June 2023
KXLE-FM   Channel 237C3
Ellensburg, WA
Allocation Study

The instant application proposes a "one step" modification of KXLE-FM, from Channel 237C1 to Channel 237C3, with a change in transmitter site. The attached spacing study shows that the proposed operation meets the co-channel and adjacent channel spacing requirements for Class C3 stations as prescribed in §73.207 of the Commission's Rules.

Please note that the HAAT of the proposed facility has been determined using 12 evenly-spaced radials (i.e. every 30 degrees).

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FMSTUDY.EXE    Copyright 2021, Hatfield & Dawson, LLC       Version 5.10
================================================================================
SEARCH PARAMETERS                           FM Database Date: 20230601
      Channel: 237C3   95.3 MHz                           Page   1
     Latitude:  46 53 14.2  (NAD83)
    Longitude: 120 26 33.2
  Safety Zone:  32 km
    Job Title: KXLE-FM 237C3 MANASHTASH RIDGE


Call    City           Channel ERP(kW)    Latitude Bearing    Dist   Req
Status   St  FCC File No.   Freq. HAAT(m)    Longitude deg-True   (km)   (km)
================================================================================
KZAL-FM1WENATCHEE        234D    0.099 DA 47 22 50.5   11.9   56.08    0
 LIC    WA  BLFTB-20070516AC  94.7    0.0   120 17 19.3          0.00 BOOST

K237GY  PROSSER         237D    0.205 DA 46 11 11.5  145.7   94.08    0
 LIC    WA  BLFT-20190128AAR  95.3    0.0   119 45 17.1          0.00 TRANS

KXLE-FM ELLENSBURG      237C1   51.000    47  9 47.4  319.1   40.70  211
 LIC    WA  BLH-20040217ACW   95.3  125.0   120 47 40.3       -170.30 SHORT

K237DP  KENNEWICK       237D    0.034    46  9 42.4  128.9  127.52    0
 LIC    WA  BLFT-20060524AHZ  95.3    0.0   119  9 19.0          0.00 TRANS

K237AW  CHELAN          237D    0.053    47 48 24.4   16.6  106.77    0
 LIC    WA  BLFT-19860606TD   95.3    0.0   120  2  5.2          0.00 TRANS

K238CH  EPHRATA         238D    0.250    47 18 17.5   53.7   79.09    0
 LIC    WA  0000132201        95.5    0.0   119 35 57.1          0.00 TRANS

K239CS  SUNNYSIDE       239D    0.250    46 19 48.5  153.3   69.28    0
 LIC    WA  0000143287        95.7    0.0   120  2 14.2          0.00 TRANS

KZML-FM1WENATCHEE        240D    1.900    47 23 49.5   12.6   58.09    0
 LIC    WA  BLFTB-20051017AA  95.9    0.0   120 16 29.3          0.00 BOOST

KZML    QUINCY          240C2   11.000    47 19 12.4   45.0   68.47   56
 LIC    WA  BLH-20030321ABM   95.9  320.0   119 48  3.1     SS   12.47 CLEAR

K291BV  WAPATO          291D    0.250    46 31 54.5  181.4   39.53    0
 LIC    WA  BLFT-20150309AGG 106.1    0.0   120 27 18.2          0.00 TRANS

        =====  END OF FM SPACING STUDY FOR CHANNEL 237  =====
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June 2023
KXLE-FM   Channel 237C3
Ellensburg, WA
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 237C3 (95.3 MHz) with an effective radiated power of 1.7 kilowatts. Operation is proposed with a 3-element circularly-polarized omni-directional half-wave-spaced antenna. The antenna will be side-mounted on an existing tower on Manashtash Ridge.

The proposed antenna support structure will not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	46-53-14.2 north
Longitude	120-26-33.2 west
Measurements (Meters)	
Overall Structure Height (AGL)	48.8
Support Structure Height (AGL)	48.8
Site Elevation (AMSL)	981
Structure Type	
GTOWER - Guyed Structure Used for Communication Purposes	

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.

$$S(\mu W / cm^2) = \frac{33.4 \times AdjERP(Watts)}{D^2}$$

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

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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.

While a three-bay, half-wavelength-spaced antenna is planned, the exact make and model have not yet been selected. Calculations of the power density produced by the proposed antenna system therefore assume a Type 1 element pattern, which is the "worst case" element pattern. The highest calculated ground level power density occurs at a distance of 7 meters from the base of the antenna support structure. At this point the power density is calculated to be 8.4 μW/cm², which is 4.2% of 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 KXLE-FM 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 of the Commission's Rules exempts 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.

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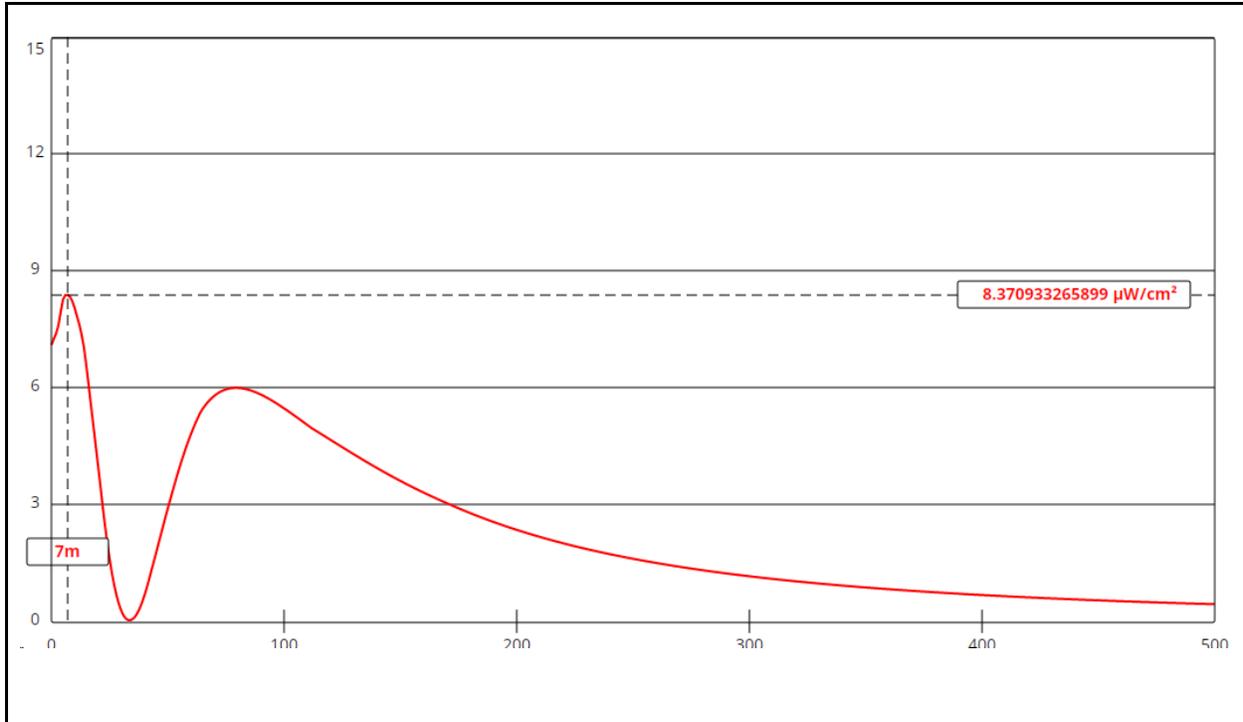
**Ground-Level RF Exposure**　　　　　　　　　　　　　　　　　　　　**OET FMModel**

KXLE-FM 237C3 Ellensburg

Antenna Type:　　　Type 1 assumed
No. of Elements:　　3
Element Spacing:　　0.5 wavelength

Distance:　　　　　500 meters
Horizontal ERP:　　1.7 kW
Vertical ERP:　　　1.7 kW

Antenna Height:　　32 meters AGL

Maximum Calculated Power Density is 8.4 µW/cm² at 7 meters from the antenna structure.

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CHELAN

DOUGLAS

60 dBu

70 dBu

KITTITAS

ELLENSBURG

GRANT

ROCK ISLAND

NALD
ROSLYN

CLE ELUM
SOUTH CLE ELUM

THORP

KITTITAS

VANTAGE

MATTAWA

DESERT AIRE

NILE

NACHES

TIETON

COWICHE
GLEED
ESCHBACH

YAKIMA

SELAH

SUMMITVIEW
YAKIMA
TERRACE HEIGHTS

AHTANUM
UNION GAP
MOXEE

TAMPICO

PARKER

DONALD

WAPATO

BUENA

HARRAH
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QUIN

GEOR

97
970
10
90
28
90
82
821
823
12
97
24
241
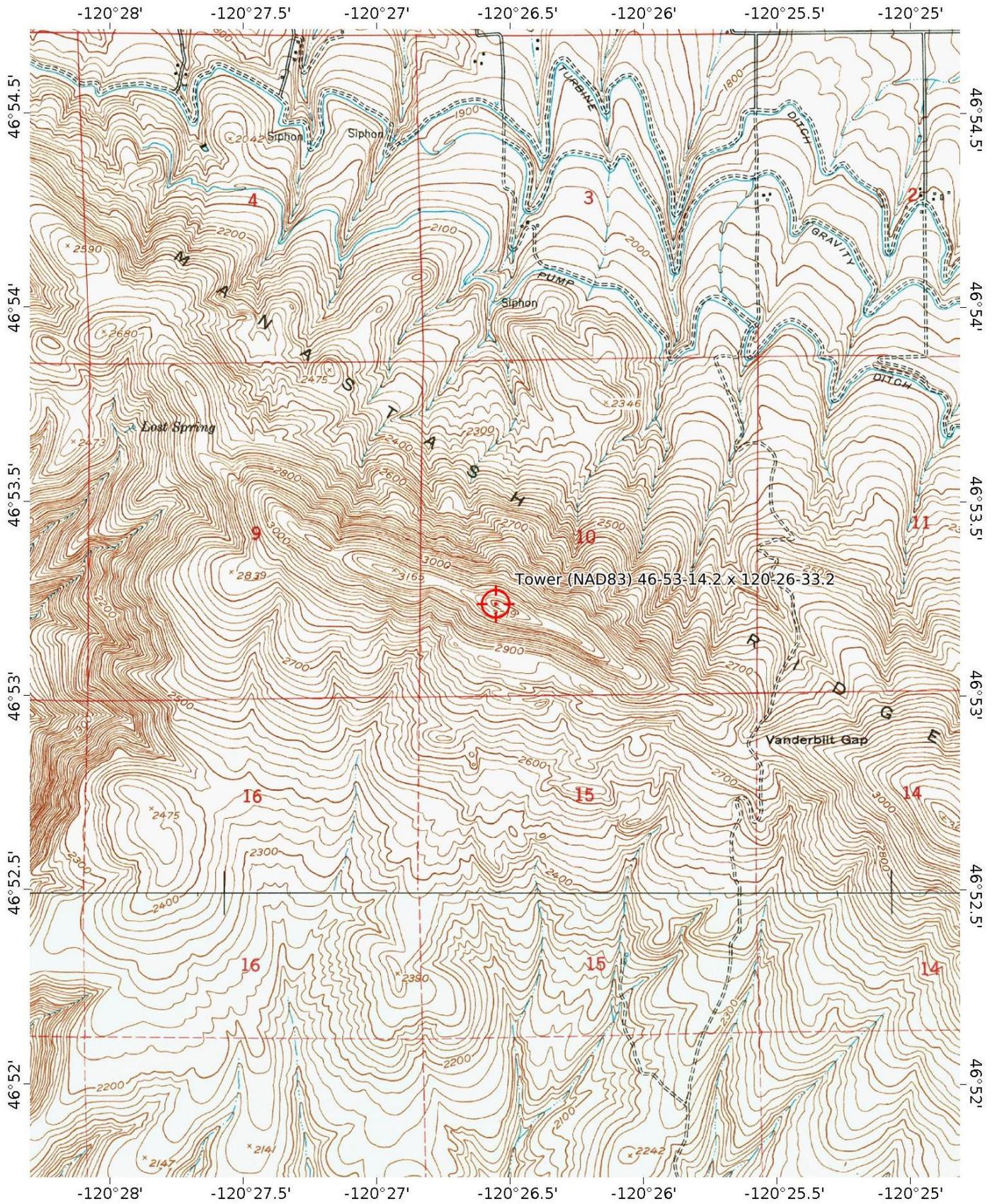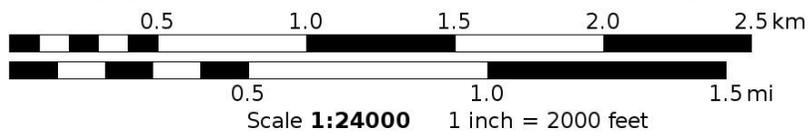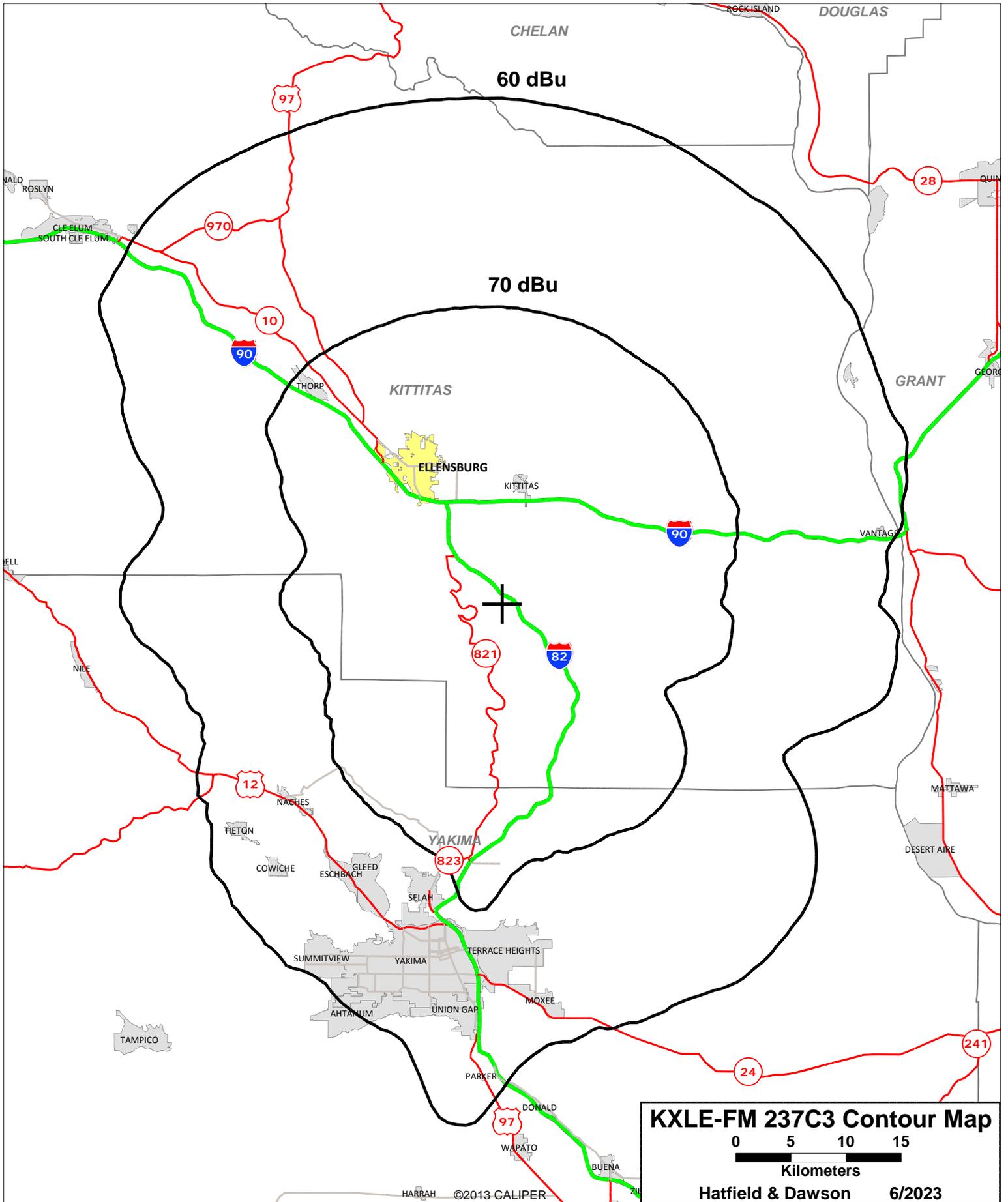
KXLE-FM 237C3 Contour Map

| 0 | 5 | 10 | 15 |

Kilometers

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