

MULLANEY ENGINEERING, INC.

4937 G - GREEN VALLEY ROAD
MONROVIA, MARYLAND 21770

APPLICATION FOR
DIGITAL LOW POWER TELEVISION STATION

DISPLACEMENT CONSTRUCTION PERMIT
SPECIAL DISPLACEMENT WINDOW APPLICATION

SAINT AUGUSTINE'S UNIVERSITY
WAUG-LD, Licensed Digital Channel 8, BLDVL-20141125AVT
PROPOSES Digital Channel 4
FACILITY ID: 62180
RALEIGH, NORTH CAROLINA
MAY 2018

Engineering Statement Narrative

Saint Augustine's University ("WAUG") is the licensee of Low Power Television Station (LPTV) WAUG-LD, Channel 8, Facility ID 62180, Raleigh, North Carolina.

Facility Displacement Justification:

WAUG a licensed low power digital television facility, has been displaced as a result of the incentive auction television channel repack assignments and qualifies for filing a displacement application during this special filing window as noted below: ¹

FCC TVStudy Displacement Summary Results

					Interference (%)	
<u>CALL</u>	<u>CHANNEL</u>	<u>CITY STATE</u>	<u>FILE NUMBER</u>	<u>DISTANCE</u>	<u>FROM WAUG</u>	<u>TO WAUG</u>
WNCN DT	D08	Goldsboro, NC	0000034761	15.4 km	21.73%	85.75%

WNCN (DT), Goldsboro, NC, a full service facility has as a result of the incentive auction been repacked from digital channel 17 to digital channel 8, co-channel to the existing licensed operation of WAUG-LD.

¹ FCC Public Notice dated February 9, 2018 entitled "Incentive Auction Task Force and Media Bureau Announce Post-Incentive Auction Special Displacement Window April 10, 2018 through May 15, 2018 and Make Location and Channel Data Available" (DA 18-124, MB Docket No. 16-306, GN Docket No. 12-268).

Media Bureau Announces Date by Which LPTV and TV Translator Stations Must Be "Operating" In Order to Participate In Post-Incentive Auction Special Displacement Window, Public Notice, 31 FCC Red 5383 (MB 2016).

The WAUG-LD facility is displaced by the assignment of channel 8 to WNCN (DT) at Goldsboro as shown in the Displacement Summary Results Table above, and presented in full detail in Figure 1.

Proposed Technical Facility:

The proposed Channel 4 operation will employ a horizontal polarized non-directional antenna (omni) with a maximum effective radiated power (ERP) of 3.0 kilowatts and an antenna radiation center above mean sea level (RCAMSL) of 180.0 meters; 82.5 meters above ground level (AGL); and a computed antenna height above average terrain (HAAT) of 82.4 meters. The RF Emission Mask is "SIMPLE."

The technical proposal is summarized in the table below:

<u>WAUG-LD TECHNICAL PROPOSAL</u>		
ANTENNA LOCATION DATA		
Antenna Structure Registration	1022011	
NAD83 Coordinates	Latitude: 35-47-30.0 N	Longitude: 078-37-09.0 W
Structure Type	GUYED TOWER UNIFORM CROSS SECTION	
Overall Structure Height (AGL)	87.8 METERS	
Support Structure Height (AGL)	86.7 METERS	
Ground Elevation (AMSL)	97.5 METERS	
ANTENNA DATA		
Channel / Frequency	CHANNEL 4 (63-69 MHZ)	
RF Emission Mask	SIMPLE	
Height of Radiation Center (AGL)	82.5 METERS	
Height of Radiation Center (HAAT)	82.4 METERS	
Height of Radiation Center (AMSL)	180.0 METERS	
Effective Radiated Power (MAX KW)	3.0 KILOWATTS	
ANTENNA TECHNICAL DATA		
Antenna Type	NON-DIRECTIONAL (OMNI)	
Antenna Manufacture & Model	Manufacture: SCA	Model: TV0/4
Beam Tilt	Electrical: NONE	Mechanical: NONE
Polarization	HORIZONTAL	

No change in the antenna's geographical coordinates is proposed. The tower specified is the existing tower structure used by WAUG-LD and is shared with co-owned AM Broadcast Station WAUG, New Hope, North Carolina.

Modification Compliance:

Pursuant to 47 CFR §74.787(b) the instant application is considered a “minor” change because:

- The change in frequency is related to displacement relief as outlined above.
- There is no change in transmitting antenna location such that the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized facilities of the existing station as illustrated in Figure 2.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station's antenna location.

Interference Analysis to other facilities:

An interference analysis to other television facilities is provided as Figure 3. “FCC TVStudy Analysis”

Contingent Application Rule:

No waiver is required, the proposed operation on digital channel 4 is not dependent on spectrum to be vacated.

AM Facilities/International Coordination:

The site is the existing site of WAUG-LD, and is shared with co-owned AM Station WAUG, 750 kHz, New Hope, NC, Facility ID: 58586. The applicant will protect the operation of its co-owned AM as required by the Commission's rules. The site location specified herein is beyond any area that require international coordination.

Environmental Considerations:

No new construction will occur at the site other than possible minor equipment replacement. Any changes in equipment will not trigger an event with regards to Section 106 of the National Historical Preservation Act (NHPA). This is an existing developed communications site.

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights.

Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the

Page 4

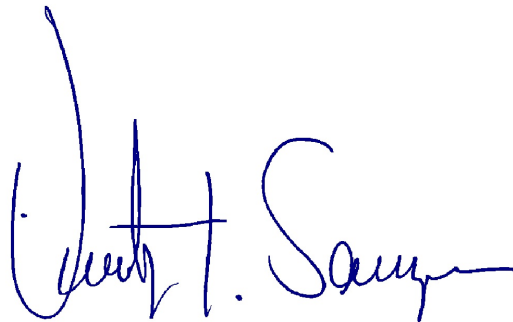
National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs are posted at the site. The applicant will coordinate exposure procedures with any co-located facilities and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. A detailed analysis is provided in the RF Hazard Statement application attachment.

The proposed operation is fully in compliance with all areas of the Commission's rules and applicable international agreements.

May 27, 2018

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A handwritten signature in blue ink, appearing to read "Timothy Z. Sawyer". The signature is fluid and cursive, with a large initial "T" and "S".

Displacement Construction Permit Application
 St. Augustine's University
 WAUG-LD, Raleigh, NC

Page 1 of 1

FCC TVSTUDY RESULTS - CHANNEL DISPLACEMENT JUSTIFICATION

[Note: EDITED FOR RELEVANT CONTENT]

Proposal: WAUG-LD D8 LD LIC RALEIGH, NC
 File number: BLDVL20141125AVT
 Facility ID: 62180
 Station data: LMS TV 2018-05-10
 Country: U.S.

Build options: Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	WHFL-CD	D7	DC	CP	GOLDSBORO, NC	BLANK0000034561	71.1 km
Yes	WNCN	D8	DT	CP	GOLDSBORO, NC	BLANK0000034761	15.4
Yes	WOLO-TV	D8	DT	LIC	COLUMBIA, SC	BLCDT20100614AIP	269.9
Yes	WUPV	D8	DT	CP	ASHLAND, VA	BLANK0000029586	248.6
Yes	WVNS-TV	D8	DT	LIC	LEWISBURG, WV	BLANK0000004085	288.2
Yes	WTVD	D9	DT	CP	DURHAM, NC	BLANK0000025609	15.8

Record parameters as studied:

Channel: D8
 Mask: Simple
 Latitude: 35 47 30.00 N (NAD83) Longitude: 78 37 9.00 W
 Height AMSL: 181.5 m
 HAAT: 0.0 m
 Peak ERP: 3.00 kW
 Antenna: Omnidirectional Elev Pattn: Generic

48.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	3.00 kW	72.4 m	40.5 km
45.0	3.00	100.6	45.8
90.0	3.00	102.7	46.2
135.0	3.00	107.5	46.9
180.0	3.00	91.5	44.3
225.0	3.00	76.0	41.3
270.0	3.00	42.0	32.6
315.0	3.00	78.1	41.7

Study cell size: 1.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

****IX check failure to [WNCN] BLANK0000034761 CP scenario 1, 21.73% interference caused**

---- Below is IX received by proposal BLDVL20141125AVT ----

Proposal receives 85.75% interference from scenario 1 [WNCN]

WAUG DISPLACEMENT

DISPLACEMENT
FCC Facility ID:62180
NAD 27 Latitude: 35-47-29.46 N
NAD 27 Longitude: 078-37-09.99 W
ERP: 3.00 kW
Channel: 4 Frequency: 69.0 MHz
AMSL Height: 180.0 m
Horiz. Pattern: Omni

WAUG-LD LICENSED

BLDVL-20141125AVT
FCC Facility ID:62180
NAD 27 Latitude: 35-47-29.46 N
NAD 27 Longitude: 078-37-09.99 W
ERP: 3.00 kW
Channel: 8 Frequency: 183.0 MHz
AMSL Height: 181.5 m
Horiz. Pattern: Omni

CHANNEL 4 43 DBU FCC F(50,90)
LPTV LO-VHF SERVICE CONTOUR

CHANNEL 8 48 DBU FCC F(50,90)
LPTV HI-VHF SERVICE CONTOUR

PRESENT AND PROPOSED SERVICE CONTOURS

WAUG-LD FCC FAC ID 62180 DISPLACEMENT APPLICATION
FCC MINOR CHANGE RULE WITH CONTOUR OVERLAP

FIGURE 2

PREDICTED SIGNAL LEVEL

> 43.0 dBuV/m
37.0 - 43.0

Channel 4 Predicted Service Area
Total Population Interference Free : 1,475,375 (FCC TVSTUDY)

Scale 1:750,000

0 20 40 60 km



Displacement Construction Permit Application
 St. Augustine's University
 WAUG-LD, Raleigh, NC

Page 1 of 2

FCC TVSTUDY ANALYSIS

[Note: PROPOSED OPERATION ON CHANNEL 4]

TVStudy v2.2.5 (4uoc83)
 Database: localhost, Study: DISPLACEMENT, Model: Longley-Rice
 Study build station data: LMS TV 05-25-2018

Proposal: WAUG-LD D4 LD APP RALEIGH, NC
 File number: DISPLACEMENT
 Facility ID: 62180
 Station data: User record
 Record ID: 129
 Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WBRA-TV	D3	DT	LIC	ROANOKE, VA	BLANK0000047419	207.8 km
No	W41BQ	D4	LD	CP	ASHEVILLE, NC	BDISDVL20091015AAC	364.6
No	W04DQ-D	D4	LD	CP	WILMINGTON, NC	BLANK0000022193	183.4
No	W04CI	N4z	TX	LIC	APPOMATTOX, VA	BLTTV19901105JO	171.4
Yes	W04AG-D	D4	LD	LIC	GARDEN CITY, ETC., VA	BLDTV20110119AAM	200.2

Non-directional AM stations within 0.8 km:
 WAUG 750 L NDD D NEW HOPE, NC BL19870925AB (co-owned and co-located)

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D4
 Mask: Simple
 Latitude: 35 47 30.00 N (NAD83)
 Longitude: 78 37 9.00 W
 Height AMSL: 180.0 m
 HAAT: 82.4 m
 Peak ERP: 3.00 kW
 Antenna: Omnidirectional
 Elev Pattern: Generic

43.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	3.00 kW	70.9 m	42.5 km
45.0	3.00	99.1	47.8
90.0	3.00	101.2	48.2
135.0	3.00	106.0	49.0
180.0	3.00	90.0	46.2
225.0	3.00	74.5	43.3
270.0	3.00	40.5	34.5
315.0	3.00	76.6	43.7

Distance to Canadian border: 731.4 km
 Distance to Mexican border: 2053.6 km

Conditions at FCC monitoring station: Laurel MD
 Bearing: 22.4 degrees Distance: 407.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
 Bearing: 289.7 degrees Distance: 2371.5 km

Displacement Construction Permit Application
St. Augustine’s University
WAUG-LD, Raleigh, NC

Page 2 of 2

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLDTV20110119AAM LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	W04AG-D	D4	LD	LIC	GARDEN CITY, ETC., VA	BLDTV20110119AAM	
Undesireds:	WAUG-LD	D4	LD	APP	RALEIGH, NC	DISPLACEMENT	200.2 km
	WBRA-TV	D3	DT	LIC	ROANOKE, VA	BLANK0000047419	20.5
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
313.7	119,629	308.8	119,584	228.1	84,481	227.1 84,422	0.44 0.07
Undesired				Total IX	Unique IX, before	Unique IX, after	
WAUG-LD D4 LD APP				1.0 59		1.0 59	
WBRA-TV D3 DT LIC				80.7 35,103	80.7 35,103	80.7 35,103	

Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WAUG-LD	D4	LD	APP	RALEIGH, NC	DISPLACEMENT	
Service area		Terrain-limited		IX-free		Percent IX	
6382.0	1,476,427	6359.0	1,475,345	6359.0	1,475,345	0.00 0.00	

Results summary:

Proposal causes 0.07% interference to BLDTV20110119AAM LIC scenario 1

No IX check failures found.