

## Community of License Coverage

### Introduction

Educational Media Foundation (“EMF”) desires to show coverage of its community of license Hatteras, NC, with a supplemental showing since the standard model does not show adequate coverage of the community of license.

### Discussion

Using the standard FCC model, the predicted 70 dBu F(50/50) contour does not cover the community of license as required by 47 C.F.R. Section 73.315(a). However, use of an alternate propagation method is warranted since the terrain between the transmitter site and the community of license departs widely from the assumed 200m average terrain.

The following parameters were used in determining the Longley/Rice 70 dBu coverage for the community of license:

Conductivity:	0.005
Dielectric Constant:	15
Refractivity:	311
Climate Zone:	Continental Temperate
Receiver Height:	9 m AGL
Receiver Gain:	0
Time Variability:	50
Situation Variability:	50
Terrain Database:	USGS 30 Second Terrain

The FCC standard F(50/50) 70dBu contour has an average distance of 32.94 km toward the community of license. Using the Longley/Rice model, the same contour has an average distance of 44.09 km. This is an increase in distance of 33.85% over the community of license (see Exhibit 16-A). Thus, the area covered by the supplemental method is more than 10% greater than the standard contour prediction method.

Exhibit 16-B shows both the FCC standard F(50,50) 70dBu contour and the Longley/Rice model 70dBu contour. The Longley/Rice coverage is also shown with gradient color shading.

As can be seen in Exhibit 16-B, the 70dBu calculated contour using the Longley/Rice propagation model, provides more than adequate coverage for the community of license.

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*Exhibit 16*  
*Hatteras, NC*

**Conclusion**

Based on the above exhibits the residents of Hatteras, NC will continue to be more than adequately served with a 70dBu signal strength contour. It should also be noted that this application proposes to maintain the equivalent community of license coverage as has been previously licensed. EMF respectfully requests that the Commission permit this supplemental showing and grant its application.

Distance to Contour Report

**Type of contour: FCC**

Location Variability: 50.0 %  
Time Variability: 50.0 %  
# of Radials Calculated: 360  
FCC Matching HAAT Calculation Used  
Field Strength: 70.00 dBuV/m

Primary Terrain: V-Soft 30 Second US Database

Azimuth (deg)	Distance (km)
133.0	32.94
134.0	32.94
135.0	32.94
136.0	32.94
137.0	32.94
138.0	32.94
139.0	32.94

Average Distance to Contour: 32.94

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Distance to Contour Report

**Type of contour: Signal Calculated Longley-Rice**

# of Radials Calculated: 72  
Using the last occurrence method at 70.0dBu

Azimuth (deg)	Distance (km)	Percent More
133.0	44.44	34.9
134.0	44.22	34.2
135.0	44.00	33.6
136.0	44.00	33.6
137.0	44.00	33.6
138.0	44.00	33.6
139.0	44.00	33.6

Average Distance to Contour: 44.09

# Exhibit 16

**WKHC.P**

Latitude: 35-29-06.4 N

Longitude: 076-00-2.3 W

Channel: 246

Frequency: 97.1 MHz

AMSL Height: 200.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: Longley-Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 311.0

Receiver Ht AG: 9.1 m

Receiver Gain: 0 dB

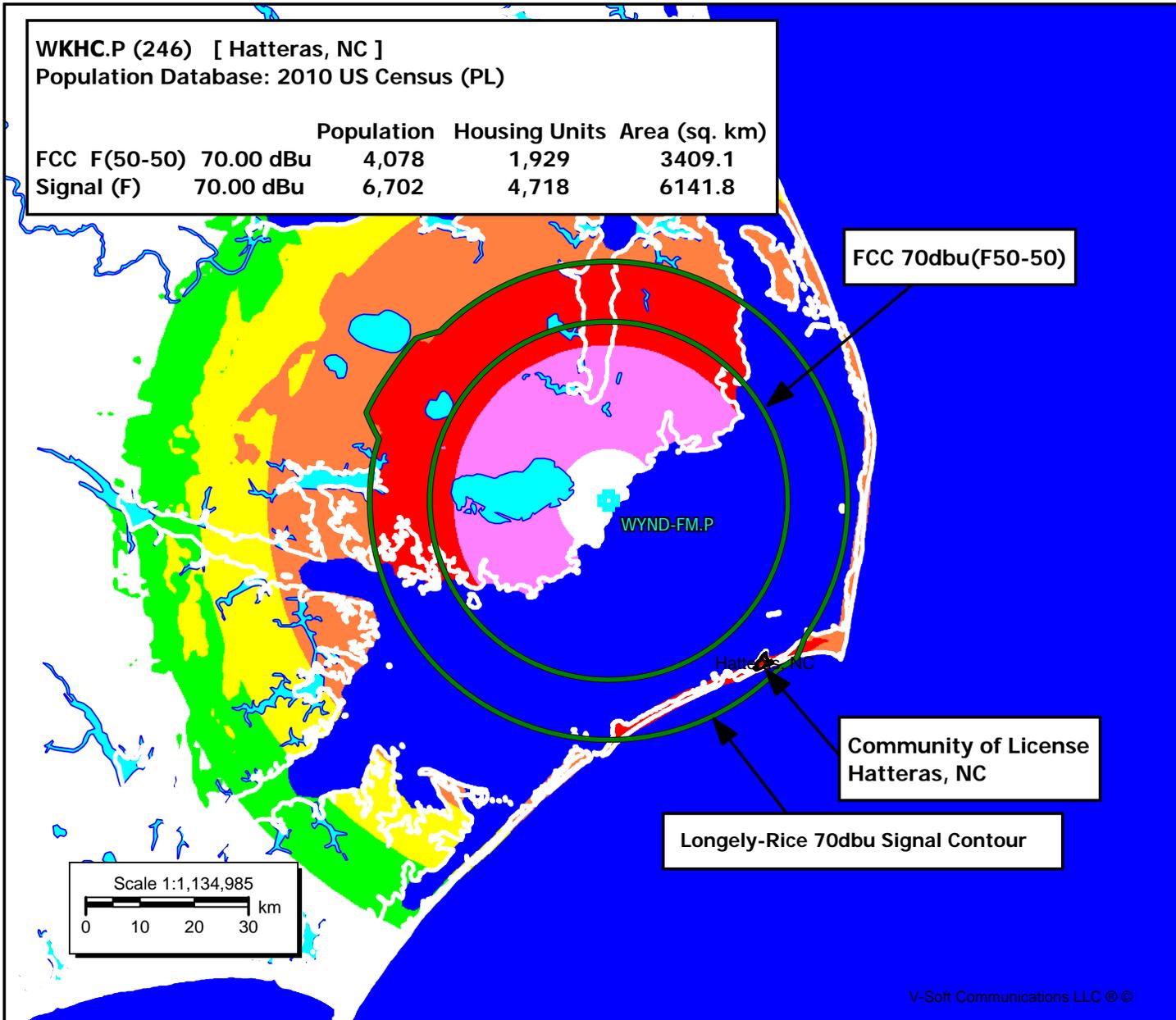
Time Variability: 50.0%

Sit. Variability: 50.0%

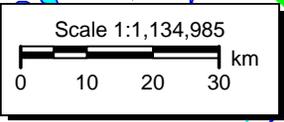
ITM Mode: Broadcast

**WKHC.P (246) [ Hatteras, NC ]**  
 Population Database: 2010 US Census (PL)

	Population	Housing Units	Area (sq. km)
FCC F(50-50) 70.00 dBu	4,078	1,929	3409.1
Signal (F) 70.00 dBu	6,702	4,718	6141.8



White	> 100.0 dBu
Pink	80.0 - 100.0
Red	70.0 - 80.0
Orange	60.0 - 70.0
Yellow	54.0 - 60.0
Green	48.0 - 54.0



**Exhibit 16B**  
**Close-Up View**

**WKHC.P**  
 Latitude: 35-29-6.40 N  
 Longitude: 076-00-02.30 W  
 ERP: 29.00 kW  
 Channel: 246  
 Frequency: 97.1 MHz  
 AMSL Height: 200.0 m  
 Horiz. Pattern: Omni  
 Vert. Pattern: No  
 Prop Model: Longley-Rice  
 Climate: Cont temperate  
 Conductivity: 0.0050  
 Dielec Const: 15.0  
 Refractivity: 311.0  
 Receiver Ht AG: 9.1 m  
 Receiver Gain: 0 dB  
 Time Variability: 50.0%  
 Sit. Variability: 50.0%  
 ITM Mode: Broadcast

- > 100.0 dBu
- 80.0 - 100.0
- 70.0 - 80.0
- 60.0 - 70.0
- 54.0 - 60.0
- 48.0 - 54.0

