

Myrtle Beach, South Carolina  
Application for Minor Modification of FM Translator W255BZ  
On Channel 255  
by  
Friends of Public Radio, Inc.

Exhibit 12  
Interference Analysis

January 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 12, Interference Analysis, for Friends of Public Radio, Inc., 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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28 January 2011

### Narrative

This Exhibit supports a minor modification to the construction permit in application file number BNPFT-20030827AMJ for FM translator W255BZ, Myrtle Beach, South Carolina. The amendment is a minor modification with respect to the previously proposed facilities, as shown in Figure 1. Allocation details are provided in this exhibit. This proposal complies fully with the requirements of 74 C.F.R. §74.1204(a), with the exception of facilities protected under 47 C.F.R. §74.1204(d) by the Undesired to Desired (U/D) method described below.

The proposed modified facilities create no mutual exclusivities as shown in the allocation table in this exhibit.

Figure 1 shows the authorized 60 dBu F(50,50) coverage area, and the proposed 60 dBu F(50,50) coverage area. As shown in Figure 1, this application proposes a minor modification.

The minor modification is limited to a reduction in height above ground, above mean sea level, and above average terrain.

### Allocations

This application proposes service to Myrtle Beach, South Carolina, on channel 255. An updated Table 1: Allocations is included in this exhibit with a list of the stations, construction permits, allocations, and applications studied. All are protected by this application, with the exception of facilities protected by the Undesired to Desired (U/D) method. Facilities protected by the U/D method are listed in Table 2. The allocations table was prepared using the NED 03 arcsecond terrain database which is described below.

Figure 2 is an aerial photo of the authorized and proposed site. The underlying photo was taken on 20 June 2009. The Distance to the Undesired Contours in Table 2 were calculated using the FM Curves utility on the FCC web site. The greatest distance is 112 meters. The tower has guy anchors at 220 feet (67 meters) and 480 feet (146 meters). The interfering contour will not reach the outer guy points. There is no population within the guy field. There is no population subject to interference. The communications shelter at the base of the tower is not a routinely staffed location. In addition, when the elevation pattern of the proposed antenna, a Shively 6812B-1 model, is used, the interference zone at ground level does not include areas closer than 24 meters from the base of the tower, nor farther than 106 meters from the base of the towers. Details of those calculations will be provided upon request.

### 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.

All population data is from 2000 U.S. Census SF1 data files. Population is counted by considering the location of the centroid of each census block. The data for each block is counted if it falls within the area being counted.

#### Television Channel 6 Protection

There are no television channel 6 stations requiring protection. This application proposes a channel which is not subject to television channel 6 separation requirements.

Table 1: Allocations

Timothy L. Warner, Inc.  
Asheville, North Carolina

Allocation Study  
Friends of Public Radio, Inc.  
CH# 255D - 98.9 MHz, Pwr= 0.013 kw, HAAT= 34.5 M, COR= 42 M  
Average Protected F(50-50)= 3.6 km  
Omni-directional

DISPLAY DATES  
DATA 01-28-11  
SEARCH 01-28-11

REFERENCE  
33 47 03.0 N.  
78 52 44.0 W.

CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)
255D Myrtle Beach	W255BZ	CP	C SC	0.0 0.0	0.0 BNPFT20030827AMJ	33 47 03.0 78 52 44.0	0.013	23.3 134	6.9 Friends of Public Radio, I	-18.3*
255C2 Mcclellanville	WWIK	LIC	CN SC	223.7 43.3	91.5 BLH19941005KA	33 11 15.0 79 33 31.0	50.000 150	137.8 157	52.2 98.9, Inc.	27.6
258C3 Socastee	WRNN-FM	LIC	C SC	192.6 12.6	7.2 BLH20040318AAT	33 43 16.0 78 53 45.0	21.500 108	3.9 112	38.1 Nm Licensing Llc	-31.2*<
253C3 Pawleys Island	WDAI	LIC	NC SC	216.2 36.1	26.6 BLH20030207ACI	33 35 27.0 79 02 55.0	6.100 203	3.7 204	38.8 Cumulus Licensing Llc	-12.5*<
256C1 Whiteville	WZFX	LIC	CN NC	4.4 184.4	105.8 BLH19860909KB	34 44 05.0 78 47 25.0	100.000 299	104.8 333	72.2 Wdas License Limited Partn	28.5
254L1 North Myrtle Beach	WNMI-LP	LIC	SC	67.0 247.1	26.1 BLL20040304ABX	33 52 32.0 78 37 09.0	0.100 29	8.0 35	5.6 City Of North Myrtle Beach	15.7
254C1 Jacksonville	WRMR	LIC	CN NC	57.9 238.7	150.5 BLH19990401KE	34 29 41.0 77 29 19.0	100.000 297	104.7 303	72.1 Sunrise Broadcasting, Llc	73.7
252C3 Oak Island	WUIN	LIC	NC NC	75.7 256.2	81.2 BLH20000807AHJ	33 57 40.0 78 01 37.0	18.500 116	3.9 120	38.4 Sea-comm, Inc.	42.6
2/9/01: Pursuant to Report and Order, DA 01-272, the name of the city of license was changed from Long Beach to Oak Island when the towns of Long Beach and Yaupon Beach consolidated.										
255D Darlington	W255BD	LIC	C SC	301.2 120.7	100.3 BLFT20100415AAA	34 14 51.0 79 48 41.0	0.250	48.0 159	14.2 Miller Communications, Inc	74.8
252D Mullins	W252BL	LIC	C SC	322.2 142.0	57.6 BLFT20070508ADK	34 11 35.0 79 15 48.0	0.038	0.4 89	6.9 Educational Media Foundati	50.4

Terrain database is NED 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 = 2, Co to 3rd adjacent.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
Incoming contour overlap is ignored.  
"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.  
< = Contour Overlap

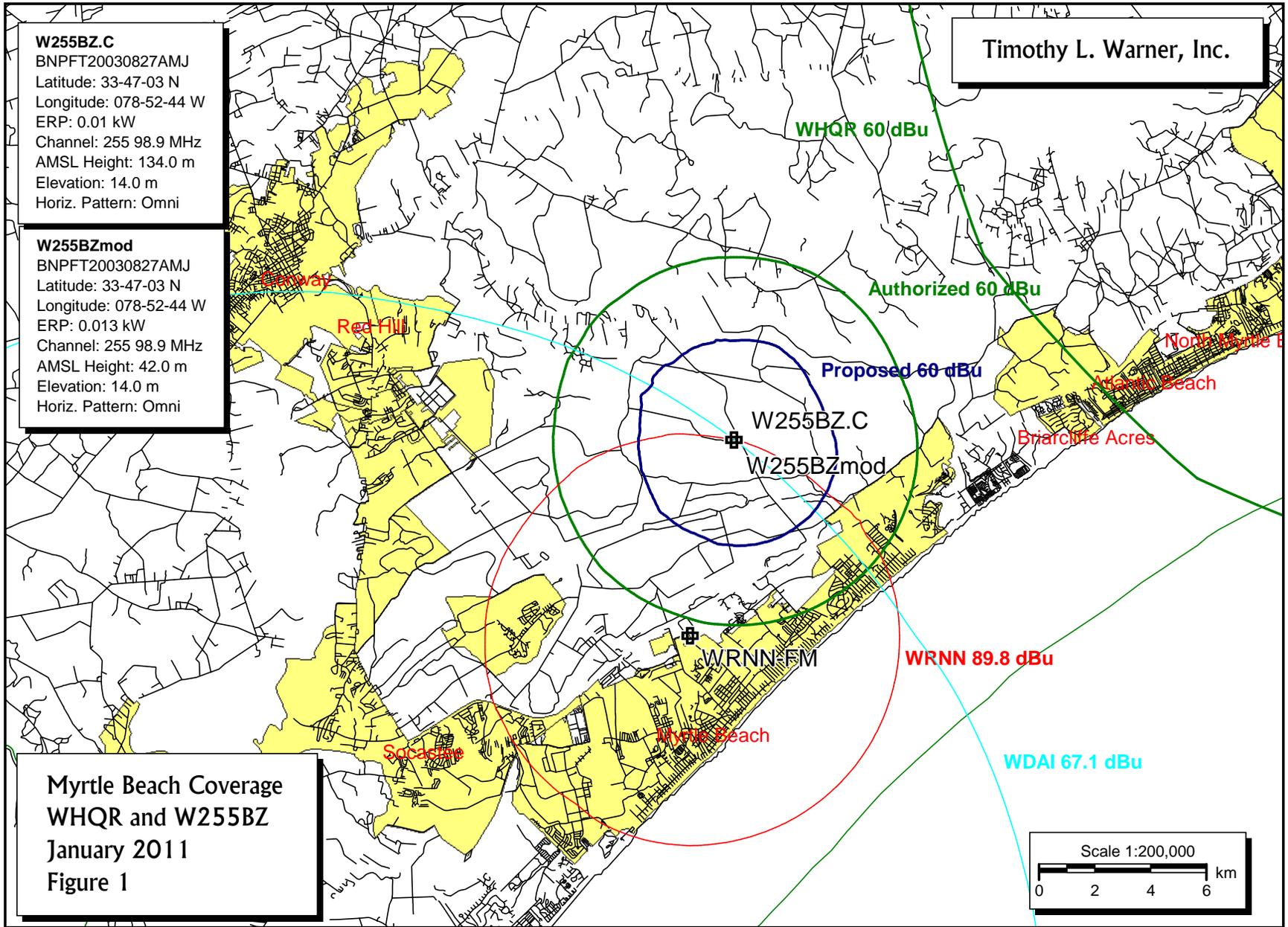
Table 2: Facilities Protected by Undesired to Desired (U/D) Ratio

Facility	WRNN Socastee, South Carolina	WDAI Pawleys Island, South Carolina
Relationship	258C3, third adjacent	253C3, second adjacent
Distance (km)	7.17	26.6
Bearing (degrees)	12.6	36.1
ERP (kW, on azimuth)	21.5	6.1
HAAT (m, on azimuth)	101.5	198.5
Ratio (dB)	40	40
Signal Strength (dBu)	89.8	67.1
Translator Signal Strength (dBu)	129.8	107.1
Translator distance (km)	.007	.112

**W255BZ.C**  
BNPFT20030827AMJ  
Latitude: 33-47-03 N  
Longitude: 078-52-44 W  
ERP: 0.01 kW  
Channel: 255 98.9 MHz  
AMSL Height: 134.0 m  
Elevation: 14.0 m  
Horiz. Pattern: Omni

**W255BZmod**  
BNPFT20030827AMJ  
Latitude: 33-47-03 N  
Longitude: 078-52-44 W  
ERP: 0.013 kW  
Channel: 255 98.9 MHz  
AMSL Height: 42.0 m  
Elevation: 14.0 m  
Horiz. Pattern: Omni

Timothy L. Warner, Inc.



Myrtle Beach Coverage  
WHQR and W255BZ  
January 2011  
Figure 1



Universal Transverse Mercator (UTM) Projection Zone17  
 North American Datum of 1983 (NAD83)

100 meter UTM / USNG / MGRS  
 Grid Zone Designation: 17S  
 100,000-m Squares: PT

