

**August 2020  
KZTM(FM) Channel 275C  
McKenna, Washington  
Allocation Study**

**One-Step Application**

The instant application is being filed by the licensee of FM station KZTM, proposing a modification from Channel 275C at Centralia, Washington to Channel 275C at McKenna, Washington. No changes in the station's licensed technical parameters are proposed, apart from adjustment to match the NAD83 coordinates of the Antenna Structure Registration in tenths of seconds.

A single allotment and transmitter site is being used for this application, at the site of the current licensed operation of KZTM. The attached spacing study shows that the proposed allotment and transmitter site satisfies the domestic co-channel and adjacent channel spacing requirements for Class C stations as prescribed in §73.207 of the Commission's Rules.

The proposed Channel 275C allotment site is located 47.6 kilometers from the far side of McKenna. The standard 70 dBu contour distance for a Class C facility is a minimum of 59.1 km. Therefore the proposed allotment will provide 70 dBu service to 100% of McKenna.

**Canadian Stations and Allotments**

The spacing study conducted with the Commission's LMS database shows that the proposed KZTM facility is short-spaced to the following Canadian stations and allotments:

<b>Callsign</b>	<b>Channel</b>	<b>City</b>	<b>Actual Distance</b>	<b>Required Distance</b>	<b>Shortspacing</b>
CHTT-FM	276B	Victoria	162.88 km	209 km	-46.12 km
Allotment	276A	River Jordan	170.51 km	182 km	-11.49 km

***CHTT-FM Channel 276B Victoria, BC***

Under the terms of the *Working Arrangement for the Allotment and Assignment of FM Broadcasting Channels Under the Agreement Between the Government of Canada and the Government of the United States of America Relating to the FM Broadcasting Service*, as amended in 1997 ("Working

*Arrangement"*), the required first-adjacent-channel Class B to Class C spacing is 209 kilometers, whereas the distance between the proposed site and the CHTT-FM transmitter site is 163 kilometers. Since the instant application does not propose any change in the KZTM technical facility, there will be no change in the existing short-spacing, which has previously been demonstrated to be in compliance with the *Working Arrangement*.

#### ***Vacant Channel 276A River Jordan, BC***

Under the terms of the *Working Arrangement* the required first-adjacent-channel Class A to Class C spacing is 182 kilometers, whereas the distance between the proposed site and the River Jordan allotment site is 171 kilometers. Since the instant application does not propose any change in the KZTM technical facility, there will be no change in the existing short-spacing, which has previously been demonstrated to be in compliance with the *Working Arrangement*.

In addition, it is noted that the River Jordan Channel 276A allotment does not appear in the current Canadian FM database. Given the proximity of River Jordan and Victoria (only 34 kilometers apart) it seems very likely that the River Jordan 276A allotment was deleted in favor of establishment of CHTT-FM 276B at Victoria.<sup>1</sup>

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<sup>1</sup> It is also noted that the LMS database appears to be missing an entry for Channel 274C at Vancouver, British Columbia, in use as CKPK-FM. LMS does have an entry for the old Channel 274B operation at Vancouver, CFRO-FM, but CFRO-FM is not operating on Channel 263C. It is hoped that the CKPK-FM entry in the database can be reinstated or appropriately coded so that it will show up in future spacing studies, but this does not affect the instant application.

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SEARCH PARAMETERS                               FM Database Date: 20200811
Channel: 275C    102.9 MHz                      Page 1
Latitude: 46 58 30.6 (NAD83)
Longitude: 123 8 21.0
Safety Zone: 32 km
Job Title: KZTM 275C

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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)
K221FJ LIC	TACOMA WA	BLFT-20100202ABK	221D 92.1	0.150 0.0	DA 47 14 31.4 122 28 1.4	59.5	59.02 0.00	0 TRANS
K221BG LIC	ABERDEEN WA	BLFT-20080508ABK	221D 92.1	0.125 0.0	DA 46 59 17.3 123 47 41.5	271.9	49.91 0.00	0 TRANS
K221GR CP	LACEY WA	BNPFT-20180418AB	221D 92.1	0.099 0.0	DA 47 3 42.3 122 49 48.5	67.5	25.39 0.00	0 TRANS
K221DV LIC	KAMILCHE WA	BLFT-20141008AAW	221D 92.1	0.019 0.0	47 8 19.3 123 8 27.5	359.6	18.18 0.00	0 TRANS
KWJD-LP LIC	ONALASKA WA	BLL-20111013ABG	221L1 92.1	0.100 26.0	46 35 36.3 122 36 50.4	136.5	58.39 0.00	0 LPFM
K272EP LIC	CHEHALIS WA	BLFT-20120224ABR	272D 102.3	0.205 0.0	46 40 7.4 122 57 54.5	158.7	36.56 0.00	0 TRANS
K273AI LIC	ARIEL WA	BLFT-20170118AAM	273D 102.5	0.010 0.0	46 0 58.4 122 46 32.3	165.2	110.19 0.00	0 TRANS
KZOK-FM LICAPP	SEATTLE WA	0000119020	273C 102.5	73.000 698.0	47 30 16.7 121 58 7.8	55.9	106.38 1.38	105 CLOSE
KZOK-FM LIC	SEATTLE WA	BMLH-20131203ABJ	273C 102.5	73.000 698.0	47 30 16.4 121 58 8.4	55.9	106.37 1.37	105 CLOSE
KYTE LIC	INDEPENDENCE OR	BLH-20170911AAL	274C0 102.7	37.000 648.0	44 47 49.4 123 32 36.3	187.5 SS	244.12 24.12	220 CLEAR
K275BW LIC	SEQUIM WA	BLFT-20160208AAL	275D 102.9	0.200 0.0	DA 48 8 7.3 123 9 48.6	359.2	129.00 0.00	0 TRANS
K275CV LIC	MOUNT VERNON WA	BLFT-20180911ADD	275D 102.9	0.250 0.0	48 26 20.3 122 20 43.5	19.8	173.31 0.00	0 TRANS
K275CH LIC	GRESHAM OR	BLFT-20150918ABX	275D 102.9	0.099 0.0	45 31 20.4 122 44 49.4	169.3	164.30 0.00	0 TRANS
K275AI LIC	OAK GROVE OR	BMLFT-20130215AB	275D 102.9	0.067 0.0	45 42 5.4 121 32 9.2	138.4	187.83 0.00	0 TRANS

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SEARCH PARAMETERS FM Database Date: 20200811

Channel: 275C 102.9 MHz Page 2

Latitude: 46 58 30.6 (NAD83)

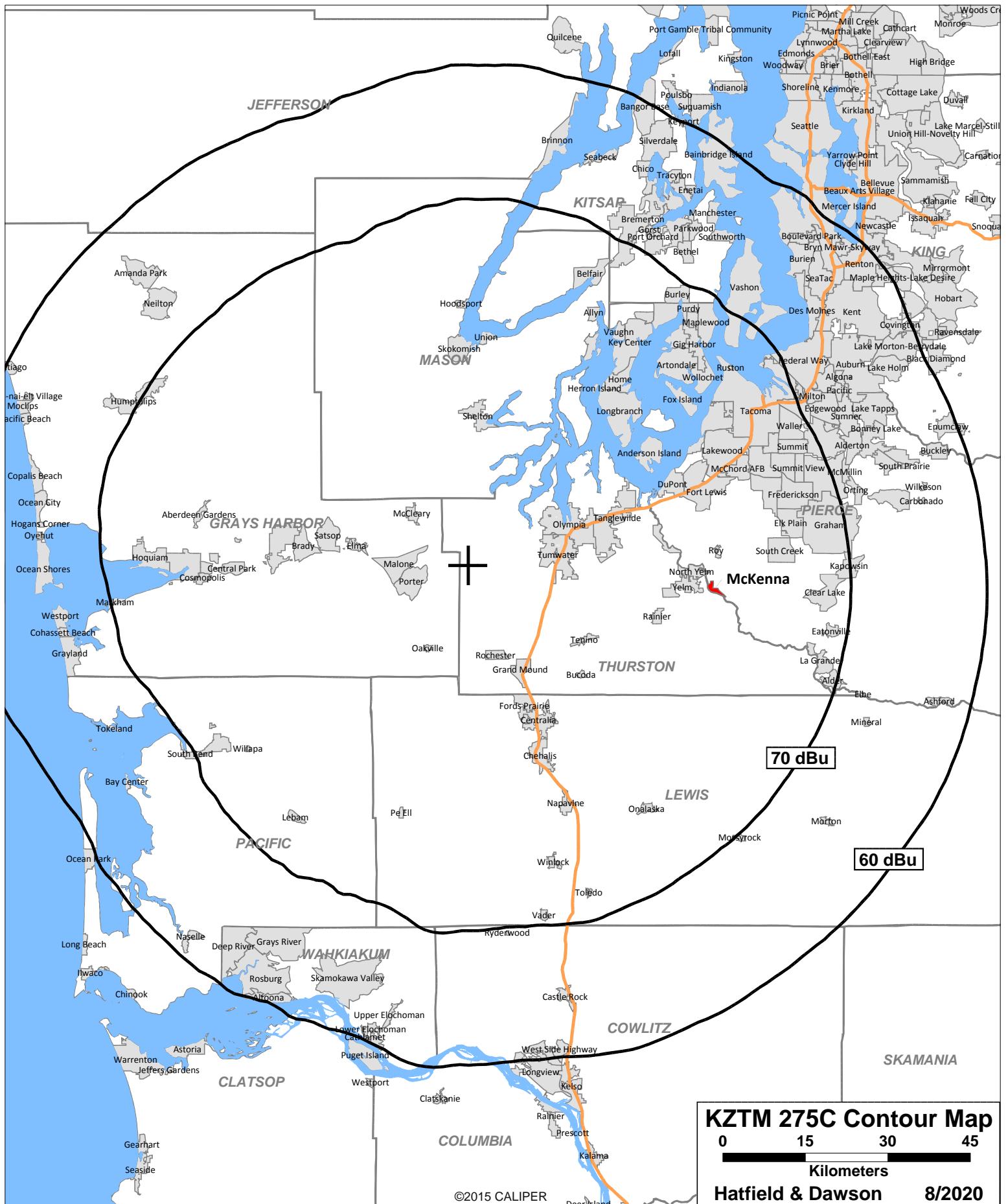
Longitude: 123 8 21.0

Safety Zone: 32 km

Job Title: KZTM 275C

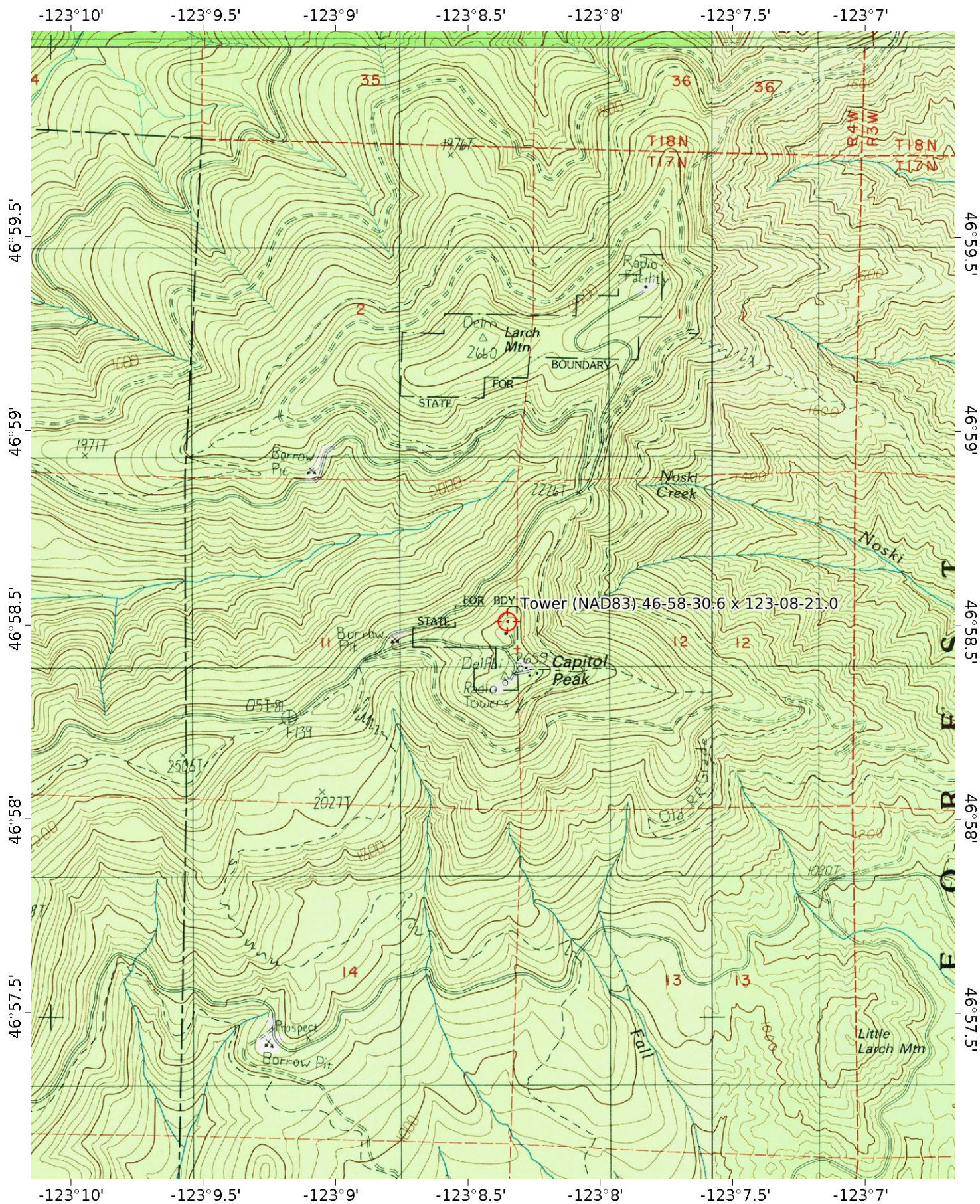
Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KZTM	CENTRALIA		275C	70.000	46 58 30.3	131.3	0.01	290
LIC	WA BLH-20050126ABD		102.9	668.0	123 8 20.5		-289.99	SHORT
CP	VICTORIA		276D	0.000	48 26 51.3	355.3	164.29	182
	BC		103.1	0.0	123 19 23.7		-17.71	SHORT
ALC	VICTORIA		276B	0.000	48 25 6.3	350.3	162.88	209
	BC		103.1	0.0	123 30 40.7		-46.12	SHORT
ALC	RIVER JORDAN		276A	0.000	48 24 5.3	338.8	170.51	182
	BC		103.1	0.0	123 58 24.7		-11.49	SHORT
KYKV	SELAH		276C2	5.400	46 38 26.5	99.1	212.57	188
LIC	WA BLED-20090420ACO		103.1	435.0	120 23 50.2		24.57	CLEAR
K277AE	SEATTLE		277D	0.250	DA 47 36 20.3	40.7	93.02	0
LIC	WA BLFT-20170818AAE		103.3	0.0	122 19 50.4		0.00	TRANS
K277CZ	SHELTON		277D	0.250	DA 47 8 19.3	359.6	18.18	0
LIC	WA BLFT-20151002ADI		103.3	0.0	123 8 27.5		0.00	TRANS
K277CZ	SHELTON		277D	0.250	DA 47 8 19.3	359.6	18.18	0
CP	WA BPFT-20171004ABL		103.3	0.0	123 8 27.5		0.00	TRANS
K278CU	ABERDEEN		278D	0.250	46 55 54.3	264.1	45.56	0
LIC	WA BMPFT-20190125AA		103.5	0.0	123 44 3.5		0.00	TRANS
K278CW	ASTORIA		278D	0.250	46 10 55.0	210.2	101.84	0
CP	OR BNPFT-20180424AA		103.5	0.0	123 48 14.0		0.00	TRANS

===== END OF FM SPACING STUDY FOR CHANNEL 275 =====

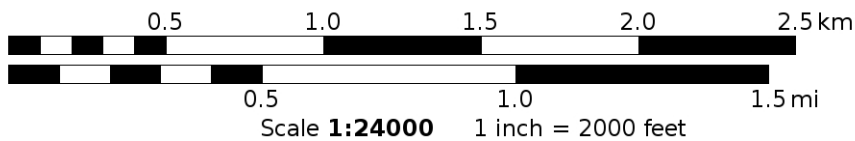


**KZTM 275C Contour Map**  
0 15 30 45  
Kilometers  
Hatfield & Dawson 8/2020





Mercator Projection  
WGS84  
USNG 10TDS-10TDT  
CalTopo





**August 2020  
KZTM(FM) Channel 275C  
McKenna, Washington  
RF Exposure Study**

**Facilities Proposed**

The proposed operation will be on Channel 275C (102.9 MHz) with an effective radiated power of 70 kilowatts. Operation is proposed with the existing ERI model SHPX-10AC-HW circularly-polarized half-wave-spaced directional antenna, which is side-mounted on an existing tower atop Capitol Peak. The FCC Antenna Structure Registration Number is 1231674.

**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.

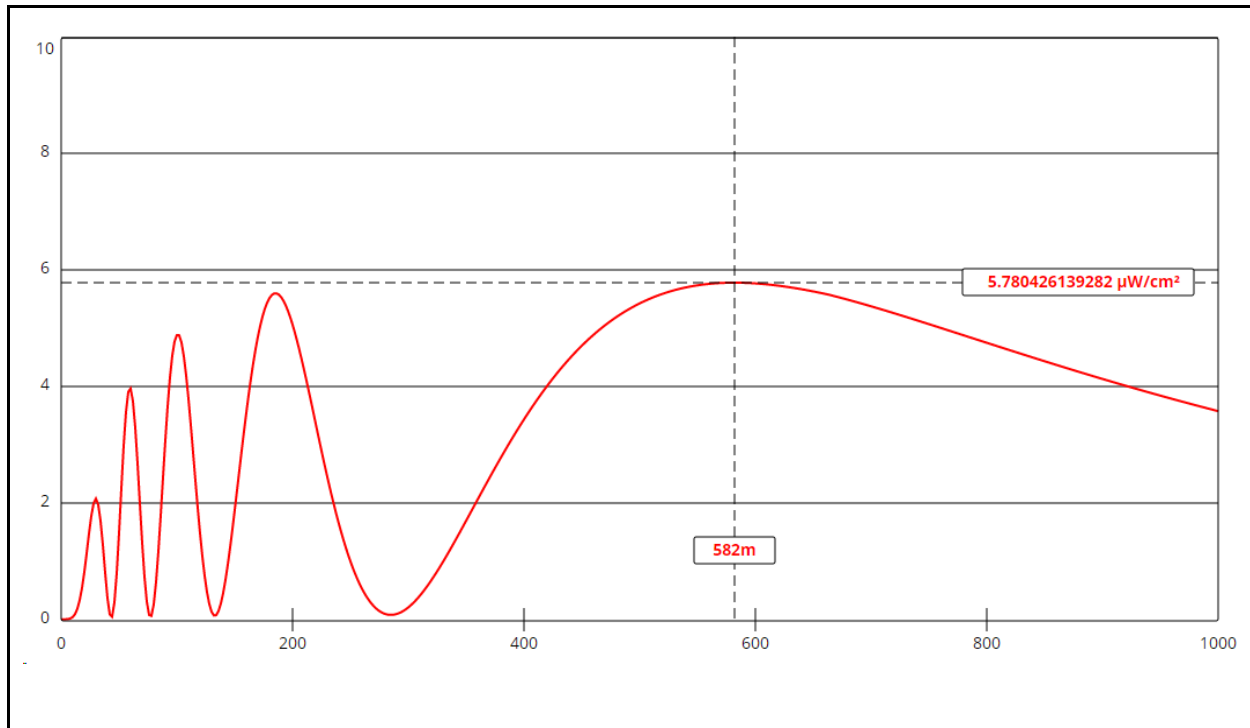
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 3 element pattern, which is the accepted element pattern for the ERI model SHPX-10AC-HW antenna to be used. The highest calculated ground level power density occurs at a distance of 582 meters from the base of the antenna support structure. At this point the power density is calculated to be 5.8  $\mu W/cm^2$ , which is 2.9% 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 KZTM alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 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 FMModel

### KZTM 275C McKenna

Antenna Type: ERI SHPX-10AC-HW (Type 3)  
 No. of Elements: 10  
 Element Spacing: 0.5 wavelength

Distance: 1000 meters  
 Horizontal ERP: 70 kW  
 Vertical ERP: 70 kW

Antenna Height: 60 meters AGL

Maximum Calculated Power Density is 5.8  $\mu\text{W}/\text{cm}^2$  at 582 meters from the antenna structure.

**August 2020  
KZTM(FM) Channel 275C  
McKenna, Washington  
Section 307(b) Analysis Engineering**

**Background**

The instant application is being filed by the licensee of FM station KZTM, proposing a modification from Channel 275C at Centralia, Washington to Channel 275C at McKenna, Washington. No changes in the station's licensed technical parameters are proposed.

**McKenna Channel 275C Spacing Study**

The allocation study exhibit included in this Form 301 application demonstrates that the proposed McKenna Channel 275C allotment site meets the co-channel and adjacent channel spacing requirements for Class C stations as prescribed in §73.207 of the Commission's Rules. The spacing study also demonstrates that this proposal is mutually-exclusive with retention of the Channel 275C license at Centralia.

**First Local Service at McKenna, Washington**

The proposed modification will provide the first local service to McKenna, which is a Census Designated Place with a 2010 Census population of 716 persons, and therefore qualifies as a community for allotment purposes. The FCC considers a town or city to be a community for allotment purposes when it is either incorporated or listed in the US Census.

McKenna is located in Pierce County along the Nisqually River, and was founded around 1908 as a timber company town. The community is home to a variety of business and institutions including Nisqually Valley Care Center, Nature's Garden (plant nursery), Walt's Place (bar), McKenna Park, McKenna Market and Gas, Oak Tree Judo Dojo, Happy Trails Espresso, BNW Motors (car dealer), Pet House, County Line Shooting Sports, Jim Bob's Chuck Wagon, McKenna Elementary School, Northwest Chevrolet, McKenna Water District, McKenna USPS Post Office, Caliber Collision, McKenna Child Care and Early Learning, and Varsity Pizza McKenna.

Centralia will retain local service from FM station KCED Channel 217A, as well as AM stations KITI 1420 kHz and KELA 1470 kHz (both of which are licensed to the neighboring communities of "Centralia-Chehalis").

Hatfield & Dawson Consulting Engineers

## **No White or Gray Areas Will Be Created**

There will be no change in the KZTM transmitter site, and the 60 dBu contour from the proposed facility will cover 100% of the licensed KZTM 60 dBu contour. There will be no loss area associated with this community change, and therefore no white, gray, or underserved areas will be created.

## **Olympia-Lacey Urbanized Area (Intra-Urbanized Area Modification)**

The Second Order on Reconsideration in MB Docket No. 09-52, *Policies to Promote Rural Radio Service and to Streamline Allotment and Assignment Procedures* (“Rural Radio Second Order on Recon”), addresses the evaluation of community of license change proposals where both the licensed and proposed facilities cover more than 50% of the same urbanized area with a 70 dBu signal:

We clarify that applicants will not be required to submit Tuck showings where both the current and proposed communities are located in the same urbanized area, or the current facilities cover, and the proposed facilities would or could be modified to cover, more than 50 percent of the same urbanized area with a daytime principal community signal.

Such proposals are considered to be “intra-urbanized area” modifications. As was explained in *Gearhart*<sup>2</sup>, the concerns expressed in *Rural Radio* addressing the move from a rural area to an urbanized area do not exist with respect to intra-Urbanized Area moves because “a first local

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<sup>2</sup> See *Gearhart, Madras, Manzanita, and Seaside, Oregon*, Report and Order, 26 FCC Rcd 10259 (MB 2011). In *Gearhart*, the authorized KNRQ (now KLVP) facility was reallocated from Tualatin to Aloha.

See also BPH-20150717AAV, which approved a change in community for KPND from Sandpoint, Idaho, to Deer Park, Washington, with no change in the station’s technical facility, which provides 70 dBu service to 95% of the Spokane Urbanized Area and 100% of the Coeur d’Alene Urbanized Area.

See also BPH-20181108AAQ, which approved a change in community for KLSY from Montesano, Washington, to Belfair, Washington, with no change in the station’s technical facility, which provides 70 dBu service to 100% of the Olympia-Lacey Urbanized Area.

service preference is not being used as a basis to enter the market.”<sup>3</sup>. The proposal is therefore evaluated under Priority 4, “other public interest factors”.

Attached is a map exhibit which depicts the licensed and proposed KZTM 70 dBu contour in relation to the 2010 Census boundaries of the Olympia-Lacey Urbanized Area. The licensed and proposed KZTM 70 dBu contour encompasses 100% of the Olympia-Lacey UA. Since this figure is greater than 50% both the licensed and proposed facilities are considered to be providing service to the entire Olympia-Lacey Urbanized Area.<sup>4</sup> Therefore this is an intra-urbanized area modification.

#### **Seattle Urbanized Area (No Tuck Analysis Required)**

#### **Bremerton Urbanized Area (No Tuck Analysis Required)**

The licensed and proposed KZTM 70 dBu contour covers, and will continue to cover, 25.4% of the land area of the Seattle Urbanized Area, and 0.4% of the land area of the Bremerton Urbanized Area.

It should be noted that the Seattle and Bremerton Urbanized Area files downloaded from the US Census Bureau include significant portions of the inland waterways of Puget Sound. In performing this analysis, we have excluded the water areas to arrive at a baseline land area of 2652.84 sq km for the Seattle UA, and 355.28 sq km for the Bremerton UA.

These urbanized areas are “nearby” the proposed facility, and the Second Report and Order in MB Docket No. 09-52, *Policies to Promote Rural Radio Service and to Streamline Allotment and Assignment Procedures* (“Rural Radio”), sets forth procedures to be used to rebut a presumption that a proposed change in community of license is intended to serve a nearby urbanized area.

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<sup>3</sup> See *East Los Angeles, Long Beach, and Frazier Park, California*, Report and Order, 10 FCC Rcd 2864, 2868 (MMB 1995).

<sup>4</sup> The Commission has established “...a rebuttable presumption that, when the community proposed is located in an urbanized area or could, through a minor modification application, cover more than 50 percent of an urbanized area, we will treat the application, for Section 307(b) purposes as proposing service to the entire urbanized area rather than the named community of license.” See *Policies to Promote Rural Radio Service and to Streamline Allotment and Assignment Procedures*, Second Report and Order, First Order on Reconsideration, and Second Further Notice of Proposed Rule Making, 25 FCC Rcd 2556, 2567, ¶ 20. (2011).



Specifically, the urbanized area service presumption may be rebutted if it can be certified that the proposed facility could not be modified to cover over 50% of an urbanized area.

*The determination of whether a proposed facility “could be modified” to cover 50 percent or more of an urbanized area will be made based on an applicant’s certification that there are no existing towers in the area to which, at the time of filing, the applicant’s antenna could be relocated pursuant to a minor modification application to serve 50 percent or more of an Urbanized Area.<sup>5</sup>*

*Specifically, a proponent would need to certify that there could be no rule-compliant minor modification on the proposed channel to provide a principal community signal to over 50 percent or more of an Urbanized Area, in addition to covering the proposed community of license. In doing so, proponents will be required to consider all existing registered towers in the Commission’s Antenna Structure Registration database, in addition to any unregistered towers currently used by licensed radio stations. Furthermore, we expect all applicants and allotment proponents to consider widely-used techniques, such as directional antennas and contour protection, when certifying that the proposal could not be modified to provide a principal community signal over the community of license and 50 percent or more of an Urbanized Area.<sup>6</sup>*

Relocation of KZTM into the Seattle Urbanized Area is very effectively blocked by the need to maintain spacing to second-adjacent channel station KZOK-FM Channel 273C Seattle, which is (axiomatically) native to the Seattle UA. Consequently the instant proposal does not trigger the requirement of a “Tuck” study with regard to the Seattle UA.

A study is warranted, however, with regard to the Bremerton Urbanized Area, and has therefore been undertaken following these guidelines above. This study included consideration of licensed radio stations and registered towers which:

- a) Meet at least the domestic §73.215(e) short-spacing minimum separation distances to other cochannel and adjacent channel stations;
- b) Are within 80 kilometers of the boundary of McKenna; and
- c) Are within 80 kilometers of the boundary of the Bremerton UA.

A map of the study area is attached, with the tower locations indicated. Operation was assumed from the top of each tower studied, with maximum Class C power for the resulting 8-radial HAAT.

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<sup>5</sup> Rural Radio at paragraph 35.

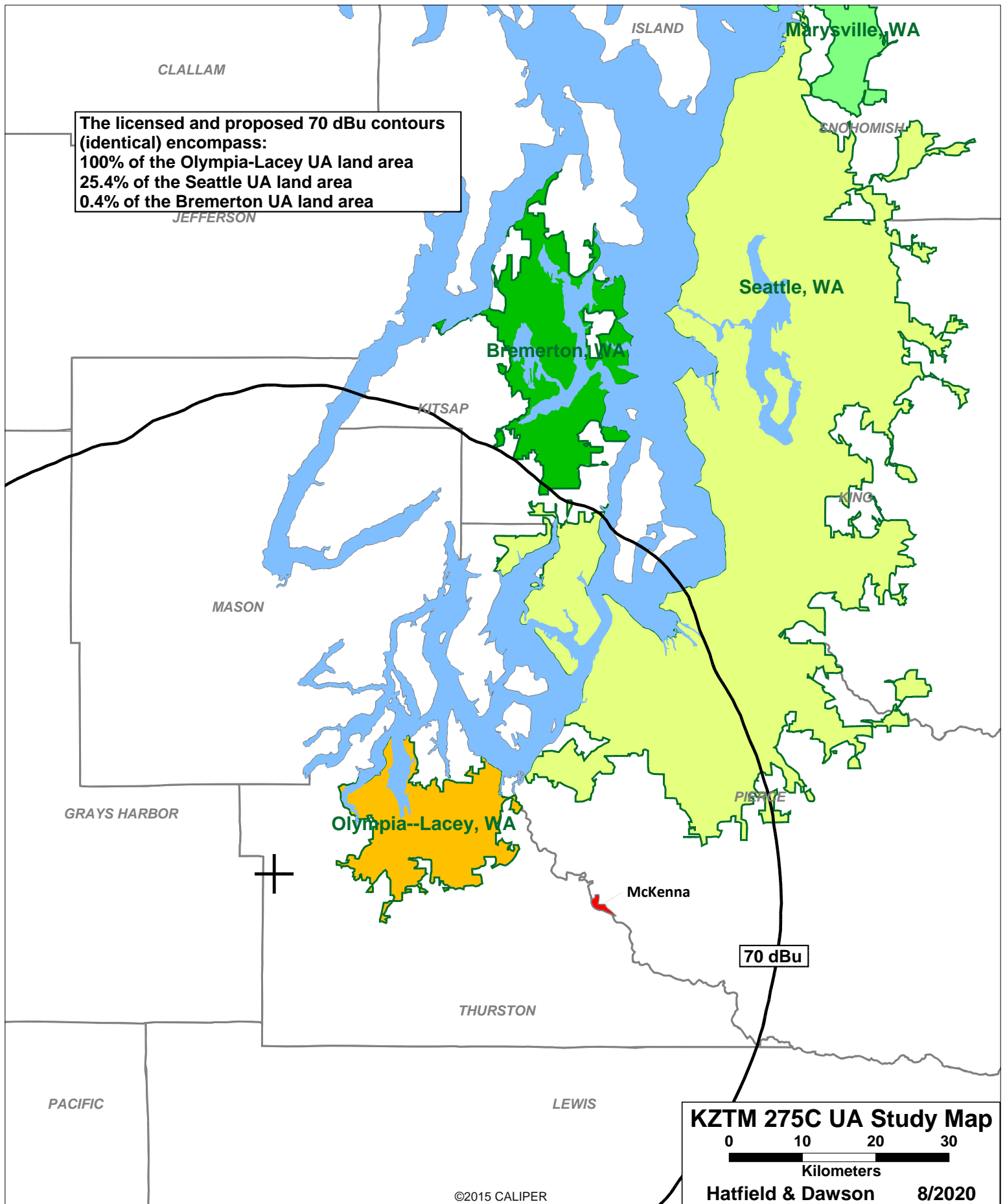
<sup>6</sup> Rural Radio at footnote 97.

For the sake of a worst-case study, and for study efficiency, omnidirectional operation was assumed even at short-spaced towers.<sup>7</sup>

Based on the results of this study we conclude that there is a) no existing registered tower and b) no unregistered tower currently used by a licensed radio station which could be used to provide a principal community signal over both McKenna and 50 percent or more of the Bremerton Urbanized Area. Consequently the instant proposal does not trigger the requirement of a “Tuck” study with regard to the Bremerton UA.

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<sup>7</sup> It is noted that the Commission’s ASR database includes two registrations for 199 foot towers at “Mid Mountain”, just northeast of the licensed/proposed KZTM transmitter site, as #1244501 #1251117. These ASRs (which appear to be for the same structure) have status of Granted, but not Constructed. ASR 1244501 relies on a long-expired 2004 FAA Determination, while ASR 1251117 similarly relies on a long-expired 2005 FAA Determination. Our search of FAA records does not indicate the filing of any Form 7460-2 to notify the FAA of completion of construction, and a site visit confirms that there is no 199 foot tower at the site. Any existing tower is shorter and unregistered, and excluded. Therefore ASR numbers 1244501 and 1251117 cannot be considered to be existing structures as defined in *Rural Radio*, but are nevertheless included in the attached list..



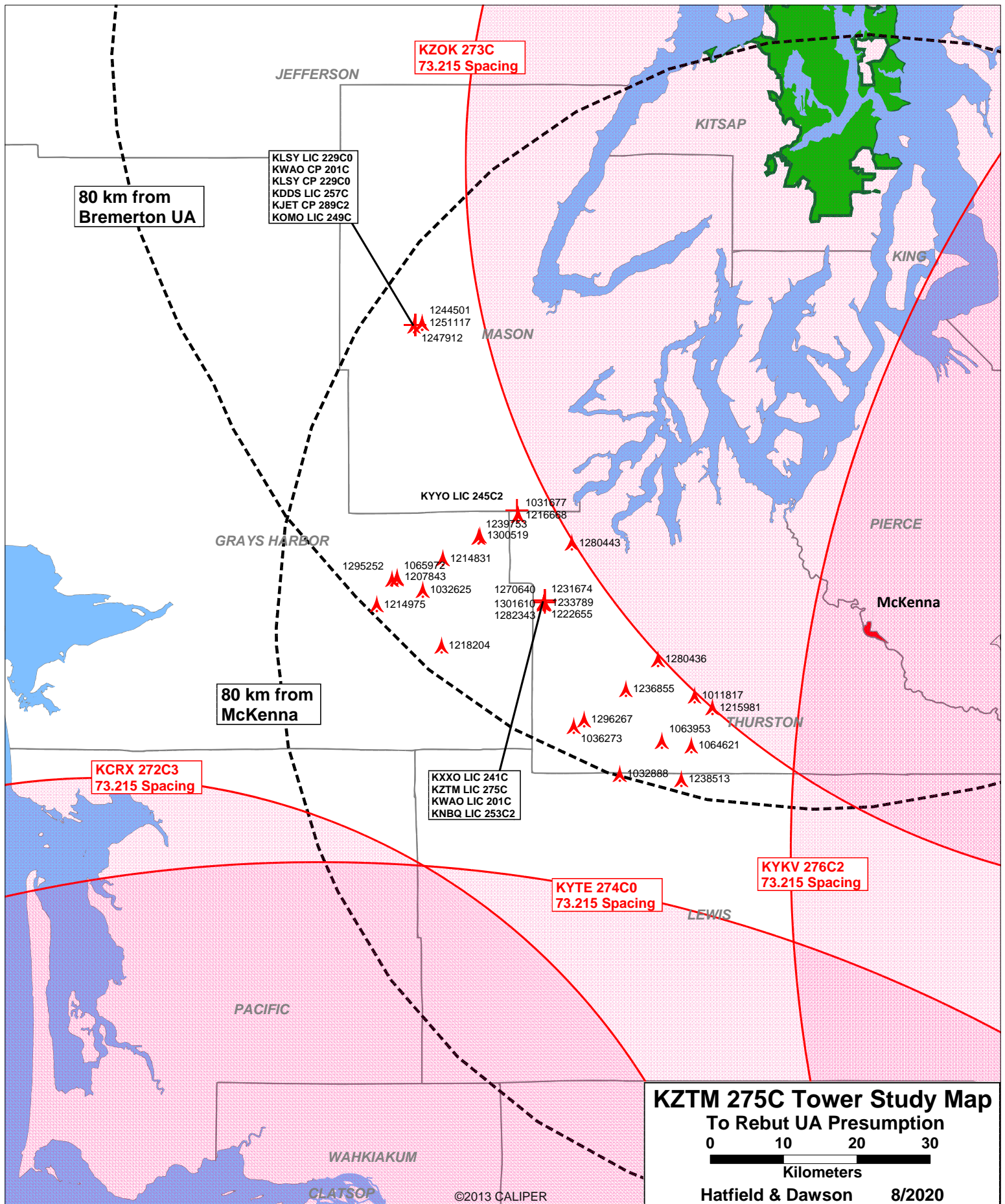
The licensed and proposed 70 dBu contours (identical) encompass:  
100% of the Olympia-Lacey UA land area  
25.4% of the Seattle UA land area  
0.4% of the Bremerton UA land area

### KZTM 275C UA Study Map

0 10 20 30  
Kilometers

Hatfield & Dawson

8/2020





## **Channel 275C at McKenna, Washington**

### **Towers Studied to Rebut Urbanized Area Service Presumption**

**Study area is the intersection of**

**a) an 80 km radius from the perimeter of McKenna, and;**

**b) an 80 km radius from the perimeter of the Bremerton Urbanized Area (see attached map)**

<b>Licensed FM Radio Station Sites Within Search Area</b>	<b>Technical Parameters</b>	<b>Conclusion (Excluded because)</b>
<b>South Mountain (ASR 1247912)</b> KLSY 229C0 Montesano KLSY 229C0 Belfair (CP) KWAQ 201C Vashon (CP) KDDS 257C Elma KOMO 249C Oakville KJET 289C2 Union (CP)	NAD83: 47-18-45.3 x 123-22-19.6 Overall height = 1043 m AMSL HAAT = 752 m Maximum C ERP = 60 kW	No 70 dBu coverage of McKenna
<b>Capitol Peak 1 (ASR 1231674)</b> KZTM 275C Centralia KWAQ 201C KNBQ 253C2	NAD83: 46-58-30.6 x 123-08-21.0 Overall height = 900 m AMSL HAAT = 701 m Maximum C ERP = 73 kW	4% 70 dBu coverage of UA
<b>Capitol Peak 2 (ASR 1282343)</b> KXXO 241C Olympia	NAD83: 46-58-22.4 x 123-08-22.1 Overall height = 929 m AMSL HAAT = 729 m Maximum C ERP = 65 kW	4% 70 dBu coverage of UA
KYYO 245C2 McCleary	NAD83: 47-05-08.3 x 123-11-21.5 Overall height = 495 m AMSL HAAT = 326 m Maximum C ERP = 100 kW	<1% 70 dBu coverage of UA

<b>Licensed AM Radio Station Sites Within Search Area</b>	<b>Technical Parameters</b>	<b>Conclusion (Excluded because)</b>
None		

<b>ASR Number and Status</b>	<b>Technical Parameters</b>	<b>Conclusion (Excluded because)</b>
1218204 Constructed	NAD83: 46-55-15.9 x 123-19-22.8 Overall height = 68 m AMSL HAAT = -91 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna
1214975 Constructed	NAD83: 46-58-17.6 x 123-26-20.5 Overall height = 213 m AMSL HAAT = 110 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna
1295252 Constructed	NAD83: 47-00-09.4 x 123-24-42.8 Overall height = 42 m AMSL HAAT = -66 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna
1032625 Granted	NAD83: 46-59-21.1 x 123-21-24.0 Overall height = 216 m AMSL HAAT = 97 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna
1065972 Granted	NAD83: 47-00-12.0 x 123-24-12.0 Overall height = 43 m AMSL HAAT = -64 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna
1207843 Granted	NAD83: 47-00-18.3 x 123-24-08.5 Overall height = 21 m AMSL HAAT = -87 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna

1214831 Constructed	NAD83: 47-01-40.2 x 123-19-13.6 Overall height = 270 m AMSL HAAT = 116 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1239753 Constructed	NAD83: 47-03-16.3 x 123-15-23.2 Overall height = 168 m AMSL HAAT = -11 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1300519 Constructed	NAD83: 47-03-21.1 x 123-15-16.1 Overall height = 194 m AMSL HAAT = 12 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1036273 Constructed	NAD83: 46-49-22.0 x 123-05-09.0 Overall height = 54 m AMSL HAAT = -59 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna
1296267 Constructed	NAD83: 46-49-50.3 x 123-04-02.1 Overall height = 91 m AMSL HAAT = -20 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna
1236855 Constructed	NAD83: 46-52-03.2 x 122-59-32.4 Overall height = 159 m AMSL HAAT = 52 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1301610 Constructed	NAD83: 46-58-20.4 x 123-08-22.0 Overall height = 858 m AMSL HAAT = 658 m Maximum C ERP = 85 kW	4% 70 dBu coverage of UA
1270640 Constructed	NAD83: 46-58-29.0 x 123-08-21.6 Overall height = 818 m AMSL HAAT = 618 m Maximum C ERP = 97 kW	4% 70 dBu coverage of UA

1222655 Constructed	NAD83: 46-58-30.0 x 123-08-20.8 Overall height = 840 m AMSL HAAT = 640 m Maximum C ERP = 90 kW	4% 70 dBu coverage of UA
1233789 Constructed	NAD83: 46-58-23.6 x 123-08-16.4 Overall height = 829 m AMSL HAAT = 629 m Maximum C ERP = 95 kW	4% 70 dBu coverage of UA
1280443 Constructed	NAD83: 47-02-49.0 x 123-05-21.0 Overall height = 414 m AMSL HAAT = 260 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1031677 Constructed	NAD83: 47-04-51.3 x 123-11-07.5 Overall height = 527 m AMSL HAAT = 359 m Maximum C ERP = 100 kW	<1% 70 dBu coverage of UA
1216668 Constructed	NAD83: 47-04-51.2 x 123-11-07.2 Overall height = 518 m AMSL HAAT = 351 m Maximum C ERP = 100 kW	<1% 70 dBu coverage of UA
1280436 Constructed	NAD83: 46-54-16.0 x 122-56-04.0 Overall height = 144 m AMSL HAAT = 42 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1244501 Granted	NAD83: 47-18-58.6 x 123-21-27.9 Overall height = 944 m AMSL HAAT = 662 m Maximum C ERP = 82 kW	No 70 dBu coverage of McKenna
1251117 Granted	NAD83: 47-18-58.6 x 123-21-27.9 Overall height = 945 m AMSL HAAT = 663 m Maximum C ERP = 82 kW	No 70 dBu coverage of McKenna



1011817 Constructed	NAD83: 46-51-36.3 x 122-52-06.8 Overall height = 224 m AMSL HAAT = 116 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1215981 Constructed	NAD83: 46-50-43.5 x 122-50-12.2 Overall height = 330 m AMSL HAAT = 207 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1063953 Constructed	NAD83: 46-48-14.0 x 122-55-39.0 Overall height = 79 m AMSL HAAT = -20 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA (Also, this tower is known to have incorrect coordinates. It is actually 10 minutes farther north, at a prohibitively short-spaced location.)
1064621 Constructed	NAD83: 46-47-56.0 x 122-52-30.0 Overall height = 173 m AMSL HAAT = 52 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1238513 Constructed	NAD83: 46-45-27.9 x 122-53-34.2 Overall height = 166 m AMSL HAAT = 46 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA
1032888 Constructed	NAD83: 46-45-50.0 x 123-00-11.0 Overall height = 95 m AMSL HAAT = 0 m Maximum C ERP = 100 kW	No 70 dBu coverage of UA No 70 dBu coverage of McKenna