



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

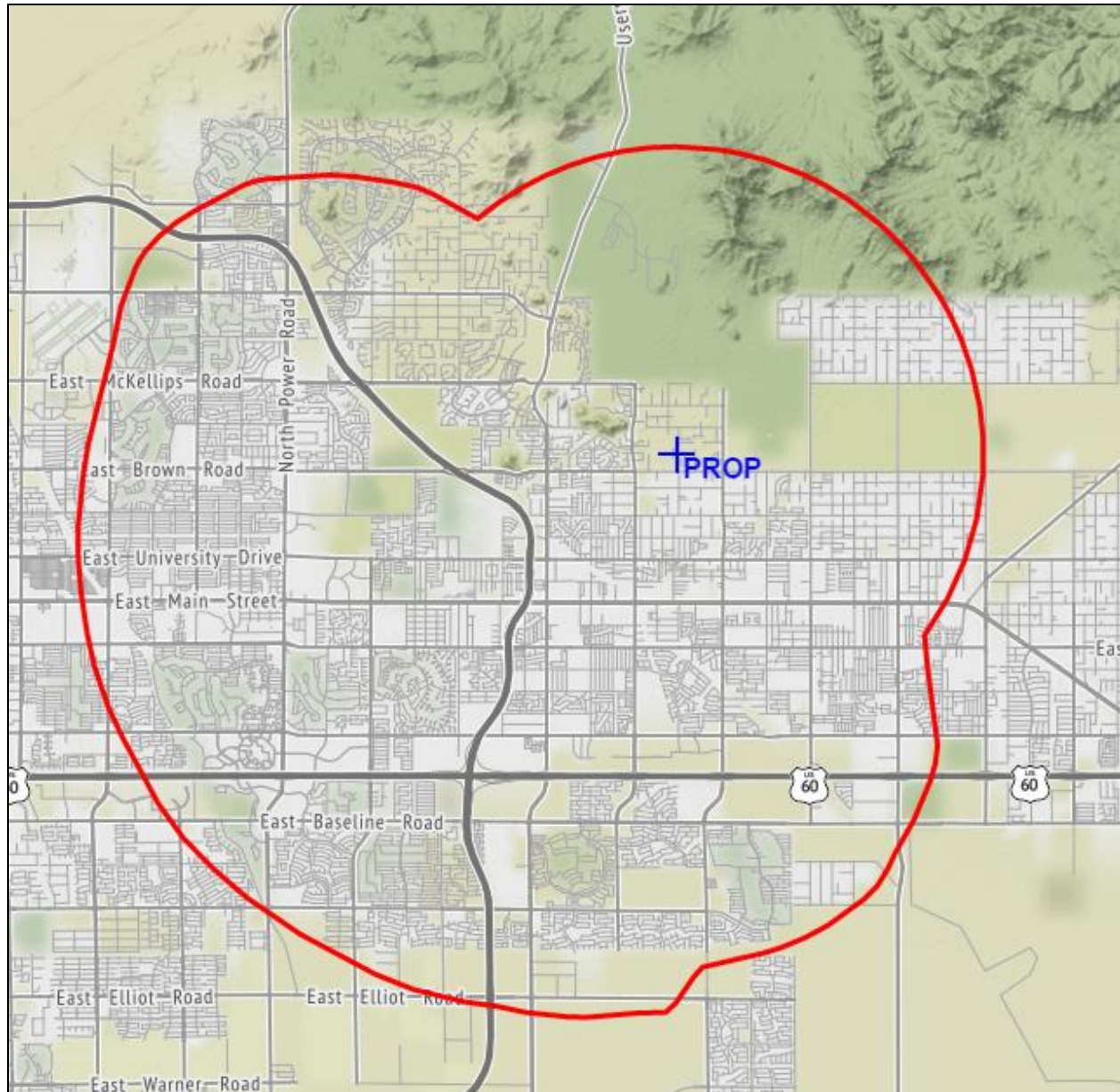
CP Modify for KFXV-LP

MESA, AZ

SAN TAN EDUCATIONAL MEDIA

BLL-20150527ACT

PROPOSED 60dBu F(50,50) SERVICE CONTOUR



MESA, AZ – Channel 256L1 (99.1 MHz) ~ ERP 0.100 kW

Elev: 516 meters ~ RCAGL: 29 meters ~ RCAMSL: 545 meters ~ HAAT: 7 meters

Overall tower height: 30 meters – ASR: Not necessary – no nearby airports.

NAD83 Latitude: 33° 26' 22.3" NL – Longitude: 111° 36' 26.3" WL

NAD27 Latitude: 33° 26' 22.1" NL – Longitude: 111° 36' 23.8" WL

NAD27 LATITUDE: 33 - 26' 22.1" - LONGITUDE: 111 - 36' 23.8"
CHANNEL: 256 - CLASS: LPFM(LP-100)

CHAN	FREQ	CALL	LOCATION	CLS	DIST	REQ	CLEAR	BEAR
253	98.5	KRDY	VAIL	AZ A	190.9	0.0	190.9	151.3
: DESERT WEST AIR RANCHERS CORPORATION (A WYOMING CORPORATION)								
253	98.5	KRFM	SHOW LOW	AZ C0	176.1	0.0	176.1	60.6
: PETRACOM OF HOLBROOK, LLC								
253	98.5	KRFM	SHOW LOW	AZ C0	182.9	0.0	182.9	61.4
: PETRACOM OF HOLBROOK, LLC								
254	98.7	KMVP-FM	PHOENIX	AZ C	44.1	93.0	-48.9	254.4
: BONNEVILLE INTERNATIONAL CORPORATION								
255	98.9	KPIH-LP	PAYSON	AZ L1	94.4	14.0	80.4	16.7
: RIM CATHOLIC EVANGELIZATION ASSOC.								
256	99.1	KTMG	PRESCOTT	AZ A	149.5	67.0	82.5	327.7
: FLAGSTAFF RADIO, INC								
256	99.1	XHSITFM	SONOITA	SO B	210.5	91.0	119.5	214.0
:								
256	99.1		PUERTO PENASCO	SO C	298.5	110.0	188.5	217.7
:								
256	99.1	KFXV-LP	MESA	AZ L1	6.6	24.0	-17.4	332.2
: SAN TAN EDUCATIONAL MEDIA								
: Currently authorized facility.								
256	99.1	KFMM	THATCHER	AZ C1	221.6	111.0	110.6	105.4
: COCHISE BROADCASTING LLC								
256	99.1	K256CY	NOGALES	AZ D5	21.8	32.0	-10.2	319.1
: GABRIELLE BROADCASTING LICENSEE I, LLC								
: Separation increased from 15.4 km to 21.8 km.								
257	99.3	KEMP	PAYSON	AZ C3	86.3	67.0	19.3	16.6
: KEMP COMMUNICATIONS, INC.								
257	99.3	KEMP	PAYSON	AZ C2	86.3	80.0	6.3	16.6
: KEMP COMMUNICATIONS, INC.								
257	99.3	KRWV-LP	GOLD CANYON	AZ L1	19.5	14.0	5.5	123.9
: GOLD CANYON PUBLIC RADIO INC								
257	99.3	K257CD	PHOENIX, ETC.	AZ D8	47.8	28.0	19.8	291.2
: MICHAEL PIAZZA, LLC								
258	99.5	KIIM-FM	TUCSON	AZ C	139.8	93.0	46.8	160.8
: RADIO LICENSE HOLDING CBC, LLC								
258	99.5	KRPH	MORRISTOWN	AZ C2	128.0	53.0	75.0	308.1
: DEPORTES Y MUSICA COMUNICACIONES LLC								

LPFM SECOND ADJACENT CHANNEL WAIVER STUDY

Mesa, AZ
Channel 256L1 (99.1 MHz)

The proposed location is second-adjacent channel short spaced to KMVP-FM, Phoenix, Arizona.

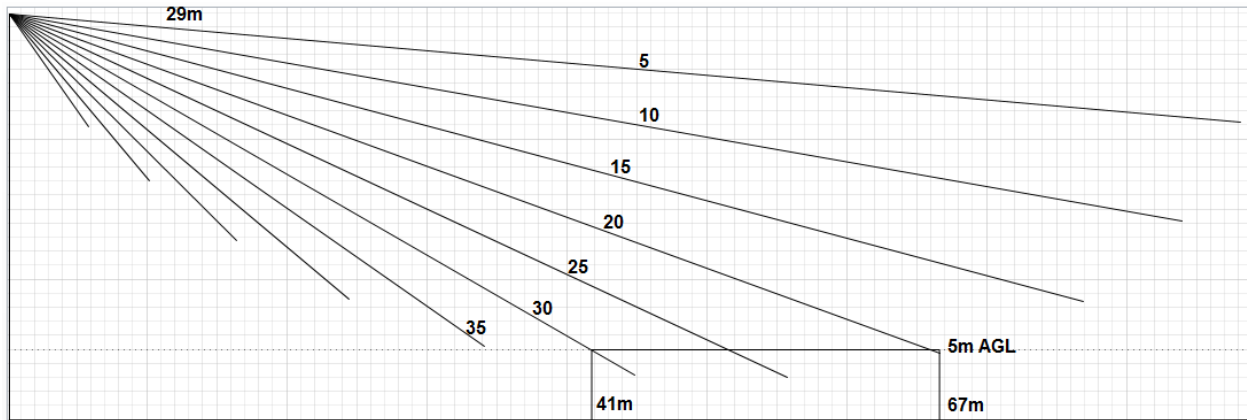
Based on a study performed by Michelle Bradley of REC Networks, it has been determined that this proposed site qualifies for a second adjacent waiver as specified in Section 73.807(e) of the Commission's Rules.

KMVP-FM operates on Channel 254C with 97 kW maximum effective radiated power ("ERP") at 545 meters height above average terrain ("HAAT") into a non-directional antenna with an effective HAAT of 497 meters towards the proposed LPFM site and is located 44.1 km from the proposed LPFM site. KMVP-FM places an 77.9 dBu service contour at the proposed LPFM site.

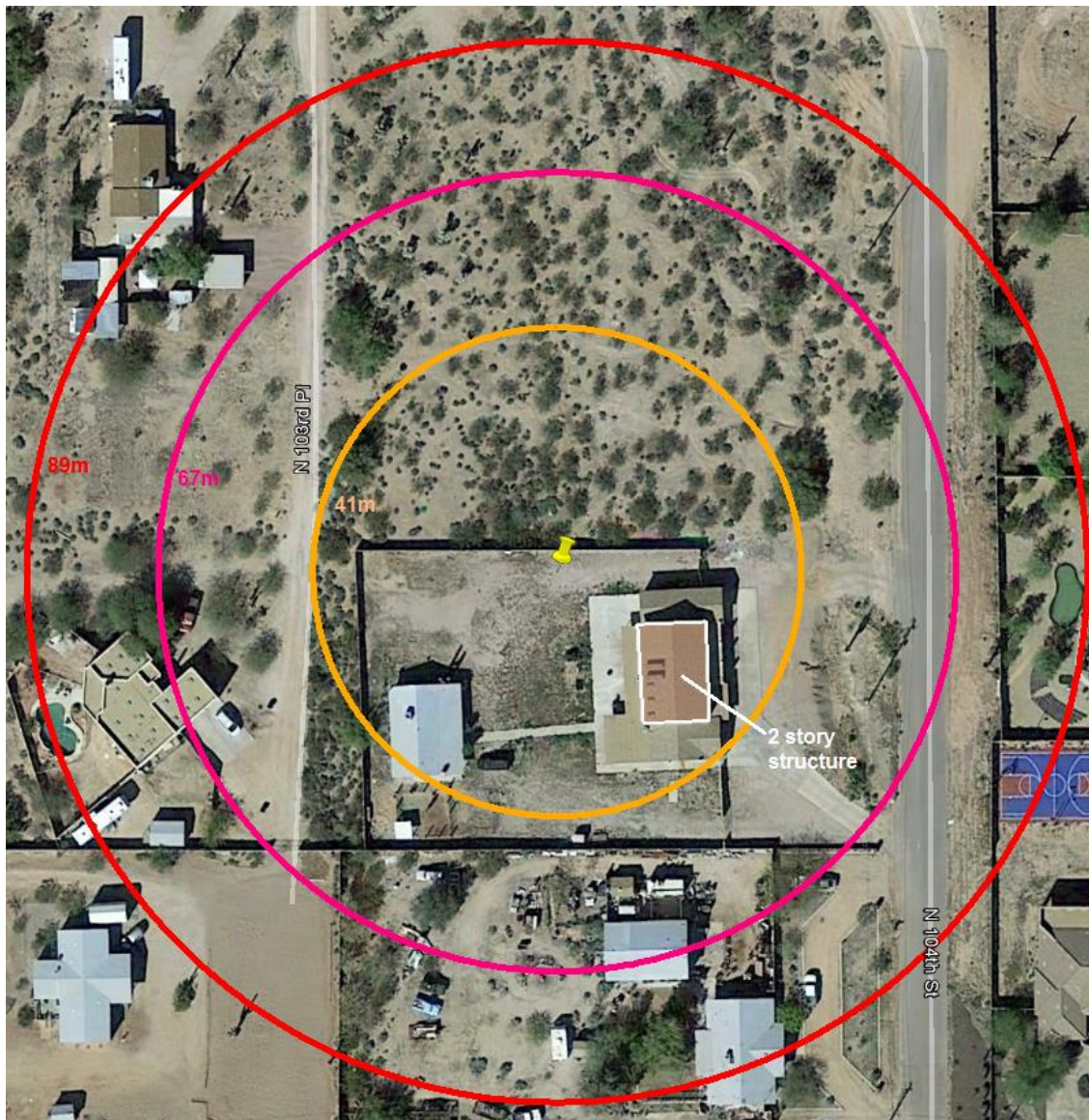
Using the U/D method¹, the proposed LPFM station is predicted to produce an undesired interference overlap in respect to KMVP-FM to the proposed LPFM station's 117.9 dBu interference contour ("overlap zone"). At 100 watts ERP, the overlap zone extends to 89 meters from the radiation center. There are several single story structures and one two-story structure within that 89 meter overlap zone.

To address these structures, the applicant proposes to use the Nicom BKG-77 circularly polarized antenna with 2 bays at half-wave spacing. Based on the manufacturer's specifications, the downward radiation along all depression angles from -5 to -90 degrees (in 5-degree increments) will not reach any point below 2 meters ground level. This provides protections to all of the single story structures in the overlap zone. To address the two-story structure, we performed an additional study to show that interference will not reach any point at or below 5 meters above ground level except along the -20, -25 and -30 degree depression angles. As demonstrated in the graph below, we have determined that the interference reaches below 5 meters above ground level in the area between 41 and 67 meters from the base of the proposed tower:

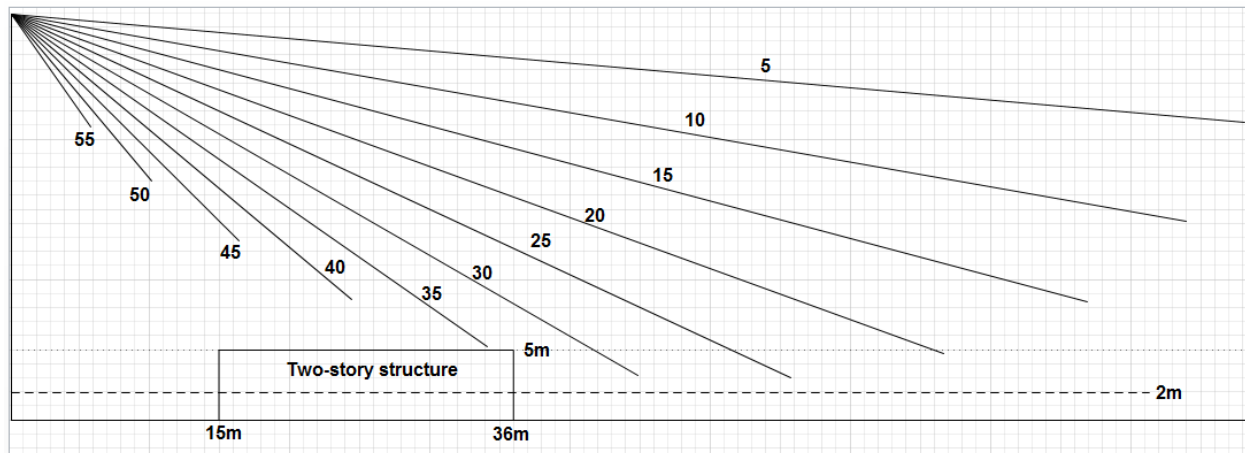
¹ - See *Living Way Ministries, Inc.* Memorandum Opinion and Order, 17 FCC Rcd 17054, 17056 (2002) at 5. *Recon denied* 23 FCC Rcd 15070 (2008).



The following satellite photo shows the proposed tower site (the yellow pin) as well as the 89 (red), 67 (pink) and 41 (orange) meter radii around the proposed tower site.



In order for there to be interference at points between 2 and 5 meters, they have to be located between 41 and 67 meters of the tower base. The only two story structure within the 89 meter overlap zone is not located within the zone between 41 and 67 meters and therefore, the interference will not second story of that occupied structure. Our measurements show that the second story structure is located between 15 and 36 meters from the tower base and based on the distance to the interference contour along the -35, -40, -45, -50 and -55 degree depression angles, the interference does not reach less than 5 meters above ground level and therefore will not reach the second floor of the only two-story structure in the overlap zone.



Based on the information presented, REC submits that the proposed station will not create any interference to existing or potential listeners of second adjacent channel station KMVP-FM, Phoenix, Arizona.

The applicant requests a waiver of §73.807 of the Commission's Rules in respect to KMVP.

Report completed by
Michelle Bradley
Founder, REC Networks
February 6, 2017

DOWNWARD RADIATION STUDY BASED ON AN ARTIFICIAL FLOOR OF 2 METERS ABOVE GROUND LEVEL

Demonstrates that the interference contour will not reach any point lower than 2 meters above ground level at any point within the 89 meter overlap zone.

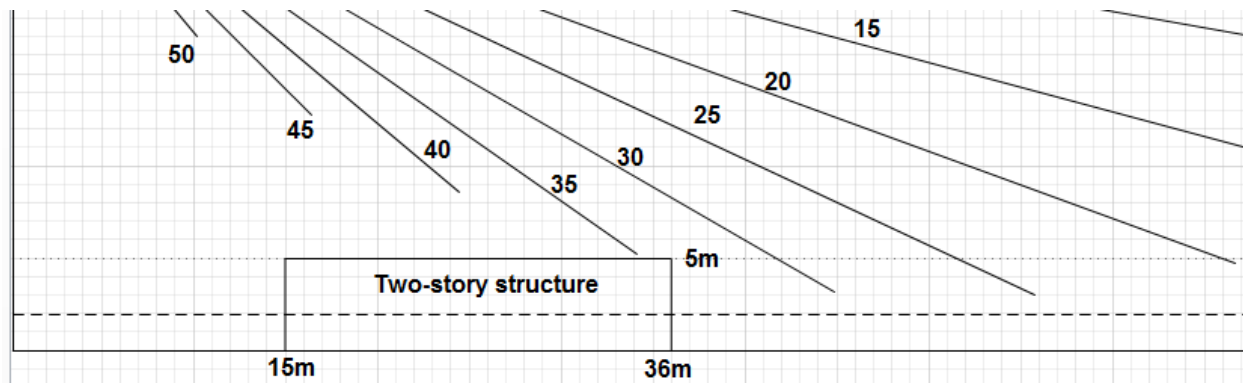
Proposed Power:				0.1 kW				
Antenna Height AGL:				29 m				
Interference Contour:				117.9 dBu				
Artificial RX Antenna Height:				2 m				
Antenna Type:				Nicom BKG77 - 2 bay Half-wave spacing				
Angle Below Horizon	Antenna Relative Field	ERP in kW	ERP in dBk	Distance from Ant to Interference Contour	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	0.988	0.098	-10.10	88.26	309.79	106.99	332.74	106.37
10	0.952	0.091	-10.43	85.04	155.49	112.66	167.00	112.04
15	0.889	0.079	-11.02	79.41	104.32	115.53	112.05	114.91
20	0.791	0.063	-12.04	70.66	78.94	116.94	84.79	116.32
25	0.686	0.047	-13.27	61.28	63.89	117.54	68.62	116.92
30	0.577	0.033	-14.78	51.54	54.00	117.50	58.00	116.87
35	0.463	0.021	-16.69	41.36	47.07	116.78	50.56	116.16
40	0.354	0.013	-19.02	31.62	42.00	115.43	45.12	114.81
45	0.256	0.007	-21.84	22.87	38.18	113.45	41.01	112.83
50	0.174	0.003	-25.19	15.54	35.25	110.79	37.86	110.17
55	0.110	0.001	-29.17	9.83	32.96	107.39	35.40	106.77
60	0.061	0.000	-34.29	5.45	31.18	102.75	33.49	102.13
65	0.028	0.000	-41.06	2.50	29.79	96.38	32.00	95.76
70	0.006	0.000	-54.44	0.54	28.73	83.32	30.86	82.69
75	0.004	0.000	-57.96	0.36	27.95	80.03	30.02	79.41
80	0.008	0.000	-51.94	0.71	27.42	86.22	29.45	85.60
85	0.008	0.000	-51.94	0.71	27.10	86.32	29.11	85.70
90	0.009	0.000	-50.92	0.80	27.00	87.38	29.00	86.76

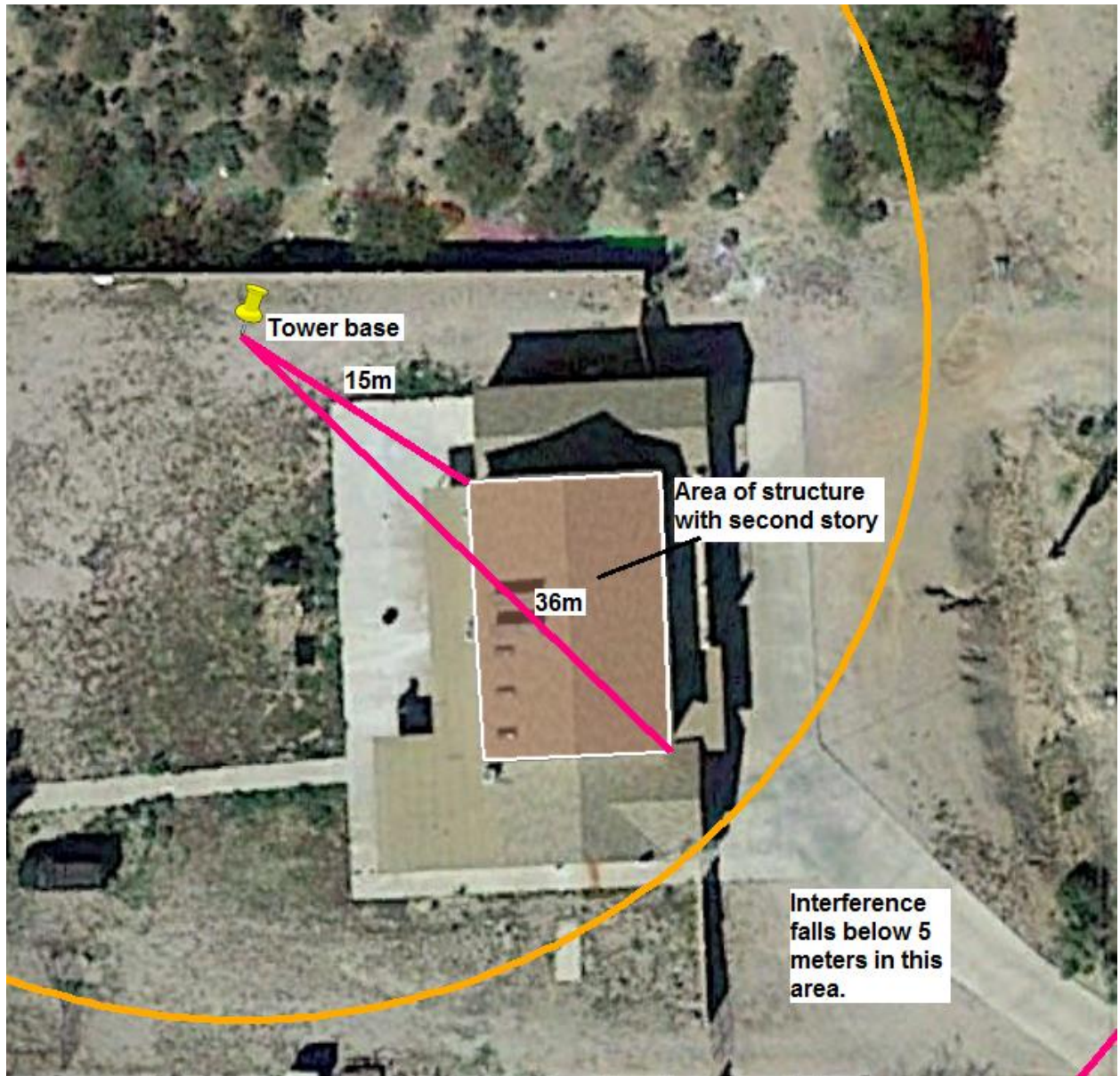
DOWNWARD RADIATION STUDY BASED ON AN ARTIFICIAL FLOOR OF 5 METERS ABOVE GROUND LEVEL

Demonstrates that any interference below 5 meters above ground level will take place only along the -20, -25 and -30 degree depression angles. The only two story structure is located along the -35, -40, -45 and -50 degree depression angles.

Proposed Power:	0.1 kW
Antenna Height AGL:	29 m
Interference Contour:	117.9 dBu
Artificial RX Antenna Height:	5 m
Antenna Type:	Nicom BKG77 - 2 bay Half-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	0.988	0.098	-10.10	88.26	275.37	108.02	332.74	106.37
10	0.952	0.091	-10.43	85.04	138.21	113.68	167.00	112.04
15	0.889	0.079	-11.02	79.41	92.73	116.55	112.05	114.91
20	0.791	0.063	-12.04	70.66	70.17	117.96	84.79	116.32
25	0.686	0.047	-13.27	61.28	56.79	118.56	68.62	116.92
30	0.577	0.033	-14.78	51.54	48.00	118.52	58.00	116.87
35	0.463	0.021	-16.69	41.36	41.84	117.80	50.56	116.16
40	0.354	0.013	-19.02	31.62	37.34	116.46	45.12	114.81
45	0.256	0.007	-21.84	22.87	33.94	114.47	41.01	112.83
50	0.174	0.003	-25.19	15.54	31.33	111.81	37.86	110.17
55	0.110	0.001	-29.17	9.83	29.30	108.41	35.40	106.77
60	0.061	0.000	-34.29	5.45	27.71	103.77	33.49	102.13
65	0.028	0.000	-41.06	2.50	26.48	97.40	32.00	95.76
70	0.006	0.000	-54.44	0.54	25.54	84.34	30.86	82.69
75	0.004	0.000	-57.96	0.36	24.85	81.06	30.02	79.41
80	0.008	0.000	-51.94	0.71	24.37	87.24	29.45	85.60
85	0.008	0.000	-51.94	0.71	24.09	87.34	29.11	85.70
90	0.009	0.000	-50.92	0.80	24.00	88.40	29.00	86.76





WAIVER OF §73.870(a) REQUESTED

Mesa, AZ
Channel 256L1 (99.1 MHz)

The move proposed in this application is 6.6 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 facing the need to find an alternate site and that need was further compounded by the potential for degraded performance triggered by recently granted application BMPFT-20161031ADI for a new translator in the Fountain Hills area (K256CY). Due to the potential for increased noise-floor, KFXV-LP may find it difficult to operate from a mountain-top facility at 2 watts ERP. The proposed site is located on ground level and significant overlap of service contours by population. In addition, the new site will increase the amount of population served in an effort to serve more of Mesa, the station's community of license. The ability to operate at 100 watts ERP will also allow KFXV-LP to improve their ability to penetrate buildings and overcome any potential noise floor from K256CY, a translator designed to serve Scottsdale and West Phoenix.

A search of registered towers within 5.6 km of the currently authorized site reveals the following:

ASRN/ VendorID	Vendor/Owner	Tower Name	Height	Type	Dist	Bearing
1027787	Crown Castle		18.90	POLE	4.8	232.2
1257550	T-Mobile West Tower LLC		19.80	TREE	4.9	238

At the Crown Castle tower, an LPFM station operating a two-bay antenna would be limited to 56 watts at 22 meters HAAT in order to meet a second-adjacent channel waiver thus depriving KFXV-LP of potential service area.

The T-Mobile site is located 15.0 km from K256CY where the currently authorized site is 15.4 km from K256CY. As this location would reduce the short-spacing to K256CY, it is not available in accordance with §73.807 of the Commission's Rules.

² - See 47 C.F.R. §73.870(a).

In addition to the registered structures, the following unregistered sites were also evaluated and determined as not viable:

Site name	NAD83 Lat	NAD83 Lon	Distance	Comments
Usery Peak ULS1939216	33-29-03	111-38-48	1.1	Further distanced from community of license.
Usery Pass ULS1691121	33-29-36	111-41-18	4.4	13.4 km from K256CY (increased short spacing, violates §73.807)
Red Mountain ULS3024330	33-28-22	111-40-37	4.7	15.0 km from K256CY (increased short spacing, violates §73.807).
Jensen Hill ULS2624940	33-26-44	111-37-19	5.5	Previously authorized on this mountain (BMPL-20140721AAI). 4 watt limitation. Will have difficulty overcoming increased noise floor from K256CY

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

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

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.

By allowing KFXV-LP to move to this proposed location, we are not jeopardizing localism. If anything, it is being improved as the station is being moved further into the community of license and bringing the station closer to its headquarters so they can reach the same audience by radio that they serve through their headquarters.

Due to these extenuating circumstances and past precedence, San Tan Educational Media feels that it would be in the public interest to allow this site move of 6.6 km so KFXV-LP can better serve the people of Mesa, Arizona.

With that, San Tan Educational Media is requesting a waiver of §73.870(a) of the Commission's Rules in respect to the instant application.

Report completed by
Michelle Bradley
Founder, REC Networks
February 6, 2017

CURRENT CONTOUR vs. PROPOSED CONTOUR

