.0000	0410.0	112.3	227.2	000.0070	0152.0	134.9	02.1
055.0	100.0000	0410.1	112.3	226.4	000.0070	0152.0	135.2	02.0
056.0	100.0000	0410.3	112.3	225.6	000.0070	0152.0	135.5	02.0
057.0	100.0000	0410.7	112.3	224.8	000.0070	0152.5	135.9	01.9
058.0	100.0000	0411.8	112.4	223.9	000.0070	0153.1	136.3	01.8
059.0	100.0000	0413.4	112.6	223.1	000.0070	0153.5	136.6	01.8
060.0	100.0000	0415.3	112.7	222.3	000.0070	0153.6	137.1	01.7
061.0	100.0000	0417.4	112.9	221.5	000.0070	0153.6	137.5	01.6
062.0	100.0000	0419.4	113.1	220.7	000.0070	0153.5	138.1	01.5
063.0	100.0000	0421.4	113.3	220.0	000.0070	0153.4	138.7	01.4
064.0	100.0000	0423.5	113.5	219.2	000.0070	0153.3	139.3	01.2
065.0	100.0000	0425.8	113.7	218.4	000.0070	0153.4	140.0	01.1
066.0	100.0000	0428.1	113.9	217.7	000.0070	0153.4	140.8	01.0
067.0	100.0000	0430.2	114.1	216.9	000.0070	0153.4	141.6	00.8
068.0	100.0000	0431.3	114.2	216.2	000.0070	0152.8	142.6	00.6
069.0	100.0000	0431.0	114.1	215.6	000.0070	0152.8	143.7	00.4
070.0	100.0000	0429.5	114.0	215.0	000.0070	0151.7	144.9	00.1