

**Engineering Statement  
In Support of  
Station KWSU-DT, Pullman, WA  
DT Fill-In Translator**

This engineering statement is in support of Washington State University's request for a new Fill-In Translator application for its KWSU-DT station. The proposed DT Translator facility meets the interference requirements because the proposed facility will cause interference to less than 0.5 percent new interference to other stations.

An interference study was performed using V-Soft's Probe analysis software. The proposed translator was shown to cause interference to none (0%) of the viewers within the coverage areas of the stations considered. The total of all outgoing interference to all analog and digital TV stations is 0.0%. The total of all incoming interference from all analog and digital TV stations is 0.0%. KWSU-DT's pre-transition channel 17 DT transmitter has been removed from the stations considered since its operation was terminated when KWSU-TV's analog channel 10 transmitter was converted to digital in December 2008.

The proposed translator's F(50,90) 39 dBu contour lies entirely within the KWSU-DT post-transition parent station's F(50,90) 36 dBu contour. As shown on the coverage map, the Longley-Rice coverage prediction shows a loss of coverage to prior analog viewers in the southwest, northern and eastern parts of Spokane. Even if the applicant's request for maximization of its KWSU-DT power (application #BMPEDT20080611ACA) is granted, previous analog coverage will still not be duplicated as shown on Page #6 of this Exhibit.

The applicant has also received viewer calls complaining of poor or no reception of the DT signal in Medical Lake and Cheney, WA areas where the analog signal had been viewable prior to the conversion of KWSU from analog to digital on channel 10. The text of one report that was submitted via the applicant's on-line reception report system <http://www.kwsu.org/Reception/Issues.aspx> is included as Page #2 of this Exhibit. The proposed translator will provide coverage in the areas that are no longer served.

The proposed site is the only site available that will provide fill-in service to the majority of the underserved areas in and near Spokane and is the location of most of the area's television broadcast facilities.

The applicant believes that this application for a new Fill-In DT Translator meets all of the Commission's requirements.

**From:** KWSU&KTNW Outage [mailto:jmarsh@wsu.edu]  
**Sent:** Saturday, January 24, 2009 6:42 PM  
**To:** Peters, Don; Wright, Warren N; Saylor, Thomas P; Hill, Jer; Eckis, Don  
**Cc:** Marsh, Jason Mead  
**Subject:** Reception Issue  
A new KWSU&KTNW 'Reception Issue' form has been filled out.

Bev Robbins filled out the form

Cheney  
WA  
99004  
[bever@centurytel.net](mailto:bever@centurytel.net)

**Description of Event:** We live outside of Cheney and have watched KWSU for years. Then you switched to HDTV and we lost your signal of course but recently have set up our own HDTV system and are receiving all other HDTV channels EXCEPT for KWSU channel 10. We received you GREAT in analog but not in HD? Is it because it's a weaker signal or ?? Hoping to again see your great programs... Bev

### Study Information:

TV Outgoing Interference Study

Signal Resolution: 2 km

Consider NTSC Taboo: Yes

KWX error points are considered to be interference free coverage.

# of radials computed for contours: 72

Contours calculated using 8 radial HAAT.

LR Profile Spacing Increment: 1.0 km

Masked interference points are being counted as interference free.

Using NTSC lptv/translators D/U rules.

Study Date: 2/16/2009

TV Database Date: 02-14-09

Land Cover was not considered in this study.

Primary Terrain: V-Soft US 3 Arc-Second Database

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### TV Interference Culling Table – Outgoing Interference

Reference station information:

Latitude: 47-34-34 N

Longitude: 117-17-58 W

Channel: 17

Type: Digital

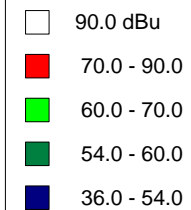
Call	City	State	Chan	Dist	Type	Lic
AP011	Creston	BC	16	179.1	D	AP
CBUBT5	Radium Hot Springs	BC	17	349.9	A	LI
CBUCT6	New Denver	BC	17	268	A	LI
AP355	Armstrong	BC	17	348.5	D	AP
CBUAT-	Trail	BC	17	172.4	D	AP
KLEW-D	Lewiston	ID	32	125.3	D	CP
KMMF	Missoula	MT	17	266.4	A	LI
KMMF-D	Missoula	MT	17	266.4	D	CP
KHQ-DT	Spokane	WA	15	0.6	D	LI
KHQ-DT	Spokane	WA	15	0.6	D	AP
KREM-D	Spokane	WA	20	2.1	D	LI
KREM-D	Spokane	WA	20	2.1	D	AP
KQUP-D	Pullman	WA	24	0.4	D	CPM
KQUP	Pullman	WA	24	79.9	A	LI

### KWSU-TV

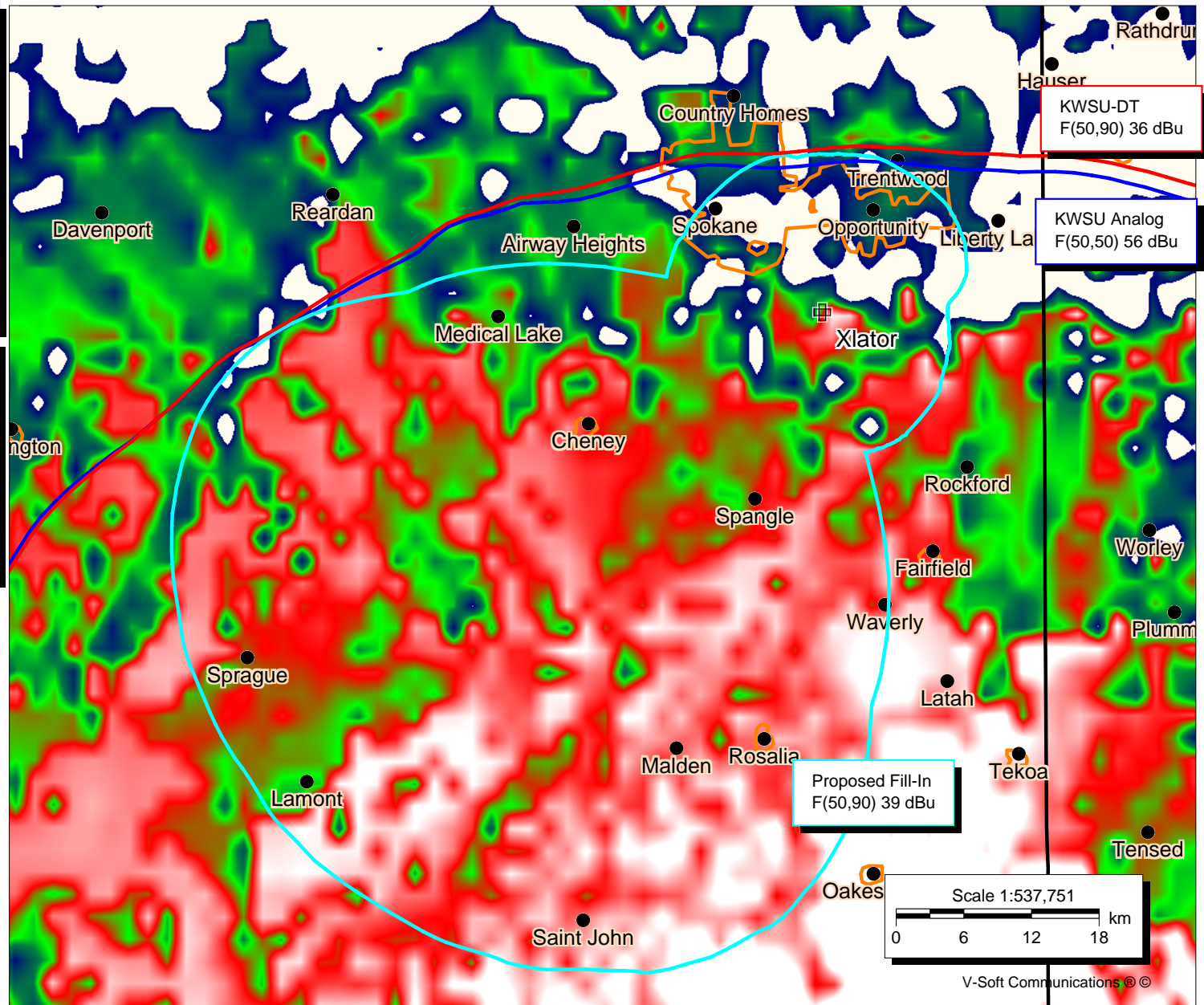
Analog  
BLET397  
Latitude: 46-51-43 N  
Longitude: 117-10-26 W  
ERP: 117.00 kW  
Channel: 10-  
Frequency: 194.5 MHz  
AMSL Height: 1178.0 m  
Elevation: 1029.33 m  
HAAT: 408.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: Yes  
Elec Tilt: 0.5

### Proposed Fill-In

Latitude: 47-34-34 N  
Longitude: 117-17-58 W  
ERP: 1.20 kW  
Channel: 17  
Frequency: 491.0 MHz  
AMSL Height: 1206.4 m  
Elevation: 1085.0 m  
HAAT: 488.77 m  
Horiz. Pattern: Directional



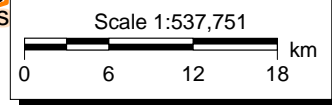
Longley-Rice  
Coverage Prediction  
Shown for  
KWSU Analog



KWSU-DT  
F(50,90) 36 dBu

KWSU Analog  
F(50,50) 56 dBu

Proposed Fill-In  
F(50,90) 39 dBu



V-Soft Communications ©

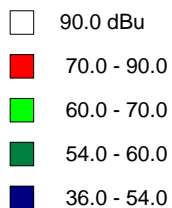


# **KWSU-DT**

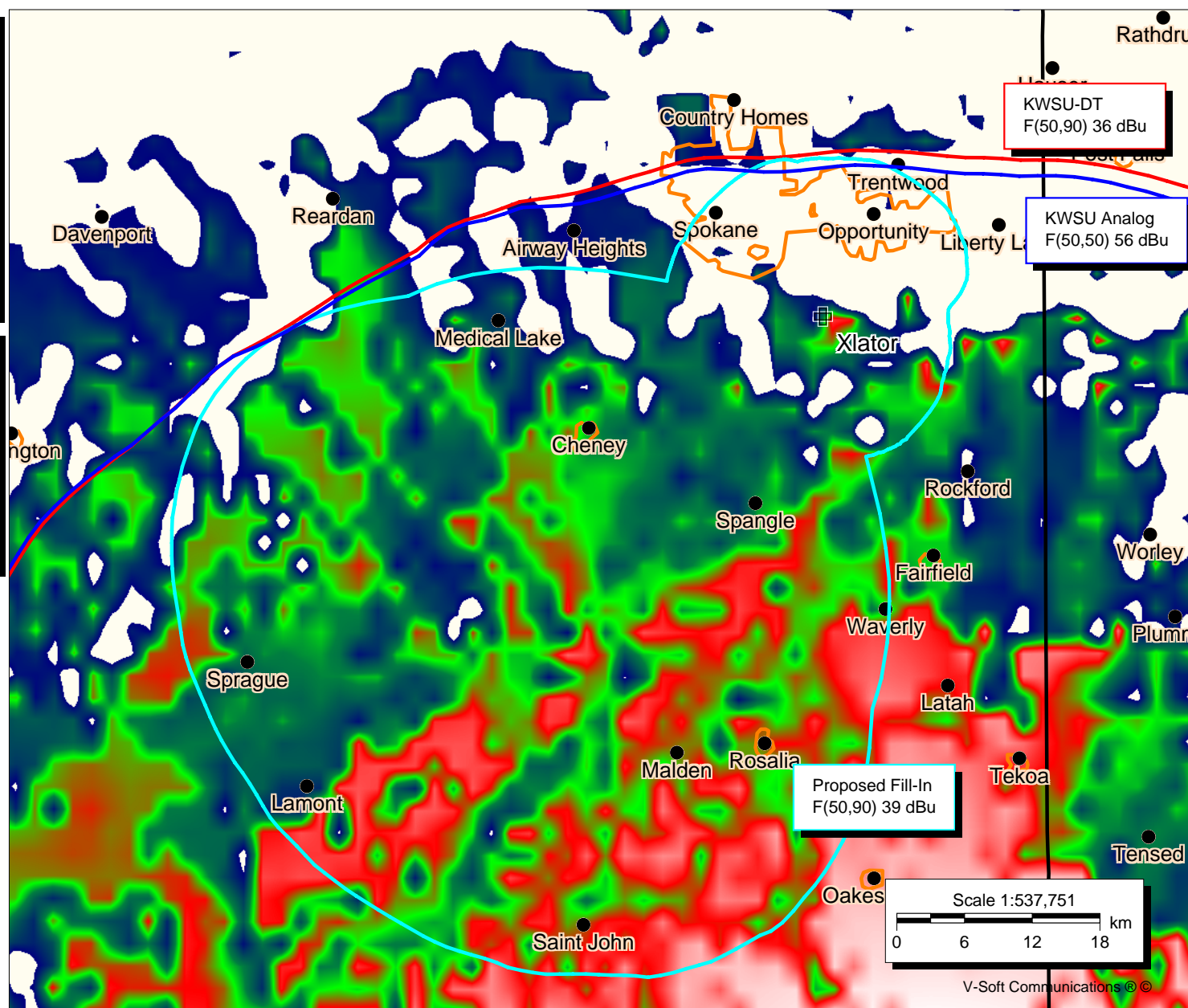
BPEDT20080303ABZ  
Latitude: 46-51-43 N  
Longitude: 117-10-26 W  
ERP: 6.20 kW  
Channel: 10  
Frequency: 195.0 MHz  
AMSL Height: 1167.0 m  
Elevation: 1029.33 m  
HAAT: 408.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: Yes  
Elec Tilt: 0.5

## **Proposed Fill-In**

Latitude: 47-34-34 N  
Longitude: 117-17-58 W  
ERP: 1.20 kW  
Channel: 17  
Frequency: 491.0 MHz  
AMSL Height: 1206.4 m  
Elevation: 1085.0 m  
HAAT: 488.77 m  
Horiz. Pattern: Directional

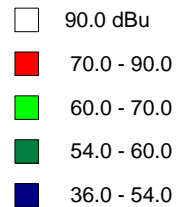


Longley-Rice  
Coverage Prediction  
Shown for  
KWSU Digital



**KWSU-DT Maximization**  
BMPEDT20080611ACA  
Latitude: 46-51-43 N  
Longitude: 117-10-26 W  
ERP: 35.00 kW  
Channel: 10  
Frequency: 195.0 MHz  
AMSL Height: 1167.0 m  
Elevation: 1029.33 m  
HAAT: 408.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: Yes  
Elec Tilt: 0.5

**Proposed Fill-In**  
Latitude: 47-34-34 N  
Longitude: 117-17-58 W  
ERP: 1.20 kW  
Channel: 17  
Frequency: 491.0 MHz  
AMSL Height: 1206.4 m  
Elevation: 1085.0 m  
HAAT: 488.77 m  
Horiz. Pattern: Directional



Longley-Rice  
Coverage Prediction  
Shown for KWSU  
Maximized Digital

