

ENGINEERING TECHNICAL STATEMENT PREPARED BY WILLIAM T. GODFREY, JR. OF THE FIRM KESSLER AND GEHMAN ASSOCIATES, INC., TELECOMMUNICATIONS CONSULTING ENGINEERS IN CONNECTION WITH A NEW CHANNEL 203 (88.5 MHZ) CLASS A NONCOMMERCIAL EDUCATIONAL FM (NCE-FM) CONSTRUCTION PERMIT APPLICATION FOR GEORGIA PUBLIC TELECOMMUNICATIONS COMMISSION (GPTC) REQUESTING TO SERVE BAINBRIDGE, GEORGIA AND SURROUNDING COMMUNITIES.

The firm Kessler and Gehman Associates was retained by Georgia Public Telecommunications Commission (GPTC) to prepare engineering studies and the engineering portion of a construction permit application for a new noncommercial education FM (NCE FM) facility which will be electronically filed in the 2021 filing window for new reserved band (channels 201-220) NCE FM radio stations.¹ The proposed NCE FM facility will distribute valuable educational broadcasting services over the air to the public within the state of Georgia and will provide a first NCE aural service to 3,918 persons which equates to 14.2% of the people within the proposed station's 60 dBu contour² and will also provide a combined first and second NCE aural service (aggregated) to 6,985 persons which equates to 25.4% of its entire service area within the proposed F(50,50) 60 dBu contour³.

DISCUSSION

GPTC is the licensee of nine NCE digital television full-service broadcast stations⁴ and sixteen NCE FM full-service broadcast stations⁵ providing an educational television and radio network service to the public in the state of Georgia. GPTC understands its responsibilities as a public radio network and realizes the importance of maximizing coverage in the state of Georgia to the highest degree for the benefit of the public and the need to provide substantive and meaningful educational programming as well as essential “state of

¹ DA 21-463

² See Exhibits 1 and 2

³ See Exhibits 3 and 4

⁴ WABW-TV, WACS-TV, WCES-TV, WGTW-TV, WJSP-TV, WMUM-TV, WNGH-TV, WVAN-TV, WXGA-TV

⁵ WABR-FM, WACG-FM, WGPB-FM, WJSP-FM, WJWV-FM, WMUM-FM, WNGH-FM, WNGU-FM, WPPR-FM, WSVH-FM, WUGA-FM, WUNV-FM, WUWG-FM, WWET-FM, WWIO-FM, WXVS-FM

emergency” type notifications for immediate response type conditions. Accordingly, GPTC is responsibly utilizing this rare NCE FM filing window opportunity to respectfully request FCC authorization for a new NCE FM full-service broadcast facility in the vicinity of Bainbridge, Georgia to expand its public radio coverage to thousands of people in the state of Georgia that do not currently receive a first and/or a second NCE FM aural service. Referring to the attached GPTC Statewide NCE FM map, it can be seen that GPTC’s sixteen licensed NCE FM full-service facilities do not fully serve the state Georgia (red 60 dBu contours) and that the proposed Channel 203 station (green 60 dBu contour) would provide NCE FM service to areas not currently served by GPTC in the state of Georgia. The addition of the proposed NCE FM Channel 203 Bainbridge, GA station would fill-in areas in Georgia encompassing portions of the following five counties: 1) Decatur County; 2) Seminole County; 3) Miller County; 4) Baker County; and 5) Mitchell County which would provide valuable educational content to areas currently unserved by GPTC and would therefore greatly serve the public interest.

TRANSMITTER LOCATION (REASONABLE SITE ASSURANCE)

The proposed new NCE-FM facility’s antenna shall be side-mounted on an existing 310 ft AGL support structure owned by SBA Structures, LLC (SBA) with antenna structure registration number 1238872 and located approximately 16.9 km NW (335°) of Bainbridge, GA. It is proposed to side-mount a directional, circularly polarized antenna on the tower with an antenna height radiation center 245 AGL. The attached “Reasonable Site Assurance Certification” from SBA demonstrates that SBA is willing to lease space on its tower to GPTC for its proposed NCE FM facility. SBA informed GPTC that it has sufficient space on its tower for GPTC to mount a new 4-bay FM antenna with an antenna height radiation center of 245 ft AGL. The SBA contact information from the person providing reasonable assurance is depicted below.

Brooke Irby, Site Marketing Manager
SBA Communications Corporation
11415 Old Roswell Road, Suite 300
Alpharetta, GA 30009
(678) 386-5587
BIrby@sbsite.com

Accordingly, the proposed facility complies with the “Reasonable Site Assurance” requirement that its specified site will be available for the construction and operation of its proposed facilities requirement⁶.

ANTENNA DATA

The antenna azimuth pattern for the proposed new NCE FM Channel 203 facility is a calculated envelope pattern. The attached NCE FM Antenna Envelope Azimuth Pattern exhibit plots the proposed azimuth pattern every ten degrees and demonstrates that the 2 dB per 10 degree requirement and the 15 dB front to back ratio requirement are satisfied pursuant to §73.316 of the FCC rules.

PRINCIPAL COMMUNITY

The attached “Technical Parameters” exhibit demonstrates compliance with §73.515 of the FCC rules such that the that the proposed principal community of Bainbridge, GA will be completely encompassed by the proposed new NCE-FM facility’s F(50,50) 60.0 dBuV/m contour in all azimuthal directions. Therefore, the proposed transmitter location, on the basis of the proposed effective radiated power (ERP) and antenna height above average terrain (HAAT), will provide a minimum field strength of 1 mV/m (60 dBu) over at least 50 percent of the proposed Bainbridge, GA community of license and it will also reach more than 50 percent of the population within the community as required.

1ST NCE AURAL SERVICE

Exhibit 1 is a contour overlap study depicting the areas within the proposed new NCE FM facility’s 60 dBu (1mV/m) service contour where there will be a first NCE aural service (red shaded area) and Exhibit 2 is a population report that was generated from the contour overlap study. Referring to red shaded area in Exhibit 1 and the population report (Exhibit 2), it can be seen that the proposed new NCE FM facility will provide a significant first NCE aural

⁶ See Schedule 340, Technical Certifications – Reasonable Site Assurance.

service within its 60 dBu (1mV/m) service contour. Based on U.S. Census 2010 data⁷ and calculations using V-Soft's Probe 5 professional signal propagation software, the number of people predicted to receive a first NCE aural service within the proposed new NCE FM facility's 60 dBu (1mV/m) service contour is 3,918 which equates to 14.2% of the entire service population. Therefore, the proposed NCE FM facility satisfies §73.7002(b) by providing a first reserved channel NCE aural signal that will be received by at least 10% of the population to more than 2,000 people within the station's 60dBu (1mV/m) service contour.

2ND OR AGGREGATED 1ST & 2ND NCE AURAL SERVICE

Exhibit 3 is a contour overlap study depicting the areas within the proposed new NCE FM facility's 60 dBu (1mV/m) service contour where there will be a first (red shaded area) and second (blue shaded area) NCE aural service and Exhibit 4 is a population report that was generated from the contour overlap study. Referring to red (1st Service) and blue (2nd Service) shaded areas in Exhibit 3 and the population report (Exhibit 4), it can be seen that the proposed new NCE FM facility will provide a significant first and second NCE aural service within its 60 dBu (1mV/m) service contour. Based on U.S. Census 2010 data and calculations using V-Soft's Probe 5 professional signal propagation software, the number of people predicted to receive a first and second NCE aural service within the proposed new NCE FM facility's 60 dBu (1mV/m) service contour is 6,985 which equates to 25.4% of the entire service population. Therefore, the proposed NCE FM facility satisfies §73.7002(b) by providing a first and second reserved channel NCE aural signal that will be received by at least 10% of the population to more than 2,000 people within the station's 60dBu (1mV/m) service contour.

INTERFERENCE STUDIES

The attached NCE FM Interference Study was calculated using V-Soft's FMCommander Version 7.1.43 professional FM allocation software, USGS 03 second terrain elevation database, and the most recent FCC FM and TV (for TV6) databases. The attached NCE FM Interference Study verifies that the proposed new NCE-FM Channel 203 facility's F(50,10)

⁷ Even if the updated 2020 Census Block Data becomes available before the November filing window, applicants must still use the 2010 Census Block Data (See DA 21-885 PN)

interfering contours will not overlap any applicable station's F(50,50) 60.0 dBuV/m protected service contours and that the proposed new NCE-FM Channel 203 facility's F(50,50) 60.0 dBuV/m protected service contour will not be overlapped by any applicable station's F(50,10) interfering contours.

TV CHANNEL 6 STUDIES - INTERFERENCE ACCEPTANCE

The attached TV Channel 6 spacing study was calculated using V-Soft's FMCommander Version 7.1.43 professional FM allocation software, the USGS 3 second terrain elevation database, and the most recent FCC FM and TV (for TV Channel 6 studies) databases. §73.525(a)(1) of the FCC Rules states that an affected TV Channel 6 station is a TV broadcast station operating on Channel 6 that is located within 246 km of a NCE FM station operating on Channel 203. The attached TV Channel 6 spacing study identifies the licensed WABW-DT Channel *6 post-transition DTV facility as an affected TV Channel 6 station. The proposed new NCE FM facility's tower site is approximately 53.6 km from the WABW-DT Channel *6 DTV facility (see attached TV Channel 6 study); therefore, the WABW-DT Channel *6 post-transition DTV facility is considered an affected TV Channel 6 station since it is within 246 km of the proposed new NCE-FM Channel 203 facility. The WABW-DT Channel *6 facility, as adopted in the Post-Transition Table of Allotments⁸, is licensed to GPTC. Since GPTC is the licensee for the WABW-DT Channel *6 post-transition DTV facility, it hereby accepts all interference that the DTV Channel 6 station may receive from the proposed new Channel 203 NCE-FM facility. Accordingly, the new NCE-FM station fully complies with §73.525 of the FCC rules pertaining to TV Channel 6 stations since GPTC accepts any interference that the proposed new NCE-FM facility may cause to its WABW-DT Channel *6 post-transition DTV facility.

AREA AND POPULATION ANALYSIS

The population counts within the proposed new NCE-FM facility's 60 dBu (1 mV/m) service contour were determined using U.S. Census 2010 data as specified in NCE FM New Station

Filing Procedures and Requirements Public Notice (DA 21-885). The area excluding water and population gain within the proposed new NCE-FM facility's 60 dBu (1 mV/m contour) is predicted to be 1,472.9 sq. km and 27,549 persons respectively. The attached Technical Parameters exhibit was calculated using V-Soft's Probe 5 professional signal propagation software as well as Worksheet #8 (Technical Parameters) which utilizes the centroid method of counting persons within each of the relevant census blocks using 2010 Census data and calculates contours based on the standard predicted contours established in §73.313(c) of the FCC Rules.

INTERMEDIATE FREQUENCY INTERFERENCE (53RD & 54TH CHANNELS)

The proposed new NCE-FM facility's site will meet all separation requirements pertaining to intermediate frequency ("IF") interference. The IF station with the narrowest gap with respect to distance from the proposed new NCE-FM facility's transmitter site ($203 + 53 = 256$ & $203 + 54 = 257$) is the licensed WEBZ-FM Channel 257 Class C2 facility located approximately 132.4 km from the proposed new NCE-FM facility's transmitter site where a separation of 15.0 km is required; therefore, the distance is easily met with a margin of 117.4 km.

FM BLANKETING INTERFERENCE

Blanketing is defined as interference to the reception of other broadcast stations which is caused by the presence of an FM broadcast signal of 115 dBu (562 mV/m) or greater signal strength in the area adjacent to the antenna of the transmitting station. The 115 dBu contour is referred to as the blanketing contour and the area within this contour is referred to as the blanketing area. The proposed new NCE-FM Channel 203 facility's blanketing contour extends 0.97 km from its transmitter and it is understood that GPTC must assume full financial responsibility for remedying new complaints of blanketing interference for a period of one year to all broadcast stations within the proposed new NCE-FM facility's blanketing contour.

⁸ ORDER GN Docket No. 12-268 *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auction* (See in §76.622(j) of the FCC Rules).

CERTIFICATION

This engineering technical statement was prepared by William T. Godfrey, Jr., with the professional firm Kessler and Gehman Associates, Inc., Telecommunications Consulting Engineers having offices in Gainesville, Florida, and has been working with the firm in the field of television and radio broadcast consulting since 1998 and his qualifications are a matter of record with the Federal Communications Commission. Mr. Godfrey is a Graduate from the University of North Florida and a Distinguished Military Graduate from the University of Florida. As a Professional in the field of Telecommunications he states under penalty of perjury that the information contained in this report is true and correct to the best of his knowledge and belief.



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October 18, 2021