

Milledgeville, Georgia  
Application for Engineering Special Temporary Authority  
for FM Station WGUR  
On Channel 205  
by  
Georgia College & State University

Exhibit 4  
Comprehensive Technical Exhibit

November 2011

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 4, Comprehensive Technical Exhibit, for Georgia College & State University, and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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### Narrative

This Exhibit supports an application for Special Temporary Authority (“STA”) for FM station WGUR, Milledgeville, Georgia. WGUR operates from licensed facilities attached to a campus building. That tower is being removed as part of building renovations. WGUR proposes temporary operation from an existing roof top tower on a nearby campus building. This Exhibit supports the request for STA. A separate application for new permanent facilities is being prepared. Figure 1 shows that the proposed STA operation will not extend the primary service contour beyond the licensed service contour.

The proposed modified facilities create no new mutual exclusivities as shown in the allocation table in this exhibit. However, the WGUR licensed facilities have third adjacent channel overlap with WRGC-FM, Milledgeville, Georgia.<sup>1</sup>

### Grandfathered Third Adjacent Contour Overlap with WRGC-FM

Figure 2 shows the licensed 60 dBu F(50,50) coverage area and the proposed STA 60 dBu F(50,50) coverage area, and the corresponding 100 dBu F(50,10) interference areas to WRGC-FM. As shown on Figure 2, the WGUR 60 dBu service contours and 100 dBu interference contours are completely within the WRGC-FM 60 dBu service contour. The proposed STA operation would reduce the interference area to WRGC-FM from 0.57 square kilometers to 0.42 square kilometers. Of the STA interference area, 0.27 square kilometers is

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<sup>1</sup> WGUR currently operates with a small, grandfathered third adjacent channel overlap with WRGC-FM, which is also licensed to the University. The STA will result in no new overlap, and the current overlap will be reduced by the requested STA operations.

existing interference area, and 0.15 square kilometers is new area. The transmitter site, and the interference area, move away from WRGC-FM.

WGUR also receives interference from the WRGC-FM licensed facilities, as permitted for Class D facilities. The proposed STA operation will reduce the area of overlap between the WRGC-FM 100 dBu F(50,10) contour and the WGUR service contour from 3.07 square kilometers to 1.53 square kilometers. No new overlap is proposed.

For both interference created and interference received, the proposed STA operation (1) reduces the area of contour overlap, (2) creates no new areas of overlap, and (3) moves the area of overlap farther from the licensed WRGC-FM facilities.

The STA proposes an increase in height above ground. For all except a small area to the Southeast, the height above average terrain remains less than 30 meters. The proposed Effective Radiated Power is decreased so that the proposed 60 dBu F(50,50) service contour remains within the licensed service contour.

It is anticipated that the application for modified facilities will be granted prior to the expiration of the proposed STA.

### Allocations

This application proposes service to Milledgeville, Georgia, on channel 205. An updated Table 2: Allocations is included in this exhibit with a list of the stations, construction permits, allocations, and applications studied. All are protected by this application, except as noted above for WRGC-FM. WGUR is a Class D facility which has no requirement to avoid incoming interference overlap of contours. The allocations table was prepared using the NED 03 arcsecond terrain database which is described below.

### Height Above Average Terrain Calculations

Transmitting antenna height above average terrain (“HAAT”) and the distance to the predicted 60.0 dBu F(50,50) contour are tabulated in Table 1. Terrain data is extracted from the latest available 3 arcsecond database, described below. The elevation of terrain along the 8 radials are extracted by a computer program which complies with the averaging methods of §73.312(d).

**Table 1: Height Above Average Terrain**

Bearing (degrees)	60 dBu F(50,50) (kilometers)	HAAT (meters)
0.0	4.00	-1.6
45.0	4.00	-5.0
90.0	4.00	-7.4
135.0	4.13	32.3
180.0	4.00	8.1
225.0	4.00	-8.9
270.0	4.00	3.0
315.0	4.00	3.4
Average		3.0

### Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission’s CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments.

The contours were also evaluated using terrain extracted from the V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS National Elevation Data 30 meter terrain database. The USGS National Elevation Dataset has

been developed by merging the highest-resolution, best-quality elevation data available across the United States into a seamless raster format. NED is the result of the maturation of the USGS effort to provide 1:24,000-scale Digital Elevation Model (DEM) data for the conterminous US and 1:63,360-scale DEM data for Alaska.



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**WGUR**  
BLED1417  
Latitude: 33-04-44 N  
Longitude: 083-13-55 W  
ERP: 0.037 kW  
Channel: 205 88.9 MHz  
AMSL Height: 115.0 m  
Elevation: 98.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

**WGURsta**  
application  
Latitude: 33-04-53 N  
Longitude: 083-13-52 W  
ERP: 0.026 kW  
Channel: 237 95.3 MHz  
AMSL Height: 121.0 m  
Elevation: 98.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No

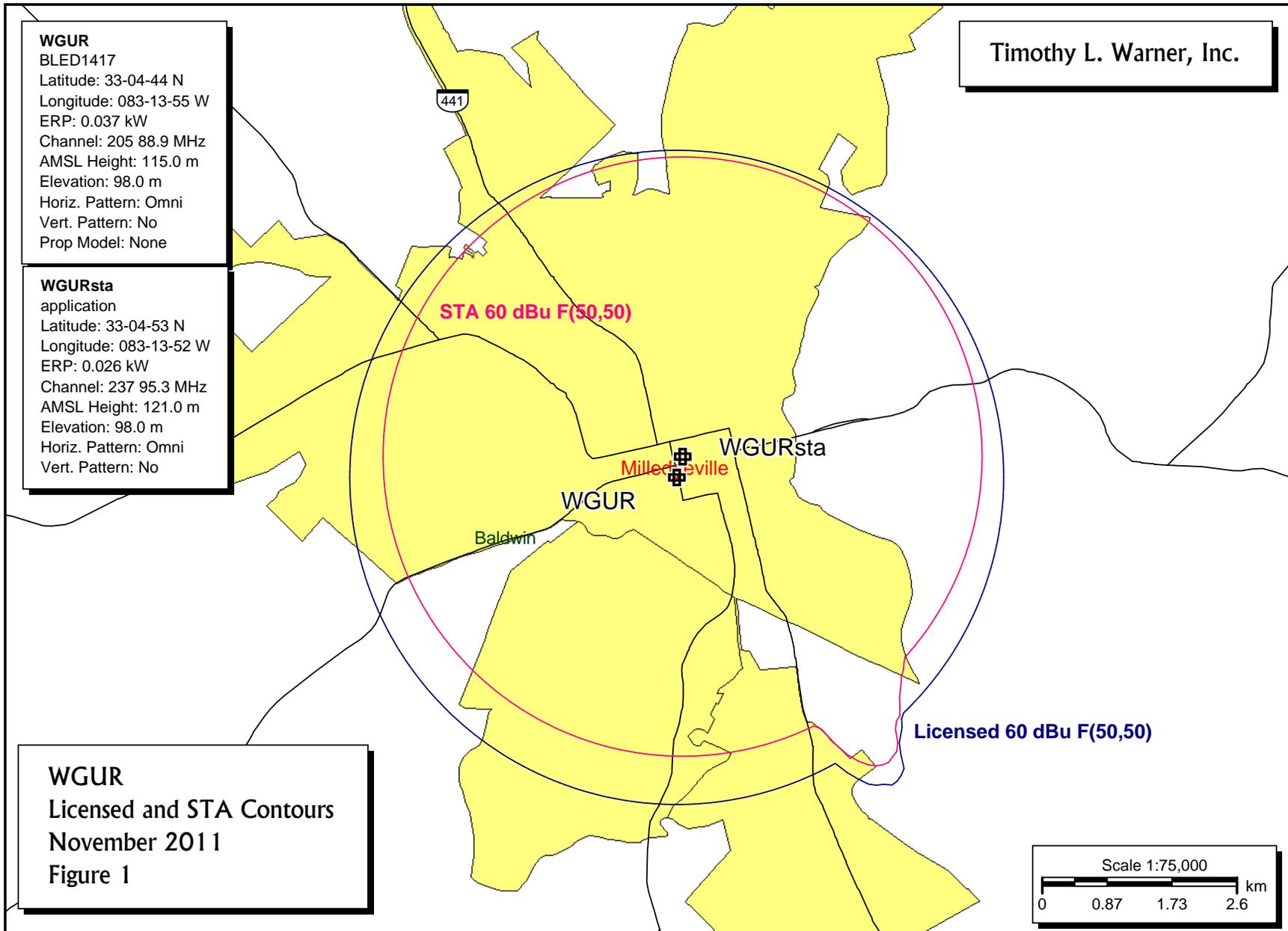
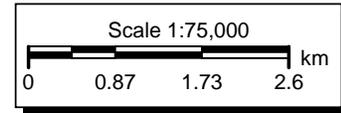
STA 60 dBu F(50,50)

WGUR  
Milledesville  
WGURsta

Baldwin

Licensed 60 dBu F(50,50)

**WGUR**  
Licensed and STA Contours  
November 2011  
Figure 1



**WGUR**  
BLED1417  
Latitude: 33-04-44 N  
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**Overlap Areas**

- Overlap Area Removed
- Overlap Area Maintained
- Overlap Area Extended

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**WGUR**  
Third Adjacent Channel Overlap  
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Figure 2

