

**AMEND BPH-20070119AFH**  
**MINOR CHANGE APPLICATION/**  
**CITY OF LICENSE CHANGE**  
**CUMULUS LICENSING LLC**  
**KNRQ (FM) RADIO STATION**  
**CH 250A - 97.9 MHZ - 0.26 KW**  
**TUALATIN, OREGON**  
**January 2007**

**EXHIBIT B**

The proposed KNRQ antenna location will be shortspaced to one other FM station, KACI-FM, Channel 249C2, The Dalles, Oregon (the applied for facility). The relevant distance between the stations is shown on Exhibit B1. Cumulus proposes to use the provisions of §73.215 of the Commission's rules to address this shortspaced situation. The shortage to this station complies with §73.215(e) of the Commission's rules.

Exhibit B2 specifically demonstrates that there will be no prohibited overlap between the proposed KNRQ and proposed KACI-FM. The contours of the applied for KACI-FM are based on the requested power and height, as it was submitted pursuant to §73.215. Attached as Exhibits B3 and B4 are the tabulated distances to the protected and interfering contours, along the pertinent arcs, of the proposed KNRQ and applied for KACI-FM. Further, attached as Exhibit B5 are the tabulated and protected contours of the proposed facility, in ten degree increments. Again, there is no prohibited overlap between the facilities.

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**EXHIBIT B1**

Clearance study for KNRQ Tualatin, Oregon  
Using proposed site as reference

REFERENCE	CLASS = A	Int = B1	DISPLAY DATES
45 31 21.0 N.	Current	Spacings	DATA 01-26-07
122 44 45.0 W.			SEARCH 01-26-07
----- Channel 250 - 97.9 MHz -----			

Call	Channel	Location	Azi	Dist	FCC	Margin
Lat.	Lng.	Ant	Power	HAAT		
KNRQ-FM	APP-N 250A	Tualatin	OR 270.0	5.20	115.0	-109.80
	45 31 21.0	122 48 45.0	NCX 0.260 kW		470 M	
	Cumulus Licensing LLC		BPH-20070119AFH			
KNRQ-FM	RSV 250A	Tualatin	OR 207.3	23.77	115.0	-91.23
	45 19 57.0	122 53 08.0	25.000 kW		100 M	
	Cumulus Licensing LLC					
KNRQ-FM	LIC 250C	Eugene	OR 189.9	171.43	226.0	-54.57
	44 00 08.0	123 06 50.0	EN 100.000 kW		308 M	
	Cumulus Licensing LLC		BLH-19910528KF			
* KACI-FM	APP-Z 249C2	The Dalles	OR 96.7	100.75	106.0	-5.25
	45 24 36.0	121 28 03.0	ZCX 9.600 kW		328 M	
	Columbia Gorge Broadcaster		BPH-20070118AEL			
KACI-FM	LIC 249C2	The Dalles	OR 82.5	115.85	106.0	9.85
	45 38 56.0	121 16 20.0	CX 5.100 kW		272 M	
	Columbia Gorge Broadcaster		BMLH-20040610AAJ			
KFMY	LIC-Z 249C1	Raymond	WA 341.6	161.82	133.0	28.82
	46 54 05.0	123 25 07.0	ZCX 44.000 kW		403 M	
	South Sound Broadcasting		BLH-20011101ACQ			
KCYS	LIC 251A	Seaside	OR 297.8	104.30	72.0	32.30
	45 57 08.0	123 56 14.0	C 6.000 kW		100 M	
	Dave's Broadcasting Corp.		BLH-20000225AAK			
RADD	ADD 252C3	Monmouth	OR 201.2	75.86	42.0	33.86
	44 53 08.0	123 05 36.0	25.000 kW		100 M	
	Radio Beam, LLC					
RADD	ADD 252C3	Monmouth	OR 201.2	75.86	42.0	33.86
	44 53 08.0	123 05 36.0	25.000 kW		100 M	
	Radio Beam, LLC					
AL8465	RSV 249C1	Oakville	WA 340.5	169.12	133.0	36.12
	46 57 14.0	123 29 21.0	N 100.000 kW		299 M	
			RM-9369			

\* Note: This shortage is addressed under \$73.215 of the rules, see Exhibit B.



Latitude: 45-31-21 N  
Longitude: 122-44-45 W  
ERP: 0.26 kW  
Channel: 250A  
Frequency: 97.9 MHz  
AMSL Height: 560.96 m

BMLH-20040610AAJ  
Latitude: 45-24-36 N  
Longitude: 121-28-03 W  
ERP: 9.60 kW  
Channel: 249C2  
Frequency: 97.7 MHz  
AMSL Height: 1430.0 m

**Graham Brock, Inc. - Broadcast Technical Consultants**

**EXHIBIT B2**  
**AMEND BPH-20070119AFH**  
**MINOR CHANGE APPLICATION/**  
**CHANGE OF COMMUNITY OF LICENSE**  
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**KNRQ RADIO STATION**  
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**KNRQ 54 dBu (50/10)**

**KNRQ 60 dBu (50/50)**

KACI-FM 60 dBu (50/50)

**KACI-FM 54 dBu (50/10)**

Scale 1:1,000,000





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**TUALATIN, OREGON**

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**EXHIBIT B3**

KNRQ-FM - BPH-20070119AFH  
Channel = 250C3  
Max ERP = 0.26 kW  
RCAMSL = 561 M  
N. Lat = 45 31 21  
W. Lng = 122 44 45

KACI-FM - BPH-20070118AEL  
Channel = 249C2  
Max ERP = 9.6 kW  
RCAMSL = 1430 M  
N. Lat = 45 24 36  
W. Lng = 121 28 03

Protected  
60 dBu

Interfering  
54 dBu

**30 Second terrain database**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
050.0	000.2600	0511.9	029.7	292.7	005.9505	0367.9	083.3	50.8
051.0	000.2600	0511.8	029.7	292.5	005.9531	0367.9	082.9	50.9
052.0	000.2600	0511.7	029.7	292.3	005.9559	0361.3	082.4	50.9
053.0	000.2600	0511.6	029.7	292.2	005.9587	0361.3	082.0	51.0
054.0	000.2600	0511.1	029.7	292.0	005.9618	0361.3	081.5	51.1
055.0	000.2600	0510.4	029.6	291.7	005.9651	0361.3	081.1	51.3
056.0	000.2600	0509.5	029.6	291.5	005.9685	0361.3	080.7	51.4
057.0	000.2600	0508.5	029.6	291.3	005.9721	0352.8	080.3	51.3
058.0	000.2600	0507.5	029.5	291.0	005.9758	0352.8	079.9	51.4
059.0	000.2600	0506.5	029.5	290.8	005.9796	0352.8	079.5	51.6
060.0	000.2600	0505.5	029.5	290.5	005.9835	0352.8	079.2	51.7
061.0	000.2600	0504.7	029.4	290.3	005.9874	0341.9	078.8	51.5
062.0	000.2600	0503.9	029.4	290.0	005.9923	0341.9	078.4	51.6
063.0	000.2600	0503.2	029.4	289.7	006.0294	0341.9	078.1	51.7
064.0	000.2600	0502.6	029.4	289.4	006.0674	0326.9	077.7	51.4
065.0	000.2600	0502.1	029.3	289.2	006.1063	0326.9	077.4	51.5
066.0	000.2600	0501.6	029.3	288.9	006.1461	0326.9	077.1	51.7
067.0	000.2600	0501.1	029.3	288.6	006.1869	0326.9	076.7	51.8
068.0	000.2600	0500.7	029.3	288.3	006.2286	0313.2	076.4	51.5
069.0	000.2600	0500.3	029.3	288.0	006.2713	0313.2	076.1	51.6
070.0	000.2600	0499.9	029.3	287.7	006.3151	0313.2	075.8	51.7
071.0	000.2600	0499.4	029.3	287.3	006.3600	0300.7	075.5	51.5
072.0	000.2600	0498.8	029.2	287.0	006.4064	0300.7	075.3	51.6
073.0	000.2600	0498.0	029.2	286.7	006.4540	0300.7	075.0	51.7
074.0	000.2600	0497.0	029.2	286.3	006.5030	0289.5	074.8	51.5
075.0	000.2600	0495.6	029.1	286.0	006.5536	0289.5	074.5	51.6
076.0	000.2600	0494.0	029.1	285.6	006.6054	0289.5	074.3	51.7
077.0	000.2600	0492.4	029.0	285.2	006.6580	0278.6	074.1	51.4
078.0	000.2600	0490.6	028.9	284.9	006.7117	0278.6	074.0	51.5
079.0	000.2600	0488.7	028.9	284.5	006.7661	0266.3	073.8	51.2
080.0	000.2600	0487.0	028.8	284.1	006.8209	0266.3	073.7	51.3
081.0	000.2600	0485.7	028.8	283.7	006.8756	0266.3	073.5	51.4
082.0	000.2600	0486.1	028.8	283.4	006.9287	0253.6	073.3	51.1
083.0	000.2600	0486.9	028.8	283.0	006.9823	0253.6	073.1	51.2
084.0	000.2600	0487.6	028.8	282.6	007.0368	0253.6	072.9	51.3
085.0	000.2600	0488.4	028.9	282.3	007.0921	0242.8	072.8	51.0
086.0	000.2600	0487.8	028.9	281.9	007.1498	0242.8	072.6	51.1
087.0	000.2600	0487.2	028.8	281.5	007.2081	0233.5	072.5	50.8
088.0	000.2600	0486.6	028.8	281.1	007.2670	0233.5	072.4	50.9
089.0	000.2600	0485.6	028.8	280.7	007.3267	0233.5	072.4	51.0
090.0	000.2600	0484.1	028.7	280.3	007.3871	0224.9	072.3	50.7

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**EXHIBIT B4**

KACI-FM - BPH-20070118AEL  
Channel = 249C2  
Max ERP = 9.6 kW  
RCAMSL = 1430 M  
N. Lat = 45 24 36  
W. Lng = 121 28 03

KNRQ-FM - BPH-20070119AFH  
Channel = 250C3  
Max ERP = 0.26 kW  
RCAMSL = 561 M  
N. Lat = 45 31 21  
W. Lng = 122 44 45

Protected  
60 dBu

Interfering  
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
275.0	008.0374	0161.9	037.8	098.2	000.2600	0478.8	063.0	47.2
276.0	007.9149	0176.9	039.2	097.6	000.2600	0478.8	061.5	47.7
277.0	007.7933	0189.9	040.2	097.0	000.2600	0478.9	060.5	48.0
278.0	007.6727	0202.3	041.0	096.3	000.2600	0479.3	059.7	48.4
279.0	007.5530	0214.7	041.8	095.6	000.2600	0479.3	058.9	48.6
280.0	007.4342	0224.9	042.4	094.8	000.2600	0479.5	058.4	48.8
281.0	007.2830	0233.5	042.8	094.0	000.2600	0479.6	058.0	49.0
282.0	007.1332	0242.8	043.3	093.2	000.2600	0479.9	057.7	49.1
283.0	006.9850	0253.6	043.8	092.4	000.2600	0481.1	057.3	49.3
284.0	006.8384	0266.3	044.4	091.5	000.2600	0481.1	056.8	49.5
285.0	006.6934	0278.6	045.1	090.6	000.2600	0482.6	056.4	49.7
286.0	006.5499	0289.5	045.6	089.7	000.2600	0484.1	056.1	49.8
287.0	006.4079	0300.7	046.1	088.7	000.2600	0485.6	055.8	49.9
288.0	006.2675	0313.2	046.7	087.8	000.2600	0486.6	055.5	50.1
289.0	006.1286	0326.9	047.3	086.7	000.2600	0487.2	055.2	50.2
290.0	005.9914	0341.9	048.1	085.6	000.2600	0487.8	054.8	50.4
291.0	005.9762	0352.8	048.7	084.5	000.2600	0488.4	054.6	50.5
292.0	005.9611	0361.3	049.2	083.5	000.2600	0486.9	054.5	50.4
293.0	005.9459	0367.9	049.6	082.5	000.2600	0486.9	054.6	50.4
294.0	005.9308	0375.7	050.0	081.5	000.2600	0485.7	054.7	50.3
295.0	005.9158	0387.6	050.6	080.4	000.2600	0487.0	054.7	50.4
296.0	005.9007	0400.3	051.3	079.2	000.2600	0488.7	054.6	50.4
297.0	005.8857	0411.9	051.9	078.1	000.2600	0490.6	054.7	50.5
298.0	005.8706	0422.9	052.5	076.9	000.2600	0492.4	054.8	50.5
299.0	005.8556	0432.9	053.0	075.8	000.2600	0494.0	055.0	50.4
300.0	005.8406	0440.7	053.4	074.9	000.2600	0495.6	055.4	50.3
301.0	005.9762	0446.1	053.9	073.8	000.2600	0497.0	055.7	50.3
302.0	006.1133	0451.8	054.4	072.7	000.2600	0498.0	056.0	50.2
303.0	006.2520	0459.3	055.1	071.6	000.2600	0498.8	056.3	50.1
304.0	006.3922	0467.4	055.8	070.5	000.2600	0499.9	056.7	50.0
305.0	006.5340	0475.3	056.4	069.3	000.2600	0500.3	057.1	49.9
306.0	006.6773	0482.5	057.1	068.2	000.2600	0500.7	057.5	49.7
307.0	006.8222	0488.5	057.6	067.2	000.2600	0501.1	058.1	49.5
308.0	006.9687	0493.0	058.1	066.3	000.2600	0501.6	058.7	49.3
309.0	007.1167	0495.8	058.5	065.5	000.2600	0501.6	059.4	49.0
310.0	007.2662	0497.2	058.8	064.8	000.2600	0502.1	060.2	48.8
311.0	007.4850	0497.6	059.1	064.2	000.2600	0502.6	061.0	48.5
312.0	007.7070	0497.9	059.4	063.5	000.2600	0502.6	061.8	48.2
313.0	007.9323	0498.6	059.8	062.9	000.2600	0503.2	062.7	47.9
314.0	008.1608	0500.3	060.2	062.2	000.2600	0503.9	063.5	47.7
315.0	008.3926	0502.9	060.6	061.5	000.2600	0503.9	064.4	47.4



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**EXHIBIT B5**

Predicted contour:

N. Lat. = 45 31 21.0 - Tabulated Protected and Interfering Contour Data  
W. Lng. = 122 44 45.0 - KNRQ Radio Station - Tualatin, Oregon

HAAT and Distance to Contour - FCC Method - NGDC 30 Second terrain database								
Azi.	HAAT	ERP kW	dBk	Field	60-F5	40-F1	54-F1	100-F1
000	489.1	0.2600	-5.85	1.000	28.89	85.60	45.06	1.13
010	491.1	0.2600	-5.85	1.000	28.96	85.74	45.17	1.13
020	498.2	0.2600	-5.85	1.000	29.21	86.23	45.56	1.13
030	512.0	0.2600	-5.85	1.000	29.69	87.15	46.35	1.13
040	509.9	0.2600	-5.85	1.000	29.61	87.01	46.22	1.13
050	511.9	0.2600	-5.85	1.000	29.68	87.14	46.34	1.13
060	505.5	0.2600	-5.85	1.000	29.46	86.72	45.98	1.13
070	499.9	0.2600	-5.85	1.000	29.27	86.34	45.66	1.13
080	487.0	0.2600	-5.85	1.000	28.82	85.45	44.94	1.13
090	484.1	0.2600	-5.85	1.000	28.72	85.24	44.78	1.13
100	478.3	0.2600	-5.85	1.000	28.52	84.81	44.46	1.13
110	478.3	0.2600	-5.85	1.000	28.53	84.81	44.46	1.13
120	472.8	0.2600	-5.85	1.000	28.34	84.39	44.16	1.13
130	458.6	0.2600	-5.85	1.000	27.87	83.22	43.38	1.13
140	447.3	0.2600	-5.85	1.000	27.51	82.23	42.77	1.13
150	465.0	0.2600	-5.85	1.000	28.08	83.76	43.73	1.13
160	439.4	0.2600	-5.85	1.000	27.27	81.52	42.33	1.13
170	446.4	0.2600	-5.85	1.000	27.48	82.15	42.72	1.13
180	479.2	0.2600	-5.85	1.000	28.56	84.88	44.51	1.13
190	489.1	0.2600	-5.85	1.000	28.89	85.60	45.06	1.13
200	484.2	0.2600	-5.85	1.000	28.73	85.25	44.79	1.13
210	473.7	0.2600	-5.85	1.000	28.37	84.45	44.21	1.13
220	467.5	0.2600	-5.85	1.000	28.16	83.97	43.87	1.13
230	460.0	0.2600	-5.85	1.000	27.92	83.34	43.46	1.13
240	483.2	0.2600	-5.85	1.000	28.69	85.17	44.73	1.13
250	496.2	0.2600	-5.85	1.000	29.14	86.09	45.46	1.13
260	497.2	0.2600	-5.85	1.000	29.18	86.16	45.51	1.13
270	493.4	0.2600	-5.85	1.000	29.04	85.90	45.30	1.13
280	487.7	0.2600	-5.85	1.000	28.85	85.50	44.98	1.13
290	483.2	0.2600	-5.85	1.000	28.69	85.17	44.73	1.13
300	470.1	0.2600	-5.85	1.000	28.25	84.18	44.01	1.13
310	433.8	0.2600	-5.85	1.000	27.10	81.03	42.02	1.13
320	366.8	0.2600	-5.85	1.000	25.07	74.92	38.09	1.13
330	335.0	0.2600	-5.85	1.000	24.01	71.89	36.15	1.13
340	440.3	0.2600	-5.85	1.000	27.30	81.61	42.38	1.13
350	483.3	0.2600	-5.85	1.000	28.69	85.18	44.74	1.13

AMSL= 561 M