REC Networks/Michelle Bradley, CBT
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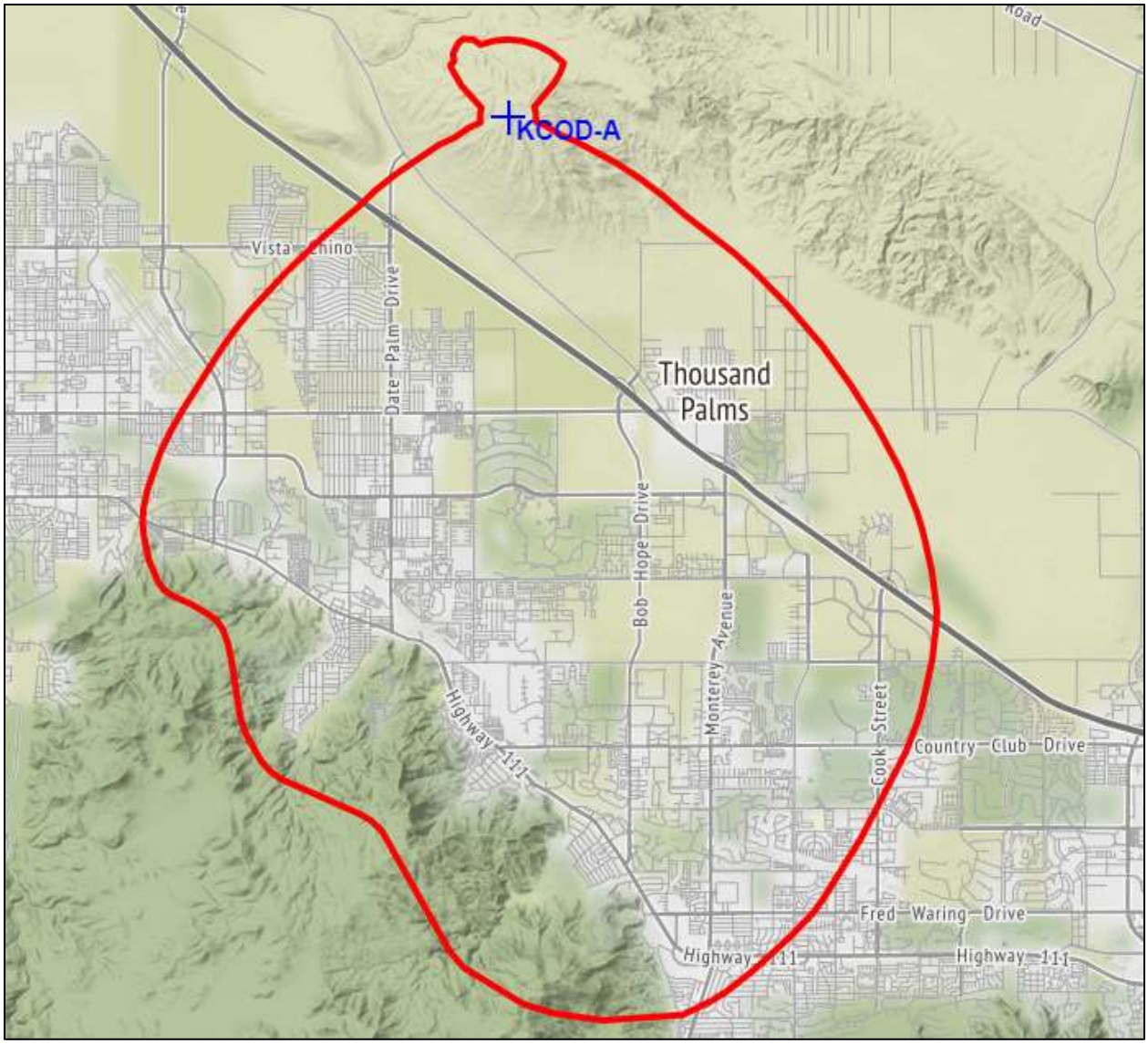
recnet.com

Modification for FM translator **K260DE**
PALM DESERT, CA
DESERT COMMUNITY COLLEGE DISTRICT dba COLLEGE OF THE DESERT
BLFT-20181203ABW

PROPOSED 60dBu F(50,50) SERVICE CONTOUR



PALM DESERT, CA – Channel 260D (99.9 MHz) ~ ERP 0.060 kW ~ Directional antenna
Elev: 481 meters ~ RCAGL: 12 meters ~ RCAMSL: 493 meters ~ HAAT: 141 meters
Overall tower height: 36 meters – ASR: None
NAD83 Latitude: 33° 51’ 57.7” NL – Longitude: 116° 26’ 01.9” WL
NAD27 Latitude: 33° 51’ 57.6” NL – Longitude: 116° 25’ 58.8” WL

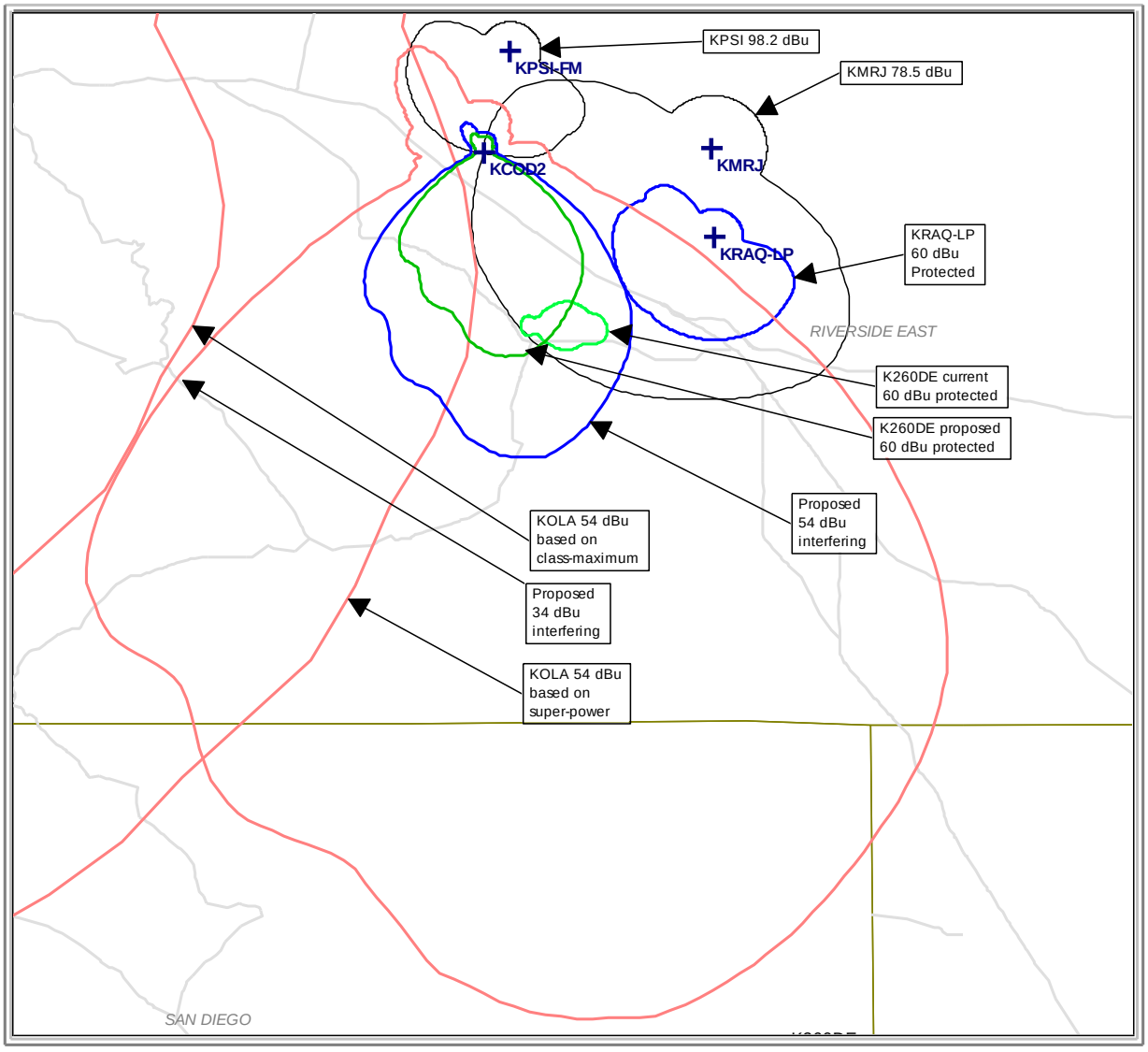
Site: KCOD2
Coordinates: 33-51-57.6 N, 116-25-58.8 W
Freq: 99.90000 MHz
ERP: 60.00 W

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
0	0.10	-56	460	1.36	33.878259	-116.433000
5	0.10	-136	430	1.36	33.878213	-116.431713
10	0.09	-182	440	1.35	33.877967	-116.430458
15	0.09	-160	600	1.34	33.877633	-116.429246
20	0.08	-136	660	1.33	33.877216	-116.428083
25	0.07	-141	730	1.30	33.876605	-116.427043
30	0.07	-151	750	1.27	33.875916	-116.426105
35	0.05	-187	840	1.20	33.874812	-116.425568
40	0.03	-232	850	1.12	33.873744	-116.425173
45	0.02	-197	930	1.01	33.872455	-116.425225
50	0.01	-125	920	0.92	33.871319	-116.425365
55	0.01	-44	850	0.92	33.870746	-116.424836
60	0.01	-51	750	0.89	33.870016	-116.424622
65	0.01	-35	630	0.83	33.869166	-116.424822
70	0.01	3	660	0.76	33.868344	-116.425243
75	0.01	77	910	0.76	33.867774	-116.425027
80	0.01	140	870	0.76	33.867190	-116.424871
85	0.01	168	940	0.76	33.866597	-116.424777
90	0.01	187	1090	0.76	33.866000	-116.424746
95	0.01	210	960	0.76	33.865402	-116.424777
100	0.01	231	900	0.80	33.864752	-116.424477
105	0.02	261	840	0.94	33.863800	-116.423113
110	0.04	305	700	1.44	33.861579	-116.418374
115	0.21	362	450	2.85	33.855163	-116.405024
120	0.61	398	400	4.53	33.845629	-116.390533
125	2.03	411	240	7.03	33.829727	-116.370666
130	4.44	417	50	9.33	33.812023	-116.355613
135	8.76	420	109	11.40	33.793478	-116.345771
140	14.23	419	119	12.91	33.776981	-116.343169
145	19.84	415	60	13.97	33.763027	-116.346295
150	26.29	409	210	14.89	33.749990	-116.352464
155	33.75	407	540	15.83	33.736913	-116.360628
160	41.63	407	1090	16.72	33.724633	-116.371143
165	48.38	408	1620	17.41	33.714751	-116.384282
170	54.72	399	1430	17.77	33.708602	-116.399638
175	57.62	379	1790	17.56	33.708631	-116.416449
180	59.40	350	1970	17.02	33.712879	-116.433000
185	56.45	313	1780	15.85	33.723953	-116.447942
190	52.68	260	1090	14.12	33.740925	-116.459521
195	45.62	263	990	13.72	33.746778	-116.471417
200	38.59	277	1350	13.54	33.751533	-116.483104
205	30.67	266	1360	12.56	33.763617	-116.490420
210	23.59	245	1280	11.33	33.777739	-116.494296
215	17.50	283	1530	11.33	33.782525	-116.503307
220	12.04	319	1600	10.93	33.790674	-116.509029
225	6.85	344	1550	9.78	33.803802	-116.507825
230	3.26	325	1600	7.62	33.821929	-116.496198
235	1.37	273	1650	5.37	33.838313	-116.480589
240	0.37	224	2000	3.22	33.851502	-116.463230
245	0.13	162	2040	1.99	33.858419	-116.452574
250	0.02	133	2250	1.03	33.862825	-116.443504
255	0.01	163	2430	0.89	33.863921	-116.442343
260	0.01	215	1710	0.76	33.864810	-116.441129
265	0.01	198	1790	0.76	33.865402	-116.441223
270	0.01	233	1240	0.76	33.866000	-116.441254
275	0.01	273	770	0.76	33.866597	-116.441223
280	0.01	282	560	0.76	33.867190	-116.441129
285	0.01	278	800	0.76	33.867774	-116.440973
290	0.01	272	1060	0.76	33.868344	-116.440757
295	0.01	263	1640	0.86	33.869284	-116.441482
300	0.02	246	2200	0.94	33.870250	-116.441865
305	0.03	230	2890	1.16	33.871994	-116.443311
310	0.04	220	2630	1.37	33.873926	-116.444378
315	0.05	214	2080	1.59	33.876086	-116.445149
320	0.07	207	2290	1.73	33.877906	-116.445033
325	0.08	199	2230	1.78	33.879151	-116.444092
330	0.09	179	1760	1.82	33.880169	-116.442854
335	0.09	142	1360	1.77	33.880420	-116.441100
340	0.10	83	1210	1.62	33.879734	-116.439021
345	0.10	15	760	1.36	33.877842	-116.436822
350	0.10	-26	630	1.36	33.878073	-116.435564
355	0.10	15	650	1.36	33.878213	-116.434287

ComStudy 2.2 search of channel 260 (99.9 MHz Class D) at 33-51-57.6 N, 116-25-58.8 W.

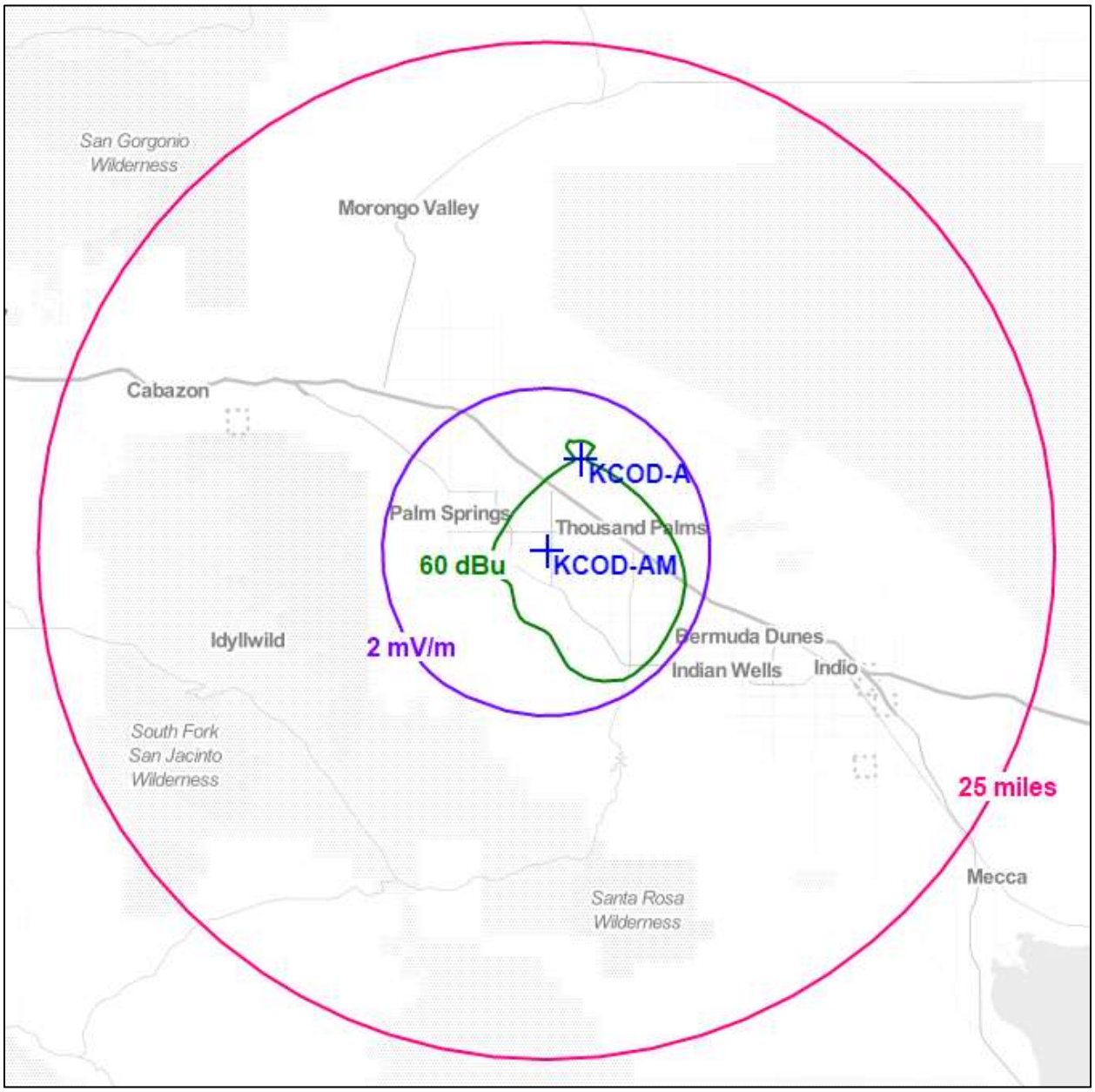
CALL	CITY	ST	CHN	CL	DIST	SEP	BRNG	CLEARANCE
K257DV	TWENTY-NINE PALMS	CA	257	D	49.92	0.00	62.0	38.27 dB
XHKYFM	TIJUANA	BN	257	B1	160.83	0.00	200.6	38.59 dB
XHKYFM	TIJUANA	BN	257	B1	160.83	0.00	200.6	37.25 dB
K258DE	APPLE VALLEY	CA	258	D	113.94	0.00	316.7	38.94 dB
KMRJ	RANCHO MIRAGE	CA	258	A	19.07	0.00	88.3	-19.19 dB
- See waiver request.								
KKLA-FM	LOS ANGELES	CA	258	B	155.59	0.00	285.3	36.40 dB
KHYZ	MOUNTAIN PASS	CA	259	B	197.30	0.00	23.7	35.73 dB
KHYZ	MOUNTAIN PASS	CA	259	B	198.21	0.00	25.9	37.63 dB
VACANT-C1	TIJUANA	BN	259	C1	160.32	0.00	195.8	27.96 dB
XHTY-FM	TIJUANA	BN	259	C1	160.32	0.00	195.8	23.63 dB
K260DE	PALM DESERT	CA	260	D	15.36	0.00	163.2	-48.13 dB
- Currently authorized facility								
KOLA-GR	SAN BERNARDINO	CA	260	B	79.83	0.00	278.3	0.09 dB
- ERP reduced to maximum for a Class B facility. See wavier request.								
KOLA	SAN BERNARDINO	CA	260	B	79.83	0.00	278.3	-44.41 dB
- Waiver requested based on intervening terrain and/or super-power status.								
KRAQ-LP	RANCHO MIRAGE	CA	261	LP100	20.56	13.00	110.3	0.11 dB
KKLJ	JULIAN	CA	261	A	80.19	0.00	192.1	18.71 dB
KGBA-FM	HOLTVILLE	CA	261	A	145.80	0.00	143.2	35.95 dB
KKLQ	LOS ANGELES	CA	262	B	156.00	0.00	285.4	24.79 dB
KJMB-FM	BLYTHE	CA	262	B	172.82	0.00	98.6	35.90 dB
KPSI-FM	PALM SPRINGS	CA	263	B1	9.09	0.00	13.8	-41.25 dB
- See waiver request.								

Proposed Contours



Map Scale: 1:473505 1 cm = 4.74 km V|H Size: 87.39 x 93.50 km

CROSS-SERVICE FILL-IN TRANSLATOR: KCOD(AM)



WAIVER OF §74.1204(a) REQUEST
REQUEST FOR HANDLING UNDER §74.1204(d)

K260DE
Palm Desert, California
Channel 260D (99.9 MHz)

The instant application is proposing to move K260DE to a different site. The current 60 dBu protected contour of K260DE has a 2010 Census of 16,682 persons. By comparison, the proposed facility would increase the population within the 60 dBu protected contour to 83,731 persons.

The applicant acknowledges that the proposed facility places a 100 dBu interfering contour side the 60 dBu protected contour of KMRJ, Rancho Mirage, California and a 97 dBu interfering contour inside the 51 dBu protected contour of KPSI-FM, Palm Springs, California. The proposed facility also places a 34 dBu interfering contour inside of the 54 dBu contour of super-powered Class B station KOLA, San Bernardino, California.

§74.1204(a) waiver requests towards KMRJ and KPSI-FM

KMRJ operates on Channel 258A and is located 19.0 kilometers from the proposed site operating 3kW at 827 meters HAAT. KMRJ places a 78.5 dBu service contour at KCOD(A).

KPSI-FM operates on Channel 263B1 and is located 8.9 kilometers from KCOD(A), operating 25 kW at 459 meters HAAT towards KCOD(A). KPSI-FM places a 98.2 dBu service contour at KCOD(A).

When evaluating multiple overlapping stations, we further evaluate the weaker of the two stations as the interfering contour towards the stronger station will fully encompass the one for the weaker station. In that case, it is KMRJ.

Using the U/D method[1], the proposed translator station is predicted to produce an undesired interference overlap in respect to KMRJ to the proposed translator station's 118.5 dBu interfering contour ("overlap zone"). At 60 watts ERP, the overlap zone extends to 65 meters from the radiation center.

The proposed transmitter site is on Edom Hill, a major transmitter site for broadcast stations serving Palm Springs and the rest of the Coachella Valley. All structures on Edom Hill are directly associated with broadcasting and other radio services and therefore are not normally occupied except for regular maintenance. Therefore, there are no occupied structures within the proposed overlap zone. In fact, there are no occupied structures or four lane highways within one mile of the proposed site in any direction.

[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).

Based on the information presented, the proposed facility does not cause interference to KMRJ and KPSI-FM and the applicant is requesting a waiver of §74.1204(a) in respect to those two FM facilities.

§74.1204(d) intervening terrain handling in respect to KOLA:

KOLA is 79.8 kilometers from the proposed site. KOLA operates non-directional at 29.5 kW at 507 meters height above average terrain. KOLA operates with a service contour of 88.7 kilometers, which exceeds the Class B maximum of 65 kilometers. For a station at 507 meters HAAT, the ERP would be limited to 3.5 kW.

KOLA operates at 950 meters (3,117 feet) above mean sea level and the instant facility is proposed at 489 meters (1,604 feet).

As demonstrated in the following exhibits, there is a significant amount of intervening terrain in the San Jacinto mountain range between KOLA and the area served by the instant facility. San Jacinto Peak itself is at an elevation of over 3,292 meters (10,800 feet). As demonstrated in Exhibit A, we have evaluated the elevation profile along each radial in 5-degree increments (as well as 92 and 138 degrees) to determine the highest point along that radial from KOLA to the point of the super-power Class B 54 dBu service contour. As shown in Exhibit A, the highest point along the radials is 2,745 meters (9,006 feet). Exhibit A shows the terrain height at all areas under study.

Exhibits B and C are line of sight shadow maps that indicate where each site can see line of sight to. If you compare Exhibits B and C, it is very clear that KOLA's signal ends at the San Jacinto Mountains and does not cross. Likewise, the proposed facility also stops at the previously determined highest points evaluated.

Exhibit D shows the "desired" facility, KOLA. The Longley/Rice propagation study is cut off at 54 dBu. This map clearly shows the areas where KOLA is expected to place a reliable signal. Exhibit E shows the "undesired" facility for evaluation purposes, the proposed facility. As clearly shown, the San Jacinto Mountains serve as a physical barrier between the San Bernardino and Riverside "Inland Empire" area and Palm Springs and the Coachella Valley area. Because of this intervening terrain, KOLA is not received in Palm Springs and other Coachella Valley communities.

Exhibit F shows the U/D ratios for this relationship between the instant facility and KOLA at super power. Exhibit F further demonstrates how the terrain blockage keeps KOLA west of the San Jacintos and the instant application to the east.

§74.1204(d) of the Commission's Rules states:

> The provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to *intervening terrain*, lack of population or such other factors that may be applicable. *(emphasis added)*

In the instant case, it clearly shows that there is intervening terrain between KOLA and the proposed facility. Terrain that prevents KOLA from being heard in Palm Springs and Palm Desert, and likewise, prevents the instant facility from being heard in the Inland Empire.

KOLA Super-power Class B:

As stated, KOLA is a super-powered Class B facility operating at 29.5 kW at a height above average terrain where a Class B station would normally be authorized 3.5 kW.

The Commission has determined that with respect to the extent of protection to be afforded [to super-powered Class B stations], these stations should not be protected to greater extent and that it is not in the public interest to perpetuate the advantage enjoyed by these [super-powered Class B stations], if it means a restriction on the provision of needed new facilities and optimum development of this medium.[2]

[2] - See *First Report and Order*, Docket No. 14185, 40 FCC 662, 695-696 at para. 96 (1962) ("First R&O"). We note that super-powered Class B stations in the non-reserved band are protected to their standard Class B facilities in respect to LPFM stations (see 47 C.F.R. §73.807(a)) hence, there is already a recognition of the First R&O in the secondary services.

In the instant application, we have demonstrated that while the proposed facility's 34 dBu interfering contour would overlap KOLA's 54 dBu contour as a super-powered station, at the class maximum of 3.5 kW (equivalent to 50 kW at 150 meters HAAT), there is no contour overlap and if KOLA was not a super-powered station, the proposed facility would otherwise be grantable.

The grant of the instant application is in the public interest.

The applicant acknowledges that any request for a waiver or other form of special handling, the applicant faces a high hurdle at the starting gate[3] and that waivers are only appropriate where special circumstances warrant a deviation from the general rule and if such deviation would serve the public interest.[4] The Commission may also take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.[5]

In the instant case, the applicant is a noncommercial educational (NCE) AM broadcast station which participated in AM Revitalization, a Commission priority issue intended to help address the issues that are facing AM broadcast stations in the modern era. This NCE station is operated by an educational institution which uses the broadcast station for student programming and therefore engages in instruction in the broadcast art. Currently, the translator is limited to a 50 watt directional facility at ground level on the college's campus. The current facility provides service to 16,682 persons inside of its 60 dBu contour of which 9,621 persons are also in the 2 mV/m daytime contour of primary station KCOD(AM). The proposed service will reach 83,620 persons, all of which are inside of KCOD's 2 mV/m daytime contour and that FM coverage accounts for nearly two thirds of the population within KCOD's entire 2 mV/m daytime contour.

The instant applicant is facing two high hurdles in addressing the need to increase NCE service. One is the inability to move locations due to the 54 dBu protected contour of KOLA reaching Palm Springs despite very high intervening terrain, mainly the San Jacinto mountain range, which in most areas, completely blocks the "desired" station (KOLA) from being received in the proposed service area of the instant application. Secondly, the fact that the translator is unable to relocate due to a super-powered Class B FM broadcast station that would have a service contour, based solely on the measurement of the terrain within 3 to 16 kilometers[6] and not taking into consideration the terrain located 35 to 82 kilometers from KOLA, where the intervening terrain is located[7]. We also note that other alternatives have been evaluated including a channel change that would qualify as "minor" under the current rules.[8]

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[3] - See *WAIT Radio v. FCC*, 418 F. 2d 1153 (D.C. Cir. 1969) *(WAIT Radio*).

[4] - See *Northeast Cellular Telephone Co. v. FCC*, 897 F. 2d 1164, 1166 (D.C. Cir. 1990). (*Northeast Cellular*); also see *WAIT Radio*.

[5] - See Id.

[6] - See 47 C.F.R. §73.313(d).

[7] - See Exhibit A.

[8] - See 47 C.F.R. §74.1233(a)(1).

In cases like *Raleigh*, while addressing second- and third-adjacent overlap, which is not the case here, the Commission did rule that the benefit of increased NCE service further outweighs any *potential* for interference in a small area.[9] In the instant case, the "interference" would normally be in what can be presumed a large area, however due to blockage by intervening terrain and the due to the increased protected contour enjoyed by KOLA in an area which they do not even reach, the provision of new facilities and optimum development of the spectrum is foreclosed on in contravention of the intentions of the *First R&O*.

Therefore, the applicant is requesting that the Commission or its delegated authority make the determination that the public interest calls for an increase in NCE service consistent with the goals of *Raleigh* and increasing service to two-thirds of the primary AM station's 2 mV/m daytime contour consistent with the goals of *AM Revitalization* outweighing over-protection of a super-powered Class B FM station beyond their class maximum service contour, especially when the super-powered station's actual coverage is impeded in the applicant's desired service area due to unusual intervening terrain.

With that, the applicant is requesting handling under §74.1204(d) under the provision of intervening terrain, or in the alternate, handling under §74.1204(a) utilizing the class-maximum protected contour of KOLA consistent with the Commission's determination in the *First R&O* or in the alternate, a waiver of §74.1204(a) in respect to KOLA for the hardships expressed. The applicant is completely aware that the translator is a secondary service and is subject to discontinuance in accordance with §74.1204(f) and §74.1203(a).

Prepared by
Michelle Bradley, CBT
REC Networks
July 26, 2019

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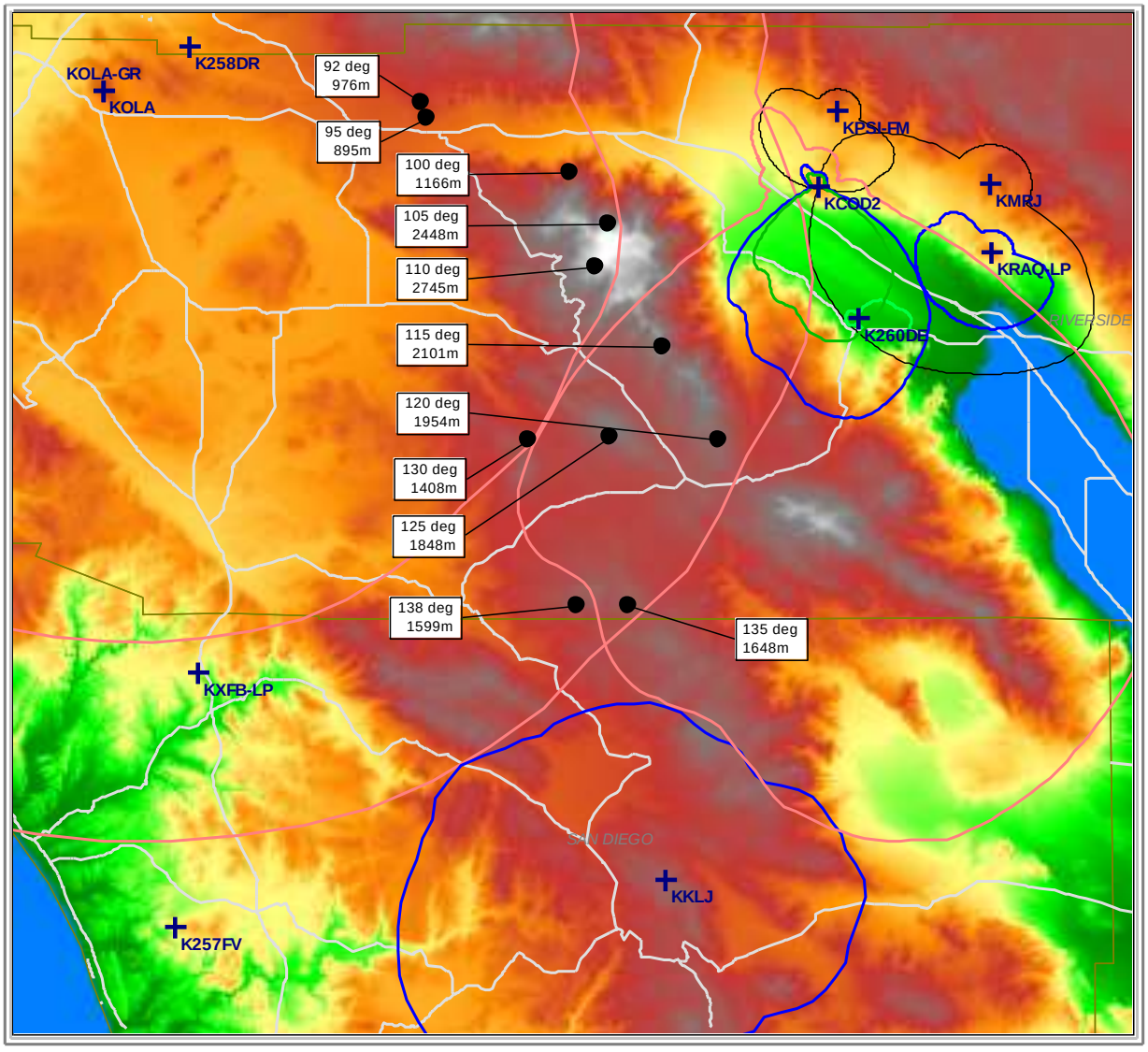
[9] - See *Educational Information Corporation*, Memorandum Opinion and Order, 6 FCC Rcd 2207, 2208 (1991) ("Raleigh") at ¶ 9.

TABLE 1
DISTANCES TO HIGHEST POINTS BETWEEN KOLA AND THE KOLA SUPER-POWERED 54 dBu F(50,50) CONTOUR:

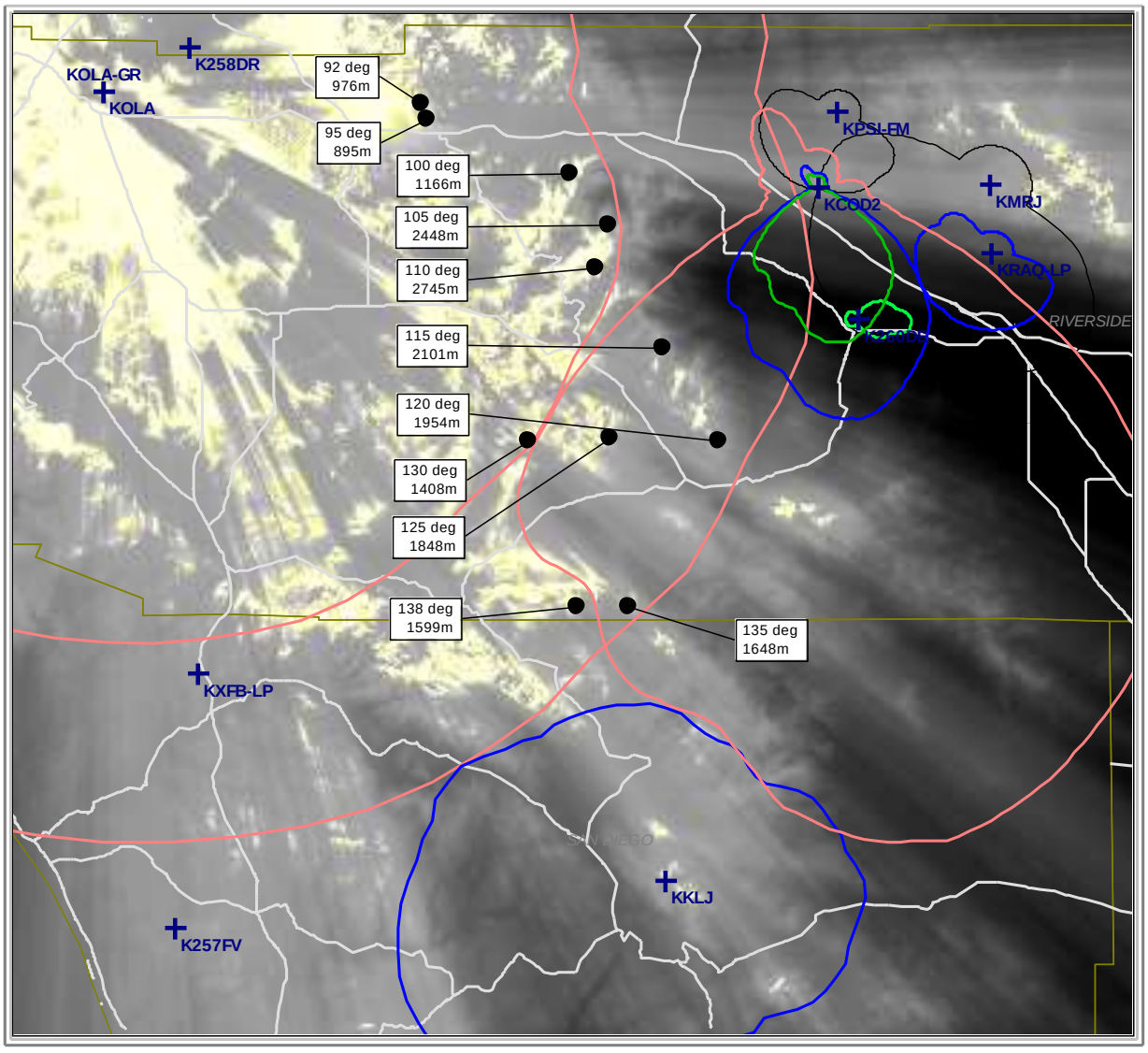
Bearing	Distance from KOLA to proposed 34 dBu contour	Base, Diffraction and Fresnel loss at proposed 34 dBu contour	Distance from KOLA to KOLA super power 54 dBu contour	Base, Diffraction and Fresnel loss at KOLA super 54 dBu contour	Highest point on path and distance from KOLA (m/km)
92	72.0	137.2/39.0/10.7	73.5	137.6/39.0/11.4	976/35.1
95	72.0	137.2/27.6/6.7	75.2	138.0/12.7/8.1	895/35.8
100	74.0	137.7/27.5/7.0	78.5	138.7/26.9/11.3	1166/52.3
105	68.5	136.3/18.3/11.3	81.0	139.3/12.3/10.0	2448/57.7
110	65.0	135.4/30.5/5.8	82.7	139.6/18.2/5.4	2745/57.9
115	62.7	134.8/19.7/10.9	82.7	139.6/12.7/7.3	2101/68.3
120	61.8	134.6/6.5/11.0	82.5	139.6/12.0/10.5	1954/78.7
125	61.7	134.5/7.5/12.0	83.5	139.8/14.7/11.3	1848/68.4
130	62.3	134.7/8.1/11.7	84.5	140.0/23.1/5.4	1408/61.5
135	65.0	135.4/10.6/11.0	84.1	139.9/13.0/11.3	1648/82.5
138	83.0	139.7/9.3/10.6	84.1	139.9/13.8/11.6	1599/78.5

Exhibit A - Elevation



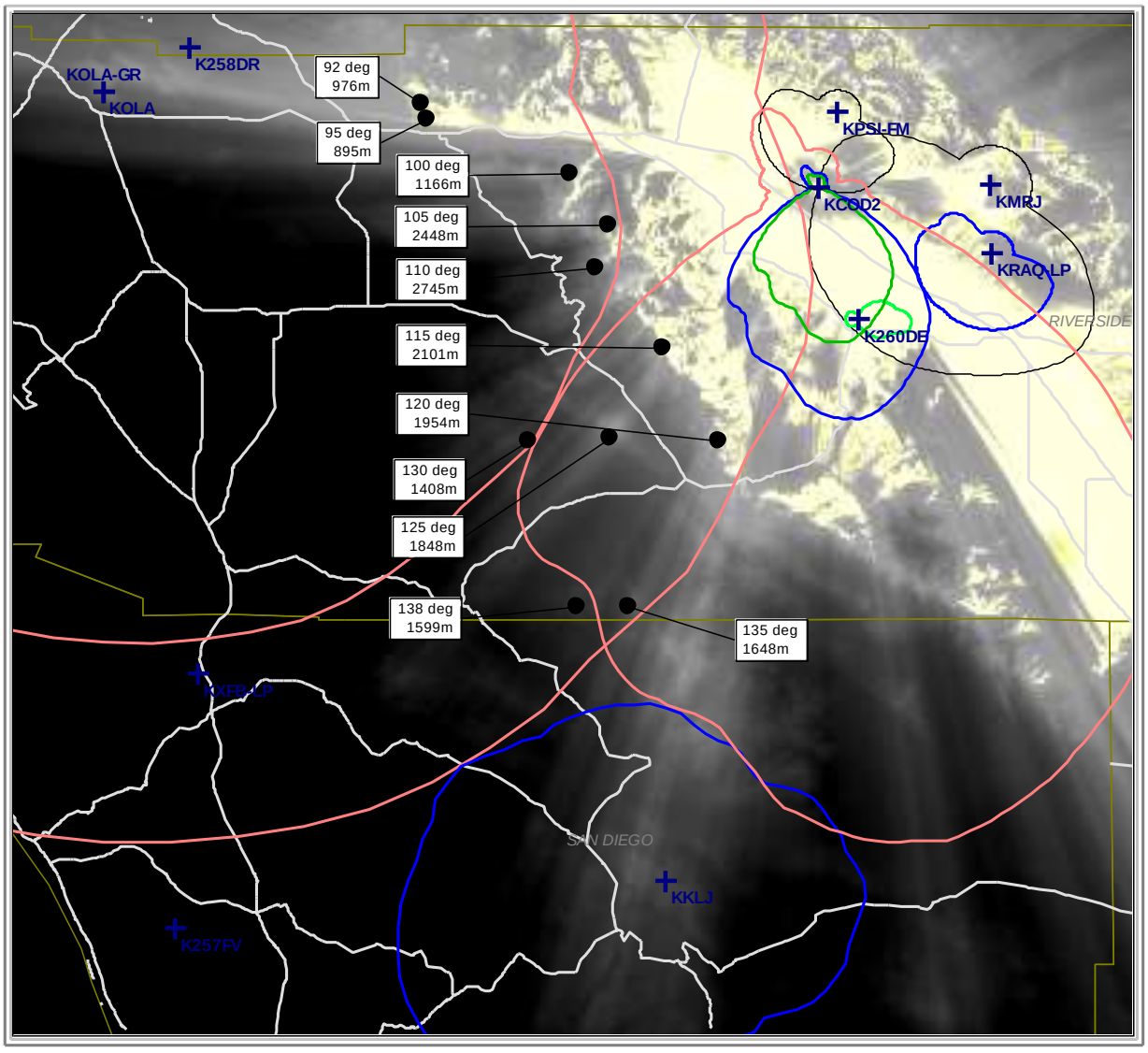
Map Scale: 1:627863 1 cm = 6.28 km V|H Size: 115.88 x 123.98 km

Exhibit B - Shadow Line of sight from KOLA



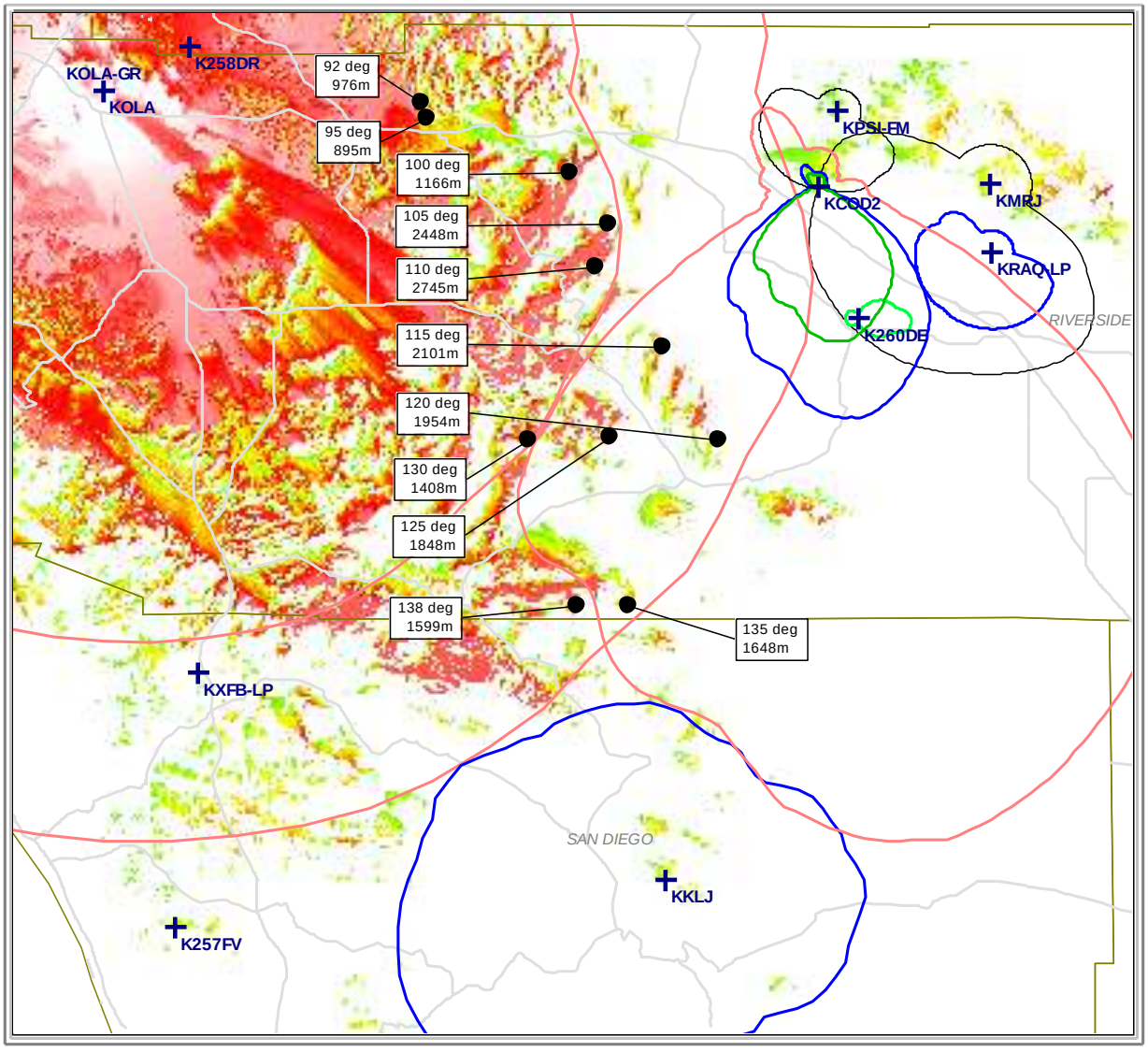
Map Scale: 1:627863 1 cm = 6.28 km V|H Size: 115.88 x 123.98 km

Exhibit C - Shadow Line of sight from proposal



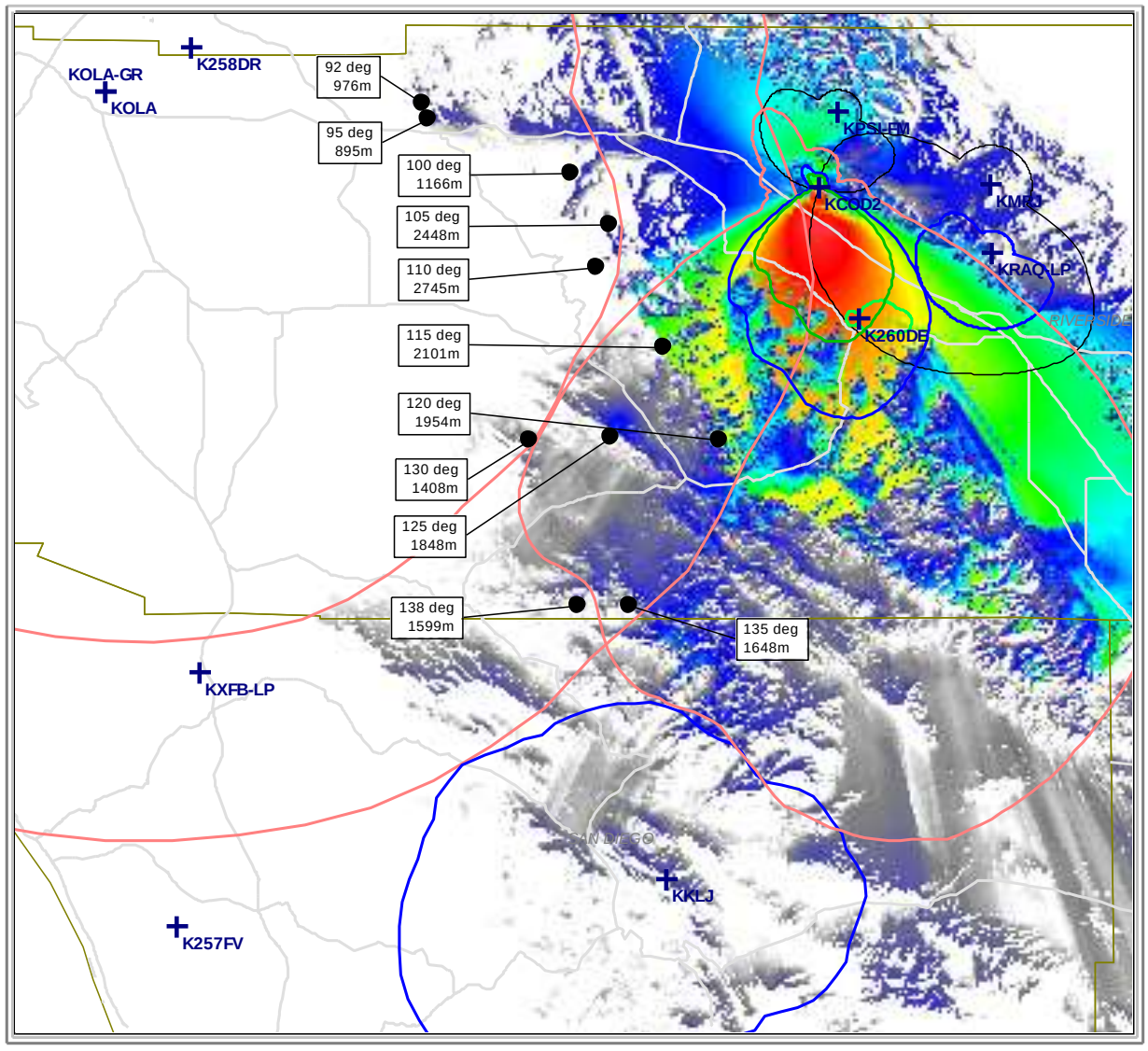
Map Scale: 1:627863 1 cm = 6.28 km V|H Size: 115.88 x 123.98 km

Exhibit D - KOLA Coverage ("desired" 54 dB)



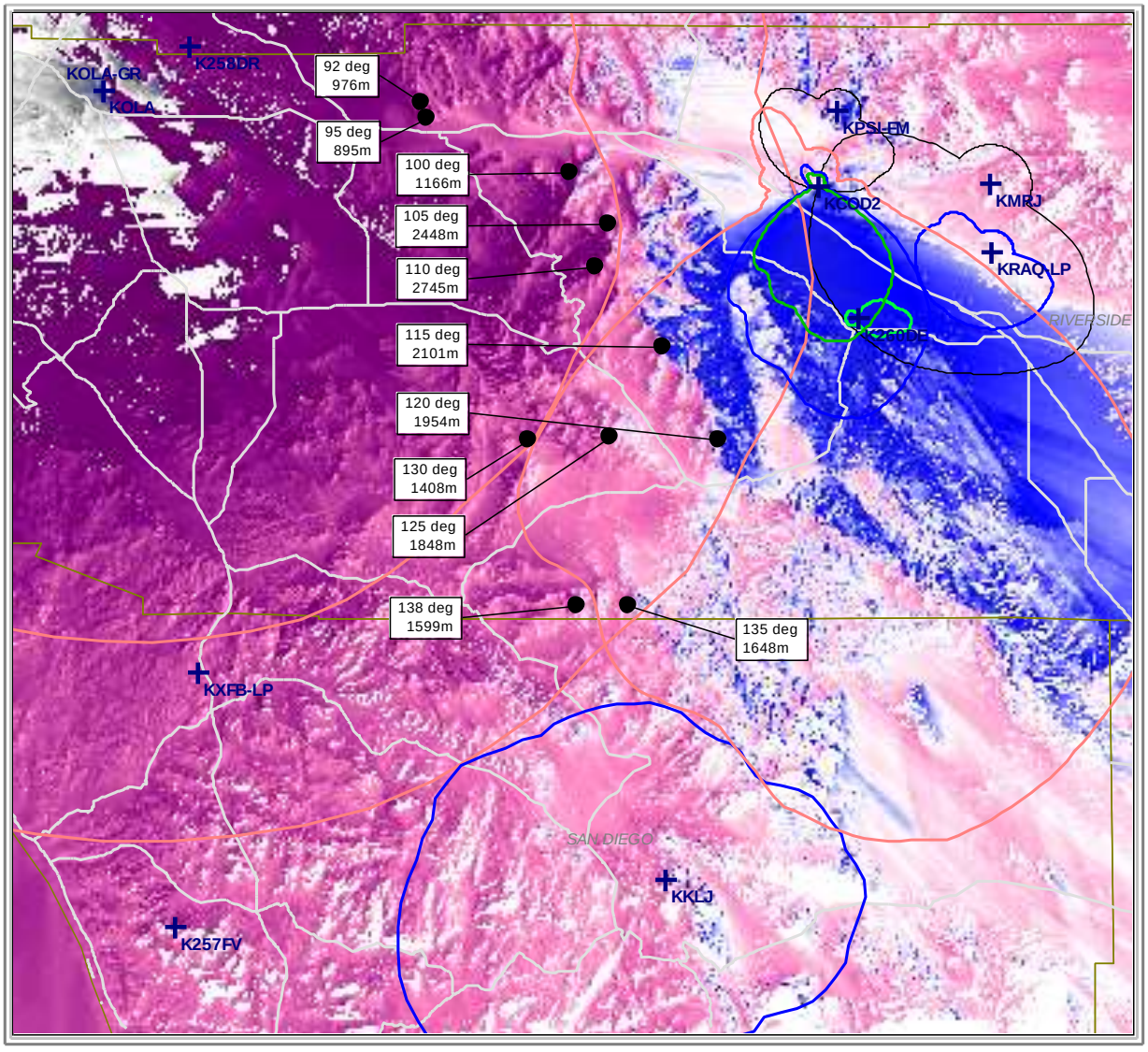
Map Scale: 1:627863 1 cm = 6.28 km V|H Size: 115.88 x 123.98 km

Exhibit E - Proposed Coverage ("undesired" 34 dB)



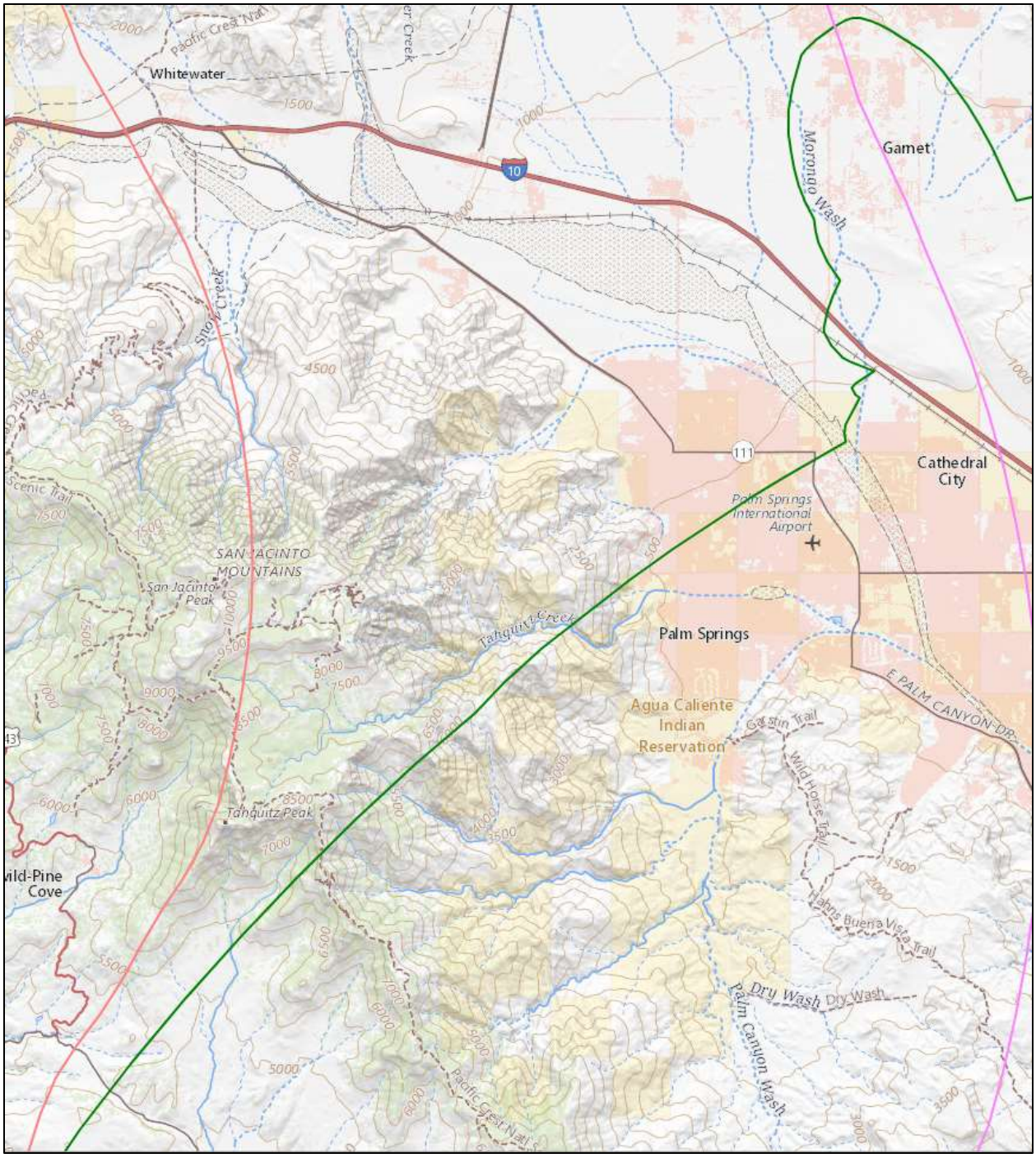
Map Scale: 1:627863 1 cm = 6.28 km V|H Size: 115.88 x 123.98 km

Exhibit F - U/D Ratio



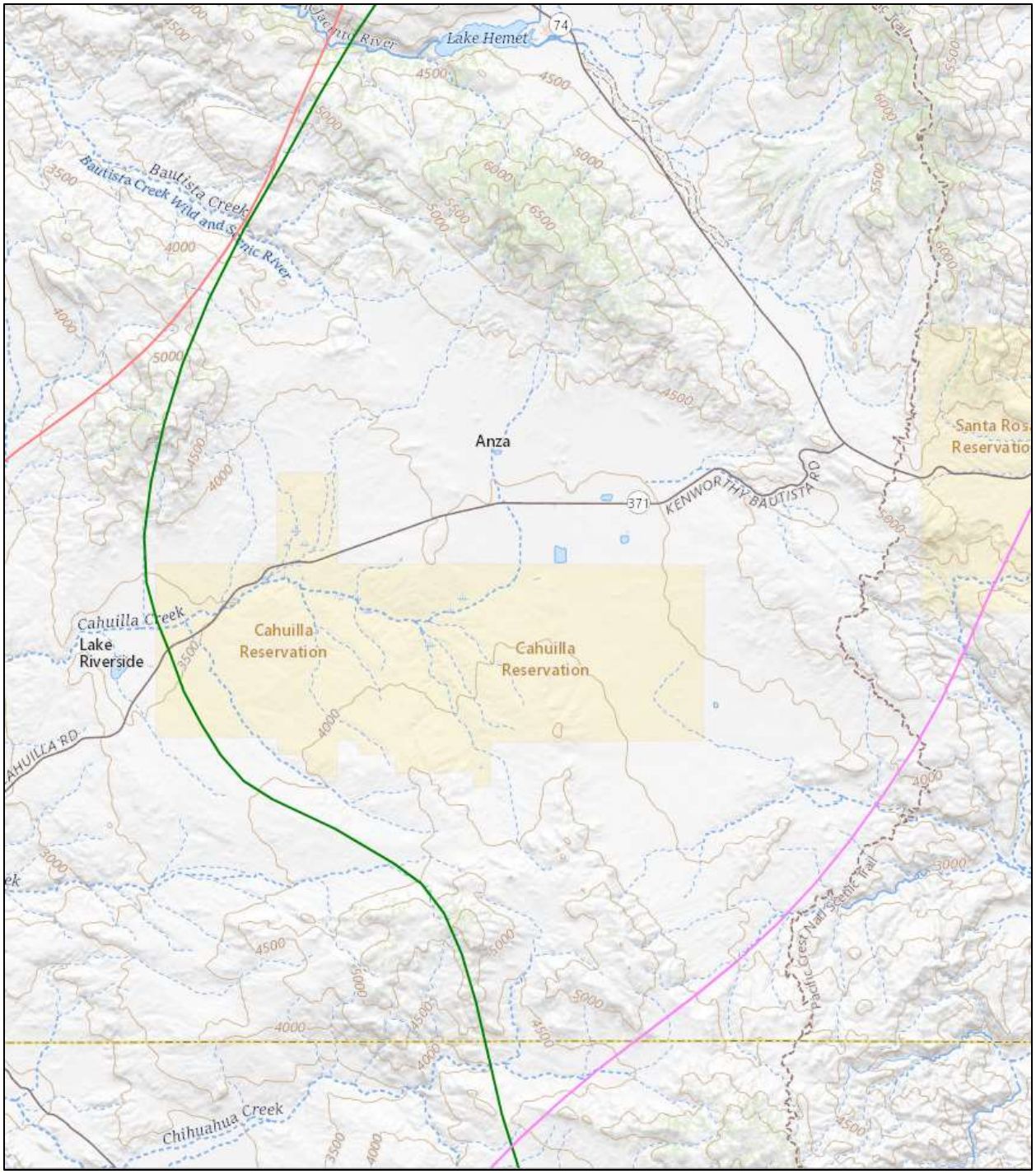
pink favors KOLA / blue favors proposal

Map Scale: 1:627863 1 cm = 6.28 km V|H Size: 115.88 x 123.98 km



GREEN – Proposed translator 34 dBu F(50,10).
PINK – KOLA as super-powered 54 dBu F(50,50).
RED – KOLA at class maximum 54 dBu F(50,50).

Source: USGS map server, retrieved July 23, 2019.



GREEN – Proposed translator 34 dBu F(50,10).
PINK – KOLA as super-powered 54 dBu F(50,50).
RED – KOLA at class maximum 54 dBu F(50,50).

Source: USGS map server, retrieved July 23, 2019.

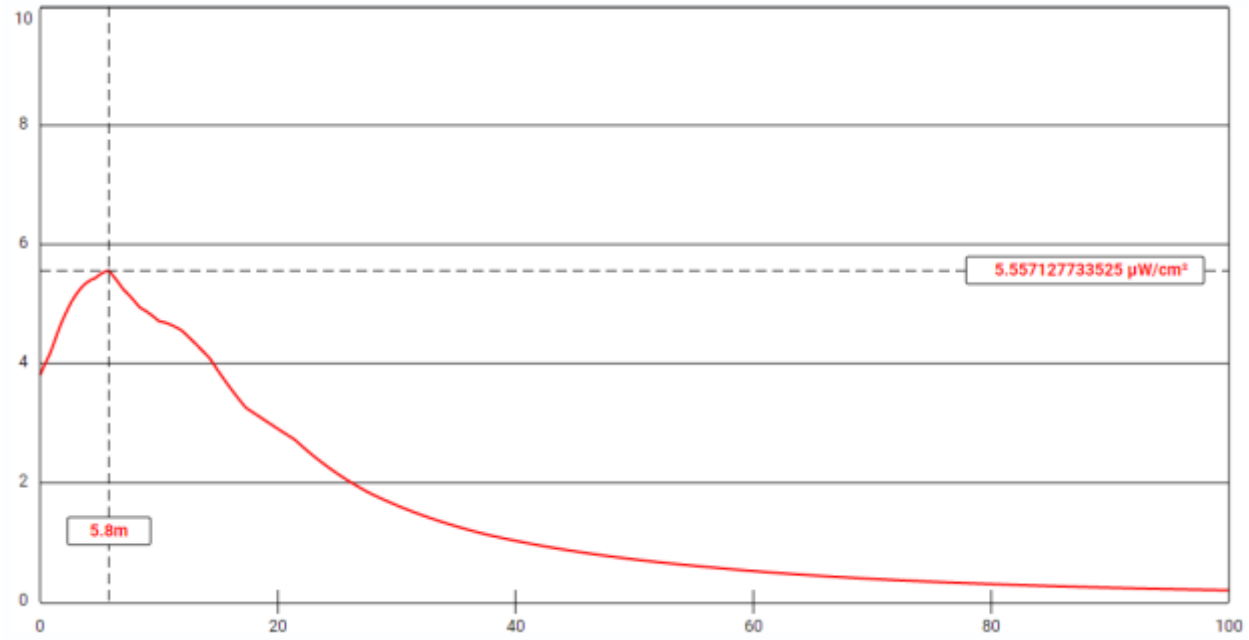
RADIO FREQUENCY RADIATION PROTECTION

K260DE
Palm Desert, California
Channel 260D (99.9 MHz)

The proposed facility is at a normally unoccupied communications site which is very remotely located in the desert north of Palm Springs. Access to this site is through a winding dirt road. There is a gate over 980 meters from the tower site that further restricts access. The nearest public roadway is 1,990 meters from the tower site. At the tower site, fencing secures the area approximately 10 meters around the base of the tower.

There are currently 5 FM broadcast stations on the tower site. Their power densities at ranges from 5.8 to 45 meters is shown in the table below:

Call	5.8	10	15	20	25	30	35	40	45
KLOB	1.4	6.7	16.3	17.5	10.5	4.6	0.8	0.4	2.0
KDGL1	0.8	4.3	10.8	12.1	7.9	3.5	0.6	0.3	1.6
KQPS	326.2	227.1	82.2	16.9	0.4	3.0	9.1	13.6	16.8
K232CX	31.5	23.6	17.0	12.1	8.6	6.2	4.6	3.6	2.9
K280CV	60.5	42.9	28.4	19.6	13.2	9.2	6.6	5.0	4.0
Before	**420.4**	**304.6**	**154.7**	**78.2**	**40.6**	**26.5**	**21.7**	**22.9**	**27.3**
PROP	5.6	4.7	3.9	2.9	2.2	1.6	1.3	1.0	0.8
After	**426.0**	**309.3**	**158.6**	**81.1**	**42.8**	**28.1**	**23.0**	**23.9**	**28.1**



The applicant is proposing a 0.06 kW facility using a horizontally polarized antenna with a radiation center of 12 meters above ground level on a new tower construction. According to a FM Model study, the peak power density is 5.57 uW/cm^2 at a distance of 5.8 meters from the base of the tower. We note that distances 10 meters and closer to the tower do exceed the uncontrolled exposure guideline of 200 uW/cm^2.The introduction of proposed facility only adds a very insignificant amount of power density thus not triggering the 1000 uW/cm^2 controlled exposure guideline at any point.

Pre-existing signage will warn of the potential RF exposure hazard at the site and in addition, the applicant may need to reduce or cease power in the event that work needs to take place in the vicinity of the tower.

Because of the antenna height, surrounding fencing, remote desert location and the gate-controlled access to the hill, radiation in excess of 200 uW/cm^2 would not reach any area of uncontrolled access.

Report prepared by

/S/
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