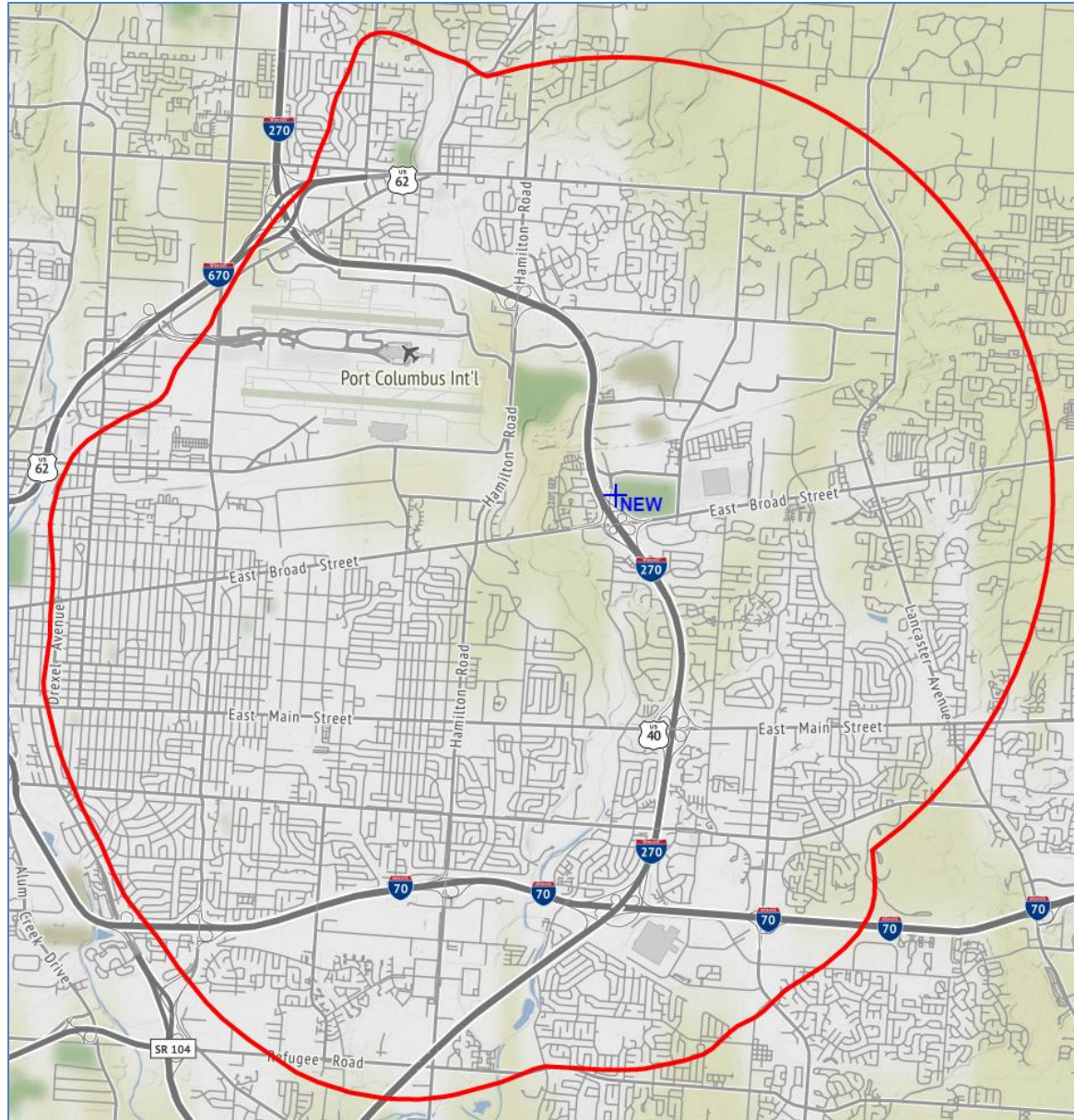




REC Broadcast Services, LLC
11541 Riverton Wharf Rd.
Mardela Springs, MD 21837
844.REC.LPFM/202.621.2355
recnet.com

CP Modify for WSAX-LP
COLUMBUS, OH
SEMM FOUNDATION
BNPL-20131113BLC

PROPOSED 60dBu F(50,50) SERVICE CONTOUR



COLUMBUS, OH – Channel 253L1 (98.5 MHz) ~ ERP 0.100 kW

Elev: 246.8 meters (based on ASR data) ~ RCAGL: 36.5 meters ~ RCAMSL: 283.3 meters

Overall tower height: 47.2 meters – ASR: 1015104 ~ HAAT: 14 m (GLOBE)

NAD83 Latitude: 39° 58' 54.0" NL – Longitude: 82° 51' 11.0" WL (from ASR)

NAD27 Latitude: 39° 58' 53.8" NL – Longitude: 82° 51' 11.4" WL (NADCON converted)

NAD27 LATITUDE: 39 - 58' 53.8" - LONGITUDE: 82 - 51' 11.4"
CHANNEL: 253 - CLASS: LPFM(LP-100)

CHAN	FREQ	CALL	LOCATION	CLS	DIST	REQ	CLEAR	BEAR
250	97.9	WNCI : CITICASTERS LICENSES, INC.	COLUMBUS	OH B	12.9	0.0	12.9	263.9
* Does not meet third adjacent channel spacing under LCRA Sect 7.								
251	98.1	WUDR : UNIVERSITY OF DAYTON	DAYTON	OH D	120.6	6.0	114.6	260.0
252	98.3	WKET : KETTERING CITY SCHOOL DISTRICT	KETTERING	OH D	116.4	13.0	103.4	254.5
252	98.3	WPKO-FM : V-TECK COMMUNICATIONS, INC.	BELLEFONTAINE	OH A	86.4	56.0	30.4	300.1
252	98.3	WMAN-FM : CAPSTAR TX, LLC	FREDERICKTOWN	OH A	74.1	56.0	18.1	25.6
252	98.3	WKNA : WLGN, LLC	LOGAN	OH A	64.3	56.0	8.3	141.4
252	98.3	W252AY : COLUMBUS INSTITUTE FOR CONTEMPORARY JOURNALISM	MARBLE CLIFF	OH D2	15.7	15.0	0.7	274.9
253	98.5	WINF-LP : DELAWARE COUNTY DEVELOPMENT COMPANY	DELAWARE	OH L1	38.9	24.0	14.9	335.1
253	98.5	WRRM : RADIO LICENSE HOLDING SRC LLC	CINCINNATI	OH B	174.1	112.0	62.1	237.1
253	98.5	WCMO : MARIETTA COLLEGE	MARIETTA	OH D	136.2	24.0	112.2	116.9
253	98.5	WNCX : CBS RADIO STATIONS INC.	CLEVELAND	OH B	177.9	112.0	65.9	31.5
253	98.5	WSAX-LP : SEMM FOUNDATION : Currently authorized location	COLUMBUS	OH L1	9.6	24.0	-14.4	356.2
254	98.7	WYKL : EDUCATIONAL MEDIA FOUNDATION	CRESTLINE	OH A	88.0	56.0	32.0	5.3
254	98.7	WYRO : DAVIS BROADCASTING MEDIA, INC.	MCARTHUR	OH A	94.4	56.0	38.4	166.5
254	98.7	W283AJ : DELMAR COMMUNICATIONS, INC.	CONNERSVILLE	IN D5	54.3	21.0	33.3	311.8
254	98.7	W254CT : WCLT RADIO INC.	NEWARK	OH D5	38.9	21.0	17.9	81.2
255	98.9	WTOH : SALEM MEDIA OF OHIO, INC.	UPPER ARLINGTON	OH A	15.0	29.0	-14.0	265.4

Azimuth	Field	ERP	HAAT	Contour	Latitude	Longitude
0	1.000	0.100	-2.5	5.636	40.0324	82.8531
5	1.000	0.100	-5.9	5.636	40.0322	82.8473
10	1.000	0.100	-8.5	5.636	40.0316	82.8416
15	1.000	0.100	-15.0	5.636	40.0306	82.8359
20	1.000	0.100	-21.4	5.636	40.0293	82.8304
25	1.000	0.100	-27.0	5.636	40.0276	82.8251
30	1.000	0.100	-29.8	5.636	40.0256	82.8200
35	1.000	0.100	-33.4	5.636	40.0232	82.8151
40	1.000	0.100	-36.2	5.636	40.0205	82.8105
45	1.000	0.100	-39.9	5.636	40.0175	82.8063
50	1.000	0.100	-40.4	5.636	40.0142	82.8024
55	1.000	0.100	-41.2	5.636	40.0107	82.7988
60	1.000	0.100	-39.3	5.636	40.0070	82.7957
65	1.000	0.100	-37.4	5.636	40.0031	82.7931
70	1.000	0.100	-35.5	5.636	39.9990	82.7909
75	1.000	0.100	-33.6	5.636	39.9948	82.7891
80	1.000	0.100	-30.8	5.636	39.9905	82.7879
85	1.000	0.100	-28.0	5.636	39.9861	82.7871
90	1.000	0.100	-24.5	5.636	39.9816	82.7869
95	1.000	0.100	-20.8	5.636	39.9772	82.7872
100	1.000	0.100	-18.7	5.636	39.9728	82.7879
105	1.000	0.100	-17.7	5.636	39.9685	82.7892
110	1.000	0.100	-13.3	5.636	39.9643	82.7909
115	1.000	0.100	-9.2	5.636	39.9602	82.7931
120	1.000	0.100	-5.4	5.636	39.9563	82.7958
125	1.000	0.100	2.0	5.636	39.9526	82.7989
130	1.000	0.100	11.2	5.636	39.9491	82.8024
135	1.000	0.100	16.5	5.636	39.9458	82.8063
140	1.000	0.100	22.4	5.636	39.9428	82.8106
145	1.000	0.100	32.2	5.817	39.9388	82.8139
150	1.000	0.100	39.3	6.393	39.9319	82.8156
155	1.000	0.100	41.7	6.585	39.9280	82.8204
160	1.000	0.100	43.1	6.700	39.9250	82.8262
165	1.000	0.100	46.3	6.953	39.9213	82.8320
170	1.000	0.100	49.7	7.225	39.9177	82.8383
175	1.000	0.100	51.4	7.355	39.9158	82.8455

Azimuth	Field	ERP	HAAT	Contour	Latitude	Longitude
180	1.000	0.100	51.9	7.393	39.9152	82.8531
185	1.000	0.100	51.9	7.393	39.9154	82.8606
190	1.000	0.100	54.8	7.614	39.9142	82.8686
195	1.000	0.100	60.0	7.983	39.9123	82.8773
200	1.000	0.100	64.2	8.264	39.9118	82.8862
205	1.000	0.100	66.7	8.427	39.9130	82.8948
210	1.000	0.100	67.5	8.478	39.9156	82.9028
215	1.000	0.100	66.9	8.440	39.9195	82.9098
220	1.000	0.100	65.6	8.356	39.9241	82.9160
225	1.000	0.100	63.4	8.211	39.9294	82.9211
230	1.000	0.100	62.6	8.158	39.9345	82.9263
235	1.000	0.100	60.6	8.023	39.9403	82.9301
240	1.000	0.100	59.5	7.951	39.9459	82.9338
245	1.000	0.100	58.5	7.884	39.9517	82.9369
250	1.000	0.100	57.2	7.793	39.9577	82.9390
255	1.000	0.100	54.1	7.559	39.9640	82.9387
260	1.000	0.100	51.5	7.363	39.9701	82.9381
265	1.000	0.100	50.5	7.287	39.9759	82.9382
270	1.000	0.100	49.4	7.201	39.9816	82.9376
275	1.000	0.100	46.0	6.930	39.9871	82.9341
280	1.000	0.100	37.3	6.232	39.9914	82.9251
285	1.000	0.100	33.3	5.905	39.9954	82.9200
290	1.000	0.100	31.2	5.736	39.9993	82.9163
295	1.000	0.100	30.3	5.661	40.0032	82.9133
300	1.000	0.100	27.8	5.636	40.0070	82.9104
305	1.000	0.100	26.5	5.636	40.0107	82.9073
310	1.000	0.100	27.2	5.636	40.0142	82.9038
315	1.000	0.100	29.9	5.636	40.0175	82.8999
320	1.000	0.100	32.9	5.873	40.0221	82.8974
325	1.000	0.100	37.6	6.257	40.0278	82.8952
330	1.000	0.100	42.4	6.643	40.0334	82.8921
335	1.000	0.100	40.9	6.518	40.0348	82.8854
340	1.000	0.100	34.2	5.975	40.0322	82.8771
345	1.000	0.100	23.7	5.636	40.0306	82.8702
350	1.000	0.100	13.9	5.636	40.0316	82.8646
355	1.000	0.100	1.5	5.636	40.0322	82.8588

LPFM SECOND ADJACENT CHANNEL WAIVER STUDY

WSAX-LP
Columbus, OH
Channel 253L1 (98.5 MHz)

The proposed site is second-adjacent channel short spaced to WTOH, Upper Arlington, Ohio (Facility ID # 73972).

Based on a study performed by Michelle Bradley of REC Networks, it has been determined that this proposed site qualifies for a second adjacent waiver as specified in Section 73.807(e) of the Commission's Rules.

WTOH operates on Channel 255A with 2.6 kW effective radiated power ("ERP") at 154 meters height above average terrain ("HAAT") into a directional antenna placing the full field value and an effective HAAT of 154 meters towards the proposed site. WTOH places a 71.3 dBu F(50, 50) field strength at the proposed site.

Using the *Living Way* method¹, the proposed LPFM station is predicted to produce an undesired interference overlap in respect to WTOH to the proposed LPFM station's 111.3 dBu interference contour. At 100 watts ERP, this contour extends to 191 meters from the radiation center ("overlap zone"). As the radiation center is only 36.5 meters above ground level, using the *Living Way* method would cause potential interference to listeners of WTOH.

To address this potential interference, the applicant is proposing operation with a 4-bay Shively 6812c circularly polarized antenna with full-wave spacing. Based on manufacturer's specifications, the 50 degree depression angle, the proposed antenna would place a field strength of 108.66 dB at 2 meters above ground level. The interfering signal will not reach any point lower than 11 meters above ground level. This includes the raised elevations of the interstate highway and associated interchange ramps located within the overlap zone. The highest elevation within the 191 meter overlap zone is 252 meters which is still well below the 111.3 dBu interfering contour at the proposed site.

Based on the information presented, REC submits that the proposed station move will continue to not create any interference to potential listeners of translator WTOH.

The applicant requests a waiver of §73.807 of the Commission's Rules in respect to WTOH, Upper Arlington, Ohio.

Report completed by
Michelle Bradley
Founder, REC Networks
December 7, 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).

WTOH 71.3 dBu CONTOUR

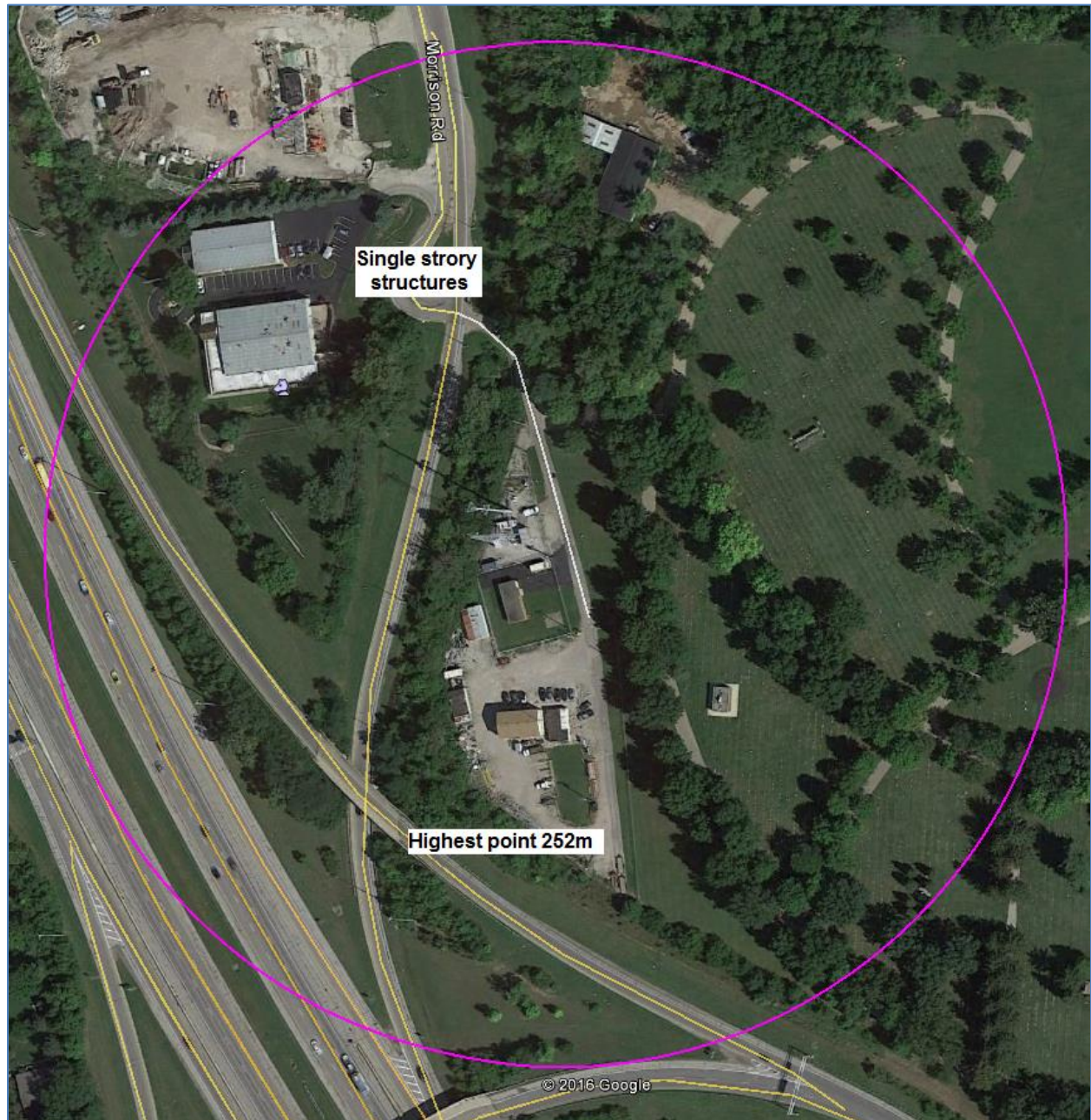


HORIZONTAL ELEVATION PATTERN FOR SHIVELY 6812c

Proposed Power:	0.1 kW
Antenna Height AGL:	36.5 m
Interference Contour:	111.3 dBu
Artificial RX Antenna Height:	11 m
Antenna Type:	Shively Labs 6812b 6812c - 4 bay Full-wave spacing

Angle Below Horizon	Antenna Relative Field	ERP in kW	ERP in dBk	Distance from Ant to Interference Contour	Distance from Ant to Artificial Plane	Field Strength in dBu @ Artificial Plane	Distance from Ant to Ground Level	Field Strength in dBu @ Ground Level
5	0.866	0.075	-11.25	165.39	292.58	106.35	418.79	103.23
10	0.529	0.028	-15.53	101.03	146.85	108.05	210.20	104.94
15	0.140	0.002	-27.08	26.74	98.52	99.97	141.03	96.86
20	0.146	0.002	-26.71	27.88	74.56	102.76	106.72	99.64
25	0.247	0.006	-22.15	47.17	60.34	109.16	86.37	106.05
30	0.181	0.003	-24.85	34.57	51.00	107.92	73.00	104.81
35	0.032	0.000	-39.90	6.11	44.46	94.06	63.64	90.95
40	0.108	0.001	-29.33	20.63	39.67	105.62	56.78	102.50
45	0.180	0.003	-24.89	34.38	36.06	110.88	51.62	107.77
50	0.174	0.003	-25.19	33.23	33.29	111.29	47.65	108.17
55	0.112	0.001	-29.02	21.39	31.13	108.04	44.56	104.93
60	0.030	0.000	-40.46	5.73	29.44	97.08	42.15	93.97
65	0.042	0.000	-37.54	8.02	28.14	100.40	40.27	97.28
70	0.087	0.001	-31.21	16.62	27.14	107.04	38.84	103.92
75	0.100	0.001	-30.00	19.10	26.40	108.49	37.79	105.37
80	0.084	0.001	-31.51	16.04	25.89	107.14	37.06	104.03
85	0.049	0.000	-36.20	9.36	25.60	102.56	36.64	99.44
90	0.001	0.000	-70.00	0.19	25.50	68.79	36.50	65.67

SATELLITE PHOTO OF 191 METER OVERLAP ZONE



WAIVER OF §73.870(a) REQUESTED

WSAX-LP
Columbus, OH
Channel 253L1 (98.5 MHz)

The move proposed in this application is 9.6 km from the currently authorized site. Section §73.870(a) of the Commission's Rules states that an LPFM station can move up to 5.6 kilometers as a minor change².

In the instant case, the applicant was unable to find an alternate site that was within 5.6 km of the currently authorized site. In addition, WSAX-LP is authorized to serve the Columbus, Ohio area. The proposed move would place the station in a better position to serve the City of Columbus.

In *SRN Communications*, the Commission permitted a move of 8.5 kilometers due to not being able to find an alternate site that is closer.³ SRN further states that the 5.6 km restriction is the strictest in the FM band where full power stations need only be mutually exclusive with the original and translators only require contour overlap.⁴

Furthermore, in *Sloan Canyon Communications*, the Commission permitted a move of 12.3 km citing a lack of available sites as well as moving the station to better serve its community of license.⁵

By allowing WSAX-LP to move to this proposed location, we are not jeopardizing localism. If anything, it is being improved as the station is being moved closer to the more densely populated portions of the community of license including closer to the downtown area. As demonstrated in the map on the following page, the headquarters will remain within 10 miles of the proposed site.

Due to these extenuating circumstances and past precedence, SEMM Foundation feels that it would be in the public interest to allow this site move of 9.6 km so WSAX-LP can better serve the people of Columbus, Ohio.

With that, SEMM Foundation is requesting a waiver of §73.870(a) of the Commission's Rules in respect to the instant application.

² - See 47 C.F.R. §73.870(a).

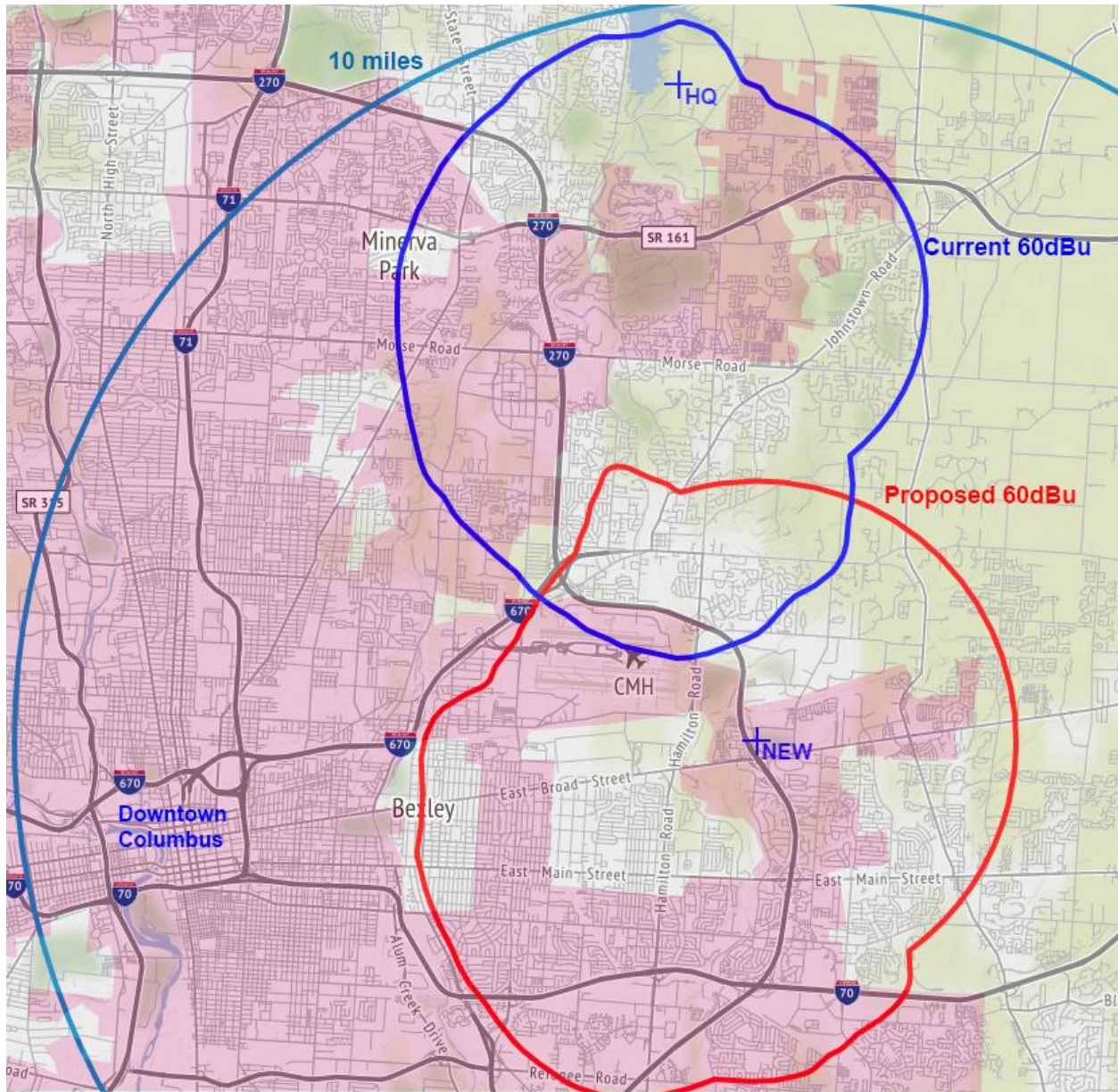
³ - See *SRN Communications, Inc.*, BMPL-20140902ACG, Granted September 15, 2014 at Exhibit 1.

⁴ - Id.

⁵ - See *Sloan Canyon Communications*, BMPL-20140623AAG, Granted December 22, 2014 at Exhibit 11.

OLD VS. NEW LOCATION

LOCATION OF HEADQUARTERS IN RESPECT TO PROPOSED SITE



Pink shaded area is approximate city limits of Columbus.