

COMPREHENSIVE ENGINEERING STATEMENT

prepared for

The Curators of the University of Missouri

KOMU-TV Columbia, Missouri

Facility ID 65583

Ch. 27 1000 kW 266 m HAAT

Table of Contents

Statement A	Comprehensive Engineering Statement
Attachment	FAA Study No. 2020-ACE-8833-OE Determination of No Hazard
Figure 1	Community of License and Contours
Figure 2	TV Study Population Loss
Figure 2a	Population Loss Analysis
Table 1	TV Study Interference Analysis for Channel 27
Table 2	KBIA(FM) Power Density Using FM Model

COMPREHENSIVE ENGINEERING STATEMENT

prepared for

The Curators of the University of Missouri

KOMU-TV Columbia, Missouri

Facility ID 65583

Ch. 27 1000 kW 266 m HAAT

The Curators of the University of Missouri (“*The University*”) is the licensee of digital full service television station KOMU-TV, Channel 8, Columbia, Missouri, Facility ID 65583 (file number BLCDDT-20090612AFB). *The University* has filed a Petition for Rulemaking for a channel substitution from channel 8 to channel 27 in the current Community of License (*see* MB Docket 20-428; RM-11870), which was recently granted and was published in the Federal Register on April 12, 2021. The instant application is for a KOMU facility on channel 27 on a new tower structure which is located at NAD 83 coordinates 38° 53’ 21.0” N, 92° 15’ 43.2” W. An ASR Application (file number A1184987, FAA Aeronautical Study 2020-ACE-8833-OE) for the new tower is currently awaiting Environmental Certification at the FCC. The aforementioned FAA study shows a Determination of No Hazard, which is attached to this statement.

Nature of the Proposal

The proposed antenna system for the KOMU-TV operation is an omnidirectional antenna which will be top mounted on a newly-constructed tower. The application for the new tower (file number A1184987), as noted above, is currently under review at the FCC. The new antenna structure is located approximately 500 feet away from the existing tower with the ASR number 1007637. The new structure is to be marked and lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, a high-dual system - Chapters 4, 9 (H-Dual), & 15.

The proposed digital facility will operate on Channel 27 using a “Full Service” out of channel emission mask, a maximum effective radiated power of 1000 kW, and an antenna height of 266 meters HAAT.

Community of License

The map in **Figure 1** shows that the Principal Community contours F(50,90) 43 dBμ for channel 8 and F(50,90) 48 dBμ for channel 27 completely cover the entirety of the principal

COMPREHENSIVE ENGINEERING STATEMENT

(Page 2 of 6)

community of Columbia, Missouri, for both the licensed facility and the proposed facility. The contours were generated using V-Soft Probe 5 (version 5.15). The population within the protected contours of the licensed and proposed facilities is also shown. The proposed Channel 27 F(50,90) 41 dB μ contour contains 574,627 persons (noise-limited) as opposed to the licensed Channel 8 F(50,90) 36 dB μ contour, which contains 555,279 persons. From the TVStudy V2.2.5 studies, the interference-free population for Channel 8 is 539,607 persons, and the interference-free population for Channel 27 is 561,048 persons for a net gain of 21,441 persons.

Population Loss Analysis

It is understood that The FCC weighs the public interest when a television broadcast facility proposes a service area change. The FCC defines “white area” as locations where the population does not receive any over-the-air television service, “gray area” as locations where the population receives only one over-the-air television service and “underserved area” where the population receives less than five other existing services. A terrain-limited contour analysis of the licensed and proposed KOMU facilities performed in TVStudy V2.2.5 shows that the licensed facility F(50,90) 36 dB μ contour has a terrain-limited coverage area of 25,771.4 km², while the proposed facility F(50,90) 41 dB μ contour has a coverage area of 24,592.4 km².

Utilizing geographical coverage from TVStudy V2.2.5, the map in **Figure 2** provides an overlay of the channel 27 coverage area (depicted in gray) on top of the channel 8 coverage (depicted in magenta). There are a total of 6 magenta cells of lost coverage, which when counted, contain a total of 401 persons. **Figure 2a** adds coverage contours of the additional services in the area, and indicates that all except one of the magenta cells is served by at least five other services and one magenta cell of 7 persons is served by four other services. As such, there are a total of 401 persons that lose coverage due to the change to channel 27, and only one block of seven persons that has fewer than 5 other television stations serving it. Accordingly, the proposal complies with the FCC’s *de minimis* standard.

COMPREHENSIVE ENGINEERING STATEMENT

(Page 3 of 6)

Interference Analysis

The instant proposal complies with the Commission's interference protection requirements toward all DTV and Class A stations. A detailed interference study was conducted using the FCC's TV Study program version 2.2.5¹. The interference study results are provided as **Table 1** (and provided as a separate attachment in this filing) and show that any new interference does not exceed the Commission's interference limits (0.5 percent to full service and Class A stations). Accordingly, the instant proposal complies with FCC Rules regarding interference protection to DTV, television translator, LPTV and Class A television facilities.

International Coordination

The proposed transmitter site is located more than 845 km from the U.S.-Canadian border. The proposal is also more than 1314 km from the U.S.-Mexican border, which is greater than the required coordination distance specified for full-service television stations. Thus, it is believed that international coordination will not be necessary for the instant proposal.

Other Interference Considerations

The nearest FCC monitoring station is at Grand Island, NE, at a distance of 572.1 km from the proposed site. This exceeds by a great margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The proposed site is also located outside the areas specified in §73.1030(a)(1) and §73.1030(b). Thus, notification of the instant proposal to the National Radio Astronomy Observatory at Green Bank, West Virginia, or the Table Mountain Radio Receiving Zone in Boulder County, Colorado is not required. The nearest AM broadcast stations, KFRU and KTGR, are located 8.98 km from the proposed site, which is well beyond the threshold as described in §1.30002 of the Rules.

Environmental Considerations

The instant proposal is not believed to have a further significant environmental impact as defined under §1.1306 of the Commission's Rules. As is required when there is construction of

¹ The TV Study program was configured to perform its calculations using the default cell size of 2.0 km and a terrain profile increment of 0.1 km. It is believed that this setting better reflects terrain variations than the default setting.

COMPREHENSIVE ENGINEERING STATEMENT

(Page 4 of 6)

a new tower, as part of the Form 854 filing, preparation of an Environmental Assessment has been performed. The Environmental Assessment FONSI can be provided once the FCC has processed the submitted form 854.

Human Exposure to Radiofrequency Electromagnetic Field

The proposed operation was evaluated for human exposure to radiofrequency electromagnetic field using the procedures outlined in the Commission's OET Bulletin 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

The KOMU-TV Channel 27 antenna center of radiation will be 164 meters above ground level. An effective radiated power of 1000 kilowatts, elliptically polarized, will be employed utilizing a Dielectric model TFU24ETT VP-R UHF antenna. Based on the manufacturer's data, a "worst-case" relative field value of 25 percent is assumed for purposes of the calculation. For the calculations here, 35% vertical polarization has been added. The "uncontrolled/general population" limit specified in §1.1310 for Channel 27 (center frequency 551 MHz) is $367.3 \mu\text{W}/\text{cm}^2$.

OET 65's formula for television transmitting antennas is based on the NTSC transmission standards, where the average power is normally much less than the peak power. For the DTV facility in the instant proposal, the peak-to-average ratio is different than the NTSC ratio. The DTV ERP figure herein refers to the average power level. The formula used for calculating DTV signal density in this analysis is essentially the same as equation (10) in OET 65.

$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:

- S = power density in microwatts/cm²
- ERP = total (average) ERP in Watts
- F = relative field factor
- D = distance in meters

COMPREHENSIVE ENGINEERING STATEMENT

(Page 5 of 6)

Using this formula and the above assumptions, the proposed facility would contribute a power density of $54.9 \mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure, or 14.95 percent of the general population/uncontrolled limit. §1.1307(b)(3) states that facilities at locations with multiple emitters are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent of the pertinent MPE limit. It is proposed to relocate radio KBIA(FM) to the proposed tower along with KOMU-TV. Since KOMU's contribution would exceed the five percent exclusion test at all ground level areas, the impact of co-located KBIA(FM) must be taken into consideration in this proposal. Using the FCC's FM Model software as shown in Table 2, the KBIA(FM) ERI SHPX-8AC antenna, which is an 8-bay, opposed-U dipole 1.0 Lambda antenna, mounted as proposed at 189.3 meters yields a power density of $11.36 \mu\text{W}/\text{cm}^2$. Taken together, the power density is $66.26 \mu\text{W}/\text{cm}^2$, or 18.05% of the uncontrolled/general public limit. Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor at ground level as defined under §1.1307(b).

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy attributable to the proposal will not be caused at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, the compound will be restricted and controlled through the use of a locked fence. Additionally, appropriate RF exposure warning signs will continue to be posted.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will be employed protecting maintenance workers from excessive exposure when work must be performed on the tower or in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines would otherwise be exceeded. On-site RF exposure measurements may also be undertaken to

COMPREHENSIVE ENGINEERING STATEMENT

(Page 6 of 6)

establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.

Conclusion

Based on the preceding, it is believed that the instant proposal complies with all Commission Rules and policies.



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2020-ACE-8833-OE

Issued Date: 02/22/2021

Jennifer Sullivan
The Curators of the University of Missouri
215 University Hall
Columbia, MO 55211

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Antenna - Side Mount KOMU Broadcast Tower
Location:	Columbia, MO
Latitude:	38-53-21.00N NAD 83
Longitude:	92-15-43.20W
Heights:	835 feet site elevation (SE) 780 feet above ground level (AGL) 1615 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does exceed obstruction standards but would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, a high-dual system-Chapters 4,9(H-Dual),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

☐ At least 10 days prior to start of construction (7460-2, Part 1)
☒ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 05/12/2021 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (816) 329-2508, or vee.stewart@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2020-ACE-8833-OE.

Signature Control No: 459780173-470191488

(EBO)

Vee Stewart
Specialist

Attachment(s)
Additional Information
Frequency Data
Map(s)

cc: FCC

Abbreviations:

AGL, Above Ground Level

CAT, Category

CFR, Code of Federal Regulations

NM, Nautical Mile

RWY, Runway

TPA, Traffic Pattern Airspace

The proposed replacement structure would be located approximately 4.77 NM northwest of the Airport Reference Point for the Columbia Regional Airport (COU), Columbia, MO. It is identified as exceeding the obstruction standards of 14 CFR Part 77 as follows:

Section 77.17(a)(1): A height more than 499 feet AGL: It would exceed by 281 feet.

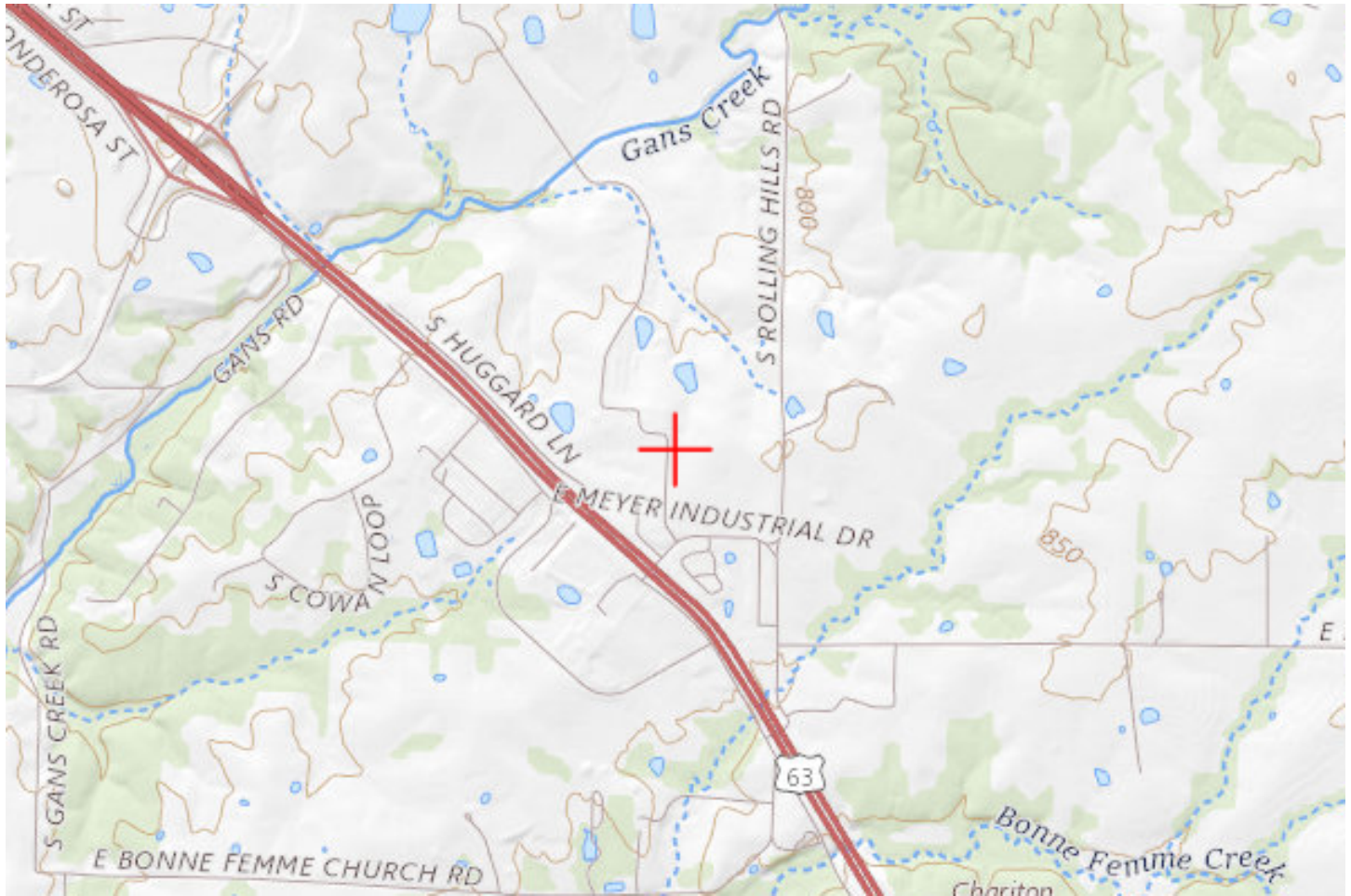
It is identified as exceeding the obstruction standards of 14 CFR Part 77 as follows as applied to COU:

Section 77.17(a)(2): A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet. It would exceed by 350 feet.

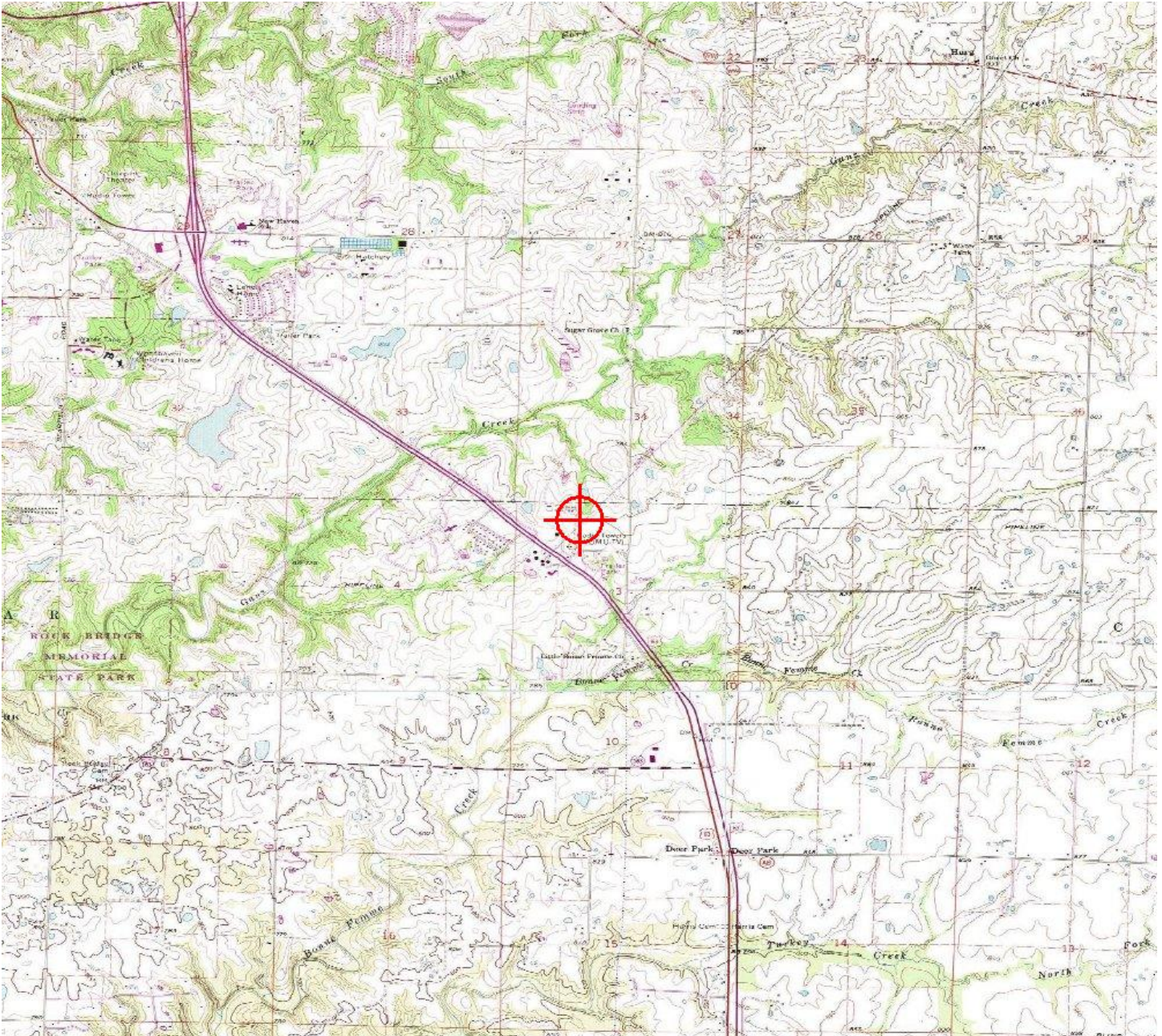
The proposed structure would lie within the TPA climb and descent area for PROPOSED RWY 2/20 and CURRENT RWY 2/20 for CAT D aircraft. The proposal would lie outside the TPA for PROPOSED RWY 2/20 and CURRENT RWY 2/20 for CAT A/B/C aircraft and PROPOSED RWY 13/31 and CURREN RWY 13/31 for all categories of aircraft. Note: Aircraft categories are based on approach speed, CAT A = less than 91 knots, CAT B = 91-120 knots, CAT C = 121-140 knots.

Frequency Data for ASN 2020-ACE-8833-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
548	554	MHz	1000	kW







LEGEND

- KOMU As LICENSED
F(50,90) 36 dB μ CONTOUR
- KOMU As PROPOSED
F(50,90) 41 dB μ CONTOUR
- - - KOMU As LICENSED
F(50,90) 43 dB μ CONTOUR
- - - KOMU As PROPOSED
F(50,90) 48 dB μ CONTOUR

FIGURE 1

COMMUNITY OF LICENSE AND CONTOURS

prepared April 2021 for
The Curators of the University of Missouri
KOMU-TV Columbia, MO (Facility ID 65583)
Chan 27 1000 kW 266 m HAAT

Cavell, Mertz & Associates, Inc.
Manassas, Virginia

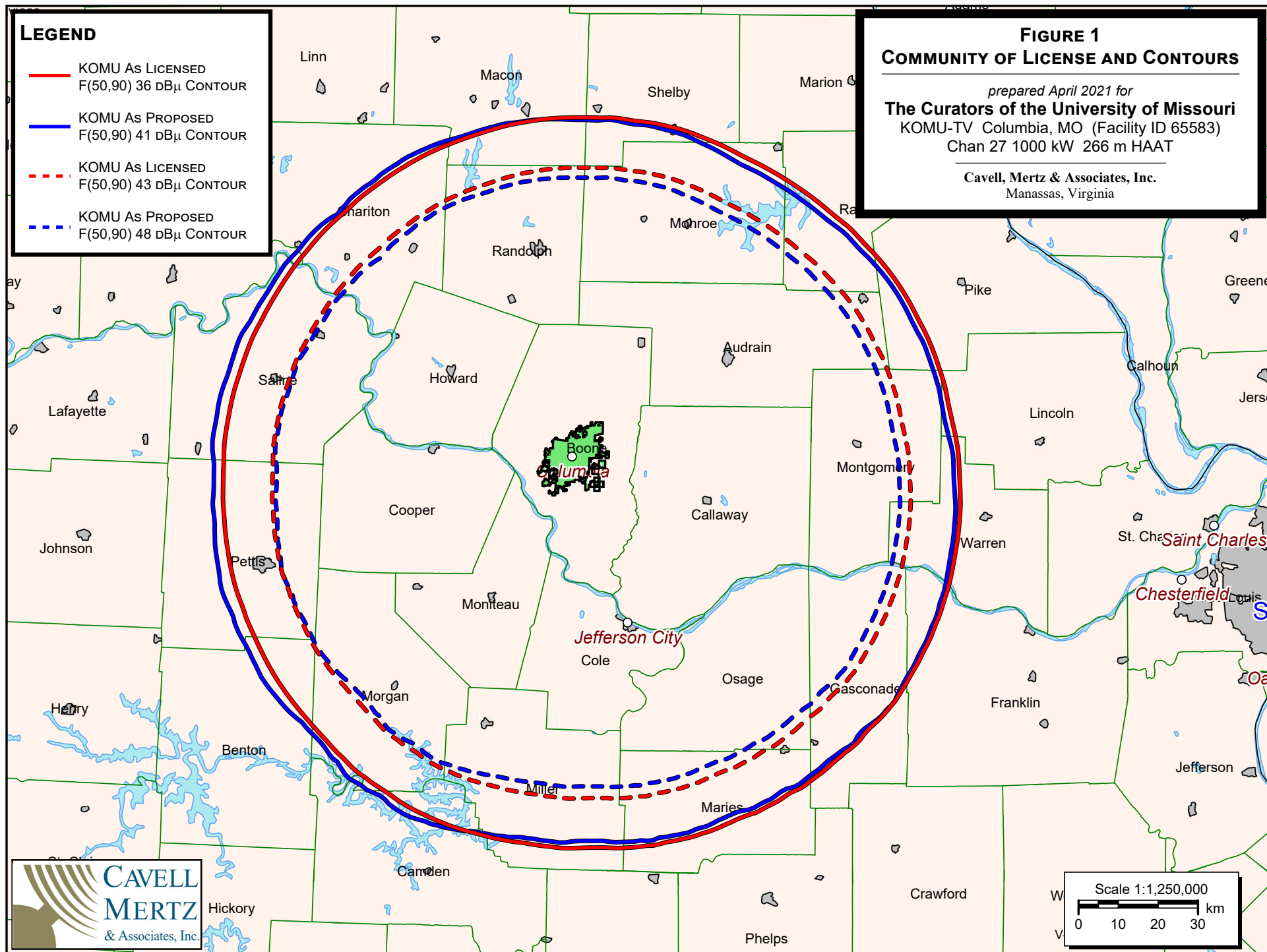


FIGURE 2 TV STUDY POPULATION LOSS

prepared April 2021 for
The Curators of the University of Missouri
KOMU-TV Columbia, MO (Facility ID 65583)
Chan 27 1000 kW 266 m HAAT

Cavell, Mertz & Associates, Inc.
Manassas, Virginia

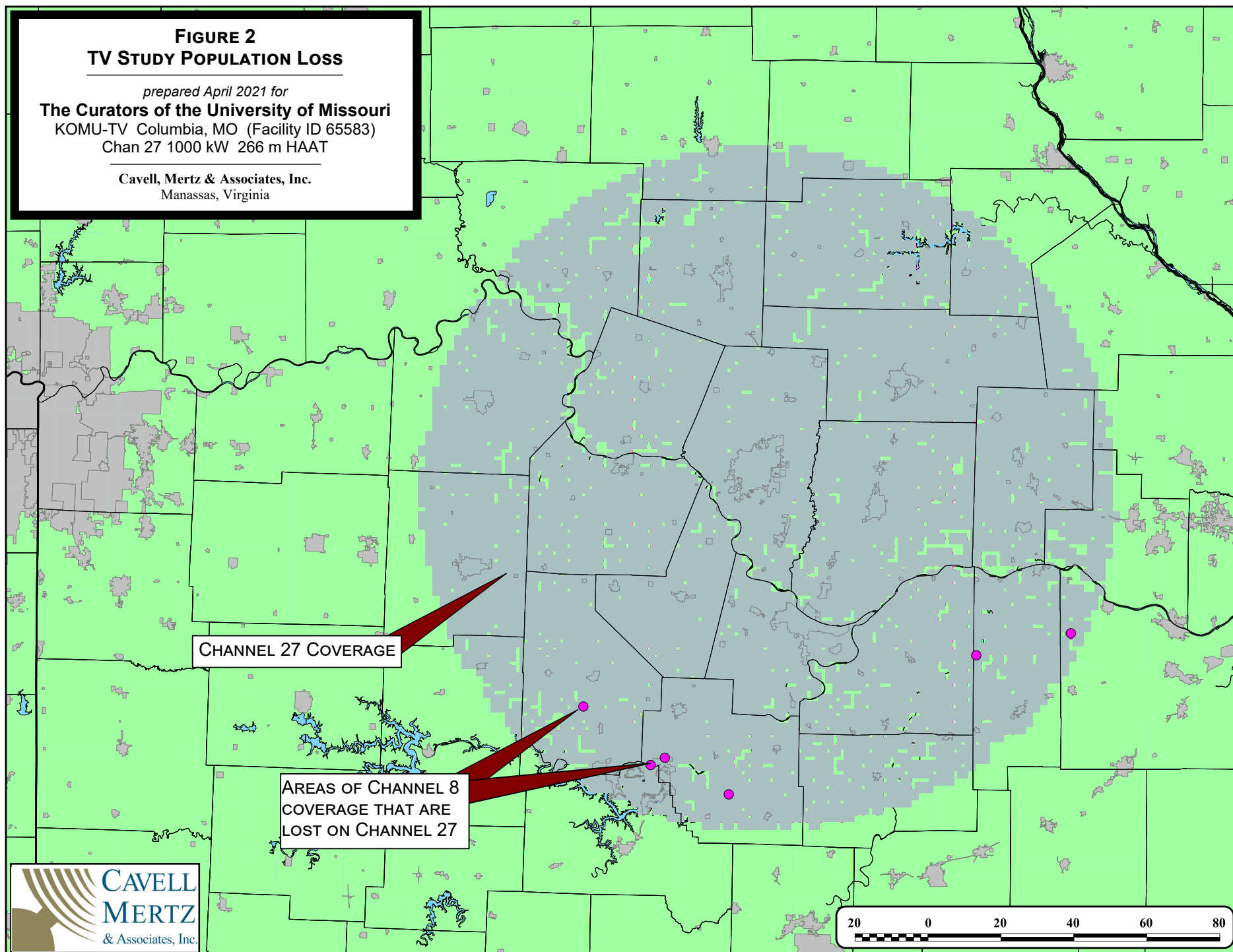


FIGURE 2A
POPULATION LOSS ANALYSIS

prepared April 2021 for
The Curators of the University of Missouri
KOMU-TV Columbia, MO (Facility ID 65583)
Chan 27 1000 kW 266 m HAAT

Cavell, Mertz & Associates, Inc.
Manassas, Virginia

Noise Limited F(50,90) Contours
Covering Loss Points

- KETC-DT Fac. ID: 62182
- KMIZ-DT Fac. ID: 63164
- KMOS-DT Fac. ID: 4326
- KMOV-DT Fac. ID: 70034
- KNLC-DT Fac. ID: 48525
- KNLJ-DT Fac. ID: 48521
- KOLR-DT Fac. ID: 28496
- KOZL-DT Fac. ID: 3659
- KPLR-DT Fac. ID: 35417
- KQFX-LD Fac. ID: 56176
- - - KRBK-DT Fac. ID: 166319
- - - KRCG-DT Fac. ID: 41110
- - - KSDK-DT Fac. ID: 46981
- - - KTVI-DT Fac. ID: 35693
- - - KYTV-DT Fac. ID: 36003
- - - WRBU-DT Fac. ID: 57221

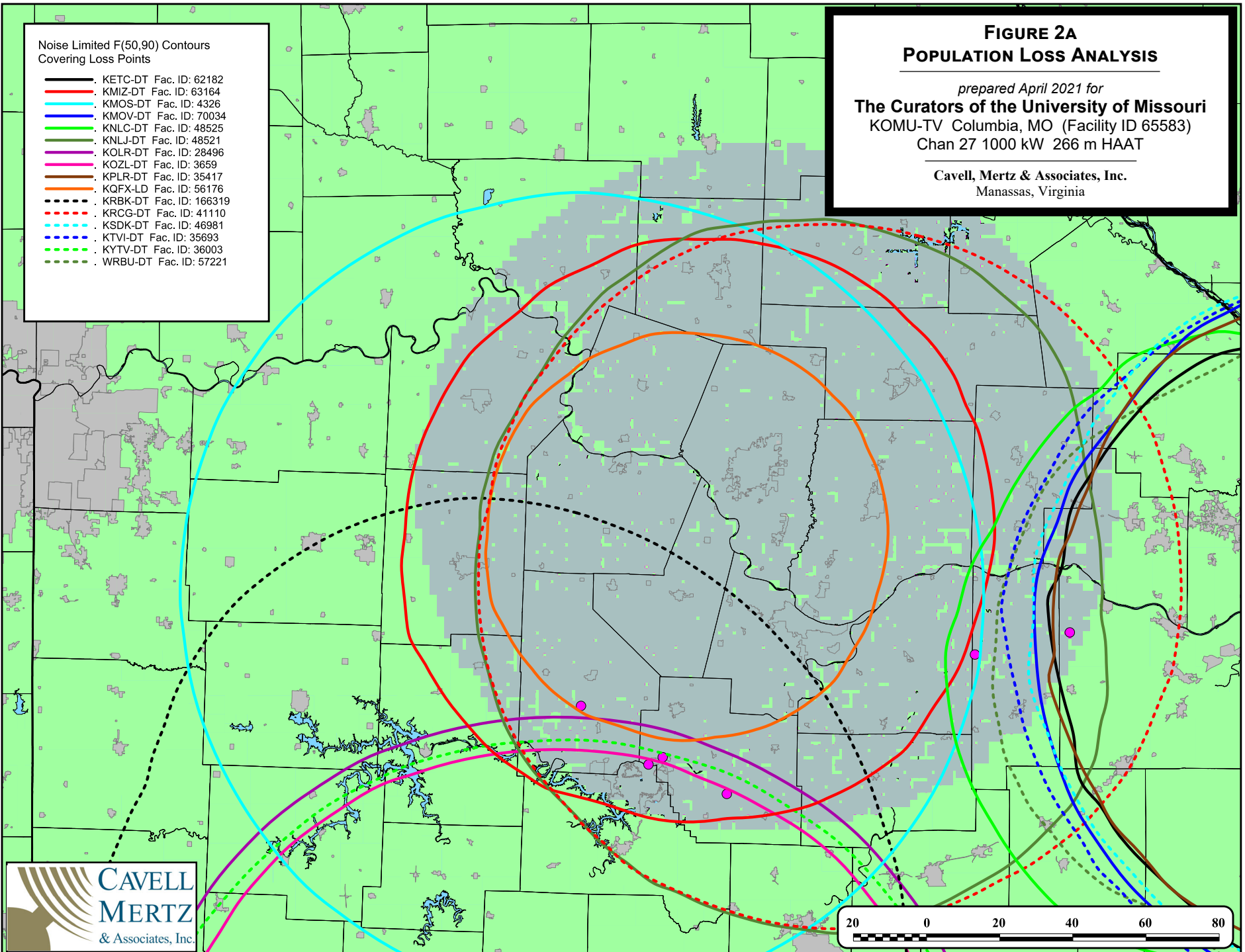


Table 1 – TV Study Analysis

tvstudy v2.2.5 (4uoc83)

Database: 192.168.0.58, Study: BLANK0000125105 #1011, Model: Longley-Rice

Start: 2021.04.08 11:30:34

Study created: 2021.04.08 11:30:34

Study build station data: LMS TV 2021-03-30

Proposal: KOMU-TV D27 DT APP *P COLUMBIA, MO
File number: BLANK0000125105
Facility ID: 65583
Station data: LMS TV 2021-03-30
Record ID: 25076f9174fff4c1017528bffaeb39fe
Country: U.S.
Zone: II

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KPLR-TV	D26	DT	LIC	ST. LOUIS, MO	BLANK0000125916	171.5 km
Yes	KPLR-TV	D26	DT	CP	ST. LOUIS, MO	BLANK0000127593	168.5
No	KFTA-TV	D27	DT	LIC	FORT SMITH, AR	BLCDT20090331AEC	390.3
No	KFTA-TV	D27	DT	CP	FORT SMITH, AR	BLANK0000127614	390.3
Yes	KAIT	D27	DT	APP	JONESBORO, AR	BLANK0000127529	353.4
Yes	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDT20050713ABD	356.1
Yes	KSNT	D27	DT	LIC	TOPEKA, KS	BLCDT20090910ABY	305.2
No	WRBU	D28	DT	LIC	EAST ST. LOUIS, IL	BLANK0000108757	163.8
No	KOZL-TV	D28	DT	LIC	SPRINGFIELD, MO	BLCDT20070213ABB	195.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D27
Latitude: 38 53 21.00 N (NAD83)
Longitude: 92 15 43.20 W
Height AMSL: 483.1 m
HAAT: 266.0 m
Peak ERP: 1000 kW
Antenna: Omnidirectional
Elev Pattn: Generic
Elec Tilt: 0.75

40.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1000 kW	240.9 m	90.3 km
45.0	1000	224.2	87.9
90.0	1000	228.3	88.5
135.0	1000	235.7	89.5
180.0	1000	223.0	87.8
225.0	1000	266.0	94.3
270.0	1000	267.5	94.6
315.0	1000	261.2	93.6

Database HAAT does not agree with computed HAAT

Database HAAT: 266 m Computed HAAT: 243 m

Distance to Canadian border: 845.1 km

Distance to Mexican border: 1314.1 km

Conditions at FCC monitoring station: Grand Island NE

Bearing: 295.2 degrees Distance: 572.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 281.1 degrees Distance: 1119.1 km

Study cell size: 2.00 km

Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

Interference to BLANK0000127593 CP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KPLR-TV	D26	DT	CP	ST. LOUIS, MO	BLANK0000127593	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	168.5 km
	K25NG-D	D25	DC	LIC	ST. LOUIS, MO	BLDTL20130805ABR	16.2
	WMBD-TV	D26	DT	LIC	PEORIA, IL	BLANK0000098193	244.1
	WFIE	D26	DT	LIC	EVANSVILLE, IN	BLANK0000087068	259.5

	Service area		Terrain-limited		IX-free, before		IX-free, after	Percent
New IX								
32882.1	3,008,857	32468.3	3,003,542	32146.3	2,995,006	32138.3	2,995,006	0.02
0.00								

Undesired		Total IX	Unique IX, before	Unique IX, after
KOMU-TV D27 DT APP	8.0	0	8.0	0
WMBD-TV D26 DT LIC	278.5	5,092	270.4	5,092
WFIE D26 DT LIC	51.6	3,444	43.6	3,444

Interference to BLANK0000127529 APP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KAIT	D27	DT	APP	JONESBORO, AR	BLANK0000127529	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	353.4 km
	WBUY-TV	D26	DT	LIC	HOLLY SPRINGS, MS	BLANK0000063641	125.0
	KTVE	D27	DT	LIC	EL DORADO, AR	BLCDT20070105ABH	334.1
	KFTA-TV	D27	DT	LIC	FORT SMITH, AR	BLCDT20090331AEC	289.4
	WCBI-TV	D27	DT	LIC	COLUMBUS, MS	BLANK0000059851	302.8
	WLJT-DT	D27	DT	LIC	LEXINGTON, TN	BLANK0000058637	211.3
	WKRN-TV	D27	DT	LIC	NASHVILLE, TN	BLANK0000115874	369.7
	KARZ-TV	D28	DT	LIC	LITTLE ROCK, AR	BLANK0000074890	186.0
	WREG-TV	D28	DT	LIC	MEMPHIS, TN	BLCDT20050513AAE	127.1

	Service area		Terrain-limited		IX-free, before		IX-free, after	Percent
New IX								
39187.1	605,399	38560.7	591,098	38199.4	580,880	38163.6	580,751	0.09
0.02								

Undesired		Total IX	Unique IX, before	Unique IX, after
KOMU-TV D27 DT APP	47.8	145	35.8	129
WBUY-TV D26 DT LIC	88.7	1,059	20.2	332
KTVE D27 DT LIC	76.2	7,001	52.2	6,533
KFTA-TV D27 DT LIC	28.2	428	12.0	51
WCBI-TV D27 DT LIC	4.0	0	0.0	0
WLJT-DT D27 DT LIC	184.3	2,273	124.2	1,735
WKRN-TV D27 DT LIC	36.0	432	0.0	0
WREG-TV D28 DT LIC	100.7	758	40.3	31

Interference to BLANK0000127529 APP scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KAIT	D27	DT	APP	JONESBORO, AR	BLANK0000127529	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	353.4 km
	WBUY-TV	D26	DT	LIC	HOLLY SPRINGS, MS	BLANK0000063641	125.0
	KTVE	D27	DT	LIC	EL DORADO, AR	BLCDDT20070105ABH	334.1
	KFTA-TV	D27	DT	LIC	FORT SMITH, AR	BLCDDT20090331AEC	289.4
	WCBI-TV	D27	DT	LIC	COLUMBUS, MS	BLANK0000059851	302.8
	WLJT-DT	D27	DT	LIC	LEXINGTON, TN	BLANK0000058637	211.3
	WKRN-TV	D27	DT	LIC	NASHVILLE, TN	BLANK0000115874	369.7
	KARZ-TV	D28	DT	CP	LITTLE ROCK, AR	BLANK0000127609	186.0
	WREG-TV	D28	DT	LIC	MEMPHIS, TN	BLCDDT20050513AAE	127.1

	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent
New IX					
39187.1	605,399	38560.7	591,098	38163.6	0.09
0.02					

Undesired	Total IX	Unique IX, before	Unique IX, after
KOMU-TV D27 DT APP	47.8	145	35.8
WBUY-TV D26 DT LIC	88.7	1,059	20.2
KTVE D27 DT LIC	76.2	7,001	44.1
KFTA-TV D27 DT LIC	28.2	428	12.0
WCBI-TV D27 DT LIC	4.0	0	0.0
WLJT-DT D27 DT LIC	184.3	2,273	124.2
WKRN-TV D27 DT LIC	36.0	432	0.0
KARZ-TV D28 DT CP	16.2	478	0.0
WREG-TV D28 DT LIC	100.7	758	40.3

Interference to BLANK0000127529 APP scenario 3

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KAIT	D27	DT	APP	JONESBORO, AR	BLANK0000127529	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	353.4 km
	WBUY-TV	D26	DT	LIC	HOLLY SPRINGS, MS	BLANK0000063641	125.0
	KTVE	D27	DT	LIC	EL DORADO, AR	BLCDDT20070105ABH	334.1
	KFTA-TV	D27	DT	CP	FORT SMITH, AR	BLANK0000127614	289.4
	WCBI-TV	D27	DT	LIC	COLUMBUS, MS	BLANK0000059851	302.8
	WLJT-DT	D27	DT	LIC	LEXINGTON, TN	BLANK0000058637	211.3
	WKRN-TV	D27	DT	LIC	NASHVILLE, TN	BLANK0000115874	369.7
	KARZ-TV	D28	DT	LIC	LITTLE ROCK, AR	BLANK0000074890	186.0
	WREG-TV	D28	DT	LIC	MEMPHIS, TN	BLCDDT20050513AAE	127.1

	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent
New IX					
39187.1	605,399	38560.7	591,098	38067.2	0.08
0.02					

Undesired	Total IX	Unique IX, before	Unique IX, after
KOMU-TV D27 DT APP	47.8	145	31.8
WBUY-TV D26 DT LIC	88.7	1,059	20.2
KTVE D27 DT LIC	76.2	7,001	36.0
KFTA-TV D27 DT CP	152.8	7,870	112.5
WCBI-TV D27 DT LIC	4.0	0	0.0
WLJT-DT D27 DT LIC	184.3	2,273	116.2
WKRN-TV D27 DT LIC	36.0	432	0.0
WREG-TV D28 DT LIC	100.7	758	40.3

Interference to BLANK0000127529 APP scenario 4

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KAIT	D27	DT	APP	JONESBORO, AR	BLANK0000127529	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	353.4 km

WBUY-TV	D26	DT	LIC	HOLLY SPRINGS, MS	BLANK0000063641	125.0
KTVE	D27	DT	LIC	EL DORADO, AR	BLCDDT20070105ABH	334.1
KFTA-TV	D27	DT	CP	FORT SMITH, AR	BLANK0000127614	289.4
WCBI-TV	D27	DT	LIC	COLUMBUS, MS	BLANK0000059851	302.8
WLJT-DT	D27	DT	LIC	LEXINGTON, TN	BLANK0000058637	211.3
WKRN-TV	D27	DT	LIC	NASHVILLE, TN	BLANK0000115874	369.7
KARZ-TV	D28	DT	CP	LITTLE ROCK, AR	BLANK0000127609	186.0
WREG-TV	D28	DT	LIC	MEMPHIS, TN	BLCDDT20050513AAE	127.1

	Service area	Terrain-limited		IX-free, before		IX-free, after		Percent
New IX								
39187.1	605,399	38560.7	591,098	38099.0	579,537	38067.2	579,414	0.08
0.02								

Undesired	Total IX		Unique IX, before		Unique IX, after	
KOMU-TV D27 DT APP	47.8	145			31.8	123
WBUY-TV D26 DT LIC	88.7	1,059	20.2	332	20.2	332
KTVE D27 DT LIC	76.2	7,001	36.0	536	36.0	536
KFTA-TV D27 DT CP	152.8	7,870	112.5	1,394	104.5	1,372
WCBI-TV D27 DT LIC	4.0	0	0.0	0	0.0	0
WLJT-DT D27 DT LIC	184.3	2,273	116.2	1,633	112.2	1,633
WKRN-TV D27 DT LIC	36.0	432	0.0	0	0.0	0
KARZ-TV D28 DT CP	16.2	478	0.0	0	0.0	0
WREG-TV D28 DT LIC	100.7	758	40.3	31	40.3	31

Interference to BLCDDT20050713ABD LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDDT20050713ABD	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	356.1 km
	W27EB-D	D27	DC	LIC	SUGAR GROVE, IL	BLANK0000126802	332.3
	WHWC-TV	D27	DT	LIC	MENOMONIE, WI	BLEDT20040824AAF	329.1
	WVTV	D27	DT	LIC	MILWAUKEE, WI	BLANK0000121792	360.0
	WBXF-CD	D28z	DC	LIC	DES MOINES, IA	BLANK0000005069	139.2

	Service area	Terrain-limited		IX-free, before		IX-free, after		Percent
New IX								
34521.3	875,538	34300.6	870,173	34256.6	870,043	34252.6	870,035	0.01
0.00								

Undesired	Total IX		Unique IX, before		Unique IX, after	
KOMU-TV D27 DT APP	4.0	8			4.0	8
WHWC-TV D27 DT LIC	35.9	112	31.9	82	31.9	82
WVTV D27 DT LIC	12.0	48	8.0	18	8.0	18

Interference to BLCDDT20050713ABD LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDDT20050713ABD	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	356.1 km
	W27EB-D	D27	DC	LIC	SUGAR GROVE, IL	BLANK0000126802	332.3
	WHWC-TV	D27	DT	LIC	MENOMONIE, WI	BLEDT20040824AAF	329.1
	WVTV	D27	DT	LIC	MILWAUKEE, WI	BLANK0000121792	360.0
	WBXF-CD	D28z	DC	CP	DES MOINES, IA	BLANK0000035778	139.2

	Service area	Terrain-limited		IX-free, before		IX-free, after		Percent
New IX								
34521.3	875,538	34300.6	870,173	34252.6	870,026	34248.6	870,018	0.01
0.00								

Undesired	Total IX		Unique IX, before		Unique IX, after	
KOMU-TV D27 DT APP	4.0	8			4.0	8
WHWC-TV D27 DT LIC	35.9	112	31.9	82	31.9	82
WVTV D27 DT LIC	12.0	48	8.0	18	8.0	18

WBXF-CD D28z DC CP 4.0 17 4.0 17 4.0 17

Interference to BLCDT20050713ABD LIC scenario 3

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDT20050713ABD	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	356.1 km
	W27EB-D	D27	DC	LIC	SUGAR GROVE, IL	BLANK0000126802	332.3
	WHWC-TV	D27	DT	CP	MENOMONIE, WI	BLANK0000035676	329.1
	WVTV	D27	DT	LIC	MILWAUKEE, WI	BLANK0000121792	360.0
	WBXF-CD	D28z	DC	LIC	DES MOINES, IA	BLANK0000005069	139.2

	Service area		Terrain-limited		IX-free, before		IX-free, after	Percent
New IX								
34521.3	875,538		34300.6	870,173	34252.6	870,034	34248.6	870,026
0.00								0.01

Undesired		Total IX	Unique IX, before	Unique IX, after
KOMU-TV D27 DT APP	4.0	8		4.0
WHWC-TV D27 DT CP	39.9	121	35.9	35.9
WVTV D27 DT LIC	12.0	48	8.0	8.0

Interference to BLCDT20050713ABD LIC scenario 4

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDT20050713ABD	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	356.1 km
	W27EB-D	D27	DC	LIC	SUGAR GROVE, IL	BLANK0000126802	332.3
	WHWC-TV	D27	DT	CP	MENOMONIE, WI	BLANK0000035676	329.1
	WVTV	D27	DT	LIC	MILWAUKEE, WI	BLANK0000121792	360.0
	WBXF-CD	D28z	DC	CP	DES MOINES, IA	BLANK0000035778	139.2

	Service area		Terrain-limited		IX-free, before		IX-free, after	Percent
New IX								
34521.3	875,538		34300.6	870,173	34248.6	870,017	34244.6	870,009
0.00								0.01

Undesired		Total IX	Unique IX, before	Unique IX, after
KOMU-TV D27 DT APP	4.0	8		4.0
WHWC-TV D27 DT CP	39.9	121	35.9	35.9
WVTV D27 DT LIC	12.0	48	8.0	8.0
WBXF-CD D28z DC CP	4.0	17	4.0	4.0

Interference to BLCDT20090910ABY LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KSNT	D27	DT	LIC	TOPEKA, KS	BLCDT20090910ABY	
Undesireds:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	305.2 km

	Service area		Terrain-limited		IX-free, before		IX-free, after	Percent
New IX								
20155.3	622,818		19899.9	594,751	19899.9	594,751	19871.9	592,803
0.33								0.14

Undesired		Total IX	Unique IX, before	Unique IX, after
KOMU-TV D27 DT APP	27.9	1,948		27.9

Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KOMU-TV	D27	DT	APP	COLUMBIA, MO	BLANK0000125105	
Undesireds:	KPLR-TV	D26	DT	LIC	ST. LOUIS, MO	BLANK0000125916	171.5 km
	KFTA-TV	D27	DT	LIC	FORT SMITH, AR	BLCDT20090331AEC	390.3
	KAIT	D27	DT	APP	JONESBORO, AR	BLANK0000127529	353.4
	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDT20050713ABD	356.1
	KSNT	D27	DT	LIC	TOPEKA, KS	BLCDT20090910ABY	305.2

	Service area		Terrain-limited		IX-free	Percent IX	
	25878.0	542,230	25710.5	539,545	25682.6	539,411	0.11 0.02
Undesired			Total	IX		Unique	IX
KAIT D27 DT APP			15.9	83	15.9	83	0.06 0.02
KFXA D27 DT LIC			7.9	19	7.9	19	0.03 0.00
KSNT D27 DT LIC			4.0	32	4.0	32	0.02 0.01

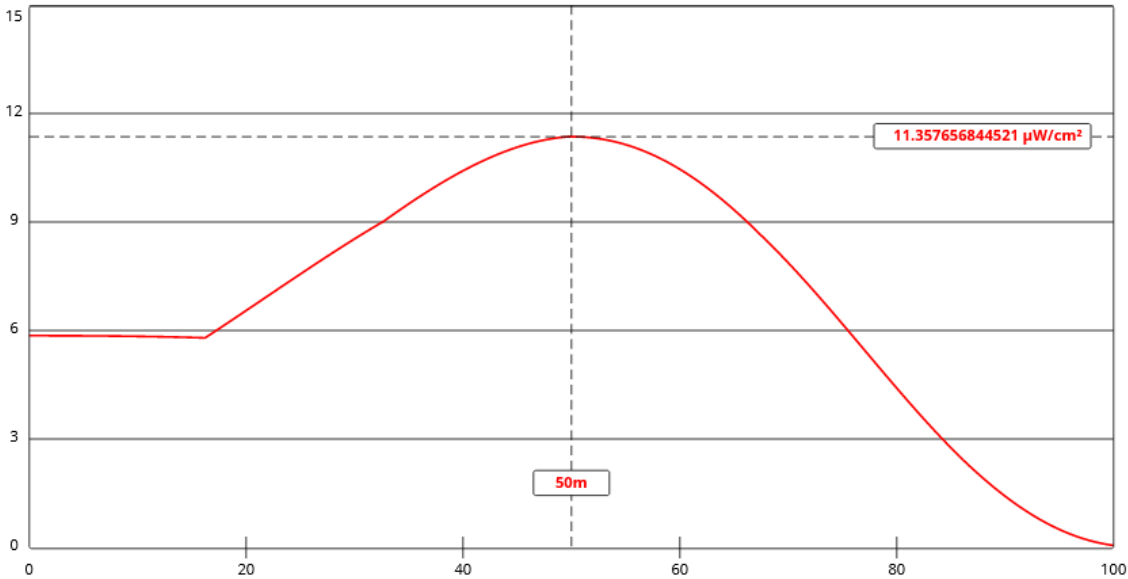
Table 2 – KBIA(FM) Power Density Using FM Model

FM Model

- Radio Frequency Safety
- FCC Policy on Human Exposure
- RF Safety FAQ
- Body Tissue Dielectric Parameters
- RF Safety Highlighted Releases
- FM Model

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data published in 1985 by the EPA.

Show More....



View Tabular Results +

Channel Selection	Channel 217 (91.3 MHz) ▾		
Antenna Type +	EPA Type 3: Opposed U Dipole ▾		
Height (m)	<input type="text" value="187.3"/>	Distance (m)	<input type="text" value="100"/>
ERP-H (W)	<input type="text" value="100000"/>	ERP-V (W)	<input type="text" value="100000"/>
Num of Elements	<input type="text" value="8"/>	Element Spacing (λ)	<input type="text" value="1.0"/>
Num of Points	<input type="text" value="500"/>	<input type="button" value="Apply"/>	