

**Channel Study**

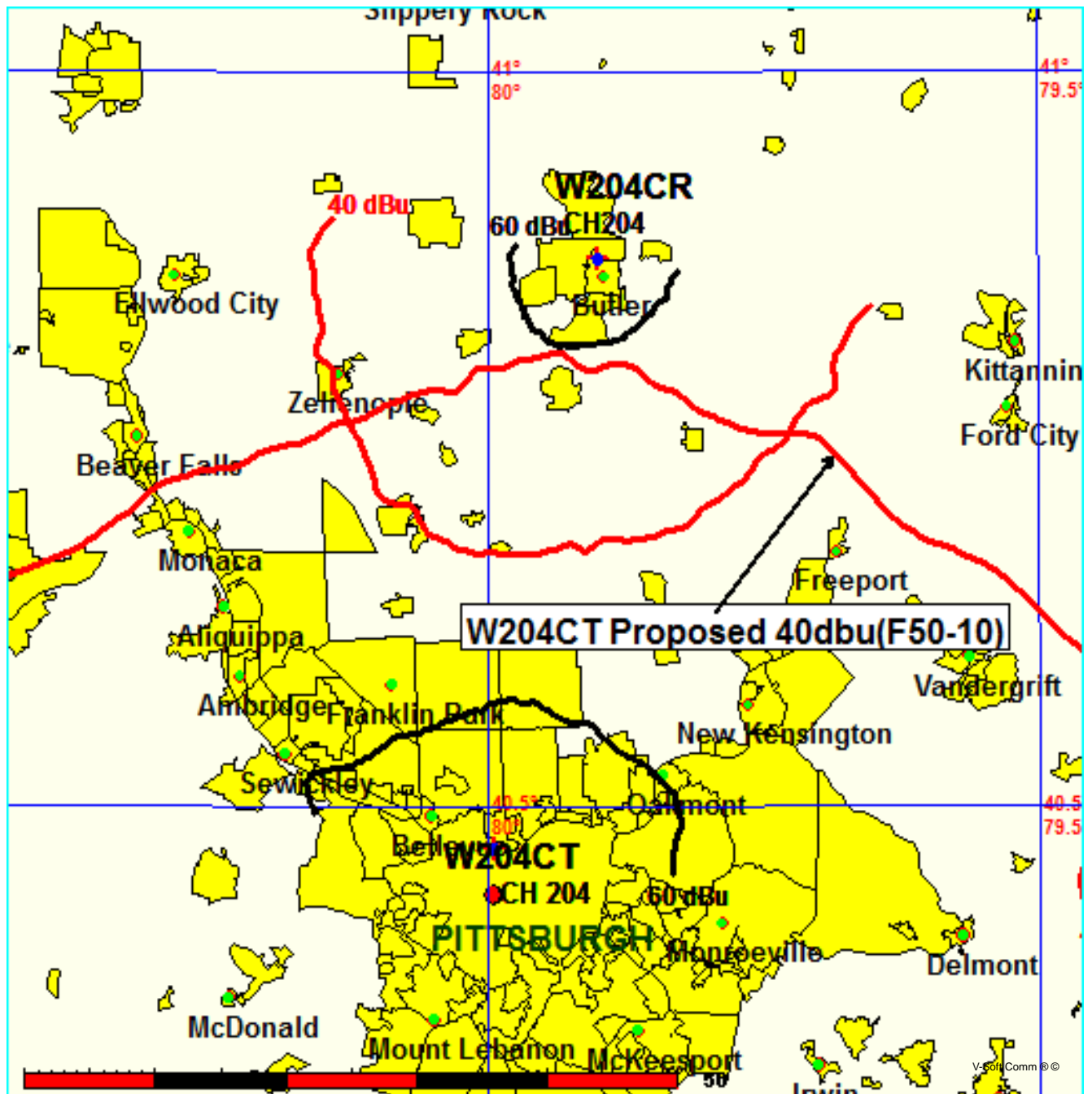
REFERENCE		CH# 204D - 88.7 MHz, Pwr= 0.13 kW DA, HAAT= 200.4 M, COR= 510 M								DISPLAY DATES	
40 28 19.0 N.		Average Protected F(50-50)= 15.6 km								DATA 10-25-17	
79 59 40.0 W.		Standard Directional								SEARCH 10-26-17	
CH CITY	CALL	TYPE STATE	ANT PA	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
207B Pittsburgh	WQED-FM	LIC	C	138.3	3.85	40 26 46.0	28.000	5.6	50.6	-17.7*<	-47.5*<
			PA	318.3	BLED20010209AAG	79 57 51.0	199	505	Wqed Multimedia		
204D Pittsburgh	W204CT!	LIC	C	0.0	0.00	40 28 19.0	0.010	26.4	7.8	-37.4	-44.2
			PA	0.0	BLFT20171006ABI	79 59 40.0		510	Educational Media Foundati		
6 -- Pittsburgh	WBPA-LP	APP	N	318.5	3.29	40 29 38.9	3.000	10.0	30.2	40.2R	-36.9M
			PA	138.5	BDISTVL-20090122AB	80 01 13.1	-999	491			
6 -- Weirton	WBPA-LD	CP	N	318.5	3.29	40 29 38.9	3.000	10.0	30.2	40.2R	-36.9M
			WV	138.5	BMPDVL-20120810ABQ	80 01 13.1	-999	491			
202A Pittsburgh	WRCT	LIC	DCN	125.7	5.30	40 26 39.0	1.750	1.6	11.6	-12.7*<	-7.1*<
			PA	305.7	BLED19931202KB	79 56 37.0	22	324	Wrct Radio, Inc.		
204B1 Moundsville	WULV	LIC	DCX	223.2	94.98	39 50 51.0	3.000	86.3	30.4	-7.8<	11.3
			WV	42.8	BMLLED20150427AAR	80 45 23.0	181	498	Educational Media Foundati		
205B Johnstown	WFRJ	LIC	DVX	97.1	86.62	40 22 17.0	5.500	80.5	53.7	-7.7<	12.1
			PA	277.8	BMLLED20130530AMH	78 58 56.0	370	897	Family Stations, Inc.		
204D Butler	W204CR	LIC	C	9.7	45.35	40 52 27.8	0.013	22.6	6.8	11.6	1.5
			PA	189.8	BLFT20160405ABN	79 54 10.8		480	Family Life Ministries, In		
203B1 Masontown	WYFU	LIC	DCX	179.7	76.05	39 47 13.0	16.000	49.4	32.0	11.7	21.5
			PA	359.7	BLED20130509AAC	79 59 23.0	106	439	Bible Broadcasting Network		
201A Murrysville	WKGO	LIC	DEX	79.3	29.01	40 31 12.0	1.000	0.6	9.4	14.0	19.0
			PA	259.5	BLED20050413AAM	79 39 29.0	92	432	Broadcast Educational Comm		
204B1 Beach City	WOFN	LIC	DE	276.3	134.82	40 35 41.0	22.500	98.9	34.0	21.9	54.5
			OH	95.3	BLED20000831ADQ	81 34 39.0	105	425	Creative Educational Media		
203B Youngstown	WYSU	LIC	DCX	320.1	85.05	41 03 23.2	50.000	49.2	31.2	24.8	37.9
			OH	139.6	BLED20101105AIJ	80 38 43.7	115	437	Youngstown State Universit		
205A Steubenville	WBJV	LIC	CX	259.4	63.25	40 21 56.0	0.125	16.1	11.2	32.3	29.7
			OH	79.0	BLED20020221AAE	80 43 36.0	78	403	American Family Associatio		
201B1 Bethany	WZUM-FM	CP	DCN	239.4	55.72	40 12 58.0	10.000	2.3	24.6	37.8	30.3
			WV	59.1	BPED20170616AAA	80 33 31.0	125	457	Pittsburgh Public Media		
204B Beach City	WOFN	CP	DCX	276.4	125.72	40 35 17.5	21.000	79.2	26.4	32.5	52.9
			OH	95.4	BPED20170922AAQ	81 28 13.3	114	423	Creative Educational Media		
6 -- Cambridge	WOUC-TV-A	CHA	D Y	249.4	117.86	40 05 32.0	1.720	13.5	47.9	61.4R	56.5M
			OH	68.5	DTVBL50141	81 17 19.0	385	699			
257A Uniontown	WPKL	LIC	CX	163.9	67.71	39 53 09.0	3.000	0.0	0.0	10.0R	57.7M
			PA	344.1	BMLH20050920ADL	79 46 29.0	90	479	Fm Radio Licenses, Llc		
6 1E Cambridge	WOUC-TV	CP	DEY	249.4	117.85	40 05 31.8	1.080	13.5	38.8	52.3R	65.5M
			OH	68.5	0000025584	81 17 18.6	338	655			

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Terrain database is FCC NGDC 30 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.  
< = Station meets FCC minimum distance spacing for its class.  
< = Contour Overlap  
Reference station has protected zone issue: AM tower

FMCommander Single Allocation Study - 11-01-2017 - FCC NGDC 30 Sec  
W204CT's Overlaps (In= 11.6 km, Out= 1.47 km)

W204CT CH 204 D DA  
Lat= 40 28 19.0, Lng= 79 59 40.0  
0.13 kW 200.4 m HAAT, 510 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

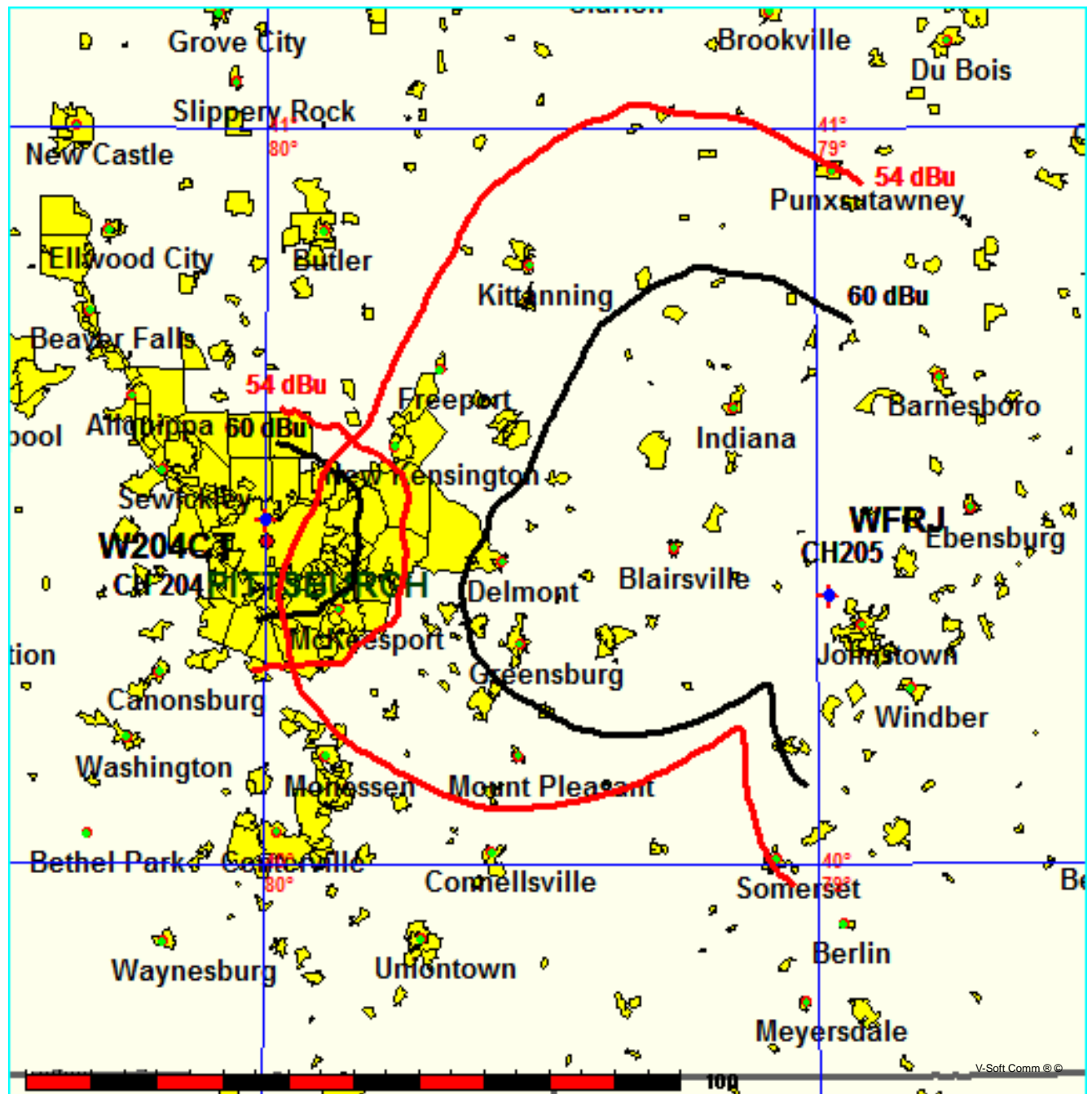
W204CR CH 204 D BLFT20160405ABN  
Lat= 40 52 27.8, Lng= 79 54 10.8  
0.013 kW 0 m HAAT, 480 m COR  
Prot.= 60 dBu, Intef.= 40 dBu



FMCommander Single Allocation Study - 11-01-2017 - FCC NGDC 30 Sec  
W204CT's Overlaps (In= -7.7 km, Out= 12.06 km)

W204CT CH 204 D DA  
Lat= 40 28 19.0, Lng= 79 59 40.0  
0.13 kW 200.4 m HAAT, 510 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

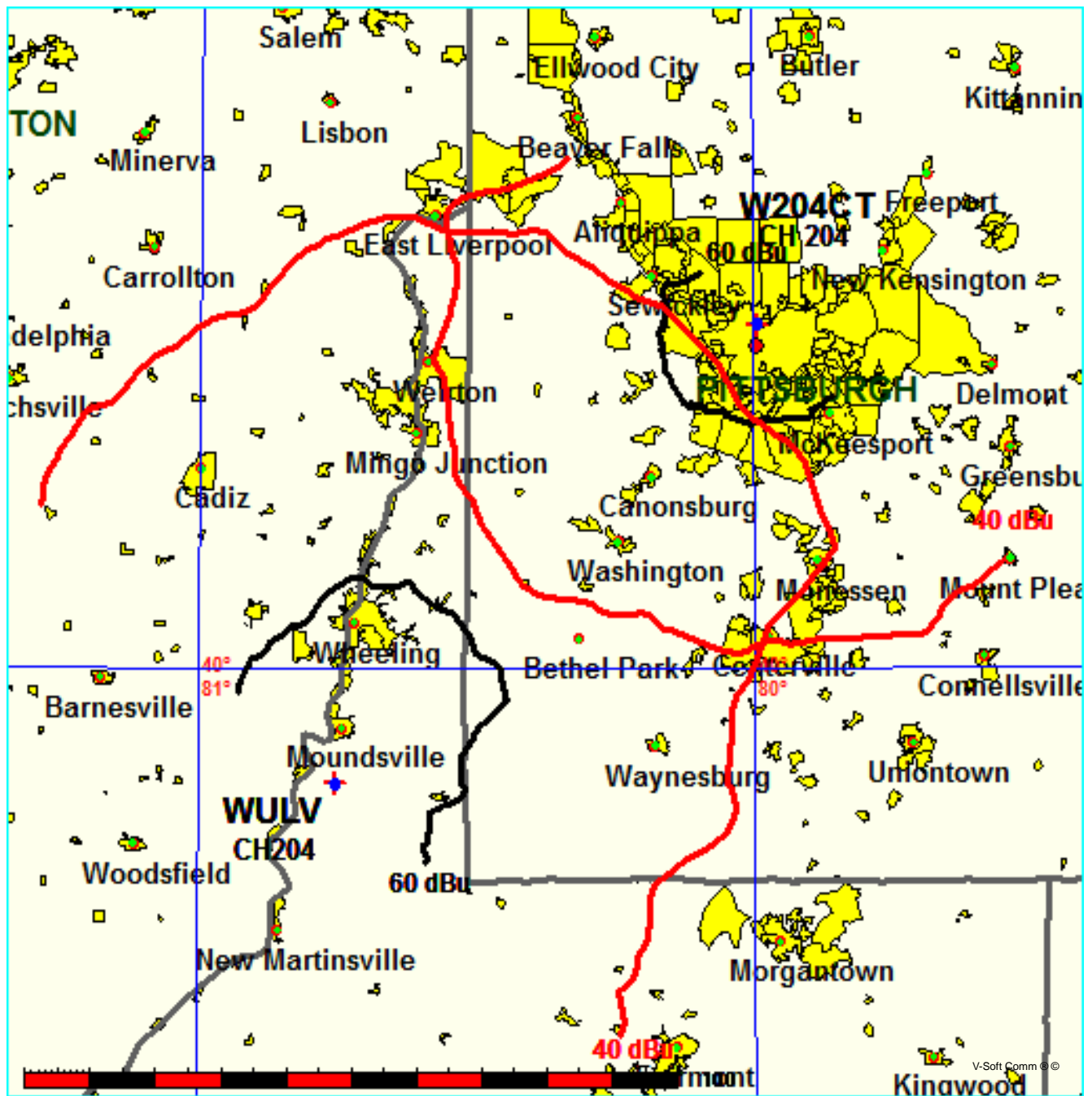
WFRJ CH 205 B DA BMLED20130530AMH  
Lat= 40 22 17.0, Lng= 78 58 56.0  
5.5 kW 370 m HAAT, 897 m COR  
Prot.= 60 dBu, Intef.= 54 dBu



FMCommander Single Allocation Study - 11-01-2017 - FCC NGDC 30 Sec  
W204CT's Overlaps (In= -7.78 km, Out= 11.28 km)

W204CT CH 204 D DA  
Lat= 40 28 19.0, Lng= 79 59 40.0  
0.13 kW 200.4 m HAAT, 510 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

WULV CH 204 B1 DA BMLED20150427AAR  
Lat= 39 50 51.0, Lng= 80 45 23.0  
3.0 kW 181 m HAAT, 498 m COR  
Prot.= 60 dBu, Intef.= 40 dBu



**Educational Media Foundation**

5700 W Oaks Blvd  
Rocklin, CA 95765

*Exhibit 13-A  
Pittsburgh, PA*

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

The proposed FM Translator to operate on channel 204 is located within the protected 60dBu contour of third adjacent channel station WQED-FM, channel 207B, Pittsburgh, PA. 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 W204CT.P:	130 watts
The proposed COR for W204CT.P:	149 meters
WQED-FM F(50/50) contour at proposed site:	105.5dBu
The F(50/10) contour of proposed W204CT.P:	145.5dBu

The predicted distance to the 145.5dbu interfering contour is 4.2 meters. Taking into account the vertical elevation pattern of the Scala FMVMP single bay vertically polarized antenna and the height above ground of 149m, it has been determined that the interfering contour of 145.5dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 147.229m above ground at a distance of 3m 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 4.2m 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  
W204CT  
Pittsburgh, PA

ERP (kw): 0.13  
Height of Antenna above Ground (m): 149  
Translator's IX Contour: 145.5  
Antenna Type: Scala FMV-1

<b>Depression Angle from Horizon</b>	<b>Antenna Relative Field</b>	<b>ERP (kw) from the Antenna RF</b>	<b>Dist. To IX Contour (m)</b>	<b>Height IX Contour Above Ground (m)</b>
0	1.000	0.1300	4.2459	149.000
5	0.995	0.1287	4.2238	148.632
10	0.982	0.1253	4.1682	148.276
15	0.956	0.1187	4.0574	147.950
20	0.918	0.1096	3.8990	147.666
25	0.867	0.0976	3.6795	147.445
30	0.803	0.0837	3.4078	147.296
35	0.727	0.0687	3.0872	147.229
40	0.645	0.0541	2.7382	147.240
45	0.558	0.0405	2.3696	147.324
50	0.472	0.0289	2.0020	147.466
55	0.388	0.0196	1.6474	147.651
60	0.315	0.0129	1.3375	147.842
65	0.240	0.0075	1.0190	148.076
70	0.176	0.0040	0.7481	148.297
75	0.119	0.0018	0.5048	148.512
80	0.067	0.0006	0.2841	148.720
85	0.019	0.0000	0.0819	148.918
90	0.025	0.0001	0.1078	148.892

**Educational Media Foundation**

5700 W Oaks Blvd  
Rocklin, CA 95765

*Exhibit 13-A  
Pittsburgh, PA*

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

The proposed FM Translator to operate on channel 204 is located within the protected 60dBu contour of second adjacent channel station WRCT, channel 202A, Pittsburgh, PA. 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 W204CT.P:	130 watts
The proposed COR for W204CT.P:	149 meters
WRCT F(50/50) contour at proposed site:	73.5dBu
The F(50/10) contour of proposed W204CT.P:	113.5dBu

The predicted distance to the 113.5dbu interfering contour is 169 meters. Taking into account the vertical elevation pattern of the Scala FMVMP single bay vertically polarized antenna and the height above ground of 149m, it has been determined that the interfering contour of 113.5dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 78.5m above ground at a distance of 122.9m 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 169m 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.

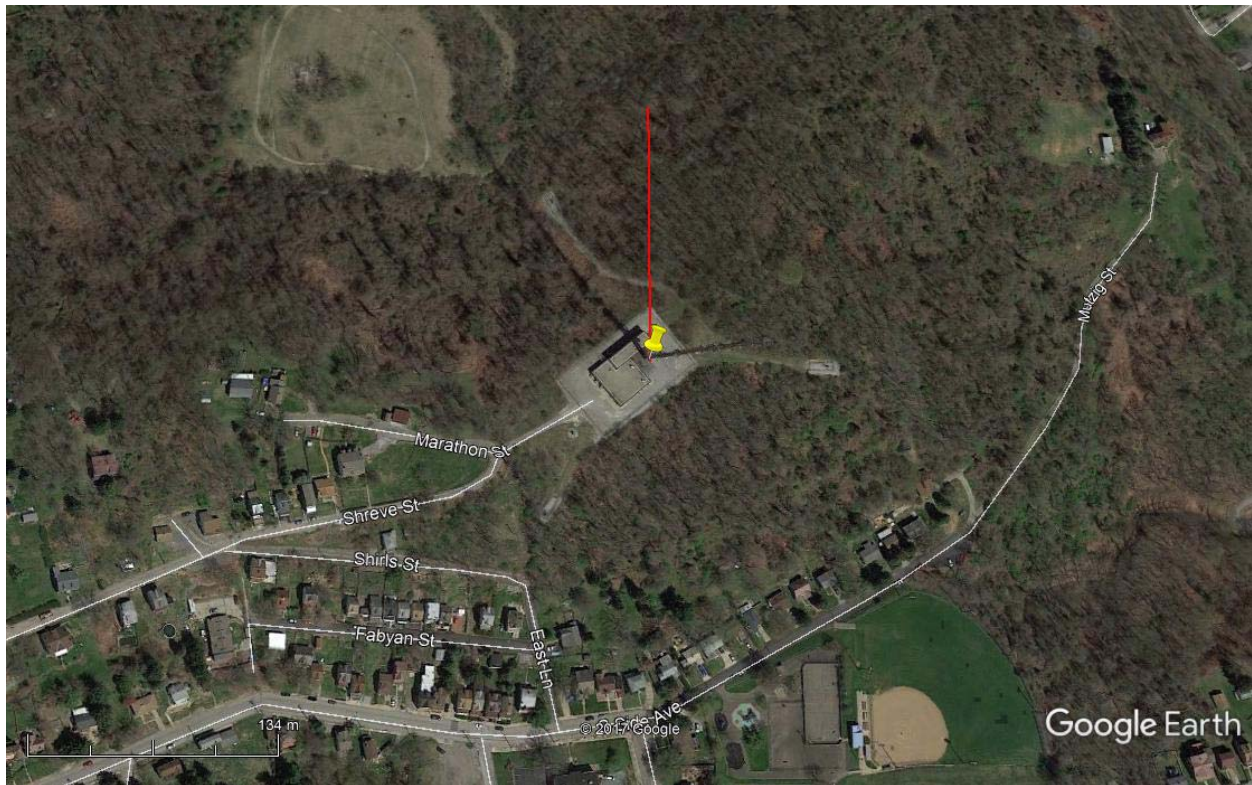
EXHIBIT 13 - A1  
74.1204(d) Showing  
W204CT  
Pittsburgh, PA

ERP (kw): 0.13  
Height of Antenna above Ground (m): 149  
Translator's IX Contour: 113.5  
Antenna Type: Scala FMV-1

<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	169.0331	149.000
5	0.995	0.1287	168.1541	134.344
10	0.982	0.1253	165.9398	120.185
15	0.956	0.1187	161.5280	107.193
20	0.918	0.1096	155.2231	95.911
25	0.867	0.0976	146.4841	87.093
30	0.803	0.0837	135.6659	81.167
35	0.727	0.0687	122.9039	78.505
40	0.645	0.0541	109.0094	78.930
45	0.558	0.0405	94.3374	82.293
50	0.472	0.0289	79.6991	87.947
55	0.388	0.0196	65.5848	95.276
60	0.315	0.0129	53.2454	102.888
65	0.240	0.0075	40.5679	112.233
70	0.176	0.0040	29.7836	121.013
75	0.119	0.0018	20.0980	129.587
80	0.067	0.0006	11.3083	137.863
85	0.019	0.0000	3.2623	145.750
90	0.025	0.0001	4.2934	144.707



Exhibit 13-A2



Yellow Pin Marker

NAD27

40-28-19.0 N 79-59-40.0 W

Red Line Marker

169m at 0 degrees true north