

ENGINEERING STUDY

KWBU (FM)

Requesting a Minor Change in
Licensed Facility BLED20010619AAG

Channel 277 (103.3 MHz)

Waco, TX.

Facility ID 4124

September, 2013



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TECHNICAL STATEMENT

This technical statement and attached exhibits were prepared on behalf of the Brazos Valley Public Broadcasting Foundation (“Brazos”), licensee of radio station KWBU-FM, Channel 277, 103.3MHz, Waco, TX. KWBU-FM has received reasonable assurance from American Tower Corp, owner of the tower specified in this application to attach its antenna at the 106m AGL height on the subject tower. KWBU-FM will remain a class A station.

ALLOCATION

The proposed operation will utilize a non-directional antenna and will meet all 73.207 spacing protections to all other stations with the exception of KSSM in Copperas Cove, TX which will be compliant under 73.215. The allocation study attached as Exhibit 1 indicates all pertinent allocation criteria.

As demonstrated in Exhibit 2, KWBU-FM will be compliant under 73.215 contour protection to KSSM.

The proposed facility is not within 320km of the common border between the US and Mexico.

Exhibit 3 indicates that the proposed 70dBu station contour will encompass 124,229 persons of the 124,961 total in Waco, TX or 99.75% of the total population. The 70dBu will encompass 246.3sq. km. or 97% of the area within the Waco city limits. As shown in Exhibit 3 the proposed 70dBu KWBU-FM contour will cover Waco, TX significantly better than the existing licensed facility and demonstrates that KWBU-FM will remain compliant with 73.315(a).

The Main Studio location for the proposed facility will continue to be located at 2100 River Street in the L.L. Sams Suite on the Baylor University Campus located in Waco, TX. Because the Main Studio is within the community of license, Waco TX, KWBU-FM will remain compliant with 73.1125 concerning Main Studio location.

ENVIRONMENTAL CONSIDERATIONS

The proposed antenna will be attached to an existing tower. The tower is owned by American Tower Corporation (ASR 1023072).

The proposed antenna for KWBU-FM will not significantly alter the existing tower structure for purposes of the Nationwide Programmatic Agreement and the NHPA Section 106.

There are several other RF sources located on or near the tower supporting the proposed KWBU-FM antenna. KBGO (239C2, 24kW @ 121m AGL) is the only other full time station currently operating from the proposed tower. There are four auxiliary transmitter facilities KBGO 920w @ 102m, KBRQ 890w @ 112m, KWTX 920w @ 108m, WACO-FM 890w @ 112m. American Tower has assured the licensee that if any existing antenna lies within the proposed KWBU-FM aperture they will be relocated. The proposed KWBU-FM antenna will operate at a power level of 3.2kW and will operate at 106m AGL. The proposal is to operate with a four-bay, 0.50 wavelength spaced ERI LPX antenna.

Based upon the FCC “FM Model for Windows” Power Density vs. Distance calculator using a “ERI or Jampro rototiller (EPA)” type antenna setting, the maximum power density at 2m AGL is expected to be 0.495 $\mu\text{W}/\text{cm}^2$ or 0.25% of the permitted 200 $\mu\text{W}/\text{cm}^2$ limit for uncontrolled exposure at 404m from the base of the tower. The output of the FCC program “FM Model for Windows” is shown as Exhibit 4. There are no tall buildings within 200m of the proposed tower.

Because the expected emission from the KWBU antenna is under 5% of the permitted 200 $\mu\text{W}/\text{cm}^2$ limit for uncontrolled exposure, and because the existing tower planned for use is on an established tower the proposed KWBU antenna is categorically excluded from further Environmental Assessment under 47CFR 1.1306 and 1.1307.

Radio station KWBU along with other users at the site will maintain an occupational safety policy and agrees to reduce power or cease operation during periods of maintenance to avoid potentially harmful exposure of personnel to non-ionizing RF radiation.

.Respectfully Submitted



Bert Goldman
Technical Consultant

EXHIBIT 1 – Allocation Study

ComStudy 2.2 search of channel 277 (103.3 MHz Class A) at 31-30-51.0 N, 97-11-44.0 W.*

CALL	CITY	ST	CHN	CL	DIST	SEP	BRNG	CLEARANCE
KSSM	COPPERAS COVE	TX	276	C3	86.33	89.00	236.6	-2.7 (73.215) SEE EXHIBIT 2
KESN	ALLEN	TX	277	C	226.92	226.00	8.5	0.9
KESN	ALLEN	TX	277	C	226.75	226.00	8.5	0.7
KESN	ALLEN	TX	277	C	227.95	226.00	5.5	1.9
KSSM	COPPERAS COVE	TX	276	C3	94.62	89.00	237.6	5.6
KVIL	HIGHLAND PARK-DALLAS	TX	279	C	116.26	95.00	11.0	21.3
KVJM	HEARNE	TX	276	A	94.72	72.00	140.8	22.7
KBPA	SAN MARCOS	TX	278	C0	175.58	152.00	202.0	23.6
KDMX	DALLAS	TX	275	C	120.87	95.00	9.8	25.9
KDMX	DALLAS	TX	275	C	120.18	95.00	9.9	25.2
KVIL	HIGHLAND PARK-DALLAS	TX	279	C	120.18	95.00	9.9	25.2
KDMX	DALLAS	TX	275	C	120.18	95.00	9.9	25.2
KVIL	HIGHLAND PARK-DALLAS	TX	279	C	121.06	95.00	10.1	26.1
KDMX	DALLAS	TX	275	C	121.08	95.00	10.1	26.1
KVIL	HIGHLAND PARK-DALLAS	TX	279	C	121.09	95.00	10.1	26.1
KVJM	HEARNE	TX	276	A	108.76	72.00	140.2	36.8
KVJM	HEARNE	TX	276	A	108.90	72.00	140.4	36.9

* FCC CDBS Database as of 9/15/13

EXHIBIT 2 – 1st Adjacent Contour Protection- KSSM

73.215 Contours KWBU Prop, 3.2kW @ 138m HAAT

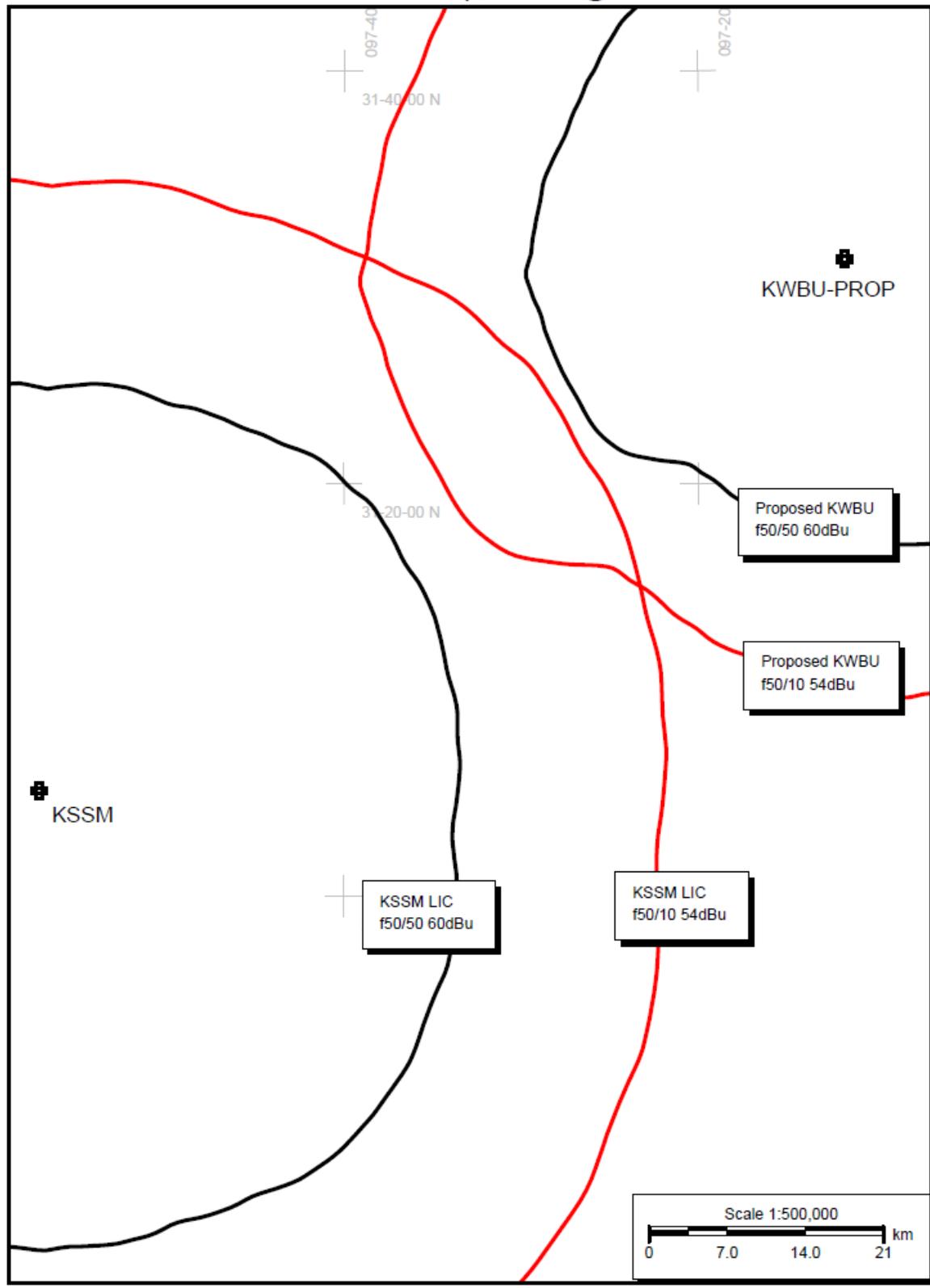


EXHIBIT 3 – Community of License Coverage

70dBu Community of License Coverage KWBU Prop, 3.2kW @ 138m HAAT

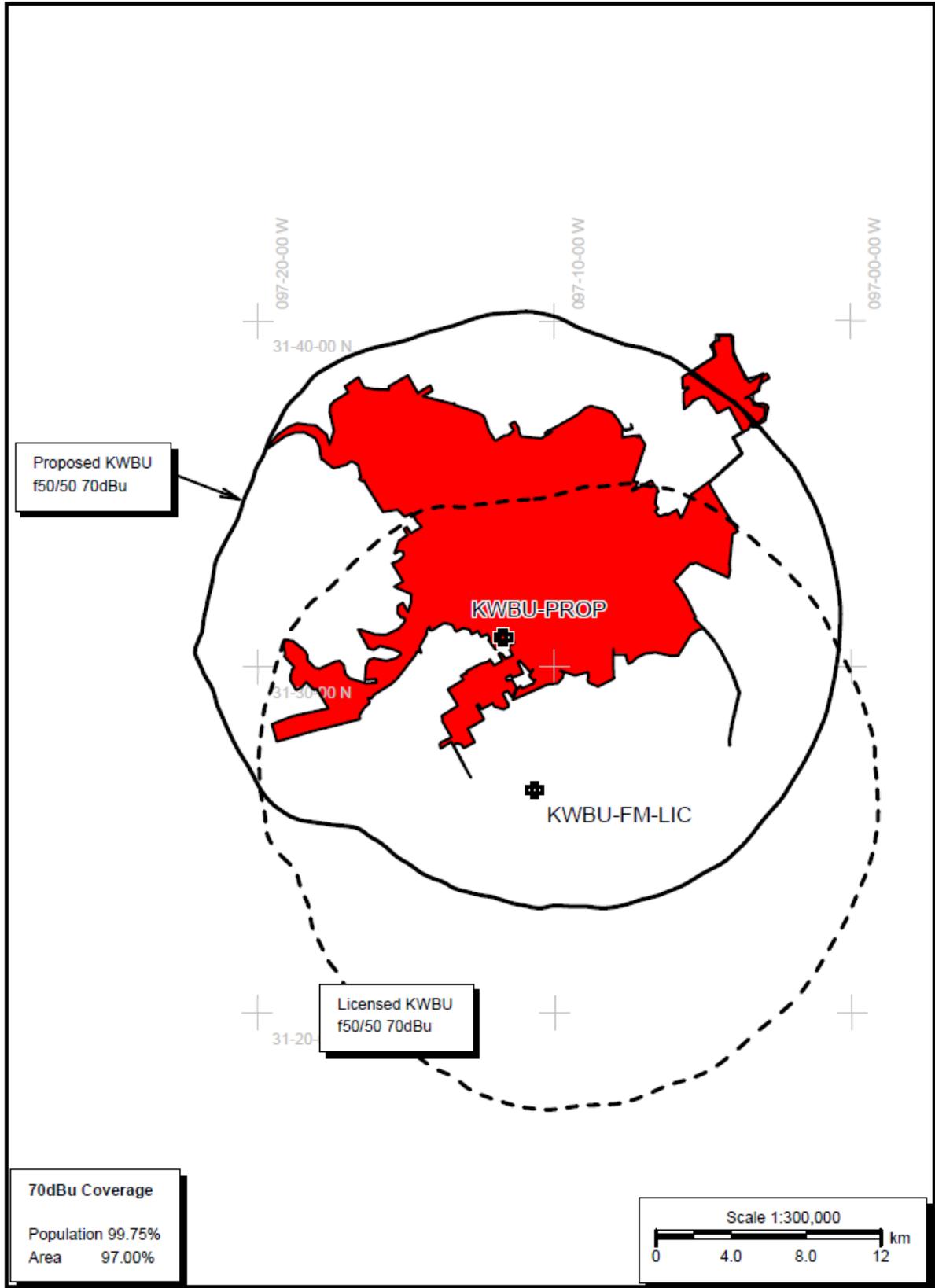
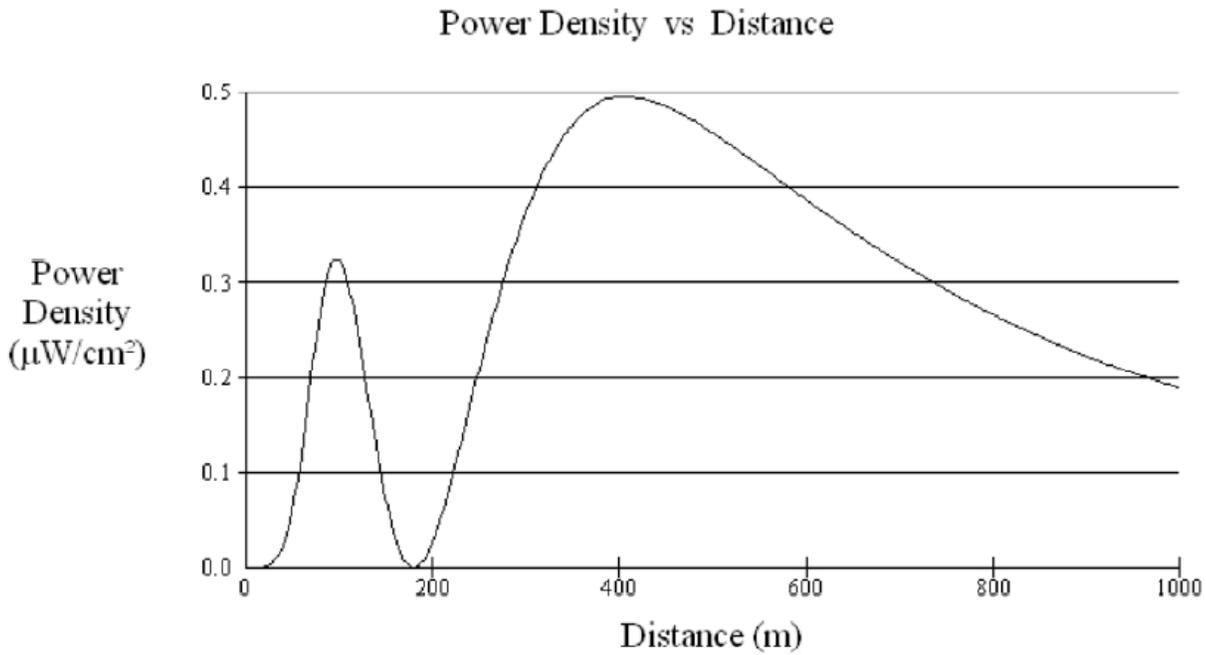


Figure 4, Power Density, KWBU PROPOSED



Office of Engineering and Technology

Distance (m):	<input type="text" value="1000"/>	Antenna Type:	<input type="text" value="ERI or JAMPRO JBCP 'Rototiller' (EPA)"/>
Horizontal ERP (W):	<input type="text" value="3200"/>	Number of Elements:	<input type="text" value="4"/>
Vertical ERP (W):	<input type="text" value="3200"/>	Element Spacing:	<input type="text" value=".5"/>
Antenna Height (m):	<input type="text" value="106"/>		

Maximum RFR @ 2m AGL, 404m from tower base = 0.495 µW/cm², or 0.25% of the 200 µW/cm² limit