

**August 2013  
New FM Translator  
Independence, Washington Channel 293D  
Allocation Study**

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. The attached allocation study map demonstrates compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

**KOWA-LP 293L1 Olympia**

Since the time that the original proposal for Independence 293D was filed in March 2003, LPFM station KOWA-LP has secured authorization to operate on Channel 293L1 at Olympia. The KOWA-LP transmitter site is located 27.09 km from the Independence 293D transmitter site, which satisfies the applicable cochannel LPFM-to-translator spacing requirement of 26 kilometers. (The Independence application has a reference 60 dBu contour distance of 6.3 kilometers, which places it in lowest tier of LPFM-to-translator spacing requirements.)

Since the Independence 293D proposal pre-dates KOWA-LP, and since KOWA-LP is fully-spaced to Independence 293D, this is believed to satisfy all protection requirements to KOWA-LP.

**LPFM Preclusion Study**

There is no change in the proposed channel or transmitter site location, from that which was on file as of June 16, 2013. Therefore this application does not change the proposal's preclusive effect upon potential LPFM applications, and is fully-protected from subsequent LPFM applications.

Attached is a copy of the previously-filed LPFM Preclusion study, which demonstrates that the proposed facility will not have a preclusive effect upon LPFM channel availability within the Seattle market grid.

## =====

SEARCH PARAMETERS FM Database Date: 130805

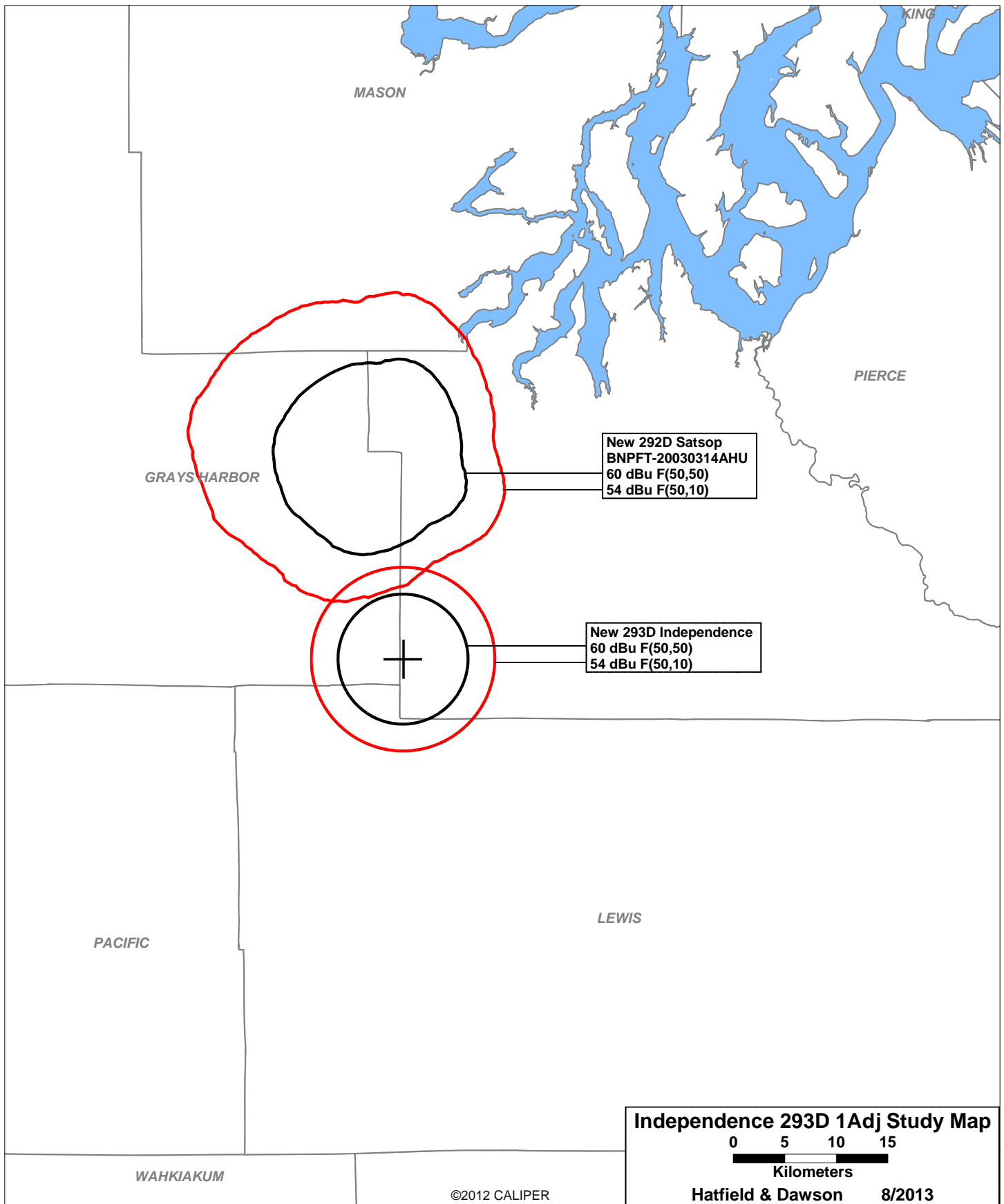
Channel: 293A 106.5 MHz  
 Latitude: 46 48 58  
 Longitude: 123 9 24  
 Safety Zone: 50 km  
 Job Title: INDEPENDENCE 293

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
NEW-T APP	RAYMOND WA	BNPFT-30310BII	291D 106.1	0.250 370.0	46-41-44 123-46-17	254.3	48.84 0.00	0 TRANS
KBKS-FM LIC	TACOMA WA	BLH-01023AFA	291C 106.1	73.000 698.0	47-30-17 121-58-04	49.1	118.27 23.27	95 CLEAR
KBKSaux LIC	TACOMA WA	BXMLH-20312AAA	291C 106.1	58.000 714.0	47-30-14 121-58-29	49.0	117.81 0.00	0 AUX
K206CL CP	ASTORIA OR	BPFT-10810ABV	292D 106.3	0.013 423.0	46-17-10 123-53-50	224.1	81.83 0.00	0 TRANS
NEW-T APP	SATSOP WA	BNPFT-30314AHU	292D 106.3	0.010 755.0	46-58-24 123-08-11	5.0	17.55 0.00	0 TRANS
K293BL LIC	NEDONNA BEACH OR	BLFT-20904AAJ	293D 106.5	0.010 501.0	45-44-38 123-56-24	207.1	133.60 0.00	0 TRANS
KAHS-LP LIC	ABERDEEN WA	BLL-00615AER	293L1 106.5	0.100 -20.7	46-58-50 123-49-02	290.3	53.55 -13.45	67 SHORT
K293AY LIC	ENUMCLAW WA	BLFT-01116AKP	293D 106.5	0.010 974.0	47-13-07 121-50-54	65.2	109.08 0.00	0 TRANS
NEW-T APP	INDEPENDENCE WA	BNPFT-30310BNJ	293D 106.5	0.150 4.0	46-48-58 123-09-24	0.0	0.00 0.00	0 TRANS
KWPZ LIC	LYNDEN WA	BMLH-81008AJR	293C 106.5	68.000 711.0	48-40-46 122-50-31	6.4	208.51 -17.49	226 SHORT
KOWA-LP LIC	OLYMPIA WA	BLL-40816AAB	293L1 106.5	0.022 62.0	47-01-15 122-57-50	32.7	27.09 -39.91	67 SHORT
KLTH LIC	LAKE OSWEGO OR	BLH-00416AAO	294C 106.7	100.000 502.0	45-30-58 122-43-59	167.1	148.16 -16.84	165 SHORT
KLTHaux LIC	LAKE OSWEGO OR	BXLH-01130AAG	294C 106.7	22.100 353.0	45-30-57 122-43-52	167.1	148.22 0.00	0 AUX
KLTHaux LIC	LAKE OSWEGO OR	BXMLH-990426KF	294C 106.7	80.000 268.0	45-27-17 122-32-58	162.6	158.43 0.00	0 AUX

```
=====
SEARCH PARAMETERS                               FM Database Date: 130805
Channel: 293A    106.5 MHz                      Page    2
Latitude:  46 48 58
Longitude: 123  9 24
Safety Zone:  50 km
Job Title: INDEPENDENCE 293
```

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
K295BO LIC	ABERDEEN WA	BLFT-30701ADB	295D 106.9	0.125 DA 136.0	46-59-18 123-47-42	291.8	52.27 0.00	0 TRANS
KRWMaux LIC	BREMERTON WA	BLH-990806KF	295C1 106.9	34.000 DA 372.0	47-32-41 122-06-28	44.0	113.50 0.00	0 AUX
KRWM LIC	BREMERTON WA	BMLH-51207AGQ	295C1 106.9	49.000 DA 396.0	47-32-39 122-06-29	44.0 SS	113.44 38.44	75 CLEAR
KRQT LIC	CASTLE ROCK WA	BLH-81216AAF	296C3 107.1	0.800 523.0	46-20-18 123-05-45	175.0 SS	53.32 11.32	42 CLEAR
KRQT-FM1 LIC	LONGVIEW WA	BLFTB-01018ACF	296D 107.1	2.000 DA 0.0	46-08-06 122-56-06	167.3	77.60 0.00	0 BOOST

===== END OF FM SPACING STUDY FOR CHANNEL 293 =====



**August 2013  
New FM Translator  
Independence, Washington Channel 293D  
RF Exposure Study**

**Facilities Proposed**

The proposed operation will be on Channel 293D (106.5 MHz) with an effective radiated power of 150 watts.

The proposed antenna support structure does 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.

**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.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

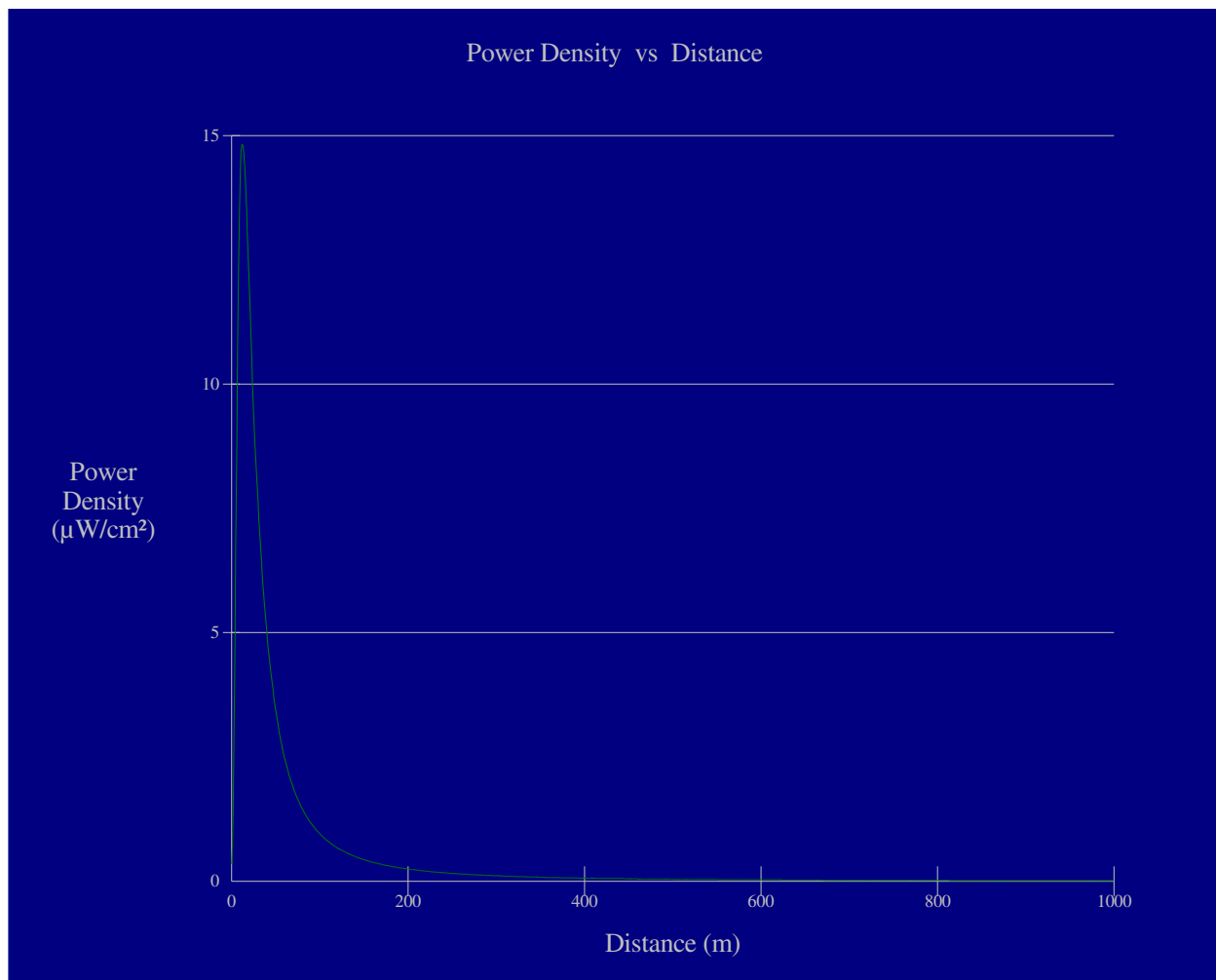
Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

*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 6 element pattern, which is the element pattern for the Shively antenna proposed for use. The highest calculated ground level power density occurs at a distance of 12 meters from the base of the antenna support structure. At this point the power density is calculated to be 14.8  $\mu W/cm^2$ , which is 7.4% of 200  $\mu W/cm^2$  (the FCC standard for uncontrolled environments).

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

### New-T 293D Independence

Antenna Type: Shively 6812B-1

No. of Elements: 1

Element Spacing: 1.0 wavelength

Distance: 1000 meters

Horizontal ERP: 150 W

Vertical ERP: 150 kW

Antenna Height: 14 meters AGL

Maximum Calculated Power Density is  $14.8 \mu\text{W}/\text{cm}^2$  at 12 meters from the antenna structure.

Hatfield & Dawson Consulting Engineers