

**October 2020
KBSX(FM) Channel 218C0
Boise, Idaho
Allocation Study**

The instant application proposes a power increase and class upgrade for KBSX, at its licensed transmitter site. The attached spacing study shows the co-channel and adjacent channel spacing between stations and demonstrates that the proposed operation meets the IF channel spacing requirements as prescribed in §73.207 of the Commission's Rules.

Individual stations were examined to confirm the lack of prohibited contour overlap as prescribed in §73.509 of the Commission's Rules. The attached allocation study exhibits demonstrate requisite contour protection for the following domestic stations:

First-adjacent:	KBSM	219C3 McCall
	KBSW	219C3 Twin Falls
Third-adjacent:	KGCL	216C1 Jordan Valley (CP)

TV Channel 6

Section 73.525 of the Commission's Rules specifies a threshold distance of 166 kilometers for FM stations operating on Channel 218. There is no full-power TV Channel 6 station operating from a transmitter site within that radius.

SEARCH PARAMETERS

FM Database Date: 20200928

Channel: 218C0 91.5 MHz
 Latitude: 43 45 20.8 (NAD83)
 Longitude: 116 5 57.0
 Safety Zone: 50 km
 Job Title: KBSX 218C0 BOISE

Page 1

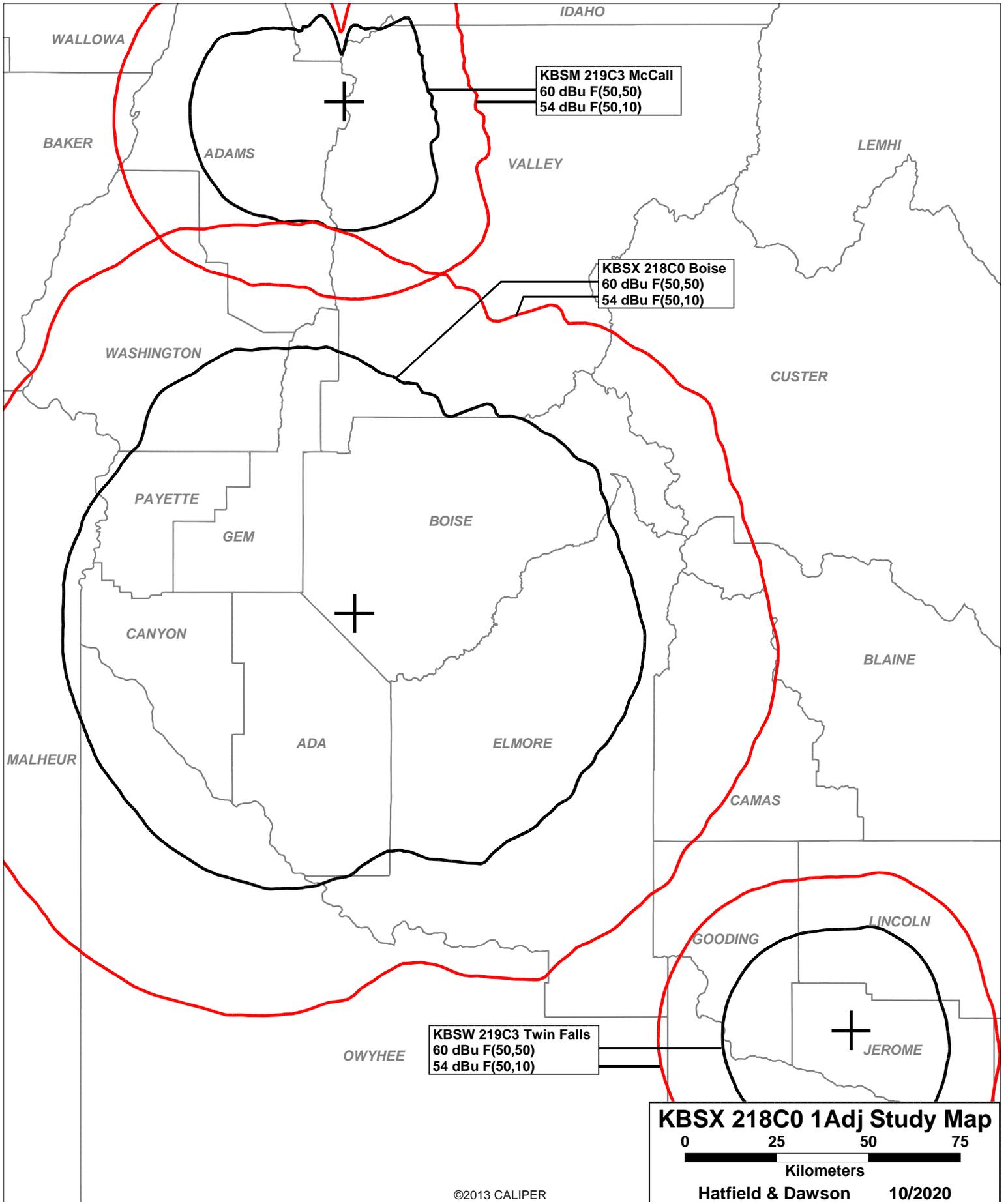
Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
K215BN LIC	CASCADE ID	BLFT-19911120TB	215D 90.9	0.010 0.0	44 30 55.6 116 2 42.4	2.9	84.52 0.00	0 TRANS
KGCL LIC	JORDAN VALLEY OR	BLED-20190917AAE	215C2 90.9	1.000 670.0	43 0 24.6 116 42 16.4	210.6	96.59 7.59	89 CLOSE
KGCL CP	JORDAN VALLEY OR	0000111645	215C1 90.9	8.000 675.0	43 0 25.0 116 42 16.0	210.6	96.58 2.58	94 CLOSE
K216CD LIC	LOWER STANLEY ID	BLFT-19911113TA	216D 91.1	0.184 0.0	DA 44 12 58.6 114 56 11.3	60.8	106.39 0.00	0 TRANS
K216CD CP	STANLEY ID	0000112330	216D 91.1	0.250 0.0	44 12 46.6 114 56 20.6	60.9	106.03 0.00	0 TRANS
KBSS LIC	SUN VALLEY ID	BLED-20040901ABR	216C2 91.1	0.700 570.0	DA 43 38 35.6 114 23 52.1	94.6	137.72 48.72	89 CLEAR
KBSJ LIC	JACKPOT NV	BLED-20020403AAQ	217C1 91.3	3.900 751.0	41 47 7.6 114 50 25.1	154.4	241.92 45.92	196 CLEAR
K217BO LIC	HALFWAY OR	BLFT-20151216ABM	217D 91.3	0.048 0.0	44 52 46.5 117 1 49.6	329.7	145.31 0.00	0 TRANS
K218FA LIC	SALMON ID	BLFT-20110617ADC	218D 91.5	0.080 0.0	45 11 0.7 113 52 17.2	47.3	237.89 0.00	0 TRANS
KBSX LIC	BOISE ID	BLED-20010917AAO	218C1 91.5	3.800 827.0	43 45 20.6 116 5 57.4	235.3	0.01 -258.99	259 SHORT
K218BA LIC	JOHN DAY OR	BLFT-19881121TD	218D 91.5	0.053 0.0	DA 44 26 1.5 118 57 5.8	289.3	240.53 0.00	0 TRANS
KBSM LIC	MCCALL ID	0000093141	219C3 91.7	0.220 602.0	45 0 29.6 116 8 3.4	358.9	139.20 -23.80	163 SHORT
KBSW LIC	TWIN FALLS ID	0000093352	219C3 91.7	4.500 150.0	42 43 48.1 114 25 9.3	129.4	177.77 14.77	163 CLEAR

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SEARCH PARAMETERS                               FM Database Date: 20200928
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Longitude: 116 5 57.0
Safety Zone: 50 km
Job Title: KBSX 218C0 BOISE
    
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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)	
K220JS LIC	ONTARIO OR	0000100490	220D 91.9	0.100 0.0	44 3 116 54	43.6 25.6	298.0	73.29 0.00	0 TRANS
K220JU LIC	NAMPA ID	BLFT-20160907AAB	220D 91.9	0.010 0.0	43 45 116 5	17.6 56.4	172.3	0.10 0.00	0 TRANS
K272FS LIC	BOISE ID	BLFT-20181214AAP	272D 102.3	0.099 0.0	DA 43 44 116 8	22.6 15.4	239.8	3.58 0.00	0 TRANS

==== END OF FM SPACING STUDY FOR CHANNEL 218 =====



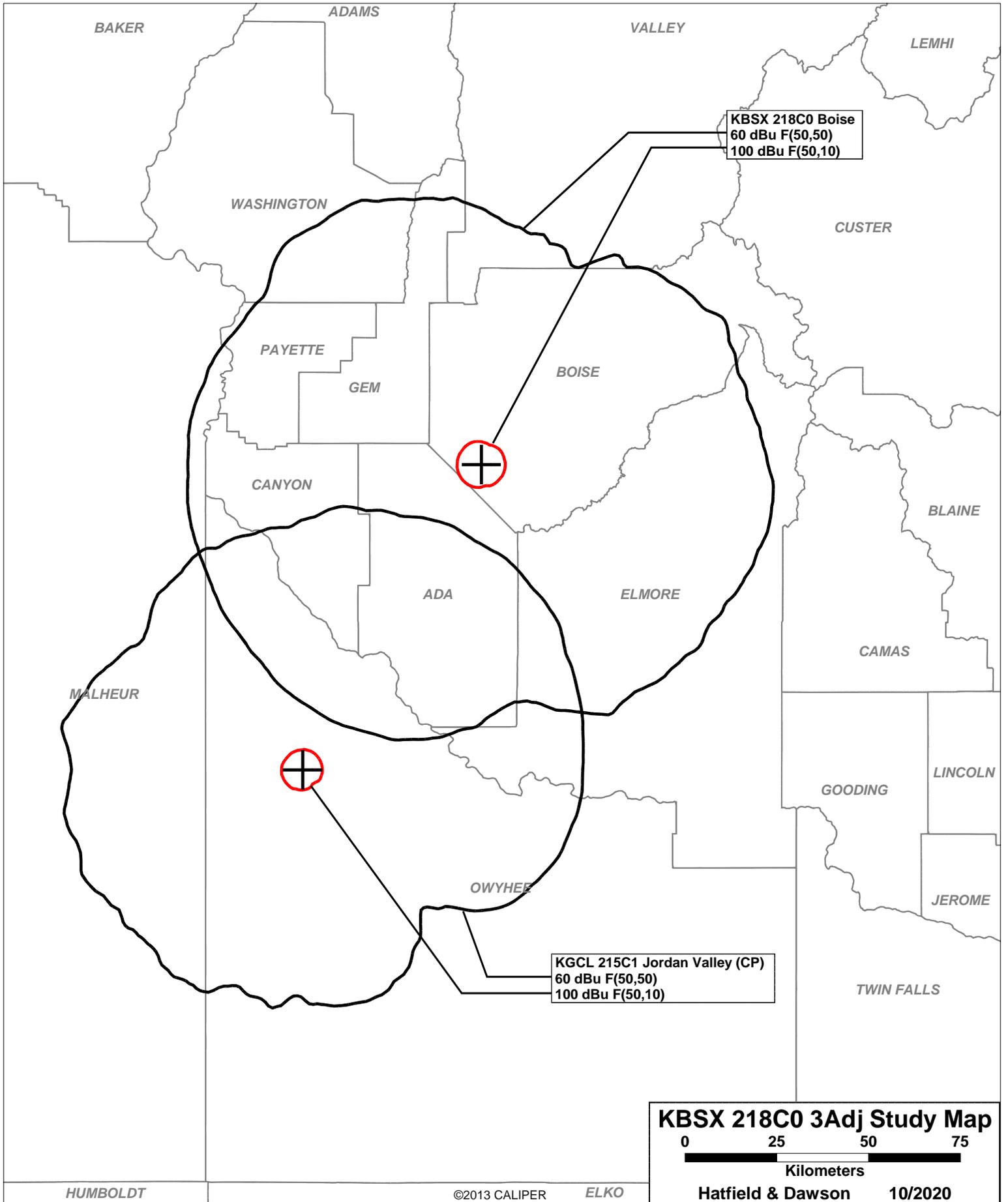
KBSM 219C3 McCall
 60 dBu F(50,50)
 54 dBu F(50,10)

KBSX 218C0 Boise
 60 dBu F(50,50)
 54 dBu F(50,10)

KBSW 219C3 Twin Falls
 60 dBu F(50,50)
 54 dBu F(50,10)

KBSX 218C0 1Adj Study Map

0 25 50 75
 Kilometers
 Hatfield & Dawson 10/2020



October 2020
KBSX(FM) Channel 218C0
Boise, Idaho
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 218C0 (91.5 MHz) with an effective radiated power of 10.5 kilowatts. Operation is proposed with the existing 6-level circularly-polarized omni-directional panel antenna. The antenna is installed on an existing tower at the Deer Point communications site, with FCC Antenna Structure Registration Number 1209884.

RF Exposure Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

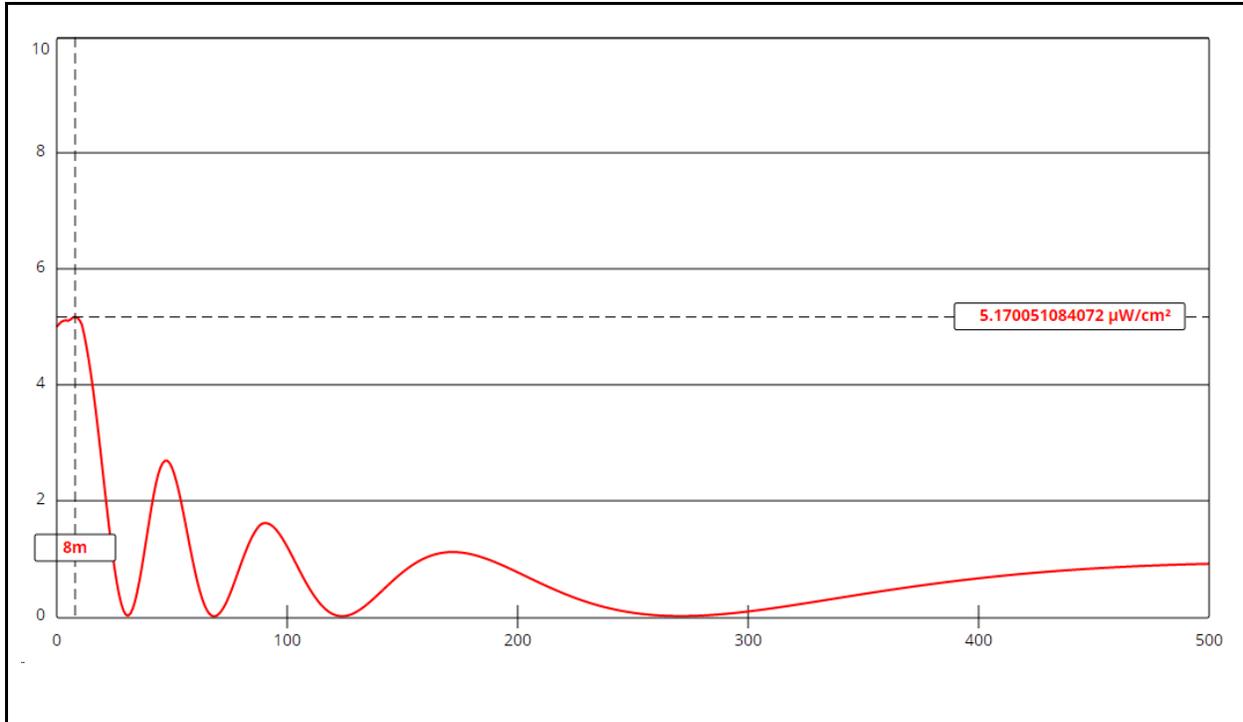
D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed KBSX antenna system assume a Type 1 element pattern, which is the "worst case" element pattern included in the Commission's FMModel software. (FMModel does not include an element model for panel antennas, despite that panel antennas have very favorable elevation pattern characteristics.) Under this worst-case assumption, the highest calculated ground level power density occurs at a distance of 8 meters from the base of the antenna support structure. At this point the power density is calculated to be 5.2 $\mu W/cm^2$, which is 2.6% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of KBSX alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.



Ground-Level RF Exposure

OET FMMModel

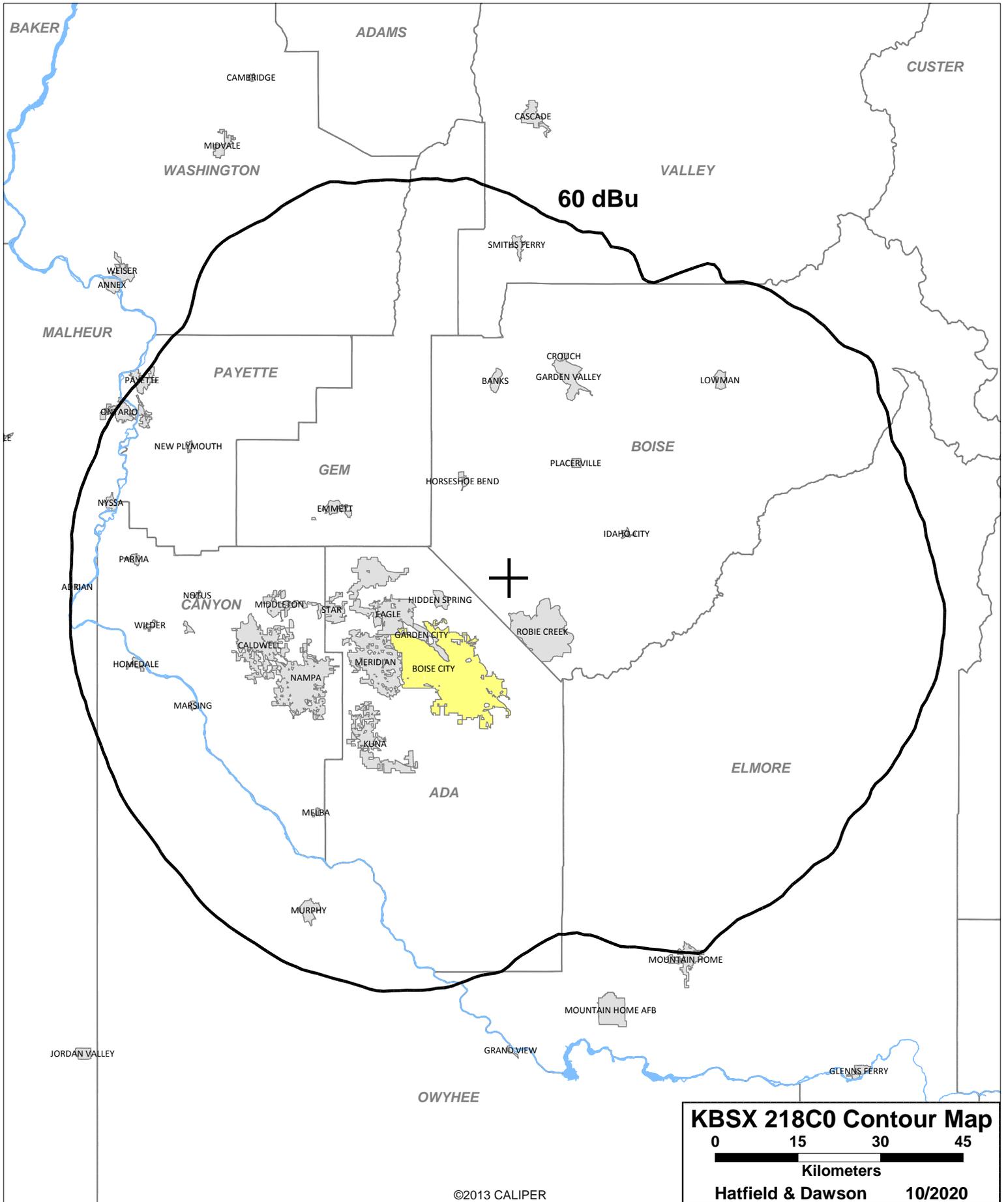
KBSX 218C0 Boise

Antenna Type: Harris TAC-6FMB-3/18 (Type 1 assumed)
 No. of Elements: 5
 Element Spacing: 0.745 wavelength

Distance: 500 meters
 Horizontal ERP: 10.5 kW
 Vertical ERP: 10.5 kW

Antenna Height: 64 meters AGL

Maximum Calculated Power Density is 5.2 $\mu\text{W}/\text{cm}^2$ at 8 meters from the antenna structure.



BAKER

ADAMS

CUSTER

CAMBRIDGE

CASCADE

WASHINGTON

VALLEY

60 dBu

SMITHS FERRY

MALHEUR

PAYETTE

CROUCH

GARDEN VALLEY

LOWMAN

PAVETTE

BANKS

NEW PLYMOUTH

GEM

PLACERVILLE

BOISE

HORSESHOE BEND

IDAHO CITY

NYSSA

PARMA



ADRIAN

NOBLES CANYON

MIDDLETON

STAR

EAGLE

HIDDEN SPRING

ROBIE CREEK

WILDER

CALDWELL

MERIDIAN

GARDEN CITY

BOISE CITY

HOMEDALE

MARSING

NAMPA

KUNA

ELMORE

ADA

MELBA

MURPHY

MOUNTAIN HOME

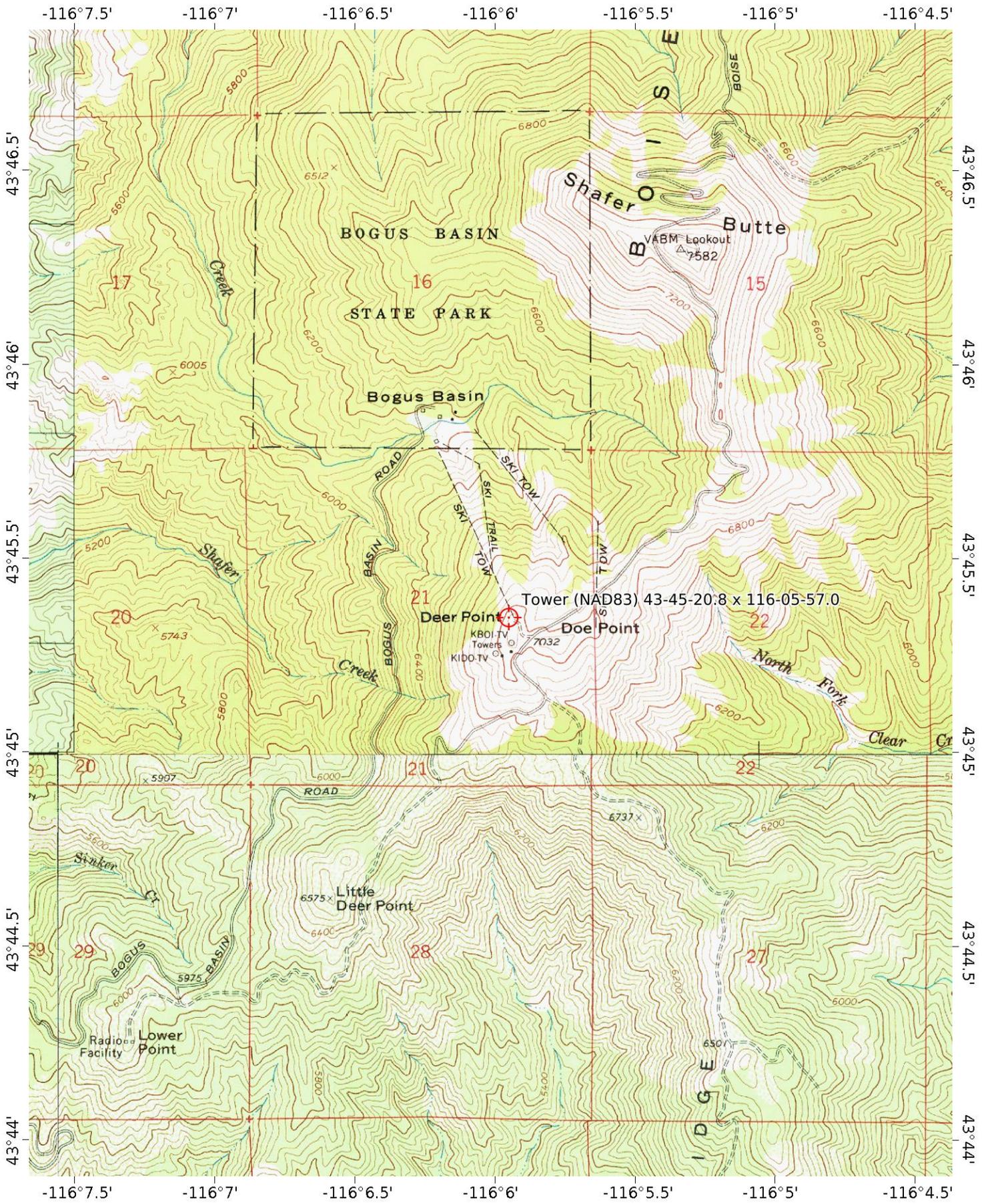
JORDAN VALLEY

MOUNTAIN HOME AFB

GRAND VIEW

OWYHEE

GLENN'S FERRY



Mercator Projection
 WGS84
 USNG Zone 11TNJ

