

ENGINEERING STATEMENT
IN SUPPORT OF A
PETITION FOR RULE MAKING
CHANGE IN ALLOTTED CHANNEL
DTV TABLE OF ALLOTMENTS
KPAX-TV
MISSOULA, MT

Background

Scripps Broadcasting Holdings LLC (Scripps), licensee of KPAX-TV, is petitioning for a Rule Making proceeding to amend the DTV Table of Allotments and change its presently allotted DTV Channel 7 at Missoula, MT to Channel 25. Scripps is proposing to operate KPAX-TV on Channel 25 at the same location as its licensed VHF facility (LMS File No. 0000004809) with a HAAT of 653.5m and an ERP of 600 kW. The coordinates of the authorized Channel 7 and proposed Channel 25 facilities are as follows:

(NAD83)
47° 01' 02.1" N
114° 00' 50.5" W

Since the transition to digital, KPAX-TV has received numerous calls from viewers living in the Missoula, MT DMA area complaining that they are unable to receive the KPAX-TV signal on Channel 7 (including viewers using indoor receiving equipment). The KPAX-TV technical staff has worked with many of these callers to resolve the problems but it has become apparent that the digital Channel 7 signal is not providing these viewers with the same quality service that other UHF stations in the market are able to provide. KPAX-TV wishes to change its allotted Channel 7 facility to a higher power UHF facility in order to provide better service (particularly indoor service) to its viewers. Reception issues for television stations operating on high-band VHF

channels are well documented, both before and after the transition to digital-only service on June 12, 2009^{1/}. Reception on high-band VHF channels is hindered by environmental noise, lower overall power levels compared to similar UHF facilities, and the inefficiencies of typical consumer receive antennas for reception at VHF frequencies (the antennas often have negative gains at VHF frequencies).

Channel Search

After a search of all “in-core” channels (from the reference coordinates listed above), Channel 25 appears to be the best available channel for KPAX-TV in the Missoula area. As KPAX-TV is requesting a change in its allotted channel rather than a new allotment, it is not required to meet the Zone II minimum geographic spacing requirements specified in Section 73.623 of the FCC Rules.

Coverage of Proposed Channel 25 Facility

KPAX-TV is proposing the following parameters for its operation on Channel 25:

Coordinates:	47° 01' 02.1" N
	114° 00' 50.5" W
ERP:	600 kW
HAAT:	653.5m
RCAMSL:	2151.5m
Pattern:	Omni

Operation with these parameters will provide the required 48 dBu F(50,90) signal over the entire city of Missoula, MT.

^{1/} MB Docket No. 09-146 (granting request by WLS-TV to substitute Channel 7 for Channel 44 in order to address VHF digital reception issues after DTV transition), CDBS File No. BPCDT-20120216ADO (requesting power increase pursuant to waiver of FCC's rules and a multi-party interference agreement in order for WABC-TV to resolve VHF digital coverage problems after DTV transition), along with many other Rule Makings to amend the DTV Table of Allotments to change from VHF to UHF channels after the completion of the DTV transition on June 12, 2009.

The proposed ERP and HAAT for KPAX-TV (600 kW at an HAAT of 653.5m) exceeds the maximum allowed under Part 73.622(f)(7) of the FCC Rules (282 kW); however, Part 73.622(f)(5) specifies that "Licensees and permittees...may request an increase in ERP in some azimuthal direction or antenna HAAT, or both, that exceed the initial technical facilities specified..., up to the maximum permissible limits on DTV power and antenna height set forth in paragraph (f)(6), (f)(7), or (f)(8) of this section, as appropriate, or up to that needed to provide the same geographic coverage area as the largest station within their market, whichever would allow the largest service area."

In this case, KPAX-TV is seeking to match the coverage area of its current VHF Ch. 7 facility, and the requested 600 kW ERP will allow for a close match. The coverage areas of the licensed Ch. 7 facility and the proposed Ch. 25 facility were calculated using the FCC TVStudy software (Version 2.2.5). A selected portion of the output of the tvstudy.txt file generated by TVStudy for each station is included below:

tvstudy v2.2.5 (4uoc83)
Database: localhost, Station Data: LMS TV 2021-09-13, Study: KPAX-0000004809092121, Model: Longley-Rice
Start: 2021.09.21 08:47:00

Scenario	Desired station	Service area	Terrain-limited	Interference-free			
Coverage	KPAX-TV D7 DT LIC MISSOULA, MT	43582.4	206,895	37611.2	193,201	37611.2	193,201

tvstudy v2.2.5 (4uoc83)
Database: localhost, Station Data: LMS TV 2021-09-29, Study: KPAX-C25-600, Model: Longley-Rice
Start: 2021.10.09 19:48:15

Scenario	Desired station	Service area	Terrain-limited	Interference-free			
Coverage	KPAX-TV D25 DT LIC MISSOULA, MT	43483.3	207,209	34497.1	188,279	34497.1	188,279

As can be seen from the TVStudy data, the coverage area of the proposed Ch. 25 facility (43,483.3 km²) will not exceed the coverage area of the licensed Ch. 7 facility (43,582.4 km²).

Loss Areas

The proposed change for KPAX-TV, from a VHF channel to a UHF channel, is predicted to create areas where service from KPAX-TV is lost and gained. Figure 1, attached hereto, is a map of the noise-limited contour of the licensed KPAX-TV Ch. 7 facility (black), the noise-limited contour of the proposed Ch. 25 facility (red), and the predicted loss area (in green). The population contained within the loss area is predicted to be 444 persons (based on the 2010 census) which is *de minimis* (less than 500 persons). Furthermore, as shown in Figure 2, attached hereto, the loss area is partially overlapped by the noise-limited contour of KXLF-TV (another CBS affiliate station like KPAX-TV). After accounting for the contour overlap from KXLF-TV, the population contained within the loss area is reduced from 444 persons to 121 persons. As showing in Figure 3, attached hereto, the loss area is also partially overlapped by the noise-limited contours of KECI-TV, KUKL-TV, KCFW-TV, KWYB, KTVM-TV, and KTVH-DT.

International Coordination

The proposed facility is located within the Canadian border zone and coordination with the Canadian government is requested to the extent necessary in light of the FCC's Memorandum of Understanding with the Canadian administration.

Interference Study Results

An interference check study was run using the FCC TVStudy software (Version 2.2.5) for the proposed KPAX-TV Channel 25 facility parameters. The summary results of the study show that the proposed facility is not predicted to cause more than 0.5% new interference to any other surrounding co-channel or adjacent channel facilities (see attached study results).

Environmental/RFR

This report addresses only the conditions specified in 47CFR1.1307 that deal with Radio Frequency Radiation. Any other non-RFR conditions that might require the preparation of an EA are beyond the scope of this report.

The location of the proposed facility is assumed to currently be “in compliance” with FCC guidelines for human exposure to RFR (as defined in OET-65). The worst-case ground level RFR contributed to the site by this proposal in public areas is calculated to be 0.011127 mW/cm², which is significantly less than the MPE limit for public exposure (0.038993 mW/cm²) at Channel 25 (536-542 MHz).

Scripps agrees to comply with the Commission’s requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access. Workers will be trained on RFR issues and encouraged to wear personal RFR monitors when on the structure.

Conclusion

In conclusion, it is requested that Section 73.622 be amended as follows:

:		
:		
Montana	<u>Present</u>	<u>Proposed</u>
:		
:		
Missoula	7, *27, 36, 40	25, *27, 36, 40

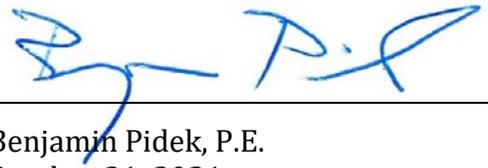
The proposed change can be made with the following specified parameters:

Channel 25 – Missoula, MT

Max ERP: 600 kW, ND
HAAT: 653.5 m
Site: 47° 01' 02.1" N
114° 00' 50.5" W

Certification

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.



Benjamin Pidek, P.E.
October 31, 2021

Attached:

KPAX-TV Proposed Channel 25 TVStudy Interference Results

Figure 1 – Map of Area Predicted to Lose KPAX Service with Proposed Channel Change

Figure 2 – Map of Noise-Limited Contour of KXLF that Overlap Area Predicted to Lose KPAX Service

Figure 3 – Map of Noise-Limited Contours From Other Stations that Overlap Area Predicted to Lose KPAX-TV Service

Proposed KPAX-TV Channel 25 TVStudy Summary Results

Study created: 2021.10.09 19:48:14

Study build station data: LMS TV 2021-09-29

Proposal: KPAX-TV D25 DT LIC MISSOULA, MT
File number: KPAX-C25-600
Facility ID: 35455
Station data: User record
Record ID: 1913
Country: U.S.
Zone: II

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KQUP	D24	DT	LIC	PULLMAN, WA	BLCDT20100120ACV	234.2 km
No	CALGARY25	D25	DT	LIC	CALGARY, AB	BLANKCANADA8	451.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D25
Latitude: 47 1 2.10 N (NAD83)
Longitude: 114 0 50.50 W
Height AMSL: 2151.5 m
HAAT: 653.5 m
Peak ERP: 600 kW
Antenna: Omnidirectional
Elev Patrn: Generic
Elec Tilt: 0.75

39.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	600 kW	813.6 m	127.9 km
45.0	600	6.6	56.4
90.0	600	206.0	82.3
135.0	600	586.6	117.5
180.0	600	1018.4	135.5
225.0	600	1055.0	137.1
270.0	600	852.4	129.2
315.0	600	680.5	122.4

Database HAAT does not agree with computed HAAT

Database HAAT: 654 m Computed HAAT: 652 m

ERP exceeds maximum
ERP: 600 kW ERP maximum: 282 kW

**Proposal is within coordination distance of Canadian border
Distance to Canadian border: 220.3 km

Distance to Mexican border: 1590.4 km

Conditions at FCC monitoring station: Ferndale WA
Bearing: 291.9 degrees Distance: 670.5 km

Proposal is not within the West Virginia quiet zone area

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Conditions at Table Mountain receiving zone:
Bearing: 134.1 degrees Distance: 1037.8 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

No IX check failures found.

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**Noise-Limited Contour of Licensed KPAX-TV Ch. 7 Facility (Black) vs.
Noise-Limited Contour of Proposed KPAX-TV CH. 25 Facility (Red)**

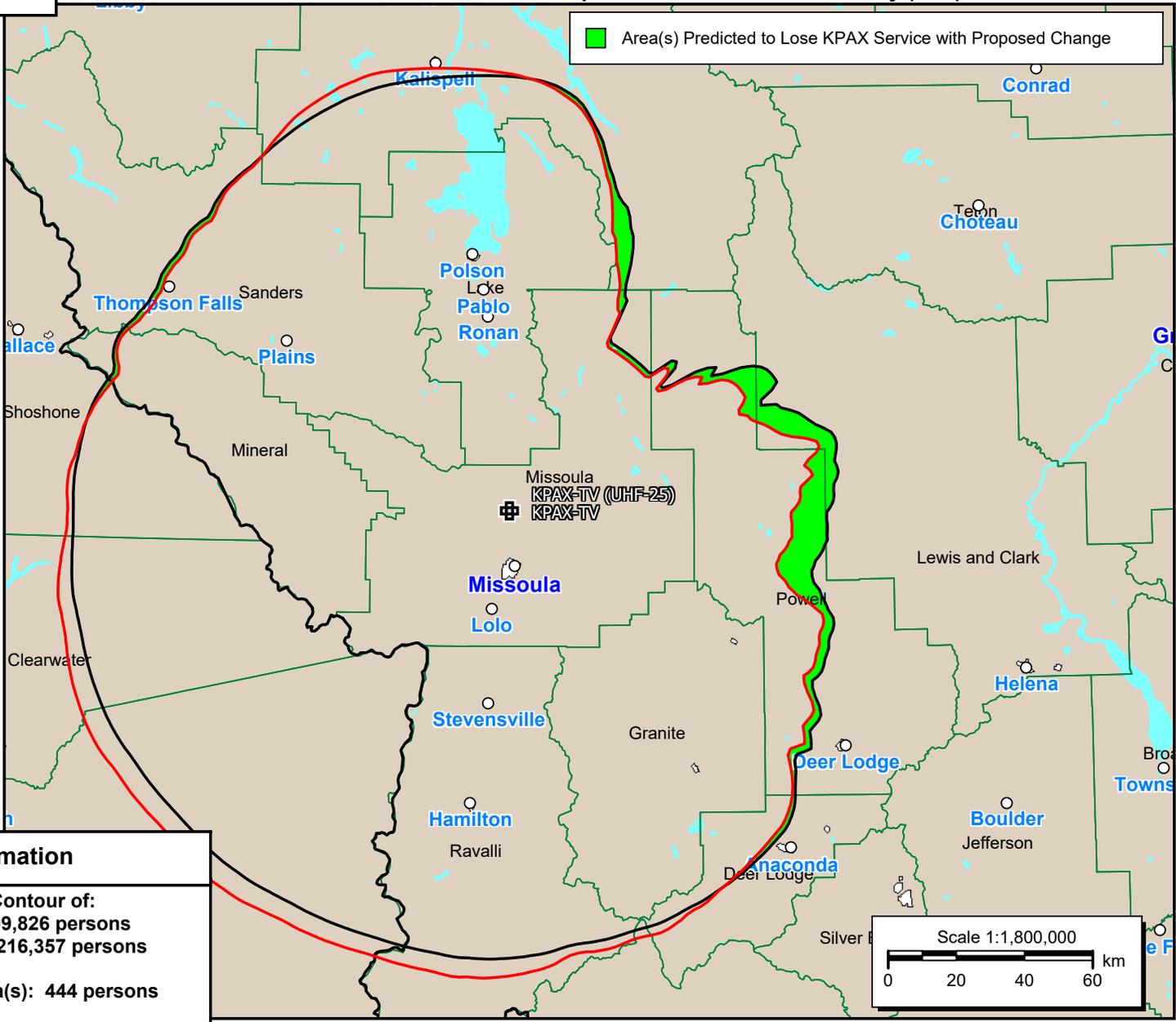
KRTV

0000091669
Latitude: 47-32-07.50 N
Longitude: 111-17-05.50 W
ERP: 32.50 kW
Channel: 7
Frequency: 177.0 MHz
AMSL Height: 1206.6 m

KXLH-LD

Latitude: 46-49-29.80 N
Longitude: 111-42-15.90 W
ERP: 3.00 kW
Channel: 9
Frequency: 189.0 MHz
AMSL Height: 2369.0 m

 Area(s) Predicted to Lose KPAX Service with Proposed Change



Population Information

Population Inside Noise-Limited Contour of:
-Licensed KPAX Ch. 7 Facility - 209,826 persons
-Proposed KPAX Ch. 25 Facility - 216,357 persons

Predicted Population in Loss Area(s): 444 persons

Figure 1

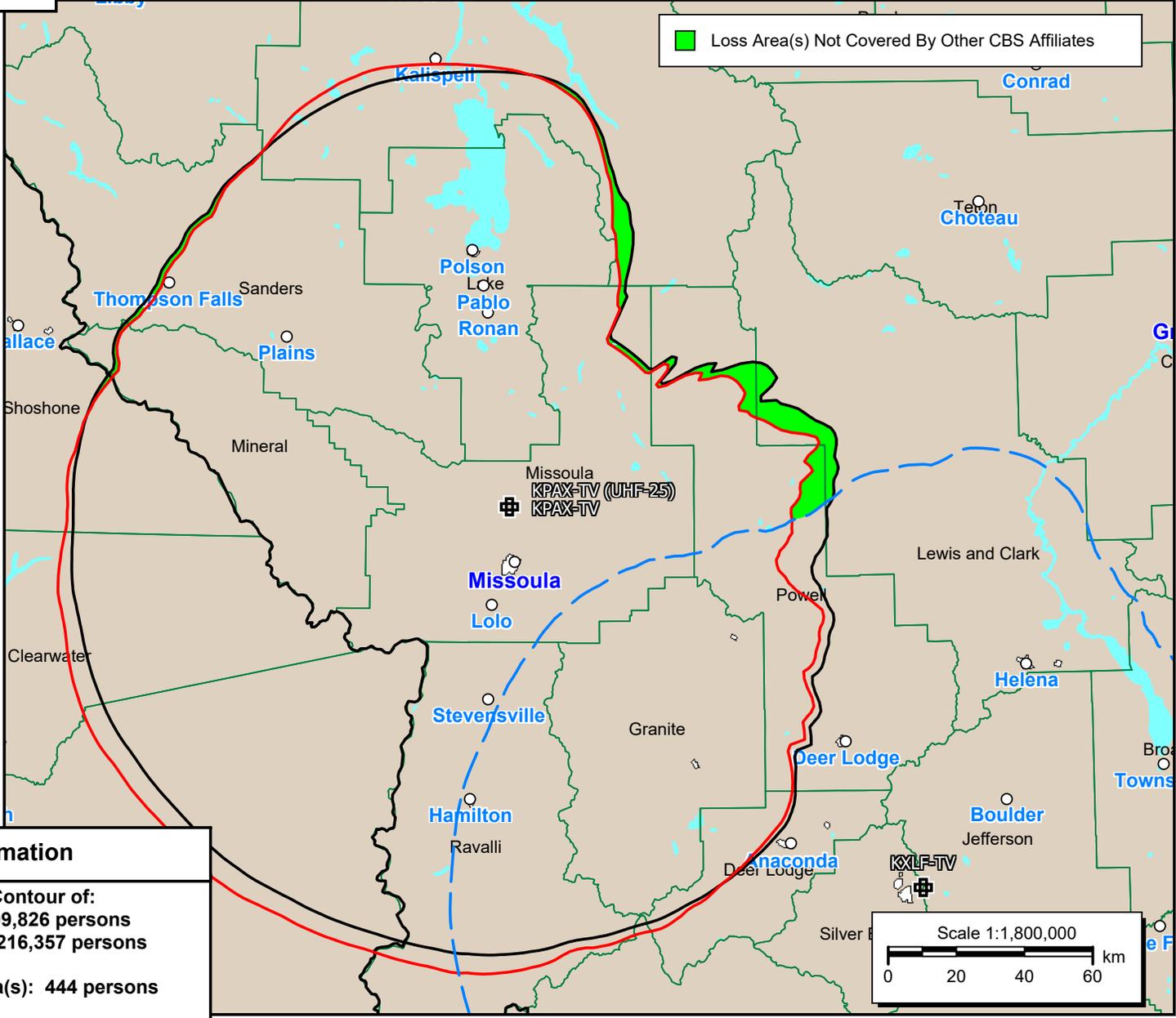
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Noise-Limited Contours of Licensed KPAX-TV Ch. 7 Facility (Black), Proposed KPAX-TV Ch. 25 Facility (Red) and Surrounding CBS Affiliate Station KXLF-TV (Blue Dash)

KPAX-TV
0000004809
Latitude: 47-01-02.10 N
Longitude: 114-00-50.50 W
ERP: 22.50 kW
Channel: 7
Frequency: 177.0 MHz
AMSL Height: 2151.5 m

KPAX-TV (UHF-25)
Latitude: 47-01-02.10 N
Longitude: 114-00-50.50 W
ERP: 600.00 kW
Channel: 25
Frequency: 539.0 MHz
AMSL Height: 2151.5 m

 Loss Area(s) Not Covered By Other CBS Affiliates



Population Information

Population Inside Noise-Limited Contour of:
-Licensed KPAX Ch. 7 Facility - 209,826 persons
-Proposed KPAX Ch. 25 Facility - 216,357 persons

Predicted Population in Loss Area(s): 444 persons

Population in Loss Area(s) Outside of KXLF-TV Contour Overlap: 121 persons

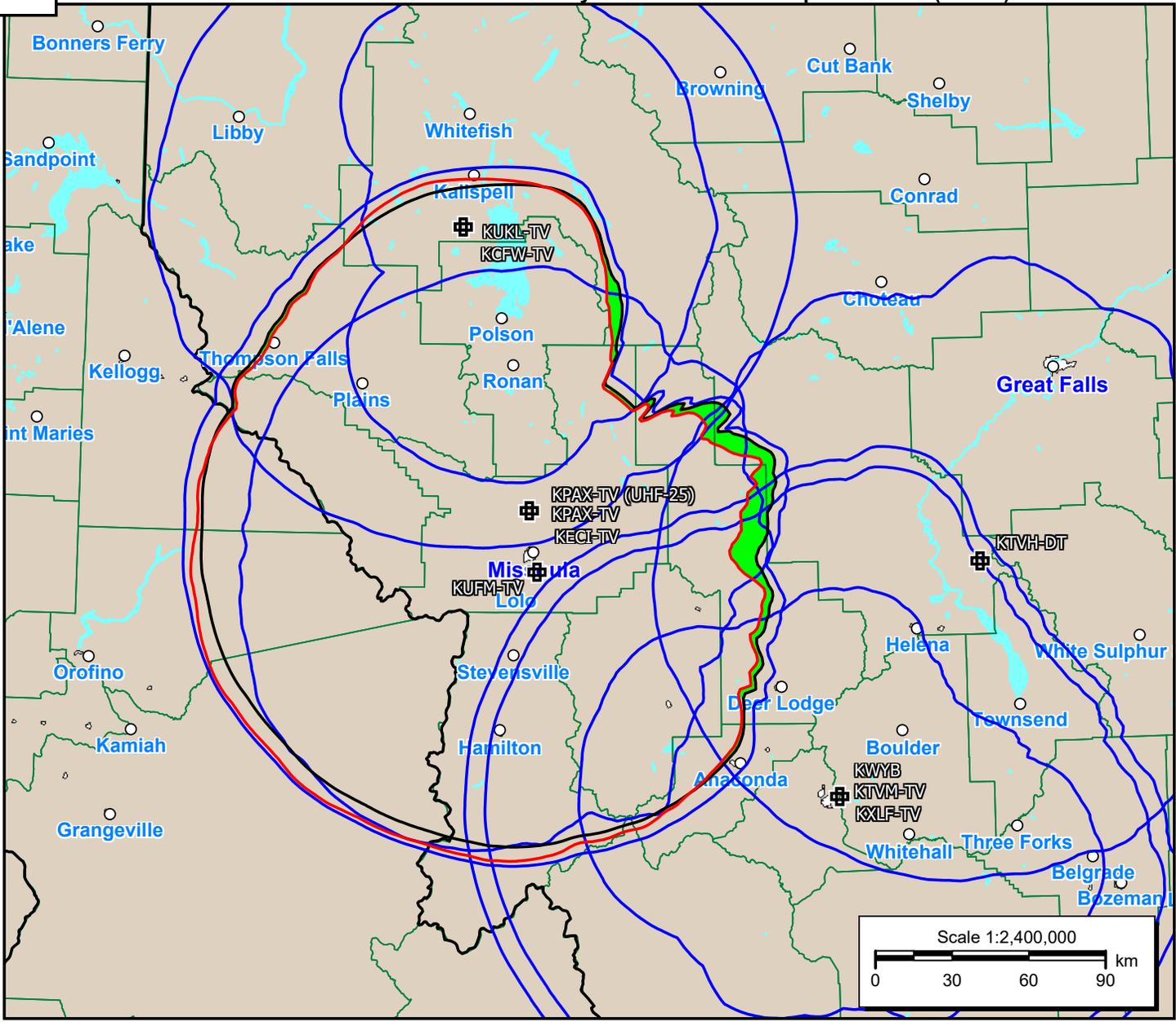
Figure 2

**Noise-Limited Contour of Licensed KPAX-TV Ch. 7 Facility (Black) vs.
 Noise-Limited Contour of Proposed KPAX-TV CH. 25 Facility (Red) and
 Noise-Limited Contours of Nearby Stations that Overlap Loss Area (Green)**

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KTVH-DT
 0000001181
 Latitude: 46-49-29.40 N
 Longitude: 111-42-15.60 W
 ERP: 17.50 kW
 Channel: 12
 Frequency: 207.0 MHz
 AMSL Height: 2394.3 m

KPAX-TV
 Latitude: 47-01-02.10 N
 Longitude: 114-00-50.50 W
 ERP: 22.50 kW
 Channel: 7
 Frequency: 177.0 MHz
 AMSL Height: 2151.5 m



■ Area(s) Predicted to Lose KPAX Service with Proposed Change

Figure 3