



**Kessler and Gehman Associates**  
Consultants • Broadcast • Wireless

# MINOR MODIFICATION TO A LICENSED NON-COMMERCIAL FM BROADCAST STATION

**CALL SIGN: WUGA(FM)**  
**FACILITY ID: 22982**  
**FCC FILE NO.: BLED-19951207KB**  
**LOCATION: ATHENS, GA**

## Prepared For:

Georgia Public  
Telecommunications Commission  
260 14th St NW  
Atlanta, GA 30318-5360

## Prepared By:

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February 29, 2024

**WUGA(FM) – Minor Modification Application**

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Athens, GA

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## **1.0 MINOR MODIFICATION APPLICATION**

Georgia Public Telecommunications Commission is the licensee of an FM broadcast station having call sign WUGA(FM) facility ID 22982. A recent survey conducted at the WUGA(FM) tower site found inaccurate site elevation and coordinates associated with the current license and with FCC Antenna Structure Registration (ASR) number 1041575. ASR 1041575 has been modified to correct the inaccuracies and the instant minor modification seeks to make similar corrections such that the coordinates and elevations coincide with the ASR. No physical changes are being made with the grant of this application. Specifically, it is proposed to make the following corrections:

- Correct the NAD 83 Site Coordinates from
  - 33° 55' 13.4" N 83° 14' 45.6" W to
  - 33° 55' 15.3" N 83° 14' 46.2" W
- Correct the center of radiation height from
  - 308.0m to 309.3m above mean sea level
  - 99m to 100m above average terrain
- Correct the ground elevation from 216.0m to 217.3m

Pursuant to 47 CFR § 73.3573 the instant application is considered a minor modification and not subject to a filing freeze.

## **2.0 FREQUENCY ALLOCATION STUDY**

Appendix B demonstrates compliance with the following sections of the FCC rules:

- 47 CFR § 73.509 – Contour overlap Protection
- 47 CFR § 73.207 – Spacing Requirements
- 47 CFR § 73.525 – Television Channel 6 Protection

All contours were generated in accordance with 47 CFR § 73.333 engineering charts utilizing 3 arc second terrain data. Appendix B illustrates that there is no prohibited contour overlap with other facilities.

### **3.0 FM TRANSMITTER LOCATION AND COVERAGE REQUIREMENTS**

Appendix C demonstrates that the transmitter location has been chosen so that based on the effective radiated power and antenna height above average terrain, a minimum field strength of 60 dB $\mu$ V/m (1- mV/m) will be provided over the entire principal community of Athens, GA.

### **4.0 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**

#### **4.1 General Environmental Requirements**

The existing structure has been previously accepted by the FAA and the FCC and it is thus presumed that the following has already been mitigated:

- Require high intensity white lighting.
- Is not located in an official designated wilderness area or wildlife preserve.
- Does not threaten the existence or habitat of endangered species.
- Does not affect districts, sites, buildings, structures or objects significant in American history, architecture, archaeology, engineering or culture that are listed in the National Register of Historic Places or are eligible for listing.
- Does not affect Indian religious sites.
- Is not located in a floodplain
- Does not require construction that involves significant changes in surface features (e.g., wetland fill, deforestation, or water diversion).

#### 4.2 Radio Frequency Radiation (RFR) Compliance.

A theoretical analysis has been conducted of the human exposure to radio frequency radiation (“RFR”) using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain extraction is compiled from the support structure site, if the support structure is on a rooftop with no higher elevations (e.g., elevator shaft) then flat terrain is compiled. Terrain is extracted using radial lengths of 0.25 miles in 0.001-mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360-degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

Appendix D is the resulting RFR study demonstrating that the peak exposure is 3.84%. The instant application is compliant with the FCC limits for human exposure to RF radiation and thus is excluded from further environmental processing.

## **5.0 CERTIFICATION**

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on February 29, 2024.

KESSLER AND GEHMAN ASSOCIATES, INC.



Ryan Wilhour  
Consulting Engineer

## APPENDIX A – Height Above Average Terrain Calculation

The Height Above Average Terrain (HAAT) was calculated from the FCC's HAAT Calculator tool:

<https://www.fcc.gov/media/radio/haat-calculator>

Results are as follows:

### Antenna Height Above Average Terrain Calculations -- Results

#### Input Data

Latitude 33° 55' 15.3" North  
Longitude 83° 14' 46.2" West (NAD 83)

These coordinates convert to NAD 27 coordinates of  
33° 55' 14.88", North, 83° 14' 46.65" West (NAD 27).

Height of antenna radiation center above mean sea level: 309.3 meters AMSL

Number of Evenly Spaced Radials = 8 0° is referenced to True North

#### Results

Calculated HAAT = 100 meters

Antenna Height Above Average Terrain calculated  
using FCC 30 second terrain database (continental USA only)

#### Individual "Radial HAAT" Values, in meters

0°	83.5 m
45°	100.1 m
90°	105.9 m
135°	95.4 m
180°	129.6 m
225°	110.5 m
270°	104.8 m
315°	72.9 m

Print Results?

New Calculation?

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## APPENDIX B – Allocation Studies and Maps

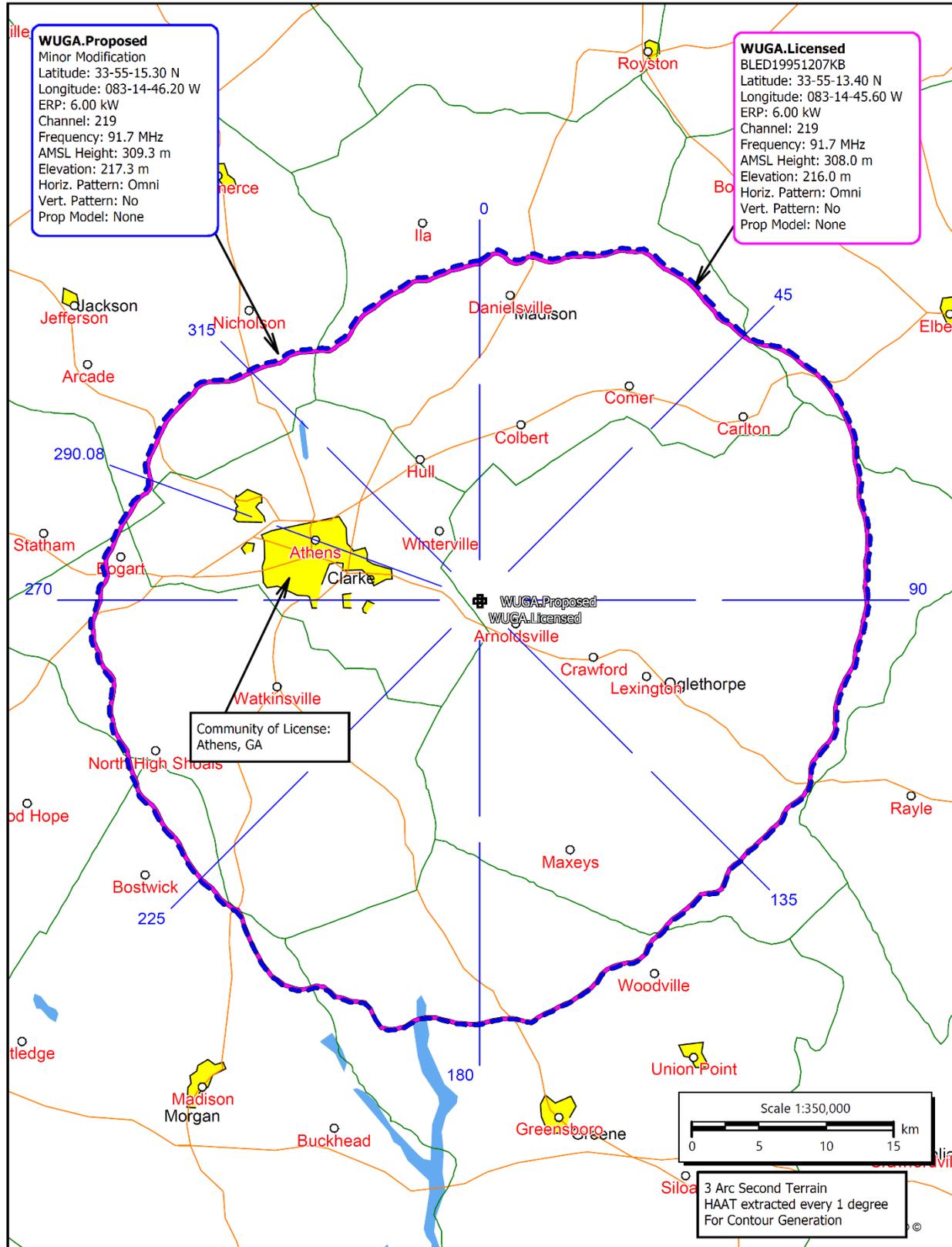
Georgia Public Telecommunicat											
REFERENCE	CH#	219A - 91.7 MHz, Pwr= 6 kW, HAAT= 100.0 M, COR= 309.3 M							DISPLAY DATES		
33 55 15.3 N.		Average Protected F(50-50)= 28.3 km							DATA 02-29-24		
83 14 46.2 W.		Omni-directional							SEARCH 02-29-24		
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr (kW)	INT (km)	PRO (km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT (M)	COR (M)	LICENSEE	(Overlap	in km)
218C2	WWEV-FM	LIC	DCN	292.9	91.18	34 14 13.30	8.900	63.4	42.6	1.0	7.2
Cumming			GA	112.4	BLED19860203KB	84 09 35.60	293	644	Rln Global, Inc.		
218A	WJGS	LIC	DCN	136.3	63.93	33 30 14.30	3.000	28.4	19.4	8.3	2.4
Norwood			GA	316.6	BLED20120716AEG	82 46 12.40	70	229	The Power Foundation		
222A	WMOQ«	LIC	DCN	236.1	34.56	33 44 49.80	5.900	2.8	29.3	30.5R	4.1M
Bostwick			GA	55.9	0000109378	83 33 22.10	102	324	Bostwick Broadcasting Grou		
219A	WZTG	LIC	DCN	347.3	105.38	34 50 43.70	0.075	61.3	18.9	19.9	5.0
Clayton			GA	167.2	0000218934	83 29 58.20	392	1078	Solid Foundation Broadcast		
217C3	WIBE	CP	DCN	55.6	37.76	34 06 45.00	4.000	1.5	20.7	6.2	14.2
Bowman			GA	235.8	0000167583	82 54 27.90	126	302	Restored Together Radio, I		
219C3	WMVW	LIC	DCN	235.9	132.98	33 14 39.40	13.000	94.6	28.8	9.5	16.8
Peachtree City			GA	55.2	BLED20100510AKQ	84 25 48.70	75	323	Life Radio Ministries, Inc		
219A	WLPE«	LIC	NCN	107.2	128.31	33 34 21.50	1.150	75.0	25.4	25.6	17.0
Augusta			GA	287.9	BLED20031003ACP	81 55 22.40	180	282	Augusta Radio Fellowship I		
221A	WLHR-FM«	LIC	NCN	16.2	51.60	34 22 03.10	4.200	2.4	25.3	30.5R	21.1M
Lavonia			GA	196.3	BLH20110719AAN	83 05 21.50	113	346	Lake Hartwell Radio, Inc.		
221A	WLHR-FM«	CP	ZCN	16.2	51.61	34 22 03.20	5.700	2.6	26.8	30.5R	21.1M
Lavonia			GA	196.2	0000149424	83 05 21.60	103	344	Lake Hartwell Radio, Inc.		
220C3	WHRT-FM«	LIC	NCN	63.9	111.62	34 21 26.40	20.500	59.2	38.7	22.0	26.0
Cokesbury			SC	244.5	BLED20110808AFD	82 09 13.40	108	285	Radio Training Network, In		
218C2	WTBI-FM«	LIC	CN	35.7	124.87	34 49 51.40	22.500	66.2	44.2	30.5	37.0
Greenville			SC	216.1	BLED20071214ADL	82 26 54.40	128	414	Tabernacle Baptist Bible C		
220A	WCLK«	LIC	NCN	263.2	101.70	33 48 26.40	0.480	38.3	25.4	34.5	31.7
Atlanta			GA	82.6	BLED20130403AAI	84 20 21.70	302	588	Clark Atlanta University		
220C3	WGJL«	CP	ZCN	176.9	122.05	32 49 28.70	13.000	57.9	38.5	32.9	35.7
Milledgeville			GA	357.0	0000212433	83 10 34.20	142	242	Elijah Radio, Inc.		
216C2	WKER-FM	LIC	DVN	106.3	69.83	33 44 32.40	15.500	1.6	20.5	40.6	46.6
Mccormick			SC	286.7	BLED20120227ABD	82 31 16.40		305	Saint Paul Radio, Inc.		

Terrain database is USGS 03 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
 Contour distances are on direct line to and from reference station. Reference Zone= - ZN2, Co to 3rd adjacent.  
 All separation margins (if shown) include rounding.  
 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.

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## APPENDIX C – 47 CFR § 73.313 - Prediction of coverage



APPENDIX D – Far Field Exposure to RF Emissions

