

Doug Vernier Telecommunications Consultants  
401 Main Street Suite 213, Cedar Falls, IA 50613

Minnesota Public Radio  
KNOW Reduce Antenna Height  
Average Protected F(50-50)= 78.91 km  
Omni-directional

REFERENCE  
45 03 44.0 N.  
93 08 21.0 W.

CH# 216C0 - 91.1 MHz, Pwr= 100 kW, HAAT= 388.5 M, COR= 663.3 M  
Average Protected F(50-50)= 78.91 km  
Omni-directional

DISPLAY DATES  
DATA 07-29-10  
SEARCH 07-29-10

CH CITY	CALL	TYPE ANT STATE	AZI <--	DI ST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
216C	KNOW-FM Minneapolis-st. Pau	LIC _CN MN	0.0 0.0	0.0 BLED19940420KA	45 03 44.0 93 08 21.0	100.000 400	183.2 677	80.1 Minnesota Public Radio	-262.2*<	-262.1*<
216A	KXLC La Crescent	LIC _CX MN	134.3 315.5	198.1 BLED20090730ACK	43 48 16.1 91 22 19.3	0.230 257	59.3 522	19.2 Minnesota Public Radio	60.8	-2.6<
217A	WHEM Eau Claire	LIC _CX WI	104.0 285.1	131.9 BLED20030715ABI	44 45 50.0 91 31 06.0	0.300 87	22.4 364	15.4 Fourth Dimension, Inc.	32.8	1.3
214A	WVSS Menomonee	LIC DCX WI	100.7 281.4	85.2 BLED20020903AFN	44 54 56.0 92 04 34.0	0.590 130	1.6 449	14.8 Board Of Regents, Universi	5.7	59.2
218C3	1210394 Turtle Lake	APP DVX WI	56.9 237.6	88.1 BNPED20071012AHI	45 29 27.0 92 11 33.0	20.000 100	3.7 473	31.3 The I-c-n Company	6.6	45.6
215A	KKLW Willmar	LIC _CX MN	276.7 95.4	142.8 BLED20040204ABY	45 11 52.0 94 56 58.0	0.400 129	24.4 491	16.3 Educational Media Foundati	39.0	8.5
216C	KTPR Fort Dodge	LIC _CX IA	202.6 21.8	269.5 BLED20070911ABL	42 49 03.0 94 24 41.0	100.000 326	176.0 676	74.9 Iowa State University Of S	14.7	12.4
218C2	1224021 Barron	APP _CX WI	62.3 243.1	95.9 BNPED20071015ABH	45 27 30.0 92 03 00.0	39.000 124	5.2 499	47.4 Community Public Radio, In	12.7	37.2
218C3	KCFB St. Cloud	LIC _C_ MN	299.9 119.1	99.1 BLED19991213AAH	45 30 02.0 94 14 31.0	15.000 106	4.0 435	39.5 Minnesota Christian Broadc	15.4	48.1
218C2	1243847 Rice Lake	APP DCX WI	69.6 250.5	101.3 BNPED20071022AVW	45 22 23.2 91 55 22.4	55.000 144	5.9 503	51.2 Immanuel Baptist Church	17.6	38.8
218A	1212217 Turtle Lake	APP _CX WI	58.3 239.1	98.1 BNPED20071018BAV	45 31 16.0 92 04 02.0	5.000 77	2.5 460	25.5 Templ o Apostol es Y Profeta	17.6	61.4
217C1	KUWS Superior	LIC _CN WI	22.1 202.8	207.7 BLED19910122KA	46 47 21.0 92 06 51.0	83.000 197	104.0 501	71.7 Board Of Regents, Universi	24.8	19.1
217A	KMSK Austin	LIC _CN MN	175.9 356.0	154.3 BLED19890831KA	43 40 39.0 93 00 04.0	0.135 59	11.7 436	8.6 Mankato State University	63.1	28.2
217C0	KRSU Appleton	LIC _CX MN	274.0 92.0	224.8 BLED20071206ACC	45 10 03.1 96 00 01.9	82.000 345	107.5 653	73.7 Minnesota Public Radio	37.9	33.3
213C1	KGAC St. Peter	LIC _CN MN	220.0 39.3	121.3 BLED19850401KB	44 13 20.0 94 07 03.0	75.000 216	8.3 504	61.6 Minnesota Public Radio	33.9	48.3
218C2	KNGA St. Peter	LIC _VN MN	220.0 39.3	121.3 BLED19920303KA	44 13 20.0 94 07 03.0	8.500 183	4.1 471	39.4 Minnesota Public Radio	38.1	70.5

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone = 2, Co to 3rd adjacent.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.

## HOW TO READ THE FM COMPUTER PRINT-OUT

### Full Service Stations

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. Contour distances are in kilometers and are predicted using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

The column listed "IN " is the difference in kilometers between of the reference station's protected contour and the data file station's interference contour at the closest point between the contours. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, "IN" column is a measure of incoming interference. Negative distances in this column indicate the presence of contour overlap. Listed antenna heights and power are those given in the FCC database. The column labeled "OUT " shows the greatest distance in kilometers of overlap or smallest of clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing contour overlap.

Under the "AZI" column, the first row of numbers indicate the True North bearings from the reference station toward the database stations, while the numbers in the second row indicate the reverse bearings from the database stations to the reference station.

The columns labeled "INT" and "PRO" contain the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships, some channel-six TV relationships and relationships with commercial channel stations providing clearance the minimum spacings values the "IN" and "OUT" columns can change their significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column follows the **available clear space** (or lack of it) in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

The call letters of stations meeting the minimum separation distances under the rules will be flagged by the characters "<<" appended to the right-hand side of the call sign. The "^" character appended to the call sign means the station has been "max-classed" according to the provisions of section 73.525 of the Rules.

The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. "Z" indicates a 73.215 directional. An "N" indicates it is a 73.215 station that operates with an omni-directional antenna. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt or an "X" if the commission is not sure, otherwise it will be an "N" or left blank.

# KNOW-FM - Overlap with station KXLC

## KNOW-FMNew

Latitude: 45-03-44 N  
Longitude: 093-08-21 W  
ERP: 100.00 kW  
Channel: 216  
Frequency: 91.1 MHz  
AMSL Height: 665.0 m  
HAAT: 389.49 m  
Horiz. Pattern: Omni

## KNOW-FM

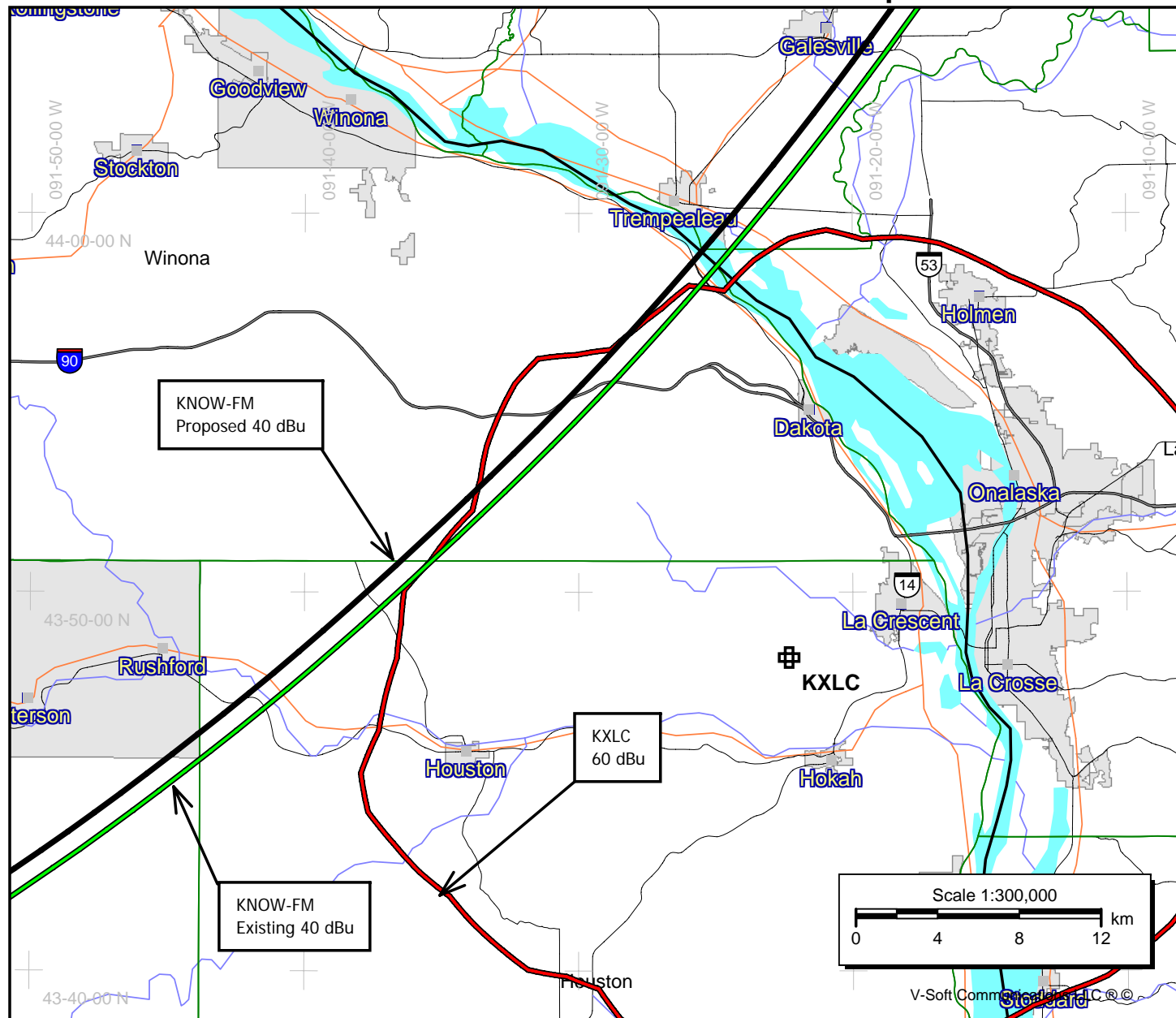
BMLED19940420KA  
Latitude: 45-03-44 N  
Longitude: 093-08-21 W  
ERP: 100.00 kW  
Channel: 216  
Frequency: 91.1 MHz  
AMSL Height: 677.0 m  
HAAT: 400.0 m  
Horiz. Pattern: Omni

## KXLC

BLED20090730ACK  
Latitude: 43-48-16.10 N  
Longitude: 091-22-19.30 W  
ERP: 0.23 kW  
Channel: 216  
Frequency: 91.1 MHz  
AMSL Height: 522.0 m  
HAAT: 257.0 m  
Horiz. Pattern: Omni

7/29/2010

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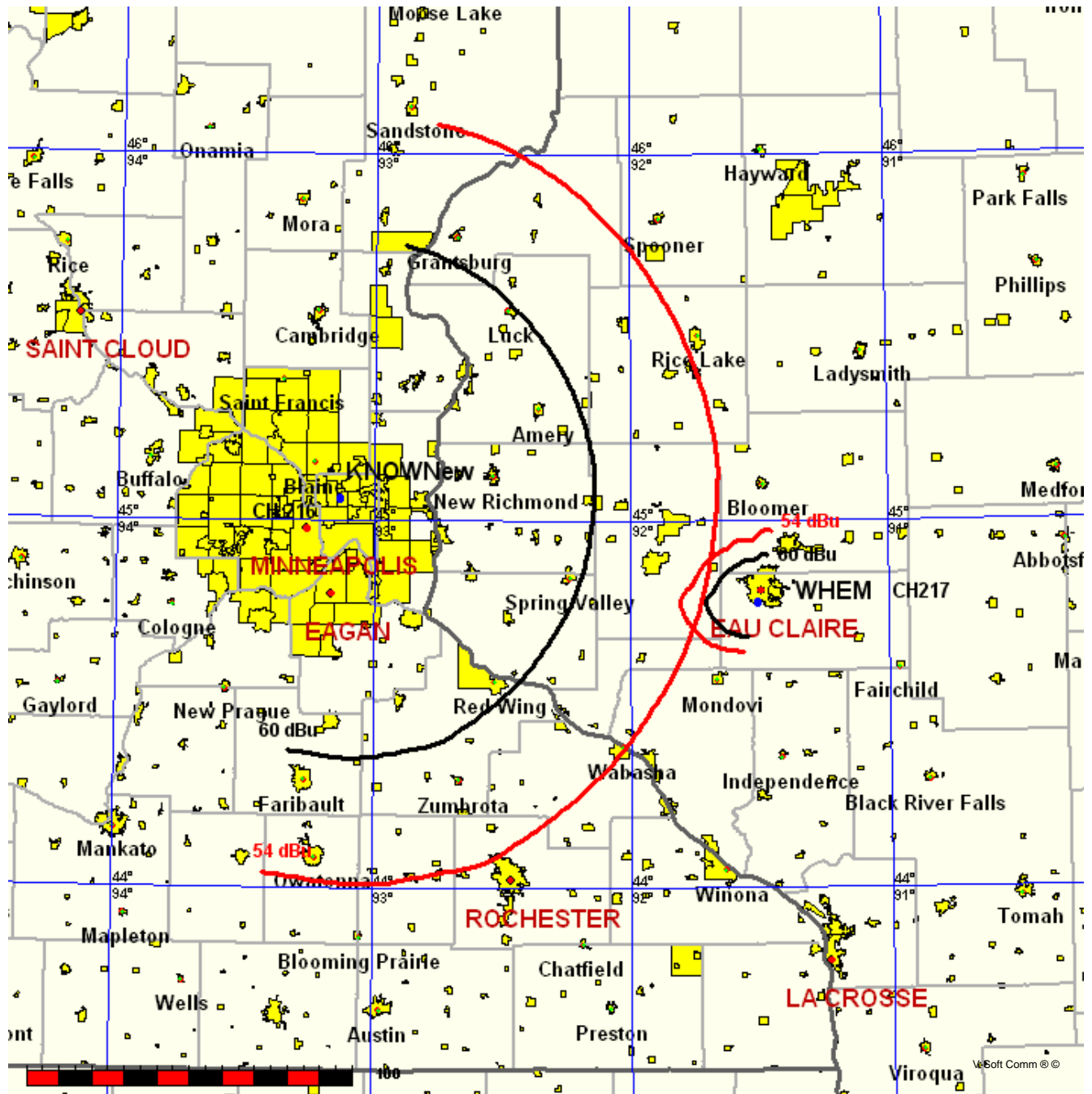


Minnesota Public Radio  
KNOW(New) vs. WHEM

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec  
KNOWNew's Overlaps (In= 32.81 km, Out= 1.3 km)

KNOWNew CH 216 C0  
Lat= 45 03 44.0, Lng= 93 08 21.0  
100.0 kW 388.5 M HAAT, 663.3 M COR  
Prot.= 60 dBu, Intef.= 54 dBu

WHEM CH 217 A BLED20030715ABI  
Lat= 44 45 50.0, Lng= 91 31 06.0  
0.3 kW 87 M HAAT, 364 M COR  
Prot.= 60 dBu, Intef.= 54 dBu



07-29-2010

FCC NGDC 30 Sec Terrain Data

FMOver Analysis

KNOWNew

WHEM BLED20030715ABI

Channel = 216C0  
 Max ERP = 100 kW  
 RCAMSL = 663.3 M  
 N. Lat. 45 03 44.0  
 W. Lng. 93 08 21.0  
 Protected  
 60 dBu

Channel = 217A  
 Max ERP = 0.3 kW  
 RCAMSL = 364 M  
 N. Lat. 44 45 50.0  
 W. Lng. 91 31 06.0  
 Interfering  
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
044.0	100.0000	0382.4	078.5	321.2	000.3000	0090.3	115.6	20.13	
045.0	100.0000	0382.0	078.4	321.3	000.3000	0090.3	114.1	20.40	
046.0	100.0000	0381.9	078.4	321.4	000.3000	0090.3	112.7	20.64	
047.0	100.0000	0382.0	078.4	321.4	000.3000	0090.3	111.3	20.89	
048.0	100.0000	0381.9	078.4	321.5	000.3000	0090.3	110.0	21.15	
049.0	100.0000	0381.5	078.4	321.5	000.3000	0090.2	108.6	21.41	
050.0	100.0000	0380.7	078.3	321.5	000.3000	0090.3	107.3	21.68	
051.0	100.0000	0379.8	078.3	321.4	000.3000	0090.3	105.9	21.95	
052.0	100.0000	0378.9	078.2	321.4	000.3000	0090.3	104.5	22.22	
053.0	100.0000	0378.2	078.2	321.3	000.3000	0090.3	103.2	22.51	
054.0	100.0000	0377.6	078.1	321.2	000.3000	0090.3	101.8	22.79	
055.0	100.0000	0377.1	078.1	321.2	000.3000	0090.3	100.5	23.09	
056.0	100.0000	0376.8	078.0	321.1	000.3000	0090.3	099.1	23.39	
057.0	100.0000	0376.7	078.0	321.0	000.3000	0090.3	097.8	23.70	
058.0	100.0000	0376.7	078.0	320.9	000.3000	0090.3	096.5	24.02	
059.0	100.0000	0376.7	078.0	320.8	000.3000	0090.3	095.1	24.34	
060.0	100.0000	0376.8	078.0	320.6	000.3000	0090.3	093.8	24.67	
061.0	100.0000	0376.8	078.0	320.5	000.3000	0090.3	092.4	25.01	
062.0	100.0000	0376.7	078.0	320.3	000.3000	0090.4	091.1	25.35	
063.0	100.0000	0376.7	078.0	320.1	000.3000	0090.4	089.8	25.70	
064.0	100.0000	0376.7	078.0	319.9	000.3000	0090.5	088.5	26.05	
065.0	100.0000	0376.7	078.0	319.6	000.3000	0090.6	087.2	26.41	
066.0	100.0000	0376.6	078.0	319.4	000.3000	0090.7	085.9	26.77	
067.0	100.0000	0376.1	078.0	319.1	000.3000	0091.0	084.6	27.13	
068.0	100.0000	0375.4	077.9	318.7	000.3000	0091.3	083.3	27.49	
069.0	100.0000	0375.2	077.9	318.4	000.3000	0091.6	082.1	27.85	
070.0	100.0000	0375.3	077.9	318.0	000.3000	0091.8	080.8	28.21	
071.0	100.0000	0375.9	078.0	317.6	000.3000	0092.1	079.6	28.57	
072.0	100.0000	0376.6	078.0	317.3	000.3000	0092.3	078.3	28.92	
073.0	100.0000	0377.4	078.1	316.9	000.3000	0092.4	077.1	29.28	
074.0	100.0000	0377.9	078.1	316.4	000.3000	0092.5	075.8	29.62	
075.0	100.0000	0377.9	078.1	315.9	000.3000	0092.5	074.6	29.96	
076.0	100.0000	0377.7	078.1	315.4	000.3000	0092.5	073.5	30.28	
077.0	100.0000	0377.8	078.1	314.8	000.3000	0092.4	072.3	30.61	
078.0	100.0000	0378.2	078.2	314.2	000.3000	0092.3	071.2	30.93	
079.0	100.0000	0378.9	078.2	313.6	000.3000	0092.2	070.0	31.25	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
080.0	100.0000	0379.6	078.2	312.9	000.3000	0092.1	068.9	31.57
081.0	100.0000	0380.2	078.3	312.3	000.3000	0092.1	067.8	31.89
082.0	100.0000	0380.8	078.3	311.5	000.3000	0092.3	066.8	32.21
083.0	100.0000	0381.3	078.4	310.8	000.3000	0092.5	065.7	32.53
084.0	100.0000	0381.7	078.4	310.0	000.3000	0092.9	064.7	32.86
085.0	100.0000	0381.6	078.4	309.1	000.3000	0093.5	063.8	33.18
086.0	100.0000	0380.8	078.3	308.1	000.3000	0094.2	062.9	33.50
087.0	100.0000	0379.9	078.3	307.1	000.3000	0095.0	062.1	33.82
088.0	100.0000	0378.6	078.2	306.1	000.3000	0095.9	061.3	34.14
089.0	100.0000	0377.9	078.1	305.0	000.3000	0096.6	060.5	34.44
090.0	100.0000	0377.1	078.1	303.9	000.3000	0096.7	059.8	34.70
091.0	100.0000	0376.3	078.0	302.8	000.3000	0096.8	059.1	34.95
092.0	100.0000	0375.7	078.0	301.6	000.3000	0096.8	058.5	35.18
093.0	100.0000	0375.0	077.9	300.4	000.3000	0096.8	057.9	35.39
094.0	100.0000	0374.6	077.9	299.1	000.3000	0096.8	057.4	35.59
095.0	100.0000	0374.0	077.8	297.9	000.3000	0097.1	056.9	35.80
096.0	100.0000	0373.4	077.8	296.6	000.3000	0097.5	056.4	35.99
097.0	100.0000	0373.1	077.8	295.3	000.3000	0097.9	056.0	36.17
098.0	100.0000	0373.1	077.8	293.9	000.3000	0098.3	055.6	36.34
099.0	100.0000	0373.2	077.8	292.6	000.3000	0098.9	055.3	36.51
100.0	100.0000	0373.3	077.8	291.2	000.3000	0099.5	055.0	36.66
101.0	100.0000	0373.8	077.8	289.8	000.3000	0100.2	054.7	36.80
102.0	100.0000	0374.4	077.9	288.4	000.3000	0100.9	054.5	36.93
103.0	100.0000	0375.0	077.9	286.9	000.3000	0101.6	054.4	37.03
104.0	100.0000	0375.6	078.0	285.5	000.3000	0102.4	054.3	37.12
105.0	100.0000	0376.0	078.0	284.1	000.3000	0103.6	054.3	37.21
106.0	100.0000	0376.1	078.0	282.6	000.3000	0105.9	054.3	37.34
107.0	100.0000	0376.1	078.0	281.2	000.3000	0109.6	054.5	37.53
108.0	100.0000	0376.0	078.0	279.8	000.3000	0113.5	054.7	37.70
109.0	100.0000	0375.8	078.0	278.4	000.3000	0117.3	054.9	37.83
110.0	100.0000	0375.7	078.0	277.0	000.3000	0121.6	055.2	37.95
111.0	100.0000	0375.8	078.0	275.6	000.3000	0125.1	055.6	38.01
112.0	100.0000	0376.3	078.0	274.3	000.3000	0128.2	055.9	38.04
113.0	100.0000	0376.8	078.0	273.0	000.3000	0130.4	056.3	38.00
114.0	100.0000	0377.4	078.1	271.7	000.3000	0131.3	056.8	37.87
115.0	100.0000	0377.9	078.1	270.4	000.3000	0131.8	057.3	37.70
116.0	100.0000	0378.2	078.1	269.2	000.3000	0132.3	057.9	37.50
117.0	100.0000	0378.1	078.1	268.0	000.3000	0132.8	058.6	37.29
118.0	100.0000	0377.8	078.1	266.9	000.3000	0132.9	059.3	37.03
119.0	100.0000	0377.6	078.1	265.8	000.3000	0132.3	060.1	36.72
120.0	100.0000	0377.4	078.1	264.7	000.3000	0131.4	060.9	36.39
121.0	100.0000	0377.2	078.1	263.7	000.3000	0130.2	061.7	36.03
122.0	100.0000	0376.8	078.0	262.7	000.3000	0128.7	062.6	35.64
123.0	100.0000	0376.4	078.0	261.8	000.3000	0127.3	063.5	35.26
124.0	100.0000	0376.3	078.0	260.9	000.3000	0126.3	064.4	34.89
125.0	100.0000	0376.5	078.0	260.1	000.3000	0125.2	065.4	34.53
126.0	100.0000	0377.2	078.1	259.2	000.3000	0124.2	066.3	34.17
127.0	100.0000	0378.1	078.1	258.4	000.3000	0123.2	067.3	33.81
128.0	100.0000	0379.2	078.2	257.6	000.3000	0122.3	068.3	33.44
129.0	100.0000	0380.2	078.3	256.8	000.3000	0121.4	069.3	33.08
130.0	100.0000	0381.2	078.4	256.1	000.3000	0120.6	070.4	32.71

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
131.0	100.0000	0382.1	078.4	255.5	000.3000	0119.8	071.5	32.33
132.0	100.0000	0383.0	078.5	254.8	000.3000	0118.9	072.6	31.95
133.0	100.0000	0383.8	078.6	254.2	000.3000	0117.9	073.7	31.56
134.0	100.0000	0384.5	078.6	253.7	000.3000	0117.0	074.9	31.16
135.0	100.0000	0384.9	078.6	253.2	000.3000	0116.0	076.1	30.76
136.0	100.0000	0385.3	078.7	252.7	000.3000	0115.2	077.3	30.36
137.0	100.0000	0385.9	078.7	252.2	000.3000	0114.3	078.6	29.96
138.0	100.0000	0386.7	078.8	251.8	000.3000	0113.7	079.8	29.57
139.0	100.0000	0387.5	078.8	251.4	000.3000	0113.1	081.0	29.19
140.0	100.0000	0388.3	078.9	251.0	000.3000	0112.7	082.3	28.81
141.0	100.0000	0388.9	078.9	250.6	000.3000	0112.3	083.6	28.42
142.0	100.0000	0389.3	079.0	250.3	000.3000	0112.0	084.9	28.04
143.0	100.0000	0389.9	079.0	250.0	000.3000	0111.6	086.2	27.65
144.0	100.0000	0390.3	079.0	249.8	000.3000	0111.4	087.5	27.27
145.0	100.0000	0390.5	079.1	249.5	000.3000	0111.1	088.9	26.89
146.0	100.0000	0390.8	079.1	249.3	000.3000	0110.9	090.2	26.51
147.0	100.0000	0392.2	079.2	249.1	000.3000	0110.7	091.5	26.13
148.0	100.0000	0394.2	079.3	248.8	000.3000	0110.4	092.9	25.77
149.0	100.0000	0395.6	079.4	248.6	000.3000	0110.2	094.2	25.40
150.0	100.0000	0396.7	079.5	248.4	000.3000	0110.0	095.6	25.04
151.0	100.0000	0397.7	079.6	248.3	000.3000	0109.9	097.0	24.69
152.0	100.0000	0399.1	079.7	248.2	000.3000	0109.7	098.3	24.34
153.0	100.0000	0400.9	079.8	248.0	000.3000	0109.6	099.7	24.00
154.0	100.0000	0403.6	080.0	247.8	000.3000	0109.3	101.1	23.67
155.0	100.0000	0406.7	080.3	247.7	000.3000	0109.1	102.5	23.35
156.0	100.0000	0409.3	080.5	247.6	000.3000	0109.0	103.9	23.03
157.0	100.0000	0411.2	080.6	247.5	000.3000	0108.8	105.3	22.72
158.0	100.0000	0412.1	080.7	247.5	000.3000	0108.8	106.7	22.42
159.0	100.0000	0411.9	080.6	247.5	000.3000	0108.9	108.1	22.14
160.0	100.0000	0410.8	080.6	247.6	000.3000	0109.0	109.5	21.86
161.0	100.0000	0409.0	080.4	247.7	000.3000	0109.1	110.9	21.59
162.0	100.0000	0406.6	080.2	247.8	000.3000	0109.3	112.3	21.34
163.0	100.0000	0404.0	080.1	248.0	000.3000	0109.6	113.7	21.09

## 07-29-2010 FCC NGDC 30 Sec Terrain Data

WHEM BLED20030715ABI

KNOWNew

Channel = 217A

Max ERP = 0.3 kW

RCAMSL = 364 M

N. Lat. 44 45 50.0

W. Lng. 91 31 06.0

Protected

60 dBu

Channel = 216C0

Max ERP = 100 kW

RCAMSL = 663.3 M

N. Lat. 45 03 44.0

W. Lng. 93 08 21.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
225.0	000.3000	0088.2	012.7	109.0	100.0000	0375.8	126.0	51.33	
226.0	000.3000	0090.0	012.8	109.0	100.0000	0375.8	125.8	51.39	
227.0	000.3000	0091.2	012.9	109.0	100.0000	0375.8	125.5	51.45	
228.0	000.3000	0092.1	012.9	109.0	100.0000	0375.8	125.3	51.51	
229.0	000.3000	0092.8	013.0	108.9	100.0000	0375.9	125.1	51.56	
230.0	000.3000	0093.4	013.0	108.9	100.0000	0375.9	124.9	51.62	
231.0	000.3000	0093.9	013.0	108.9	100.0000	0375.9	124.7	51.67	
232.0	000.3000	0094.5	013.1	108.8	100.0000	0375.9	124.4	51.73	
233.0	000.3000	0095.4	013.1	108.8	100.0000	0375.9	124.2	51.78	
234.0	000.3000	0096.5	013.2	108.8	100.0000	0375.9	124.0	51.84	
235.0	000.3000	0097.4	013.3	108.7	100.0000	0375.9	123.8	51.90	
236.0	000.3000	0097.7	013.3	108.7	100.0000	0375.9	123.6	51.95	
237.0	000.3000	0097.7	013.3	108.6	100.0000	0375.9	123.4	52.00	
238.0	000.3000	0097.9	013.3	108.5	100.0000	0375.9	123.2	52.05	
239.0	000.3000	0098.5	013.3	108.5	100.0000	0375.9	123.0	52.10	
240.0	000.3000	0099.4	013.4	108.4	100.0000	0376.0	122.8	52.16	
241.0	000.3000	0100.4	013.5	108.4	100.0000	0376.0	122.5	52.21	
242.0	000.3000	0101.4	013.5	108.3	100.0000	0376.0	122.3	52.27	
243.0	000.3000	0102.4	013.6	108.3	100.0000	0376.0	122.1	52.32	
244.0	000.3000	0103.5	013.7	108.2	100.0000	0376.0	121.9	52.38	
245.0	000.3000	0104.9	013.8	108.2	100.0000	0376.0	121.6	52.44	
246.0	000.3000	0106.5	013.9	108.1	100.0000	0376.0	121.4	52.50	
247.0	000.3000	0108.1	014.0	108.1	100.0000	0376.0	121.2	52.56	
248.0	000.3000	0109.5	014.1	108.0	100.0000	0376.0	120.9	52.62	
249.0	000.3000	0110.6	014.2	108.0	100.0000	0376.0	120.7	52.68	
250.0	000.3000	0111.6	014.2	107.9	100.0000	0376.0	120.5	52.73	
251.0	000.3000	0112.7	014.3	107.8	100.0000	0376.0	120.3	52.79	
252.0	000.3000	0114.0	014.4	107.7	100.0000	0376.0	120.1	52.84	
253.0	000.3000	0115.7	014.5	107.7	100.0000	0376.1	119.8	52.90	
254.0	000.3000	0117.6	014.6	107.6	100.0000	0376.1	119.6	52.96	
255.0	000.3000	0119.2	014.7	107.5	100.0000	0376.1	119.4	53.02	
256.0	000.3000	0120.5	014.8	107.5	100.0000	0376.1	119.2	53.08	
257.0	000.3000	0121.6	014.9	107.4	100.0000	0376.1	119.0	53.13	



Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
258.0	000.3000	0122.7	014.9	107.3	100.0000	0376.1	118.8	53.18
259.0	000.3000	0124.0	015.0	107.2	100.0000	0376.1	118.6	53.23
260.0	000.3000	0125.2	015.1	107.1	100.0000	0376.1	118.4	53.27
261.0	000.3000	0126.3	015.1	107.0	100.0000	0376.1	118.2	53.32
262.0	000.3000	0127.6	015.2	106.9	100.0000	0376.1	118.0	53.37
263.0	000.3000	0129.1	015.3	106.8	100.0000	0376.1	117.8	53.42
264.0	000.3000	0130.6	015.4	106.7	100.0000	0376.1	117.6	53.47
265.0	000.3000	0131.7	015.5	106.6	100.0000	0376.1	117.4	53.52
266.0	000.3000	0132.4	015.5	106.5	100.0000	0376.1	117.3	53.56
267.0	000.3000	0132.9	015.6	106.4	100.0000	0376.1	117.2	53.59
268.0	000.3000	0132.8	015.6	106.2	100.0000	0376.1	117.1	53.61
269.0	000.3000	0132.4	015.5	106.1	100.0000	0376.1	117.0	53.62
270.0	000.3000	0131.9	015.5	106.0	100.0000	0376.1	117.0	53.64
271.0	000.3000	0131.5	015.5	105.8	100.0000	0376.1	116.9	53.65
272.0	000.3000	0131.2	015.5	105.7	100.0000	0376.1	116.9	53.66
273.0	000.3000	0130.3	015.4	105.6	100.0000	0376.1	116.8	53.67
274.0	000.3000	0128.7	015.3	105.4	100.0000	0376.1	116.9	53.66
275.0	000.3000	0126.7	015.2	105.3	100.0000	0376.1	117.0	53.64
276.0	000.3000	0124.2	015.0	105.2	100.0000	0376.0	117.1	53.61
277.0	000.3000	0121.6	014.9	105.0	100.0000	0376.0	117.2	53.58
278.0	000.3000	0118.5	014.7	104.9	100.0000	0376.0	117.3	53.54
279.0	000.3000	0115.6	014.5	104.7	100.0000	0375.9	117.5	53.50
280.0	000.3000	0112.9	014.3	104.6	100.0000	0375.9	117.6	53.46
281.0	000.3000	0110.1	014.1	104.5	100.0000	0375.8	117.8	53.42
282.0	000.3000	0107.5	014.0	104.4	100.0000	0375.8	117.9	53.38
283.0	000.3000	0105.2	013.8	104.2	100.0000	0375.7	118.1	53.34
284.0	000.3000	0103.7	013.7	104.1	100.0000	0375.7	118.2	53.32
285.0	000.3000	0102.7	013.6	104.0	100.0000	0375.6	118.2	53.30
286.0	000.3000	0102.1	013.6	103.9	100.0000	0375.5	118.3	53.28
287.0	000.3000	0101.6	013.6	103.8	100.0000	0375.5	118.3	53.27
288.0	000.3000	0101.1	013.5	103.7	100.0000	0375.4	118.4	53.26
289.0	000.3000	0100.6	013.5	103.5	100.0000	0375.3	118.4	53.24
290.0	000.3000	0100.1	013.5	103.4	100.0000	0375.3	118.5	53.23
291.0	000.3000	0099.6	013.4	103.3	100.0000	0375.2	118.5	53.21
292.0	000.3000	0099.1	013.4	103.2	100.0000	0375.2	118.6	53.19
293.0	000.3000	0098.7	013.4	103.1	100.0000	0375.1	118.6	53.18
294.0	000.3000	0098.3	013.3	103.0	100.0000	0375.0	118.7	53.16
295.0	000.3000	0098.0	013.3	102.9	100.0000	0375.0	118.8	53.14
296.0	000.3000	0097.7	013.3	102.8	100.0000	0374.9	118.8	53.12
297.0	000.3000	0097.4	013.3	102.7	100.0000	0374.9	118.9	53.10
298.0	000.3000	0097.1	013.3	102.6	100.0000	0374.8	119.0	53.08
299.0	000.3000	0096.9	013.2	102.5	100.0000	0374.7	119.0	53.06
300.0	000.3000	0096.8	013.2	102.4	100.0000	0374.7	119.1	53.04
301.0	000.3000	0096.8	013.2	102.2	100.0000	0374.6	119.2	53.02
302.0	000.3000	0096.8	013.2	102.1	100.0000	0374.5	119.3	53.00
303.0	000.3000	0096.8	013.2	102.0	100.0000	0374.5	119.3	52.98
304.0	000.3000	0096.7	013.2	101.9	100.0000	0374.4	119.4	52.95
305.0	000.3000	0096.6	013.2	101.8	100.0000	0374.3	119.5	52.93
306.0	000.3000	0096.0	013.2	101.7	100.0000	0374.3	119.6	52.89
307.0	000.3000	0095.1	013.1	101.7	100.0000	0374.2	119.8	52.85
308.0	000.3000	0094.3	013.1	101.6	100.0000	0374.1	119.9	52.81

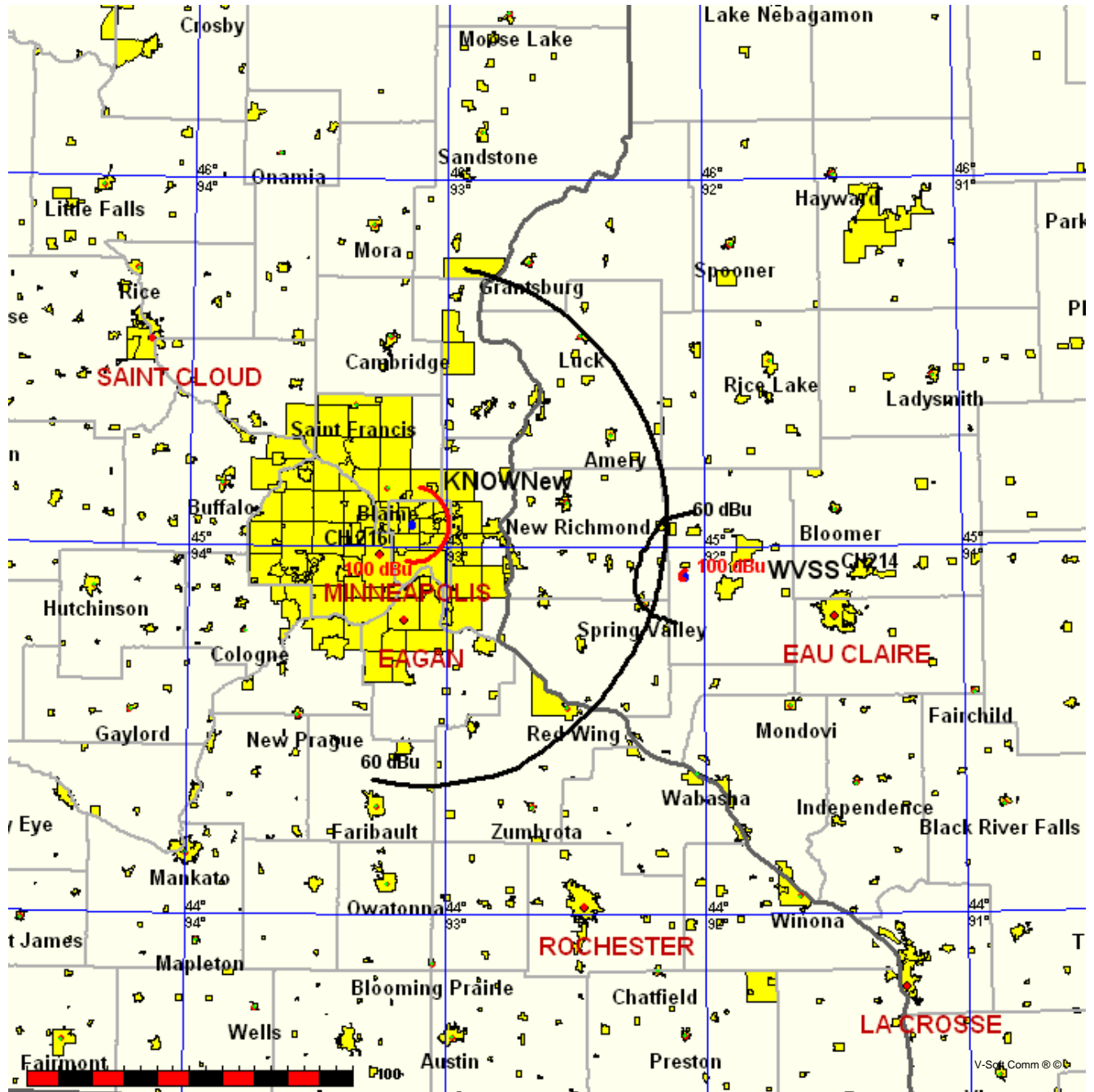
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
309.0	000.3000	0093.5	013.0	101.5	100.0000	0374.1	120.1	52.78
310.0	000.3000	0092.9	013.0	101.4	100.0000	0374.0	120.2	52.74
311.0	000.3000	0092.4	012.9	101.3	100.0000	0374.0	120.4	52.70
312.0	000.3000	0092.2	012.9	101.2	100.0000	0373.9	120.5	52.67
313.0	000.3000	0092.1	012.9	101.1	100.0000	0373.9	120.6	52.64
314.0	000.3000	0092.2	012.9	101.0	100.0000	0373.8	120.7	52.61
315.0	000.3000	0092.4	012.9	100.9	100.0000	0373.7	120.8	52.58
316.0	000.3000	0092.5	012.9	100.8	100.0000	0373.7	120.9	52.54
317.0	000.3000	0092.4	012.9	100.8	100.0000	0373.6	121.1	52.51
318.0	000.3000	0091.8	012.9	100.7	100.0000	0373.6	121.2	52.47
319.0	000.3000	0091.0	012.8	100.6	100.0000	0373.6	121.4	52.42
320.0	000.3000	0090.5	012.8	100.5	100.0000	0373.5	121.6	52.38
321.0	000.3000	0090.3	012.8	100.5	100.0000	0373.5	121.7	52.34
322.0	000.3000	0090.2	012.8	100.4	100.0000	0373.5	121.9	52.30
323.0	000.3000	0090.0	012.8	100.3	100.0000	0373.4	122.0	52.26
324.0	000.3000	0089.8	012.8	100.2	100.0000	0373.4	122.2	52.22
325.0	000.3000	0089.6	012.7	100.2	100.0000	0373.4	122.4	52.17
326.0	000.3000	0089.2	012.7	100.1	100.0000	0373.4	122.5	52.13
327.0	000.3000	0088.6	012.7	100.0	100.0000	0373.3	122.7	52.08
328.0	000.3000	0088.0	012.6	100.0	100.0000	0373.3	122.9	52.03
329.0	000.3000	0087.4	012.6	099.9	100.0000	0373.3	123.1	51.98
330.0	000.3000	0086.9	012.6	099.9	100.0000	0373.3	123.3	51.94
331.0	000.3000	0087.1	012.6	099.8	100.0000	0373.3	123.4	51.90
332.0	000.3000	0087.5	012.6	099.7	100.0000	0373.3	123.6	51.86
333.0	000.3000	0088.3	012.7	099.6	100.0000	0373.3	123.7	51.82
334.0	000.3000	0089.2	012.7	099.6	100.0000	0373.2	123.9	51.79
335.0	000.3000	0090.0	012.8	099.5	100.0000	0373.2	124.0	51.75
336.0	000.3000	0090.9	012.8	099.4	100.0000	0373.2	124.2	51.71
337.0	000.3000	0092.0	012.9	099.3	100.0000	0373.2	124.3	51.67
338.0	000.3000	0093.1	013.0	099.2	100.0000	0373.2	124.5	51.64
339.0	000.3000	0093.8	013.0	099.1	100.0000	0373.2	124.6	51.59
340.0	000.3000	0094.2	013.1	099.1	100.0000	0373.2	124.8	51.55
341.0	000.3000	0094.2	013.1	099.0	100.0000	0373.2	125.0	51.50
342.0	000.3000	0094.1	013.0	099.0	100.0000	0373.2	125.2	51.45
343.0	000.3000	0093.8	013.0	098.9	100.0000	0373.2	125.4	51.39
344.0	000.3000	0093.3	013.0	098.9	100.0000	0373.2	125.6	51.34

Minnesota Public Radio  
KNOW(New) vs. WVSS

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec  
KNOWNew's Overlaps (In= 5.75 km, Out= 59.21 km)

KNOWNew CH 216 C0  
Lat= 45 03 44.0, Lng= 93 08 21.0  
100.0 kW 388.5 M HAAT, 663.3 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

WVSS CH 214 A DA BLED20020903AFN  
Lat= 44 54 56.0, Lng= 92 04 34.0  
0.59 kW 130 M HAAT, 449 M COR  
Prot.= 60 dBu, Intef.= 100 dBu



07-29-2010

FCC NGDC 30 Sec Terrain Data

FMOver Analysis

KNOWNew

WVSS BLED20020903AFN

Channel = 216C0  
 Max ERP = 100 kW  
 RCAMSL = 663.3 M  
 N. Lat. 45 03 44.0  
 W. Lng. 93 08 21.0  
 Protected  
 60 dBu

Channel = 214A  
 Max ERP = 0.59 kW  
 RCAMSL = 449 M  
 N. Lat. 44 54 56.0  
 W. Lng. 92 04 34.0  
 Interfering  
 100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
041.0	100.0000	0385.0	078.6	337.2	000.5900	0125.9	082.2	32.39	
042.0	100.0000	0383.9	078.6	337.7	000.5900	0127.2	080.8	32.85	
043.0	100.0000	0383.1	078.5	338.1	000.5900	0128.0	079.5	33.26	
044.0	100.0000	0382.4	078.5	338.5	000.5900	0128.5	078.3	33.66	
045.0	100.0000	0382.0	078.4	338.9	000.5900	0129.0	077.0	34.06	
046.0	100.0000	0381.9	078.4	339.3	000.5900	0129.4	075.8	34.45	
047.0	100.0000	0382.0	078.4	339.7	000.5900	0129.6	074.5	34.84	
048.0	100.0000	0381.9	078.4	340.0	000.5900	0129.8	073.2	35.24	
049.0	100.0000	0381.5	078.4	340.4	000.5900	0129.9	072.0	35.64	
050.0	100.0000	0380.7	078.3	340.7	000.5900	0130.0	070.7	36.04	
051.0	100.0000	0379.8	078.3	341.1	000.5900	0129.8	069.4	36.44	
052.0	100.0000	0378.9	078.2	341.4	000.5900	0129.5	068.1	36.83	
053.0	100.0000	0378.2	078.2	341.7	000.5900	0129.0	066.8	37.22	
054.0	100.0000	0377.6	078.1	342.0	000.5900	0128.3	065.5	37.61	
055.0	100.0000	0377.1	078.1	342.4	000.5900	0127.6	064.1	37.99	
056.0	100.0000	0376.8	078.0	342.7	000.5900	0126.8	062.8	38.38	
057.0	100.0000	0376.7	078.0	343.0	000.5900	0126.0	061.5	38.79	
058.0	100.0000	0376.7	078.0	343.4	000.5900	0125.2	060.2	39.21	
059.0	100.0000	0376.7	078.0	343.7	000.5900	0124.5	058.9	39.65	
060.0	100.0000	0376.8	078.0	344.0	000.5900	0123.8	057.6	40.10	
061.0	100.0000	0376.8	078.0	344.3	000.5900	0123.2	056.3	40.57	
062.0	100.0000	0376.7	078.0	344.6	000.5900	0122.6	054.9	41.05	
063.0	100.0000	0376.7	078.0	344.9	000.5900	0122.1	053.6	41.54	
064.0	100.0000	0376.7	078.0	345.2	000.5900	0121.7	052.3	42.03	
065.0	100.0000	0376.7	078.0	345.5	000.5900	0121.4	050.9	42.54	
066.0	100.0000	0376.6	078.0	345.7	000.5900	0121.2	049.6	43.05	
067.0	100.0000	0376.1	078.0	345.9	000.5900	0121.1	048.3	43.57	
068.0	100.0000	0375.4	077.9	346.1	000.5900	0121.1	046.9	44.10	
069.0	100.0000	0375.2	077.9	346.3	000.5900	0121.3	045.6	44.65	
070.0	100.0000	0375.3	077.9	346.5	000.5900	0121.6	044.2	45.22	
071.0	100.0000	0375.9	078.0	346.7	000.5900	0122.1	042.9	45.81	
072.0	100.0000	0376.6	078.0	346.9	000.5900	0122.6	041.5	46.42	
073.0	100.0000	0377.4	078.1	347.1	000.5900	0123.2	040.2	47.05	
074.0	100.0000	0377.9	078.1	347.3	000.5900	0123.6	038.8	47.68	
075.0	100.0000	0377.9	078.1	347.4	000.5900	0123.9	037.4	48.31	
076.0	100.0000	0377.7	078.1	347.4	000.5900	0123.9	036.1	48.95	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
077.0	100.0000	0377.8	078.1	347.4	000.5900	0124.0	034.7	49.60
078.0	100.0000	0378.2	078.2	347.5	000.5900	0124.1	033.4	50.27
079.0	100.0000	0378.9	078.2	347.5	000.5900	0124.1	032.0	50.95
080.0	100.0000	0379.6	078.2	347.5	000.5900	0124.1	030.6	51.66
081.0	100.0000	0380.2	078.3	347.4	000.5900	0123.9	029.3	52.43
082.0	100.0000	0380.8	078.3	347.3	000.5900	0123.6	027.9	53.24
083.0	100.0000	0381.3	078.4	347.1	000.5900	0123.0	026.5	54.09
084.0	100.0000	0381.7	078.4	346.8	000.5900	0122.2	025.2	54.96
085.0	100.0000	0381.6	078.4	346.3	000.5900	0121.3	023.8	55.87
086.0	100.0000	0380.8	078.3	345.5	000.5900	0121.3	022.5	56.86
087.0	100.0000	0379.9	078.3	344.6	000.5900	0122.6	021.2	57.95
088.0	100.0000	0378.6	078.2	343.5	000.5900	0125.0	019.9	59.14
089.0	100.0000	0377.9	078.1	342.2	000.5900	0128.0	018.6	60.38
090.0	100.0000	0377.1	078.1	340.6	000.5900	0130.0	017.3	61.56
091.0	100.0000	0376.3	078.0	338.8	000.5900	0128.9	016.0	62.52
092.0	100.0000	0375.7	078.0	336.5	000.5900	0123.6	014.8	63.11
093.0	100.0000	0375.0	077.9	333.8	000.5900	0116.0	013.6	63.98
094.0	100.0000	0374.6	077.9	330.5	000.5900	0109.6	012.5	65.04
095.0	100.0000	0374.0	077.8	326.5	000.5900	0102.9	011.4	66.11
096.0	100.0000	0373.4	077.8	321.5	000.5900	0098.1	010.4	67.33
097.0	100.0000	0373.1	077.8	315.7	000.5900	0093.5	009.5	68.50
098.0	100.0000	0373.1	077.8	308.6	000.5900	0085.4	008.8	69.13
099.0	100.0000	0373.2	077.8	300.4	000.5900	0087.2	008.2	70.47
100.0	100.0000	0373.3	077.8	291.0	000.5900	0082.7	007.8	70.76
101.0	100.0000	0373.8	077.8	281.0	000.5900	0085.8	007.6	71.44
102.0	100.0000	0374.4	077.9	270.8	000.5900	0086.9	007.7	71.35
103.0	100.0000	0375.0	077.9	261.3	000.5900	0095.3	008.1	71.46
104.0	100.0000	0375.6	078.0	252.9	000.5812	0099.5	008.7	70.62
105.0	100.0000	0376.0	078.0	245.7	000.5523	0100.7	009.4	69.05
106.0	100.0000	0376.1	078.0	239.9	000.5210	0103.3	010.4	67.35
107.0	100.0000	0376.1	078.0	235.2	000.4953	0107.1	011.4	65.73
108.0	100.0000	0376.0	078.0	231.5	000.4714	0107.7	012.5	63.88
109.0	100.0000	0375.8	078.0	228.4	000.4524	0103.6	013.7	61.78
110.0	100.0000	0375.7	078.0	226.0	000.4372	0104.5	014.9	60.28
111.0	100.0000	0375.8	078.0	223.9	000.4245	0107.8	016.1	59.49
112.0	100.0000	0376.3	078.0	222.1	000.4139	0111.6	017.4	58.63
113.0	100.0000	0376.8	078.0	220.6	000.4051	0112.3	018.7	57.54
114.0	100.0000	0377.4	078.1	219.4	000.3978	0111.7	020.0	56.38
115.0	100.0000	0377.9	078.1	218.3	000.3919	0111.4	021.3	55.26
116.0	100.0000	0378.2	078.1	217.5	000.3873	0111.4	022.6	54.19
117.0	100.0000	0378.1	078.1	216.9	000.3839	0111.5	024.0	53.16
118.0	100.0000	0377.8	078.1	216.5	000.3814	0111.5	025.3	52.18
119.0	100.0000	0377.6	078.1	216.1	000.3794	0111.6	026.7	51.24
120.0	100.0000	0377.4	078.1	215.9	000.3778	0111.6	028.1	50.35
121.0	100.0000	0377.2	078.1	215.7	000.3767	0111.5	029.4	49.51
122.0	100.0000	0376.8	078.0	215.5	000.3760	0111.4	030.8	48.73
123.0	100.0000	0376.4	078.0	215.5	000.3756	0111.4	032.1	48.02
124.0	100.0000	0376.3	078.0	215.4	000.3753	0111.4	033.5	47.36
125.0	100.0000	0376.5	078.0	215.4	000.3750	0111.4	034.9	46.70
126.0	100.0000	0377.2	078.1	215.3	000.3747	0111.4	036.2	46.07
127.0	100.0000	0378.1	078.1	215.3	000.3744	0111.4	037.6	45.44

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
128.0	100.0000	0379.2	078.2	215.2	000.3743	0111.4	039.0	44.83
129.0	100.0000	0380.2	078.3	215.3	000.3744	0111.4	040.4	44.23
130.0	100.0000	0381.2	078.4	215.3	000.3747	0111.4	041.7	43.65
131.0	100.0000	0382.1	078.4	215.4	000.3752	0111.4	043.1	43.08
132.0	100.0000	0383.0	078.5	215.5	000.3758	0111.4	044.5	42.53
133.0	100.0000	0383.8	078.6	215.7	000.3766	0111.5	045.8	41.99
134.0	100.0000	0384.5	078.6	215.8	000.3777	0111.6	047.2	41.47
135.0	100.0000	0384.9	078.6	216.1	000.3789	0111.6	048.6	40.96
136.0	100.0000	0385.3	078.7	216.3	000.3802	0111.5	049.9	40.45
137.0	100.0000	0385.9	078.7	216.5	000.3816	0111.5	051.3	39.93
138.0	100.0000	0386.7	078.8	216.8	000.3829	0111.5	052.7	39.41
139.0	100.0000	0387.5	078.8	217.0	000.3843	0111.5	054.0	38.90
140.0	100.0000	0388.3	078.9	217.3	000.3858	0111.4	055.4	38.39
141.0	100.0000	0388.9	078.9	217.6	000.3874	0111.4	056.7	37.89
142.0	100.0000	0389.3	079.0	217.9	000.3892	0111.5	058.1	37.41
143.0	100.0000	0389.9	079.0	218.2	000.3909	0111.4	059.4	36.93
144.0	100.0000	0390.3	079.0	218.5	000.3928	0111.4	060.8	36.47
145.0	100.0000	0390.5	079.1	218.8	000.3949	0111.5	062.1	36.03
146.0	100.0000	0390.8	079.1	219.2	000.3968	0111.6	063.4	35.62
147.0	100.0000	0392.2	079.2	219.5	000.3985	0111.7	064.8	35.21
148.0	100.0000	0394.2	079.3	219.7	000.4000	0111.9	066.1	34.80
149.0	100.0000	0395.6	079.4	220.0	000.4018	0112.0	067.5	34.41
150.0	100.0000	0396.7	079.5	220.4	000.4038	0112.1	068.8	34.03
151.0	100.0000	0397.7	079.6	220.7	000.4057	0112.3	070.2	33.66
152.0	100.0000	0399.1	079.7	221.0	000.4077	0112.4	071.5	33.28
153.0	100.0000	0400.9	079.8	221.4	000.4095	0112.4	072.8	32.89
154.0	100.0000	0403.6	080.0	221.6	000.4111	0112.1	074.2	32.49
155.0	100.0000	0406.7	080.3	221.9	000.4127	0111.9	075.6	32.09
156.0	100.0000	0409.3	080.5	222.2	000.4144	0111.5	076.9	31.69
157.0	100.0000	0411.2	080.6	222.5	000.4164	0110.8	078.3	31.29
158.0	100.0000	0412.1	080.7	222.9	000.4188	0110.1	079.6	30.91
159.0	100.0000	0411.9	080.6	223.4	000.4215	0109.0	080.9	30.52
160.0	100.0000	0410.8	080.6	223.9	000.4244	0107.9	082.1	30.15

## 07-29-2010 FCC NGDC 30 Sec Terrain Data

WVSS BLED20020903AFN

KNOWNew

Channel = 214A

Max ERP = 0.59 kW

RCAMSL = 449 M

N. Lat. 44 54 56.0

W. Lng. 92 04 34.0

Protected

60 dBu

Channel = 216C0

Max ERP = 100 kW

RCAMSL = 663.3 M

N. Lat. 45 03 44.0

W. Lng. 93 08 21.0

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
221.0	000.4074	0112.4	015.5	110.5	100.0000	0375.7	078.7	64.84	
222.0	000.4133	0111.8	015.5	110.5	100.0000	0375.7	078.4	64.93	
223.0	000.4193	0109.9	015.4	110.3	100.0000	0375.7	078.2	65.00	
224.0	000.4253	0107.6	015.3	110.2	100.0000	0375.7	078.0	65.07	
225.0	000.4313	0105.7	015.2	110.0	100.0000	0375.7	077.8	65.14	
226.0	000.4374	0104.5	015.2	109.9	100.0000	0375.7	077.6	65.22	
227.0	000.4435	0103.7	015.2	109.8	100.0000	0375.7	077.3	65.30	
228.0	000.4497	0103.6	015.2	109.8	100.0000	0375.7	077.1	65.39	
229.0	000.4559	0103.8	015.3	109.7	100.0000	0375.7	076.8	65.48	
230.0	000.4621	0104.9	015.4	109.7	100.0000	0375.7	076.5	65.59	
231.0	000.4684	0106.9	015.7	109.8	100.0000	0375.7	076.2	65.71	
232.0	000.4747	0108.4	015.9	109.8	100.0000	0375.7	075.8	65.82	
233.0	000.4811	0108.5	015.9	109.7	100.0000	0375.7	075.5	65.92	
234.0	000.4875	0107.9	015.9	109.6	100.0000	0375.7	075.3	66.00	
235.0	000.4940	0107.2	015.9	109.5	100.0000	0375.7	075.1	66.08	
236.0	000.4994	0107.1	016.0	109.4	100.0000	0375.7	074.8	66.17	
237.0	000.5048	0106.7	016.0	109.3	100.0000	0375.8	074.6	66.25	
238.0	000.5103	0105.6	015.9	109.1	100.0000	0375.8	074.4	66.32	
239.0	000.5158	0104.1	015.9	108.9	100.0000	0375.9	074.2	66.38	
240.0	000.5213	0103.3	015.8	108.8	100.0000	0375.9	074.1	66.45	
241.0	000.5269	0103.3	015.9	108.7	100.0000	0375.9	073.8	66.53	
242.0	000.5325	0103.6	016.0	108.6	100.0000	0375.9	073.6	66.62	
243.0	000.5381	0103.7	016.0	108.4	100.0000	0376.0	073.3	66.71	
244.0	000.5437	0102.9	016.0	108.3	100.0000	0376.0	073.1	66.77	
245.0	000.5494	0101.6	015.9	108.1	100.0000	0376.0	073.0	66.82	
246.0	000.5534	0100.5	015.8	107.9	100.0000	0376.0	072.8	66.87	
247.0	000.5574	0100.3	015.8	107.7	100.0000	0376.1	072.7	66.94	
248.0	000.5614	0100.8	015.9	107.6	100.0000	0376.1	072.4	67.02	
249.0	000.5655	0101.4	016.0	107.5	100.0000	0376.1	072.2	67.11	
250.0	000.5695	0101.8	016.1	107.3	100.0000	0376.1	071.9	67.19	
251.0	000.5736	0101.4	016.1	107.2	100.0000	0376.1	071.8	67.25	
252.0	000.5777	0100.4	016.0	107.0	100.0000	0376.1	071.7	67.29	
253.0	000.5818	0099.3	015.9	106.7	100.0000	0376.1	071.6	67.33	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
254.0	000.5859	0098.1	015.9	106.5	100.0000	0376.1	071.5	67.36
255.0	000.5900	0097.3	015.8	106.3	100.0000	0376.1	071.4	67.39
256.0	000.5900	0096.8	015.8	106.1	100.0000	0376.1	071.3	67.43
257.0	000.5900	0096.7	015.8	105.9	100.0000	0376.1	071.1	67.48
258.0	000.5900	0096.6	015.8	105.7	100.0000	0376.1	071.0	67.52
259.0	000.5900	0096.3	015.7	105.5	100.0000	0376.1	070.9	67.56
260.0	000.5900	0096.0	015.7	105.3	100.0000	0376.1	070.8	67.59
261.0	000.5900	0095.5	015.7	105.1	100.0000	0376.0	070.7	67.62
262.0	000.5900	0094.8	015.6	104.8	100.0000	0376.0	070.7	67.63
263.0	000.5900	0093.8	015.5	104.6	100.0000	0375.9	070.7	67.63
264.0	000.5900	0092.8	015.4	104.4	100.0000	0375.8	070.6	67.64
265.0	000.5900	0092.5	015.4	104.2	100.0000	0375.7	070.6	67.66
266.0	000.5900	0092.0	015.3	104.0	100.0000	0375.6	070.5	67.67
267.0	000.5900	0091.1	015.2	103.7	100.0000	0375.4	070.5	67.67
268.0	000.5900	0090.0	015.1	103.5	100.0000	0375.3	070.6	67.65
269.0	000.5900	0088.9	015.0	103.3	100.0000	0375.2	070.6	67.64
270.0	000.5900	0087.7	014.9	103.0	100.0000	0375.1	070.6	67.62
271.0	000.5900	0086.9	014.8	102.8	100.0000	0374.9	070.6	67.61
272.0	000.5900	0087.1	014.9	102.6	100.0000	0374.8	070.6	67.63
273.0	000.5900	0087.4	014.9	102.4	100.0000	0374.7	070.5	67.66
274.0	000.5900	0087.7	014.9	102.2	100.0000	0374.6	070.4	67.68
275.0	000.5900	0087.8	014.9	102.0	100.0000	0374.4	070.4	67.69
276.0	000.5900	0088.0	014.9	101.8	100.0000	0374.3	070.3	67.70
277.0	000.5900	0088.1	014.9	101.6	100.0000	0374.2	070.3	67.71
278.0	000.5900	0088.1	014.9	101.4	100.0000	0374.0	070.3	67.71
279.0	000.5900	0087.6	014.9	101.2	100.0000	0373.9	070.3	67.70
280.0	000.5900	0086.8	014.8	100.9	100.0000	0373.7	070.4	67.68
281.0	000.5900	0085.8	014.7	100.7	100.0000	0373.6	070.5	67.64
282.0	000.5900	0084.8	014.7	100.5	100.0000	0373.5	070.5	67.61
283.0	000.5900	0084.2	014.6	100.3	100.0000	0373.4	070.6	67.58
284.0	000.5900	0083.7	014.5	100.1	100.0000	0373.4	070.7	67.56
285.0	000.5900	0083.3	014.5	099.9	100.0000	0373.3	070.7	67.54
286.0	000.5900	0083.0	014.5	099.7	100.0000	0373.3	070.8	67.52
287.0	000.5900	0082.5	014.4	099.5	100.0000	0373.2	070.8	67.49
288.0	000.5900	0082.3	014.4	099.3	100.0000	0373.2	070.9	67.48
289.0	000.5900	0082.3	014.4	099.1	100.0000	0373.2	070.9	67.46
290.0	000.5900	0082.4	014.4	098.9	100.0000	0373.2	071.0	67.45
291.0	000.5900	0082.7	014.5	098.7	100.0000	0373.2	071.0	67.44
292.0	000.5900	0083.1	014.5	098.5	100.0000	0373.1	071.0	67.43
293.0	000.5900	0084.2	014.6	098.3	100.0000	0373.1	071.0	67.45
294.0	000.5900	0086.0	014.8	098.0	100.0000	0373.1	070.9	67.48
295.0	000.5900	0088.0	014.9	097.8	100.0000	0373.1	070.8	67.52
296.0	000.5900	0089.7	015.1	097.6	100.0000	0373.1	070.7	67.54
297.0	000.5900	0090.6	015.2	097.3	100.0000	0373.1	070.7	67.54
298.0	000.5900	0090.5	015.2	097.1	100.0000	0373.1	070.8	67.51
299.0	000.5900	0089.4	015.1	097.0	100.0000	0373.1	071.0	67.44
300.0	000.5900	0087.8	014.9	096.8	100.0000	0373.1	071.2	67.36
301.0	000.5900	0086.1	014.8	096.7	100.0000	0373.1	071.4	67.27
302.0	000.5900	0084.8	014.6	096.5	100.0000	0373.2	071.7	67.20
303.0	000.5900	0083.8	014.6	096.4	100.0000	0373.2	071.9	67.13
304.0	000.5900	0082.8	014.5	096.2	100.0000	0373.2	072.1	67.06



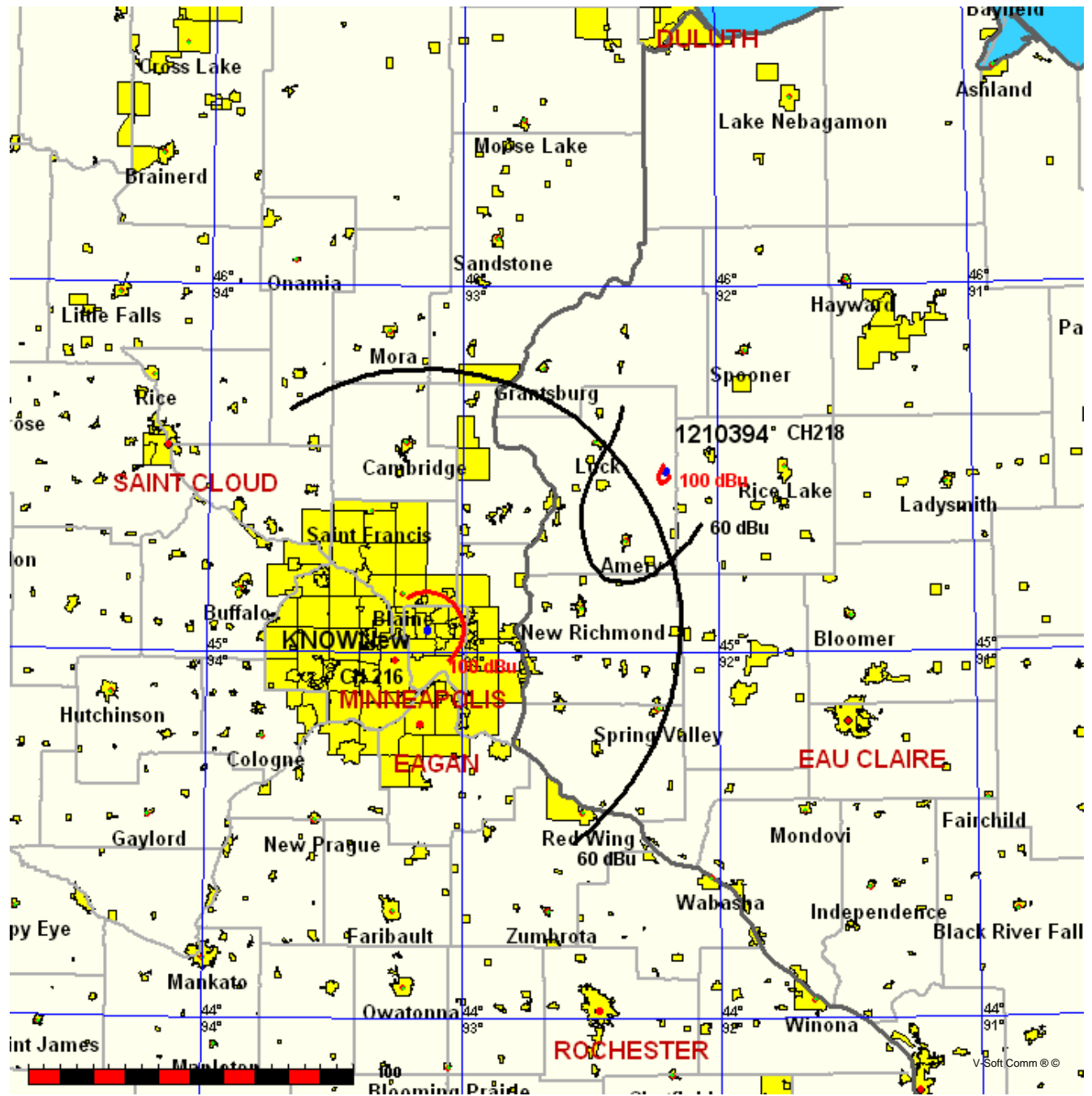
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
305.0	000.5900	0082.0	014.4	096.1	100.0000	0373.3	072.2	67.00
306.0	000.5900	0081.8	014.4	095.9	100.0000	0373.4	072.4	66.96
307.0	000.5900	0082.6	014.5	095.7	100.0000	0373.5	072.4	66.94
308.0	000.5900	0084.1	014.6	095.5	100.0000	0373.7	072.4	66.94
309.0	000.5900	0086.0	014.8	095.2	100.0000	0373.8	072.4	66.95
310.0	000.5900	0087.6	014.9	095.0	100.0000	0374.0	072.5	66.95
311.0	000.5900	0088.9	015.0	094.8	100.0000	0374.1	072.5	66.93
312.0	000.5900	0090.0	015.1	094.6	100.0000	0374.2	072.6	66.91
313.0	000.5900	0090.9	015.2	094.4	100.0000	0374.4	072.7	66.88
314.0	000.5900	0091.8	015.3	094.1	100.0000	0374.5	072.8	66.85
315.0	000.5900	0092.8	015.4	093.9	100.0000	0374.6	072.9	66.82
316.0	000.5900	0093.9	015.5	093.7	100.0000	0374.7	073.0	66.79
317.0	000.5900	0094.7	015.6	093.5	100.0000	0374.8	073.1	66.75
318.0	000.5900	0095.1	015.6	093.3	100.0000	0374.9	073.2	66.69
319.0	000.5900	0095.4	015.6	093.2	100.0000	0375.0	073.4	66.64
320.0	000.5900	0096.2	015.7	093.0	100.0000	0375.1	073.6	66.59
321.0	000.5900	0097.4	015.8	092.8	100.0000	0375.2	073.7	66.55
322.0	000.5900	0098.7	016.0	092.6	100.0000	0375.3	073.8	66.51
323.0	000.5900	0099.9	016.1	092.4	100.0000	0375.4	073.9	66.47
324.0	000.5900	0100.7	016.2	092.2	100.0000	0375.6	074.1	66.42
325.0	000.5900	0101.4	016.2	092.0	100.0000	0375.7	074.3	66.36
326.0	000.5900	0102.4	016.3	091.8	100.0000	0375.8	074.5	66.30
327.0	000.5900	0103.6	016.4	091.6	100.0000	0375.9	074.6	66.25
328.0	000.5900	0105.1	016.6	091.4	100.0000	0376.1	074.8	66.20
329.0	000.5900	0106.7	016.7	091.2	100.0000	0376.2	074.9	66.15
330.0	000.5900	0108.5	016.9	090.9	100.0000	0376.4	075.1	66.10
331.0	000.5900	0110.7	017.1	090.7	100.0000	0376.6	075.3	66.05
332.0	000.5900	0112.7	017.2	090.5	100.0000	0376.7	075.4	66.00
333.0	000.5900	0114.6	017.4	090.3	100.0000	0376.9	075.6	65.93
334.0	000.5900	0116.5	017.6	090.1	100.0000	0377.1	075.8	65.87
335.0	000.5900	0118.9	017.7	089.8	100.0000	0377.2	076.0	65.81
336.0	000.5900	0122.0	018.0	089.6	100.0000	0377.4	076.2	65.75
337.0	000.5900	0125.2	018.2	089.3	100.0000	0377.6	076.4	65.69
338.0	000.5900	0127.7	018.4	089.1	100.0000	0377.8	076.6	65.62
339.0	000.5900	0129.1	018.5	088.9	100.0000	0377.9	076.9	65.53
340.0	000.5900	0129.8	018.5	088.8	100.0000	0378.0	077.2	65.43

Minnesota Public Radio  
KNOW(New) vs. Turtle Lake Application

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec  
KNOWNew's Overlaps (In= 6.55 km, Out= 45.62 km)

KNOWNew CH 216 C0  
Lat= 45 03 44.0, Lng= 93 08 21.0  
100.0 kW 388.5 M HAAT, 663.3 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

1210394 CH 218 C3 DA BNPED20071012AHI  
Lat= 45 29 27.0, Lng= 92 11 33.0  
20.0 kW 99.6 M HAAT, 473.2 M COR  
Prot.= 60 dBu, Intef.= 100 dBu



07-29-2010

FCC NGDC 30 Sec Terrain Data

FMOver Analysis

KNOWNew

1210394 BNPED20071012AHI

Channel = 216C0  
 Max ERP = 100 kW  
 RCAMSL = 663.3 M  
 N. Lat. 45 03 44.0  
 W. Lng. 93 08 21.0  
 Protected  
 60 dBu

Channel = 218C3  
 Max ERP = 20 kW  
 RCAMSL = 473.2 M  
 N. Lat. 45 29 27.0  
 W. Lng. 92 11 33.0  
 Interfering  
 100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
357.0	100.0000	0389.4	079.0	292.3	001.0651	0107.7	083.7	33.67	
358.0	100.0000	0389.3	079.0	292.6	001.0648	0107.2	082.5	33.99	
359.0	100.0000	0389.2	079.0	293.0	001.0644	0106.8	081.3	34.33	
000.0	100.0000	0390.3	079.0	293.5	001.0640	0106.3	080.0	34.65	
001.0	100.0000	0391.8	079.1	293.9	001.0636	0105.9	078.8	34.98	
002.0	100.0000	0392.9	079.2	294.3	001.0632	0105.6	077.6	35.31	
003.0	100.0000	0392.7	079.2	294.7	001.0629	0105.3	076.3	35.66	
004.0	100.0000	0392.1	079.2	295.0	001.0626	0105.0	075.0	36.03	
005.0	100.0000	0391.8	079.2	295.4	001.0623	0104.7	073.7	36.39	
006.0	100.0000	0391.7	079.1	295.7	001.0619	0104.4	072.4	36.75	
007.0	100.0000	0391.4	079.1	296.1	001.0616	0104.2	071.1	37.12	
008.0	100.0000	0390.9	079.1	296.4	001.0613	0104.1	069.7	37.50	
009.0	100.0000	0390.4	079.0	296.7	001.0610	0103.9	068.4	37.89	
010.0	100.0000	0390.1	079.0	297.0	001.0607	0103.8	067.1	38.28	
011.0	100.0000	0389.6	079.0	297.3	001.0605	0103.6	065.8	38.68	
012.0	100.0000	0389.1	079.0	297.6	001.0602	0103.5	064.4	39.08	
013.0	100.0000	0388.7	078.9	297.9	001.0599	0103.4	063.1	39.50	
014.0	100.0000	0388.4	078.9	298.2	001.0597	0103.4	061.8	39.94	
015.0	100.0000	0388.3	078.9	298.5	001.0594	0103.4	060.4	40.40	
016.0	100.0000	0388.4	078.9	298.8	001.0591	0103.4	059.1	40.87	
017.0	100.0000	0388.5	078.9	299.0	001.0589	0103.5	057.8	41.37	
018.0	100.0000	0388.8	078.9	299.3	001.0586	0103.6	056.4	41.87	
019.0	100.0000	0389.1	079.0	299.6	001.0584	0103.6	055.1	42.38	
020.0	100.0000	0389.5	079.0	299.9	001.0581	0103.7	053.7	42.90	
021.0	100.0000	0389.8	079.0	300.1	001.0616	0103.7	052.4	43.43	
022.0	100.0000	0389.9	079.0	300.4	001.0678	0103.7	051.0	43.98	
023.0	100.0000	0389.9	079.0	300.6	001.0734	0103.7	049.7	44.52	
024.0	100.0000	0389.8	079.0	300.7	001.0783	0103.7	048.3	45.06	
025.0	100.0000	0389.7	079.0	300.9	001.0827	0103.6	046.9	45.59	
026.0	100.0000	0389.6	079.0	301.0	001.0865	0103.6	045.6	46.14	
027.0	100.0000	0389.4	079.0	301.1	001.0896	0103.6	044.2	46.69	
028.0	100.0000	0389.2	079.0	301.2	001.0919	0103.6	042.8	47.25	
029.0	100.0000	0389.0	078.9	301.3	001.0933	0103.5	041.5	47.82	
030.0	100.0000	0388.8	078.9	301.3	001.0940	0103.5	040.1	48.40	
031.0	100.0000	0388.7	078.9	301.3	001.0938	0103.5	038.7	49.00	
032.0	100.0000	0388.6	078.9	301.3	001.0928	0103.6	037.3	49.60	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
033.0	100.0000	0388.6	078.9	301.2	001.0909	0103.6	036.0	50.21
034.0	100.0000	0388.6	078.9	301.1	001.0881	0103.6	034.6	50.83
035.0	100.0000	0388.8	078.9	300.9	001.0843	0103.6	033.2	51.46
036.0	100.0000	0388.9	078.9	300.7	001.0785	0103.7	031.9	52.10
037.0	100.0000	0388.7	078.9	300.4	001.0700	0103.7	030.5	52.78
038.0	100.0000	0388.2	078.9	300.0	001.0584	0103.7	029.2	53.50
039.0	100.0000	0387.4	078.8	299.4	001.0585	0103.6	027.8	54.31
040.0	100.0000	0386.2	078.7	298.7	001.0592	0103.4	026.5	55.15
041.0	100.0000	0385.0	078.6	297.9	001.0600	0103.5	025.2	56.05
042.0	100.0000	0383.9	078.6	296.9	001.0609	0103.8	023.9	57.02
043.0	100.0000	0383.1	078.5	295.8	001.0619	0104.4	022.6	58.03
044.0	100.0000	0382.4	078.5	294.5	001.0631	0105.4	021.3	59.10
045.0	100.0000	0382.0	078.4	293.1	001.0644	0106.7	020.0	60.21
046.0	100.0000	0381.9	078.4	291.4	001.0659	0108.6	018.8	61.38
047.0	100.0000	0382.0	078.4	289.5	001.0710	0110.7	017.6	62.57
048.0	100.0000	0381.9	078.4	287.3	001.0902	0112.2	016.4	63.74
049.0	100.0000	0381.5	078.4	284.5	001.1137	0113.5	015.3	64.88
050.0	100.0000	0380.7	078.3	281.1	001.1426	0115.5	014.2	66.13
051.0	100.0000	0379.8	078.3	277.1	001.2227	0118.3	013.2	67.84
052.0	100.0000	0378.9	078.2	272.4	001.3408	0120.3	012.3	69.60
053.0	100.0000	0378.2	078.2	267.1	001.6279	0121.4	011.6	71.68
054.0	100.0000	0377.6	078.1	261.0	002.1437	0121.3	010.9	73.91
055.0	100.0000	0377.1	078.1	254.1	002.9539	0121.3	010.4	76.13
056.0	100.0000	0376.8	078.0	246.8	004.1425	0124.9	010.1	78.40
057.0	100.0000	0376.7	078.0	239.1	005.8716	0120.3	010.0	79.85
058.0	100.0000	0376.7	078.0	231.3	008.4067	0115.2	010.0	80.93
059.0	100.0000	0376.7	078.0	223.8	011.9505	0111.0	010.3	81.68
060.0	100.0000	0376.8	078.0	216.8	014.9371	0110.4	010.8	81.83
061.0	100.0000	0376.8	078.0	210.5	016.7666	0111.6	011.4	81.41
062.0	100.0000	0376.7	078.0	205.1	014.7504	0111.8	012.1	79.69
063.0	100.0000	0376.7	078.0	200.4	012.8112	0114.3	013.0	78.02
064.0	100.0000	0376.7	078.0	196.3	010.8191	0115.3	014.0	76.12
065.0	100.0000	0376.7	078.0	192.9	009.2214	0116.0	015.0	74.43
066.0	100.0000	0376.6	078.0	190.0	007.9826	0115.2	016.1	72.80
067.0	100.0000	0376.1	078.0	187.6	007.2270	0113.1	017.3	71.25
068.0	100.0000	0375.4	077.9	185.7	006.6282	0110.2	018.5	69.65
069.0	100.0000	0375.2	077.9	183.9	006.1233	0108.9	019.8	68.20
070.0	100.0000	0375.3	077.9	182.4	005.6895	0108.9	021.0	66.91
071.0	100.0000	0375.9	078.0	181.0	005.3111	0108.1	022.3	65.58
072.0	100.0000	0376.6	078.0	179.8	005.0005	0107.4	023.5	64.31
073.0	100.0000	0377.4	078.1	178.8	004.7865	0106.7	024.8	63.13
074.0	100.0000	0377.9	078.1	177.9	004.6168	0106.2	026.1	62.02
075.0	100.0000	0377.9	078.1	177.3	004.4904	0105.7	027.5	60.99
076.0	100.0000	0377.7	078.1	176.8	004.3925	0105.5	028.8	60.05
077.0	100.0000	0377.8	078.1	176.3	004.3034	0105.1	030.1	59.15
078.0	100.0000	0378.2	078.2	175.9	004.2241	0104.7	031.5	58.31
079.0	100.0000	0378.9	078.2	175.5	004.1529	0104.3	032.8	57.54
080.0	100.0000	0379.6	078.2	175.2	004.0951	0103.9	034.2	56.81
081.0	100.0000	0380.2	078.3	175.0	004.0503	0103.6	035.5	56.10
082.0	100.0000	0380.8	078.3	174.8	004.0162	0103.3	036.9	55.42
083.0	100.0000	0381.3	078.4	174.6	003.9922	0103.0	038.3	54.77

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
084.0	100.0000	0381.7	078.4	174.6	003.9796	0102.9	039.6	54.16
085.0	100.0000	0381.6	078.4	174.6	003.9835	0103.0	041.0	53.58
086.0	100.0000	0380.8	078.3	174.7	004.0049	0103.2	042.4	53.05
087.0	100.0000	0379.9	078.3	174.9	004.0334	0103.4	043.7	52.55
088.0	100.0000	0378.6	078.2	175.1	004.0715	0103.7	045.1	52.07
089.0	100.0000	0377.9	078.1	175.2	004.1052	0103.9	046.4	51.59
090.0	100.0000	0377.1	078.1	175.4	004.1420	0104.2	047.8	51.13
091.0	100.0000	0376.3	078.0	175.7	004.1821	0104.4	049.2	50.68
092.0	100.0000	0375.7	078.0	175.9	004.2237	0104.7	050.5	50.22
093.0	100.0000	0375.0	077.9	176.1	004.2681	0104.9	051.9	49.76
094.0	100.0000	0374.6	077.9	176.3	004.3129	0105.1	053.2	49.30
095.0	100.0000	0374.0	077.8	176.6	004.3621	0105.3	054.5	48.85
096.0	100.0000	0373.4	077.8	176.9	004.4139	0105.6	055.9	48.41
097.0	100.0000	0373.1	077.8	177.1	004.4632	0105.7	057.2	47.96
098.0	100.0000	0373.1	077.8	177.4	004.5116	0105.8	058.5	47.52
099.0	100.0000	0373.2	077.8	177.6	004.5610	0106.0	059.9	47.10
100.0	100.0000	0373.3	077.8	177.9	004.6119	0106.1	061.2	46.69
101.0	100.0000	0373.8	077.8	178.1	004.6615	0106.3	062.5	46.29
102.0	100.0000	0374.4	077.9	178.4	004.7109	0106.5	063.9	45.91
103.0	100.0000	0375.0	077.9	178.6	004.7631	0106.7	065.2	45.55
104.0	100.0000	0375.6	078.0	178.9	004.8184	0106.8	066.5	45.21
105.0	100.0000	0376.0	078.0	179.2	004.8773	0107.1	067.9	44.87
106.0	100.0000	0376.1	078.0	179.5	004.9428	0107.3	069.2	44.54
107.0	100.0000	0376.1	078.0	179.9	005.0102	0107.5	070.5	44.22
108.0	100.0000	0376.0	078.0	180.2	005.0915	0107.7	071.8	43.91
109.0	100.0000	0375.8	078.0	180.5	005.1843	0107.9	073.1	43.62
110.0	100.0000	0375.7	078.0	180.9	005.2790	0108.1	074.3	43.33
111.0	100.0000	0375.8	078.0	181.2	005.3715	0108.3	075.6	43.04
112.0	100.0000	0376.3	078.0	181.6	005.4622	0108.5	076.9	42.75
113.0	100.0000	0376.8	078.0	181.9	005.5535	0108.7	078.2	42.46
114.0	100.0000	0377.4	078.1	182.3	005.6470	0108.8	079.5	42.17
115.0	100.0000	0377.9	078.1	182.6	005.7441	0109.0	080.8	41.89
116.0	100.0000	0378.2	078.1	183.0	005.8460	0109.0	082.0	41.61

## 07-29-2010 FCC NGDC 30 Sec Terrain Data

1210394 BNPED20071012AHI

KNOWNew

Channel = 218C3

Max ERP = 20 kW

RCAMSL = 473.2 M

N. Lat. 45 29 27.0

W. Lng. 92 11 33.0

Protected

60 dBu

Channel = 216C0

Max ERP = 100 kW

RCAMSL = 663.3 M

N. Lat. 45 03 44.0

W. Lng. 93 08 21.0

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
178.0	004.6349	0106.2	027.5	074.6	100.0000	0378.0	077.8	65.20	
179.0	004.8354	0106.9	027.8	074.8	100.0000	0378.0	077.3	65.39	
180.0	005.0401	0107.5	028.1	074.9	100.0000	0378.0	076.7	65.58	
181.0	005.3045	0108.1	028.5	075.1	100.0000	0377.9	076.2	65.77	
182.0	005.5757	0108.7	028.9	075.3	100.0000	0377.9	075.6	65.98	
183.0	005.8536	0109.0	029.3	075.5	100.0000	0377.8	075.0	66.18	
184.0	006.1383	0108.9	029.6	075.6	100.0000	0377.8	074.4	66.38	
185.0	006.4298	0109.5	030.0	075.7	100.0000	0377.7	073.8	66.59	
186.0	006.7280	0110.6	030.4	075.9	100.0000	0377.7	073.2	66.81	
187.0	007.0330	0112.1	030.9	076.2	100.0000	0377.7	072.5	67.05	
188.0	007.3447	0113.6	031.5	076.4	100.0000	0377.7	071.8	67.29	
189.0	007.6632	0114.6	031.9	076.6	100.0000	0377.7	071.1	67.53	
190.0	007.9885	0115.2	032.3	076.7	100.0000	0377.8	070.5	67.76	
191.0	008.4085	0115.8	032.8	076.9	100.0000	0377.8	069.7	68.01	
192.0	008.8392	0116.3	033.3	077.1	100.0000	0377.8	069.0	68.27	
193.0	009.2807	0115.9	033.6	077.1	100.0000	0377.9	068.4	68.50	
194.0	009.7329	0115.3	033.9	077.1	100.0000	0377.9	067.7	68.73	
195.0	010.1959	0115.0	034.2	077.1	100.0000	0377.9	067.0	68.97	
196.0	010.6697	0115.2	034.6	077.2	100.0000	0377.9	066.3	69.22	
197.0	011.1542	0115.5	035.0	077.2	100.0000	0377.9	065.6	69.48	
198.0	011.6495	0115.4	035.3	077.2	100.0000	0377.9	064.9	69.72	
199.0	012.1555	0115.0	035.6	077.1	100.0000	0377.9	064.2	69.96	
200.0	012.6723	0114.5	035.9	077.1	100.0000	0377.8	063.6	70.20	
201.0	013.0702	0114.0	036.0	076.9	100.0000	0377.8	063.0	70.42	
202.0	013.4743	0113.4	036.2	076.7	100.0000	0377.7	062.3	70.64	
203.0	013.8844	0112.7	036.3	076.4	100.0000	0377.7	061.8	70.85	
204.0	014.3008	0112.0	036.5	076.2	100.0000	0377.7	061.2	71.07	
205.0	014.7233	0111.8	036.7	076.0	100.0000	0377.7	060.5	71.30	
206.0	015.1519	0111.8	036.9	075.8	100.0000	0377.7	059.9	71.54	
207.0	015.5867	0111.9	037.1	075.5	100.0000	0377.8	059.3	71.78	
208.0	016.0277	0111.9	037.4	075.3	100.0000	0377.9	058.6	72.01	
209.0	016.4748	0111.9	037.6	075.0	100.0000	0377.9	058.0	72.24	
210.0	016.9280	0111.7	037.8	074.7	100.0000	0378.0	057.4	72.47	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
211.0	016.6276	0111.5	037.6	074.1	100.0000	0378.0	057.1	72.59
212.0	016.3299	0111.2	037.4	073.5	100.0000	0377.7	056.8	72.71
213.0	016.0348	0111.0	037.2	072.9	100.0000	0377.3	056.5	72.81
214.0	015.7425	0110.7	037.1	072.2	100.0000	0376.8	056.2	72.89
215.0	015.4528	0110.5	036.9	071.6	100.0000	0376.3	055.9	72.97
216.0	015.1659	0110.3	036.7	071.0	100.0000	0375.8	055.7	73.05
217.0	014.8816	0110.4	036.6	070.3	100.0000	0375.4	055.4	73.13
218.0	014.6000	0110.9	036.5	069.7	100.0000	0375.2	055.2	73.23
219.0	014.3211	0111.5	036.4	069.1	100.0000	0375.1	054.9	73.33
220.0	014.0449	0111.9	036.3	068.5	100.0000	0375.3	054.7	73.42
221.0	013.4743	0111.8	036.0	067.8	100.0000	0375.6	054.7	73.43
222.0	012.9155	0111.6	035.6	067.0	100.0000	0376.1	054.7	73.42
223.0	012.3685	0111.2	035.2	066.2	100.0000	0376.5	054.8	73.40
224.0	011.8334	0110.9	034.8	065.5	100.0000	0376.7	054.9	73.36
225.0	011.3101	0111.1	034.5	064.8	100.0000	0376.7	055.0	73.32
226.0	010.7986	0111.7	034.2	064.1	100.0000	0376.7	055.1	73.30
227.0	010.2990	0112.6	034.0	063.4	100.0000	0376.6	055.2	73.27
228.0	009.8112	0113.5	033.7	062.8	100.0000	0376.7	055.2	73.24
229.0	009.3352	0114.2	033.4	062.1	100.0000	0376.7	055.4	73.19
230.0	008.8711	0114.7	033.1	061.4	100.0000	0376.8	055.6	73.12
231.0	008.5099	0115.1	032.8	060.8	100.0000	0376.8	055.7	73.06
232.0	008.1562	0115.4	032.5	060.2	100.0000	0376.8	055.9	72.98
233.0	007.8100	0115.7	032.2	059.6	100.0000	0376.8	056.2	72.90
234.0	007.4713	0116.3	031.9	059.0	100.0000	0376.7	056.4	72.82
235.0	007.1401	0116.9	031.7	058.4	100.0000	0376.7	056.6	72.74
236.0	006.8164	0117.6	031.4	057.8	100.0000	0376.7	056.8	72.65
237.0	006.5003	0118.3	031.1	057.3	100.0000	0376.7	057.1	72.55
238.0	006.1916	0119.2	030.9	056.7	100.0000	0376.7	057.3	72.46
239.0	005.8905	0120.3	030.6	056.2	100.0000	0376.8	057.6	72.36
240.0	005.5968	0121.3	030.4	055.7	100.0000	0376.9	057.9	72.26
241.0	005.3686	0122.1	030.2	055.2	100.0000	0377.1	058.1	72.17
242.0	005.1450	0122.8	029.9	054.7	100.0000	0377.3	058.4	72.07
243.0	004.9263	0123.3	029.7	054.2	100.0000	0377.5	058.7	71.96
244.0	004.7123	0123.9	029.4	053.7	100.0000	0377.8	059.1	71.85
245.0	004.5030	0124.5	029.2	053.3	100.0000	0378.0	059.4	71.73
246.0	004.2985	0124.9	028.9	052.9	100.0000	0378.3	059.8	71.60
247.0	004.0987	0124.8	028.6	052.5	100.0000	0378.5	060.2	71.46
248.0	003.9037	0124.5	028.3	052.1	100.0000	0378.8	060.6	71.29
249.0	003.7135	0123.9	027.9	051.8	100.0000	0379.1	061.1	71.12
250.0	003.5280	0123.0	027.5	051.4	100.0000	0379.4	061.6	70.94
251.0	003.3850	0122.3	027.2	051.1	100.0000	0379.7	062.1	70.79
252.0	003.2450	0121.7	026.9	050.8	100.0000	0380.0	062.5	70.63
253.0	003.1079	0121.5	026.6	050.5	100.0000	0380.3	063.0	70.49
254.0	002.9737	0121.3	026.3	050.2	100.0000	0380.5	063.4	70.34
255.0	002.8426	0121.0	026.1	049.9	100.0000	0380.7	063.8	70.18
256.0	002.7144	0120.9	025.8	049.7	100.0000	0381.0	064.3	70.03
257.0	002.5891	0120.9	025.5	049.4	100.0000	0381.2	064.7	69.88
258.0	002.4668	0121.1	025.3	049.2	100.0000	0381.3	065.2	69.73
259.0	002.3475	0121.1	025.0	049.0	100.0000	0381.5	065.6	69.58
260.0	002.2311	0121.2	024.7	048.7	100.0000	0381.6	066.1	69.42
261.0	002.1399	0121.3	024.5	048.5	100.0000	0381.7	066.5	69.27

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
262.0	002.0506	0121.5	024.3	048.3	100.0000	0381.7	066.9	69.13
263.0	001.9631	0121.5	024.0	048.1	100.0000	0381.8	067.3	68.98
264.0	001.8776	0121.6	023.8	048.0	100.0000	0381.9	067.7	68.83
265.0	001.7940	0121.6	023.5	047.8	100.0000	0381.9	068.2	68.68
266.0	001.7123	0121.5	023.3	047.7	100.0000	0381.9	068.6	68.52
267.0	001.6325	0121.4	023.0	047.5	100.0000	0381.9	069.1	68.36
268.0	001.5546	0121.3	022.8	047.4	100.0000	0382.0	069.5	68.20
269.0	001.4786	0121.2	022.5	047.3	100.0000	0382.0	070.0	68.04
270.0	001.4045	0121.1	022.2	047.2	100.0000	0382.0	070.5	67.88
271.0	001.3781	0121.0	022.1	047.0	100.0000	0382.0	070.8	67.76
272.0	001.3520	0120.6	022.0	046.9	100.0000	0382.0	071.2	67.63
273.0	001.3261	0120.1	021.8	046.8	100.0000	0382.0	071.5	67.51
274.0	001.3005	0119.6	021.7	046.6	100.0000	0382.0	071.9	67.38
275.0	001.2751	0119.2	021.6	046.5	100.0000	0382.0	072.3	67.25
276.0	001.2500	0118.8	021.4	046.4	100.0000	0381.9	072.6	67.12
277.0	001.2251	0118.3	021.3	046.3	100.0000	0381.9	073.0	66.99
278.0	001.2005	0117.8	021.2	046.2	100.0000	0381.9	073.4	66.86
279.0	001.1761	0117.3	021.0	046.1	100.0000	0381.9	073.8	66.73
280.0	001.1520	0116.5	020.8	046.0	100.0000	0381.9	074.2	66.59
281.0	001.1434	0115.6	020.7	045.9	100.0000	0381.9	074.5	66.47
282.0	001.1348	0114.7	020.6	045.8	100.0000	0381.9	074.9	66.34
283.0	001.1262	0114.2	020.5	045.7	100.0000	0381.9	075.2	66.23
284.0	001.1177	0113.7	020.4	045.6	100.0000	0381.9	075.6	66.11
285.0	001.1092	0113.3	020.4	045.5	100.0000	0381.9	075.9	65.99
286.0	001.1007	0112.9	020.3	045.5	100.0000	0381.9	076.3	65.87
287.0	001.0923	0112.4	020.2	045.4	100.0000	0382.0	076.6	65.75
288.0	001.0839	0111.8	020.1	045.3	100.0000	0382.0	076.9	65.63
289.0	001.0756	0111.2	020.0	045.3	100.0000	0382.0	077.3	65.51
290.0	001.0672	0110.3	019.9	045.2	100.0000	0382.0	077.7	65.39
291.0	001.0663	0109.2	019.8	045.2	100.0000	0382.0	078.0	65.27
292.0	001.0654	0108.0	019.7	045.2	100.0000	0382.0	078.4	65.14
293.0	001.0644	0106.8	019.6	045.1	100.0000	0382.0	078.7	65.02
294.0	001.0635	0105.8	019.5	045.1	100.0000	0382.0	079.1	64.90
295.0	001.0626	0105.0	019.4	045.1	100.0000	0382.0	079.4	64.78
296.0	001.0617	0104.3	019.3	045.0	100.0000	0382.0	079.8	64.67
297.0	001.0608	0103.8	019.3	045.0	100.0000	0382.0	080.1	64.55

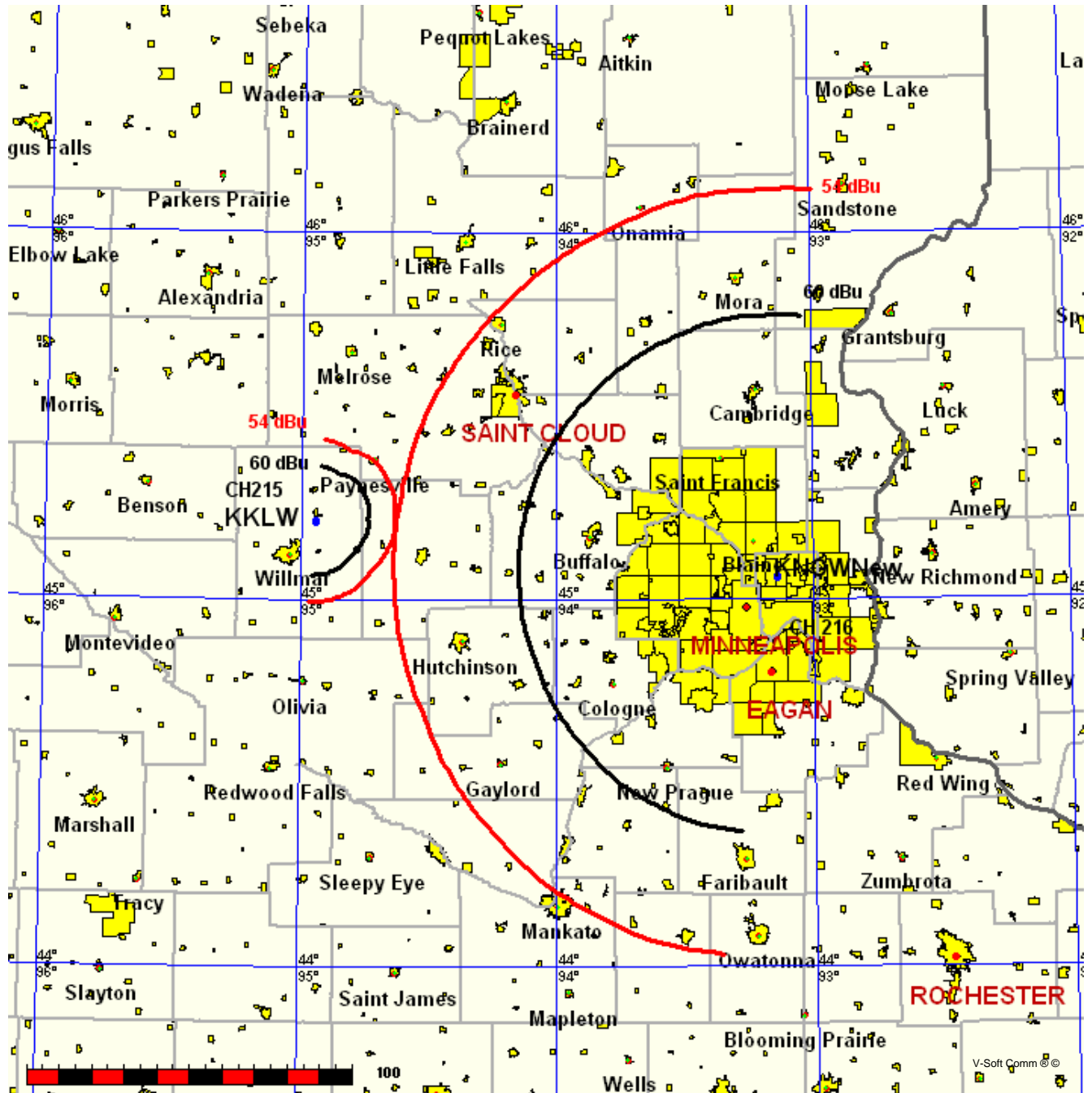


Minnesota Public Radio  
KNOW(New) vs. KKLW

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec  
KNOWNew's Overlaps (In= 39.01 km, Out= 8.46 km)

KNOWNew CH 216 C0  
Lat= 45 03 44.0, Lng= 93 08 21.0  
100.0 kW 388.5 M HAAT, 663.3 M COR  
Prot.= 60 dBu, Intef.= 54 dBu

KKLW CH 215 A BLED20040204ABY  
Lat= 45 11 52.0, Lng= 94 56 58.0  
0.4 kW 129 M HAAT, 491 M COR  
Prot.= 60 dBu, Intef.= 54 dBu



07-29-2010

FCC NGDC 30 Sec Terrain Data

FMOver Analysis

KNOWNew

KKLW BLED20040204ABY

Channel = 216C0  
 Max ERP = 100 kW  
 RCAMSL = 663.3 M  
 N. Lat. 45 03 44.0  
 W. Lng. 93 08 21.0  
 Protected  
 60 dBu

Channel = 215A  
 Max ERP = 0.4 kW  
 RCAMSL = 491 M  
 N. Lat. 45 11 52.0  
 W. Lng. 94 56 58.0  
 Interfering  
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
217.0	100.0000	0393.8	079.3	129.2	000.4000	0111.4	123.1	20.74	
218.0	100.0000	0393.6	079.3	129.1	000.4000	0111.5	121.9	20.95	
219.0	100.0000	0392.9	079.2	129.1	000.4000	0111.5	120.5	21.19	
220.0	100.0000	0392.2	079.2	129.1	000.4000	0111.5	119.1	21.43	
221.0	100.0000	0391.7	079.1	129.1	000.4000	0111.5	117.7	21.68	
222.0	100.0000	0391.4	079.1	129.0	000.4000	0111.5	116.3	21.92	
223.0	100.0000	0391.3	079.1	129.0	000.4000	0111.5	115.0	22.17	
224.0	100.0000	0390.9	079.1	128.9	000.4000	0111.5	113.6	22.42	
225.0	100.0000	0390.7	079.1	128.9	000.4000	0111.5	112.2	22.67	
226.0	100.0000	0390.6	079.1	128.8	000.4000	0111.5	110.8	22.94	
227.0	100.0000	0390.5	079.1	128.7	000.4000	0111.6	109.5	23.21	
228.0	100.0000	0390.2	079.0	128.6	000.4000	0111.6	108.1	23.48	
229.0	100.0000	0389.8	079.0	128.5	000.4000	0111.7	106.7	23.77	
230.0	100.0000	0389.8	079.0	128.3	000.4000	0111.7	105.4	24.06	
231.0	100.0000	0390.3	079.0	128.2	000.4000	0111.8	104.0	24.35	
232.0	100.0000	0391.1	079.1	128.1	000.4000	0111.8	102.6	24.66	
233.0	100.0000	0391.5	079.1	127.9	000.4000	0111.9	101.3	24.97	
234.0	100.0000	0391.2	079.1	127.7	000.4000	0112.0	099.9	25.29	
235.0	100.0000	0390.6	079.1	127.4	000.4000	0112.1	098.6	25.61	
236.0	100.0000	0390.4	079.0	127.2	000.4000	0112.2	097.3	25.95	
237.0	100.0000	0390.5	079.1	126.9	000.4000	0112.4	096.0	26.28	
238.0	100.0000	0390.6	079.1	126.7	000.4000	0112.5	094.7	26.63	
239.0	100.0000	0390.5	079.1	126.4	000.4000	0112.7	093.4	26.97	
240.0	100.0000	0390.3	079.0	126.0	000.4000	0112.8	092.1	27.32	
241.0	100.0000	0390.0	079.0	125.7	000.4000	0113.0	090.9	27.67	
242.0	100.0000	0389.6	079.0	125.3	000.4000	0113.2	089.6	28.02	
243.0	100.0000	0389.2	079.0	124.9	000.4000	0113.4	088.4	28.37	
244.0	100.0000	0388.7	078.9	124.4	000.4000	0113.7	087.2	28.71	
245.0	100.0000	0387.9	078.9	123.9	000.4000	0113.9	086.0	29.05	
246.0	100.0000	0386.8	078.8	123.4	000.4000	0114.1	084.9	29.39	
247.0	100.0000	0385.9	078.7	122.9	000.4000	0114.3	083.8	29.72	
248.0	100.0000	0385.7	078.7	122.3	000.4000	0114.6	082.6	30.06	
249.0	100.0000	0386.0	078.7	121.8	000.4000	0114.8	081.5	30.39	
250.0	100.0000	0386.8	078.8	121.2	000.4000	0115.1	080.4	30.73	
251.0	100.0000	0387.9	078.9	120.7	000.4000	0115.4	079.2	31.07	
252.0	100.0000	0388.8	078.9	120.0	000.4000	0115.8	078.1	31.41	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
253.0	100.0000	0389.5	079.0	119.4	000.4000	0116.3	077.1	31.74
254.0	100.0000	0390.1	079.0	118.7	000.4000	0116.8	076.0	32.07
255.0	100.0000	0390.6	079.1	118.0	000.4000	0117.3	075.0	32.39
256.0	100.0000	0391.3	079.1	117.2	000.4000	0117.6	074.1	32.70
257.0	100.0000	0392.3	079.2	116.4	000.4000	0117.7	073.1	32.99
258.0	100.0000	0393.2	079.3	115.6	000.4000	0117.8	072.2	33.27
259.0	100.0000	0394.1	079.3	114.8	000.4000	0117.8	071.3	33.55
260.0	100.0000	0394.7	079.4	113.9	000.4000	0117.7	070.4	33.80
261.0	100.0000	0394.9	079.4	113.0	000.4000	0117.8	069.6	34.05
262.0	100.0000	0394.9	079.4	112.0	000.4000	0118.2	068.9	34.29
263.0	100.0000	0394.7	079.4	111.0	000.4000	0118.9	068.2	34.54
264.0	100.0000	0394.6	079.4	109.9	000.4000	0119.9	067.6	34.79
265.0	100.0000	0394.4	079.3	108.9	000.4000	0120.7	067.0	35.03
266.0	100.0000	0394.3	079.3	107.8	000.4000	0121.4	066.4	35.23
267.0	100.0000	0394.2	079.3	106.7	000.4000	0122.0	065.9	35.42
268.0	100.0000	0394.5	079.4	105.5	000.4000	0122.8	065.4	35.63
269.0	100.0000	0395.2	079.4	104.4	000.4000	0123.8	065.0	35.83
270.0	100.0000	0395.8	079.4	103.2	000.4000	0124.6	064.6	36.00
271.0	100.0000	0396.5	079.5	102.0	000.4000	0124.8	064.2	36.13
272.0	100.0000	0397.1	079.5	100.8	000.4000	0124.7	063.9	36.22
273.0	100.0000	0397.6	079.6	099.6	000.4000	0124.7	063.7	36.30
274.0	100.0000	0397.7	079.6	098.3	000.4000	0124.8	063.5	36.36
275.0	100.0000	0397.8	079.6	097.1	000.4000	0124.6	063.4	36.39
276.0	100.0000	0397.9	079.6	095.8	000.4000	0123.9	063.3	36.37
277.0	100.0000	0397.8	079.6	094.6	000.4000	0123.1	063.4	36.32
278.0	100.0000	0397.7	079.6	093.3	000.4000	0122.3	063.4	36.25
279.0	100.0000	0397.6	079.6	092.1	000.4000	0122.1	063.6	36.20
280.0	100.0000	0397.5	079.6	090.8	000.4000	0121.9	063.7	36.13
281.0	100.0000	0397.4	079.6	089.6	000.4000	0121.7	064.0	36.04
282.0	100.0000	0397.6	079.6	088.4	000.4000	0121.6	064.2	35.95
283.0	100.0000	0397.7	079.6	087.2	000.4000	0122.0	064.5	35.87
284.0	100.0000	0397.9	079.6	086.0	000.4000	0122.5	064.9	35.78
285.0	100.0000	0398.1	079.6	084.8	000.4000	0123.3	065.3	35.69
286.0	100.0000	0398.4	079.6	083.7	000.4000	0124.3	065.8	35.59
287.0	100.0000	0398.8	079.7	082.6	000.4000	0124.9	066.3	35.47
288.0	100.0000	0399.3	079.7	081.5	000.4000	0125.4	066.8	35.32
289.0	100.0000	0399.8	079.7	080.4	000.4000	0125.9	067.4	35.16
290.0	100.0000	0400.1	079.8	079.4	000.4000	0126.5	068.1	34.99
291.0	100.0000	0400.3	079.8	078.3	000.4000	0127.1	068.8	34.80
292.0	100.0000	0400.4	079.8	077.4	000.4000	0127.7	069.5	34.60
293.0	100.0000	0400.5	079.8	076.4	000.4000	0128.9	070.3	34.42
294.0	100.0000	0400.5	079.8	075.5	000.4000	0130.3	071.1	34.23
295.0	100.0000	0400.3	079.8	074.7	000.4000	0131.5	072.0	34.02
296.0	100.0000	0400.0	079.8	073.8	000.4000	0132.4	072.9	33.79
297.0	100.0000	0399.7	079.7	073.0	000.4000	0133.1	073.9	33.53
298.0	100.0000	0399.2	079.7	072.3	000.4000	0133.6	074.8	33.25
299.0	100.0000	0398.8	079.7	071.6	000.4000	0134.0	075.8	32.97
300.0	100.0000	0398.4	079.6	070.9	000.4000	0134.3	076.9	32.67
301.0	100.0000	0398.0	079.6	070.2	000.4000	0134.5	077.9	32.36
302.0	100.0000	0397.6	079.6	069.6	000.4000	0134.6	079.0	32.04
303.0	100.0000	0397.0	079.5	069.0	000.4000	0134.8	080.2	31.71

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
304.0	100.0000	0396.3	079.5	068.5	000.4000	0134.9	081.3	31.37
305.0	100.0000	0395.6	079.4	067.9	000.4000	0134.9	082.5	31.03
306.0	100.0000	0395.1	079.4	067.4	000.4000	0134.9	083.6	30.68
307.0	100.0000	0394.6	079.4	067.0	000.4000	0134.9	084.8	30.33
308.0	100.0000	0394.2	079.3	066.5	000.4000	0134.8	086.0	29.97
309.0	100.0000	0393.8	079.3	066.1	000.4000	0134.6	087.3	29.61
310.0	100.0000	0393.3	079.3	065.7	000.4000	0134.5	088.5	29.25
311.0	100.0000	0392.6	079.2	065.3	000.4000	0134.4	089.8	28.89
312.0	100.0000	0391.7	079.1	065.0	000.4000	0134.2	091.0	28.52
313.0	100.0000	0391.1	079.1	064.7	000.4000	0134.1	092.3	28.16
314.0	100.0000	0390.7	079.1	064.4	000.4000	0134.0	093.6	27.80
315.0	100.0000	0390.7	079.1	064.1	000.4000	0134.0	094.9	27.45
316.0	100.0000	0390.8	079.1	063.8	000.4000	0133.9	096.2	27.10
317.0	100.0000	0390.9	079.1	063.6	000.4000	0133.9	097.5	26.75
318.0	100.0000	0390.8	079.1	063.3	000.4000	0133.9	098.8	26.41
319.0	100.0000	0390.8	079.1	063.1	000.4000	0133.9	100.1	26.08
320.0	100.0000	0390.6	079.1	062.9	000.4000	0133.9	101.4	25.75
321.0	100.0000	0390.3	079.0	062.8	000.4000	0134.0	102.8	25.43
322.0	100.0000	0390.0	079.0	062.6	000.4000	0134.0	104.1	25.12
323.0	100.0000	0389.8	079.0	062.5	000.4000	0134.0	105.5	24.81
324.0	100.0000	0389.6	079.0	062.3	000.4000	0134.0	106.8	24.51
325.0	100.0000	0389.5	079.0	062.2	000.4000	0134.1	108.2	24.22
326.0	100.0000	0389.5	079.0	062.1	000.4000	0134.1	109.5	23.93
327.0	100.0000	0389.5	079.0	062.1	000.4000	0134.1	110.9	23.66
328.0	100.0000	0389.5	079.0	062.0	000.4000	0134.1	112.2	23.39
329.0	100.0000	0389.3	079.0	061.9	000.4000	0134.1	113.6	23.13
330.0	100.0000	0389.1	079.0	061.9	000.4000	0134.1	115.0	22.87
331.0	100.0000	0388.8	078.9	061.9	000.4000	0134.1	116.4	22.62
332.0	100.0000	0388.5	078.9	061.9	000.4000	0134.1	117.7	22.37
333.0	100.0000	0388.1	078.9	061.9	000.4000	0134.1	119.1	22.12
334.0	100.0000	0388.0	078.9	061.9	000.4000	0134.1	120.5	21.88
335.0	100.0000	0387.9	078.9	061.9	000.4000	0134.1	121.8	21.63
336.0	100.0000	0388.0	078.9	061.9	000.4000	0134.1	123.2	21.38

## 07-29-2010 FCC NGDC 30 Sec Terrain Data

KKLW BLED20040204ABY

KNOWNew

Channel = 215A

Max ERP = 0.4 kW

RCAMSL = 491 M

N. Lat. 45 11 52.0

W. Lng. 94 56 58.0

Protected

60 dBu

Channel = 216C0

Max ERP = 100 kW

RCAMSL = 663.3 M

N. Lat. 45 03 44.0

W. Lng. 93 08 21.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
035.0	000.4000	0128.1	016.6	282.8	100.0000	0397.7	135.4	49.59	
036.0	000.4000	0128.7	016.6	282.8	100.0000	0397.7	135.2	49.66	
037.0	000.4000	0129.2	016.6	282.7	100.0000	0397.7	134.9	49.73	
038.0	000.4000	0129.8	016.7	282.7	100.0000	0397.7	134.6	49.80	
039.0	000.4000	0130.8	016.8	282.7	100.0000	0397.7	134.3	49.88	
040.0	000.4000	0132.2	016.8	282.6	100.0000	0397.7	134.0	49.95	
041.0	000.4000	0133.6	017.0	282.6	100.0000	0397.7	133.7	50.03	
042.0	000.4000	0134.9	017.0	282.6	100.0000	0397.7	133.4	50.11	
043.0	000.4000	0136.0	017.1	282.6	100.0000	0397.7	133.1	50.18	
044.0	000.4000	0136.8	017.2	282.5	100.0000	0397.7	132.8	50.25	
045.0	000.4000	0137.3	017.2	282.4	100.0000	0397.7	132.5	50.32	
046.0	000.4000	0137.6	017.2	282.4	100.0000	0397.7	132.3	50.39	
047.0	000.4000	0137.9	017.3	282.3	100.0000	0397.6	132.0	50.45	
048.0	000.4000	0138.2	017.3	282.2	100.0000	0397.6	131.8	50.52	
049.0	000.4000	0138.4	017.3	282.2	100.0000	0397.6	131.5	50.58	
050.0	000.4000	0138.5	017.3	282.1	100.0000	0397.6	131.3	50.64	
051.0	000.4000	0138.3	017.3	282.0	100.0000	0397.6	131.1	50.70	
052.0	000.4000	0138.0	017.3	281.9	100.0000	0397.6	130.9	50.75	
053.0	000.4000	0137.6	017.2	281.8	100.0000	0397.5	130.7	50.80	
054.0	000.4000	0137.2	017.2	281.7	100.0000	0397.5	130.5	50.85	
055.0	000.4000	0136.6	017.2	281.6	100.0000	0397.5	130.3	50.90	
056.0	000.4000	0136.0	017.1	281.5	100.0000	0397.5	130.1	50.95	
057.0	000.4000	0135.6	017.1	281.4	100.0000	0397.5	129.9	50.99	
058.0	000.4000	0135.1	017.1	281.3	100.0000	0397.4	129.7	51.04	
059.0	000.4000	0134.7	017.0	281.2	100.0000	0397.4	129.5	51.08	
060.0	000.4000	0134.4	017.0	281.1	100.0000	0397.4	129.4	51.12	
061.0	000.4000	0134.2	017.0	281.0	100.0000	0397.4	129.2	51.17	
062.0	000.4000	0134.1	017.0	280.9	100.0000	0397.4	129.0	51.21	
063.0	000.4000	0133.9	017.0	280.8	100.0000	0397.4	128.9	51.26	
064.0	000.4000	0133.9	017.0	280.6	100.0000	0397.4	128.7	51.30	
065.0	000.4000	0134.2	017.0	280.5	100.0000	0397.4	128.5	51.35	
066.0	000.4000	0134.6	017.0	280.4	100.0000	0397.4	128.3	51.39	
067.0	000.4000	0134.9	017.0	280.3	100.0000	0397.5	128.1	51.44	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
068.0	000.4000	0134.9	017.0	280.2	100.0000	0397.5	128.0	51.48
069.0	000.4000	0134.8	017.0	280.1	100.0000	0397.5	127.8	51.51
070.0	000.4000	0134.5	017.0	280.0	100.0000	0397.5	127.7	51.55
071.0	000.4000	0134.2	017.0	279.9	100.0000	0397.5	127.6	51.58
072.0	000.4000	0133.7	017.0	279.7	100.0000	0397.5	127.5	51.60
073.0	000.4000	0133.1	016.9	279.6	100.0000	0397.5	127.4	51.63
074.0	000.4000	0132.3	016.9	279.5	100.0000	0397.5	127.3	51.65
075.0	000.4000	0131.0	016.8	279.3	100.0000	0397.6	127.3	51.65
076.0	000.4000	0129.6	016.7	279.2	100.0000	0397.6	127.3	51.66
077.0	000.4000	0128.1	016.6	279.1	100.0000	0397.6	127.3	51.66
078.0	000.4000	0127.2	016.5	278.9	100.0000	0397.6	127.2	51.67
079.0	000.4000	0126.7	016.5	278.8	100.0000	0397.6	127.2	51.69
080.0	000.4000	0126.1	016.4	278.7	100.0000	0397.6	127.1	51.70
081.0	000.4000	0125.6	016.4	278.5	100.0000	0397.6	127.1	51.71
082.0	000.4000	0125.1	016.3	278.4	100.0000	0397.6	127.0	51.72
083.0	000.4000	0124.7	016.3	278.3	100.0000	0397.6	127.0	51.74
084.0	000.4000	0124.0	016.3	278.2	100.0000	0397.7	127.0	51.74
085.0	000.4000	0123.2	016.2	278.0	100.0000	0397.7	127.0	51.74
086.0	000.4000	0122.5	016.2	277.9	100.0000	0397.7	126.9	51.74
087.0	000.4000	0122.1	016.1	277.8	100.0000	0397.7	126.9	51.75
088.0	000.4000	0121.7	016.1	277.6	100.0000	0397.7	126.9	51.75
089.0	000.4000	0121.6	016.1	277.5	100.0000	0397.7	126.9	51.76
090.0	000.4000	0121.8	016.1	277.4	100.0000	0397.8	126.8	51.77
091.0	000.4000	0121.9	016.1	277.3	100.0000	0397.8	126.8	51.78
092.0	000.4000	0122.1	016.1	277.1	100.0000	0397.8	126.8	51.79
093.0	000.4000	0122.2	016.1	277.0	100.0000	0397.8	126.7	51.80
094.0	000.4000	0122.8	016.2	276.9	100.0000	0397.8	126.7	51.81
095.0	000.4000	0123.4	016.2	276.8	100.0000	0397.8	126.6	51.83
096.0	000.4000	0124.0	016.3	276.6	100.0000	0397.8	126.6	51.84
097.0	000.4000	0124.6	016.3	276.5	100.0000	0397.8	126.6	51.85
098.0	000.4000	0124.8	016.3	276.4	100.0000	0397.8	126.6	51.85
099.0	000.4000	0124.7	016.3	276.2	100.0000	0397.9	126.6	51.84
100.0	000.4000	0124.7	016.3	276.1	100.0000	0397.9	126.6	51.84
101.0	000.4000	0124.7	016.3	276.0	100.0000	0397.9	126.6	51.83
102.0	000.4000	0124.8	016.3	275.9	100.0000	0397.9	126.7	51.82
103.0	000.4000	0124.6	016.3	275.7	100.0000	0397.8	126.7	51.81
104.0	000.4000	0124.1	016.3	275.6	100.0000	0397.8	126.8	51.79
105.0	000.4000	0123.3	016.2	275.5	100.0000	0397.8	126.9	51.76
106.0	000.4000	0122.4	016.2	275.4	100.0000	0397.8	127.0	51.73
107.0	000.4000	0121.8	016.1	275.2	100.0000	0397.8	127.1	51.71
108.0	000.4000	0121.3	016.1	275.1	100.0000	0397.8	127.2	51.68
109.0	000.4000	0120.7	016.0	275.0	100.0000	0397.8	127.3	51.65
110.0	000.4000	0119.8	016.0	274.9	100.0000	0397.8	127.5	51.62
111.0	000.4000	0118.9	015.9	274.8	100.0000	0397.8	127.6	51.58
112.0	000.4000	0118.2	015.9	274.7	100.0000	0397.8	127.7	51.55
113.0	000.4000	0117.8	015.8	274.6	100.0000	0397.8	127.8	51.52
114.0	000.4000	0117.7	015.8	274.4	100.0000	0397.8	127.9	51.49
115.0	000.4000	0117.8	015.8	274.3	100.0000	0397.8	128.0	51.47
116.0	000.4000	0117.8	015.8	274.2	100.0000	0397.8	128.2	51.44
117.0	000.4000	0117.7	015.8	274.1	100.0000	0397.8	128.3	51.41
118.0	000.4000	0117.3	015.8	274.0	100.0000	0397.7	128.4	51.38

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
119.0	000.4000	0116.6	015.7	273.9	100.0000	0397.7	128.6	51.34
120.0	000.4000	0115.9	015.7	273.8	100.0000	0397.7	128.7	51.29
121.0	000.4000	0115.2	015.6	273.7	100.0000	0397.7	128.9	51.25
122.0	000.4000	0114.7	015.6	273.6	100.0000	0397.7	129.1	51.21
123.0	000.4000	0114.3	015.6	273.5	100.0000	0397.7	129.2	51.16
124.0	000.4000	0113.8	015.5	273.4	100.0000	0397.6	129.4	51.12
125.0	000.4000	0113.4	015.5	273.3	100.0000	0397.6	129.6	51.08
126.0	000.4000	0112.9	015.4	273.2	100.0000	0397.6	129.8	51.03
127.0	000.4000	0112.3	015.4	273.1	100.0000	0397.6	130.0	50.98
128.0	000.4000	0111.9	015.4	273.1	100.0000	0397.6	130.1	50.93
129.0	000.4000	0111.5	015.3	273.0	100.0000	0397.5	130.3	50.89
130.0	000.4000	0111.3	015.3	272.9	100.0000	0397.5	130.5	50.84
131.0	000.4000	0111.2	015.3	272.8	100.0000	0397.5	130.7	50.80
132.0	000.4000	0111.1	015.3	272.7	100.0000	0397.4	130.8	50.75
133.0	000.4000	0111.1	015.3	272.6	100.0000	0397.4	131.0	50.71
134.0	000.4000	0111.3	015.3	272.5	100.0000	0397.4	131.2	50.66
135.0	000.4000	0111.8	015.4	272.4	100.0000	0397.3	131.3	50.62
136.0	000.4000	0112.4	015.4	272.3	100.0000	0397.3	131.5	50.58
137.0	000.4000	0112.8	015.4	272.2	100.0000	0397.2	131.7	50.53
138.0	000.4000	0113.0	015.5	272.1	100.0000	0397.2	131.9	50.49
139.0	000.4000	0113.6	015.5	272.1	100.0000	0397.1	132.0	50.44
140.0	000.4000	0114.4	015.6	272.0	100.0000	0397.1	132.2	50.40
141.0	000.4000	0114.9	015.6	271.9	100.0000	0397.0	132.4	50.35
142.0	000.4000	0115.2	015.6	271.8	100.0000	0397.0	132.6	50.30
143.0	000.4000	0115.6	015.7	271.7	100.0000	0396.9	132.8	50.25
144.0	000.4000	0116.1	015.7	271.6	100.0000	0396.9	133.0	50.20
145.0	000.4000	0116.6	015.7	271.5	100.0000	0396.8	133.2	50.14
146.0	000.4000	0117.2	015.8	271.5	100.0000	0396.7	133.4	50.09
147.0	000.4000	0118.1	015.8	271.4	100.0000	0396.7	133.5	50.04
148.0	000.4000	0119.3	015.9	271.3	100.0000	0396.6	133.7	49.99
149.0	000.4000	0120.1	016.0	271.2	100.0000	0396.6	133.9	49.94
150.0	000.4000	0120.3	016.0	271.1	100.0000	0396.5	134.2	49.88
151.0	000.4000	0120.3	016.0	271.1	100.0000	0396.5	134.4	49.81
152.0	000.4000	0120.4	016.0	271.0	100.0000	0396.5	134.7	49.75
153.0	000.4000	0120.7	016.0	270.9	100.0000	0396.4	134.9	49.69
154.0	000.4000	0120.9	016.0	270.9	100.0000	0396.4	135.1	49.63