

Comprehensive Engineering Exhibit

Minor Modification of KSSX

Facility ID No. 67664

February 2021

This exhibit is for a Minor Modification of KSSX to specify a new antenna location. The current support tower will soon no longer be available for use by KSSX, and we request via this modification to relocate to a tower in the same communications tower facility approximately 120 meters from the current location.

The Height Above Average Terrain (HAAT) has been determined with the 270° and 315° radials excluded from the calculation as they are entirely over water, the determined HAAT is 194 meters. At this value the maximum allowable calculated ERP (rounded per Section 73.212) is 30.0 kW.

The KSSX principal community of Carlsbad, California will continue to receive 70 dBu coverage of more than 81 percent of population as given in **Figure 1**.

This proposal requests use of an antenna meeting the envelope defined in **Figure 2** solely to protect two non-domestic allotments or allocations. No domestic facility, application, or allotment will rely upon this antenna for protection.

Allocation Study

KSSX is now and is proposed to remain fully spaced to all domestic facilities, applications, and allotments as demonstrated in the spacing study of **Figure 3**.

Concerning Mexico

As indicated in the spacing study this facility is now and will remain short-spaced with Mexican channel 238B at Ensenada, BN and 237C at Tecate, BN. It is anticipated that acceptance of this assignment modification by Mexico will **not** be required, only notification of the new parameters.

Attached as **Figure 4** is a contour map depicting 48 dBu F(50,10) contours for both the licensed and proposed facilities, along with the 65 km radius protection circle for Ensenada. It can be seen that use of the proposed directional antenna will contain the proposed 48 dBu F(50,10) contour to within that of the current licensed facility.

Attached as **Figure 5** is a contour map depicting 48 dBu F(50,10) contour for maximum facilities at Ensenada, the 65 km radius protection circle for the current KSSX, as well as the licensed and proposed 54 dBu F(50,50) contours of KSSX. It can be seen that use of the proposed directional antenna will contain the proposed 48 dBu F(50,10) contour to within that of the current facility. No new area of overlap as proposed facility contour is inside the existing protected radius, thus no new area of interference is received from Ensenada 238B, assuming Ensenada operation with class maximum facilities.

Attached as **Figure 6** is a contour map depicting 100 dBu F(50,10) contours for both the licensed and proposed facilities, along with the 92 km radius protection circle for Tecate. It can be seen that use of the proposed directional antenna will contain the proposed 100 dBu F(50,10) contour to within that of the current licensed facility.

Attached as **Figure 5** is a contour map depicting 94 dBu F(50,10) contour for maximum facilities at Tecate, as well as the licensed and proposed 54 dBu F(50,50) contours of KSSX. It can be seen that use of the proposed directional antenna will contain the proposed 54 dBu F(50,10) contour to within that of the current facility. No new area of overlap as proposed facility contour is inside the existing protected radius, thus no new area of interference is received from Tecate 237C, assuming operation with class maximum facilities.

RF Fields Statement

Upon completion of construction and during the equipment test period, we will make proper radiofrequency electromagnetic (RF) field strength measurements throughout the transmitter site area to determine if there are any areas that exceed the FCC guidelines for human exposure to RF fields. If necessary, appropriate marking, barriers and or fences will be erected at such distances and in such a manner as to prevent the exposure of humans to RF fields in excess of the FCC Guidelines (OET Bulletin No. 65, Edition 97-01, August 1997).

Figure 1. Coverage of Principal Community

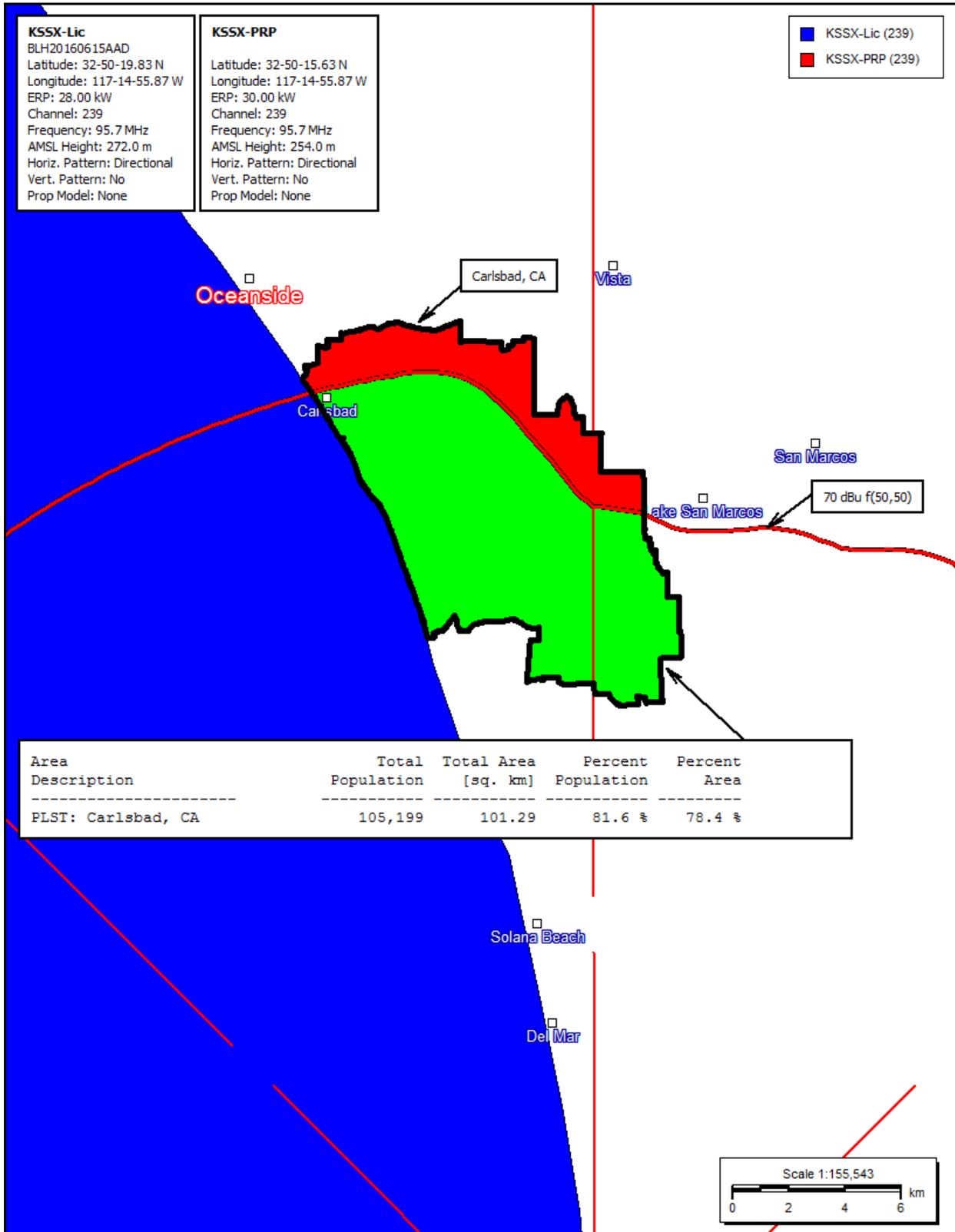
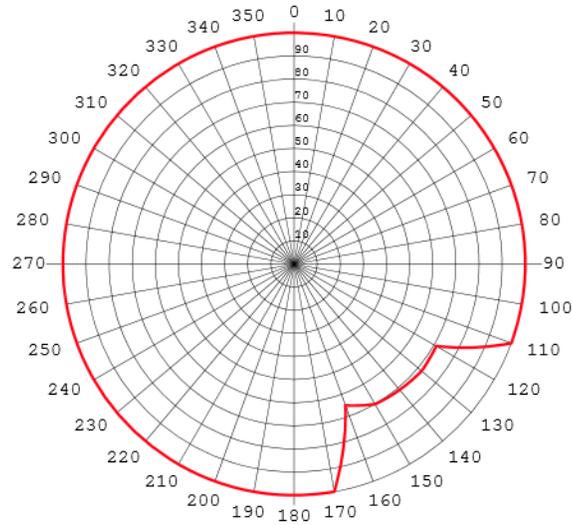


Figure 2. Antenna Envelope Pattern



Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
0	1.000	14.47	28.0	0.00	180	1.000	14.47	28.0	0.00
10	1.000	14.47	28.0	0.00	190	1.000	14.47	28.0	0.00
20	1.000	14.47	28.0	0.00	200	1.000	14.47	28.0	0.00
30	1.000	14.47	28.0	0.00	210	1.000	14.47	28.0	0.00
40	1.000	14.47	28.0	0.00	220	1.000	14.47	28.0	0.00
50	1.000	14.47	28.0	0.00	230	1.000	14.47	28.0	0.00
60	1.000	14.47	28.0	0.00	240	1.000	14.47	28.0	0.00
70	1.000	14.47	28.0	0.00	250	1.000	14.47	28.0	0.00
80	1.000	14.47	28.0	0.00	260	1.000	14.47	28.0	0.00
90	1.000	14.47	28.0	0.00	270	1.000	14.47	28.0	0.00
100	1.000	14.47	28.0	0.00	280	1.000	14.47	28.0	0.00
110	1.000	14.47	28.0	0.00	290	1.000	14.47	28.0	0.00
120	0.710	11.50	14.1	-2.97	300	1.000	14.47	28.0	0.00
130	0.720	11.62	14.5	-2.85	310	1.000	14.47	28.0	0.00
140	0.710	11.50	14.1	-2.97	320	1.000	14.47	28.0	0.00
150	0.700	11.37	13.7	-3.10	330	1.000	14.47	28.0	0.00
160	0.650	10.73	11.8	-3.74	340	1.000	14.47	28.0	0.00
170	1.000	14.47	28.0	0.00	350	1.000	14.47	28.0	0.00

Rotation Angle = 0

Figure 3. Overlap and Spacing Study

KSSX As Proposed						
Ihm Licenses, LLC						
REFERENCE	CLASS = B Int = B			DISPLAY DATES		
32 50 15.80 N.	Current Spacings to 3rd Adj.			DATA 02-22-21		
117 14 59.00 W.	Channel 239 - 95.7 MHz			SEARCH 02-26-21		
Call	Channel	Location	Azi	Dist	FCC	Margin
KSSX	LIC-D 239B	Carlsbad	CA 0.0	0.13	240.5	-240.4
XHUACFM	LIC-D 238B	Ensenada	BN 152.1	123.71	164.0	-40.3
XHUACFM	USE 238B	Ensenada	BN 152.1	123.71	164.0	-40.3
R11853	VAC 237C	Tecate	BN 136.6	79.93	98.0	-18.1
KYDO	LIC 241B1	Campo	CA 104.2	70.76	70.5	0.26
AL3490	RSV-A 241B1	Campo	CA 107.7	70.94	70.5	0.44
KLNV	LIC 293B	San Diego	CA 127.3	21.19	19.5	1.7
KLOS	LIC 238B	Los Angeles	CA 334.1	172.02	168.5	3.5
KFSH-FM	LIC 240A	La Mirada	CA 334.9	122.12	112.5	9.6
AL9192	VAC 240A	Ensenada	BN 152.1	123.71	105.0	18.7
KJUZ	LIC-N 240A	Indian Wells	CA 41.3	143.28	112.5	30.8
KCLZ	LIC-N 238A	Twentynine Palms Ba	CA 33.3	175.69	112.5	63.2
KRQB	LIC-N 241A	San Jacinto	CA 11.0	135.84	68.5	67.3
KFRG	LIC 236B	San Bernardino	CA 358.7	151.21	73.5	77.7
KXXZ	LIC-N 240B1	Barstow	CA 4.6	225.15	144.5	80.7
KSSB	LIC 242A	Calipatria	CA 78.6	165.01	68.5	96.5
KALI-FM	LIC-N 292A	Santa Ana	CA 331.3	116.58	14.5	102.1
KCAQ	CP 240B1	Camarillo	CA 311.4	247.88	144.5	103.4
KXOL-FM	LIC-Z 242B	Los Angeles	CA 328.5	177.71	73.5	104.2
KXCM	LIC 242A	Joshua Tree	CA 33.4	175.86	68.5	107.4
KCAQ	LIC-N 240B1	Camarillo	CA 311.6	256.14	144.5	111.6
KKCA	LIC-D 239A	Arvin	CA 326.5	291.30	177.5	113.8
KPKR	LIC 239B1	Parker	AZ 59.3	328.95	210.5	118.5

Reference station has protected zone issue: Mexico
 RSV-R = reserved - needs protection, RSV-A = allocation
 All separation margins include rounding

Figure 4. Contour Map of Caused Overlap

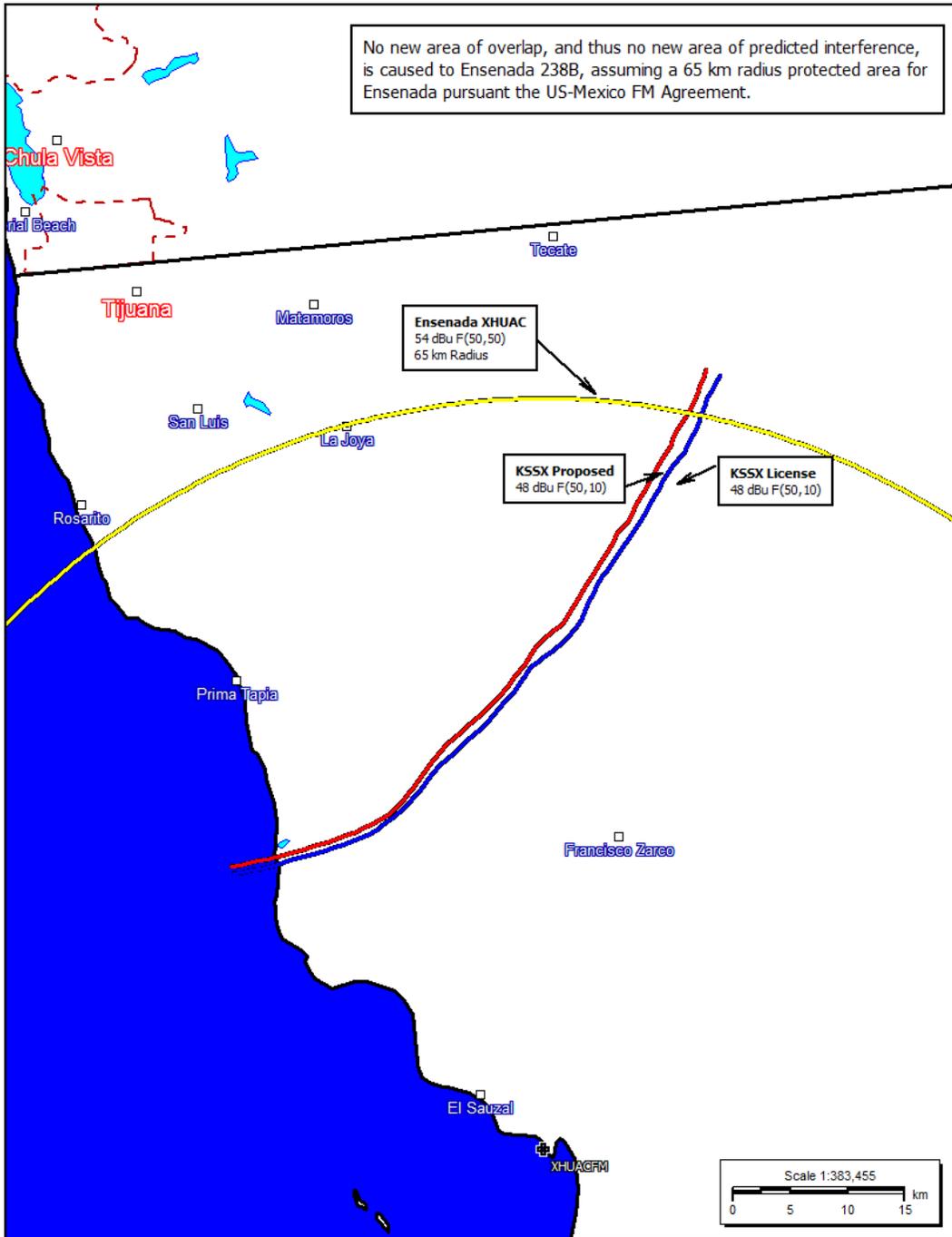


Figure 5. Contour Map of Received Overlap from Tecate

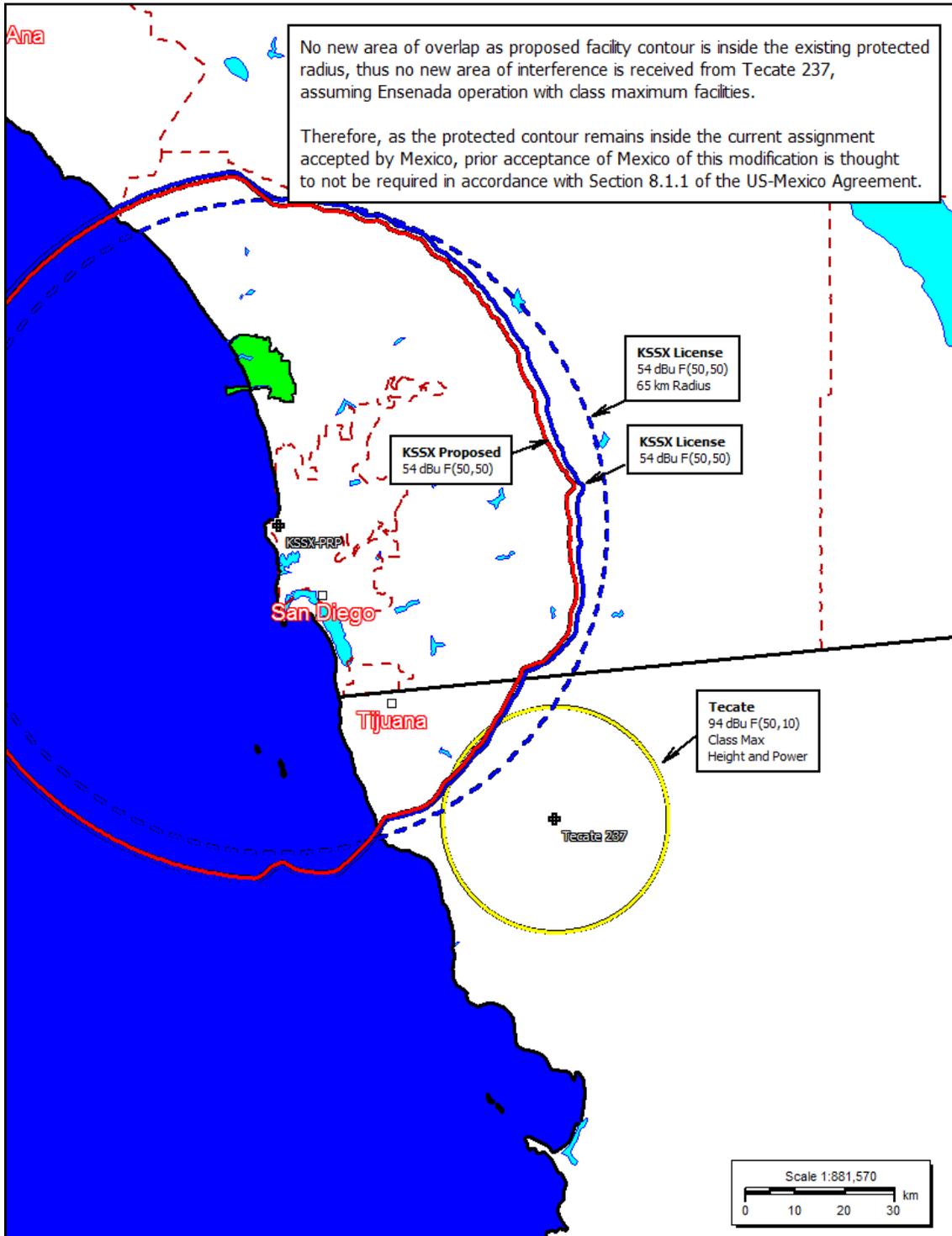


Figure 6. Contour Map of Caused Overlap to Tecate

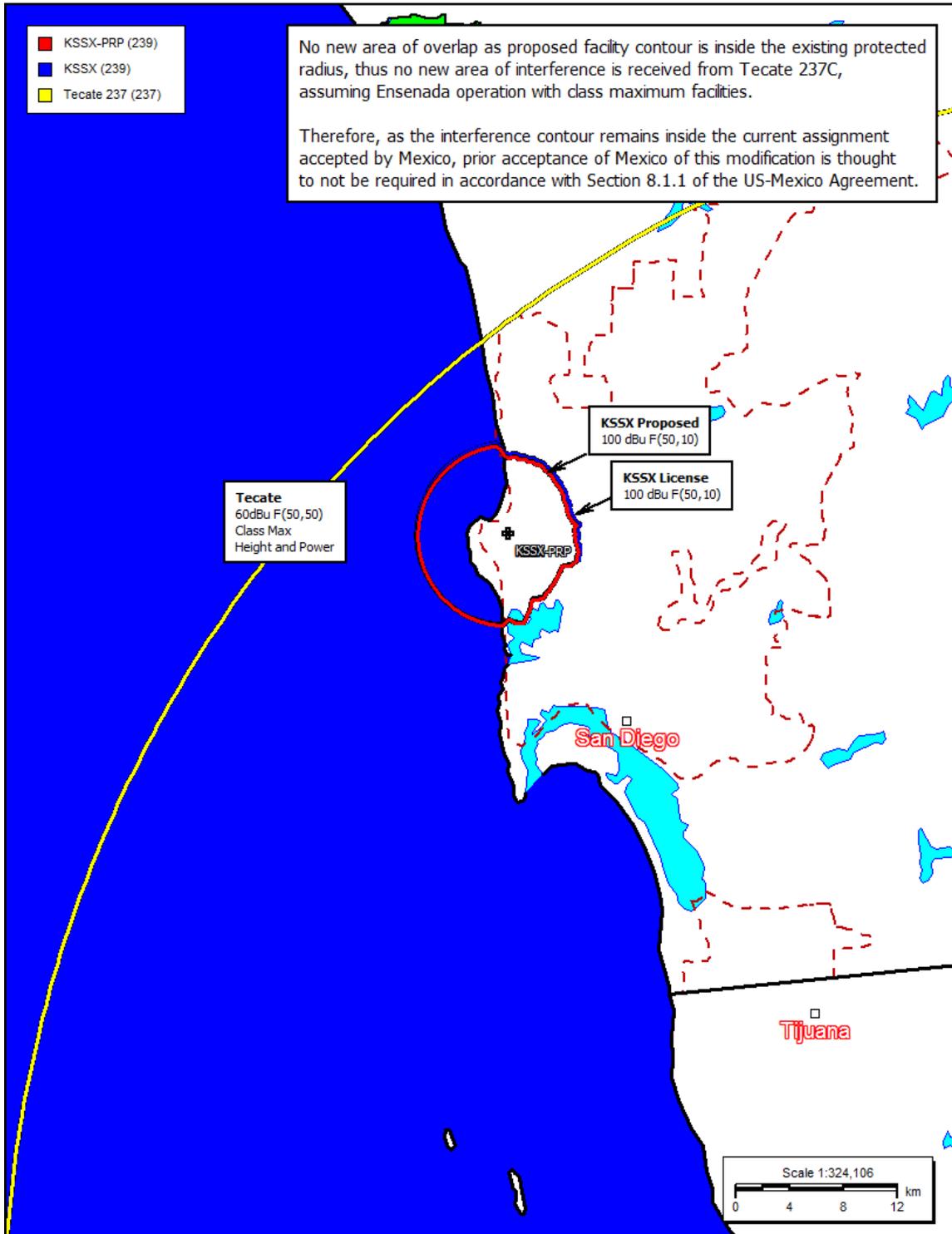


Figure 7. Contour Map of Received Overlap

