

## **Comprehensive Engineering Statement – October 30, 2021**

### **Historic Oxford Limited**

This proposal is for a new non-commercial educational FM station to serve Trappe, Maryland.

Geographic Coordinates: N. Lat. 38-29-27.3, W. Long. 76-08-08 (NAD 83)

Channel number: 219, 91.7 Mhz.

Proposed Antenna C.O.R: 51.2 m AMSL, HAAT: 50.1 m (8 cardinal radials, FCC 30m terrain data.)

Antenna height C.O.R. above ground: 49.4 m.

Base elevation at the site: 1.8 m.

Total tower height above ground: 59.4 m, Structure Height 58.4m (existing tower.) ASR # 1256544

Antenna Type: ERI Model LP-4C, EPA type 3.

ERP: 23.8 kW, circularly polarized.

Page #3 is a complete channel study table for channel 219 at the proposed coordinates.

Pages #4 through #31 compose detailed contour-to-contour map studies and FMOVER tables. These exhibits were put together using our FMCommander program that is in wide use throughout the industry. These studies use FCC 30-meter terrain data to show that, per section 73.509 of the Commission's rules, the proposed facilities will neither cause nor receive contour overlap with 1<sup>st</sup> adjacent WGTS, Tacoma Park, MD, and co-channel WRTX, Dover, DE. This is followed by similar studies showing contour overlap is neither caused nor received with 2nd adjacent WESM, Princess Anne, MD and first adjacent WBJC, Baltimore, MD. These are the only four stations where such detailed studies were needed.

Page #32 is a coverage map showing the 60 dBu City service contour. Page #33 is a distance to contour table. As shown on the map, the proposed city of license is Trappe, Maryland. Page #34 is a closeup study of the 60 dBu contour service to Trappe. This study uses the 2010 US Census City/Place, high-resolution, city boundaries to show that 97.1 percent of the population of the principal city is covered for an area of 68.2% of the total Trappe city boundary area.

Page #35 is a graph and table of the proposed azimuth pattern. This pattern meets the Commission's required maximum 2 dB per ten-degree and the 15 dB maximum null rules. The pattern will be achieved by the manufacturer using a testing range and a physical tower and antenna model. The antenna will be arraigned on the tower with the possible use of resonators to produce the final pattern. Page #36 is a graph of the 4-bay vertical field elevation.

Page # 37 through #39 is an RF hazard graph and table that shows that the proposed, full-wave, 2-bay ERI antenna produces a power density well below the Commission's 200  $\mu\text{W}/\text{cm}^2$  maximum for an uncontrolled area. Using the OET 65 formulas with the proposed EPA type #3, antenna, at head height, at the tower base, a power density of 23.45  $\mu\text{W}/\text{cm}^2$  is predicted. The maximum power density of 66.95  $\mu\text{W}/\text{cm}^2$  is located at a horizontal distance from the base of 27 meters. This is 33.5 percent of the maximum. The applicant proposes to use an existing registered tower (ASR #1256544) that has not been the target of environmental objections. There will be no changes to the tower height or other changes that may call for a detailed environmental analysis. The tower is gated and locked with appropriate signage. The applicant will reduce power or terminate transmissions as necessary to protect the public and workers on the tower. There are no other broadcast related RF sources within distance.

Page # 40 is a 307-B map showing the 60 dBu contour and the calculated first and second service areas therein. While the first service, US 2010 block level census population is 11,206 at 33.0 percent of the total 60 dBu, the second service population is 21,521 and that together with the first service is 96.4 percent of the full 60 dBu. The total US 2010 block population within the 60 dBu has been calculated to be 33,944.

Page #41 is an area map that shows the land area of the 60 dBu coverage is 1,235.4 sq km. The land area was determined using the digital polar-planimeter function of our software, Probe 5.

The applicant, Historic Oxford Limited, owns no AM, FM or TV stations or translators.

Page #42 is an exhibit stating the qualifications of the preparer.

Doug Vernier, Telecommunication Consultants  
V-Soft Communications

Channel 219 contour-to-contour channel study - Trappe, Maryland

Historic Oxford Limited

REFERENCE  
38 29 27.30 N.  
76 08 08.00 W.

CH# 219B1 - 91.7 MHz, Pwr= 23.8 kW DA, HAAT= 50.1 M, COR= 51.2 M  
Average Protected F(50-50)= 28.24 km  
Standard Directional

DISPLAY DATES  
DATA 10-30-21  
SEARCH 10-30-21

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
220B Takoma Park	WGTS	LIC _CN MD		297.6 117.0	97.25 BMLED20070501AAA	38 53 30.40 77 07 53.90	23.500 186	76.9 252	52.1 Atlantic Gateway	-2.5<***	10.5 Communications
219A Dover	WRTX	LIC _VN DE		31.9 212.2	93.12 BLED19950418KB	39 12 03.40 75 33 53.70	0.580	51.2 104	14.8 Temple University Of The C	20.4	0.0
217B Princess Anne	WESM	LIC _CN MD		128.1 308.4	50.37 BLED19870303KC	38 12 37.40 75 40 54.70	45.000 91	4.6 97	42.9 University Of Maryland, Ea	17.5	4.6
218B Baltimore	WBJC	LIC DCN MD		332.8 152.5	112.08 BLED20101109ABJ	39 23 11.40 76 43 50.90	50.000 152	86.4 289	58.5 Baltimore City Community C	4.7	22.7
222B Baltimore	WERQ-FM«	LIC DCN MD		334.2 153.9	104.74 BLH20130830ACP	39 20 18.40 76 39 58.90	37.000 173	7.0 269	72.0 Radio One Licenses, LLC	71.0R	33.7M
221A Fenwick Island	WLBW«	LIC _CN DE		94.7 275.3	87.28 BMLED20110201ADZ	38 25 20.40 75 08 21.70	3.000 143	2.5 147	27.7 Educational Media Foundati	48.0R	39.3M
273B Princess Anne	WBOC-FM«	CP _CN MD		134.9 315.2	59.43 0000141568	38 06 47.00 75 39 15.00	50.000 144	0.0 147	0.0 Wboc, Inc.	17.0R	42.4M
273B Princess Anne	WBOC-FM«	LIC _CN MD		134.9 315.2	59.55 BLH7539	38 06 43.40 75 39 12.70	50.000 152	0.0 157	0.0 Wboc, Inc.	17.0R	42.6M

Terrain database is FCC 30 meter, 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= - Zone 1, 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)  
« = Station meets FCC minimum distance spacing for its class.

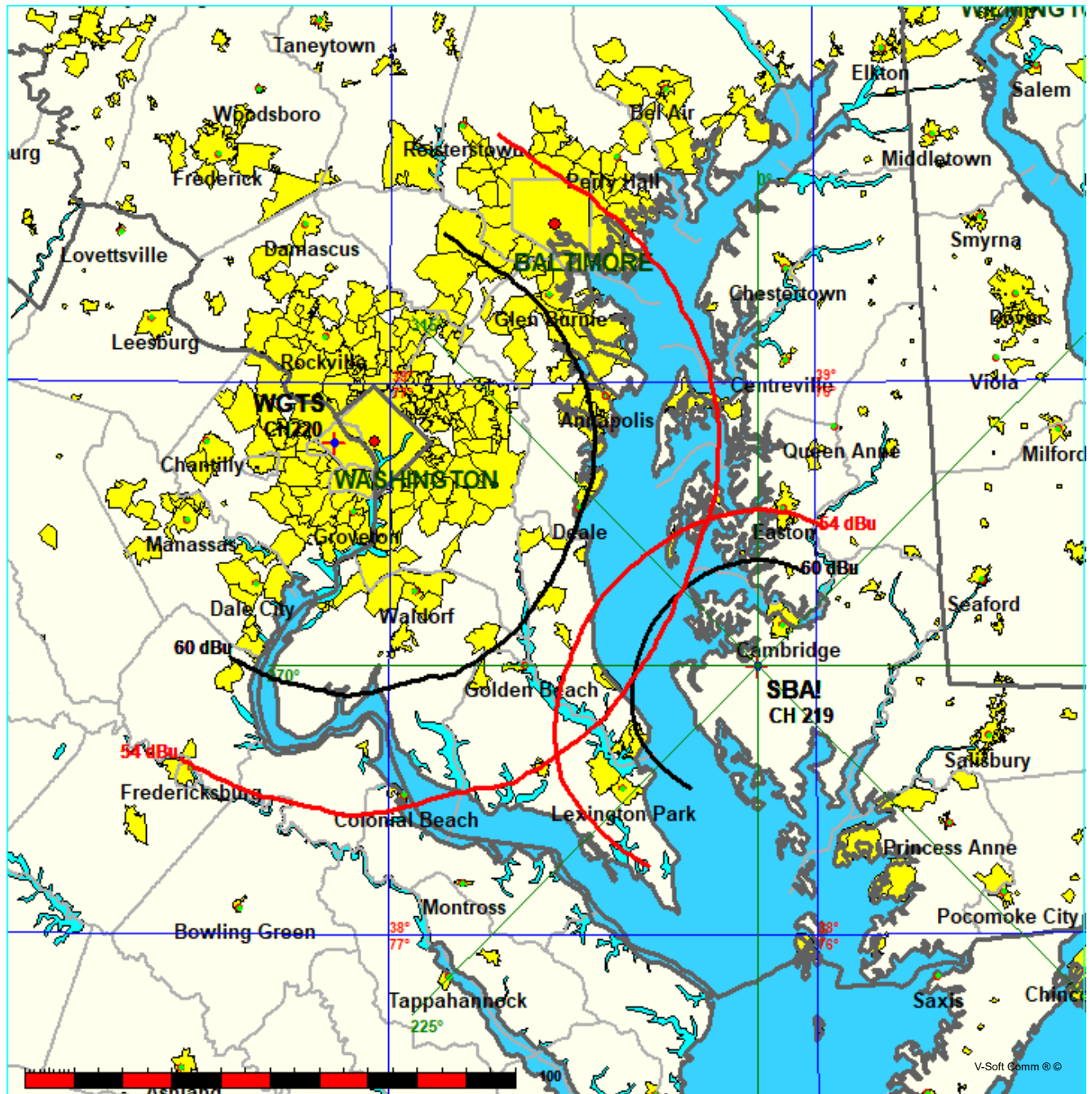
<\*\*\* This incoming contour overlap is entirely over the Chesapeake Bay.

# Contour-to-Contour Proposed (SBA!) vs WGTS Historic Oxford Limited

FMCommander Single Allocation Study - 10-29-2021 - FCC 30 meter  
SBA!'s Overlaps (In= -2.47 km, Out= 10.55 km)

SBA! CH 219 B1 73.215 Z  
Lat= 38 29 27.30, Lng= 76 08 08.00  
23.8 kW 50.1 m HAAT, 51.2 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

WGTS CH 220 B BMLED20070501AAA  
Lat= 38 53 30.40, Lng= 77 07 53.90  
23.5 kW 186 m HAAT, 252 m COR  
Prot.= 60 dBu, Intef.= 54 dBu



10-29-2021

Terrain Data: FCC 30 meter

FMOver Analysis

SBA!

WGTS BMLED20070501AAA

Channel = 219B1  
 Max ERP = 23.8 kW  
 RCAMSL = 51.2 m  
 N. Lat. 38 29 27.30  
 W. Lng. 76 08 08.00  
 Protected  
 60 dBu

Channel = 220B  
 Max ERP = 23.5 kW  
 RCAMSL = 252 m  
 N. Lat. 38 53 30.40  
 W. Lng. 77 07 53.90  
 Interfering  
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
238.0	023.7049	0050.8	028.4	133.4	023.5000	0227.8	086.4	51.25	
239.0	023.7049	0050.7	028.4	133.3	023.5000	0227.5	085.9	51.39	
240.0	023.7049	0050.7	028.4	133.2	023.5000	0227.1	085.5	51.53	
241.0	023.3735	0050.6	028.3	133.1	023.5000	0226.6	085.0	51.65	
242.0	022.9977	0050.6	028.2	132.9	023.5000	0226.3	084.6	51.78	
243.0	022.6713	0050.6	028.1	132.7	023.5000	0226.2	084.2	51.92	
244.0	022.3473	0050.5	027.9	132.5	023.5000	0226.4	083.7	52.06	
245.0	022.0256	0050.5	027.9	132.4	023.5000	0226.6	083.3	52.20	
246.0	021.6608	0050.5	027.8	132.2	023.5000	0226.6	082.9	52.33	
247.0	021.3441	0050.5	027.7	132.0	023.5000	0226.4	082.5	52.46	
248.0	021.0297	0050.6	027.6	131.8	023.5000	0226.0	082.1	52.57	
249.0	020.6732	0050.5	027.5	131.6	023.5000	0225.7	081.7	52.68	
250.0	020.3639	0050.5	027.4	131.3	023.5000	0225.6	081.3	52.80	
251.0	019.9695	0050.5	027.3	131.1	023.5000	0225.3	081.0	52.91	
252.0	019.5790	0050.5	027.1	130.9	023.5000	0225.0	080.6	53.01	
253.0	019.2352	0050.5	027.0	130.6	023.5000	0224.5	080.3	53.11	
254.0	018.8520	0050.5	026.9	130.4	023.5000	0224.5	079.9	53.21	
255.0	018.4726	0050.5	026.8	130.1	023.5000	0224.4	079.6	53.31	
256.0	018.0971	0050.5	026.6	129.9	023.5000	0224.3	079.3	53.41	
257.0	017.7255	0050.4	026.5	129.6	023.5000	0223.3	079.0	53.47	
258.0	017.3984	0050.4	026.4	129.3	023.5000	0222.4	078.7	53.53	
259.0	017.0340	0050.4	026.3	129.0	023.5000	0221.9	078.4	53.60	
260.0	016.6735	0050.4	026.2	128.7	023.5000	0221.6	078.2	53.68	
261.0	016.3169	0050.4	026.0	128.4	023.5000	0221.1	077.9	53.75	
262.0	015.9252	0050.4	025.9	128.2	023.5000	0220.8	077.7	53.81	
263.0	015.5766	0050.4	025.8	127.9	023.5000	0220.8	077.4	53.89	
264.0	015.2320	0050.5	025.6	127.6	023.5000	0220.4	077.2	53.95	
265.0	014.8912	0050.5	025.5	127.2	023.5000	0220.7	077.0	54.03*	0.09
266.0	014.5171	0050.5	025.4	126.9	023.5000	0220.7	076.8	54.10*	0.30
267.0	014.1844	0050.5	025.2	126.6	023.5000	0220.5	076.6	54.15*	0.45
268.0	013.8556	0050.4	025.1	126.3	023.5000	0220.9	076.4	54.22*	0.67
269.0	013.4948	0050.4	024.9	126.0	023.5000	0221.1	076.3	54.27*	0.83
270.0	013.1742	0050.4	024.8	125.6	023.5000	0220.5	076.1	54.31*	0.93
271.0	012.9274	0050.5	024.7	125.3	023.5000	0220.3	076.0	54.36*	1.09
272.0	012.7178	0050.5	024.6	125.0	023.5000	0220.5	075.8	54.41*	1.27
273.0	012.4754	0050.6	024.5	124.7	023.5000	0220.4	075.6	54.46*	1.42

\* Over Chesapeake Bay

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
274.0	012.2353	0050.5	024.4	124.4	023.5000	0220.6	075.5	54.52* 1.58
275.0	012.0314	0050.6	024.3	124.1	023.5000	0220.8	075.4	54.57* 1.74
276.0	011.7957	0050.7	024.3	123.8	023.5000	0220.8	075.2	54.61* 1.87
277.0	011.5623	0050.6	024.1	123.5	023.5000	0220.7	075.1	54.64* 1.95
278.0	011.3312	0050.7	024.0	123.1	023.5000	0221.0	075.0	54.68* 2.08
279.0	011.1350	0050.7	024.0	122.8	023.5000	0221.6	074.9	54.74* 2.25
280.0	010.9082	0050.7	023.8	122.5	023.5000	0222.1	074.9	54.78* 2.37
281.0	010.7477	0050.7	023.8	122.2	023.5000	0221.8	074.8	54.79* 2.42
282.0	010.5884	0050.7	023.7	121.8	023.5000	0221.3	074.7	54.80* 2.43
283.0	010.4302	0050.7	023.6	121.5	023.5000	0220.9	074.7	54.80* 2.45
284.0	010.2732	0050.7	023.5	121.2	023.5000	0219.7	074.6	54.78* 2.37
285.0	010.1485	0050.7	023.4	120.9	023.5000	0219.6	074.5	54.79* 2.42
286.0	009.9937	0050.7	023.4	120.6	023.5000	0219.6	074.5	54.80* 2.45
287.0	009.8401	0050.7	023.3	120.3	023.5000	0219.5	074.5	54.81* 2.47
288.0	009.6876	0050.7	023.2	119.9	023.5000	0219.1	074.5	54.80* 2.43
289.0	009.5364	0050.8	023.1	119.6	023.5000	0218.7	074.5	54.79* 2.40
290.0	009.3863	0050.8	023.1	119.3	023.5000	0218.6	074.5	54.78* 2.39
291.0	009.2375	0050.8	023.0	119.0	023.5000	0218.1	074.5	54.76* 2.32
292.0	009.0898	0050.9	022.9	118.7	023.5000	0217.7	074.5	54.74* 2.24
293.0	008.9433	0050.9	022.8	118.4	023.5000	0218.0	074.5	54.74* 2.25
294.0	008.7980	0050.9	022.7	118.1	023.5000	0218.3	074.6	54.73* 2.23
295.0	008.6539	0050.9	022.6	117.7	023.5000	0217.9	074.6	54.70* 2.13
296.0	008.4825	0050.9	022.5	117.4	023.5000	0218.3	074.7	54.68* 2.08
297.0	008.3410	0050.9	022.4	117.1	023.5000	0219.0	074.8	54.68* 2.09
298.0	008.2007	0050.9	022.4	116.8	023.5000	0219.3	074.9	54.67* 2.05
299.0	008.0616	0050.9	022.3	116.5	023.5000	0220.4	075.0	54.67* 2.06
300.0	007.9237	0050.9	022.2	116.3	023.5000	0220.5	075.1	54.65* 1.97
301.0	007.8415	0050.9	022.1	116.0	023.5000	0219.4	075.2	54.57* 1.76
302.0	007.7598	0050.8	022.1	115.7	023.5000	0218.4	075.3	54.50* 1.54
303.0	007.6514	0050.7	022.0	115.4	023.5000	0218.1	075.4	54.45* 1.38
304.0	007.5707	0050.8	021.9	115.1	023.5000	0217.5	075.5	54.40* 1.21
305.0	007.4904	0050.7	021.9	114.8	023.5000	0217.0	075.6	54.34* 1.03
306.0	007.4105	0050.8	021.8	114.5	023.5000	0216.2	075.7	54.27* 0.83
307.0	007.3310	0050.8	021.8	114.3	023.5000	0215.4	075.9	54.20* 0.62
308.0	007.2257	0050.8	021.7	114.0	023.5000	0215.4	076.0	54.15* 0.46
309.0	007.1472	0050.8	021.6	113.7	023.5000	0215.8	076.2	54.12* 0.36
310.0	007.0692	0050.6	021.5	113.5	023.5000	0216.3	076.4	54.07* 0.22
311.0	007.0174	0050.6	021.5	113.2	023.5000	0216.9	076.5	54.05* 0.15
312.0	006.9658	0050.6	021.5	113.0	023.5000	0217.2	076.7	54.01* 0.03
313.0	006.9144	0050.6	021.4	112.7	023.5000	0217.8	076.8	53.98
314.0	006.8632	0050.5	021.4	112.5	023.5000	0219.2	077.0	53.97
315.0	006.8376	0050.4	021.3	112.2	023.5000	0219.7	077.2	53.94
316.0	006.7867	0050.5	021.3	112.0	023.5000	0220.3	077.3	53.90
317.0	006.7360	0050.4	021.2	111.7	023.5000	0221.0	077.5	53.87
318.0	006.6854	0050.4	021.2	111.5	023.5000	0220.7	077.7	53.79
319.0	006.6351	0050.5	021.2	111.3	023.5000	0220.9	077.9	53.74
320.0	006.5849	0050.5	021.2	111.0	023.5000	0221.1	078.1	53.68
321.0	006.5599	0050.4	021.1	110.8	023.5000	0220.4	078.3	53.58
322.0	006.5599	0050.5	021.1	110.6	023.5000	0219.8	078.5	53.51
323.0	006.5349	0050.4	021.1	110.4	023.5000	0219.2	078.7	53.41
324.0	006.5100	0050.4	021.1	110.1	023.5000	0218.8	078.9	53.33

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
325.0	006.5100	0050.4	021.1	109.9	023.5000	0219.0	079.1	53.27
326.0	006.4851	0050.4	021.1	109.7	023.5000	0219.0	079.4	53.20
327.0	006.4603	0050.4	021.0	109.5	023.5000	0219.2	079.6	53.13
328.0	006.4355	0050.4	021.0	109.3	023.5000	0219.9	079.8	53.07
329.0	006.4355	0050.5	021.0	109.1	023.5000	0220.2	080.1	53.02
330.0	006.4108	0050.4	021.0	108.9	023.5000	0219.6	080.3	52.91
331.0	006.3861	0050.5	021.0	108.7	023.5000	0218.9	080.6	52.81
332.0	006.3861	0050.5	021.0	108.5	023.5000	0218.5	080.8	52.71
333.0	006.3615	0050.5	021.0	108.3	023.5000	0218.4	081.1	52.62
334.0	006.3615	0050.5	021.0	108.2	023.5000	0218.6	081.3	52.54
335.0	006.3369	0050.5	021.0	108.0	023.5000	0218.2	081.6	52.44
336.0	006.3369	0050.5	021.0	107.8	023.5000	0218.1	081.9	52.35
337.0	006.3369	0050.5	021.0	107.6	023.5000	0218.4	082.1	52.28
338.0	006.3124	0050.5	020.9	107.5	023.5000	0218.7	082.4	52.19
339.0	006.3124	0050.5	020.9	107.3	023.5000	0219.2	082.7	52.12
340.0	006.2879	0050.2	020.8	107.2	023.5000	0219.6	083.1	52.03
341.0	006.2879	0050.3	020.9	107.1	023.5000	0220.1	083.3	51.96
342.0	006.2879	0050.3	020.9	106.9	023.5000	0220.2	083.6	51.87
343.0	006.3124	0050.3	020.9	106.7	023.5000	0220.3	083.9	51.78
344.0	006.3124	0050.1	020.9	106.6	023.5000	0220.2	084.2	51.67
345.0	006.3124	0050.1	020.9	106.5	023.5000	0220.1	084.5	51.57
346.0	006.3124	0050.1	020.8	106.4	023.5000	0220.0	084.9	51.47
347.0	006.3124	0050.0	020.8	106.3	023.5000	0220.0	085.2	51.36
348.0	006.3369	0050.0	020.9	106.1	023.5000	0219.9	085.5	51.26
349.0	006.3369	0050.0	020.9	106.0	023.5000	0219.9	085.8	51.16
350.0	006.3369	0050.2	020.9	105.9	023.5000	0219.7	086.1	51.06
351.0	006.3615	0050.1	020.9	105.8	023.5000	0219.6	086.4	50.95
352.0	006.4108	0050.0	020.9	105.7	023.5000	0219.5	086.8	50.84
353.0	006.4355	0049.9	020.9	105.6	023.5000	0219.5	087.1	50.73
354.0	006.4851	0049.7	020.9	105.5	023.5000	0219.4	087.4	50.63
355.0	006.5100	0049.7	020.9	105.4	023.5000	0219.3	087.8	50.52
356.0	006.5349	0049.6	020.9	105.3	023.5000	0219.5	088.1	50.42
357.0	006.5849	0049.6	021.0	105.2	023.5000	0219.6	088.4	50.32

10-29-2021

Terrain Data: FCC 30 meter

FMOver Analysis

WGTS BMLD20070501AAA

SBA!

Channel = 220B

Max ERP = 23.5 kW

RCAMSL = 252 m

N. Lat. 38 53 30.40

W. Lng. 77 07 53.90

Protected

60 dBu

Channel = 219B1

Max ERP = 23.8 kW

RCAMSL = 51.2 m

N. Lat. 38 29 27.30

W. Lng. 76 08 08.00

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
057.0	023.5000	0198.0	050.4	328.8	006.4355	0050.4	084.2	38.49	
058.0	023.5000	0199.1	050.5	328.9	006.4355	0050.4	083.3	38.70	
059.0	023.5000	0197.5	050.3	328.8	006.4355	0050.4	082.4	38.91	
060.0	023.5000	0199.8	050.5	328.9	006.4355	0050.5	081.6	39.12	
061.0	023.5000	0202.8	050.8	329.0	006.4348	0050.5	080.7	39.33	
062.0	023.5000	0205.9	051.0	329.2	006.4312	0050.5	079.8	39.54	
063.0	023.5000	0206.4	051.1	329.2	006.4315	0050.5	078.9	39.75	
064.0	023.5000	0207.0	051.1	329.1	006.4321	0050.5	078.0	39.96	
065.0	023.5000	0209.9	051.4	329.2	006.4294	0050.5	077.1	40.17	
066.0	023.5000	0211.4	051.5	329.3	006.4291	0050.5	076.2	40.39	
067.0	023.5000	0211.5	051.5	329.2	006.4313	0050.5	075.3	40.60	
068.0	023.5000	0209.1	051.3	328.9	006.4355	0050.5	074.4	40.80	
069.0	023.5000	0210.1	051.4	328.8	006.4355	0050.4	073.5	41.01	
070.0	023.5000	0213.0	051.6	328.9	006.4355	0050.5	072.6	41.23	
071.0	023.5000	0216.2	051.9	328.9	006.4355	0050.5	071.7	41.45	
072.0	023.5000	0217.3	052.0	328.9	006.4355	0050.4	070.8	41.67	
073.0	023.5000	0218.7	052.1	328.8	006.4355	0050.4	069.8	41.88	
074.0	023.5000	0221.5	052.3	328.7	006.4355	0050.4	068.9	42.11	
075.0	023.5000	0220.9	052.3	328.5	006.4355	0050.4	068.1	42.31	
076.0	023.5000	0223.6	052.5	328.4	006.4355	0050.4	067.1	42.54	
077.0	023.5000	0225.9	052.7	328.3	006.4355	0050.4	066.2	42.76	
078.0	023.5000	0227.9	052.8	328.2	006.4355	0050.4	065.3	42.98	
079.0	023.5000	0228.1	052.8	327.9	006.4383	0050.4	064.4	43.19	
080.0	023.5000	0227.7	052.8	327.5	006.4467	0050.4	063.6	43.41	
081.0	023.5000	0227.5	052.8	327.2	006.4555	0050.4	062.7	43.63	
082.0	023.5000	0228.0	052.8	326.9	006.4636	0050.4	061.9	43.85	
083.0	023.5000	0230.5	053.0	326.6	006.4690	0050.5	061.0	44.10	
084.0	023.5000	0231.6	053.1	326.3	006.4774	0050.4	060.1	44.33	
085.0	023.5000	0232.5	053.2	325.9	006.4866	0050.4	059.3	44.57	
086.0	023.5000	0233.0	053.2	325.5	006.4971	0050.4	058.4	44.81	
087.0	023.5000	0233.3	053.2	325.1	006.5087	0050.4	057.6	45.04	
088.0	023.5000	0233.0	053.2	324.5	006.5100	0050.4	056.9	45.25	
089.0	023.5000	0233.6	053.3	324.0	006.5100	0050.4	056.1	45.48	



Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
090.0	023.5000	0232.4	053.2	323.4	006.5254	0050.4	055.4	45.69
091.0	023.5000	0231.5	053.1	322.7	006.5417	0050.4	054.7	45.90
092.0	023.5000	0230.4	053.0	322.0	006.5590	0050.5	054.0	46.11
093.0	023.5000	0230.4	053.0	321.4	006.5599	0050.4	053.4	46.31
094.0	023.5000	0231.3	053.1	320.8	006.5661	0050.4	052.6	46.52
095.0	023.5000	0232.3	053.1	320.1	006.5825	0050.5	051.9	46.75
096.0	023.5000	0232.0	053.1	319.3	006.6182	0050.5	051.3	46.97
097.0	023.5000	0232.0	053.1	318.6	006.6571	0050.5	050.7	47.17
098.0	023.5000	0231.8	053.1	317.7	006.6985	0050.5	050.1	47.36
099.0	023.5000	0229.6	052.9	316.8	006.7469	0050.4	049.7	47.51
100.0	023.5000	0227.9	052.8	315.8	006.7954	0050.5	049.2	47.68
101.0	023.5000	0226.5	052.7	314.9	006.8411	0050.4	048.8	47.83
102.0	023.5000	0224.2	052.5	313.8	006.8716	0050.5	048.5	47.95
103.0	023.5000	0222.5	052.4	312.8	006.9237	0050.6	048.1	48.10
104.0	023.5000	0220.6	052.2	311.8	006.9777	0050.6	047.8	48.22
105.0	023.5000	0219.9	052.2	310.8	007.0298	0050.6	047.5	48.36
106.0	023.5000	0219.9	052.2	309.7	007.0887	0050.6	047.1	48.51
107.0	023.5000	0220.1	052.2	308.7	007.1684	0050.8	046.7	48.69
108.0	023.5000	0218.2	052.0	307.6	007.2662	0050.9	046.6	48.81
109.0	023.5000	0220.0	052.2	306.6	007.3627	0050.8	046.1	48.99
110.0	023.5000	0218.9	052.1	305.5	007.4519	0050.7	046.0	49.08
111.0	023.5000	0221.0	052.3	304.4	007.5364	0050.8	045.6	49.26
112.0	023.5000	0220.3	052.2	303.3	007.6282	0050.7	045.5	49.34
113.0	023.5000	0217.2	052.0	302.1	007.7481	0050.8	045.6	49.39
114.0	023.5000	0215.4	051.8	301.0	007.8452	0050.9	045.6	49.45
115.0	023.5000	0217.4	052.0	299.8	007.9461	0050.9	045.3	49.58
116.0	023.5000	0219.5	052.1	298.7	008.1033	0050.9	045.1	49.74
117.0	023.5000	0219.1	052.1	297.5	008.2645	0050.9	045.1	49.83
118.0	023.5000	0218.3	052.0	296.4	008.4267	0050.9	045.2	49.88
119.0	023.5000	0218.2	052.0	295.2	008.6115	0050.9	045.3	49.95
120.0	023.5000	0219.2	052.1	294.1	008.7848	0050.9	045.3	50.04
121.0	023.5000	0219.6	052.1	292.9	008.9510	0050.9	045.4	50.09
122.0	023.5000	0221.6	052.3	291.8	009.1224	0050.9	045.4	50.17
123.0	023.5000	0221.2	052.3	290.7	009.2878	0050.9	045.6	50.18
124.0	023.5000	0220.9	052.3	289.6	009.4522	0050.9	045.8	50.17
125.0	023.5000	0220.4	052.2	288.5	009.6146	0050.8	046.1	50.15
126.0	023.5000	0221.1	052.3	287.4	009.7808	0050.8	046.4	50.15
127.0	023.5000	0220.8	052.2	286.3	009.9408	0050.7	046.7	50.11
128.0	023.5000	0220.8	052.2	285.3	010.1001	0050.7	047.0	50.07
129.0	023.5000	0221.9	052.3	284.3	010.2409	0050.7	047.3	50.04
130.0	023.5000	0224.5	052.5	283.2	010.4053	0050.7	047.6	50.05
131.0	023.5000	0225.1	052.6	282.2	010.5623	0050.7	048.0	49.99
132.0	023.5000	0226.5	052.7	281.2	010.7226	0050.7	048.3	49.95
133.0	023.5000	0226.4	052.7	280.2	010.8691	0050.7	048.8	49.86
134.0	023.5000	0228.9	052.9	279.2	011.0831	0050.7	049.2	49.84
135.0	023.5000	0228.8	052.9	278.4	011.2585	0050.7	049.7	49.75
136.0	023.5000	0228.2	052.8	277.6	011.4299	0050.6	050.3	49.63
137.0	023.5000	0227.5	052.8	276.8	011.6053	0050.7	051.0	49.51
138.0	023.5000	0227.7	052.8	276.0	011.7881	0050.7	051.6	49.40
139.0	023.5000	0227.6	052.8	275.3	011.9595	0050.6	052.2	49.27
140.0	023.5000	0226.7	052.7	274.7	012.1025	0050.6	052.9	49.11

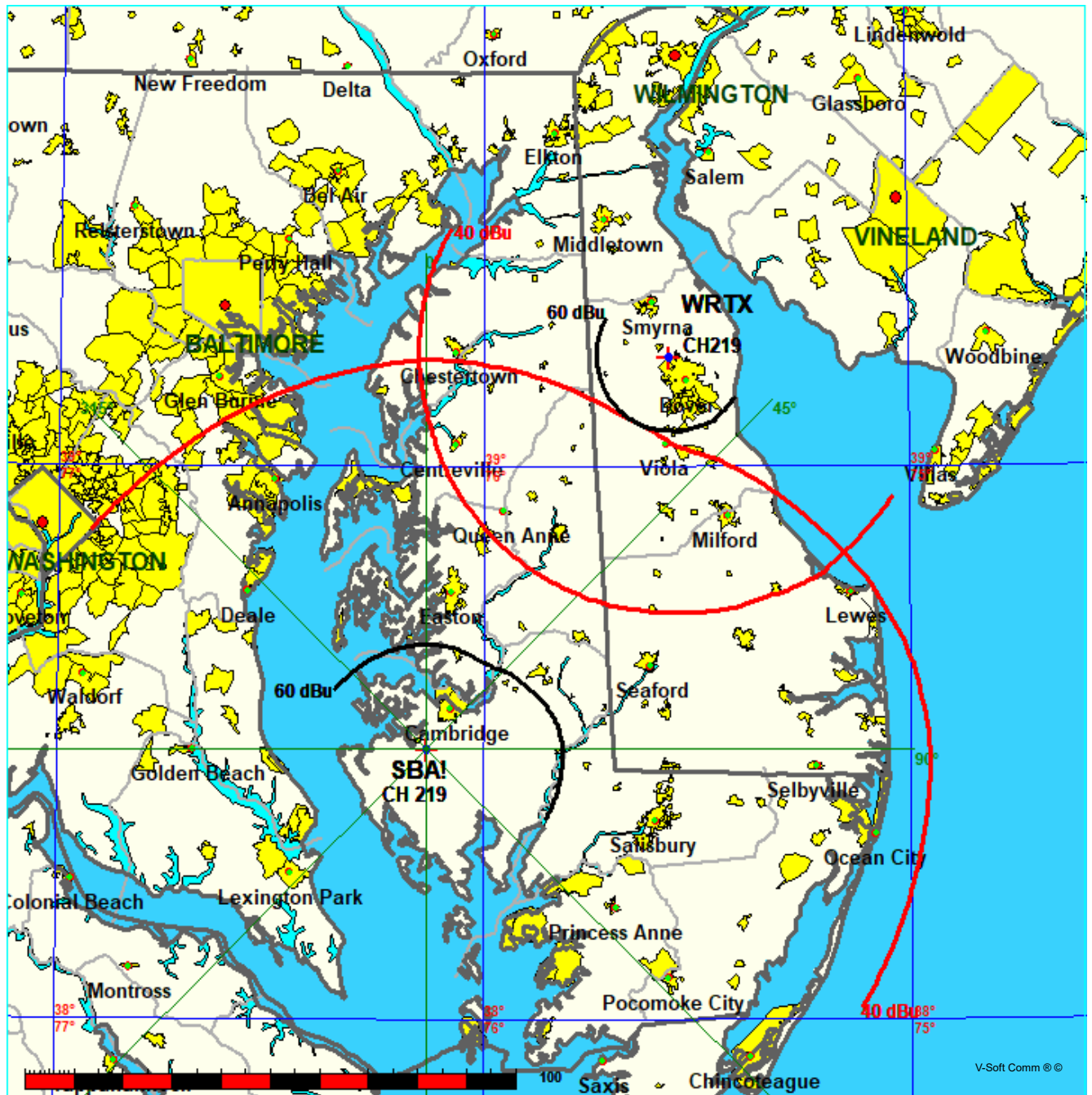
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
141.0	023.5000	0226.3	052.7	274.0	012.2364	0050.5	053.6	48.95
142.0	023.5000	0225.7	052.6	273.4	012.3825	0050.6	054.3	48.80
143.0	023.5000	0224.4	052.5	272.9	012.5111	0050.6	055.1	48.62
144.0	023.5000	0223.7	052.5	272.3	012.6425	0050.4	055.9	48.43
145.0	023.5000	0224.9	052.6	271.7	012.7865	0050.5	056.5	48.29
146.0	023.5000	0224.9	052.6	271.1	012.8985	0050.5	057.3	48.12
147.0	023.5000	0226.3	052.7	270.5	013.0405	0050.4	058.0	47.96
148.0	023.5000	0225.0	052.6	270.1	013.1382	0050.4	058.8	47.75
149.0	023.5000	0222.8	052.4	269.8	013.2273	0050.4	059.7	47.55
150.0	023.5000	0223.6	052.5	269.4	013.3816	0050.5	060.5	47.39
151.0	023.5000	0225.2	052.6	268.8	013.5526	0050.4	061.2	47.24
152.0	023.5000	0224.6	052.5	268.5	013.6752	0050.4	062.1	47.06
153.0	023.5000	0221.7	052.3	268.3	013.7355	0050.3	063.0	46.83
154.0	023.5000	0219.1	052.1	268.2	013.7956	0050.4	063.9	46.63
155.0	023.5000	0216.2	051.9	268.0	013.8402	0050.4	064.8	46.42
156.0	023.5000	0209.6	051.3	268.2	013.7887	0050.4	065.9	46.15
157.0	023.5000	0205.7	051.0	268.2	013.7963	0050.4	066.8	45.93
158.0	023.5000	0204.3	050.9	268.0	013.8570	0050.4	067.7	45.73
159.0	023.5000	0204.8	050.9	267.7	013.9454	0050.4	068.5	45.56
160.0	023.5000	0201.8	050.7	267.7	013.9546	0050.4	069.4	45.34
161.0	023.5000	0199.4	050.5	267.6	013.9720	0050.4	070.3	45.13
162.0	023.5000	0199.5	050.5	267.4	014.0365	0050.5	071.2	44.96
163.0	023.5000	0199.7	050.5	267.3	014.0977	0050.5	072.0	44.78
164.0	023.5000	0199.0	050.5	267.2	014.1346	0050.5	072.9	44.58
165.0	023.5000	0197.7	050.4	267.1	014.1557	0050.5	073.8	44.38
166.0	023.5000	0199.4	050.5	266.9	014.2317	0050.5	074.6	44.20
167.0	023.5000	0200.2	050.6	266.7	014.2868	0050.6	075.5	44.02
168.0	023.5000	0200.7	050.6	266.6	014.3303	0050.5	076.3	43.83
169.0	023.5000	0201.9	050.7	266.4	014.3811	0050.5	077.2	43.64
170.0	023.5000	0202.9	050.8	266.3	014.4261	0050.5	078.1	43.45
171.0	023.5000	0202.9	050.8	266.2	014.4444	0050.5	079.0	43.25
172.0	023.5000	0202.7	050.8	266.2	014.4555	0050.5	079.9	43.04
173.0	023.5000	0203.0	050.8	266.1	014.4733	0050.5	080.7	42.84
174.0	023.5000	0203.7	050.9	266.1	014.4936	0050.5	081.6	42.64
175.0	023.5000	0203.9	050.9	266.0	014.5018	0050.5	082.5	42.43
176.0	023.5000	0204.5	050.9	266.0	014.5125	0050.5	083.4	42.22

# Contour-to-Contour Proposed (SBA!) vs WRTX Historic Oxford Limited

FMCommander Single Allocation Study - 10-29-2021 - FCC 30 meter  
SBA!'s Overlaps (In= 20.41 km, Out= 0.05 km)

SBA! CH 219 B1 73.215 Z  
Lat= 38 29 27.30, Lng= 76 08 08.00  
23.8 kW 50.1 m HAAT, 51.2 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

WRTX CH 219 A BLED19950418KB  
Lat= 39 12 03.40, Lng= 75 33 53.70  
0.58 kW 0 m HAAT, 104 m COR  
Prot.= 60 dBu, Intef.= 40 dBu



10-29-2021

Terrain Data: FCC 30 meter

FMOver Analysis

SBA!

WRTX BLED19950418KB

Channel = 219B1  
 Max ERP = 23.8 kW  
 RCAMSL = 51.2 m  
 N. Lat. 38 29 27.30  
 W. Lng. 76 08 08.00  
 Protected  
 60 dBu

Channel = 219A  
 Max ERP = 0.58 kW  
 RCAMSL = 104 m  
 N. Lat. 39 12 03.40  
 W. Lng. 75 33 53.70  
 Interfering  
 40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
332.0	006.3861	0050.5	021.0	224.6	000.5800	0086.2	084.6	29.77	
333.0	006.3615	0050.5	021.0	224.5	000.5800	0086.2	084.2	29.86	
334.0	006.3615	0050.5	021.0	224.4	000.5800	0086.3	083.9	29.96	
335.0	006.3369	0050.5	021.0	224.4	000.5800	0086.3	083.5	30.05	
336.0	006.3369	0050.5	021.0	224.3	000.5800	0086.3	083.2	30.14	
337.0	006.3369	0050.5	021.0	224.2	000.5800	0086.3	082.9	30.24	
338.0	006.3124	0050.5	020.9	224.0	000.5800	0086.3	082.5	30.32	
339.0	006.3124	0050.5	020.9	223.9	000.5800	0086.3	082.2	30.41	
340.0	006.2879	0050.2	020.8	223.8	000.5800	0086.3	081.9	30.49	
341.0	006.2879	0050.3	020.9	223.7	000.5800	0086.4	081.6	30.59	
342.0	006.2879	0050.3	020.9	223.6	000.5800	0086.4	081.3	30.68	
343.0	006.3124	0050.3	020.9	223.4	000.5800	0086.4	080.9	30.76	
344.0	006.3124	0050.1	020.9	223.3	000.5800	0086.4	080.6	30.85	
345.0	006.3124	0050.1	020.9	223.1	000.5800	0086.5	080.3	30.93	
346.0	006.3124	0050.1	020.8	223.0	000.5800	0086.5	080.0	31.02	
347.0	006.3124	0050.0	020.8	222.8	000.5800	0086.5	079.7	31.09	
348.0	006.3369	0050.0	020.9	222.7	000.5800	0086.5	079.4	31.18	
349.0	006.3369	0050.0	020.9	222.6	000.5800	0086.5	079.1	31.26	
350.0	006.3369	0050.2	020.9	222.4	000.5800	0086.5	078.8	31.34	
351.0	006.3615	0050.1	020.9	222.2	000.5800	0086.5	078.5	31.42	
352.0	006.4108	0050.0	020.9	222.1	000.5800	0086.5	078.2	31.50	
353.0	006.4355	0049.9	020.9	221.9	000.5800	0086.5	078.0	31.57	
354.0	006.4851	0049.7	020.9	221.7	000.5800	0086.5	077.7	31.65	
355.0	006.5100	0049.7	020.9	221.6	000.5800	0086.5	077.4	31.73	
356.0	006.5349	0049.6	020.9	221.4	000.5800	0086.5	077.2	31.80	
357.0	006.5849	0049.6	021.0	221.2	000.5800	0086.5	076.9	31.87	
358.0	006.6100	0049.4	020.9	221.0	000.5800	0086.4	076.6	31.93	
359.0	006.6602	0049.5	021.0	220.8	000.5800	0086.4	076.3	32.01	
000.0	006.6854	0049.6	021.0	220.6	000.5800	0086.4	076.1	32.09	
001.0	006.6854	0049.6	021.0	220.4	000.5800	0086.4	075.8	32.15	
002.0	006.6602	0049.8	021.1	220.2	000.5800	0086.4	075.6	32.22	
003.0	006.6602	0049.6	021.0	220.0	000.5800	0086.4	075.4	32.27	
004.0	006.6602	0049.6	021.0	219.7	000.5800	0086.4	075.2	32.33	
005.0	006.6351	0049.9	021.1	219.5	000.5800	0086.4	075.0	32.40	
006.0	006.6351	0049.8	021.0	219.3	000.5800	0086.4	074.8	32.45	
007.0	006.6351	0049.6	021.0	219.0	000.5800	0086.5	074.6	32.50	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
008.0	006.6351	0049.4	021.0	218.8	000.5800	0086.6	074.4	32.55
009.0	006.6100	0049.3	020.9	218.5	000.5800	0086.7	074.3	32.59
010.0	006.6100	0049.5	021.0	218.3	000.5800	0086.7	074.1	32.65
011.0	006.6100	0049.6	021.0	218.0	000.5800	0086.7	073.9	32.71
012.0	006.6100	0049.8	021.0	217.8	000.5800	0086.7	073.7	32.76
013.0	006.6351	0049.6	021.0	217.5	000.5800	0086.8	073.6	32.80
014.0	006.6351	0049.6	021.0	217.3	000.5800	0086.8	073.4	32.85
015.0	006.6351	0049.3	020.9	217.0	000.5800	0086.8	073.3	32.87
016.0	006.6351	0049.5	021.0	216.7	000.5800	0086.8	073.2	32.92
017.0	006.6351	0049.4	021.0	216.4	000.5800	0086.9	073.1	32.95
018.0	006.6602	0049.2	020.9	216.2	000.5800	0086.9	073.0	32.98
019.0	006.6602	0048.9	020.9	215.9	000.5800	0086.9	072.9	32.99
020.0	006.6602	0048.8	020.8	215.6	000.5800	0087.0	072.9	33.01
021.0	006.6602	0048.8	020.8	215.3	000.5800	0087.0	072.8	33.04
022.0	006.6854	0048.8	020.9	215.0	000.5800	0087.1	072.7	33.07
023.0	006.6854	0048.7	020.8	214.8	000.5800	0087.1	072.6	33.09
024.0	006.6854	0048.5	020.8	214.5	000.5800	0087.1	072.6	33.09
025.0	006.6854	0048.4	020.8	214.2	000.5800	0087.0	072.6	33.10
026.0	006.7107	0048.3	020.8	213.9	000.5800	0087.0	072.5	33.11
027.0	006.7107	0048.4	020.8	213.6	000.5800	0087.0	072.4	33.13
028.0	006.7107	0048.4	020.8	213.3	000.5800	0087.1	072.4	33.15
029.0	006.7360	0048.2	020.8	213.0	000.5800	0087.1	072.4	33.15
030.0	006.7360	0048.2	020.8	212.8	000.5800	0087.2	072.4	33.16
031.0	006.7867	0048.2	020.8	212.5	000.5800	0087.2	072.3	33.18
032.0	006.8122	0048.1	020.8	212.2	000.5800	0087.3	072.3	33.18
033.0	006.8632	0048.1	020.8	211.9	000.5800	0087.3	072.3	33.18
034.0	006.8888	0048.0	020.8	211.6	000.5800	0087.2	072.3	33.18
035.0	006.9401	0048.4	021.0	211.3	000.5800	0087.2	072.2	33.21
036.0	006.9916	0048.8	021.1	211.0	000.5800	0087.1	072.1	33.23
037.0	007.0174	0049.1	021.2	210.7	000.5800	0087.0	072.1	33.24
038.0	007.0692	0049.0	021.2	210.4	000.5800	0087.0	072.1	33.23
039.0	007.0952	0049.0	021.2	210.1	000.5800	0087.1	072.1	33.22
040.0	007.1472	0048.9	021.2	209.8	000.5800	0087.2	072.2	33.21
041.0	007.4370	0048.8	021.4	209.5	000.5800	0087.3	072.1	33.25
042.0	007.7055	0048.5	021.5	209.2	000.5800	0087.2	072.0	33.25
043.0	008.0063	0048.7	021.8	208.9	000.5800	0087.2	071.9	33.29
044.0	008.2848	0049.1	022.0	208.5	000.5800	0087.2	071.7	33.34
045.0	008.5966	0049.1	022.2	208.2	000.5800	0087.3	071.7	33.37
046.0	008.9141	0049.0	022.4	207.8	000.5800	0087.3	071.6	33.37
047.0	009.2078	0048.7	022.5	207.5	000.5800	0087.4	071.7	33.37
048.0	009.5364	0048.7	022.7	207.2	000.5800	0087.4	071.6	33.38
049.0	009.8401	0048.6	022.8	206.8	000.5800	0087.3	071.7	33.37
050.0	010.1796	0048.6	023.0	206.5	000.5800	0087.2	071.7	33.37
051.0	010.5250	0048.4	023.1	206.2	000.5800	0087.3	071.7	33.36
052.0	010.8760	0048.2	023.2	205.8	000.5800	0087.3	071.8	33.34
053.0	011.2329	0048.0	023.4	205.5	000.5800	0087.4	071.8	33.33
054.0	011.5955	0047.6	023.4	205.2	000.5800	0087.5	072.0	33.29
055.0	011.9638	0047.6	023.6	204.8	000.5800	0087.4	072.0	33.28
056.0	012.3037	0047.3	023.7	204.5	000.5800	0087.5	072.2	33.23
057.0	012.6830	0047.1	023.8	204.2	000.5800	0087.5	072.3	33.21
058.0	013.0681	0047.2	024.0	203.8	000.5800	0087.6	072.4	33.18

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
059.0	013.4590	0047.1	024.1	203.5	000.5800	0087.6	072.5	33.14
060.0	013.8556	0047.2	024.3	203.1	000.5800	0087.6	072.6	33.12
061.0	014.2580	0047.2	024.5	202.8	000.5800	0087.7	072.7	33.08
062.0	014.6662	0047.3	024.6	202.4	000.5800	0087.6	072.9	33.04
063.0	015.1180	0047.4	024.8	202.1	000.5800	0087.7	073.0	33.01
064.0	015.5382	0047.3	025.0	201.8	000.5800	0087.8	073.2	32.97
065.0	015.9641	0047.4	025.1	201.4	000.5800	0087.9	073.4	32.92
066.0	016.3958	0047.4	025.3	201.1	000.5800	0087.8	073.6	32.86
067.0	016.8333	0047.5	025.5	200.8	000.5800	0087.9	073.8	32.81
068.0	017.3171	0047.5	025.6	200.4	000.5800	0088.1	074.0	32.76
069.0	017.7666	0047.5	025.8	200.1	000.5800	0088.1	074.2	32.70
070.0	018.2219	0047.7	026.0	199.8	000.5800	0088.1	074.4	32.64
071.0	018.5566	0047.6	026.1	199.5	000.5800	0088.2	074.7	32.56
072.0	018.9368	0047.6	026.2	199.2	000.5800	0088.2	075.0	32.48
073.0	019.2780	0047.6	026.3	199.0	000.5800	0088.2	075.3	32.39
074.0	019.6655	0047.7	026.4	198.7	000.5800	0088.2	075.6	32.31
075.0	020.0568	0047.8	026.6	198.4	000.5800	0088.2	075.9	32.22
076.0	020.4079	0048.0	026.7	198.1	000.5800	0088.2	076.2	32.14
077.0	020.7621	0048.4	026.9	197.8	000.5800	0088.2	076.5	32.06
078.0	021.1641	0048.2	027.0	197.6	000.5800	0088.1	076.9	31.95
079.0	021.5247	0048.0	027.1	197.4	000.5800	0088.2	077.3	31.84
080.0	021.9341	0048.1	027.2	197.1	000.5800	0088.1	077.7	31.74
081.0	022.1172	0048.2	027.3	196.9	000.5800	0088.1	078.1	31.63
082.0	022.3012	0048.3	027.3	196.7	000.5800	0088.1	078.5	31.52
083.0	022.4859	0048.5	027.4	196.5	000.5800	0088.1	078.9	31.42
084.0	022.6713	0048.5	027.5	196.3	000.5800	0088.1	079.3	31.30
085.0	022.8575	0048.6	027.6	196.2	000.5800	0088.2	079.7	31.19
086.0	023.0445	0048.8	027.7	196.0	000.5800	0088.2	080.1	31.08
087.0	023.2322	0048.9	027.8	195.8	000.5800	0088.2	080.5	30.96
088.0	023.4207	0048.8	027.8	195.7	000.5800	0088.1	081.0	30.83
089.0	023.6100	0048.7	027.8	195.6	000.5800	0088.2	081.5	30.71
090.0	023.8000	0048.8	027.9	195.4	000.5800	0088.2	081.9	30.59
091.0	023.8000	0049.1	028.0	195.3	000.5800	0088.3	082.4	30.47

10-29-2021

Terrain Data: FCC 30 meter

FMOver Analysis

WRTX BLED19950418KB

SBA!

Channel = 219A

Max ERP = 0.58 kW

RCAMSL = 104 m

N. Lat. 39 12 03.40

W. Lng. 75 33 53.70

Protected

60 dBu

Channel = 219B1

Max ERP = 23.8 kW

RCAMSL = 51.2 m

N. Lat. 38 29 27.30

W. Lng. 76 08 08.00

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
152.0	000.5800	0095.6	015.6	040.9	007.3985	0048.8	086.5	38.47	
153.0	000.5800	0095.7	015.6	040.8	007.3809	0048.8	086.2	38.52	
154.0	000.5800	0095.3	015.6	040.7	007.3532	0048.9	086.0	38.56	
155.0	000.5800	0094.5	015.5	040.6	007.3190	0049.0	085.7	38.60	
156.0	000.5800	0093.8	015.4	040.5	007.2862	0048.9	085.5	38.63	
157.0	000.5800	0093.1	015.3	040.4	007.2513	0048.9	085.3	38.66	
158.0	000.5800	0092.6	015.3	040.3	007.2197	0048.9	085.1	38.69	
159.0	000.5800	0092.7	015.3	040.2	007.1974	0049.0	084.9	38.74	
160.0	000.5800	0092.8	015.3	040.1	007.1736	0048.9	084.6	38.78	
161.0	000.5800	0092.6	015.3	040.0	007.1468	0048.9	084.4	38.81	
162.0	000.5800	0092.3	015.3	039.9	007.1411	0048.9	084.2	38.86	
163.0	000.5800	0092.3	015.3	039.8	007.1361	0048.9	084.0	38.91	
164.0	000.5800	0092.4	015.3	039.7	007.1309	0048.9	083.7	38.96	
165.0	000.5800	0092.4	015.3	039.6	007.1256	0049.0	083.5	39.02	
166.0	000.5800	0092.4	015.3	039.5	007.1200	0049.0	083.3	39.06	
167.0	000.5800	0092.3	015.3	039.4	007.1141	0049.0	083.1	39.11	
168.0	000.5800	0092.0	015.2	039.2	007.1073	0049.0	082.9	39.15	
169.0	000.5800	0091.6	015.2	039.1	007.1004	0049.1	082.7	39.19	
170.0	000.5800	0091.4	015.2	039.0	007.0944	0049.0	082.5	39.23	
171.0	000.5800	0090.9	015.1	038.8	007.0906	0049.1	082.3	39.27	
172.0	000.5800	0090.8	015.1	038.7	007.0873	0049.0	082.2	39.31	
173.0	000.5800	0090.6	015.1	038.6	007.0838	0048.9	082.0	39.35	
174.0	000.5800	0090.3	015.1	038.4	007.0801	0048.9	081.8	39.38	
175.0	000.5800	0090.3	015.1	038.3	007.0765	0048.9	081.6	39.42	
176.0	000.5800	0090.0	015.1	038.1	007.0727	0048.9	081.5	39.46	
177.0	000.5800	0089.7	015.0	038.0	007.0685	0049.0	081.3	39.50	
178.0	000.5800	0089.5	015.0	037.8	007.0607	0049.0	081.2	39.53	
179.0	000.5800	0089.4	015.0	037.7	007.0532	0049.1	081.0	39.57	
180.0	000.5800	0089.1	015.0	037.5	007.0449	0049.0	080.9	39.59	
181.0	000.5800	0089.0	015.0	037.4	007.0372	0049.1	080.7	39.63	
182.0	000.5800	0089.0	015.0	037.2	007.0293	0049.1	080.6	39.66	
183.0	000.5800	0089.1	015.0	037.1	007.0217	0049.1	080.4	39.69	
184.0	000.5800	0088.7	014.9	036.9	007.0152	0049.3	080.3	39.72	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
185.0	000.5800	0088.4	014.9	036.7	007.0109	0049.3	080.2	39.75
186.0	000.5800	0088.5	014.9	036.6	007.0068	0049.3	080.0	39.78
187.0	000.5800	0088.3	014.9	036.4	007.0025	0049.2	079.9	39.80
188.0	000.5800	0088.4	014.9	036.3	006.9984	0049.1	079.8	39.82
189.0	000.5800	0088.4	014.9	036.1	006.9941	0048.9	079.6	39.84
190.0	000.5800	0088.4	014.9	035.9	006.9881	0048.7	079.5	39.85
191.0	000.5800	0088.4	014.9	035.8	006.9794	0048.5	079.4	39.85
192.0	000.5800	0088.4	014.9	035.6	006.9706	0048.4	079.3	39.87
193.0	000.5800	0088.4	014.9	035.4	006.9617	0048.4	079.2	39.89
194.0	000.5800	0088.4	014.9	035.2	006.9526	0048.2	079.1	39.89
195.0	000.5800	0088.3	014.9	035.1	006.9435	0048.3	079.0	39.91
196.0	000.5800	0088.2	014.9	034.9	006.9342	0048.3	078.9	39.93
197.0	000.5800	0088.1	014.9	034.7	006.9250	0048.1	078.9	39.92
198.0	000.5800	0088.2	014.9	034.5	006.9158	0048.1	078.8	39.94
199.0	000.5800	0088.2	014.9	034.3	006.9065	0048.0	078.7	39.94
200.0	000.5800	0088.0	014.9	034.2	006.8970	0048.1	078.7	39.95
201.0	000.5800	0087.8	014.9	034.0	006.8881	0048.0	078.6	39.95
202.0	000.5800	0087.8	014.9	033.8	006.8834	0048.1	078.6	39.97
203.0	000.5800	0087.7	014.8	033.6	006.8786	0047.9	078.5	39.96
204.0	000.5800	0087.5	014.8	033.4	006.8738	0048.0	078.5	39.97
205.0	000.5800	0087.4	014.8	033.2	006.8690	0048.0	078.4	39.98
206.0	000.5800	0087.3	014.8	033.0	006.8642	0048.0	078.4	39.98
207.0	000.5800	0087.3	014.8	032.9	006.8556	0048.1	078.4	39.99
208.0	000.5800	0087.3	014.8	032.7	006.8460	0048.0	078.4	39.98
209.0	000.5800	0087.2	014.8	032.5	006.8363	0048.1	078.4	39.98
210.0	000.5800	0087.1	014.8	032.3	006.8267	0048.1	078.3	39.98
211.0	000.5800	0087.1	014.8	032.1	006.8171	0048.1	078.3	39.98
212.0	000.5800	0087.3	014.8	031.9	006.8098	0048.2	078.3	39.98
213.0	000.5800	0087.1	014.8	031.7	006.8050	0048.3	078.3	39.98
214.0	000.5800	0087.0	014.8	031.5	006.8002	0048.4	078.4	39.98
215.0	000.5800	0087.1	014.8	031.3	006.7954	0048.3	078.4	39.97
216.0	000.5800	0087.0	014.8	031.2	006.7906	0048.3	078.4	39.96
217.0	000.5800	0086.9	014.8	031.0	006.7850	0048.2	078.4	39.94
218.0	000.5800	0086.7	014.8	030.8	006.7756	0048.2	078.5	39.93
219.0	000.5800	0086.5	014.7	030.6	006.7662	0048.1	078.5	39.90
220.0	000.5800	0086.4	014.7	030.4	006.7568	0048.1	078.6	39.89
221.0	000.5800	0086.4	014.7	030.2	006.7475	0048.1	078.6	39.87
222.0	000.5800	0086.5	014.7	030.0	006.7381	0048.2	078.6	39.86
223.0	000.5800	0086.5	014.7	029.9	006.7360	0048.2	078.7	39.85
224.0	000.5800	0086.3	014.7	029.7	006.7360	0048.1	078.8	39.82
225.0	000.5800	0086.1	014.7	029.5	006.7360	0048.2	078.9	39.81
226.0	000.5800	0085.9	014.7	029.3	006.7360	0048.2	078.9	39.79
227.0	000.5800	0085.8	014.7	029.2	006.7360	0048.2	079.0	39.77
228.0	000.5800	0085.7	014.7	029.0	006.7354	0048.2	079.1	39.75
229.0	000.5800	0085.4	014.6	028.8	006.7311	0048.1	079.2	39.72
230.0	000.5800	0085.5	014.6	028.6	006.7267	0048.1	079.3	39.70
231.0	000.5800	0085.6	014.7	028.5	006.7223	0048.2	079.4	39.67
232.0	000.5800	0085.6	014.7	028.3	006.7180	0048.1	079.5	39.65
233.0	000.5800	0085.7	014.7	028.1	006.7136	0048.2	079.6	39.63
234.0	000.5800	0085.9	014.7	027.9	006.7107	0048.5	079.7	39.62
235.0	000.5800	0086.0	014.7	027.8	006.7107	0048.4	079.8	39.59



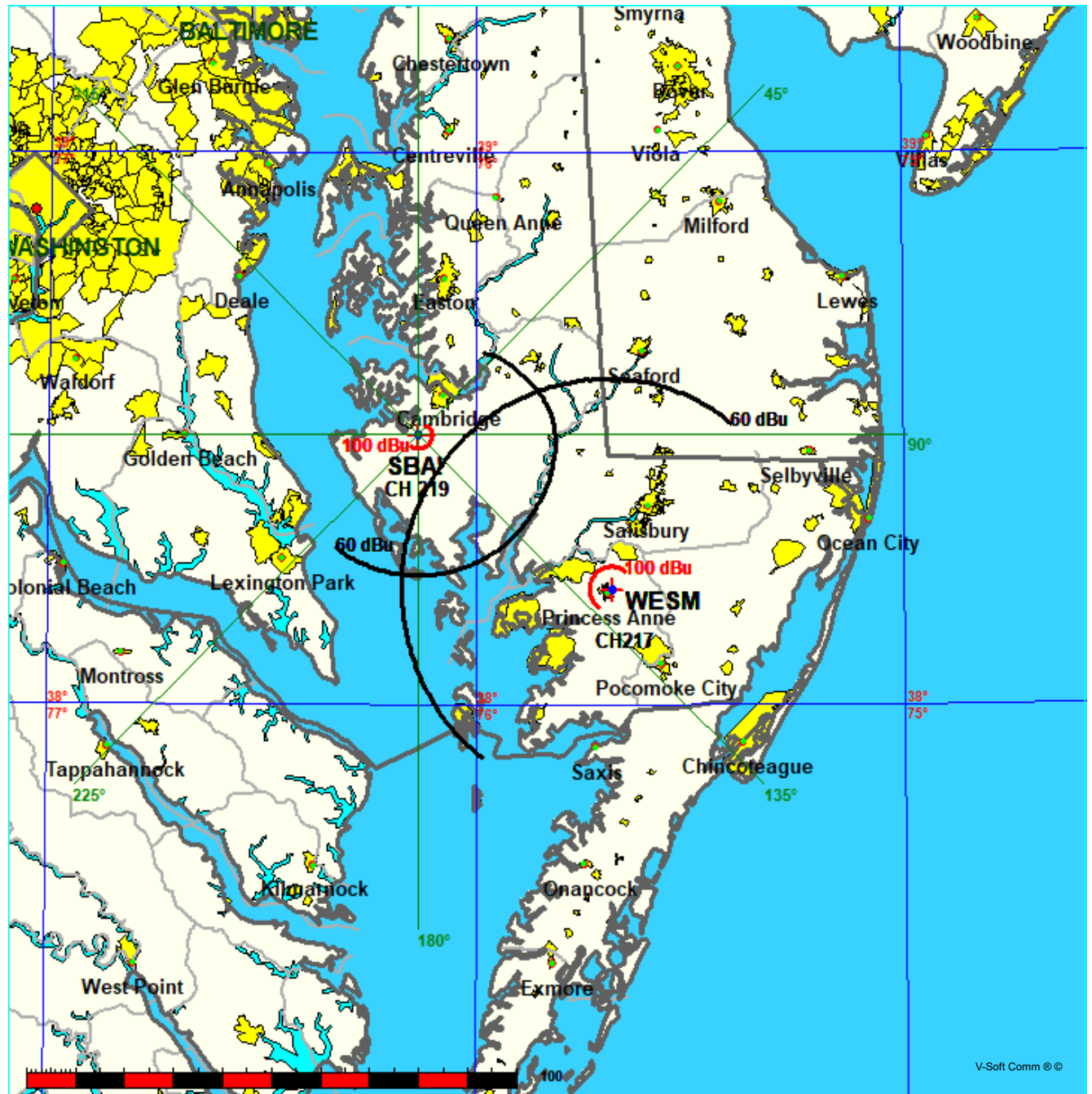
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
236.0	000.5800	0086.1	014.7	027.6	006.7107	0048.4	079.9	39.57
237.0	000.5800	0085.7	014.7	027.5	006.7107	0048.4	080.0	39.53
238.0	000.5800	0085.6	014.7	027.3	006.7107	0048.4	080.2	39.50
239.0	000.5800	0085.5	014.6	027.2	006.7107	0048.4	080.3	39.47
240.0	000.5800	0085.3	014.6	027.0	006.7107	0048.4	080.5	39.43
241.0	000.5800	0085.4	014.6	026.9	006.7107	0048.3	080.6	39.39
242.0	000.5800	0085.4	014.6	026.7	006.7107	0048.2	080.8	39.36
243.0	000.5800	0085.0	014.6	026.6	006.7107	0048.3	080.9	39.32
244.0	000.5800	0085.0	014.6	026.4	006.7107	0048.3	081.1	39.28
245.0	000.5800	0084.9	014.6	026.3	006.7107	0048.3	081.2	39.25
246.0	000.5800	0084.7	014.6	026.2	006.7107	0048.3	081.4	39.21
247.0	000.5800	0084.3	014.5	026.0	006.7107	0048.3	081.6	39.16
248.0	000.5800	0084.3	014.5	025.9	006.7082	0048.3	081.8	39.12
249.0	000.5800	0084.2	014.5	025.8	006.7050	0048.3	082.0	39.08
250.0	000.5800	0084.0	014.5	025.7	006.7018	0048.3	082.1	39.03
251.0	000.5800	0084.0	014.5	025.5	006.6987	0048.4	082.3	38.99
252.0	000.5800	0084.2	014.5	025.4	006.6954	0048.4	082.5	38.95
253.0	000.5800	0083.9	014.5	025.3	006.6927	0048.4	082.7	38.90
254.0	000.5800	0084.0	014.5	025.2	006.6897	0048.4	082.9	38.86
255.0	000.5800	0084.1	014.5	025.0	006.6866	0048.4	083.1	38.81
256.0	000.5800	0084.1	014.5	024.9	006.6854	0048.4	083.3	38.77
257.0	000.5800	0084.0	014.5	024.8	006.6854	0048.4	083.5	38.72
258.0	000.5800	0084.1	014.5	024.7	006.6854	0048.4	083.7	38.67
259.0	000.5800	0084.3	014.5	024.6	006.6854	0048.4	083.8	38.63
260.0	000.5800	0084.3	014.5	024.5	006.6854	0048.5	084.1	38.58
261.0	000.5800	0084.6	014.6	024.4	006.6854	0048.5	084.2	38.53
262.0	000.5800	0084.6	014.6	024.3	006.6854	0048.5	084.5	38.48
263.0	000.5800	0084.8	014.6	024.2	006.6854	0048.5	084.7	38.44
264.0	000.5800	0084.9	014.6	024.1	006.6854	0048.5	084.9	38.38
265.0	000.5800	0085.0	014.6	024.0	006.6854	0048.5	085.1	38.33
266.0	000.5800	0084.9	014.6	023.9	006.6854	0048.5	085.3	38.28
267.0	000.5800	0085.2	014.6	023.8	006.6854	0048.5	085.5	38.23
268.0	000.5800	0085.3	014.6	023.8	006.6854	0048.5	085.8	38.18
269.0	000.5800	0085.6	014.7	023.7	006.6854	0048.6	086.0	38.13
270.0	000.5800	0085.5	014.7	023.6	006.6854	0048.6	086.2	38.07
271.0	000.5800	0086.1	014.7	023.5	006.6854	0048.6	086.4	38.02

# Contour-to-Contour Proposed (SBA!) vs WESM Historic Oxford Limited

FMCommander Single Allocation Study - 10-29-2021 - FCC 30 meter  
SBA!'s Overlaps (In= 17.47 km, Out= 4.59 km)

SBA! CH 219 B1 73.215 Z  
Lat= 38 29 27.30, Lng= 76 08 08.00  
23.8 kW 50.1 m HAAT, 51.2 m COR  
Prot.= 60 dBu, Intef.= 100 dBu

WESM CH 217 B BLED19870303KC  
Lat= 38 12 37.40, Lng= 75 40 54.70  
45.0 kW 91 m HAAT, 97 m COR  
Prot.= 60 dBu, Intef.= 100 dBu



10-29-2021

Terrain Data: FCC 30 meter

FMOver Analysis

SBA!

WESM BLED19870303KC

Channel = 219B1  
 Max ERP = 23.8 kW  
 RCAMSL = 51.2 m  
 N. Lat. 38 29 27.30  
 W. Lng. 76 08 08.00  
 Protected  
 60 dBu

Channel = 217B  
 Max ERP = 45 kW  
 RCAMSL = 97 m  
 N. Lat. 38 12 37.40  
 W. Lng. 75 40 54.70  
 Interfering  
 100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
068.0	017.3171	0047.5	025.6	339.0	045.0000	0092.8	043.7	62.16	
069.0	017.7666	0047.5	025.8	339.2	045.0000	0092.9	043.2	62.35	
070.0	018.2219	0047.7	026.0	339.4	045.0000	0093.0	042.8	62.54	
071.0	018.5566	0047.6	026.1	339.6	045.0000	0093.0	042.3	62.72	
072.0	018.9368	0047.6	026.2	339.7	045.0000	0093.0	041.9	62.91	
073.0	019.2780	0047.6	026.3	339.8	045.0000	0093.0	041.4	63.09	
074.0	019.6655	0047.7	026.4	339.9	045.0000	0093.0	040.9	63.28	
075.0	020.0568	0047.8	026.6	340.1	045.0000	0092.9	040.5	63.48	
076.0	020.4079	0048.0	026.7	340.3	045.0000	0092.9	040.0	63.68	
077.0	020.7621	0048.4	026.9	340.5	045.0000	0092.9	039.5	63.88	
078.0	021.1641	0048.2	027.0	340.5	045.0000	0092.9	039.0	64.08	
079.0	021.5247	0048.0	027.1	340.4	045.0000	0092.9	038.5	64.28	
080.0	021.9341	0048.1	027.2	340.6	045.0000	0092.9	038.0	64.50	
081.0	022.1172	0048.2	027.3	340.5	045.0000	0092.9	037.6	64.70	
082.0	022.3012	0048.3	027.3	340.5	045.0000	0092.9	037.1	64.91	
083.0	022.4859	0048.5	027.4	340.5	045.0000	0092.9	036.6	65.13	
084.0	022.6713	0048.5	027.5	340.4	045.0000	0092.9	036.1	65.34	
085.0	022.8575	0048.6	027.6	340.3	045.0000	0092.9	035.6	65.56	
086.0	023.0445	0048.8	027.7	340.3	045.0000	0092.9	035.1	65.78	
087.0	023.2322	0048.9	027.8	340.2	045.0000	0092.9	034.7	66.00	
088.0	023.4207	0048.8	027.8	340.0	045.0000	0093.0	034.2	66.22	
089.0	023.6100	0048.7	027.8	339.7	045.0000	0093.0	033.7	66.44	
090.0	023.8000	0048.8	027.9	339.6	045.0000	0093.0	033.2	66.67	
091.0	023.8000	0049.1	028.0	339.4	045.0000	0093.0	032.8	66.89	
092.0	023.8000	0049.1	028.0	339.1	045.0000	0092.9	032.3	67.09	
093.0	023.8000	0049.2	028.0	338.8	045.0000	0092.7	031.8	67.29	
094.0	023.8000	0049.2	028.0	338.4	045.0000	0092.7	031.4	67.52	
095.0	023.8000	0049.3	028.0	338.1	045.0000	0092.7	030.9	67.75	
096.0	023.8000	0049.4	028.0	337.7	045.0000	0092.7	030.5	67.98	
097.0	023.8000	0049.6	028.1	337.3	045.0000	0092.8	030.1	68.23	
098.0	023.8000	0049.5	028.1	336.7	045.0000	0092.9	029.7	68.47	
099.0	023.8000	0049.4	028.0	336.2	045.0000	0093.1	029.2	68.72	
100.0	023.8000	0049.3	028.0	335.6	045.0000	0093.2	028.8	68.97	
101.0	023.8000	0049.3	028.0	335.1	045.0000	0093.2	028.5	69.21	
102.0	023.8000	0049.4	028.0	334.5	045.0000	0093.3	028.1	69.46	
103.0	023.8000	0049.5	028.1	333.9	045.0000	0093.6	027.6	69.74	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
104.0	023.8000	0049.7	028.1	333.4	045.0000	0093.7	027.2	70.02
105.0	023.8000	0049.8	028.2	332.7	045.0000	0093.8	026.9	70.27
106.0	023.8000	0049.9	028.2	332.0	045.0000	0093.8	026.5	70.52
107.0	023.8000	0049.9	028.2	331.3	045.0000	0093.8	026.1	70.76
108.0	023.8000	0050.1	028.2	330.5	045.0000	0093.7	025.8	71.00
109.0	023.8000	0050.0	028.2	329.7	045.0000	0093.6	025.5	71.19
110.0	023.8000	0050.0	028.2	328.8	045.0000	0093.8	025.1	71.44
111.0	023.8000	0050.1	028.2	327.9	045.0000	0093.8	024.8	71.66
112.0	023.8000	0050.1	028.2	327.0	045.0000	0094.1	024.5	71.89
113.0	023.8000	0050.1	028.3	326.1	045.0000	0094.2	024.2	72.10
114.0	023.8000	0050.3	028.3	325.1	045.0000	0094.0	023.9	72.30
115.0	023.8000	0050.2	028.3	324.1	045.0000	0094.0	023.7	72.47
116.0	023.8000	0050.1	028.2	323.0	045.0000	0094.1	023.5	72.63
117.0	023.8000	0050.1	028.2	321.9	045.0000	0094.0	023.3	72.77
118.0	023.8000	0050.0	028.2	320.8	045.0000	0093.9	023.1	72.89
119.0	023.8000	0050.1	028.2	319.6	045.0000	0094.0	022.9	73.05
120.0	023.8000	0050.1	028.2	318.5	045.0000	0093.9	022.8	73.17
121.0	023.8000	0050.1	028.2	317.3	045.0000	0094.0	022.6	73.28
122.0	023.8000	0050.0	028.2	316.1	045.0000	0094.2	022.5	73.38
123.0	023.8000	0050.1	028.2	314.8	045.0000	0094.3	022.4	73.49
124.0	023.8000	0050.2	028.3	313.6	045.0000	0094.3	022.3	73.58
125.0	023.8000	0050.2	028.3	312.4	045.0000	0094.4	022.2	73.64
126.0	023.8000	0050.2	028.3	311.1	045.0000	0094.5	022.1	73.70
127.0	023.8000	0050.3	028.3	309.8	045.0000	0094.6	022.1	73.74
128.0	023.8000	0050.3	028.3	308.5	045.0000	0094.5	022.1	73.74
129.0	023.8000	0050.3	028.3	307.3	045.0000	0094.5	022.1	73.74
130.0	023.8000	0050.3	028.3	306.0	045.0000	0094.5	022.1	73.72
131.0	023.8000	0050.5	028.3	304.7	045.0000	0094.4	022.1	73.72
132.0	023.8000	0050.6	028.4	303.4	045.0000	0094.4	022.2	73.68
133.0	023.8000	0050.6	028.4	302.2	045.0000	0094.6	022.2	73.63
134.0	023.8000	0050.6	028.4	300.9	045.0000	0094.6	022.3	73.55
135.0	023.8000	0050.6	028.4	299.7	045.0000	0094.7	022.5	73.48
136.0	023.8000	0050.7	028.4	298.5	045.0000	0094.8	022.6	73.39
137.0	023.8000	0050.6	028.4	297.3	045.0000	0094.8	022.8	73.26
138.0	023.8000	0050.6	028.4	296.1	045.0000	0094.9	022.9	73.14
139.0	023.8000	0050.7	028.4	295.0	045.0000	0095.0	023.1	73.02
140.0	023.8000	0050.7	028.4	293.9	045.0000	0095.2	023.3	72.88
141.0	023.8000	0050.7	028.4	292.8	045.0000	0095.2	023.6	72.71
142.0	023.8000	0050.7	028.4	291.8	045.0000	0095.2	023.8	72.53
143.0	023.8000	0050.7	028.4	290.7	045.0000	0095.0	024.1	72.33
144.0	023.8000	0050.7	028.4	289.8	045.0000	0095.0	024.3	72.12
145.0	023.8000	0050.8	028.4	288.8	045.0000	0095.2	024.6	71.94
146.0	023.8000	0050.8	028.4	287.9	045.0000	0095.3	024.9	71.75
147.0	023.8000	0050.8	028.4	287.0	045.0000	0095.3	025.2	71.53
148.0	023.8000	0050.8	028.4	286.1	045.0000	0095.5	025.5	71.32
149.0	023.8000	0050.8	028.4	285.3	045.0000	0095.6	025.9	71.10
150.0	023.8000	0050.9	028.4	284.5	045.0000	0095.8	026.2	70.88
151.0	023.8000	0050.8	028.4	283.8	045.0000	0095.9	026.6	70.66
152.0	023.8000	0050.8	028.4	283.1	045.0000	0095.9	027.0	70.41
153.0	023.8000	0050.9	028.4	282.4	045.0000	0096.1	027.3	70.19
154.0	023.8000	0050.8	028.4	281.8	045.0000	0096.0	027.7	69.94

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
155.0	023.8000	0050.9	028.5	281.2	045.0000	0095.9	028.1	69.69
156.0	023.8000	0050.8	028.4	280.6	045.0000	0095.9	028.5	69.43
157.0	023.8000	0050.9	028.4	280.0	045.0000	0095.8	028.9	69.17
158.0	023.8000	0050.9	028.4	279.5	045.0000	0095.7	029.4	68.92
159.0	023.8000	0050.8	028.4	279.1	045.0000	0095.7	029.8	68.67
160.0	023.8000	0050.9	028.5	278.6	045.0000	0095.6	030.2	68.43
161.0	023.8000	0050.9	028.5	278.1	045.0000	0095.4	030.7	68.17
162.0	023.8000	0050.9	028.4	277.7	045.0000	0095.5	031.1	67.94
163.0	023.8000	0050.9	028.5	277.3	045.0000	0095.4	031.6	67.70
164.0	023.8000	0050.9	028.5	277.0	045.0000	0095.4	032.0	67.48
165.0	023.8000	0050.9	028.4	276.7	045.0000	0095.4	032.5	67.25
166.0	023.8000	0050.9	028.4	276.4	045.0000	0095.3	032.9	67.03
167.0	023.8000	0050.8	028.4	276.1	045.0000	0095.4	033.4	66.81
168.0	023.8000	0050.9	028.5	275.8	045.0000	0095.4	033.9	66.60
169.0	023.8000	0050.9	028.5	275.6	045.0000	0095.4	034.3	66.38
170.0	023.8000	0050.9	028.5	275.3	045.0000	0095.3	034.8	66.15
171.0	023.8000	0050.9	028.4	275.1	045.0000	0095.3	035.3	65.93
172.0	023.8000	0050.9	028.4	275.0	045.0000	0095.3	035.8	65.71
173.0	023.8000	0050.9	028.4	274.8	045.0000	0095.3	036.3	65.49
174.0	023.8000	0050.9	028.4	274.7	045.0000	0095.3	036.8	65.28
175.0	023.8000	0050.8	028.4	274.5	045.0000	0095.3	037.3	65.06
176.0	023.8000	0050.8	028.4	274.4	045.0000	0095.3	037.7	64.85
177.0	023.8000	0050.8	028.4	274.3	045.0000	0095.3	038.2	64.63
178.0	023.8000	0050.9	028.4	274.2	045.0000	0095.3	038.7	64.42
179.0	023.8000	0050.8	028.4	274.2	045.0000	0095.3	039.2	64.21
180.0	023.8000	0050.8	028.4	274.1	045.0000	0095.3	039.7	64.00
181.0	023.8000	0050.8	028.4	274.1	045.0000	0095.3	040.2	63.79
182.0	023.8000	0050.9	028.4	274.0	045.0000	0095.3	040.7	63.58
183.0	023.8000	0050.8	028.4	274.0	045.0000	0095.3	041.2	63.38
184.0	023.8000	0050.9	028.4	274.0	045.0000	0095.3	041.7	63.17
185.0	023.8000	0050.9	028.4	274.0	045.0000	0095.3	042.2	62.97
186.0	023.8000	0051.0	028.5	274.0	045.0000	0095.3	042.7	62.77
187.0	023.8000	0051.0	028.5	274.0	045.0000	0095.3	043.2	62.57

10-29-2021

Terrain Data: FCC 30 meter

FMOver Analysis

WESM BLED19870303KC

SBA!

Channel = 217B

Max ERP = 45 kW

RCAMSL = 97 m

N. Lat. 38 12 37.40

W. Lng. 75 40 54.70

Protected

60 dBu

Channel = 219B1

Max ERP = 23.8 kW

RCAMSL = 51.2 m

N. Lat. 38 29 27.30

W. Lng. 76 08 08.00

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
248.0	045.0000	0095.1	043.0	180.2	023.8000	0050.8	047.4	53.71	
249.0	045.0000	0095.2	043.0	180.5	023.8000	0050.8	046.7	53.92	
250.0	045.0000	0095.0	043.0	180.9	023.8000	0050.8	046.0	54.13	
251.0	045.0000	0095.0	043.0	181.2	023.8000	0050.8	045.3	54.35	
252.0	045.0000	0095.0	043.0	181.5	023.8000	0050.8	044.6	54.58	
253.0	045.0000	0094.9	043.0	181.8	023.8000	0050.8	043.9	54.81	
254.0	045.0000	0094.9	043.0	182.1	023.8000	0050.8	043.2	55.05	
255.0	045.0000	0094.9	043.0	182.4	023.8000	0050.9	042.5	55.30	
256.0	045.0000	0094.9	043.0	182.7	023.8000	0050.8	041.7	55.54	
257.0	045.0000	0094.8	043.0	183.0	023.8000	0050.9	041.0	55.80	
258.0	045.0000	0094.9	043.0	183.3	023.8000	0050.8	040.3	56.06	
259.0	045.0000	0094.8	043.0	183.6	023.8000	0050.9	039.6	56.33	
260.0	045.0000	0094.8	042.9	183.9	023.8000	0050.9	038.8	56.59	
261.0	045.0000	0094.8	042.9	184.1	023.8000	0050.9	038.1	56.87	
262.0	045.0000	0094.9	043.0	184.4	023.8000	0050.9	037.4	57.16	
263.0	045.0000	0095.0	043.0	184.7	023.8000	0050.9	036.7	57.43	
264.0	045.0000	0095.0	043.0	184.9	023.8000	0050.9	035.9	57.72	
265.0	045.0000	0095.1	043.0	185.2	023.8000	0050.8	035.2	58.01	
266.0	045.0000	0095.2	043.0	185.4	023.8000	0050.9	034.5	58.32	
267.0	045.0000	0095.3	043.0	185.7	023.8000	0050.9	033.7	58.63	
268.0	045.0000	0095.3	043.0	185.9	023.8000	0050.9	033.0	58.94	
269.0	045.0000	0095.3	043.0	186.0	023.8000	0050.9	032.2	59.26	
270.0	045.0000	0095.2	043.0	186.2	023.8000	0051.0	031.5	59.59	
271.0	045.0000	0095.2	043.0	186.3	023.8000	0051.0	030.7	59.95	
272.0	045.0000	0095.3	043.0	186.5	023.8000	0051.0	030.0	60.33	
273.0	045.0000	0095.3	043.0	186.6	023.8000	0051.0	029.2	60.74	
274.0	045.0000	0095.3	043.0	186.7	023.8000	0051.0	028.5	61.17	
275.0	045.0000	0095.3	043.0	186.7	023.8000	0051.0	027.7	61.62	
276.0	045.0000	0095.4	043.1	186.8	023.8000	0051.0	027.0	62.10	
277.0	045.0000	0095.4	043.1	186.8	023.8000	0051.0	026.2	62.59	
278.0	045.0000	0095.4	043.1	186.8	023.8000	0051.0	025.5	63.10	
279.0	045.0000	0095.7	043.1	186.9	023.8000	0051.0	024.7	63.63	
280.0	045.0000	0095.7	043.1	186.9	023.8000	0051.0	024.0	64.18	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
281.0	045.0000	0096.0	043.2	186.9	023.8000	0051.0	023.2	64.74
282.0	045.0000	0096.1	043.2	186.8	023.8000	0051.0	022.5	65.31
283.0	045.0000	0095.9	043.2	186.5	023.8000	0051.0	021.7	65.89
284.0	045.0000	0095.9	043.1	186.2	023.8000	0051.0	021.0	66.48
285.0	045.0000	0095.7	043.1	185.8	023.8000	0050.9	020.2	67.07
286.0	045.0000	0095.5	043.1	185.4	023.8000	0050.9	019.5	67.68
287.0	045.0000	0095.3	043.0	184.8	023.8000	0050.9	018.8	68.29
288.0	045.0000	0095.3	043.0	184.3	023.8000	0050.9	018.0	68.91
289.0	045.0000	0095.2	043.0	183.7	023.8000	0050.9	017.3	69.53
290.0	045.0000	0095.0	043.0	182.9	023.8000	0050.8	016.6	70.14
291.0	045.0000	0095.0	043.0	182.1	023.8000	0050.8	015.9	70.76
292.0	045.0000	0095.3	043.0	181.3	023.8000	0050.8	015.2	71.39
293.0	045.0000	0095.2	043.0	180.2	023.8000	0050.8	014.5	71.94
294.0	045.0000	0095.2	043.0	179.0	023.8000	0050.8	013.8	72.80
295.0	045.0000	0095.0	043.0	177.5	023.8000	0050.9	013.1	73.70
296.0	045.0000	0094.9	043.0	175.7	023.8000	0050.9	012.5	74.63
297.0	045.0000	0094.9	043.0	173.9	023.8000	0050.9	011.8	75.61
298.0	045.0000	0094.8	042.9	171.7	023.8000	0050.9	011.2	76.57
299.0	045.0000	0094.8	042.9	169.3	023.8000	0051.0	010.6	77.56
300.0	045.0000	0094.6	042.9	166.5	023.8000	0050.9	010.1	78.48
301.0	045.0000	0094.6	042.9	163.3	023.8000	0050.9	009.6	79.41
302.0	045.0000	0094.5	042.9	159.8	023.8000	0050.9	009.1	80.26
303.0	045.0000	0094.5	042.9	155.8	023.8000	0050.9	008.7	81.05
304.0	045.0000	0094.5	042.9	151.5	023.8000	0050.8	008.3	81.73
305.0	045.0000	0094.5	042.9	146.7	023.8000	0050.8	008.0	82.32
306.0	045.0000	0094.5	042.9	141.5	023.8000	0050.7	007.7	82.80
307.0	045.0000	0094.5	042.9	136.0	023.8000	0050.7	007.6	83.16
308.0	045.0000	0094.5	042.9	130.4	023.8000	0050.4	007.5	83.27
309.0	045.0000	0094.5	042.9	124.6	023.8000	0050.2	007.5	83.23
310.0	045.0000	0094.5	042.9	119.0	023.8000	0050.1	007.6	83.00
311.0	045.0000	0094.5	042.9	113.6	023.8000	0050.2	007.8	82.64
312.0	045.0000	0094.4	042.9	108.5	023.8000	0050.1	008.0	82.07
313.0	045.0000	0094.4	042.9	103.9	023.8000	0049.7	008.4	81.36
314.0	045.0000	0094.4	042.9	099.6	023.8000	0049.4	008.8	80.57
315.0	045.0000	0094.2	042.8	095.9	023.8000	0049.4	009.2	79.72
316.0	045.0000	0094.2	042.8	092.5	023.8000	0049.1	009.7	78.78
317.0	045.0000	0094.1	042.8	089.6	023.7155	0048.8	010.3	77.76
318.0	045.0000	0094.0	042.8	087.0	023.2288	0048.9	010.9	76.71
319.0	045.0000	0093.9	042.8	084.7	022.8024	0048.5	011.5	75.57
320.0	045.0000	0094.0	042.8	082.6	022.4035	0048.5	012.1	74.55
321.0	045.0000	0093.9	042.8	080.8	022.0808	0048.2	012.7	73.48
322.0	045.0000	0094.0	042.8	079.2	021.5926	0047.9	013.4	72.41
323.0	045.0000	0094.1	042.8	077.7	021.0539	0048.4	014.0	71.52
324.0	045.0000	0094.0	042.8	076.6	020.6038	0048.2	014.7	70.56
325.0	045.0000	0094.1	042.8	075.5	020.2221	0047.9	015.4	69.92
326.0	045.0000	0094.2	042.8	074.5	019.8657	0047.7	016.1	69.19
327.0	045.0000	0094.1	042.8	073.7	019.5633	0047.6	016.8	68.49
328.0	045.0000	0093.8	042.8	073.2	019.3546	0047.6	017.5	67.82
329.0	045.0000	0093.8	042.8	072.6	019.1385	0047.6	018.3	67.15
330.0	045.0000	0093.6	042.7	072.2	019.0083	0047.6	019.0	66.50
331.0	045.0000	0093.8	042.8	071.6	018.8023	0047.6	019.7	65.85

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
332.0	045.0000	0093.8	042.8	071.3	018.6513	0047.6	020.5	65.22
333.0	045.0000	0093.7	042.8	071.0	018.5503	0047.6	021.2	64.60
334.0	045.0000	0093.5	042.7	070.8	018.4950	0047.6	021.9	64.00
335.0	045.0000	0093.2	042.7	070.7	018.4698	0047.6	022.7	63.41
336.0	045.0000	0093.1	042.6	070.6	018.4243	0047.6	023.4	62.84
337.0	045.0000	0092.9	042.6	070.6	018.4101	0047.6	024.2	62.29
338.0	045.0000	0092.7	042.6	070.6	018.4095	0047.6	024.9	61.76
339.0	045.0000	0092.8	042.6	070.4	018.3712	0047.7	025.7	61.24
340.0	045.0000	0092.9	042.6	070.4	018.3410	0047.7	026.4	60.75
341.0	045.0000	0093.0	042.6	070.3	018.3359	0047.7	027.1	60.27
342.0	045.0000	0092.8	042.6	070.4	018.3669	0047.7	027.9	59.80
343.0	045.0000	0092.8	042.6	070.5	018.3774	0047.6	028.6	59.37
344.0	045.0000	0092.7	042.6	070.6	018.4186	0047.6	029.4	58.95
345.0	045.0000	0092.5	042.5	070.7	018.4649	0047.6	030.1	58.57
346.0	045.0000	0092.2	042.5	071.0	018.5441	0047.6	030.8	58.22
347.0	045.0000	0092.1	042.4	071.1	018.6012	0047.6	031.6	57.89
348.0	045.0000	0092.0	042.4	071.3	018.6688	0047.6	032.3	57.59
349.0	045.0000	0092.2	042.5	071.4	018.6971	0047.6	033.1	57.28
350.0	045.0000	0092.2	042.5	071.6	018.7686	0047.6	033.8	57.00
351.0	045.0000	0092.1	042.4	071.8	018.8496	0047.6	034.5	56.72
352.0	045.0000	0092.0	042.4	072.0	018.9312	0047.6	035.2	56.44
353.0	045.0000	0092.2	042.5	072.2	018.9880	0047.6	036.0	56.16
354.0	045.0000	0091.6	042.4	072.5	019.1182	0047.6	036.7	55.92
355.0	045.0000	0091.5	042.3	072.8	019.2102	0047.6	037.4	55.67
356.0	045.0000	0091.3	042.3	073.1	019.3050	0047.6	038.1	55.41
357.0	045.0000	0091.5	042.3	073.3	019.3813	0047.6	038.9	55.17
358.0	045.0000	0091.4	042.3	073.6	019.4956	0047.6	039.6	54.94
359.0	045.0000	0091.2	042.3	073.9	019.6130	0047.7	040.3	54.71
000.0	045.0000	0091.2	042.3	074.1	019.7203	0047.6	041.0	54.48
001.0	045.0000	0091.6	042.4	074.3	019.7999	0047.7	041.7	54.25
002.0	045.0000	0091.6	042.4	074.6	019.9121	0047.7	042.4	54.04
003.0	045.0000	0091.2	042.3	075.0	020.0632	0047.8	043.1	53.86
004.0	045.0000	0091.0	042.2	075.4	020.1835	0047.9	043.8	53.68
005.0	045.0000	0090.9	042.2	075.7	020.3015	0047.9	044.5	53.48
006.0	045.0000	0091.0	042.2	076.0	020.4038	0048.0	045.2	53.30
007.0	045.0000	0090.9	042.2	076.3	020.5217	0048.1	045.9	53.13

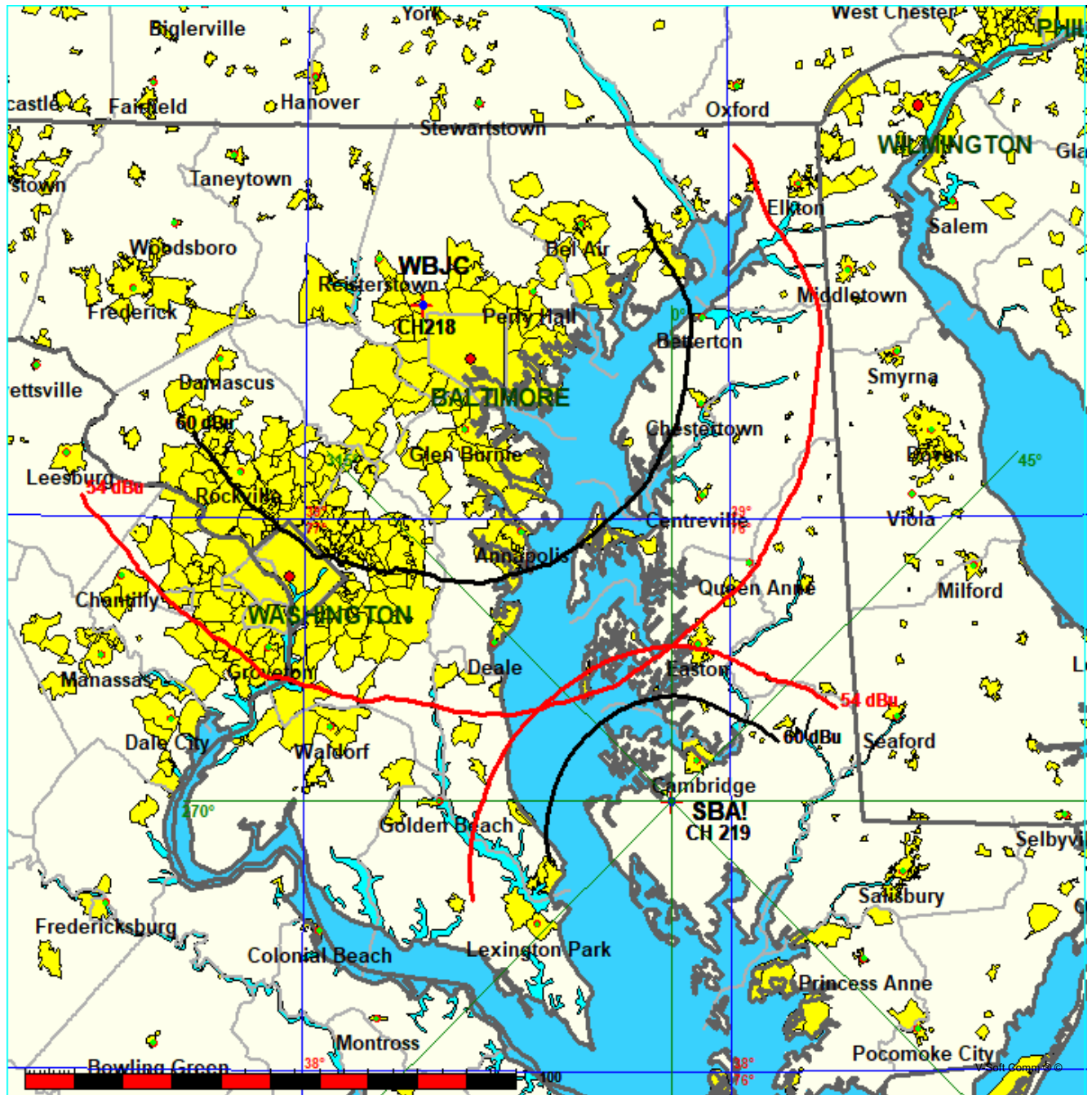


# Contour-to-Contour Proposed (SBA!) vs WBJC Historic Oxford Limited

FMCommander Single Allocation Study - 10-29-2021 - FCC 30 meter  
SBA!'s Overlaps (In= 4.72 km, Out= 22.66 km)

SBA! CH 219 B1 73.215 Z  
Lat= 38 29 27.30, Lng= 76 08 08.00  
23.8 kW 50.1 m HAAT, 51.2 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

WBJC CH 218 B DA BLED20101109ABJ  
Lat= 39 23 11.40, Lng= 76 43 50.90  
50.0 kW 152 m HAAT, 289.2 m COR  
Prot.= 60 dBu, Intef.= 54 dBu



10-30-2021

Terrain Data: FCC 30 meter

FMOver Analysis

SBA!

WBJC BLED20101109ABJ

Channel = 219B1  
 Max ERP = 23.8 kW  
 RCAMSL = 51.2 m  
 N. Lat. 38 29 27.30  
 W. Lng. 76 08 08.00  
 Protected  
 60 dBu

Channel = 218B  
 Max ERP = 50 kW  
 RCAMSL = 289.2 m  
 N. Lat. 39 23 11.40  
 W. Lng. 76 43 50.90  
 Interfering  
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
273.0	012.4754	0050.6	024.5	164.5	050.0000	0199.4	102.0	48.84	
274.0	012.2353	0050.5	024.4	164.3	050.0000	0199.4	101.6	48.94	
275.0	012.0314	0050.6	024.3	164.2	050.0000	0199.3	101.3	49.04	
276.0	011.7957	0050.7	024.3	164.1	050.0000	0199.5	100.9	49.15	
277.0	011.5623	0050.6	024.1	163.9	050.0000	0199.6	100.5	49.25	
278.0	011.3312	0050.7	024.0	163.8	050.0000	0199.6	100.2	49.34	
279.0	011.1350	0050.7	024.0	163.6	050.0000	0199.6	099.8	49.44	
280.0	010.9082	0050.7	023.8	163.5	050.0000	0199.6	099.5	49.53	
281.0	010.7477	0050.7	023.8	163.3	050.0000	0199.3	099.2	49.62	
282.0	010.5884	0050.7	023.7	163.2	050.0000	0199.3	098.9	49.71	
283.0	010.4302	0050.7	023.6	163.0	050.0000	0199.2	098.5	49.80	
284.0	010.2732	0050.7	023.5	162.9	050.0000	0199.1	098.2	49.89	
285.0	010.1485	0050.7	023.4	162.7	050.0000	0198.9	097.9	49.97	
286.0	009.9937	0050.7	023.4	162.5	050.0000	0198.8	097.6	50.06	
287.0	009.8401	0050.7	023.3	162.4	050.0000	0198.6	097.3	50.14	
288.0	009.6876	0050.7	023.2	162.2	050.0000	0198.3	097.0	50.21	
289.0	009.5364	0050.8	023.1	162.0	050.0000	0198.6	096.7	50.30	
290.0	009.3863	0050.8	023.1	161.8	050.0000	0198.6	096.5	50.38	
291.0	009.2375	0050.8	023.0	161.6	050.0000	0198.4	096.2	50.45	
292.0	009.0898	0050.9	022.9	161.5	050.0000	0198.3	095.9	50.53	
293.0	008.9433	0050.9	022.8	161.3	050.0000	0198.4	095.7	50.60	
294.0	008.7980	0050.9	022.7	161.1	050.0000	0198.3	095.5	50.67	
295.0	008.6539	0050.9	022.6	160.9	050.0000	0198.0	095.2	50.73	
296.0	008.4825	0050.9	022.5	160.7	050.0000	0198.1	095.0	50.79	
297.0	008.3410	0050.9	022.4	160.4	050.0000	0198.7	094.8	50.88	
298.0	008.2007	0050.9	022.4	160.2	050.0000	0199.7	094.6	50.98	
299.0	008.0616	0050.9	022.3	160.0	050.0000	0200.7	094.4	51.07	
300.0	007.9237	0050.9	022.2	159.8	050.0000	0201.2	094.2	51.14	
301.0	007.8415	0050.9	022.1	159.6	050.0000	0201.4	094.0	51.21	
302.0	007.7598	0050.8	022.1	159.4	050.0000	0201.9	093.8	51.28	
303.0	007.6514	0050.7	022.0	159.2	050.0000	0202.7	093.7	51.36	
304.0	007.5707	0050.8	021.9	159.0	050.0000	0203.2	093.5	51.43	
305.0	007.4904	0050.7	021.9	158.8	050.0000	0202.9	093.3	51.47	
306.0	007.4105	0050.8	021.8	158.5	050.0000	0202.6	093.2	51.51	
307.0	007.3310	0050.8	021.8	158.3	050.0000	0202.1	093.0	51.54	
308.0	007.2257	0050.8	021.7	158.1	050.0000	0201.8	092.8	51.58	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
309.0	007.1472	0050.8	021.6	157.9	050.0000	0202.0	092.7	51.63
310.0	007.0692	0050.6	021.5	157.7	050.0000	0202.9	092.6	51.68
311.0	007.0174	0050.6	021.5	157.4	050.0000	0203.6	092.5	51.75
312.0	006.9658	0050.6	021.5	157.2	050.0000	0203.8	092.4	51.80
313.0	006.9144	0050.6	021.4	157.0	050.0000	0203.6	092.2	51.83
314.0	006.8632	0050.5	021.4	156.8	050.0000	0203.4	092.1	51.85
315.0	006.8376	0050.4	021.3	156.5	050.0000	0203.2	092.0	51.88
316.0	006.7867	0050.5	021.3	156.3	050.0000	0203.1	091.9	51.91
317.0	006.7360	0050.4	021.2	156.1	050.0000	0203.4	091.8	51.94
318.0	006.6854	0050.4	021.2	155.9	050.0000	0203.9	091.7	51.99
319.0	006.6351	0050.5	021.2	155.6	050.0000	0204.4	091.7	52.03
320.0	006.5849	0050.5	021.2	155.4	050.0000	0204.8	091.6	52.07
321.0	006.5599	0050.4	021.1	155.2	050.0000	0205.5	091.5	52.11
322.0	006.5599	0050.5	021.1	155.0	050.0000	0206.2	091.4	52.17
323.0	006.5349	0050.4	021.1	154.7	050.0000	0206.6	091.4	52.21
324.0	006.5100	0050.4	021.1	154.5	050.0000	0206.9	091.3	52.23
325.0	006.5100	0050.4	021.1	154.3	050.0000	0207.0	091.3	52.25
326.0	006.4851	0050.4	021.1	154.1	050.0000	0207.5	091.2	52.28
327.0	006.4603	0050.4	021.0	153.8	050.0000	0208.4	091.2	52.33
328.0	006.4355	0050.4	021.0	153.6	050.0000	0208.6	091.2	52.34
329.0	006.4355	0050.5	021.0	153.4	050.0000	0209.6	091.1	52.39
330.0	006.4108	0050.4	021.0	153.1	050.0000	0210.8	091.1	52.44
331.0	006.3861	0050.5	021.0	152.9	050.0000	0212.5	091.1	52.51
332.0	006.3861	0050.5	021.0	152.7	050.0000	0213.0	091.1	52.52
333.0	006.3615	0050.5	021.0	152.4	050.0000	0212.4	091.1	52.50
334.0	006.3615	0050.5	021.0	152.2	050.0000	0211.1	091.1	52.45
335.0	006.3369	0050.5	021.0	152.0	050.0000	0210.4	091.1	52.42
336.0	006.3369	0050.5	021.0	151.8	050.0000	0210.0	091.2	52.39
337.0	006.3369	0050.5	021.0	151.5	050.0000	0209.6	091.2	52.37
338.0	006.3124	0050.5	020.9	151.3	050.0000	0209.2	091.3	52.34
339.0	006.3124	0050.5	020.9	151.1	050.0000	0208.6	091.3	52.30
340.0	006.2879	0050.2	020.8	150.8	050.0000	0207.9	091.4	52.23
341.0	006.2879	0050.3	020.9	150.6	050.0000	0207.8	091.5	52.22
342.0	006.2879	0050.3	020.9	150.4	050.0000	0207.9	091.5	52.20
343.0	006.3124	0050.3	020.9	150.2	050.0000	0207.7	091.6	52.18
344.0	006.3124	0050.1	020.9	150.0	050.0000	0207.5	091.7	52.13
345.0	006.3124	0050.1	020.9	149.7	050.0000	0207.5	091.8	52.11
346.0	006.3124	0050.1	020.8	149.5	050.0000	0207.5	091.9	52.07
347.0	006.3124	0050.0	020.8	149.3	050.0000	0207.5	092.0	52.04
348.0	006.3369	0050.0	020.9	149.1	050.0000	0207.3	092.1	52.00
349.0	006.3369	0050.0	020.9	148.9	050.0000	0207.3	092.2	51.96
350.0	006.3369	0050.2	020.9	148.6	050.0000	0207.1	092.3	51.93
351.0	006.3615	0050.1	020.9	148.4	050.0000	0207.0	092.5	51.88
352.0	006.4108	0050.0	020.9	148.2	050.0000	0207.2	092.6	51.85
353.0	006.4355	0049.9	020.9	148.0	050.0000	0207.2	092.7	51.80
354.0	006.4851	0049.7	020.9	147.8	050.0000	0207.2	092.9	51.76
355.0	006.5100	0049.7	020.9	147.6	050.0000	0207.2	093.0	51.71
356.0	006.5349	0049.6	020.9	147.4	050.0000	0207.2	093.2	51.66
357.0	006.5849	0049.6	021.0	147.2	050.0000	0207.1	093.4	51.61
358.0	006.6100	0049.4	020.9	147.0	050.0000	0206.9	093.6	51.55
359.0	006.6602	0049.5	021.0	146.8	050.0000	0206.7	093.7	51.50

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
000.0	006.6854	0049.6	021.0	146.6	050.0000	0206.7	093.9	51.45
001.0	006.6854	0049.6	021.0	146.4	050.0000	0206.6	094.1	51.38
002.0	006.6602	0049.8	021.1	146.2	050.0000	0206.6	094.3	51.33
003.0	006.6602	0049.6	021.0	146.1	050.0000	0206.6	094.5	51.25
004.0	006.6602	0049.6	021.0	145.9	050.0000	0206.8	094.7	51.19
005.0	006.6351	0049.9	021.1	145.7	050.0000	0207.1	094.9	51.14
006.0	006.6351	0049.8	021.0	145.5	050.0000	0207.3	095.2	51.08
007.0	006.6351	0049.6	021.0	145.4	050.0000	0207.4	095.4	51.00
008.0	006.6351	0049.4	021.0	145.2	050.0000	0207.4	095.7	50.92
009.0	006.6100	0049.3	020.9	145.1	050.0000	0207.4	096.0	50.83
010.0	006.6100	0049.5	021.0	144.9	050.0000	0207.6	096.2	50.77
011.0	006.6100	0049.6	021.0	144.8	050.0000	0207.7	096.5	50.71
012.0	006.6100	0049.8	021.0	144.6	050.0000	0207.4	096.7	50.63
013.0	006.6351	0049.6	021.0	144.5	050.0000	0207.2	097.0	50.53
014.0	006.6351	0049.6	021.0	144.3	050.0000	0207.0	097.3	50.44
015.0	006.6351	0049.3	020.9	144.2	050.0000	0206.8	097.6	50.34
016.0	006.6351	0049.5	021.0	144.0	050.0000	0206.7	097.8	50.26
017.0	006.6351	0049.4	021.0	143.9	050.0000	0206.5	098.1	50.17
018.0	006.6602	0049.2	020.9	143.8	050.0000	0206.3	098.5	50.07
019.0	006.6602	0048.9	020.9	143.7	050.0000	0206.2	098.8	49.97
020.0	006.6602	0048.8	020.8	143.6	050.0000	0206.1	099.1	49.87
021.0	006.6602	0048.8	020.8	143.5	050.0000	0206.0	099.4	49.79
022.0	006.6854	0048.8	020.9	143.4	050.0000	0206.0	099.7	49.70
023.0	006.6854	0048.7	020.8	143.3	050.0000	0206.0	100.0	49.61
024.0	006.6854	0048.5	020.8	143.2	050.0000	0206.1	100.4	49.51
025.0	006.6854	0048.4	020.8	143.1	050.0000	0206.2	100.7	49.43
026.0	006.7107	0048.3	020.8	143.0	050.0000	0206.3	101.0	49.34
027.0	006.7107	0048.4	020.8	142.9	050.0000	0206.3	101.3	49.25
028.0	006.7107	0048.4	020.8	142.8	050.0000	0206.3	101.6	49.16
029.0	006.7360	0048.2	020.8	142.7	050.0000	0206.3	102.0	49.06
030.0	006.7360	0048.2	020.8	142.7	050.0000	0206.4	102.3	48.97
031.0	006.7867	0048.2	020.8	142.6	050.0000	0206.4	102.6	48.89
032.0	006.8122	0048.1	020.8	142.5	050.0000	0206.4	103.0	48.79

10-30-2021

Terrain Data: FCC 30 meter

FMOver Analysis

WBJC BLED20101109ABJ

SBA!

Channel = 218B

Max ERP = 50 kW

RCAMSL = 289.2 m

N. Lat. 39 23 11.40

W. Lng. 76 43 50.90

Protected

60 dBu

Channel = 219B1

Max ERP = 23.8 kW

RCAMSL = 51.2 m

N. Lat. 38 29 27.30

W. Lng. 76 08 08.00

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
092.0	050.0000	0174.3	055.0	002.3	006.6602	0049.8	097.5	35.56	
093.0	050.0000	0175.9	055.2	002.4	006.6602	0049.7	096.6	35.76	
094.0	050.0000	0178.0	055.4	002.5	006.6602	0049.7	095.6	35.96	
095.0	050.0000	0177.2	055.3	002.4	006.6602	0049.7	094.6	36.17	
096.0	050.0000	0177.0	055.3	002.3	006.6602	0049.7	093.7	36.39	
097.0	050.0000	0176.1	055.2	002.2	006.6602	0049.8	092.7	36.60	
098.0	050.0000	0176.8	055.3	002.2	006.6602	0049.8	091.8	36.82	
099.0	050.0000	0177.4	055.4	002.2	006.6602	0049.8	090.8	37.04	
100.0	050.0000	0179.1	055.5	002.2	006.6602	0049.8	089.8	37.27	
101.0	050.0000	0179.1	055.5	002.1	006.6602	0049.8	088.8	37.50	
102.0	050.0000	0179.5	055.5	002.0	006.6602	0049.8	087.9	37.72	
103.0	050.0000	0181.4	055.7	002.0	006.6602	0049.8	086.9	37.96	
104.0	050.0000	0182.3	055.8	001.9	006.6617	0049.8	085.9	38.19	
105.0	050.0000	0183.4	055.9	001.9	006.6638	0049.8	085.0	38.42	
106.0	050.0000	0186.1	056.1	001.8	006.6641	0049.8	084.0	38.66	
107.0	050.0000	0188.1	056.3	001.8	006.6656	0049.7	083.0	38.90	
108.0	050.0000	0190.3	056.5	001.7	006.6671	0049.7	082.0	39.14	
109.0	050.0000	0191.3	056.6	001.6	006.6708	0049.8	081.0	39.37	
110.0	050.0000	0193.5	056.8	001.5	006.6731	0049.8	080.0	39.60	
111.0	050.0000	0195.1	056.9	001.3	006.6767	0049.7	079.0	39.83	
112.0	050.0000	0195.5	057.0	001.1	006.6826	0049.7	078.1	40.05	
113.0	050.0000	0196.2	057.0	000.9	006.6854	0049.6	077.1	40.27	
114.0	050.0000	0199.5	057.3	000.8	006.6854	0049.6	076.1	40.51	
115.0	050.0000	0201.3	057.5	000.6	006.6854	0049.5	075.1	40.74	
116.0	050.0000	0201.3	057.5	000.3	006.6854	0049.6	074.2	40.95	
117.0	050.0000	0199.6	057.3	359.8	006.6805	0049.6	073.4	41.15	
118.0	050.0000	0199.0	057.3	359.4	006.6701	0049.5	072.5	41.33	
119.0	050.0000	0198.4	057.2	359.0	006.6583	0049.5	071.7	41.52	
120.0	050.0000	0198.4	057.2	358.5	006.6375	0049.4	070.8	41.70	
121.0	050.0000	0201.3	057.5	358.3	006.6244	0049.5	069.9	41.93	
122.0	050.0000	0203.3	057.6	357.9	006.6086	0049.4	068.9	42.14	
123.0	050.0000	0204.0	057.7	357.5	006.5974	0049.5	068.1	42.34	
124.0	050.0000	0204.9	057.8	357.0	006.5861	0049.5	067.2	42.54	

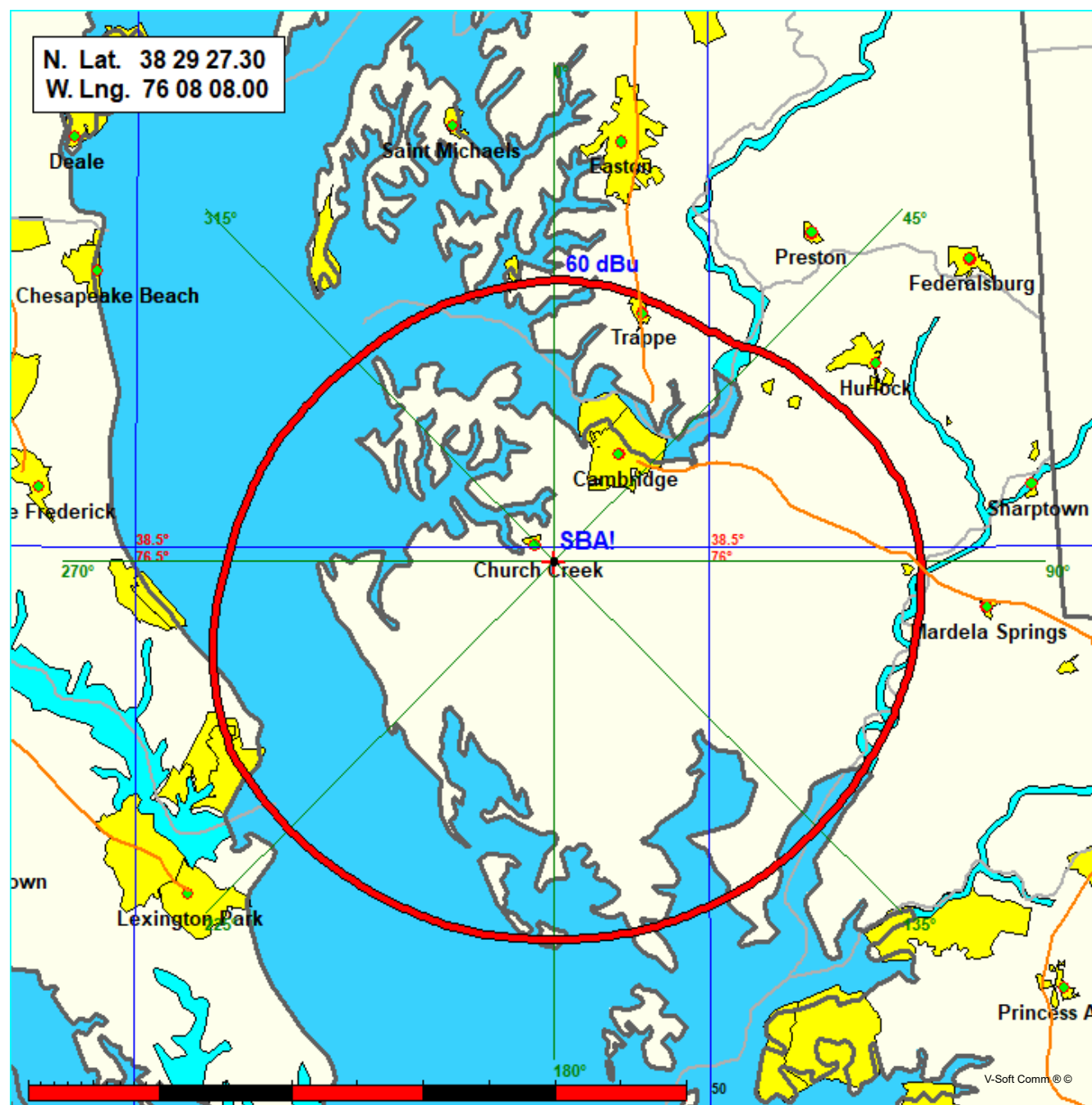
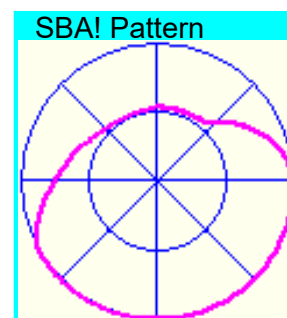
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
125.0	050.0000	0206.4	057.9	356.6	006.5650	0049.6	066.3	42.74
126.0	050.0000	0208.8	058.1	356.2	006.5440	0049.6	065.4	42.95
127.0	050.0000	0212.3	058.4	355.8	006.5299	0049.7	064.4	43.18
128.0	050.0000	0210.9	058.3	355.1	006.5125	0049.7	063.8	43.33
129.0	050.0000	0211.8	058.4	354.5	006.4980	0049.7	063.0	43.52
130.0	050.0000	0211.4	058.3	353.8	006.4765	0049.7	062.3	43.68
131.0	050.0000	0210.8	058.3	353.1	006.4404	0049.8	061.7	43.83
132.0	050.0000	0209.2	058.2	352.3	006.4182	0049.9	061.1	43.98
133.0	050.0000	0208.6	058.1	351.5	006.3873	0050.1	060.5	44.13
134.0	050.0000	0206.3	057.9	350.6	006.3527	0050.2	060.0	44.24
135.0	050.0000	0205.9	057.9	349.8	006.3369	0050.2	059.5	44.38
136.0	050.0000	0204.1	057.7	348.9	006.3369	0049.9	059.1	44.47
137.0	050.0000	0204.1	057.7	348.1	006.3369	0050.0	058.5	44.62
138.0	050.0000	0204.3	057.7	347.2	006.3185	0050.0	058.0	44.76
139.0	050.0000	0203.7	057.7	346.3	006.3124	0050.0	057.6	44.87
140.0	050.0000	0203.9	057.7	345.4	006.3124	0050.2	057.1	45.02
141.0	050.0000	0204.0	057.7	344.5	006.3124	0050.2	056.7	45.14
142.0	050.0000	0205.9	057.9	343.6	006.3124	0050.2	056.2	45.29
143.0	050.0000	0206.3	057.9	342.7	006.3046	0050.4	055.8	45.42
144.0	050.0000	0206.6	057.9	341.7	006.2879	0050.3	055.5	45.50
145.0	050.0000	0207.5	058.0	340.7	006.2879	0050.3	055.1	45.60
146.0	050.0000	0206.7	057.9	339.7	006.2957	0050.2	054.9	45.65
147.0	050.0000	0206.9	058.0	338.7	006.3124	0050.5	054.7	45.77
148.0	050.0000	0207.2	058.0	337.6	006.3219	0050.6	054.5	45.84
149.0	050.0000	0207.4	058.0	336.6	006.3369	0050.6	054.3	45.90
150.0	050.0000	0207.5	058.0	335.5	006.3369	0050.5	054.2	45.92
151.0	050.0000	0208.3	058.1	334.4	006.3508	0050.5	054.0	45.98
152.0	050.0000	0210.5	058.3	333.4	006.3615	0050.5	053.8	46.05
153.0	050.0000	0211.8	058.4	332.3	006.3793	0050.5	053.7	46.09
154.0	050.0000	0207.7	058.0	331.2	006.3861	0050.5	054.1	45.99
155.0	050.0000	0206.1	057.9	330.2	006.4069	0050.4	054.3	45.93
156.0	050.0000	0203.6	057.7	329.1	006.4323	0050.5	054.6	45.85
157.0	050.0000	0203.6	057.7	328.1	006.4355	0050.4	054.8	45.80
158.0	050.0000	0201.9	057.5	327.1	006.4582	0050.4	055.1	45.73
159.0	050.0000	0203.1	057.6	326.0	006.4842	0050.4	055.2	45.71
160.0	050.0000	0200.8	057.4	325.1	006.5079	0050.4	055.7	45.60
161.0	050.0000	0198.2	057.2	324.2	006.5100	0050.4	056.2	45.45
162.0	050.0000	0198.6	057.2	323.2	006.5301	0050.4	056.5	45.39
163.0	050.0000	0199.2	057.3	322.2	006.5543	0050.4	056.7	45.33
164.0	050.0000	0199.5	057.3	321.3	006.5599	0050.4	057.1	45.22
165.0	050.0000	0199.2	057.3	320.4	006.5754	0050.5	057.5	45.12
166.0	050.0000	0198.5	057.2	319.5	006.6092	0050.6	058.0	45.01
167.0	050.0000	0198.2	057.2	318.7	006.6523	0050.5	058.5	44.90
168.0	050.0000	0196.1	057.0	317.9	006.6903	0050.5	059.2	44.74
169.0	050.0000	0190.3	056.5	317.3	006.7186	0050.4	060.1	44.49
170.0	050.0000	0188.9	056.4	316.6	006.7552	0050.4	060.7	44.34
171.0	050.0000	0187.6	056.3	315.9	006.7906	0050.5	061.4	44.20
172.0	050.0000	0184.9	056.0	315.3	006.8215	0050.5	062.2	44.02
173.0	050.0000	0180.7	055.7	314.8	006.8423	0050.5	063.1	43.80
174.0	050.0000	0179.0	055.5	314.2	006.8572	0050.5	063.8	43.63
175.0	050.0000	0177.4	055.4	313.7	006.8804	0050.5	064.5	43.46

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
176.0	050.0000	0173.9	055.0	313.2	006.9020	0050.6	065.4	43.26
177.0	050.0000	0169.4	054.5	312.9	006.9183	0050.6	066.4	43.03
178.0	050.0000	0165.2	054.1	312.6	006.9332	0050.6	067.4	42.80
179.0	050.0000	0164.9	054.0	312.1	006.9603	0050.6	068.2	42.64
180.0	050.0000	0163.0	053.8	311.7	006.9803	0050.6	069.0	42.45
181.0	050.0000	0160.9	053.6	311.4	006.9982	0050.6	069.9	42.26
182.0	050.0000	0158.8	053.3	311.0	007.0150	0050.6	070.8	42.06
183.0	050.0000	0158.5	053.3	310.6	007.0377	0050.6	071.5	41.89
184.0	050.0000	0157.3	053.1	310.3	007.0556	0050.5	072.3	41.70
185.0	050.0000	0157.1	053.1	309.9	007.0801	0050.6	073.1	41.53
186.0	050.0000	0162.2	053.7	309.1	007.1432	0050.8	073.5	41.49
187.0	050.0000	0164.7	054.0	308.5	007.1879	0050.8	074.2	41.36
188.0	050.0000	0165.5	054.1	308.1	007.2216	0050.8	075.0	41.20
189.0	050.0000	0164.6	054.0	307.8	007.2496	0050.9	075.8	41.01
190.0	050.0000	0162.3	053.7	307.6	007.2655	0050.9	076.8	40.79
191.0	049.7703	0164.9	054.0	307.1	007.3168	0050.8	077.5	40.65
192.0	049.5411	0165.6	054.0	306.8	007.3456	0050.8	078.4	40.47
193.0	049.3124	0164.4	053.9	306.7	007.3584	0050.8	079.3	40.26
194.0	049.0842	0163.9	053.8	306.5	007.3735	0050.8	080.2	40.05
195.0	048.8566	0163.5	053.7	306.3	007.3889	0050.8	081.1	39.85
196.0	048.6295	0164.6	053.8	306.0	007.4113	0050.8	081.9	39.66
197.0	048.4030	0166.7	054.0	305.7	007.4383	0050.7	082.8	39.48
198.0	048.1769	0167.4	054.0	305.4	007.4562	0050.7	083.7	39.27
199.0	047.9514	0165.7	053.8	305.4	007.4588	0050.7	084.6	39.04
200.0	047.7264	0166.3	053.8	305.2	007.4737	0050.7	085.5	38.84
201.0	047.4630	0168.7	054.0	304.9	007.4967	0050.7	086.4	38.64
202.0	047.2003	0177.1	054.8	304.3	007.5499	0050.8	087.1	38.50
203.0	046.9384	0177.6	054.8	304.1	007.5597	0050.8	088.1	38.28
204.0	046.6771	0173.3	054.3	304.3	007.5444	0050.8	089.1	38.03
205.0	046.4166	0169.6	053.9	304.5	007.5302	0050.7	090.1	37.78
206.0	046.1568	0167.3	053.6	304.6	007.5224	0050.7	091.1	37.55
207.0	045.8978	0164.3	053.2	304.8	007.5096	0050.7	092.0	37.32
208.0	045.6395	0164.2	053.1	304.7	007.5119	0050.7	093.0	37.11
209.0	045.3819	0164.6	053.1	304.7	007.5163	0050.7	093.9	36.90
210.0	045.1250	0162.8	052.9	304.8	007.5075	0050.7	094.8	36.69
211.0	045.1250	0163.7	053.0	304.7	007.5153	0050.7	095.8	36.50

60 dBu Contour-to-Contour Map  
Historic Oxford Limited

Coverage Study - FCC 30 meter  
10-29-2021

SBA! CH219 B1, 23.8 kW, 50.1m HAAT, 51.2m COR AMSL  
Service Contour = 60 dBu.





N. Lat. = 38 29 27.3 W. Lng. = 76 08 08.0  
 HAAT and Distance to Contour,  
 FCC, FM 2-10 Mi, 51 pts Method - FCC 30 Meter

Proposed (SBA!) Distance to Contour and HAATs

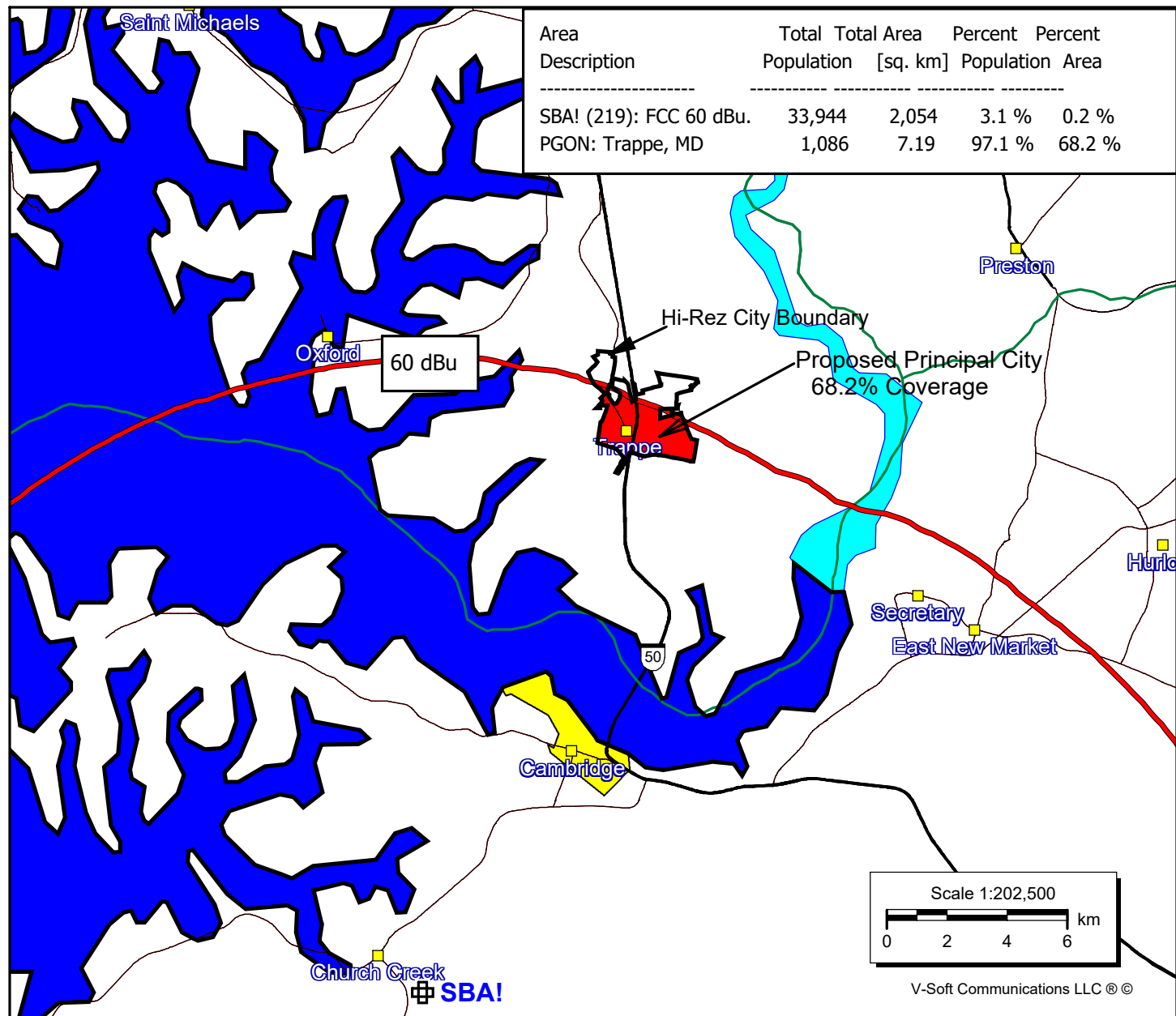
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	1.6	49.6	6.6854	8.25	0.530	21.03
045	2.1	49.1	8.5966	9.34	0.601	22.22
090	2.4	48.8	23.8000	13.77	1.000	27.88
135	0.6	50.6	23.8000	13.77	1.000	28.38
180	0.4	50.8	23.8000	13.77	1.000	28.44
225	0.4	50.8	23.8000	13.77	1.000	28.43
270	0.8	50.4	13.1742	11.20	0.744	24.81
315	0.8	50.4	6.8376	8.35	0.536	21.32

Ave El= 1.12 M HAAT= 50.08 M AMSL= 51.2

**SBA!**

Latitude: 38-29-27.30 N  
 Longitude: 076-08-08 W  
 ERP: 23.80 kW  
 Channel: 219  
 Frequency: 91.7 MHz  
 AMSL Height: 51.2 m  
 Elevation: 1.8 m  
 Horiz. Pattern: Directional

Area Description	Total Population	Total Area [sq. km]	Percent Population	Percent Area
SBA! (219): FCC 60 dBu.	33,944	2,054	3.1 %	0.2 %
PGON: Trappe, MD	1,086	7.19	97.1 %	68.2 %



**Doug Vernier**  
 1600 Picturesque Dr.  
 Cedar Falls, Iowa 50613  
 Telecommunication Consultants

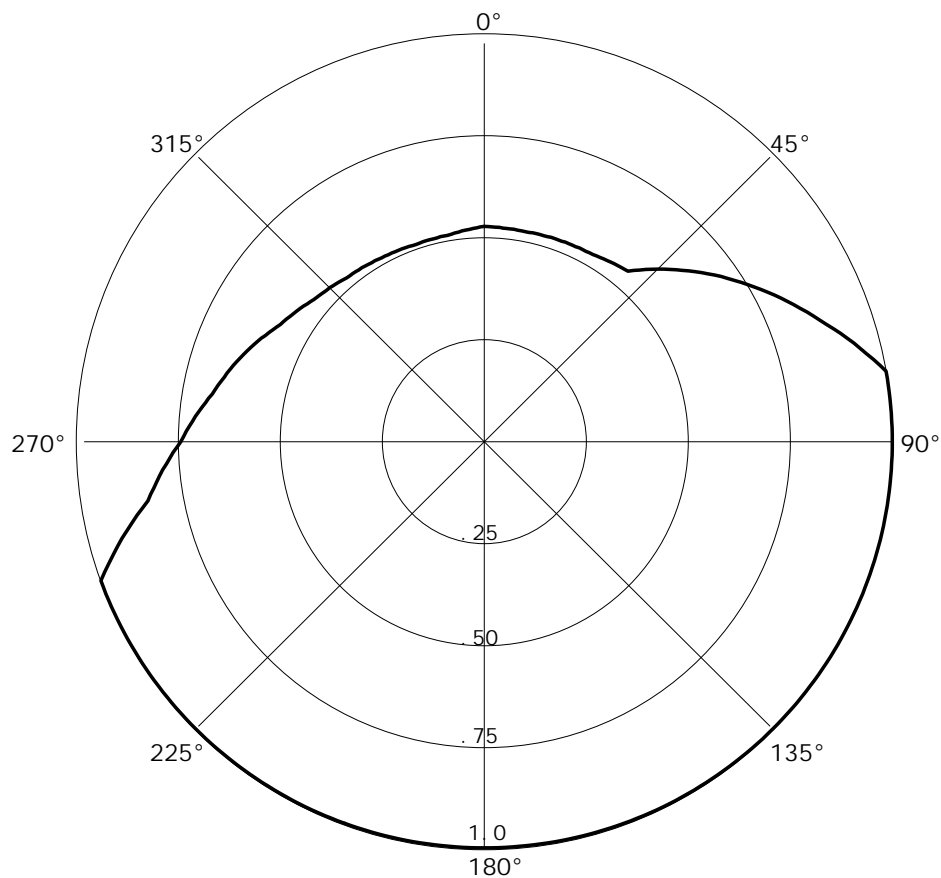
SBA!

10-30-2021

RMS(V) = .833

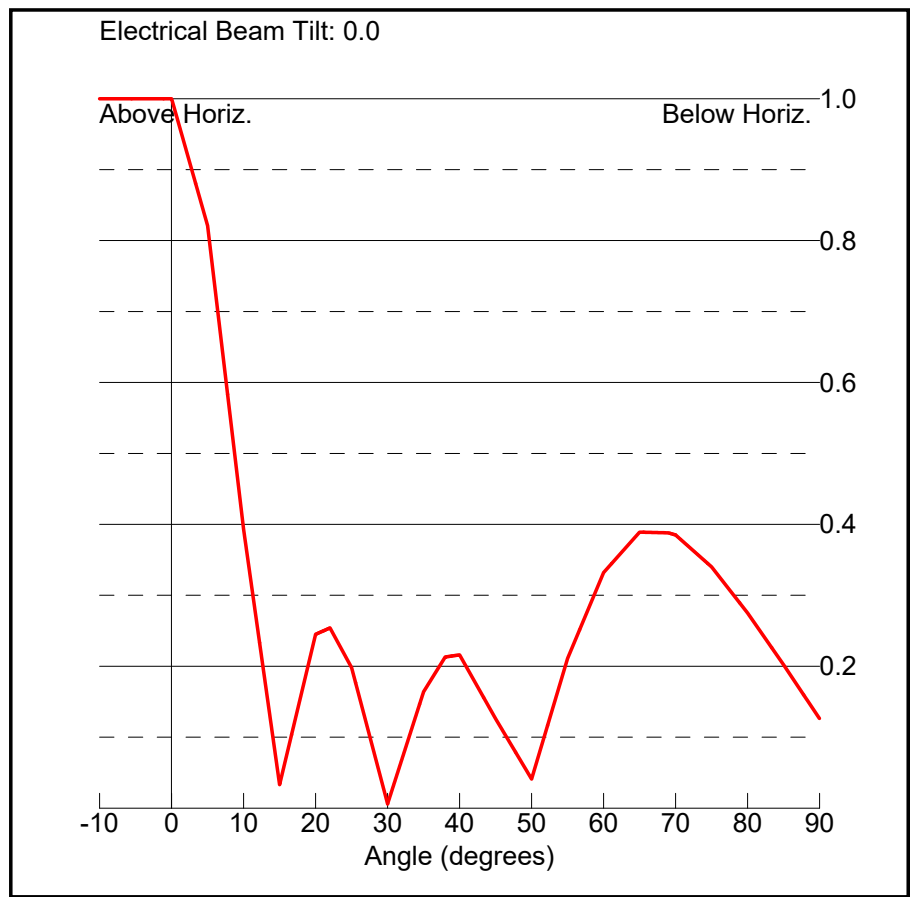
Graph i s Relative Field

Azi	Fi el d	dBk	kW
000	0.530	08.251	6.685
010	0.527	08.202	6.610
020	0.529	08.235	6.660
030	0.532	08.284	6.736
040	0.548	08.541	7.147
050	0.654	10.077	10.180
060	0.763	11.416	13.856
070	0.875	12.606	18.222
080	1.000	13.766	23.800
090	1.000	13.766	23.800
100	1.000	13.766	23.800
110	1.000	13.766	23.800
120	1.000	13.766	23.800
130	1.000	13.766	23.800
140	1.000	13.766	23.800
150	1.000	13.766	23.800
160	1.000	13.766	23.800
170	1.000	13.766	23.800
180	1.000	13.766	23.800
190	1.000	13.766	23.800
200	1.000	13.766	23.800
210	1.000	13.766	23.800
220	1.000	13.766	23.800
230	1.000	13.766	23.800
240	1.000	13.766	23.800
250	1.000	13.766	23.800
260	0.837	12.220	16.674
270	0.744	11.197	13.174
280	0.677	10.378	10.908
290	0.628	09.725	9.386
300	0.577	08.989	7.924
310	0.545	08.494	7.069
320	0.526	08.185	6.585
330	0.519	08.069	6.411
340	0.514	07.985	6.288
350	0.516	08.019	6.337

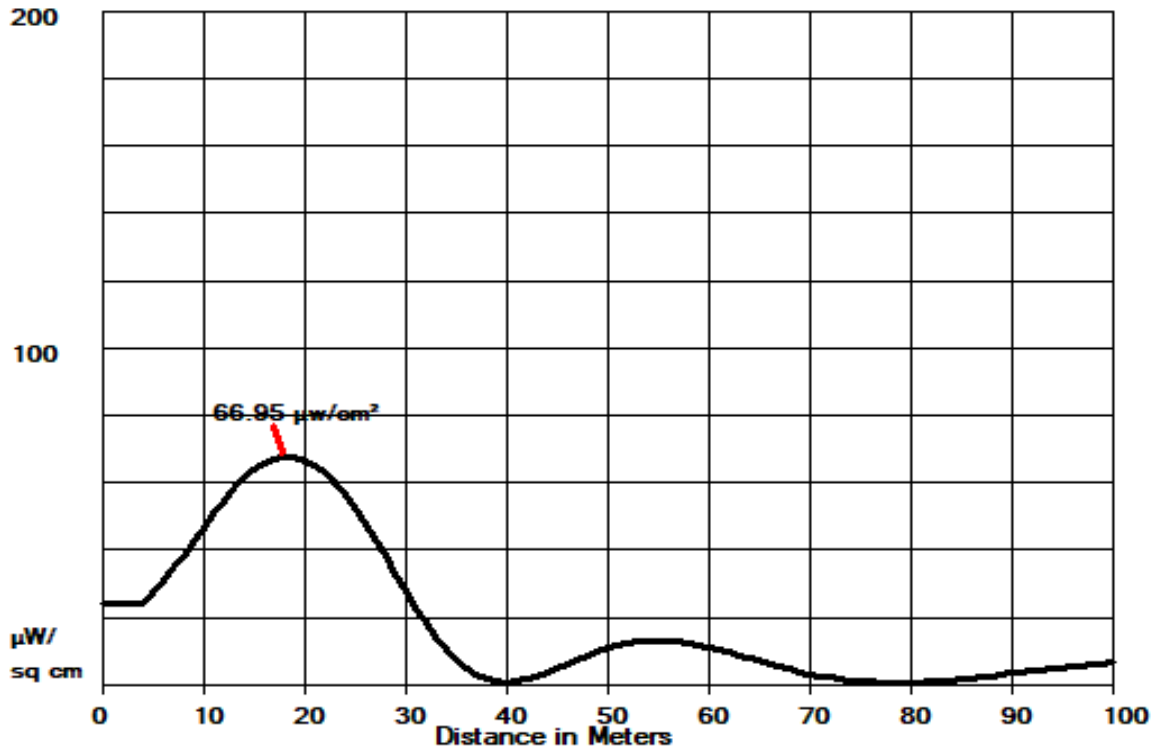


## Vertical Elevation Pattern

Angle (deg)	Relative Field
0.0	1.0
5.0	0.821
10.0	0.393
15.0	0.033
20.0	0.245
22.0	0.254
25.0	0.198
30.0	0.006
35.0	0.164
38.0	0.213
40.0	0.216
45.0	0.126
50.0	0.041
55.0	0.211
60.0	0.332
65.0	0.389
69.0	0.388
70.0	0.385
75.0	0.34
80.0	0.275
85.0	0.202
90.0	0.126



EPA Type 3: Opposed "U" dipole, 4 Bays, Spac= 1, H=23.8 kW, V=23.8 kW, 47.4 M AG



HORZ. DISTANCE FROM FM RADIATOR VS POWER DENSITY (Microwatt/Square cm)  
 Dist(Meters) PD (H) PD (V) Total (uW/cm2) Percent Max. (200)

Dist(Meters)	PD (H)	PD (V)	Total (uW/cm2)	Percent Max. (200)
0	11.73	11.73	23.45	11.7
1	11.72	11.72	23.44	11.7
2	11.70	11.70	23.40	11.7
3	11.67	11.67	23.34	11.7
4	11.67	11.67	23.34	11.7
5	13.35	13.35	26.70	13.4
6	15.10	15.10	30.20	15.1
7	16.89	16.89	33.78	16.9
8	18.70	18.70	37.41	18.7
9	21.62	20.11	41.73	20.9
10	24.58	21.46	46.04	23.0
11	27.54	22.71	50.24	25.1
12	30.41	23.84	54.24	27.1
13	31.90	25.75	57.65	28.8
14	32.91	27.68	60.59	30.3
15	33.65	29.36	63.01	31.5
16	34.09	30.75	64.84	32.4
17	34.35	31.83	66.18	33.1
18	34.40	32.55	66.95	33.5
19	34.06	32.85	66.92	33.5
20	33.34	32.72	66.06	33.0
21	32.24	32.15	64.39	32.2
22	31.45	30.90	62.34	31.2
23	30.35	29.23	59.58	29.8
24	28.82	27.26	56.08	28.0
25	26.92	25.04	51.96	26.0

Dist (Meters)	PD (H)	PD (V)	Total (uW/cm2)	Percent Max.
26	24.70	22.63	47.33	23.7
27	22.34	20.25	42.59	21.3
28	19.81	17.81	37.62	18.8
29	17.18	15.32	32.50	16.3
30	14.53	12.86	27.39	13.7
31	11.94	10.50	22.45	11.2
32	9.48	8.28	17.76	8.9
33	7.16	6.23	13.39	6.7
34	5.15	4.46	9.61	4.8
35	3.48	3.00	6.47	3.2
36	2.15	1.84	3.98	2.0
37	1.15	0.98	2.14	1.1
38	0.49	0.42	0.91	0.5
39	0.14	0.11	0.25	0.1
40	0.06	0.05	0.10	0.1
41	0.22	0.18	0.40	0.2
42	0.58	0.47	1.06	0.5
43	1.11	0.89	2.00	1.0
44	1.75	1.39	3.14	1.6
45	2.47	1.94	4.41	2.2
46	3.21	2.52	5.73	2.9
47	3.91	3.11	7.03	3.5
48	4.58	3.69	8.27	4.1
49	5.18	4.22	9.39	4.7
50	5.69	4.68	10.37	5.2
51	6.10	5.08	11.18	5.6
52	6.41	5.39	11.80	5.9
53	6.62	5.61	12.23	6.1
54	6.71	5.75	12.46	6.2
55	6.71	5.82	12.53	6.3
56	6.62	5.80	12.42	6.2
57	6.44	5.71	12.15	6.1
58	6.19	5.54	11.73	5.9
59	5.87	5.31	11.18	5.6
60	5.50	5.03	10.53	5.3
61	5.10	4.70	9.79	4.9
62	4.66	4.33	8.99	4.5
63	4.21	3.95	8.15	4.1
64	3.75	3.54	7.29	3.6
65	3.29	3.14	6.42	3.2
66	2.82	2.73	5.55	2.8
67	2.39	2.34	4.72	2.4
68	1.98	1.96	3.94	2.0
69	1.61	1.61	3.22	1.6
70	1.27	1.29	2.56	1.3
71	0.98	1.00	1.98	1.0
72	0.72	0.75	1.47	0.7
73	0.51	0.53	1.04	0.5
74	0.33	0.35	0.69	0.3
75	0.20	0.21	0.41	0.2
76	0.10	0.11	0.21	0.1
77	0.04	0.04	0.08	0.0

Dist (Meters)	PD (H)	PD (V)	Total (uW/cm2)	Percent Max.
78	0.01	0.01	0.02	0.0
79	0.01	0.01	0.02	0.0
80	0.04	0.04	0.08	0.0
81	0.09	0.10	0.19	0.1
82	0.16	0.19	0.35	0.2
83	0.26	0.30	0.55	0.3
84	0.37	0.42	0.79	0.4
85	0.49	0.57	1.06	0.5
86	0.63	0.73	1.36	0.7
87	0.77	0.91	1.68	0.8
88	0.92	1.09	2.01	1.0
89	1.07	1.28	2.36	1.2
90	1.23	1.48	2.71	1.4
91	1.39	1.68	3.06	1.5
92	1.54	1.88	3.42	1.7
93	1.69	2.07	3.77	1.9
94	1.84	2.27	4.11	2.1
95	1.98	2.45	4.44	2.2
96	2.12	2.64	4.75	2.4
97	2.25	2.81	5.06	2.5
98	2.37	2.96	5.33	2.7
99	2.49	3.09	5.58	2.8
100	2.59	3.21	5.80	2.9

**SBA!**

Latitude: 38-29-27.30 N  
 Longitude: 076-08-08 W  
 ERP: 23.80 kW  
 Channel: 219  
 Frequency: 91.7 MHz  
 AMSL Height: 51.2 m  
 Elevation: 1.8 m  
 Horiz. Pattern: Directional

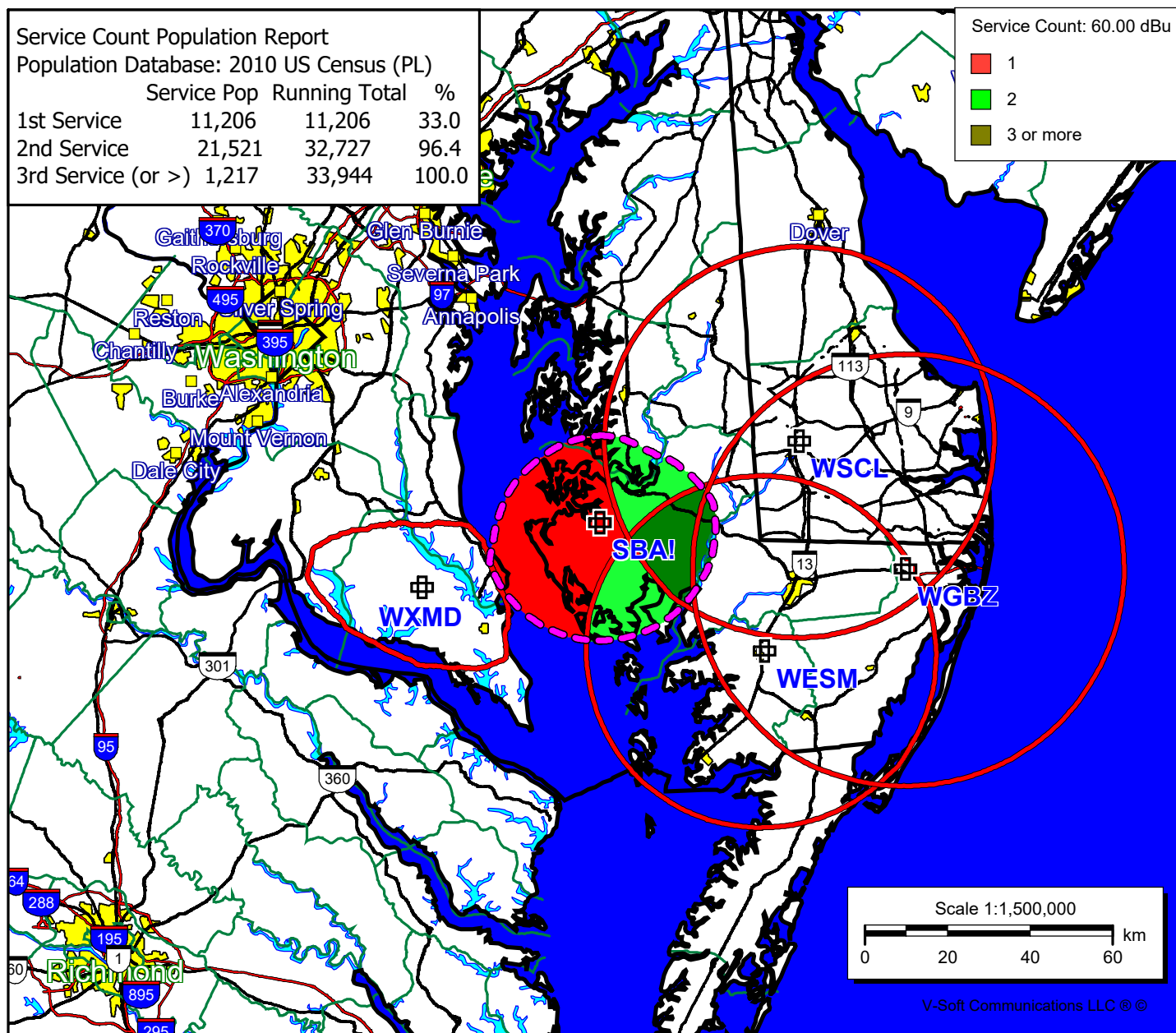
**Service Count Population Report**

Population Database: 2010 US Census (PL)

	Service Pop	Running Total	%
1st Service	11,206	11,206	33.0
2nd Service	21,521	32,727	96.4
3rd Service (or >)	1,217	33,944	100.0

Service Count: 60.00 dBu

- 1
- 2
- 3 or more



**Doug Vernier**  
 1600 Picturesque Dr.  
 Cedar Falls, Iowa 50613  
 Telecommunication Consultants

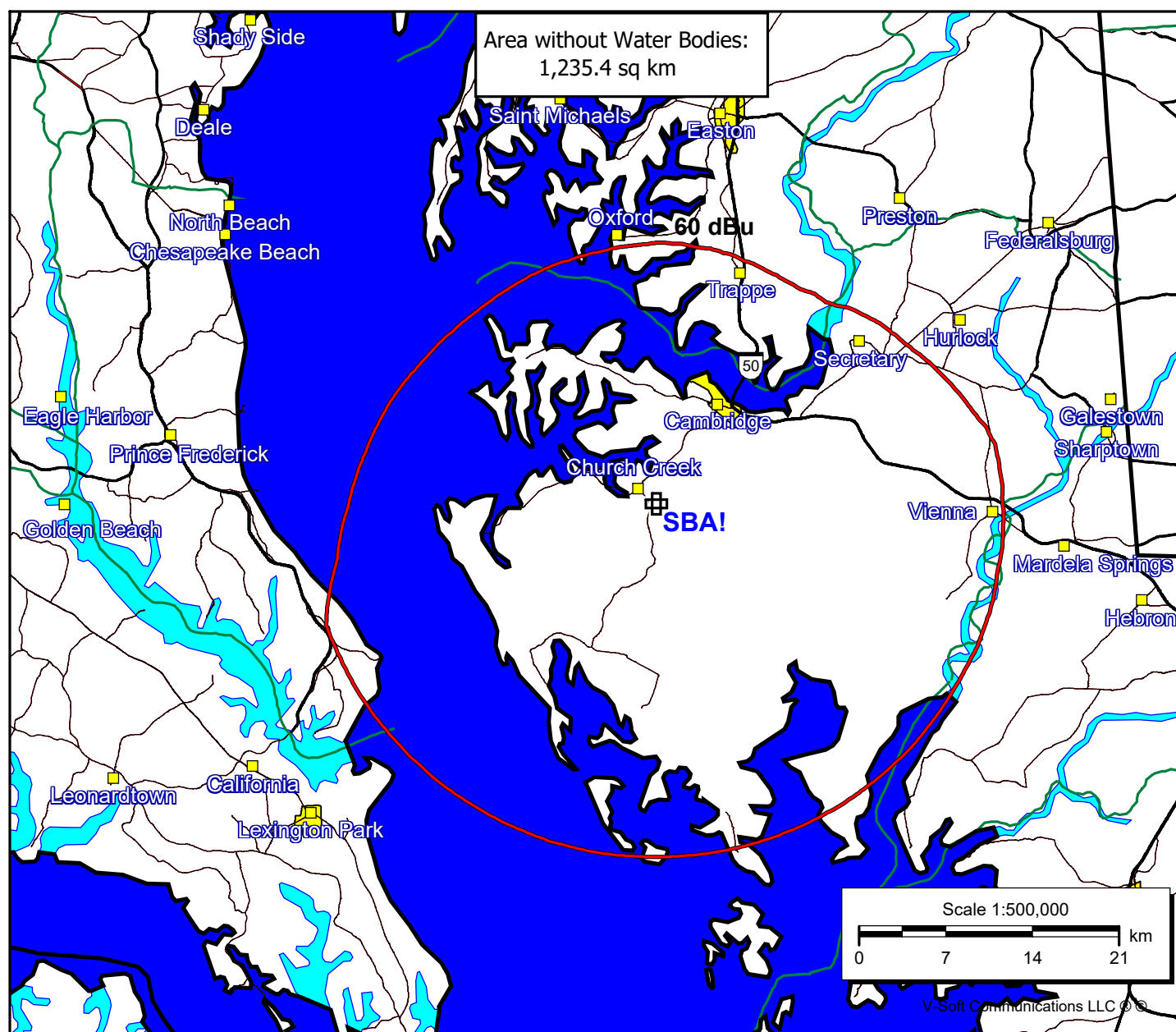
V-Soft Communications LLC ©



**SBA!**

Latitude: 38-29-27.30 N  
 Longitude: 076-08-08 W  
 ERP: 23.80 kW  
 Channel: 219  
 Frequency: 91.7 MHz  
 AMSL Height: 51.2 m  
 Elevation: 1.8 m  
 Horiz. Pattern: Directional

**V** Doug Vernier  
 1600 Picturesque Dr.  
 Cedar Falls, Iowa 50613  
 Telecommunication Consultants



**Declaration and  
Statement of Qualifications**

I, Douglas L. Vernier, declare that I have received training as an engineer from the University of Michigan School of Engineering. That, I have received degrees from the University in the field of Broadcast Telecommunications. That, I have been active in broadcast consulting for over 40 years.

That, I have held a Federal Communications Commission First Class Radiotelephone License continually since 1964. In 1985, this license was reissued by the Commission as a lifetime General Radiotelephone license no. PG-16-16464.

That, I am certified as a Professional Broadcast Engineer (#50258) by the Society of Broadcast Engineers, Indianapolis, Indiana. (Life-time Certification received in 2010).

That, my qualifications are a matter of record with the Federal Communications Commission.

That, I have been retained by Historic Oxford Limited to prepare the engineering showing appended hereto.

That, I have prepared this broadcast engineering showing, the technical information contained in same and the facts stated within are true of my knowledge.

That, under penalty of perjury, I declare that the foregoing is correct.

Douglas L. Vernier

A handwritten signature in blue ink, appearing to read "Doug Vernier", with a large, stylized loop at the end.

Executed on October 30th 2021