

TECHNICAL EXHIBIT
AMENDMENT TO
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT
(FCC FILE NO. BMPTTA-20030508AAC)
CLASS A STATION KGMM-CA
FACILITY ID 17830
SAN ANTONIO, TEXAS
CH 44 51 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an amendment to the pending application for modification of the construction permit for Class A station KGMM-CA at San Antonio, Texas (Facility ID: 17830; File No. BMPTTA-20030508AAC). Specifically, this application proposes to change the directional antenna system to a Moyano model M-82-8H/CI-ID061703 (antenna ID 60622) to be oriented at 0 degrees true and to increase the maximum effective radiated power (ERP) towards the radio horizon to 51 kW. The maximum ERP at any horizontal or vertical angle will be 73.25 kW. No other changes are proposed including no change in transmitter site, antenna radiation center height above mean sea level (434.7 m), or community of license (San Antonio). As detailed below, this application is considered a "minor change" in facilities pursuant to Section 73.3572.

The proposal would not be subject to environmental processing in accordance with Section 1.1306. It is proposed to side-mount the directional antenna on an existing tower structure (antenna structure registration number: 1054166). It is believed that the instant application conforms with all other applicable rules and regulations of the Federal Communications Commission.

Minor Change Application

Figure 1 depicts the authorized and herein proposed 74 dBu contours for KGMM-CA. As indicated, the proposed 74 dBu contour encompasses the majority of the licensed 74 dBu contour. Therefore, the proposed modification is considered a "minor" change in facilities pursuant to Section 73.3572.

US-Mexican TV Agreement Compliance

The proposed KGMM-CA transmitter site is located 217.6 kilometers from the closest point of the US-Mexican border. The US-Mexican TV agreement specifies the coordination zone as the area within 400 km of the common US-Mexican border. The US-Mexican TV agreement also indicates that notification (coordination) is not required if the ERP for LPTV stations located between 100-400 km of the Mexican border does not exceed 10 kW. The arc of azimuths towards the US-Mexican 400 km border zone (163° true clockwise to 281° true) have been shown on Figures 1 and 2.¹ As shown on Figures 1 and 2, the 74 dBu contour for the instant amendment does not extend beyond the authorized KGMM-CA 74 dBu contour towards the Mexican border zone. Thus, it is apparent that there will be a reduction in the authorized KGMM-CA ERP towards the US-Mexican border zone where an ERP of 10 kW would normally be permitted. As such, the instant amendment does not require a new Mexican coordination.

Analog TV Broadcast Analog Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the proposed KGMM-CA operation will not create prohibited interference to other existing, authorized or proposed TV broadcast analog (NTSC) full-power stations with the exception of the licensed operations of KABB on channel 29 at San Antonio, TX (BLCT-19880210KF), KWEX-TV on channel 41 at San Antonio, TX (BLCT-19970331SG) and KWKT on channel 44 at Waco, TX (BLCT-19880322KI). Therefore, waiver of Section 74.705 is requested with respect to KABB, KWEX-TV and KWKT. Justification for the waiver requests is provided below.

Station KABB operates on a -15 picture image taboo channel to the proposed KGMM-CA operation and KWKT operates on co-channel 44. Based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.705(e)], it is believed that KGMM-CA's proposed operation complies with the FCC's interference criteria towards KABB and KWKT. Specifically, calculations have been made using the procedures outlined in the

¹ Figure 2 is a large scale version of Figure 1 depicting the US-Mexican 400 km border zone.

FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 calculations are tabulated on Figure 3 and, as indicated, the proposal is not predicted to cause any interference to KABB or KWKT.²

Station KWEX-TV operates on a third lower adjacent channel to the proposed KGMM-CA operation. Section 74.705 specifies a minimum distance of 32 kilometers towards KWEX-TV for a Class A station operating in excess of 50 kW whereas the actual distance to KWEX-TV is 0 km. Therefore, the proposed KKGMM-CA operation will be short-spaced to KWEX-TV.

The 32 kilometer separation requirement between third adjacent channel full service NTSC (KWEX-TV) and LPTV stations is designed to prevent "cross modulation" and "intermodulation" interference. In cross modulation interference, the modulation of the undesired channel is superimposed on the modulation of the desired channel. The potential for cross modulation interference was analyzed based on OET Bulletin No. 69 which indicates that no interference is calculated to occur to KWEX-TV. This complies with the FCC's 0.5% interference criteria and is tabulated on Figure 3.

Intermodulation interference results from the combination of the proposed KGMM-CA channel 44 and KWEX-TV channel 41 signals (visual carriers only) in a receiver to generate a signal that falls within the pass-band of a "desired" third signal. For the KGMM-CA channel 44/KWEX-TV channel 41 combination, the intermodulation products will not be on either channel 44 or channel 41, but will fall on channels 38 and 47. If there are viewable signals on those channels in the vicinity of the proposed KGMM-CA channel 44 service area there will be a potential for interference. Our studies indicate that there are no viewable full-service NTSC signals on these channels in the area and, therefore, interference is not likely to occur.

² The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. An Alpha based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin 69.

DTV Station and DTV Table of Allotments Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed KGMM-CA operation on channel 44 complies with the FCC's 0.5% interference threshold criteria to all allotted, proposed or actual DTV operating facilities on channels 43, 44, and 45. Figure 3 provides the output of study based on OET-69 Bulletin.

LPTV/TV Translator, Class A and Digital Class A Protection

A study has been conducted which indicates that the KGMM-CA proposal will not create prohibited interference to other existing, authorized or proposed LPTV, TV Translator, Class A and digital Class A stations with the exceptions of an application for channel 44 at Big Wells, TX (BNPTTL-20000831CCL) and an application on channel 44 at Ingram, TX (BNPTTL-20000831CCK). However, based on the provisions of OET-69 Bulletin as permitted by FCC rules [Section 74.707(e)] it is believed that KGMM-CA's proposed operation complies with the FCC's interference criteria towards these applications. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 calculations are tabulated on Figure 3 and, as indicated, the KGMM-CA proposal is not predicted to cause any interference to either application.

Land Mobile Station Protection

The proposed KGMM-LP operation does not cause interference to land mobile radio stations (LMRS).

Environmental Considerations

The proposed KGMM-CA television facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". The calculated power density at the base of the tower was calculated using the appropriate equation on Page 13 of the Bulletin. Using a worse case vertical relative field value of 1.0, a maximum visual ERP of 73.25 kilowatts and 10 percent aural power, the calculated

power density at 2 meters above ground level at the base of the tower is 0.0165 milliwatts per square centimeter (mW/cm^2), or 3.8 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ($0.44 \text{ mW}/\text{cm}^2$ for TV channel 44). Therefore, based on the responsibility threshold of 5%, the KGMM-CA proposal will comply with the new RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

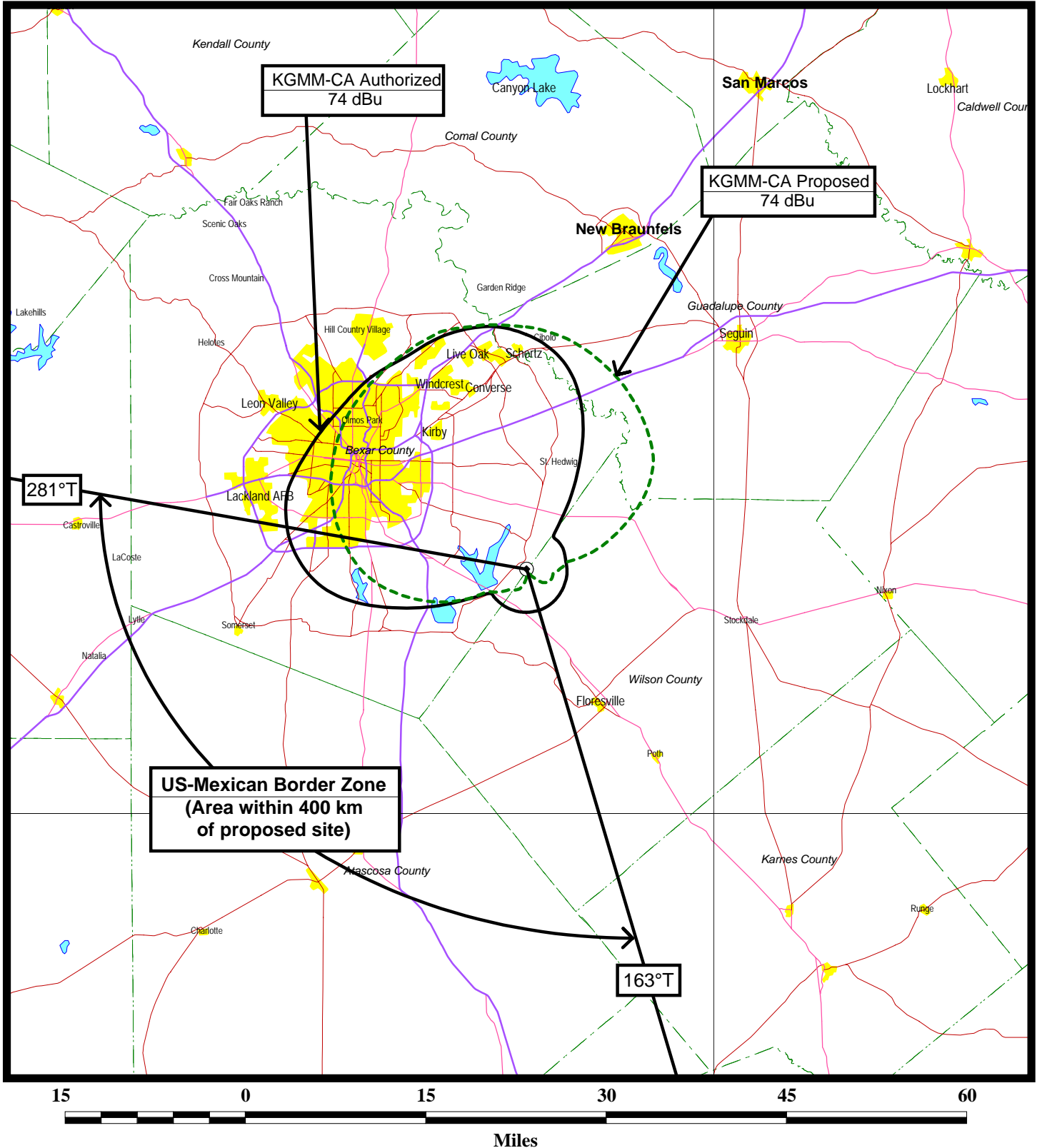
In addition, it appears that the existing tower is otherwise excluded from environmental processing as it complies with all the criteria for such exclusion in Section 1.1306.

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Figure 1

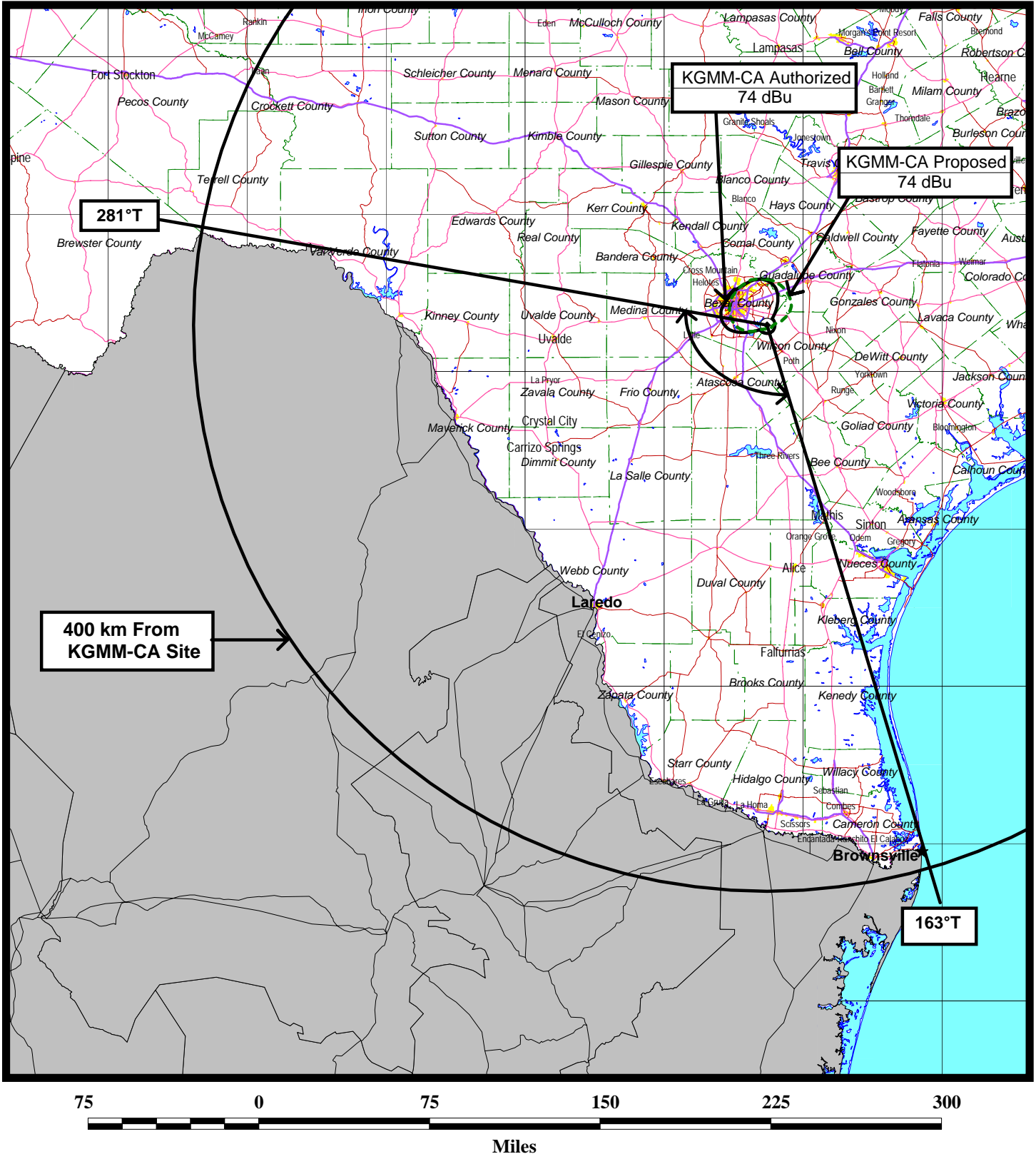


PREDICTED COVERAGE CONTOURS

STATION KGMM-CA
SAN ANTONIO, TEXAS
CH 44 51 KW (MAX-DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2



US-MEXICAN AGREEMENT COMPLIANCE

STATION KGMM-CA
SAN ANTONIO, TEXAS
CH 44 51 KW (MAX-DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

OET-69 NTSC, LPTV AND DTV INTERFERENCE CAUSED STUDY

CELL SIZE : 2.00
Using offset in determining thresholds

KABB 29-17-27 098-16-12 29(+) 5000.000 kw 604 m DA 50.0 % 63.2 dBu
SAN ANTONIO TX 23364 1497 FCC NTSC BL: 1506919 FCC IX POP%: 0.1
LIC BLCT19880210KF

0.92	0.89	0.85	0.81	0.77	0.70	0.63	0.53	0.42	0.33	0.28	0.31
0.37	0.42	0.43	0.42	0.37	0.31	0.28	0.33	0.42	0.53	0.63	0.70
0.77	0.81	0.85	0.89	0.92	0.95	0.98	0.99	1.00	0.99	0.98	0.95

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	24170.714844	1506919
not affected by terrain losses	23479.439453	1497708

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX
KGMM-CA

0.92	0.84	0.72	0.59	0.47	0.36	0.23	0.13	0.03	0.02	0.02	0.02
0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
0.03	0.13	0.23	0.35	0.46	0.58	0.72	0.83	0.92	0.97	1.00	0.97

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -9.00

	Area	Pop
Interference	0	0

KWEX-T 29-17-39 098-15-30 41(+) 5000.000 kw 593 m DA 50.0 % 64.2 dBu
SAN ANTONIO TX 22090 1466 FCC NTSC BL: 1493319 FCC IX POP%: 0.0
LIC BLCT19970331SG

0.94	0.91	0.87	0.81	0.74	0.66	0.56	0.46	0.38	0.34	0.35	0.40
0.44	0.47	0.47	0.44	0.40	0.35	0.34	0.38	0.46	0.56	0.66	0.74
0.81	0.87	0.91	0.94	0.96	0.98	0.99	1.00	1.00	0.99	0.98	0.96

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	22993.447266	1493380
not affected by terrain losses	22445.984375	1485864

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX
KGMM-CA

0.92	0.84	0.72	0.59	0.47	0.36	0.23	0.13	0.03	0.02	0.02	0.02
0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
0.03	0.13	0.23	0.35	0.46	0.58	0.72	0.83	0.92	0.97	1.00	0.97

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -34.00

Interference	Area 0	Pop 0

KEYE-2 30-19-07 097-48-04 43(N) 82.700 kw 611 m DA 90.0 % 41.4 dBu		
AUSTIN TX 17588 911 DTVSERVICE: 911000 NTSCSERVICE: 878000		
CP BPCDT19991101ABZ		
0.41 0.47 0.53 0.56 0.55 0.50 0.43 0.41 0.49 0.65 0.81 0.94		
1.00 0.97 0.87 0.72 0.55 0.43 0.41 0.47 0.53 0.56 0.55 0.50		
0.43 0.41 0.49 0.65 0.81 0.94 1.00 0.97 0.87 0.72 0.55 0.43		
Ref Az: 0.0		
Using DEFAULT vertical antenna pattern		
	Area	Pop
within Noise Limited Contour	19069.488281	925013
not affected by terrain losses	18724.447266	920717

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5		
SAN ANTONIO TX		
KGMM-CA		
0.92 0.84 0.72 0.59 0.47 0.36 0.23 0.13 0.03 0.02 0.02 0.02		
0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.01 0.01 0.01 0.01 0.02		
0.03 0.13 0.23 0.35 0.46 0.58 0.72 0.83 0.92 0.97 1.00 0.97		
Ref Az: 0.0		
Using DEFAULT vertical antenna pattern		

D/U Baseline: -49.00

Interference	Area 0	Pop 0

DKEYET 30-19-10 097-48-06 43(0) 82.700 kw 615 m DA 90.0 % 41.4 dBu		
AUSTIN TX 17588 911 DTVSERVICE: 911000 NTSCSERVICE: 878000		
DTVALT DTV ALLOTMENT		
0.33 0.41 0.51 0.56 0.52 0.41 0.33 0.29 0.36 0.52 0.72 0.92		
1.00 0.93 0.73 0.53 0.39 0.31 0.33 0.41 0.52 0.55 0.51 0.41		
0.33 0.31 0.38 0.51 0.76 0.88 0.96 0.89 0.76 0.56 0.38 0.31		
Ref Az: 0.0		
Using DEFAULT vertical antenna pattern		
	Area	Pop
within Noise Limited Contour	18185.615234	916318
not affected by terrain losses	17844.611328	912577

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5		
SAN ANTONIO TX		
KGMM-CA		
0.92 0.84 0.72 0.59 0.47 0.36 0.23 0.13 0.03 0.02 0.02 0.02		
0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.01 0.01 0.01 0.01 0.02		
0.03 0.13 0.23 0.35 0.46 0.58 0.72 0.83 0.92 0.97 1.00 0.97		
Ref Az: 0.0		
Using DEFAULT vertical antenna pattern		

D/U Baseline: -49.00

Interference	Area 0	Pop 0
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KEYE-T 30-19-18 097-48-11 43(N) 1000.000 kw 616 m DA 90.0 % 41.4 dBu
AUSTIN TX 17588 911 DTVSERVICE: 911000 NTSCSERVICE: 878000

APP BMPCDT20020528AAE

0.75	0.69	0.66	0.67	0.72	0.79	0.83	0.81	0.75	0.76	0.84	0.95
1.00	0.96	0.86	0.78	0.78	0.86	0.93	0.97	0.98	0.98	0.95	0.89
0.81	0.77	0.82	0.93	1.00	0.98	0.89	0.79	0.75	0.78	0.83	0.81

(22.0 0.66)(121.0 1.00)(122.0 1.00)(282.0 1.00)(283.0 1.00)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	32387.279297	1354934
not affected by terrain losses	31644.912109	1339162

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX

KGMM-CA

0.92	0.84	0.72	0.59	0.47	0.36	0.23	0.13	0.03	0.02	0.02	0.02
0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
0.03	0.13	0.23	0.35	0.46	0.58	0.72	0.83	0.92	0.97	1.00	0.97

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00

	Area	Pop
Interference	0	0

NEW2 28-44-53 099-31-05 44(+) 49.000 kw 361 m 50.0 % 74.5 dBu
BIG WELLS TX

APP BNPTTL20000831CCL

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	2271.422119	2428
not affected by terrain losses	2271.422119	2428

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX

KGMM-CA

0.92	0.84	0.72	0.59	0.47	0.36	0.23	0.13	0.03	0.02	0.02	0.02
0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
0.03	0.13	0.23	0.35	0.46	0.58	0.72	0.83	0.92	0.97	1.00	0.97

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

	Area	Pop
Interference	0	0

KWKT 31-18-52 097-19-37 44(-) 4170.000 kw 761 m DA 50.0 % 64.5 dBu
WACO TX 22407 608 FCC NTSC BL: 643200 FCC IX POP%: 0.0
LIC BLCT19880322KI

0.75	0.91	0.99	0.99	0.92	0.75	0.50	0.37	0.36	0.38	0.40	0.37
0.37	0.40	0.38	0.36	0.37	0.52	0.71	0.90	0.98	0.99	0.93	0.78
0.56	0.38	0.28	0.23	0.22	0.23	0.23	0.22	0.23	0.28	0.39	0.55

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	22958.328125	643192
not affected by terrain losses	22668.685547	640745

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX

KGMM-CA

0.92	0.84	0.72	0.59	0.47	0.36	0.23	0.13	0.03	0.02	0.02	0.02
0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
0.03	0.13	0.23	0.35	0.46	0.58	0.72	0.83	0.92	0.97	1.00	0.97

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 28.00

	Area	Pop
Interference	0	0

NEW 30-10-32 099-30-29 44(+) 49.000 kw 832 m 50.0 % 74.5 dBu
INGRAM TX
APP BNPTTL20000831CCK

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	2414.623779	5345
not affected by terrain losses	2362.394043	5325

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX

KGMM-CA

0.92	0.84	0.72	0.59	0.47	0.36	0.23	0.13	0.03	0.02	0.02	0.02
0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
0.03	0.13	0.23	0.35	0.46	0.58	0.72	0.83	0.92	0.97	1.00	0.97

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

	Area	Pop
Interference	0	0

KZJL 29-33-44 095-30-35 44(N) 1000.000 kw 597.4 m 90.0 % 41.5 dBu
HOUSTON TX 20486 3695 DTVSERVICE: 3695000 NTSCSERVICE: 3695000
CP MOD BMPCDT20021107AAB

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	44007.398438	3899447
not affected by terrain losses	43943.585938	3899134

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX
KGMM-CA
0.92 0.84 0.72 0.59 0.47 0.36 0.23 0.13 0.03 0.02 0.02 0.02
0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.01 0.01 0.01 0.01 0.02
0.03 0.13 0.23 0.35 0.46 0.58 0.72 0.83 0.92 0.97 1.00 0.97
Ref Az: 0.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

DKZJL 29-33-25 095-30-04 44(0) 122.200 kw 445 m DA 90.0 % 41.5 dBu
HOUSTON TX 20486 3695 DTVSERVICE: 3695000 NTSCSERVICE: 3695000
DTVALT DTV ALLOTMENT
0.85 0.90 0.95 0.98 1.00 1.00 0.98 0.95 0.90 0.85 0.80 0.76
0.72 0.67 0.61 0.52 0.41 0.29 0.21 0.18 0.21 0.27 0.31 0.30
0.27 0.21 0.18 0.21 0.29 0.41 0.51 0.60 0.67 0.72 0.76 0.80
Ref Az: 0.0
Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	20490.175781	3694788
not affected by terrain losses	20490.175781	3694788

KGMM-P 29-17-39 098-15-30 44(+) 51.000 kw 435 m DA 10.0 % 74.5
SAN ANTONIO TX
KGMM-CA
0.92 0.84 0.72 0.59 0.47 0.36 0.23 0.13 0.03 0.02 0.02 0.02
0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.01 0.01 0.01 0.01 0.02
0.03 0.13 0.23 0.35 0.46 0.58 0.72 0.83 0.92 0.97 1.00 0.97
Ref Az: 0.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

SUMMARY OF CALCULATIONS

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KABB, SAN ANTONIO, TX	29	TV	1506919	0.5	0	0.00
KWEX-T, SAN ANTONIO, TX	41	TV	1493319	0.5	0	0.00
KEYE-2, AUSTIN, TX	43	DTV	925013	0.5	0	0.00
DKEYET, AUSTIN, TX	43	DTV	916318	0.5	0	0.00
KEYE-T, AUSTIN, TX	43	DTV	1354934	0.5	0	0.00
NEW2, BIG WELLS, TX	44	TV	2428	0.5	0	0.00
KWKT, WACO, TX	44	TV	643200	0.5	0	0.00
NEW, INGRAM, TX	44	TV	5345	0.5	0	0.00
KZJL, HOUSTON, TX	44	DTV	3899447	0.5	0	0.00
DKZJL, HOUSTON, TX	44	DTV	3695000	0.5	0	0.00