

**Channel Study**

REFERENCE	CH#	240D - 95.9 MHz, Pwr= 0.13 kW, HAAT= 140.8 M,		COR= 409 M		DISPLAY DATES					
42 40 32.9 N.		Average Protected F(50-50)= 12.9 km				DATA 06-14-17					
84 30 00.1 W.		Omni-directional				SEARCH 06-15-17					
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
240D Webberville	W240CG!	LIC	C MI	147.2	4.04	42 38 42.9	0.055	24.3	7.2	-32.9	-46.1
				327.2	BLFT20130815ABZ	84 28 23.7		328	Educational Media Foundati		
237D Mason	W237BY	LIC	C MI	325.4	7.70	42 43 58.0	0.250	1.1	12.2	-6.9*<	-5.3*<
				145.3	BLFT20150513ABQ	84 33 13.0		355	Olivet Nazarene University		
243A Dewitt	WQHH	LIC	CX MI	324.7	23.67	42 50 58.0	6.000	2.6	26.5	7.6	-3.6*<
				144.6	BLH20030331ALN	84 40 04.0	98	343	The Macdonald Broadcasting		
240D Jackson	W240DG	LIC	C MI	173.8	53.94	42 11 35.0	0.250	34.3	10.2	6.9	0.8
				353.8	BLFT20160620AAZ	84 25 44.0		362	Jackson Radio Works, Inc.		
241C0 Bay City	WHNN	LIC	DCN MI	33.7	117.63	43 33 10.0	100.000	95.7	65.6	8.7	32.1
				214.3	BLH19920211KB	83 41 24.0	311	493	Radio License Holding Cbc,		
239B Grand Rapids	WLHT-FM	LIC	CN MI	292.5	105.50	43 01 57.0	40.000	79.2	66.4	13.0	10.9
				111.7	BLH19840120AE	85 41 47.0	168	397	Townsquare Media Of Grand		
240B1 Windsor	CJWF-FM	OP	DHN ON	113.9	136.21	42 10 15.0	11.800	98.7	48.2	24.9	30.1
				294.9	8991	82 59 29.0	145	330	Cjwf-Fm		
240A Three Rivers	WLKM-FM	LIC	DCX MI	225.7	123.19	41 53 51.0	3.600	82.9	27.8	27.5	52.4
				45.0	BLH20091006ABF	85 33 51.0	130	383	Impact Radio, Llc		
241B Holland	WMAX-FM	LIC	DEN MI	278.6	113.22	42 49 10.0	50.000	65.2	55.3	34.9	29.9
				97.7	BLH19850403KR	85 52 09.0	150	357	Cc Licenses, Llc		
238B Detroit	WKQI	LIC	CX MI	101.5	109.10	42 28 23.0	100.000	6.2	66.5	90.3	41.0
				282.4	BMLH20130617AAP	83 11 59.0	130	338	Amfm Radio Licenses, L.l.c		
242B Detroit	WDVD	LIC	CN MI	102.3	112.46	42 27 13.0	20.000	5.7	64.7	94.2	46.2
				283.2	BLH19861112KB	83 09 50.0	240	440	Radio License Holdings Llc		
237A Battle Creek	WBCK	LIC	CN MI	231.9	69.60	42 17 17.0	3.000	2.1	22.0	54.8	46.8
				51.4	BLH6625	85 09 54.0	82	362	Townsquare Media Battle Cr		
242D Marshall	W242BH	LIC	C MI	225.4	62.43	42 16 51.0	0.120	0.8	5.9	48.9	55.7
				45.1	BLFT20070427AAV	85 02 25.0	32	312	Fcr Broadcasting, Inc.		
239L1 Addison	WQAR-LP	LIC		170.3	77.52	41 59 16.0	0.100			56.9	52.9
			MI	350.4	BLL20140818AFX	84 20 31.0	23	342	Addison Community Schools		

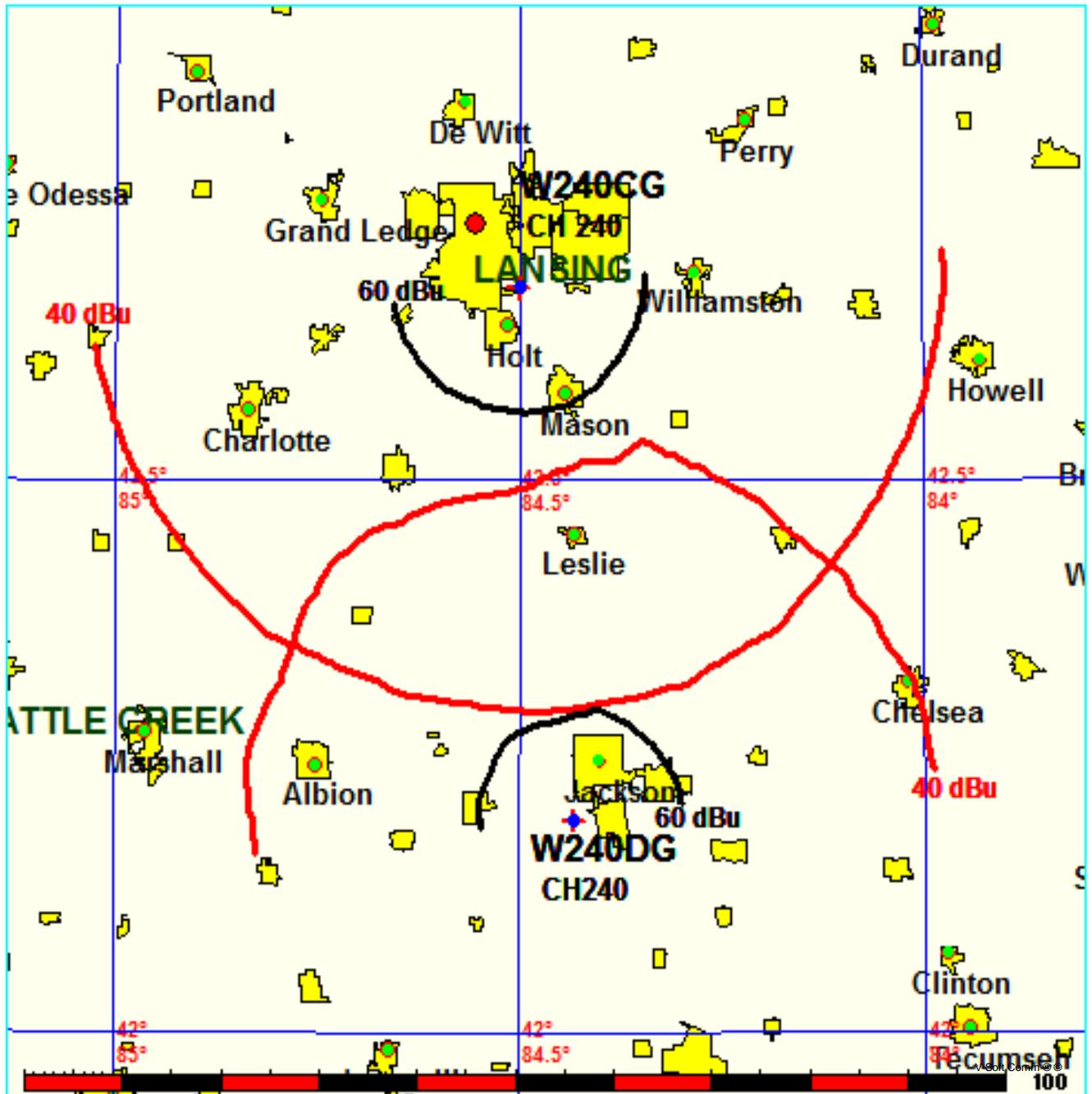
Terrain database is USGS 03 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
Contour distances are on direct line to and from reference station. Reference Zone= East Zone, Co to 3rd adjacent.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
< = Contour Overlap

Educational Media Foundation

FMCommander Single Allocation Study - 06-15-2017 - **USGS 03 SEC**  
W240CG's Overlaps (In= 6.89 km, Out= 0.82 km)

W240CG CH 240 D  
Lat= 42 40 32.9, Lng= 84 30 00.1  
0.13 kW 140.8 m HAAT, 409 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

W240DG CH 240 D BLFT20160620AAZ  
Lat= 42 11 35.0, Lng= 84 25 44.0  
0.25 kW 0 m HAAT, 362 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

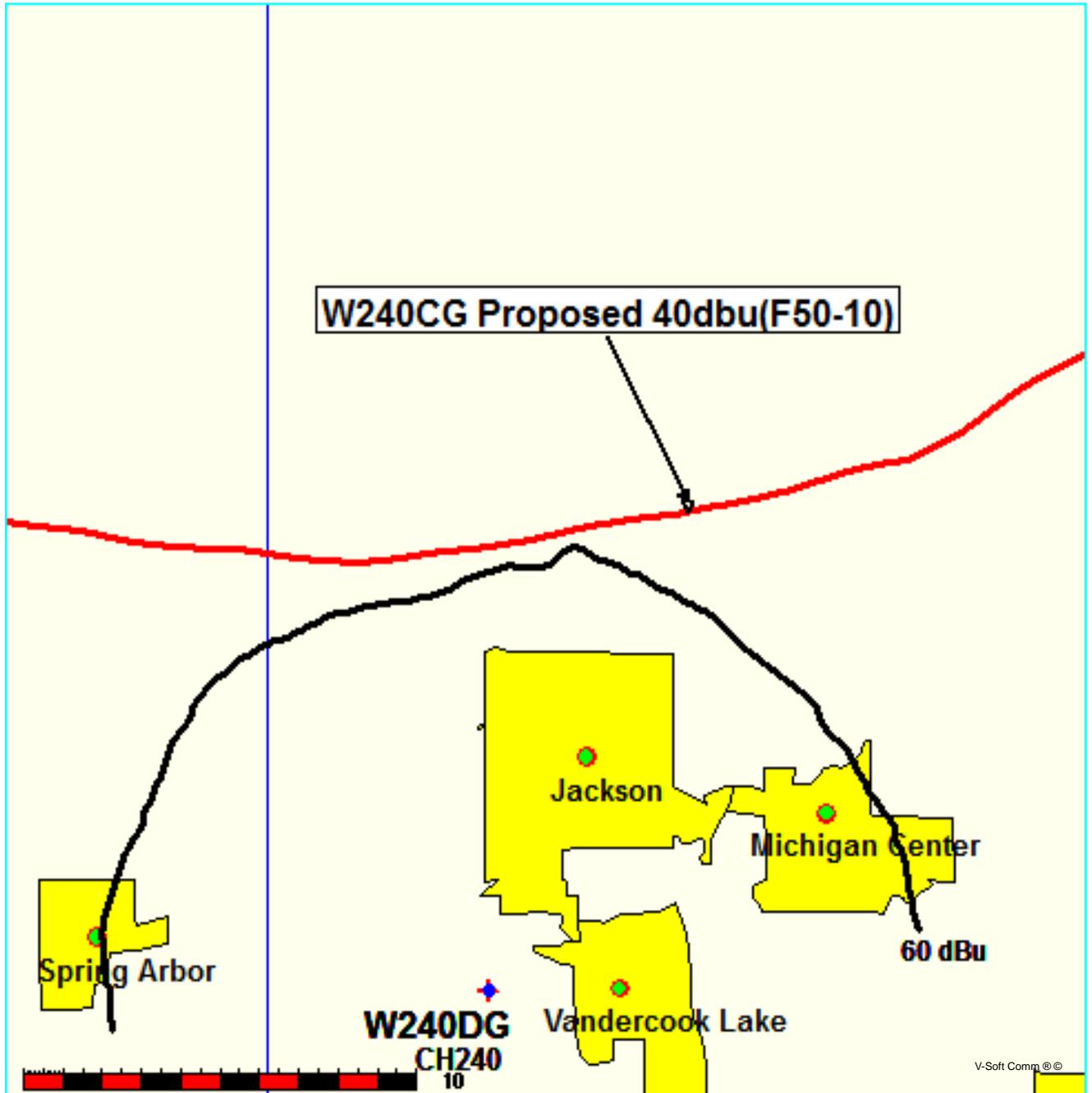


Educational Media Foundation

FMCommander Single Allocation Study - 06-15-2017 - **USGS 03 SEC**  
W240CG's Overlaps (In= 6.89 km, Out= 0.82 km)

W240CG CH 240 D  
Lat= 42 40 32.9, Lng= 84 30 00.1  
0.13 kW 140.8 m HAAT, 409 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

W240DG CH 240 D BLFT20160620AAZ  
Lat= 42 11 35.0, Lng= 84 25 44.0  
0.25 kW 0 m HAAT, 362 m COR  
Prot.= 60 dBu, Intef.= 40 dBu



**Educational Media Foundation**

5700 W Oaks Blvd  
Rocklin, CA 95765

*Exhibit 13-A  
Webberville, MI*

**Compliance with C.F.R. 74.1204**

The proposed FM Translator to operate on channel 240 is located within the protected 60dBu contour of third adjacent channel station W237BY, channel 237D, Mason, MI. According to 74.1204(a)(3), in order to protect second and third adjacent facilities, the difference in dBu between the two facilities must not exceed 40dBu.

The proposed ERP for W240CG.P:	130 watts
The proposed COR for W240CG.P:	142 meters
W237BY F(50/50) contour at proposed site:	68.0dBu
The F(50/10) contour of proposed W240CG.P:	108.0dBu

The predicted distance to the 108.0dbu interfering contour is 318 meters. Taking into account the vertical elevation pattern of the Nicom BKG77 three bay .5 wavespaced circularly polarized antenna and the height above ground of 142m, it has been determined that the interfering contour of 108.0dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 75.7m above ground at a distance of 194m from the antenna.

As can be seen in Exhibit 13–A2 there are no surrounding structures which are tall enough to enter the interfering contour within the 318m distance from the antenna.

Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1  
 74.1204(d) Showing  
 W240CG  
 Webberville, MI

ERP (kw): 0.13  
 Height of Antenna above Ground (m): 142  
 Translator's IX Contour: 108  
 Antenna Type: Nicom BKG77-3HW

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1.000	0.1300	318.3990	142.000
5	0.974	0.1233	310.1206	114.971
10	0.896	0.1044	285.2855	92.461
15	0.766	0.0763	243.8936	78.876
20	0.609	0.0482	193.9050	75.681
25	0.424	0.0234	135.0012	84.946
30	0.282	0.0103	89.7885	97.106
35	0.142	0.0026	45.2127	116.067
40	0.032	0.0001	10.1888	135.451
45	0.045	0.0003	14.3280	131.869
50	0.092	0.0011	29.2927	119.560
55	0.113	0.0017	35.9791	112.528
60	0.114	0.0017	36.2975	110.565
65	0.104	0.0014	33.1135	111.989
70	0.087	0.0010	27.7007	115.970
75	0.069	0.0006	21.9695	120.779
80	0.053	0.0004	16.8751	125.381
85	0.042	0.0002	13.3728	128.678
90	0.040	0.0002	12.7360	129.264

**Educational Media Foundation**

5700 W Oaks Blvd  
Rocklin, CA 95765

*Exhibit 13-A  
Webberville, MI*

**Compliance with C.F.R. 74.1204**

The proposed FM Translator to operate on channel 240 is located within the protected 60dBu contour of third adjacent channel station WQHH, channel 243A, Dewitt, MI. According to 74.1204(a)(3), in order to protect second and third adjacent facilities, the difference in dBu between the two facilities must not exceed 40dBu.

The proposed ERP for W240CG.P:	130 watts
The proposed COR for W240CG.P:	142 meters
WQHH F(50/50) contour at proposed site:	62.0dBu
The F(50/10) contour of proposed W240CG.P:	102.0dBu

The predicted distance to the 102.0dbu interfering contour is 635 meters. Taking into account the vertical elevation pattern of the Nicom BKG77 three bay .5 wavespaced circularly polarized antenna and the height above ground of 142m, it has been determined that the interfering contour of 102.0dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 9.7m above ground at a distance of 387m from the antenna.

As can be seen in Exhibit 13–A2 there are no surrounding structures which are tall enough to enter the interfering contour within the 635m distance from the antenna.

Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1  
 74.1204(d) Showing  
 W240CG  
 Webberville, MI

ERP (kw): 0.13  
 Height of Antenna above Ground (m): 142  
 Translator's IX Contour: 102  
 Antenna Type: Nicom BKG77-3HW

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1.000	0.1300	635.2895	142.000
5	0.974	0.1233	618.7720	88.070
10	0.896	0.1044	569.2194	43.156
15	0.766	0.0763	486.6318	16.050
20	0.609	0.0482	386.8913	9.675
25	0.424	0.0234	269.3627	28.162
30	0.282	0.0103	179.1516	52.424
35	0.142	0.0026	90.2111	90.257
40	0.032	0.0001	20.3293	128.933
45	0.045	0.0003	28.5880	121.785
50	0.092	0.0011	58.4466	97.227
55	0.113	0.0017	71.7877	83.195
60	0.114	0.0017	72.4230	79.280
65	0.104	0.0014	66.0701	82.120
70	0.087	0.0010	55.2702	90.063
75	0.069	0.0006	43.8350	99.659
80	0.053	0.0004	33.6703	108.841
85	0.042	0.0002	26.6822	115.419
90	0.040	0.0002	25.4116	116.588



Google Earth



Yellow Pin Marker

NAD 27

42-40-32.9 N 84-30-00.1 W

Red Line Marker

635m at zero degrees true north