

EXHIBIT 11

Fulcrum Community Communications - LPFM Channel 297

Interference Study and Second Adjacent Channel Waiver Request

The proposed facility's Effective Radiated Power (ERP) is 15 Watts at 18 meters above ground level. The antenna would be mounted on a building that is 8 meters tall. The antenna itself will be 10 meters above the roof of the building. There is no public access to the roof. Entry is through a locked door from the upper level which is an unoccupied storage area and crawl space.

The applicant proposes to reduce the potential zone of interference by reducing downward radiation through use of a Nicom BLD-1/P vertical dipole antenna with 2 bays spaced vertically at one full wavelength. The manufacturer's specs for this array are included on the last page of this exhibit.

At the proposed transmitter site, the signals of second adjacent channel stations KNND 299C Seattle and KRWM 295C1 Bremerton are each calculated to be 86 dBu. Adding this value to the 40 dB desired/undesired signal ratio for the second adjacent channel gives a potential interference contour of 126 dBu.

The potential interference contour measures 14 meters, based on an isotropic antenna with 15 Watts at 57 meters AGL. This was plotted on a USGS quadrangle and is shown after the interference calculation table.

Since the field strength of the proposed antenna varies with angle of depression from horizontal, the antenna relative fields are tabulated at 5 degree increments. Antenna relative field strength data was provided by the manufacturer of the proposed antenna. It is included as the last page of this exhibit.

The distance to the proposed interference contour at each angle has been calculated using the "FM and TV Propagation Curves Calculations" tool on the FCC website. The relative ERP at each angle of elevation was calculated using the "Relative Field Values for Directional Pattern tool on the FCC website.

There are no habitable structures within 14 meters other than the building hosting the transmitter.

The building beneath the antenna structure lies completely within 30 to 90 degrees of the antenna. The interference zone extends no more than 3 meters from the antenna toward the building.

The applicant believes that the proposed facility's area of potential interference will not reach the ground or any habitable space above ground level.

Additionally, the reduced downward RF radiation is well below a fraction of a percentage of the FCC RF guidelines for casual exposure to people within the building beneath the antenna.

Calculation of RF Levels at a Distance
15 Watts into a 2-Bay Vertical Dipole with Full Wave Vertical Spacing

Depression Angle (from Center of Radiation)	Antenna Relative Field	ERP (watts)	Distance to 126 dBu F(50,10) Interfering Contour from Antenna (m)
5	.954	14	13
10	.875	11	12
15	.740	8	10
20	.575	5	8
25	.397	2.4	5
30	.222	0.7	3
35	.129	0.2	2
40	.050	0.0	0
45	.136	0.3	2
50	.186	0.5	3
55	.208	0.6	3
60	.206	0.6	3
65	.185	0.5	3
70	.156	0.4	2
75	.118	0.2	2
80	.074	0.1	1
85	.035	0.0	0
90	.000	0.0	0

**Map Showing KNDD Seattle 299C and KRWM Bremerton 295C1
86 dBu F (50,50) contours at Proposed LPFM Site and
126 dBu potential interfering contour (14 m)
before suppression of downward radiation**



Prepared by
Dr. Sandra Woodruff
Technical Consultant
2708 Hampton Court SE
Olympia, WA

Manufacturer Specs - Nicom BLD-1/P Vertical Radiation values

TX station: BLD-1/P (2-bay)

Site name:

Frequency: 98.00 MHz

Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)
0.0	100.0	3.56	60.0	20.6	0.15	120.0	7.9	0.02
2.0	99.2	3.50	62.0	20.0	0.14	122.0	7.6	0.02
4.0	97.6	3.39	64.0	19.0	0.13	124.0	7.5	0.02
6.0	95.1	3.21	66.0	18.0	0.12	126.0	7.2	0.02
8.0	91.6	2.99	68.0	16.9	0.10	128.0	6.7	0.02
10.0	87.5	2.72	70.0	15.6	0.09	130.0	6.2	0.01
12.0	82.5	2.42	72.0	14.2	0.07	132.0	5.4	0.01
14.0	77.0	2.11	74.0	12.6	0.06	134.0	4.5	0.01
16.0	70.9	1.79	76.0	11.0	0.04	136.0	3.6	0.00
18.0	64.3	1.47	78.0	9.2	0.03	138.0	2.5	0.00
20.0	57.5	1.18	80.0	7.4	0.02	140.0	1.4	0.00
22.0	50.4	0.90	82.0	5.8	0.01	142.0	0.2	0.00
24.0	43.3	0.67	84.0	4.2	0.01	144.0	1.2	0.00
26.0	36.1	0.46	86.0	2.8	0.00	146.0	2.6	0.00
28.0	28.9	0.30	88.0	1.8	0.00	148.0	4.1	0.01
30.0	22.2	0.17	90.0	0.8	0.00	150.0	5.7	0.01
32.0	15.8	0.09	92.0	1.4	0.00	152.0	7.2	0.02
34.0	9.9	0.04	94.0	2.2	0.00	154.0	8.9	0.03
36.0	4.4	0.01	96.0	3.1	0.00	156.0	10.5	0.04
38.0	0.6	0.00	98.0	4.0	0.01	158.0	12.1	0.05
40.0	5.0	0.01	100.0	5.0	0.01	160.0	13.7	0.07
42.0	8.9	0.03	102.0	5.7	0.01	162.0	15.3	0.08
44.0	12.3	0.05	104.0	6.3	0.01	164.0	16.8	0.10
46.0	15.0	0.08	106.0	6.8	0.02	166.0	18.1	0.12
48.0	17.2	0.11	108.0	7.1	0.02	168.0	19.1	0.13
50.0	18.8	0.13	110.0	7.4	0.02	170.0	20.1	0.14
52.0	20.0	0.14	112.0	7.6	0.02	172.0	20.8	0.15
54.0	20.6	0.15	114.0	7.8	0.02	174.0	21.4	0.16
56.0	20.9	0.16	116.0	7.9	0.02	176.0	22.0	0.17
58.0	20.9	0.16	118.0	7.9	0.02	178.0	22.6	0.18