

**SANTA CLARITA PUBLIC SERVICE BROADCASTERS CORPORATION**  
**MINOR CHANGE OF LICENSED FACILITY**  
**KZNQ-LP, FAC ID No. 196311 SANTA CLARITA, CALIFORNIA**

Low Power FM licensee Santa Clarita Public Service Broadcasters Corporation ("SCPS") has been mulling options for future viability of operation of KZNQ-LP. Licensee has been attempting to ameliorate incoming interference concerns presented by listeners on an ongoing basis that appears to be from co-channel KGB (FM) San Diego. The target of audience KZNQ-LP are listeners in the city of Santa Clarita, CA, including Valencia, Saugus, Canyon Country, and Newhall, located in northern Los Angeles County. KZNQ-LP's concern is it has been experiencing incoming interference in central Santa Clarita. To-date, it has attempted measures to fix the problem:

(1) On 10/06/2016 SCPS modified its facilities attempting to utilize directional antennas pointed towards the interference area--construction permit BPL-20160928ACM--and it was unable to relieve the issue upon licensing to cover 04/18/2017.

(2) SCPS pursued a preliminary engineering study to see if a booster might be appropriate in the vicinity of McBean Parkway and Interstate 5--the worse area of interference. Study concluded that due to terrain, a booster of 1 watts would not fit within the 60 dBu contour of KZNQ-LP.

(3) SCPS pursued a preliminary engineering study to view if it could move its transmitter location. The major issue is the Santa Clarita area is mountaineous, and KZNQ-LP antenna resides at **-121 meters HAAT**. The low HAAT results in certain shadowed areas around the coverage area. Study revealed that KZNQ-LP is short-spaced by translator K268CO as seen in Figure 1 below, providing much limitation in relocation options.

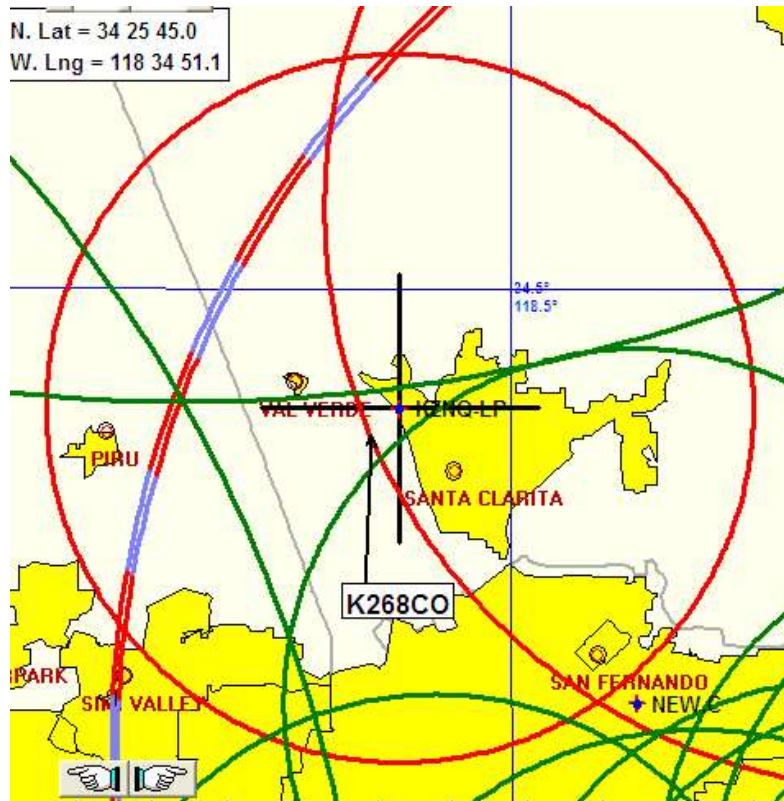


Figure 1: Short spaced by K68CO.

Concerning possible relocation spots, additional circumstances presented a challenge:

- The short spacing by K268CO only allows relocation to the west of the current site. The area to the west is primarily rippling small mountains with limited access and no power. See Figure 2.

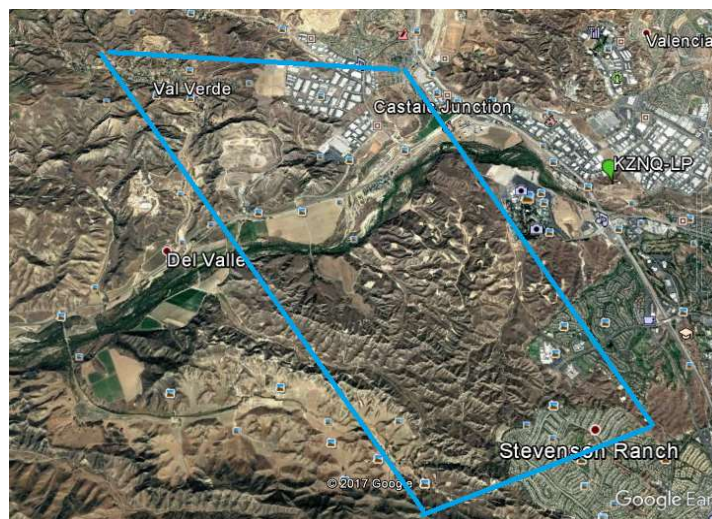


Figure 2: Prospective Relocation area

- The relocation cannot occur near any population as the ~115 dBu inference zone boundary around the antenna required over a 100 meters of zero-population clearance around any proposed antenna site.
- Few mountain peaks would work to provide an adequate signal back into Santa Clarita, CA.
- Relocation did not appear a viable option

(4) SCPS acquired engineering assistance to attempt to plot a Longley-Rice interference with station KGB (FM) San Diego, CA, the station causing incoming interference. The plot was inconclusive into diagnosing the incoming interference issue, insinuating a more complicated interference scenerio was present. SCPS and listeners definitely hear KGB overpowering the KZNQ-LP signal in practice though.

(5) SCPS engineering consultant drove by interference area and personally noted the obtrusive signal issue concerning KGB (FM).

(6) KZNQ-LP's Engineer visited the area of interference and took measurements (See APPENDIX). An Affidavit attached to this application provides validation that this interference was actual and received.

(7) A video of the interference while driving in a vehicle within the station's service area is included here:

<https://drive.google.com/file/d/0B4iWxoHGyrI0YUtnUjNwM1VKUjQ/view>

Given this account, SCPS would like to request a LPFM relocation channel. The only channel left open for Low Power FM broadcasting within the Santa Clarita Valley is Channel 260. Longley Rice plotting of the co-channels within the vicinity reveal no incoming signals from KTYD and KOLA, both on CH 260. See Figures 3 and 4 below.

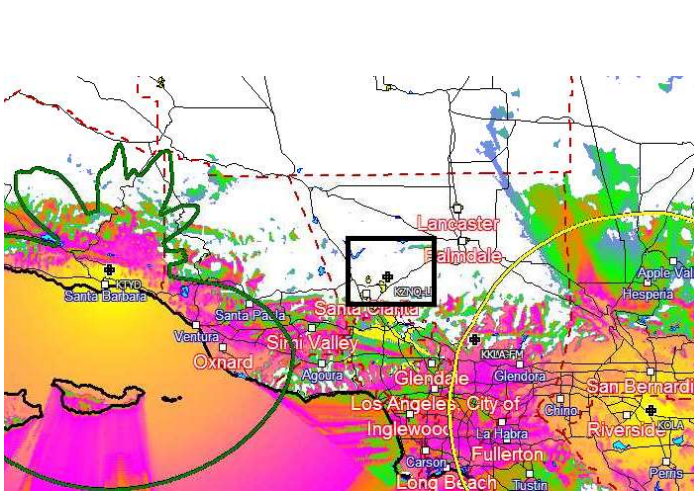


Figure 3: KTYD and KOLA

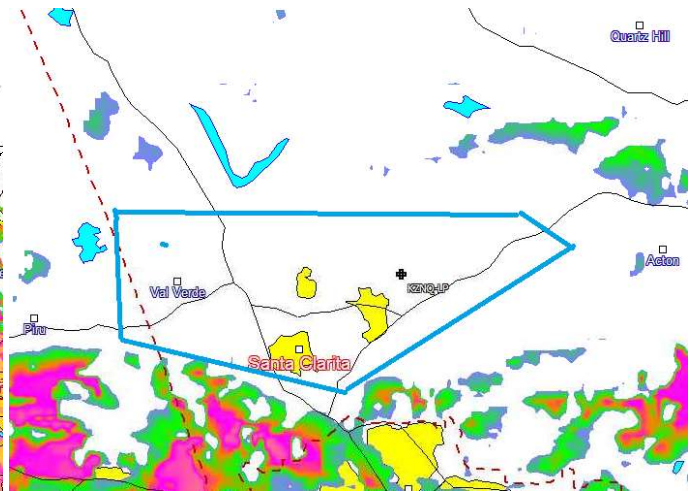


Figure 4: Close-up on the Santa Clarita Valley

Conclusion: The proposed relocation channel is thus expected to provide less interference than the current channel.

### WAIVER REQUEST SECTION 73.870(a)

Facility requests move of 12.8 km; Section 73.870(a) permits 5.6 km moves. Applicant requests a waiver of 73.870(a) in the public interest due to following constricting parameters:

- The area open for relocating to 99.9 FM is only available within a section that at closest is a 11.45 km move (see Figures 5a and 5b). The closest location KZNQ-LP could find for relocation is 12.8 km area from the current site (Figure 6).
- The proposed 60 dBu at the new site overlaps the current 60 dBu contour, covering approximately 2/3 of the current coverage area (Figure 7).



Figure 5a: Area open to 99.9FM



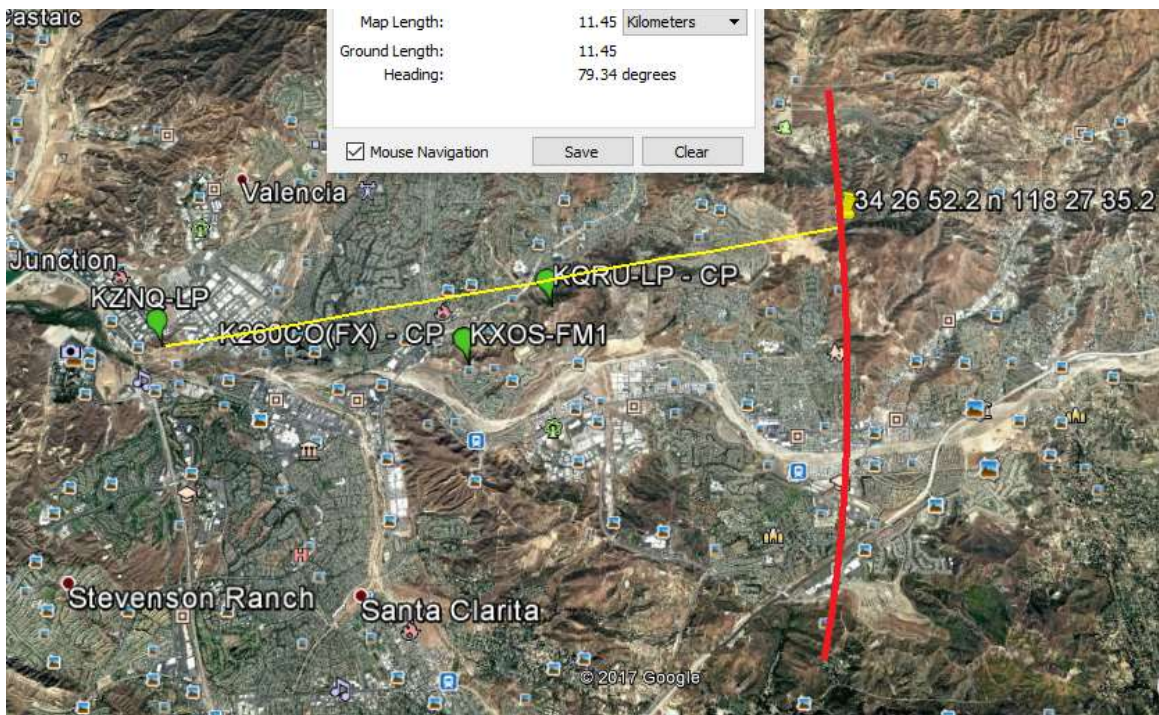


Figure 5b: Closest area open for 99.9 FM, 11.45 km

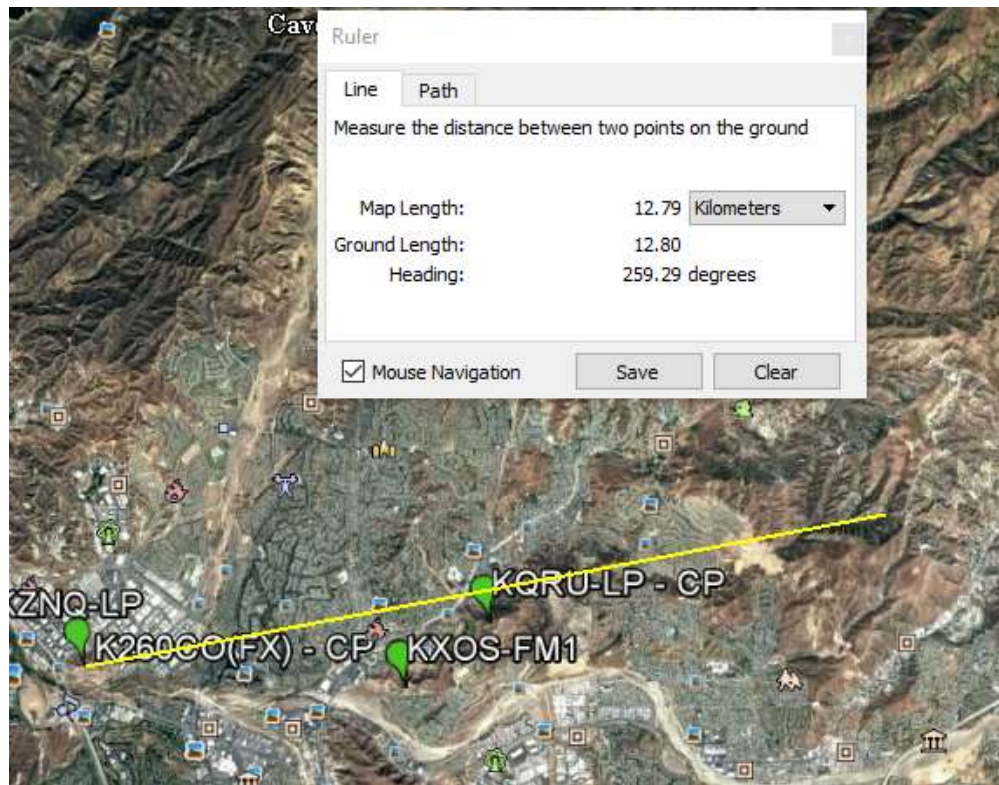


Figure 6: Proposed site move

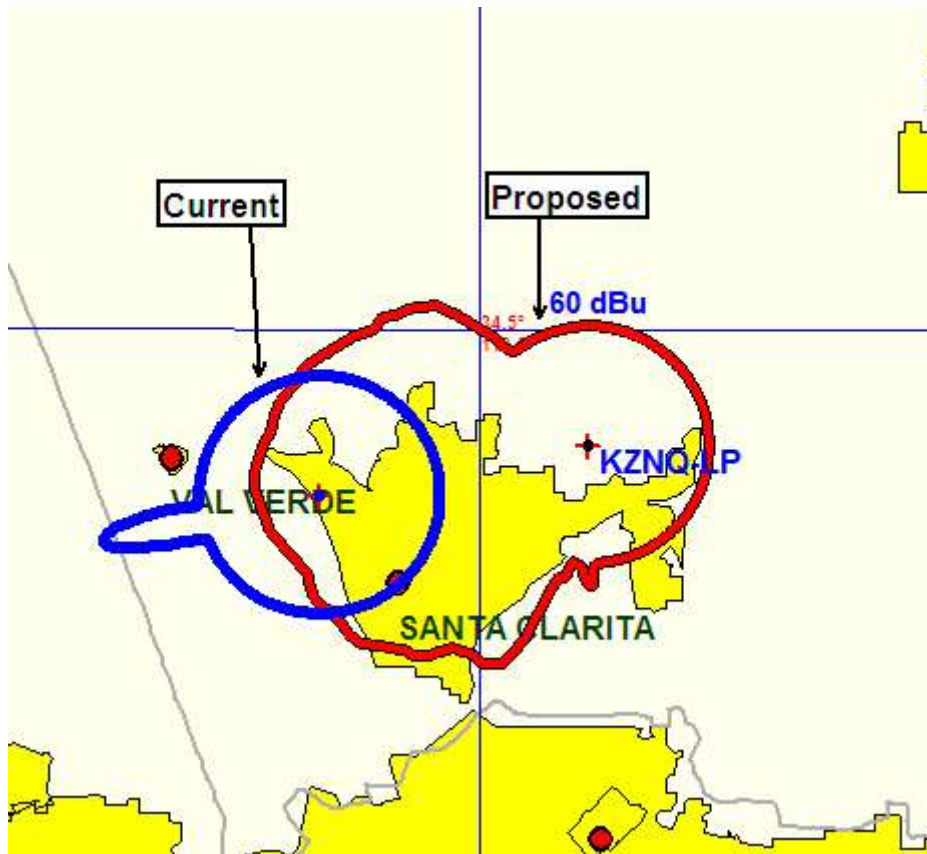


Figure 7: Current and Proposed coverage (60 dBu)

#### PROPOSED MINOR CHANGE: CHANNEL/LOCATION

Coordinates:	NAD 83	34 27 01.7 N 118 26 41.6 W
	NAD 27	34 27 01.7 N 118 26 38.3 W
	Site	616 m
	AGL	9 m
	AMSL	625 m
	ERP	100 watt
	CH	260

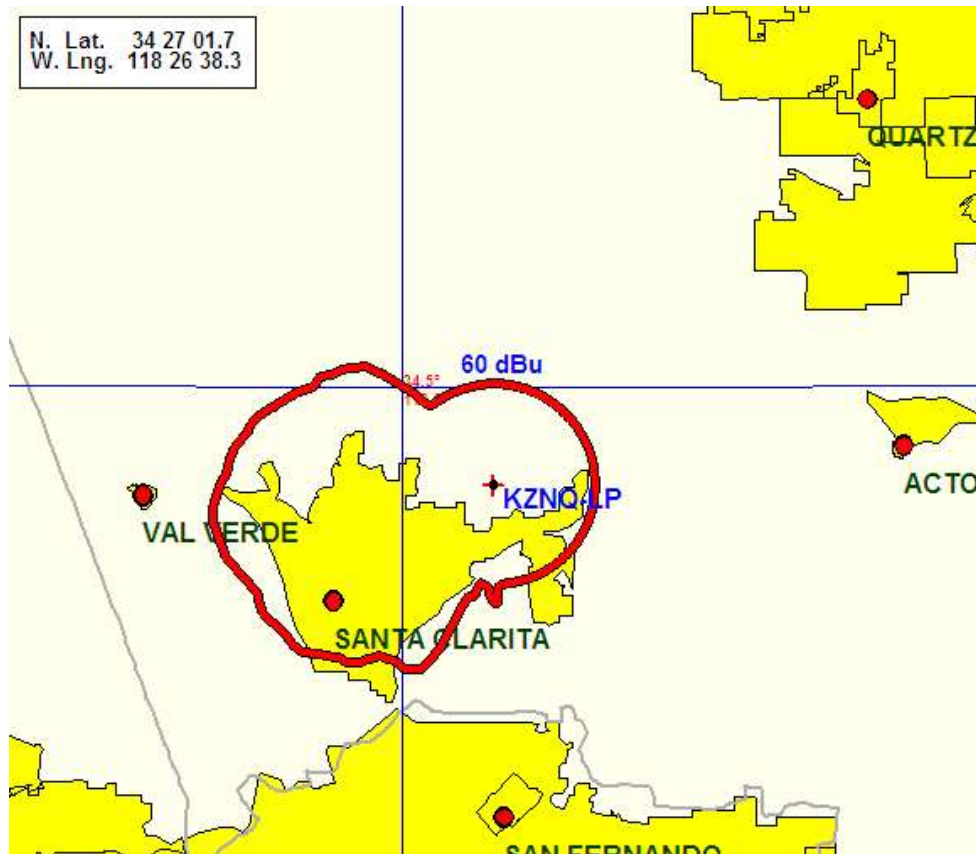


Figure 8: Proposed 60 dBu F(50,50)

## CHANNEL SPACING

Santa Clarita Public Service Broadcasters Corporation

REFERENCE		DISPLAY DATES
34 27 01.7 N.	CLASS = L1 Int = L1	DATA 05-27-17
118 26 38.3 W.	Current Spacings to 2nd Adj.	SEARCH 07-17-17
----- Channel 260 - 99.9 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
*KSWD	LIC 262B	Los Angeles	CA 125.6	42.74	66.5	-23.8
*KKLA-FM	LIC-Z 258B	Los Angeles	CA 125.6	43.19	66.5	-23.3
KTYD	LIC 260B	Santa Barbara	CA 271.5	113.21	111.5	1.7
KOLA	LIC 260B	San Bernardino	CA 116.5	119.32	111.5	7.8
KKZQ	LIC-N 261A	Tehachapi	CA 5.6	69.62	55.5	14.1
K259BD	LIC 259D	Rosamond	CA 18.3	49.53	14.5	35.0
K259BD	APP-D 259D	Rosamond	CA 23.2	63.89	20.5	43.4

Reference station has protected zone issue: Mexico

All separation margins include rounding

\* See Second Adj Waiver Request



## TOWAIR DETERMINATION

Proposed site passes FAA clearance.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	34-27-01.7 north
Longitude	118-26-41.6 west
Measurements (Meters)	
Overall Structure Height (AGL)	9
Support Structure Height (AGL)	0
Site Elevation (AMSL)	615
Structure Type	
GTOWER - Guyed Structure Used for Communication Purposes	

## SECOND ADJACENT WAIVER REQUEST

Applicant requests a waiver of the second adjacent minimum spacing requirements stated in §73.807 of the FCC rules using U/D zero population inference protocol ("Living Way" Waiver). At the proposed facility site, second adjacent channel KKLA has the signal strength of 65.7 dBu, and KSWD has the signal strength of 67.4 dBu as shown in Figure 9.



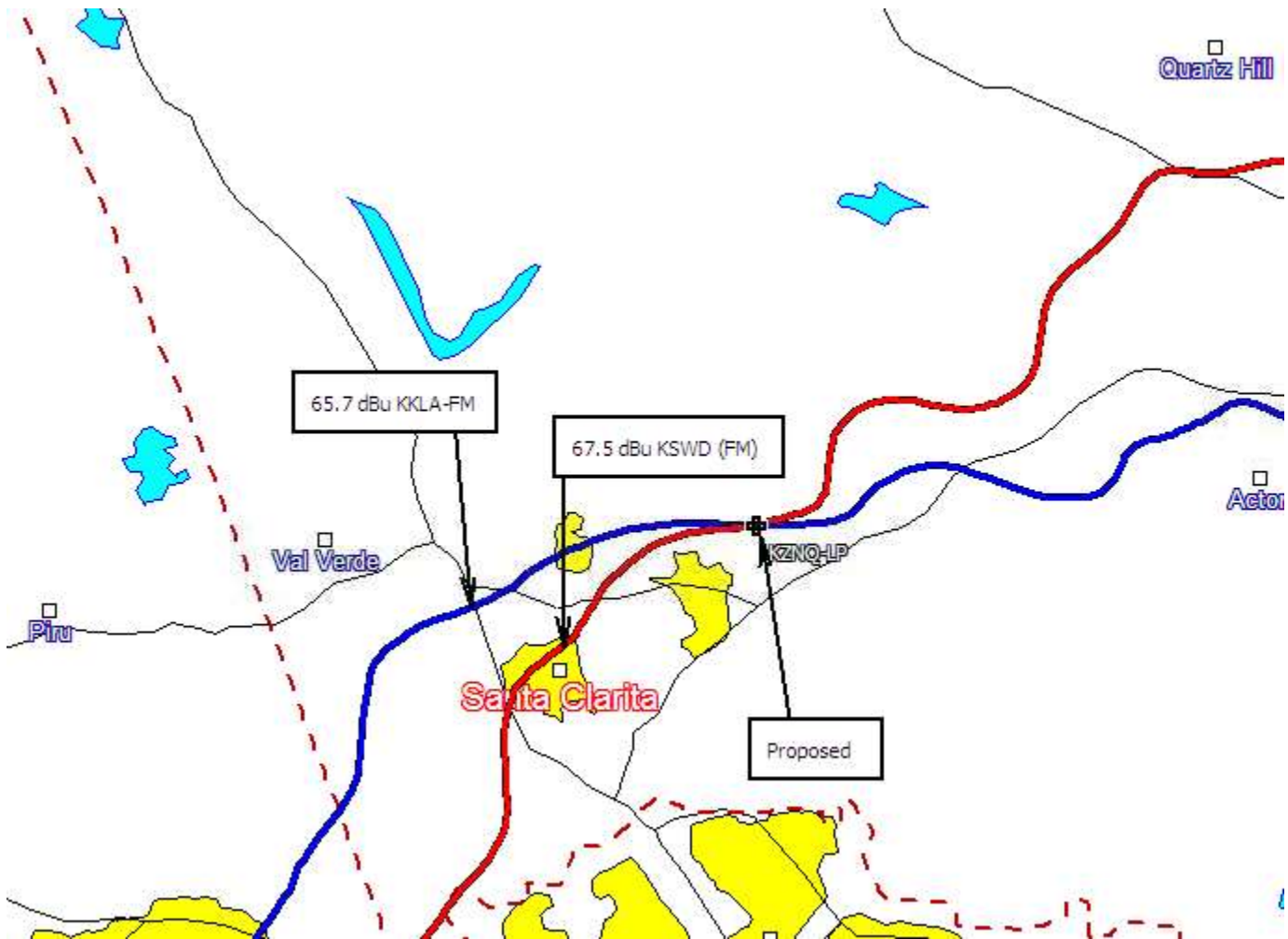


Figure 9: Second adjacent signal strengths at the proposed site.

KKLA-FM will be chosen for calculation as it would result in the larger interference area, vs. KSWD. If it passes the "Living Way" zero-population criteria, then KSWD, the smaller interference area, will then dually comply with the licensing criteria for translators/LPFM.

Using U/D methodology, at the proposed KZNQ-LP transmitter location KKLA has a signal strength of 65.7 dBu. Interference will occur when the interfering signal exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 105.7 dBu contour. The distance to this contour, using free space method:

$D = (7.01 \cdot P^{1/2}) / E$ , where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):

P = 100 w, E = 105.7 dBu  
D = 363 meters

Conclusion: The area of interference resides within 363 m of the proposed antenna. Figure 10 shows the area

of zero population (with private dirt roads). Therefore, the proposal passes muster for a "Living Way" waiver and the facility is permissible.

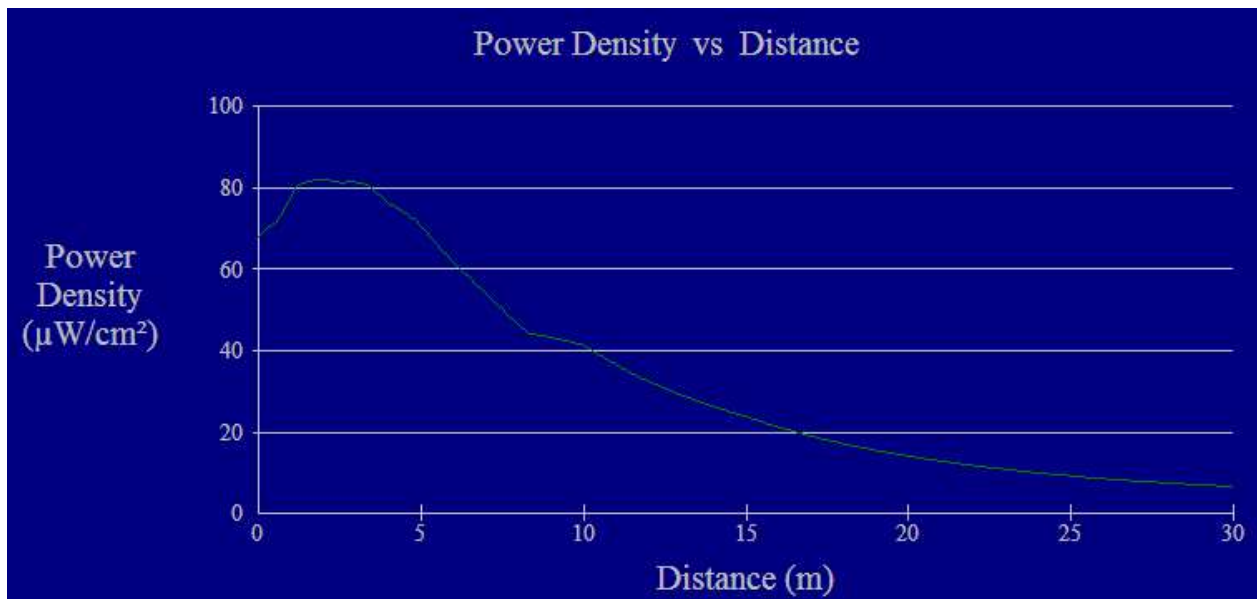


Figure 10: 105.7 dBu interference area of zero population

## NON-IONIZING ELECTROMAGNETIC RADIATION (NEIR) ANALYSIS

The Effective Radiated Power for proposed will be 100 watts, mounted on guyed tower 9 meters above the ground. The OET program FM Model for Windows, Version 2.10 Beta was used to determine the maximum predicted RF exposure. The settings used were:

Antenna: Phelps-Dodge Ring Stub or Dipole  
Vertical ERP (W): 100  
Horizontal ERP (W): 100  
Antenna Height (m): 9  
Number of Elements: 1



Using these settings, the maximum predicted RF exposure for a human standing on the ground would be less than 82.1  $\mu\text{W}/\text{cm}^2$  at 1.92 m. This represents less than 42% of the FCC Maximum Permissible Exposure (MPE) of 200  $\mu\text{W}/\text{cm}^2$  for uncontrolled environments. There are no other RF emitters at the site

The tower will be inaccessible by the public and will have a no climbing with a warning sign to potential climbers and a fence around it. If work on tower is required facility will be temporarily powered down.

## APPENDIX

### FIELD STRENGTH READINGS: Incoming Interference from KGB (FM)

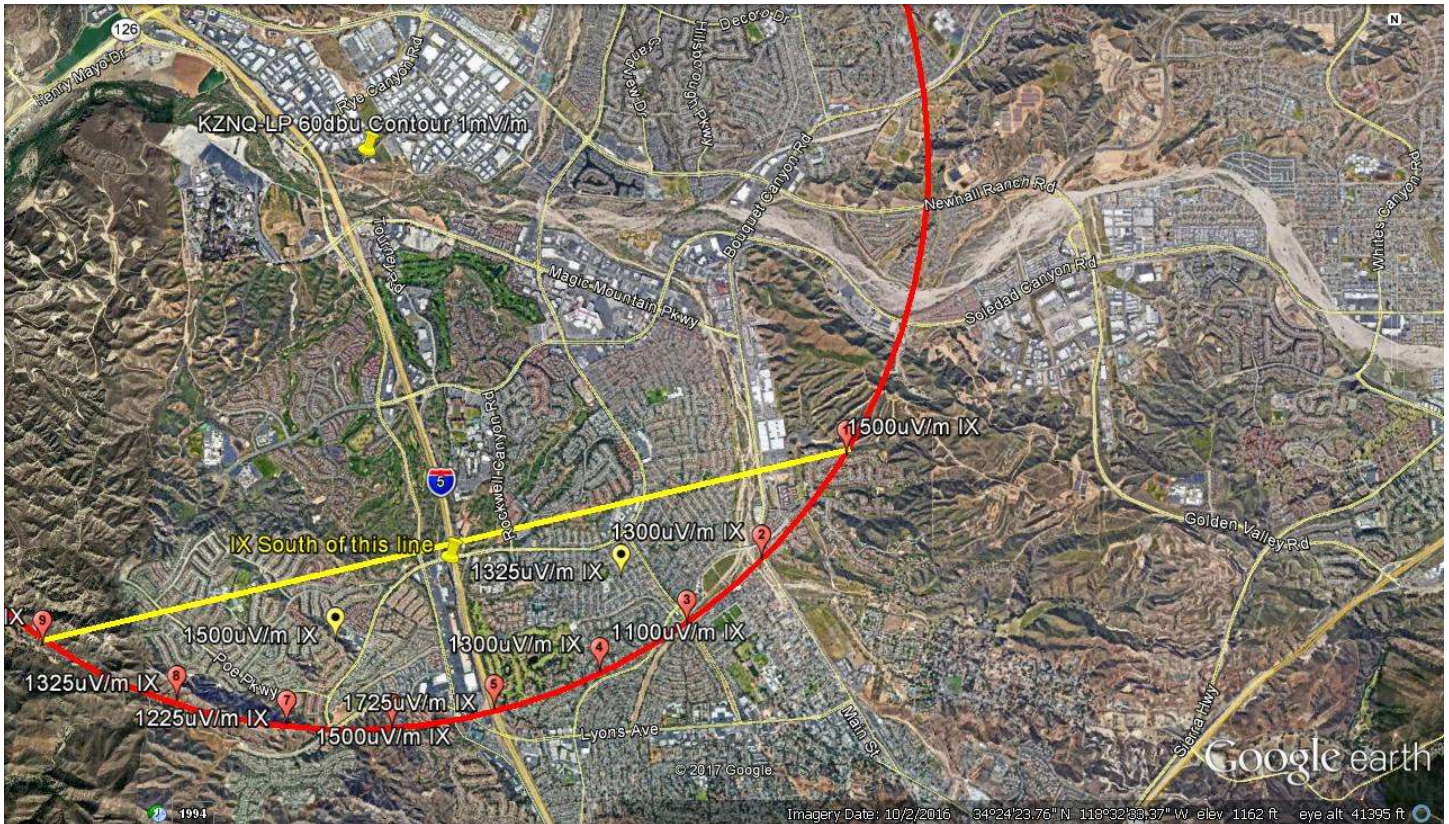
This explanation pertains to the Field Strength Readings that are listed on the Google Maps Co-Channel IX Map (map below). The Field Strength Readings were taken on an Un-calibrated Icom IC-706mkIIg Ham Radio Transceiver. Although this Transceiver isn't NIST calibrated, it is factory calibrated by Icom. We have found the Field Strength Readings from the Icom IC-706mkIIg to be accurate. For example, at 5.6km line of sight from our Transmitter Site, the Signal Strength Reading on the IC-706 is 60dbu or 1mV/meter. This is exactly what it should be.

The points on the Co-Channel IX Map were driven to by auto, and the readings were taken. We have supplied 11 points including the Field Strength Reading of the interfering Station indicated. Also, for reference, the KZNQ-LP 60dbu 1mv/m contour is displayed on the Map.



## COMPLAINT:

Excessive inbound interference on Channel 268 within our South facing 60dbu contour. South of the Yellow Line indicated on the IX MAP.



## INTERPRETATION:

As indicated by the RED CIRCLE on the IX MAP, this is the 60dbu 1mv/m contour of our Station KZNQ-LP. This is supported by several Field Strength Readings taken 5.6km from our Transmitter Site. Our findings are as follows, as indicated, the Field Strength Readings of the Co-Channel IX is stronger than the KZNQ-LP 60dbu contour, in some areas substantially stronger. Being much stronger, the Co-Channel IX Station completely mutes our signal in the area South of the yellow line indicated on the map.