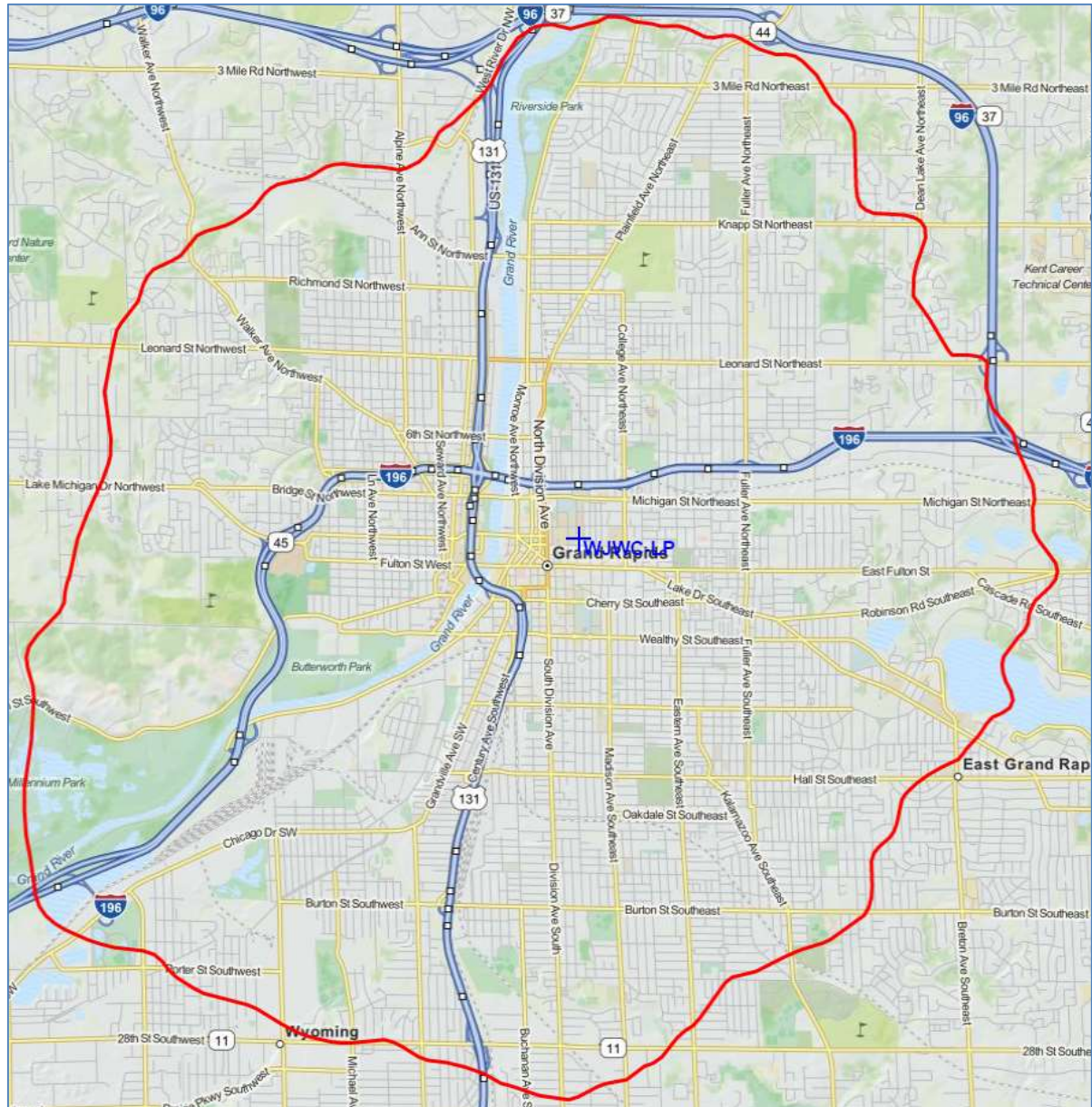




REC Broadcast Services
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Minor CP Modification for **WJWC-LP**
GRAND RAPIDS, MI
EMPOWERMENT RADIO PROJECT
BMPL-20160406AAB

PROPOSED 60dBu F(50,50) SERVICE CONTOUR



GRAND RAPIDS, MI – Channel 247L1 ~ 97.3 MHz ~ ERP 0.049 kW
Elev: 197 meters ~ RCAGL: 65 meters ~ RCAMSL: 262 meters ~ HAAT: 43 meters (GLOBE)
Overall tower height: 82 meters – ASR: 1060519
NAD83 Latitude: 42° 58' 58.0" NL – Longitude: 85° 39' 55.0" WL
NAD27 Latitude: 42° 58' 57.9" NL – Longitude: 85° 39' 54.9" WL
Exceeds 3km from all directional AM stations and one wavelength from all ND AM stations.

NAD27 LATITUDE: 42 - 58' 57.9" - LONGITUDE: 85 - 39' 54.9"
CHANNEL: 247 - CLASS: LPFM(LP-100)

CHAN	FREQ	CALL	LOCATION	CLS	DIST	REQ	CLEAR	BEAR
244	96.7	WLXV : MACDONALD GARBER	CADILLAC BROADCASTING, INC	MI C3	155.6	0.0	155.6	3.1
244	96.7	CHYR-FM :	LEAMINGTON	ON C1	277.0	88.0	189.0	112.0
244	96.7	WBDK : NICOLET BROADCASTING, INC.	ALGOMA	WI C3	237.3	0.0	237.3	324.4
244	96.7	WUFN : FAMILY LIFE BROADCASTING SYSTEM	ALBION	MI A	115.5	0.0	115.5	133.4
244	96.7	W244BS : SPIRIT COMMUNICATIONS, INC.	ALMA	MI D2	94.1	0.0	94.1	59.6
244	96.7	WCOE : LAPORTE COUNTY BROADCASTING CO., INC	LA PORTE	IN A	174.9	0.0	174.9	211.2
245	96.9	WSJB-LP : SAINT JOSEPH EDUCATIONAL BROADCASTERS	ST. JOSEPH	MI L1	116.8	0.0	116.8	212.8
245	96.9	WLAV-FM : RADIO LICENSE HOLDING CBC, LLC	GRAND RAPIDS	MI B	13.1	67.0	-53.9	64.0
247	97.3	WRNW : CAPSTAR TX, LLC	MILWAUKEE	WI B	184.8	112.0	72.8	275.1
247	97.3	WMJO : THE MACDONALD BROADCASTING COMPANY	ESSEXVILLE	MI A	165.3	67.0	98.3	68.4
247	97.3	WDEE-FM : STEVEN V. BEILFUSS	REED CITY	MI A	88.8	67.0	21.8	2.5
247	97.3	WMEE : PATHFINDER COMMUNICATIONS CORPORATION	FORT WAYNE	IN B	211.5	112.0	99.5	169.3
247	97.3	WJWC-LP : EMPOWERMENT RADIO PROJECT : Currently authorized facility	GRAND RAPIDS	MI L1	3.5	24.0	-20.5	147.3
248	97.5	WJIM-FM : TOWNSQUARE MEDIA	LANSING LANSING LICENSE, LLC	MI B	101.2	97.0	4.2	109.3
248	97.5	WWSN : RADIO LICENSE HOLDING CBC, LLC	WHITEHALL	MI A	69.8	56.0	13.8	310.0
250	97.9	WJLB : AMFM RADIO LICENSES, L.L.C.	DETROIT	MI B	218.8	0.0	218.8	106.2
250	97.9	WGRD-FM : TOWNSQUARE MEDIA OF GRAND RAPIDS, INC. * Does not meet third adjacent channel spacing under LCRA Sect 7.	GRAND RAPIDS	MI B	20.8	0.0	20.8	176.4
250	97.9	WLUP-FM : MERLIN MEDIA LICENSE, LLC	CHICAGO	IL B	201.1	0.0	201.1	233.7

Azimuth	Field	ERP	HAAT	Contour	Latitude	Longitude
0	1.000	0.049	48.1	5.958	43.0197	85.6653
5	1.000	0.049	50.8	6.129	43.0210	85.6587
10	1.000	0.049	50.0	6.078	43.0199	85.6523
15	1.000	0.049	49.7	6.059	43.0187	85.6460
20	1.000	0.049	50.0	6.078	43.0175	85.6397
25	1.000	0.049	49.9	6.071	43.0156	85.6337
30	1.000	0.049	45.7	5.808	43.0113	85.6296
35	1.000	0.049	42.1	5.568	43.0071	85.6260
40	1.000	0.049	34.7	5.037	43.0008	85.6255
45	1.000	0.049	37.4	5.239	42.9994	85.6197
50	1.000	0.049	34.5	5.021	42.9951	85.6180
55	1.000	0.049	28.8	4.683	42.9903	85.6181
60	1.000	0.049	27.6	4.683	42.9872	85.6154
65	1.000	0.049	33.9	4.977	42.9850	85.6098
70	1.000	0.049	33.5	4.947	42.9813	85.6081
75	1.000	0.049	34.9	5.052	42.9779	85.6053
80	1.000	0.049	35.5	5.098	42.9741	85.6036
85	1.000	0.049	36.5	5.172	42.9701	85.6019
90	1.000	0.049	36.4	5.165	42.9661	85.6018
95	1.000	0.049	39.1	5.360	42.9619	85.5997
100	1.000	0.049	35.7	5.113	42.9581	85.6034
105	1.000	0.049	34.2	4.998	42.9545	85.6060
110	1.000	0.049	36.9	5.202	42.9501	85.6052
115	1.000	0.049	34.7	5.037	42.9470	85.6092
120	1.000	0.049	33.8	4.969	42.9438	85.6124
125	1.000	0.049	31.2	4.775	42.9415	85.6172
130	1.000	0.049	31.0	4.760	42.9386	85.6205
135	1.000	0.049	33.1	4.918	42.9348	85.6226
140	1.000	0.049	37.3	5.231	42.9301	85.6240
145	1.000	0.049	40.7	5.471	42.9258	85.6267
150	1.000	0.049	40.2	5.437	42.9238	85.6319
155	1.000	0.049	39.6	5.395	42.9221	85.6373
160	1.000	0.049	39.6	5.395	42.9205	85.6426
165	1.000	0.049	43.8	5.684	42.9167	85.6472
170	1.000	0.049	48.9	6.006	42.9129	85.6525
175	1.000	0.049	53.9	6.316	42.9095	85.6585

Azimuth	Field	ERP	HAAT	Contour	Latitude	Longitude
180	1.000	0.049	57.5	6.515	42.9075	85.6653
185	1.000	0.049	56.8	6.477	42.9081	85.6722
190	1.000	0.049	54.0	6.322	42.9101	85.6788
195	1.000	0.049	54.2	6.333	42.9111	85.6854
200	1.000	0.049	53.4	6.287	42.9130	85.6917
205	1.000	0.049	57.9	6.538	42.9128	85.6992
210	1.000	0.049	60.1	6.658	42.9142	85.7062
215	1.000	0.049	60.7	6.689	42.9168	85.7124
220	1.000	0.049	65.5	6.927	42.9184	85.7200
225	1.000	0.049	65.8	6.942	42.9220	85.7256
230	1.000	0.049	74.6	7.383	42.9234	85.7347
235	1.000	0.049	79.5	7.630	42.9267	85.7420
240	1.000	0.049	74.4	7.373	42.9329	85.7437
245	1.000	0.049	68.9	7.098	42.9391	85.7443
250	1.000	0.049	62.2	6.765	42.9453	85.7434
255	1.000	0.049	58.8	6.588	42.9508	85.7435
260	1.000	0.049	55.6	6.412	42.9561	85.7429
265	1.000	0.049	49.5	6.046	42.9613	85.7393
270	1.000	0.049	47.0	5.890	42.9661	85.7377
275	1.000	0.049	44.0	5.697	42.9706	85.7350
280	1.000	0.049	42.3	5.582	42.9748	85.7328
285	1.000	0.049	44.3	5.717	42.9794	85.7332
290	1.000	0.049	46.1	5.834	42.9840	85.7327
295	1.000	0.049	47.4	5.915	42.9886	85.7312
300	1.000	0.049	46.9	5.884	42.9926	85.7279
305	1.000	0.049	44.4	5.724	42.9956	85.7229
310	1.000	0.049	42.5	5.596	42.9984	85.7180
315	1.000	0.049	39.4	5.381	43.0003	85.7121
320	1.000	0.049	39.4	5.381	43.0032	85.7078
325	1.000	0.049	37.0	5.209	43.0045	85.7020
330	1.000	0.049	34.0	4.984	43.0049	85.6959
335	1.000	0.049	30.7	4.737	43.0047	85.6899
340	1.000	0.049	32.5	4.873	43.0073	85.6858
345	1.000	0.049	35.5	5.098	43.0104	85.6815
350	1.000	0.049	40.4	5.450	43.0144	85.6769
355	1.000	0.049	47.7	5.933	43.0193	85.6716

WAIVER OF §73.807(a) REQUEST
SHORT-SPACED SECOND ADJACENT CHANNEL

WJWC-LP
Grand Rapids, Michigan
Channel 247L1 (97.3 MHz)

The proposed modification is second-adjacent channel short-spaced to full-power station WLAV-FM, Grand Rapids, Michigan (Facility ID # 41680).

WLAV-FM operates on Channel 245B with 50 kW at 149 meters height above average terrain using a non-directional antenna. WLAV-FM places an 87.3 dBu service contour at the proposed LPFM site.

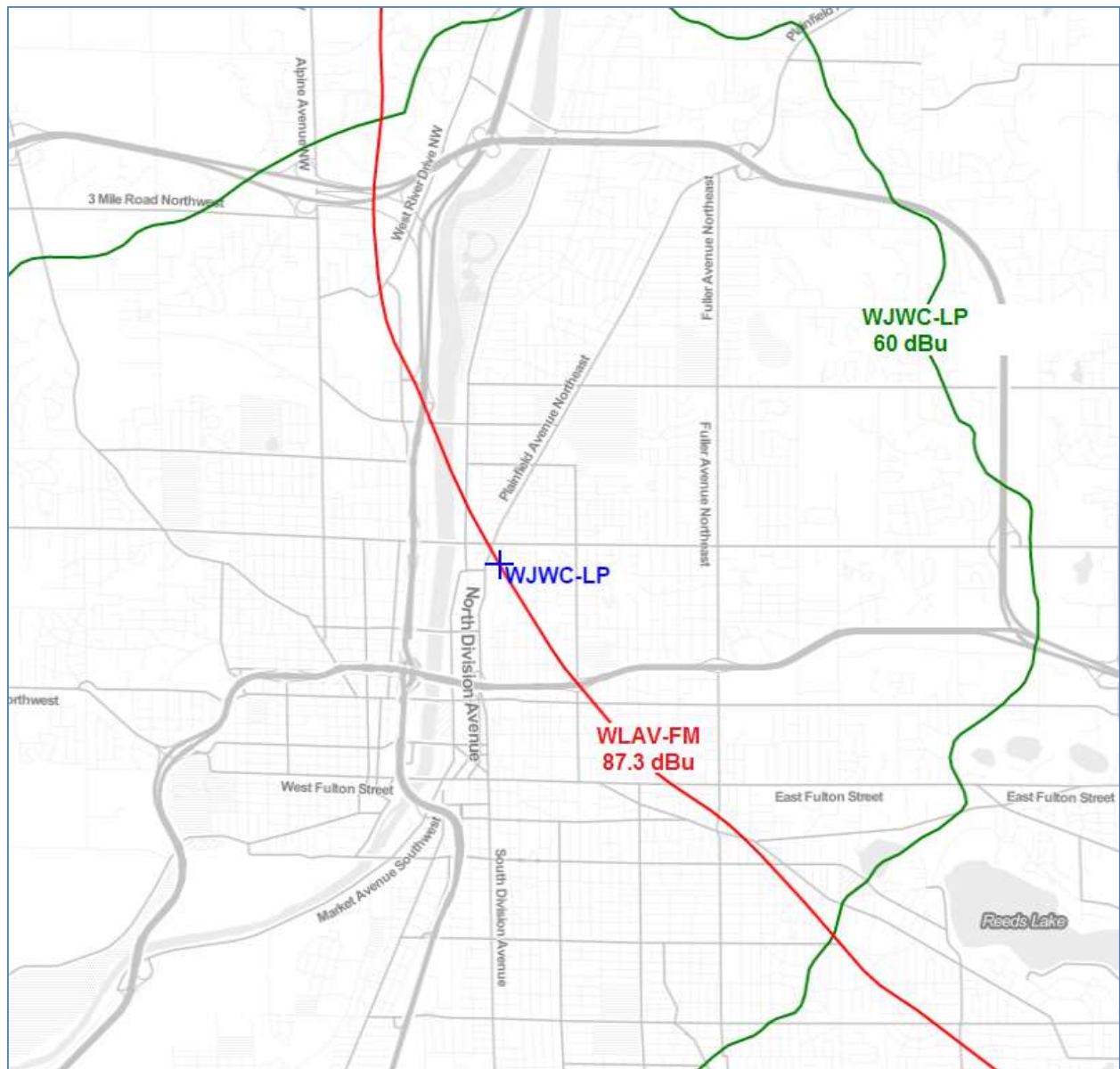
Using GLOBE terrain data, the proposed LPFM site is at 43 meters height above average terrain therefore we will specify operation at 0.049 kW. Using the U/D method¹, the proposed LPFM station is predicted to produce an undesired interference overlap in respect to WLAV-FM to the proposed LPFM station's 127.3 dBu interference contour ("overlap zone"). At 49 watts ERP, the overlap zone extends to 21 meters from the radiation center.

The proposed LPFM radiation center is 65 meters above ground level. The antenna structure is a registered free-standing tower with no adjacent tall structures within 21 meters of the radiation center. Based on this height and a lack of nearby occupied structures within the 21 meter sphere from the radiation center, the interference will not reach the ground.

Based on these findings, the proposed modified LPFM station will not create any interference to listeners or potential listeners of WLAV-FM. Therefore, the applicant is requesting a waiver of §73.807(a) in respect to WLAV-FM.

Prepared by
Michelle Bradley
REC Broadcast Services
April 14, 2016

¹ - See *Living Way Ministries, Inc.* Memorandum Opinion and Order, 17 FCC Rcd 17054, 17056 (2002) at 5. *Recon denied* 23 FCC Rcd 15070 (2008).





REQUEST TO USE GLOBE TERRAIN DATA

Using the alternative GLOBE terrain data in lieu of the FCC NGC-30 terrain data, the height above average terrain (HAAT) at this location has been calculated at 43 meters using 8 radials. At 43 meters HAAT, an LPFM station would be authorized at 49 watts ERP. The applicant is requesting operation at 49 watts ERP.

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **42° 58' 57.9" North**
Longitude **85° 39' 54.9" (NAD 27)**

These coordinates convert to NAD 83 coordinates of
42° 58' 57.99", North, 85° 39' 55.01" West (NAD 83).

Height of antenna radiation center above mean sea level: **262 meters AMSL**

Number of Evenly Spaced Radials = **8** 0° is referenced to True North

Results

Calculated HAAT = 43 meters

Antenna Height Above Average Terrain calculated
using 1 km **GLOBE terrain data**

Individual "Radial HAAT" Values, in meters

0°	36.3 m
45°	38.7 m
90°	35.4 m
135°	34.1 m
180°	63.0 m
225°	68.9 m
270°	36.1 m
315°	28.3 m

[Print Results?](#)

[New Calculation?](#)