

**KMTJ**  
**Columbus, MT**  
Proposed Minor Modification  
Of Licensed Facility

**Application Overview:**

KMTJ (FCC Facility ID# 175678) proposes to modify its currently Licensed Facilities to using the following parameters:

**Tech Box:**

Channel:	213
Class:	C3
Antenna Coordinates:	N45-11-39, W109-20-30 (NAD 27)
ASRN:	1234064
Tower Height AMSL:	38.7 m
COR AMSL:	2423 m
COR AGL:	23 m
COR HAAT:	375 m
ERP:	1 kW
Directional Antenna:	No

**Antenna Site City-Grade Coverage:**

Exhibit 1 demonstrates that the proposed facility's antenna site provides city grade coverage of KMTJ's proposed community of license – Columbus, MT. As can be seen in the Exhibit, 100% of Columbus's community boundaries are encompassed by the F(50,50) 60 dBu

contour of the proposed facility. Also, no major terrain obstructions are located between the antenna site and the community.

### **Interference Study:**

Exhibit 2 is a contour overlap study from the proposed KMTJ antenna site. It notes that the proposed KMTJ facility's contours would not overlap any other authorizations.

### **Downward Radiation Study (FM Model):**

The proposed FM Facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (OET Bulletin 65, Second Edition 97-01, August, 1997). The Commission's FM Model Power Density Prediction program was employed to determine the Field. Using the Phelps-Dodge "Ring Stub" or Dipole Worst-Case antenna with 2 sections and 0.88 wavelength spacing, and the AGL height and ERP proposed in this application, the highest predicted power density 2 meters above ground is less than 37.3% of the Uncontrolled Standard with a Power Density of 74.6 microwatts per square centimeter 4 meters from the base of the tower.

It should be noted that the proposed facility will be located in close proximity to KMXE-FM Red Lodge, MT. KMXE-FM utilizes a Phelps-Dodge "Ring Stub" or Dipole Worst-Case antenna with 4 sections and 0.5 wavelength spacing with a COR AGL of 32 meters and an ERP of 30 kW. As such, the highest predicted power density 2 meters above ground for KMXE-FM

is less than 37.3% of the Uncontrolled Standard with a Power Density of 53.6 microwatts per square centimeter 117 meters from the base of the tower.

Although the peak power densities for both emitters will not occur at the same distance from the tower due to antenna configurations, using a “worst case” sum of the proposed KMTJ(FM) RFR plus the existing KMXE-FM RFR will still be less than 65% of the Uncontrolled Standard with a Power Density of 128.2 microwatts per square centimeter if the peaks did occur at the same locations. As such, the combination of KMTJ(FM) and KMXE-FM at this site will not exceed the Uncontrolled RFR standard.

Even though the site will fully comply with the Uncontrolled Site Standards, access to the transmitting site will be restricted and appropriately marked with warning signs. When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shut down of power if necessary, shall be taken to ensure that the human exposure to radiofrequency radiation will not exceed the FCC guidelines.

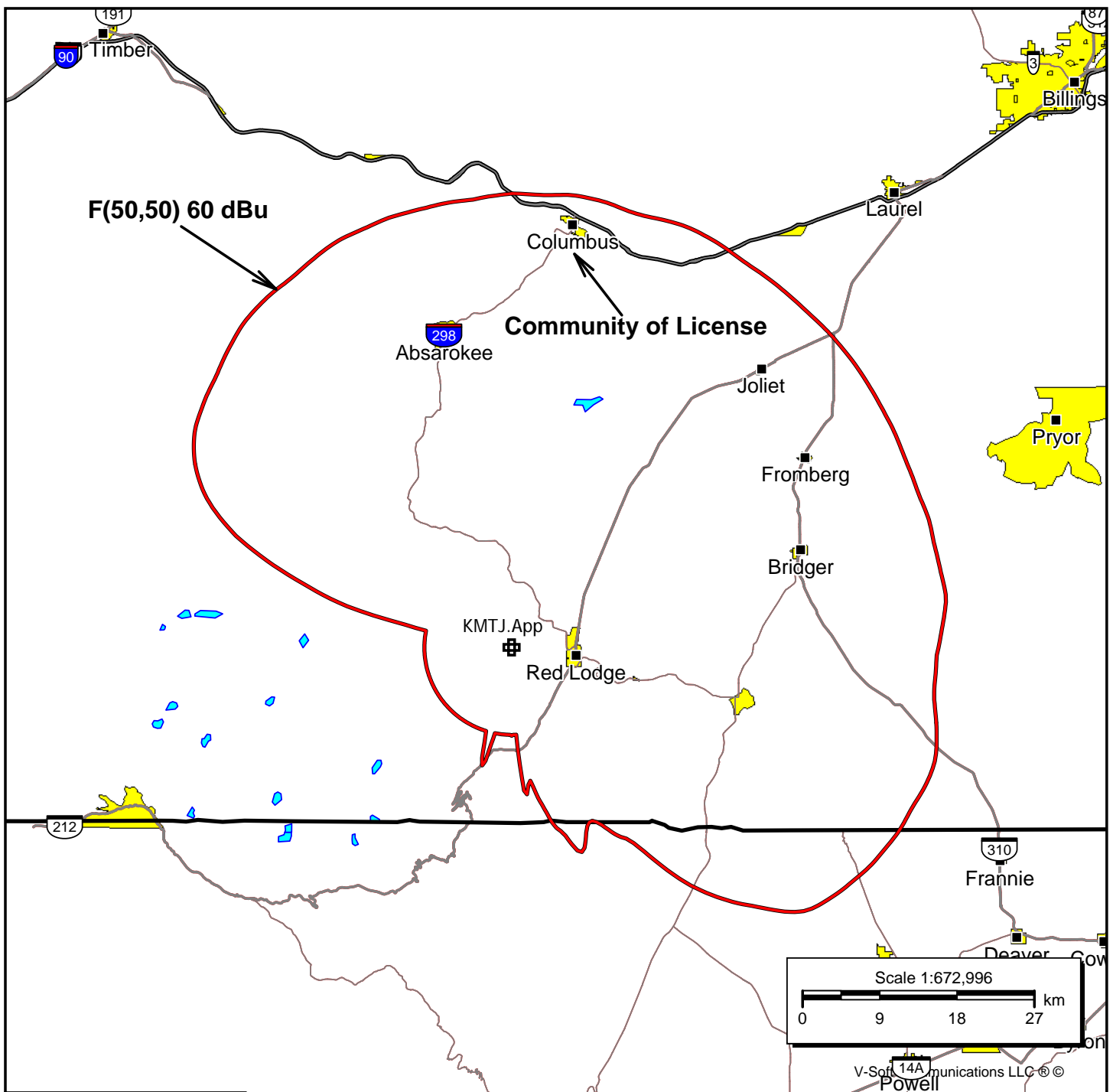
**Existing Tower:**

The proposed facility is exempt from environmental processing because the facility is not located at a location specified in Section 1.1307(a)(1)-(8) of the Commission's Rules and since the tower in question already exists.

# **Exhibit 1**

## **Proposed Antenna Site Contour Map:**

**F(50,50) City-Grade Contour**



**KMTJ.App**

BPED20151116ABO  
Channel: 213C3  
Frequency: 90.5 MHz  
Latitude: 45-11-39 N  
Longitude: 109-20-30 W  
COR AGL Height: 23.0 m  
COR AMSL Height: 2423.0 m  
Base Elevation: 2400.0 m  
COR HAAT: 374.72 m  
ERP: 1.00 kW  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

## **Exhibit 2**

### **Section 73.509 Contour Overlap Tabulations**

## KMTJ(FM) Columbus, MT

Section 73.509 Overlap Study

REFERENCE CH# 213C3 - 90.5 MHz, Pwr= 1 kW, HAAT= 374.7 M, COR= 2423 M  
 45 11 39.0 N.  
 109 20 30.0 W.

Average Protected F(50-50)= 35.0 km  
 Omni-directional

DISPLAY DATES  
 DATA 11-29-15  
 SEARCH 12-10-15

CH CITY	CALL	TYPE ANT STATE	AZI <--	DI ST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
213C2 Columbus	<del>KMTJ</del>	CP_CX MT	0.0 180.0	0.03 BPED20120924AAQ	45 11 40.0 109 20 30.0	2.300 369	48.0 2416	12.4 Hi-line Radio Fellowship I	-100.7*	-138.5*
213C3 Columbus	<del>KMTJ</del>	APP_CX MT	0.0 180.0	0.03 BPED20151116ABO	45 11 40.0 109 20 30.0	1.000 369	35.6 2416	10.2 Hi-line Radio Fellowship I	-88.3*	-136.3*
213A Columbus	<del>KMTJ</del>	LIC_HX MT	7.8 187.9	47.80 BLED20120830AID	45 37 13.0 109 15 29.0	0.100 1	18.6 1232	5.6 Hi-line Radio Fellowship I	-23.8	-84.4*
216C1 Cody	KOFG	LIC_DCX WY	169.1 349.2	79.00 BLED20101006AAV	44 29 46.0 109 09 09.0	8.700 547	5.3 2333	57.8 Gospel Messengers	54.4	19.6
215C3 Billings	KLRV	LIC_VX MT	47.1 227.8	93.95 BLED20050531AIX	45 45 54.0 108 27 19.0	7.500 181	3.8 1230	38.9 Educational Media Foundati	38.4	52.9
211A Billings	KBLW	CP_CX MT	47.4 228.1	93.76 BPED20120924AAW	45 45 37.0 108 27 09.0	1.600 137	2.0 1187	23.1 Hi-line Radio Fellowship,	39.9	68.5
211A Billings	KBLW	LIC_CX MT	47.4 228.1	93.76 BLED20060320AGX	45 45 37.0 108 27 09.0	0.450 137	1.5 1187	16.8 Hi-line Radio Fellowship,	40.4	74.8
211C3 Powell	KUWP	LIC_C_ WY	150.1 330.4	77.74 BLED19991109ABZ	44 35 14.0 108 51 08.0	0.430 495	1.5 2019	35.1 University Of Wyoming	50.9	40.7

Terrain database is NGDC 30 SEC, R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
 Contour distances are on direct line to and from reference station. Reference zone= , Co to 3rd adjacent.

All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
 "\*\*\*affixed to 'IN' or 'OUT' values = site inside restricted contour.

« = Station meets FCC minimum distance spacing for its class.