

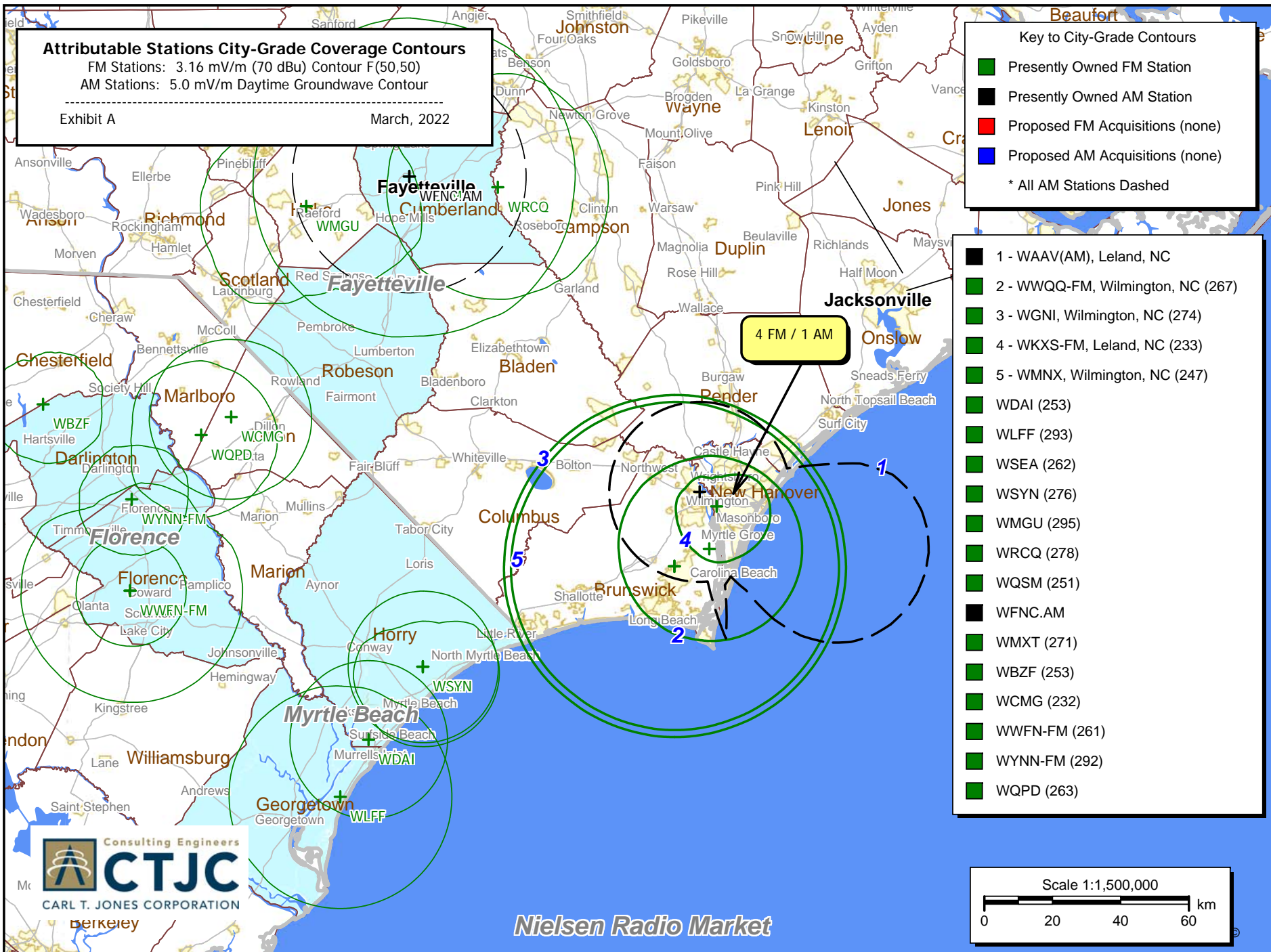
Statement of Compliance with Multiple Ownership Rules

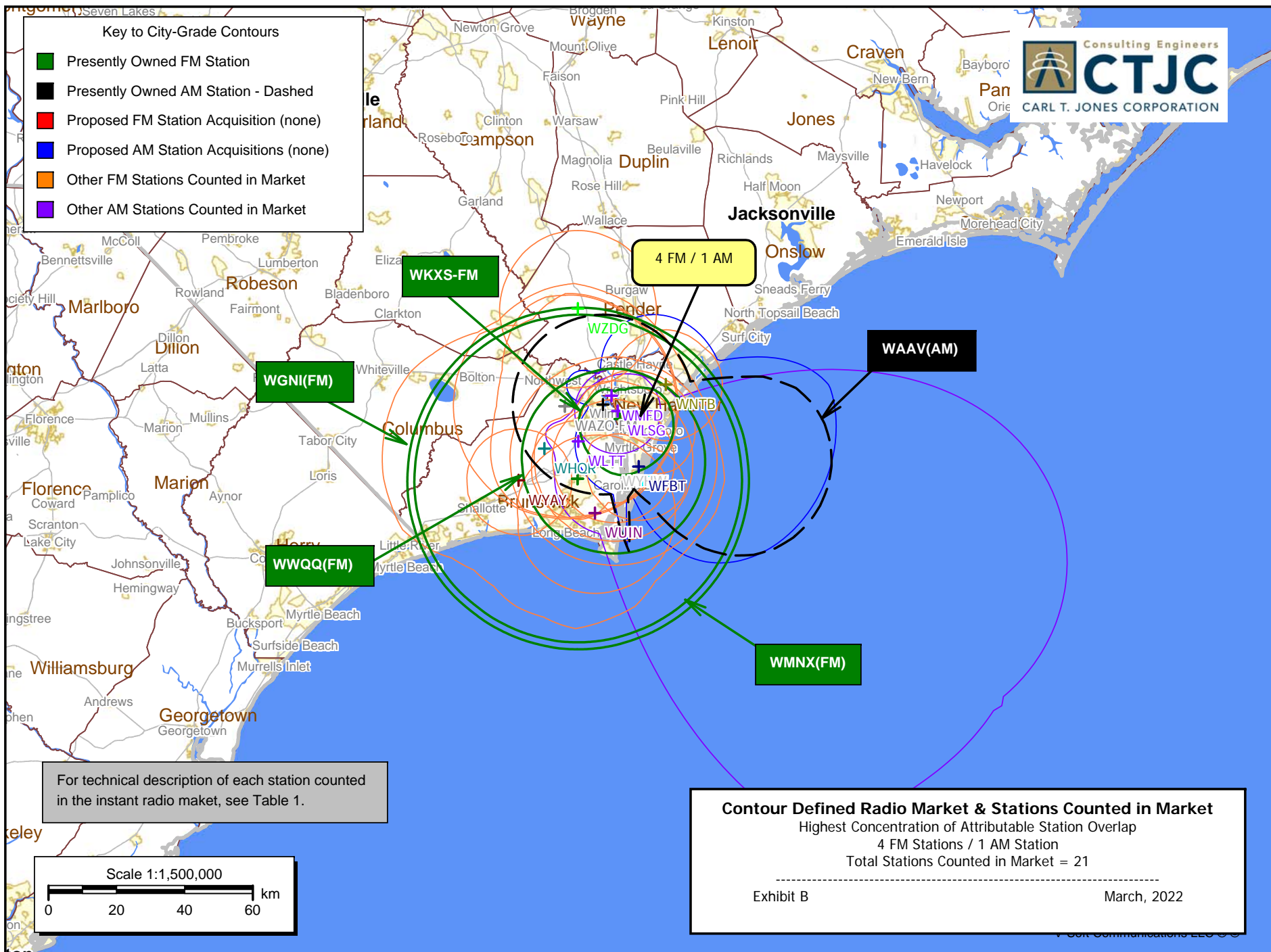
The instant proposal requests a minor change for a station licensed to a community located outside of a Neilsen Radio Metro Area. As shown in Exhibit A, the WAAV(AM) daytime principal community contour overlaps four other stations in which the applicant holds attributable interest and does not overlap any other attributable stations in any nearby rated markets.¹ Accordingly, this material demonstrates that the common ownership of the stations shown in Exhibit A is compliant with Section 73.3555 of the FCC Rules as it applies to the contour-defined radio market.

Exhibit B depicts the five-station radio market as defined by the total principal community contour area of WAAV(AM), WWQQ-FM, WGNI(FM), WKXS-FM and WMNX(FM) [i.e. the “subject stations”] and the principal community contours for the other stations, in which the Applicant holds no attributable interest, which are counted in the contour-defined radio market. Table 1 contains each station's call sign, city of license, state, channel of operation, and technical facilities.

As stated above, the applicant owns or controls 4 FM stations and 1 AM stations in the contour-defined radio market. Pursuant to Section 73.3555(a)(1)(iii) of the FCC Rules, the applicant is permitted to own five radio stations (four in the same service) provided the market contains at least 15 full-power, commercial and non-commercial radio stations. As shown in Exhibit B, the contour-defined radio market contains at least 21 operating commercial or noncommercial radio stations [defined by the city-grade contours of the 5 subject stations and the overlapping city-grade contours of at least 16 other stations in which the applicant holds no attributable interest]. Accordingly, the proposed minor change application causes no change in the number of stations attributable to the Applicant and the existing combination of stations remains compliant with the multiple ownership criteria set forth in Section 73.3555 of the FCC Rules.

¹ For the FM stations considered herein, the principal community contour is the predicted 3.16 mV/m (70 dBu) contour computed in accordance with Section 73.313 of the FCC Rules. For the AM stations considered herein, the principal community contour is the predicted daytime 5.0 mV/m groundwave contour computed in accordance with Section 73.183 of the FCC Rules. All stations represented herein are operating full service commercial or noncommercial radio stations and operate from transmitter sites located within 92 kilometers of the perimeter of the Subject Station's mutual 70 dBu contour overlap area.





**Technical Description of Stations
Counted in Proposed Radio Market**

March, 2022

	<u>Call</u>	<u>Status</u>	<u>Channel/Freq</u>	<u>Service</u>	<u>City</u>	<u>State</u>	<u>DA</u>	<u>AM Day Power</u> <u>FM ERP (kW)</u>	<u>Fac. ID</u>
1	WAAV*	LIC	980	AM	Leland	NC	DA-N	5	25999
2	WWQQ-FM*	LIC	267	FM	Wilmington	NC	No	18	28163
3	WGNI*	LIC	274	FM	Wilmington	NC	No	100	8581
4	WKXS-FM*	LIC	233	FM	Leland	NC	Yes	3.8	25998
5	WMNX*	LIC	247	FM	Wilmington	NC	No	100	8584
6	WGHW	LIC	201	FM	Lockwoods Foll	NC	Yes	52	89986
7	WZDG	LIC	203	FM	Scotts Hill	NC	No	8.9	88327
8	WDVV	LIC	209	FM	Wilmington	NC	No	4.9	43707
9	WWIL-FM	LIC	213	FM	Wilmington	NC	Yes	31	12165
10	WHQR	LIC	217	FM	Wilmington	NC	Yes	100	22656
11	WNTB	LIC	229	FM	Topsail Beach	NC	No	6	73954
12	WUIN	LIC	252	FM	Oak Island	NC	No	18.5	48626
13	WKXB	LIC	260	FM	Boiling Spring	NC	No	26	59481
14	WILT	LIC	279	FM	Wrightsville Beach	NC	No	22	52023
15	WYHW	LIC	283	FM	Carolina Beach	NC	Yes	17	74159
16	WYAY	LIC	292	FM	Bolivia	NC	No	6	60882
17	WFBT	LIC	294	FM	Carolina Beach	NC	Yes	5.3	34006
18	WAZO	LIC	298	FM	Southport	NC	Yes	21	59480
19	WLSG	LIC	1340	AM	Wilmington	NC	No	1	53864
20	WLTT	LIC	1180	AM	Carolina Beach	NC	No	10	25586
21	WMFD	LIC	630	AM	Wilmington	NC	Yes	0.8	61701

* Subject Station - Principal community contour defines the radio market boundary

ENGINEERING EXHIBIT
IN SUPPORT OF AN
APPLICATION FOR CONSTRUCTION PERMIT
WAAV – LELAND, NORTH CAROLINA
980 kHz - 5.0 kW DAY/0.085 kW NIGHT - ND-2
FACILITY ID: 25999

Applicant: Cumulus Licensing, LLC

March, 2022



TABLE OF CONTENTS

FCC Form 301 - Section III

STATEMENT OF CYNTHIA M. JACOBSON, P.E.

FIGURE

Present and Proposed Nighttime 1000 mV/m Contours	1
Present and Proposed Nighttime Interference-Free Contours	2
Nighttime Allocation Study	3



ENGINEERING STATEMENT OF CYNTHIA M. JACOBSON, P.E.
IN SUPPORT OF AN
APPLICATION FOR CONSTRUCTION PERMIT
WAAV – LELAND, NORTH CAROLINA
980 kHz – 5.0 kW DAY/0.085 kW NIGHT – ND-2
Facility ID: 25999

Applicant: Cumulus Licensing, LLC

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Registered Professional Engineer in the Commonwealth of Virginia, Registration No. 0402027914.

GENERAL

This office has been authorized by Cumulus Licensing, LLC (“Cumulus”), licensee of Standard Broadcast Station WAAV, Leland, North Carolina, to prepare this Engineering Statement, FCC Form 301 (Section III), and the attached figures in support of an Application for Construction Permit to change the nighttime operating mode from a directional antenna system to a non-directional system, and to correct site coordinates to agree with the use of a single antenna tower for both the daytime and nighttime

modes. A slight adjustment was made to the antenna efficiency to correspond with a radiator height of 78.9 electrical degrees.

WAAV is a Class B station, presently licensed to operate on 980 kHz with a power of 5.0 kW with a nondirectional antenna for the day and 5.0 kW with a directional antenna for the night (DA-N).¹

The instant application proposes to operate with a nondirectional antenna at a nighttime power of 0.085 kW. The night power reduction is necessary to satisfy FCC allocation requirements. The #3 east tower will be employed for the nondirectional daytime and nighttime operations. A correction to the day and night coordinates is necessary to agree with the ASR data for the specific nondirectional antenna.

The corrected site coordinates result in a 0.083 kilometer difference. Due to the fact that the distance is so slight, and no physical alterations have been made to the tower, the daytime allocation considerations are not a concern and the predicted daytime coverage remains essentially the same as that on file with the Commission.

A full nighttime allocation study and coverage maps are included herein due to the change in the antenna system and the power level.

ANTENNA SYSTEM AND GROUND SYSTEM

The WAAV nondirectional antenna is an existing, guyed, uniform cross-section, series fed tower, 78.9 electrical degrees in height, corresponding to a radiator height of

¹ WAAV is currently operating pursuant to an STA using a nondirectional antenna for nighttime operation as last extended by BESTA-20211025AAD.

67.05 meters. The #3 (east) tower will be used for the nondirectional operation. A radiator of 78.9 electrical degrees results in a Theoretical Efficiency of 298.9 mV/m/kW at 1 km.²

The ground system consists of 120 evenly spaced, buried, copper wire radials about the base of the tower. The radials are 91.4 meters in length.

FAA NOTIFICATION AND TOWER REGISTRATION

The overall height of the existing antenna structure is 68.3 meters AGL (73.2 meters AMSL). The ASR number for the tower that will be employed for the daytime and nighttime nondirectional operation is #1061207. The tower structure identified by ASR #1061209 remains standing. The middle tower structure identified by ASR #1061208 has been dismantled by the tower owner.

SITE AND SURROUNDING TERRAIN

The proposed antenna/transmitter location and surrounding terrain characteristics are on file with the FCC and the FAA. The tower coordinates (NAD-27) for the proposed WAAV nondirectional operation are:

North Latitude: 34 - 14 - 53
West Longitude: 78 - 00 - 03

² Currently licensed at 297.7 mV/m/kW at 1 km.

BLANKETING AND STATION INTERACTION

The population within the proposed WAAV 1000 mV/m night contour is less than 300 persons. The present and proposed 1000 mV/m nighttime contours are shown in Figure 1. In response to all legitimate complaints of blanketing interference, the applicant will undertake steps to mitigate the interference in accordance with the requirements of Section 73.88 of the Commission's Rules and Regulations.

There are no other AM stations located within 3.2 kilometers of the WAAV site. There is one licensed full-service FM station, five licensed FM auxiliary stations and eight licensed FM translators/low power stations located within 10 kilometers of the proposed site. There is one licensed low power TV station located within the 10 kilometers. It is expected that no detrimental interaction will occur with any other station due to the fact that WAAV is remaining at its licensed site and the proposed night power is less than the current licensed night power.

COVERAGE CONTOURS

The present and proposed predicted nighttime service contours are shown on the map of Figure 2. Since the nighttime operating power of WAAV is less than 250 watts, WAAV will be reclassified as a Class D station. A Class D station is not subject to any city coverage requirements during nighttime hours. Also, because WAAV is an existing, licensed station, coverage of the community of license is not required. For reference

purposes, Figure 2 depicts the present and proposed nighttime interference-free contours of WAAV.

NIGHTTIME ALLOCATION STUDY

The results of the nighttime allocation study are shown in Figure 3. Figure 3 contains a tabulation of the present and proposed RSS calculations for co-channel and first-adjacent channel stations that may be impacted by the instant proposal. The proposed nighttime facility of WAAV will not raise the 25% or 50% RSS limit of any domestic station or raise the 50% RSS limit of any foreign station.

ENVIRONMENTAL IMPACT

The proposal described herein will not result in human exposure to radio-frequency radiation in excess of the standards specified in Section 1.1307(b). The applicant has determined that under the provisions of Section 1.1306, the proposal is excluded from environmental processing because no new construction will occur.

RADIO-FREQUENCY IMPACT

On January 1, 1986, the FCC amended its Rules to implement the National Environmental Policy Act of 1969 (NEPA). This amendment established RF radiation protection guidelines to be used to determine if potentially harmful RF exposure is possible from an FCC-regulated transmission facility. Effective October 15, 1997, the FCC adopted revised guidelines and procedures for evaluating environmental effects of

RF emissions. These revised guidelines incorporate two tiers of exposure limits based on whether exposure occurs in a “controlled” (occupational) situation or an “uncontrolled” (general population) situation. The FCC has also revised OET Bulletin No. 65 entitled, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields,” to aid the radiation exposure analysis. This bulletin, as well as other current literature, provides detailed information for conducting an analysis including mathematical equations that can be used to determine compliance with the Commission’s guidelines.

CALCULATION METHODS

Verification of compliance with FCC specified guidelines for human exposure to RF radiation was obtained from OET Bulletin No. 65.

The proposed WAAV facility will operate on 980 kHz with the current daytime power level of 5.0 kW and a proposed nighttime power level of 0.085 kW. To determine distance to compliance with the guidelines, Tables 1 and 2 of Supplement A (Edition 97-01) to OET Bulletin 65 was used. The daytime mode is the worst-case condition, therefore the nighttime proposal will not have any impact upon the fencing requirements. A fence of no less than 2.62 meters from the base of the tower would be compliant with the radio-frequency energy requirements of the FCC regarding the occupational/controlled and the general population/uncontrolled MPE limits. Any existing fencing around the base of the tower should meet requirements and will be expanded if necessary.

It is submitted that the proposed WAAV station will not constitute a potential hazard to the quality of the human environment. Accordingly, the WAAV proposal, as described herein, should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Rules.

OCCUPATIONAL SAFETY

Access to the area immediately surrounding the WAAV supporting tower base will be restricted to authorize maintenance personnel only. WAAV ensures protection to station personnel or tower contractors working in the vicinity of the towers. Procedures will be followed during times of service or maintenance of the transmission systems when necessary to avoid potentially harmful exposure to personnel.

CONCLUSION

This statement and Section III of FCC Form 301 and the attached figures were prepared by me or under my direct supervision and are believed to be true and correct.

It is submitted that the proposed operation described herein complies with the technical standards of the Rules and Regulations of the Commission.

DATED: March 1, 2022

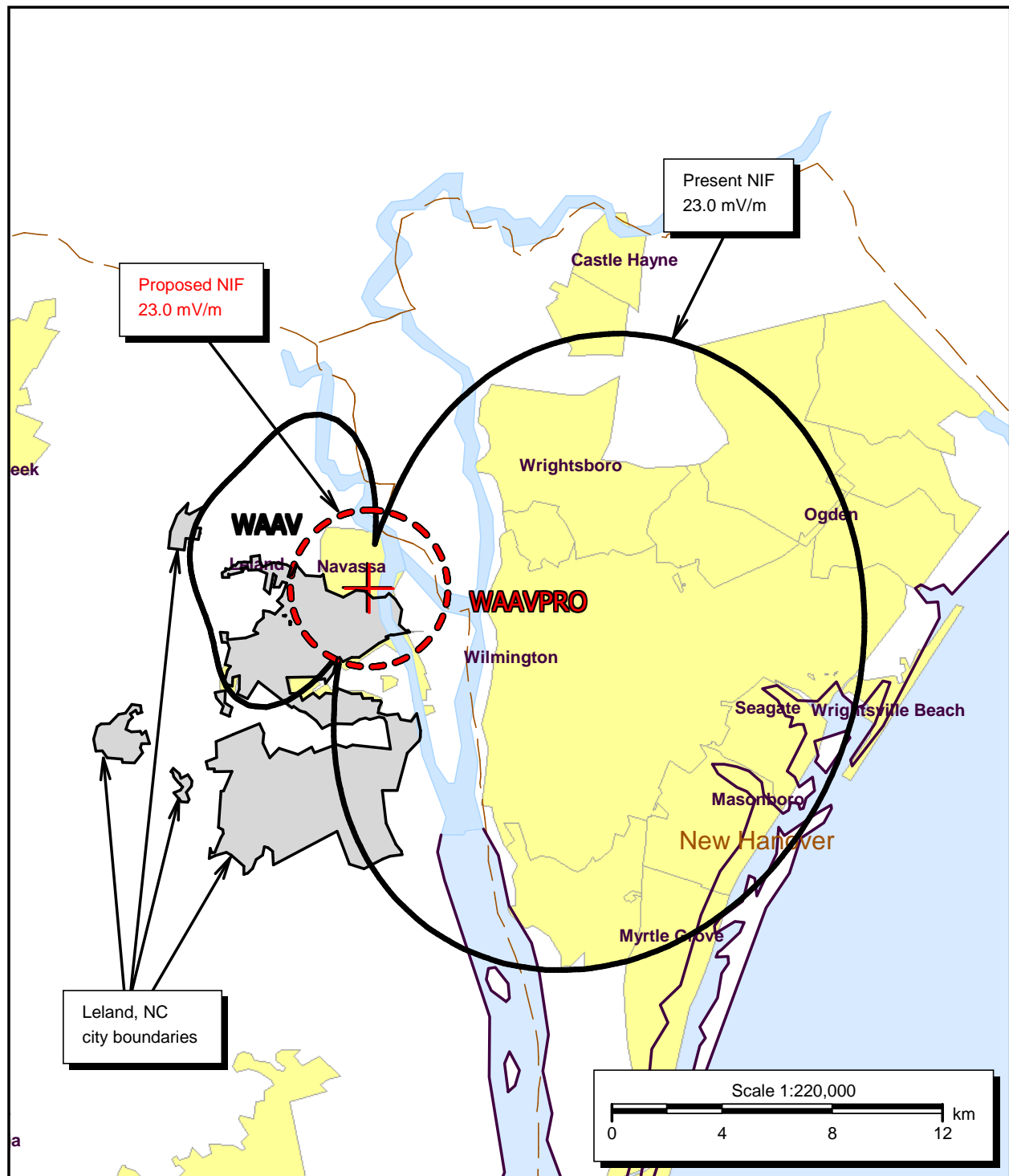


FIGURE 1



PRESENT AND PROPOSED NIGHTTIME
1000 MV/M CONTOURS
WAUV - LELAND, NORTH CAROLINA
980 KHZ - 5.0 KW DAY/0.085 KW NIGHT - ND-2
MARCH, 2022

FIGURE 2



PRESENT AND PROPOSED NIGHTTIME
INTERFERENCE-FREE CONTOURS
WAAV - LELAND, NORTH CAROLINA
980 KHZ - 5.0 KW DAY/0.085 KW NIGHT - ND-2
MARCH, 2022

Night Allocation Protection Report

Night Allocation Protection Report

Call: WAAV
Freq: 980 kHz
LELAND, NC, US
Hours: N
Lat: 34-14-53 N
Lng: 078-00-03 W
Power: 0.085 kW
Theo RMS: 298.9 mV/m @ 1km @ 1kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	78.9	0	0	0.0	0.0	0.0	0.0

Call Letters	Ct	St	City	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
WTEM	US	DC	WASHINGTON	108.05	1.814	83.95	83.75	0.19
50% = 6.822, 25% = 7.318; ZYH-707-A=5.44 WBGG=4.12 WILK=1.93 WOFX=1.81								
WWTB	US	VA	BRISTOL	132.69	6.147	231.61	82.45	149.15
50% = 20.442, 25% = 23.368; WTEM=14.88 WONE=14.01 WYFN=9.51 WAAV=6.15								
WYFN	US	TN	NASHVILLE	59.63	3.050	255.76	85.96	169.80
50% = 8.881, 25% = 12.328; WTEM=5.74 ZYH-707-A=5.14 WITY=4.41 WGTK=3.97 KSGM=3.88 KMBZ=3.48 KQUE=3.30 WTOT=3.16 WAAV=3.05								
WILK	US	PA	WILKES-BARRE	58.57	3.068	261.90	85.90	176.00
50% = 11.204, 25% = 12.271; WTEM=9.39 WOFX=6.11 ZYH-707-A=5.01								
WTOT	US	FL	MARIANNA	66.09	3.796	287.16	85.81	201.36
50% = 11.992, 25% = 15.183; WYFN=7.37 WWTB=6.92 ZYH-707-A=6.45 WTEM=5.92 KQUE=4.22 WRNE=4.12 WTPA=4.11								
WTPA	US	FL	POMPANO BEACH	52.72	3.070	291.19	86.33	204.86
50% = 9.704, 25% = 12.282; ZYH-707-A=8.46 WTEM=4.75 HJNL-A=4.37 HOR 57-A=4.18 HRZC 2-A=3.22 KQUE=3.11								
WONE	US	OH	DAYTON	57.90	3.403	293.88	85.96	207.92
50% = 10.181, 25% = 13.612; WTEM=7.72 WYFN=6.64 ZYH-707-A=4.70 WILK=4.10 KSGM=3.84 KMBZ=3.80 WWTB=3.68								

Call Letters	Ct	St	City	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
KMBZ	US	MO	KANSAS CITY	19.17	1.222	318.73	87.10	231.63
50% = 3.989, 25% = 4.981; ZYH-707-A=3.99 KFWB=1.73 WTEM=1.70 CBW/A=1.23 HOR 57-A=1.22								
WOFX	US	NY	TROY	38.38	2.838	369.76	86.55	283.20
50% = 9.592, 25% = 11.352; WILK=5.07 CHRF/A=4.93 ZYH-707-A=4.81 WDCX=4.35 WTEM=3.96 CKRU/A=3.36 WCAP=3.15								
KSGM	US	IL	CHESTER	34.29	2.896	422.24	86.78	335.46
50% = 9.554, 25% = 11.899; KMBZ=6.95 WYFN=6.55 ZYH-707-A=4.56 KQUE=3.33 WTEM=3.16 WGTK=2.90								
CHRF/A	CA	QC	MONTREAL	39.84	3.692	463.41	86.59	376.81
50% = 7.795, 25% = 8.748; WOFX=6.87 WTEM=3.69 WONE=2.96 CKRU/A=2.65								
WRNE	US	FL	GULF BREEZE	49.40	4.716	477.31	86.40	390.91
50% = 15.468, 25% = 19.377; WYFN=13.34 WTOT=7.83 WWTB=6.43 ZYH-707-A=6.27 KQUE=5.77 WTEM=4.72								
CFPL/	CA	ON	LONDON	64.13	7.720	601.88	85.84	516.04
50% = 16.271, 25% = 20.192; WTEM=14.32 WOFX=7.72 CHRF/A=7.54 WITY=5.47 WILK=5.34 WONE=5.25								
CMBE-D	CU		ARROYO ARENA	14.80	1.825	616.44	86.65	529.79
50% = 3.65, 25% = 4.628; HRZC 2-A=2.37 WTPA=1.98 KQUE=1.95 WRNE=1.82 HOR 57-A=1.61 XEQO/A=1.48								
WGTK	US	KY	LOUISVILLE	57.23	0.943	823.98	86.02	737.96
50% = 2.705, 25% = 3.874; WYFN=1.69 XEJ/A=1.65 XEDF/A=1.31 WAMD=1.27 KCFO=1.08 KHVN=1.01 XEO/A=1.01 HCOT1-A=1.00 WKCI=0.99 HCAW2-A=0.94								
WITY	US	IL	DANVILLE	36.85	6.158	835.45	86.67	748.78
50% = 21.967, 25% = 24.631; WYFN=17.34 WONE=13.48 KSGM=9.19 KMBZ=6.30								
CKRU/A	CA	ON	PETERBOROUGH	53.89	10.048	932.20	86.20	846.00
50% = 20.096, 25% = 23.939; CHRF/A=12.45 WTEM=11.74 WILK=10.53 WOFX=9.31 CFPL/ =9.08								
CKRU/A	CA	ON	PETERBOROUGH	53.89	10.048	932.20	86.20	846.00
50% = 20.096, 25% = 23.938; CHRF/A=12.45 WTEM=11.74 WILK=10.53 WOFX=9.31 CFPL/ =9.08								
WNML	US	TN	KNOXVILLE	99.90	2.045	1023.54	84.26	939.28
50% = 6.501, 25% = 8.364; CBW/A=5.36 WMVP=3.68 KWAM=2.68 WDEO=2.49 WNTP=2.37 WYFN=2.11 WTLN=2.04								