

**CONSOLIDATED ENGINEERING STATEMENT**  
**CONCERNING 301 APPLICATION FOR**  
**CONSTRUCTION PERMIT AND**  
**ASSOCIATED CHANGE IN COMMUNITY OF LICENSE**  
**PRESENT CH 224C1 OCRACOE, NORTH CAROLINA**  
**PROPOSED NEW (FM) CH 224C2 PINE KNOLL SHORES, NORTH CAROLINA**

**FEBRUARY 2007**

## **TABLE OF CONTENTS**

### **CONSOLIDATED ENGINEERING STATEMENT CONCERNING 301 APPLICATION FOR CONSTRUCTION PERMIT AND ASSOCIATED CHANGE IN COMMUNITY OF LICENSE PRESENT CH 224C1 OCRACOCKE, NORTH CAROLINA PROPOSED NEW (FM) CH 224C2 PINE KNOLL SHORES, NORTH CAROLINA**

**FEBRUARY 2007**

#### **Engineering Statement**

#### **Tables:**

- I. Allocation study, 73.207 separations, proposed allotment site coordinates.
- II. Allocation study, 73.207 separations, proposed transmitter site coordinates.
- III. Tabulation of stations depicted on map Figure 4 and 5.
- IV. ITM point to point computation of 70 dBu.

#### **Figures:**

- 1. 70 & 60 dBu contours for proposed Pine Knoll Shores, North Carolina CH 224C2 allotment coordinates.
- 2. Predicted 70 & 60 dBu contours for existing Ocracoke, North Carolina CH224C1 allotment coordinates.
- 3. 70 & 60 dBu contours for CH 224C2 Pine Knoll Shores, North Carolina transmitter site coordinates.
- 4. 60 dBu allotment contours for proposed Pine Knoll Shores allotment coordinates and Ocracoke, North Carolina allotment coordinates with primary protected contours of other stations which serve 100% of Pine Knoll Shores and/or Ocracoke, North Carolina or duplicate a portion of the proposed allotment contours. See Table III for stations considered.
- 5. Detailed mapping depicting 70 dBu contour based on Longley Rice alternative prediction method.
- 5P. Terrain profile.
- 6. 73.215 Allocation mapping.
- 7. Map depicting local nature of overlap area.

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**FEBRUARY 2007**

**SUMMARY**

The following engineering statement has been prepared on behalf of **Tower Investment Trust, Inc.** (“**Tower**”), applicant for a new FM station at Ocracoke, North Carolina, FCC ID 170178. The facilities specified herein, and in FCC Form 301, Section III-B, are mutually exclusive with the allotment coordinates for Channel 224C1 at Ocracoke, North Carolina and thus are believed to be in compliance with the minor modification Rules established in *MM Docket No. 05-210* released November 29, 2006. **Tower** proposes to delete CH224C1 at Ocracoke, North Carolina and specifies CH 224C2 at Pine Knoll Shores, North Carolina. The proposed community of license change is believed to be in the public interest but is also made out of necessity. There are no existing towers that meet FCC allocation criteria which would provide 70 dBu service to Ocracoke, North Carolina on CH 224C1. The Ocracoke CH224C1 allotment site area is not suitable for tall tower construction due to its small size and location along the coastline in areas that are in, or adjacent, to the National Seashore.

The application public interest merits are summarized as follows. A more detailed discussion is in a separate exhibit.

1. The community of Ocracoke, North Carolina has a population of 769 persons<sup>1</sup>. No AM or FM stations are licensed to Ocracoke, North Carolina .
2. The town of Pine Knoll Shores, North Carolina has a population of 1,524 persons. No AM or FM stations are licensed to Pine Knoll Shores, North Carolina.
3. The proposed Channel 224C2 allotment site at Pine Knoll Shores, North Carolina complies with the Commission’s allotment spacing rules for a fully spaced Class C2 facility.

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<sup>1</sup> All population data from 2000 U.S. Census unless otherwise stated.

4. The proposed new allotment at Pine Knoll Shores, North Carolina would bring a first local aural service to that community.

### **URBANIZED AREA**

Based on U. S. Census data, no Urban Areas are associated with the allotment or proposed facilities. Neither the licensed facility 70 dBu nor the proposed 70 dBu covers a Census designated Urban Area.

### **POPULATION DATA – ALLOTMENT**

The licensed and proposed 70 dBu and 60 dBu population data is listed below. The population data is based on 2000 Census data with the contour locations based on a constant radius appropriate for the class of FM facility.

<u>Facility</u>	<u>Population - Persons</u>		<u>Area - Sq. kM</u>	
	<u>70 dBu</u>	<u>60 dBu</u>	<u>70 dBu</u>	<u>60 dBu</u>
Ocracoke, NC Allotment	88,985	162,476	7,844	16,265
Pine Knoll Shores, NC Allotment	45,798	97,045	3,213	8,484

### **POPULATION DATA – ALLOTMENT & PROPOSED FACILITIES.**

The proposed 70 dBu and 60 dBu population data are listed below. The population data are based on 2000 Census data with the contour locations based on 72 evenly spaced radials computed using the Radio Soft 3 second (NGDC Based) high accuracy 3 second terrain database for FM stations. Distances to FM contours were determined using the methodology found in 73.313.

<u>Facility</u>	<u>Population - Persons</u>		<u>Area - Sq. kM</u>	
	<u>70 dBu</u>	<u>60 dBu</u>	<u>70 dBu</u>	<u>60 dBu</u>
Proposed	40,910	102,479	3,379	8,533

### **PROTECTED AURAL SERVICE**

Ocracoke, North Carolina, the current CH 224C1 allotment community , receives protected aural service from 2 FM radio stations and 3 AM stations. Pine Knoll Shores, North Carolina, the proposed community

of license, receives protected aural service from a minimum of 10 FM radio stations. This analysis is based on FM services to 100% of the allotment community. In no case is either community underserved and there are a minimum of 5 aural services to all portions of the loss area as depicted on map Figure 4.

### **GAIN AND LOSS AREAS**

The loss area will encompass 7,781 square kilometers and a population of 65,431 persons. It is noted that there is no actual loss of service as there has never been a licensed facility for CH224C1 at Ocracoke, North Carolina.

### **ALTERNATE PREDICTION METHODOLOGY**

To determine the **Tower** proposed signal level over the allotment community of Pine Knoll Shores it is necessary to employ an alternate prediction methodology as the 70 dBu contour, using 73.313 methodology, does not envelop the proposed community of license. NBS Tech Note 101 (Longley-Rice) is employed here as the primary supplemental prediction method to the 73.313 contour prediction methodology. The FCC Media Bureau, in coordination with OET, has established guidelines for use of the Longley-Rice method. The guidelines are enunciated in a letter dated August 8, 2002 from the Media Bureau concerning KMAJ-FM, Topeka, Kansas, Facility ID 42012, Application BPH-20000316ACF and accessible on the Audio Division web page.

Use of the Longley-Rice prediction model is believed appropriate for analyzing the signal level provided to the community of Pine Knoll Shores for the proposed facilities based on the following facts.

The terrain in the applicable coastal plane of North Carolina is commonly acknowledged to be extremely flat and regular. Figure 5 is a topographical map depicting the proposed transmitter site with the 230, 232, 234, 236, 238 and 240 degree radials. Each radial passes over bodies of water and low marsh land to reach the community which is located on an island in the Atlantic Ocean.

The FCC test for use of Longley-Rice are listed below:

- 1) The FCC has established that the Delta h must depart widely from the 50 meter standard and be 20 meters or less or 100 meters or more. In the case of the proposed facilities, the Delta h on the radials which cross Pine Knoll Shores (230-240 degree) are all 0 meters.
- 2) Distance to the 73.313(a) computed 70 dBu contour must be at least 10% different than the distance to the 20 dBu based on Longley-Rice. The 70 dBu 73.313 distance on the pertinent radials is 32.87 kilometers while the Longley Rice predicted 70 dBu occurs at a minimum distance of 43 km (See Table IV). This is a difference of 30.82%.
- 3) A list of assumptions must be supplied (Please see Table IV for Telecommunications Analysis Services printout).
- 4) A sample calculation using the supplemental procedure must be supplied (please see below).

#### **SUPPLEMENTAL 70 dBu ANALYSIS**

Figure 3 depicts the proposed 70 dBu contour based on 73.313(c) using 3 second terrain data at 5 degree evenly spaced radials. The RadioSoft 3 second terrain data was employed for the contour calculation.

Figure 5 is the 70 dBu F(50,50) contour location calculated using the Longley Rice methodology. It is seen that 100% of the community boundary lies well inside the Longley Rice 70 dBu.

#### **SAMPLE COMPUTATION**

Figure 5P is a plot of the terrain elevation from the site to the Pine Knoll Shores reference coordinates using the RadioSoft 3 second terrain data. The community reference coordinates are NAD 27 N.L. 34° 41' 50", W.L. 76° 48' 49".

This figure is offered to demonstrate distance and bearing to the community, that the community is near sea level, that the terrain is very flat and for computation purposes.

The basic formula for calculation of signal strength is obtained from NBS Technical Note 101, Transmission Loss Predictions For Tropospheric Communications Circuits, revised May 1966.

$$\text{dBuV/m} = 106.92 - 20 (\log d)$$

d = distance in kilometers

To determine Field Strength in dBuV/m, the path specific data must be applied:

Lbd = basic diffraction transmission loss (obstruction loss)  
ERP = Effective radiated power in dBkW relative to a dipole  
A = Excess path loss from fresnel zone loss and clutter loss

The final formula becomes:

$$\text{dBuV/m} = 106.92 - 20 (\log d) + \text{ERP} - \text{Lbd} - \text{A}$$

For the proposed facility the sample computation values, related to *Figure 5P*, are:

d = 34.9 kM  
Lbd = 0 dB  
ERP = 14.15 dBk  
A = 5.8 dB fresnel loss  
5 dB clutter loss (Value obtained from discussion with OET)  
dBuV/m =  $106.92 - 30.9 + 14.15 - 5.8 - 5$   
dBuV/m = 79.4 dBu

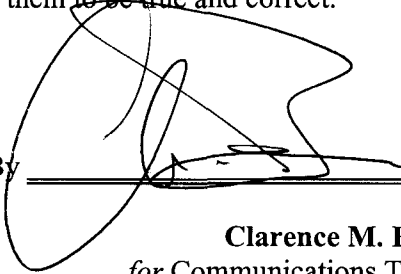
### **73.215 - REQUEST FOR WAIVER**

73.215 processing is requested with regard to WERO, CH 277C. The proposed site to site distance is 97 kM which exceeds the 73.215 minimum allowable value of 96 kM. However, with WERO considered as a full Class C facility the proposed 100 dBu F(50,10) contour and the 60 dBu F(50,50) contour for WERO CH 277C, Washington, NC are involved in a small area of overlap as depicted on *Figure 6*. The overlap area is 4.7 square kilometers and the population in the area is 0 persons based on a detailed centroid count. The 4.7 square kilometer area is 0.0178% of the 26,466 square kilometer area in the WERO 60 dBu. The overlap area, based on review of satellite data is protected marshlands with some adjacent farmed land.

**CONCLUSION**

The foregoing was prepared on behalf of **Tower Investment Trust, Inc.** by Clarence M. Beverage of *Communications Technologies, Inc.*, Marlton, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The undersigned certifies, under penalty of perjury, that the statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.

By

A handwritten signature in black ink, appearing to be "Clarence M. Beverage", written over a horizontal line.

**Clarence M. Beverage**  
*for Communications Technologies, Inc.*  
Marlton, New Jersey

February 21, 2007



**TABLE I**

**73.207 SPACING STUDY  
CH224C2 ALLOTMENT SITE PINE KNOLL SHORES, NORTH CAROLINA  
FEBRUARY 2007**

Search of channel 224 (92.7 MHz Class C2) at 34-43-45.0 N, 76-32-15.0 W.

<u>CALL</u>	<u>CITY</u>	<u>ST CHN CL</u>	<u>DIST</u>	<u>SEP</u>	<u>BRNG</u>	<u>CLEARANCE</u>
NEW	OCRACoke	NC 224 C1	18.15	224.00	37.4	-205.9
WERO	WASHINGTON	NC 227 C	105.29	105.00	312.5	0.3
WMGV	NEWPORT	NC 277 C1	54.32	27.00	325.6	27.3
WQSL	JACKSONVILLE	NC 222 C2	86.66	58.00	254.6	28.7
WYFL	HENDERSON	NC 223 C	224.25	188.00	318.3	36.3
WYFL	HENDERSON	NC 223 C0	224.25	176.00	318.3	48.3

**TABLE II**

**73.207 SPACING STUDY  
CH224C2 PROPOSED TRANSMITTER SITE  
PINE KNOLL SHORES, NORTH CAROLINA  
FEBRUARY 2007**

Search of channel 224 (92.7 MHz Class C2) at 34-53-00.4 N, 76-30-21.3 W.

<u>CALL</u>	<u>CITY</u>	<u>ST CHN CL</u>	<u>DIST</u>	<u>SEP</u>	<u>BRNG</u>	<u>CLEARANCE</u>
NEW	OCRACoke	NC 224 C1	8.60	224.00	108.5	-215.4
WERO	WASHINGTON	NC 227 C	97.00	105.00	303.8	-8.0 *
WMGV	NEWPORT	NC 277 C1	43.57	27.00	309.5	16.6
WYFL	HENDERSON	NC 223 C	213.87	188.00	314.6	25.9
WQSL	JACKSONVILLE	NC 222 C2	95.27	58.00	245.1	37.3
WYFL	HENDERSON	NC 223 C0	213.87	176.00	314.6	37.9

73.215 PROCESSING REQUESTED - SEE ENGINEERING NARRATIVE

TABLE III

LIST OF AM & FM STATIONS DEPICTED ON MAP FIGURE 4  
FEBRUARY 2007

FM CALL ARN LATITUDE	ST OWNER LONGITUDE	CITY HAAT:m AMSL:m	FREQ	CHN	CL	ERP	STAT
WWTB	NC	TOPSAIL BEACH	103.90000		C3	21500.00	LIC
BLH19930920KF		SEA-COMM, INC.					
34-29-38.0 N	77-29-18.0 W	100.215 107.000					
WILT	NC	JACKSONVILLE	98.70000		C1	100000.00	LIC
BLH19990401KE		NM LICENSING LLC					
34-29-41.0 N	77-29-19.0 W	296.112 303.000					
WQSL	NC	JACKSONVILLE	92.30000		C2	22500.00	LIC
BLH19950612KD		NM LICENSING LLC					
34-31-10.0 N	77-26-52.0 W	219.675 226.000					
WXQR-FM	NC	JACKSONVILLE	105.50000		C2	19000.00	LIC
BLH19950612KC		NM LICENSING LLC					
34-31-10.0 N	77-26-52.0 W	240.675 247.000					
WERO	NC	WASHINGTON	93.30000		C	100000.00	LIC
BLH19791206AF		NM LICENSING LLC					
35-21-55.0 N	77-23-38.0 W	543.121 554.000					
WIKS	NC	NEW BERN	101.90000		C1	100000.00	LIC
BLH19870306KD		WIKS LICENSE LIMITED PARTNERSHIP					
35-12-07.0 N	77-11-15.0 W	300.326 308.000					
WTEB	NC	NEW BERN	89.30000		C1	99000.00	LIC
BLED19870220KB		CRAVEN COMMUNITY COLLEGE					
35-06-32.0 N	77-06-10.0 W	148.185 154.000					
WAAE	NC	NEW BERN	91.90000		A	1350.00	LIC
BLED20020606AAB		AMERICAN FAMILY ASSOCIATION					
35-08-14.0 N	77-00-22.0 W	49.534 55.000					
WRNS-FM	NC	KINSTON	95.10000		C	100000.00	LIC
BLH20000531AED		NM LICENSING LLC					
35-06-15.0 N	77-20-12.0 W	459.452 472.000					
WXNR	NC	GRIFTON	99.50000		C2	16500.00	LIC
BLH19890925KH		WXNR LICENSE LIMITED PARTNERSHIP					
35-12-07.0 N	77-11-15.0 W	257.326 265.000					
WSFL-FM	NC	NEW BERN	106.50000		C1	100000.00	LIC
BLH19860127KC		WSFL LICENSE LIMITED PARTNERSHIP					
35-02-27.0 N	77-21-11.0 W	279.414 292.000					

TABLE III  
page 2

FM CALL	ST	CITY	FREQ	CHN	CL	ERP	STAT
ARN		OWNER					
LATITUDE	LONGITUDE	HAAT:m	AMSL:m				
WNCT-FM	NC	GREENVILLE	107.90000		C	100000.00	LIC
BMLH19980323KE		WNCT LICENSE LIMITED PARTNERSHIP					
35-21-55.0 N	77-23-38.0 W	519.121	530.000				
WZNB	NC	NEW BERN	88.50000		A	300.00	LIC
BLED20030103ACG		CRAVEN COMMUNITY COLLEGE					
35-06-32.0 N	77-06-10.0 W	37.185	43.000				
WLGT	NC	WASHINGTON	98.30000		A	1350.00	LIC
BLH19890227KF		ABG NORTH CAROLINA LICENSES, LLC					
35-29-14.0 N	77-02-42.0 W	151.212	159.000				
WRHT	NC	MOREHEAD CITY	96.30000		C1	100000.00	LIC
BMLH20020910ABD		ABG NORTH CAROLINA LICENSES, LLC					
34-45-07.0 N	76-52-57.0 W	147.653	152.000				
WTKF	NC	ATLANTIC	107.30000		C3	7000.00	LIC
BLH19930602KB		ATLANTIC RIDGE TELECASTERS, INC.					
34-53-01.0 N	76-30-21.0 W	183.951	185.000				
WBJD	NC	ATLANTIC BEACH	91.50000		C1	85000.00	LIC
BLED20061201AJA		CRAVEN COMMUNITY COLLEGE					
34-45-34.0 N	76-51-16.0 W	117.330	121.000				
WOTJ	NC	MOREHEAD CITY	90.70000		C2	24000.00	LIC
BLED19960903KC		GRACE CHRISTIAN SCHOOL					
34-46-41.0 N	76-52-42.0 W	140.053	145.000				
WXBE	NC	BEAUFORT	88.30000		A	1000.00	LIC
BLED20050214ABC		AMERICAN FAMILY ASSOCIATION					
34-43-26.0 N	76-43-18.0 W	53.990	55.000				
WSSM	NC	HAVELOCK	105.10000		C3	18500.00	LIC
BLH19980922KG		NM LICENSING LLC					
34-45-07.0 N	76-52-57.0 W	115.653	120.000				
WLGP	NC	HARKERS ISLAND	100.30000		C1	100000.00	LIC
BLH19961021KD		BARINOWSKI INVESTMENT COMPANY					
34-48-17.0 N	76-54-23.0 W	145.805	152.000				
WQZL	NC	BELHAVEN	101.10000		C2	31000.00	LIC
BLH19990412KA		NM LICENSING LLC					
35-18-18.0 N	76-45-45.0 W	185.655	189.000				
WWHA	NC	ORIENTAL	94.10000		C3	11000.00	LIC
BLH19930326KA		ABG NORTH CAROLINA LICENSES, LLC					
35-00-02.0 N	76-49-58.0 W	146.914	150.000				

TABLE III  
page 3

FM CALL	ST	CITY	FREQ	CHN	CL	ERP	STAT
ARN		OWNER					
LATITUDE	LONGITUDE	HAAT:m AMSL:m					
WZGO	NC	AURORA	91.10000	C2		40000.00	LIC
BLED20060727AAI		PATHWAY CHRISTIAN ACADEMY, INC.					
35-18-09.0 N	76-34-00.0 W	107.451 108.000					
WERX-FM	NC	COLUMBIA	102.50000	C1		64000.00	LIC
BLH19990208KD		LAWRENCE LOESCH & MARGARET LOESCH					
35-55-05.0 N	76-20-48.0 W	208.855 210.000					
WMGV	NC	NEWPORT	103.30000	C1		100000.00	LIC
BLH19960508KC		WMGV LICENSE LIMITED PARTNERSHIP					
35-07-55.0 N	76-52-32.0 W	294.683 300.000					
WNBB	NC	BAYBORO	97.90000	C3		14500.00	LIC
BLH20010723AAC		COASTAL CAROLINA RADIO, LLC					
35-00-02.0 N	76-49-58.0 W	131.914 135.000					
WSTK	NC	AURORA	104.50000	A		4200.00	LIC
BLH20041203AFD		MEDIA EAST, LLC					
35-18-09.0 N	76-34-00.0 W	119.451 120.000					
WZPE	NC	BATH	90.10000	A		675.00	LIC
BLED20040908ABF		EDUCATIONAL INFORMATION CORPORATION					
35-28-32.0 N	76-48-44.0 W	35.562 39.000					
WUND-FM	NC	MANTEO	88.90000	C0		50000.00	LIC
BLED20030812ABB		BOARD OF TRUSTEES OF THE UNIV. OF NC AT CHAPEL HILL					
35-54-00.0 N	76-20-45.0 W	417.694 419.000					
WRHD	NC	WILLIAMSTON	103.70000	C1		100000.00	LIC
BLH20020910ABC		ABG NORTH CAROLINA LICENSES, LLC					
35-53-54.0 N	76-59-10.0 W	298.219 305.000					
WHYC	NC	SWAN QUARTER	88.50000	A		2800.00	LIC
BLED19980527KD		HYDE COUNTY BOARD OF EDUCATION					
35-26-27.0 N	76-13-19.0 W	79.337 80.000					
WRSF	NC	COLUMBIA	105.70000	C1		100000.00	LIC
BLH19840316AA		EAST CAROLINA RADIO, INC.					
35-53-18.0 N	76-13-50.0 W	185.835 187.000					
WYND-FM	NC	HATTERAS	97.10000	C1		59000.00	LIC
BLH20040212ABG		CAPSAN MEDIA LLC					
35-27-48.0 N	76-02-07.0 W	169.435 170.000					
WCMS-FM	NC	HATTERAS	94.50000	C1		100000.00	LIC
BMLH20040610AAV		MAX RADIO OF THE CAROLINAS LICENSES LLC					
35-29-10.0 N	75-59-58.0 W	298.452 299.000					

# TABLE III

page 4

## LIST OF AM & FM STATIONS DEPICTED ON MAP FIGURE 4 FEBRUARY 2007

AM CALL ARN LATITUDE	ST OWNER LONGITUDE	CITY	FREQ	PAT	AG	PWR	DESC
WEGG BL20061212CFT 34-51-48.0 N	NC CONNER MEDIA CORPORATION 78-02-16.0 W	ROSE HILL	710.00000 LD			2.500	NDD
WSRP BL20060628ADK 34-47-45.0 N	NC ESTUARDO VALDEMAR RODRIGUEZ & LEONOR RODRIGUEZ 77-29-24.0 W	JACKSONVILLE	910.00000 LD			5.000	DAN
WSME BL20010924ABM 34-43-03.0 N	NC CTC MEDIA GROUP, INC. 77-16-57.0 W	CAMP LEJEUNE	1120.00000 LD			6.000	NDD
WJCV BL20031028AEV 34-45-58.0 N	NC DOWN EAST BROADCASTING CO INC. 77-23-28.0 W	JACKSONVILLE	1290.00000 LD			5.000	ND2
WJNC BL 34-44-56.0 N	NC HERITAGE BROADCASTING, LLC 77-24-51.0 W	JACKSONVILLE	1240.00000 LU			1.000	ND1
WNOS BL 35-06-03.0 N	NC CTC MEDIA GROUP, INC. 77-04-33.0 W	NEW BERN	1450.00000 LU			1.000	ND1
WRNS BL19990401DG 35-16-57.0 N	NC NM LICENSING LLC 77-39-09.0 W	KINSTON	960.00000 LD			5.000	DAN
WNCT BL20060802BFL 35-36-08.0 N	NC WNCT LICENSE LIMITED PARTNERSHIP 77-25-35.0 W	GREENVILLE	1070.00000 LD			50.000	DA2
WWNB BL 35-07-59.0 N	NC CTC MEDIA GROUP, INC. 77-03-56.0 W	NEW BERN	1490.00000 LU			1.000	ND1
WDLX BL19990401DD 35-31-36.0 N	NC PIRATE MEDIA GROUP, LLC 77-04-31.0 W	WASHINGTON	930.00000 LD			5.000	DAN
WANG BL20000707AEM 34-55-23.0 N	NC NM LICENSING LLC 76-56-37.0 W	HAVELOCK	1330.00000 LD			1.000	NDD

**TABLE III****page 5****LIST OF AM & FM STATIONS DEPICTED ON MAP FIGURE 4  
FEBRUARY 2007**

<b>AM CALL</b>	<b>ST</b>	<b>CITY</b>	<b>FREQ</b>	<b>PAT</b>	<b>AG</b>	<b>PWR</b>	<b>DESC</b>
<b>ARN</b>		<b>OWNER</b>					
<b>LATITUDE</b>	<b>LONGITUDE</b>						
-----							
WJPI	NC	PLYMOUTH	1470.00000 LD			5.000	NDD
BL19830909AI		FREE TEMPLE MINISTRIES INC..					
35-50-48.0 N	76-45-22.0 W						
WOBX	NC	WANCHESE	1530.00000 LD			1.000	DAD
BL19811214AF		EAST CAROLINA RADIO, INC.					
35-51-52.0 N	75-39-01.0 W						

**TABLE IV**  
**TIREM POINT TO POINT MODE SIGNAL LEVEL CALCULATIONS**

Contents of Calculation file:  
 /taservice/output/coverage/CV356Feb1407A.calc

Communications System Coverage      Model  
 Input Summary  
 14-Feb-07    16:09:22

```

-----
1) Model:                               Point-to-point irregular terrain
model
2) Output option:                       Field intensity
3) Length units:                        Metric (km and m)
4) Service Application:                  Broadcast
5) Results option:                      WWW
6) Location variability:                 50.00 %
7) Time availability:                   50.00 %
8) Situation variability:                50.00 %
10) Frequency:                           92.700 MHz
11) Polarization:                       Horizontal
12) Conductivity:                       0.005 S/m
13) Dielectric constant:                 15.0
14) Climate zone:                       Continental temperate
20) Transmitter name:                   PROPOSED
21) Transmitter location:
      Latitude                           Longitude
      Deg N                             Deg W
      34.8834  34N,53, 0.4              -76.5059  76W,30,21.3
22) Xmtr site elevation:                 2.0 m           6.6 ft
23) Xmtr ant ht AMSL:                    209.30 m        686.68 ft
23) Xmtr ant ht AGL:                     207.30 m        680.12 ft
24) Transmitter radiation option:        ERP
29) Effective Radiated Power:             26000.0 W
      Effective Isotropic Radiated Power: 42655.3 W
30) Transmitter ant horiz pattern:       Omnidirectional
32) Transmitter ant vert pattern:        Omnidirectional
40) Rcvr ant ht above ground:             9.10 m         29.86 ft
50) Man-made noise environment:          Quiet rural
62) Analysis center:
      Latitude                           Longitude
      Deg N                             Deg W
      34.8834  34N,53, 0.4              -76.5059  76W,30,21.3
66) Field intensity contour levels:
      1) 68.00 dBuV/m
      2) 69.00 dBuV/m
      3) 70.00 dBuV/m
67) Coverage study starting azimuth:     225.0 deg
67) Coverage study ending azimuth:       240.0 deg
67) Coverage study azimuth increment:     1 deg
69) Coverage limits:                     maximum Full Listing
68) Analysis radius:                     50.00 km      31.07 mi
  
```

Distance to Contours (KM)

NOTE: \*\*\*\*\* indicates contour not found!

Bearing	NO. 1	NO. 2	NO. 3
	68.0	69.0	70.0
225	48.0	46.0	44.0
226	48.0	46.0	44.0
227	47.0	46.0	44.0
228	47.0	46.0	44.0
229	47.0	46.0	44.0
230	48.0	46.0	44.0
231	47.0	46.0	44.0
232	47.0	45.0	43.0
233	47.0	45.0	43.0
234	46.0	45.0	43.0
235	46.0	45.0	43.0
236	47.0	45.0	43.0
237	46.0	45.0	43.0
238	46.0	45.0	43.0
239	46.0	45.0	44.0
240	47.0	46.0	43.0



Table of Field intensity values.  
Distance Bearing

km	225	226	227	228	229	230
1.00	128.2	128.2	128.2	128.2	128.2	128.2
2.00	117.2	117.2	117.2	117.2	117.2	117.2
3.00	112.9	112.9	112.9	112.9	112.9	112.9
4.00	110.1	110.1	110.1	110.1	110.1	110.1
5.00	107.9	107.9	107.9	107.9	107.9	107.9
6.00	106.2	106.2	106.2	106.2	106.2	106.2
7.00	104.8	104.8	104.8	104.8	104.8	104.8
8.00	103.0	103.0	103.0	103.0	103.0	103.0
9.00	101.0	101.0	101.0	101.0	101.1	101.1
10.00	99.2	99.2	99.2	99.2	99.2	99.2
11.00	97.6	97.6	97.6	97.6	97.6	97.6
12.00	96.1	96.1	96.1	96.1	96.1	96.1
13.00	94.8	94.8	94.8	94.8	94.8	94.8
14.00	93.5	93.5	93.5	93.5	93.5	93.5
15.00	92.5	92.7	92.8	93.0	93.1	93.2
16.00	92.5	92.5	92.4	92.4	92.3	92.2
17.00	91.3	91.3	91.6	91.7	91.8	91.7
18.00	90.7	90.8	90.6	90.5	90.4	90.4
19.00	89.2	89.0	88.9	88.8	88.6	88.4
20.00	86.9	86.9	86.9	86.9	86.9	86.9
21.00	86.0	86.0	85.9	85.9	85.9	86.0
22.00	85.1	85.1	85.0	85.0	85.0	85.1
23.00	84.2	84.2	84.2	84.2	84.2	84.2
24.00	83.3	83.3	83.3	83.3	83.3	83.3
25.00	82.5	82.5	82.5	82.5	82.7	83.0
26.00	82.1	82.3	81.8	81.7	81.7	81.7
27.00	81.0	81.2	82.3	82.7	81.5	80.9
28.00	80.3	80.2	80.1	80.2	81.4	82.6
29.00	80.4	79.5	79.4	79.3	79.3	79.3
30.00	79.5	81.3	81.9	81.2	78.5	78.5
31.00	78.0	77.8	78.5	80.5	80.2	77.8
32.00	77.4	77.2	77.1	77.1	78.9	78.5
33.00	76.7	76.5	76.4	76.4	76.4	76.9
34.00	76.1	75.9	75.7	75.7	75.7	75.7
35.00	75.5	75.3	75.0	75.0	75.0	75.0
36.00	74.8	74.7	74.4	74.3	74.3	74.4
37.00	74.2	74.1	73.8	73.6	73.7	73.8
38.00	73.5	73.4	73.2	73.0	73.1	73.2
39.00	72.9	72.8	72.6	72.4	72.5	72.6
40.00	72.3	72.2	72.0	71.8	71.9	72.1
41.00	71.7	71.6	71.4	71.3	71.3	71.5
42.00	71.1	71.0	70.9	70.7	70.8	70.9
43.00	70.5	70.5	70.3	70.1	70.2	70.3
44.00	69.9	69.9	69.7	69.6	69.6	69.8
45.00	69.4	69.3	69.2	69.0	69.1	69.2
46.00	68.8	68.7	68.6	68.5	68.5	68.6
47.00	68.2	68.1	68.0	67.9	67.9	68.0
48.00	67.6	67.5	67.4	67.4	67.4	67.5
49.00	67.0	67.0	66.9	66.8	66.8	66.9
50.00	66.5	66.4	66.3	66.3	66.3	66.4

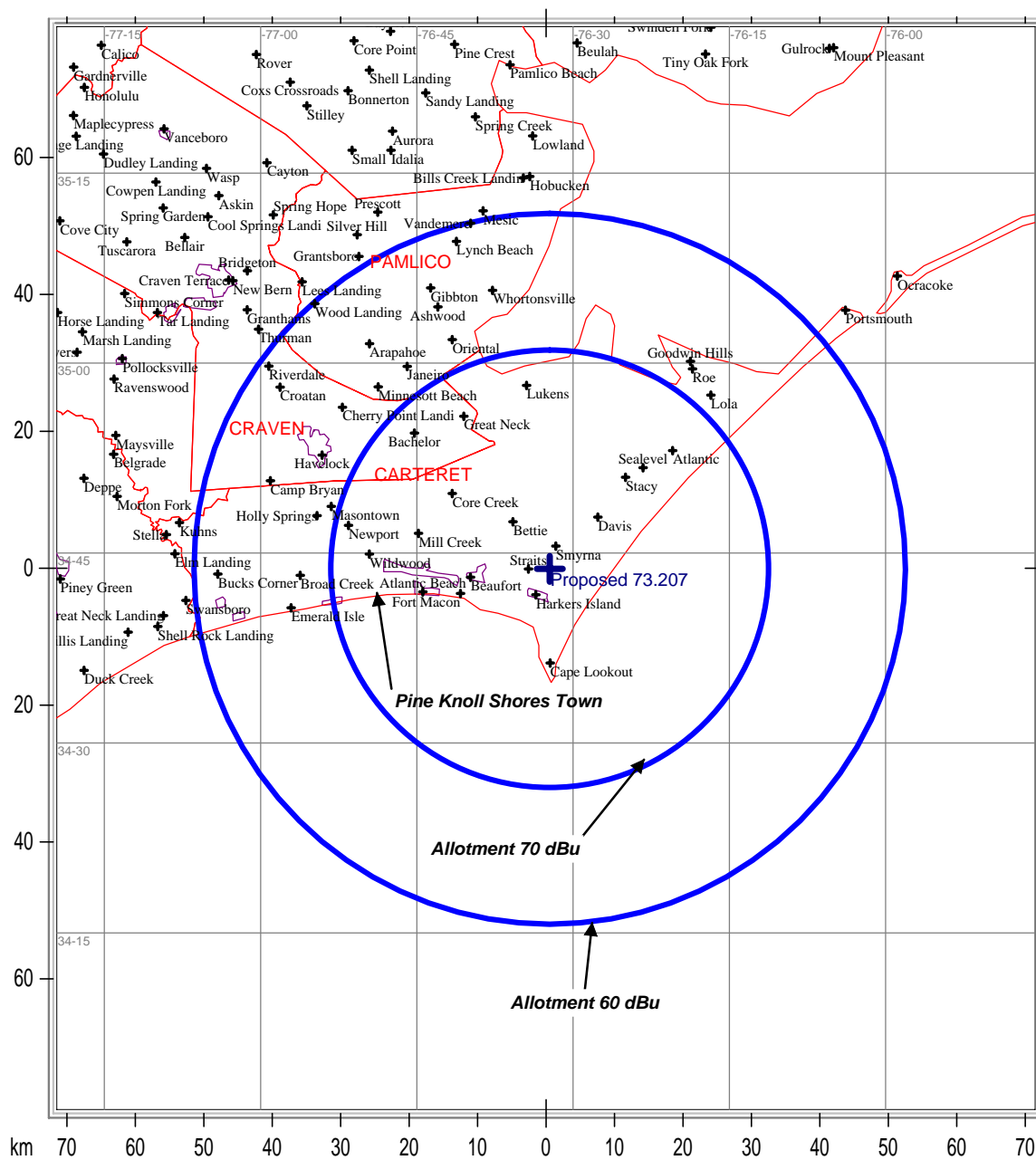
Table of Field intensity values.  
Distance Bearing

km	231	232	233	234	235	236
1.00	128.2	128.2	128.2	128.2	128.2	128.2
2.00	117.2	117.2	117.2	117.2	117.2	117.2
3.00	112.9	112.9	112.9	112.9	112.9	112.9
4.00	110.1	110.1	110.1	110.1	110.1	110.1
5.00	107.9	107.9	107.9	107.9	107.9	107.9
6.00	106.2	106.2	106.2	106.2	106.2	106.2
7.00	104.8	104.8	104.8	104.8	104.8	104.8
8.00	103.0	103.0	103.0	103.0	103.0	103.0
9.00	101.1	101.1	101.1	101.1	101.1	101.1
10.00	99.2	99.2	99.2	99.2	99.2	99.2
11.00	97.6	97.6	97.6	97.6	97.6	97.6
12.00	96.1	96.1	96.1	96.1	96.1	96.1
13.00	94.8	94.8	94.8	94.8	94.8	94.8
14.00	93.5	93.5	93.6	93.6	93.8	93.8
15.00	93.3	93.3	93.2	93.2	93.1	93.0
16.00	92.3	92.3	92.3	92.4	92.5	92.4
17.00	91.6	91.6	91.5	91.4	91.3	91.2
18.00	90.3	90.2	89.9	89.6	89.5	89.2
19.00	88.2	88.1	88.0	88.0	87.9	87.9
20.00	86.9	86.9	86.9	86.9	86.9	86.9
21.00	86.0	86.0	86.0	86.0	86.0	86.0
22.00	85.1	85.1	85.1	85.1	85.1	85.1
23.00	84.2	84.2	84.2	84.2	84.2	84.2
24.00	83.3	83.4	83.4	83.3	83.3	83.3
25.00	83.3	83.9	84.4	84.7	84.2	83.2
26.00	81.7	81.7	83.1	84.5	84.4	82.0
27.00	81.1	82.1	82.8	84.3	83.1	80.9
28.00	83.4	82.8	81.6	82.4	83.1	82.0
29.00	79.5	82.1	83.9	82.4	83.6	84.5
30.00	78.5	78.5	80.1	81.4	82.0	82.2
31.00	77.8	77.8	77.8	77.8	77.8	77.8
32.00	77.3	77.1	77.1	77.0	77.0	77.1
33.00	79.3	77.1	76.4	76.3	76.3	76.4
34.00	75.7	78.5	76.6	75.6	75.6	75.7
35.00	75.0	75.0	77.4	75.6	74.9	75.0
36.00	74.3	74.3	74.3	75.8	75.0	74.3
37.00	73.6	73.6	73.6	73.5	76.2	73.6
38.00	73.0	73.0	72.9	72.9	72.9	74.4
39.00	72.4	72.3	72.3	72.2	72.2	73.1
40.00	71.8	71.7	71.7	71.6	71.6	71.7
41.00	71.2	71.1	71.0	71.0	71.0	71.1
42.00	70.7	70.4	70.4	70.3	70.3	70.4
43.00	70.1	69.8	69.8	69.7	69.7	69.8
44.00	69.6	69.2	69.2	69.1	69.1	69.2
45.00	69.0	68.7	68.6	68.5	68.5	68.7
46.00	68.4	68.1	68.0	67.9	67.9	68.0
47.00	67.9	67.6	67.4	67.3	67.3	67.4
48.00	67.3	67.0	66.8	66.7	66.7	66.9
49.00	66.8	66.5	66.3	66.2	66.2	66.3
50.00	66.3	66.0	65.7	65.6	65.6	65.8

Table of Field intensity values.

Distance	Bearing					
km	237	238	239	240	241	242
1.00	128.2	128.2	128.2	128.2	10000.0	10000.0
2.00	117.2	117.2	117.2	117.2	10000.0	10000.0
3.00	112.9	112.9	112.9	112.9	10000.0	10000.0
4.00	110.1	110.1	110.1	110.1	10000.0	10000.0
5.00	107.9	107.9	107.9	107.9	10000.0	10000.0
6.00	106.2	106.2	106.2	106.2	10000.0	10000.0
7.00	104.8	104.8	104.8	104.8	10000.0	10000.0
8.00	103.0	103.0	103.0	103.0	10000.0	10000.0
9.00	101.1	101.1	101.1	101.1	10000.0	10000.0
10.00	99.2	99.2	99.2	99.2	10000.0	10000.0
11.00	97.6	97.6	97.6	97.6	10000.0	10000.0
12.00	96.1	96.1	96.1	96.1	10000.0	10000.0
13.00	94.8	94.8	94.8	94.8	10000.0	10000.0
14.00	93.8	93.8	93.9	93.9	10000.0	10000.0
15.00	92.8	92.7	92.7	92.7	10000.0	10000.0
16.00	92.3	92.3	92.3	92.3	10000.0	10000.0
17.00	91.0	90.9	90.8	90.7	10000.0	10000.0
18.00	89.0	89.0	89.0	89.0	10000.0	10000.0
19.00	87.9	87.9	87.9	87.9	10000.0	10000.0
20.00	86.9	87.0	87.0	87.0	10000.0	10000.0
21.00	86.1	86.1	86.2	86.1	10000.0	10000.0
22.00	85.1	85.1	85.2	85.3	10000.0	10000.0
23.00	84.2	84.2	84.3	84.4	10000.0	10000.0
24.00	83.3	83.4	83.4	83.4	10000.0	10000.0
25.00	82.5	82.5	82.5	82.5	10000.0	10000.0
26.00	81.7	81.7	81.7	81.7	10000.0	10000.0
27.00	80.9	80.9	80.9	81.1	10000.0	10000.0
28.00	80.6	80.3	80.1	80.4	10000.0	10000.0
29.00	83.7	83.1	81.6	80.2	10000.0	10000.0
30.00	82.3	82.7	82.0	81.1	10000.0	10000.0
31.00	80.3	81.7	81.4	81.7	10000.0	10000.0
32.00	80.9	80.5	80.3	80.5	10000.0	10000.0
33.00	76.3	76.3	80.3	80.3	10000.0	10000.0
34.00	75.6	75.6	77.6	79.8	10000.0	10000.0
35.00	74.9	74.9	74.9	76.1	10000.0	10000.0
36.00	74.2	74.2	74.2	74.3	10000.0	10000.0
37.00	73.6	73.5	73.5	73.5	10000.0	10000.0
38.00	72.9	72.9	72.8	72.8	10000.0	10000.0
39.00	72.4	72.2	72.2	72.2	10000.0	10000.0
40.00	74.3	71.6	71.6	71.6	10000.0	10000.0
41.00	71.0	72.1	70.9	70.9	10000.0	10000.0
42.00	70.3	72.8	70.9	70.3	10000.0	10000.0
43.00	69.7	69.7	72.3	69.7	10000.0	10000.0
44.00	69.1	69.1	69.3	69.1	10000.0	10000.0
45.00	68.5	68.5	68.5	69.7	10000.0	10000.0
46.00	67.9	67.9	67.9	68.7	10000.0	10000.0
47.00	67.3	67.3	67.3	67.2	10000.0	10000.0
48.00	66.8	66.7	66.7	66.7	10000.0	10000.0
49.00	66.2	66.2	66.1	66.1	10000.0	10000.0
50.00	65.6	65.7	65.6	65.5	10000.0	10000.0

CH 224C2 92.7 MHz 50 kW @ 150 M HAAT PINE KNOLL SHORES, NORTH CAROLINA

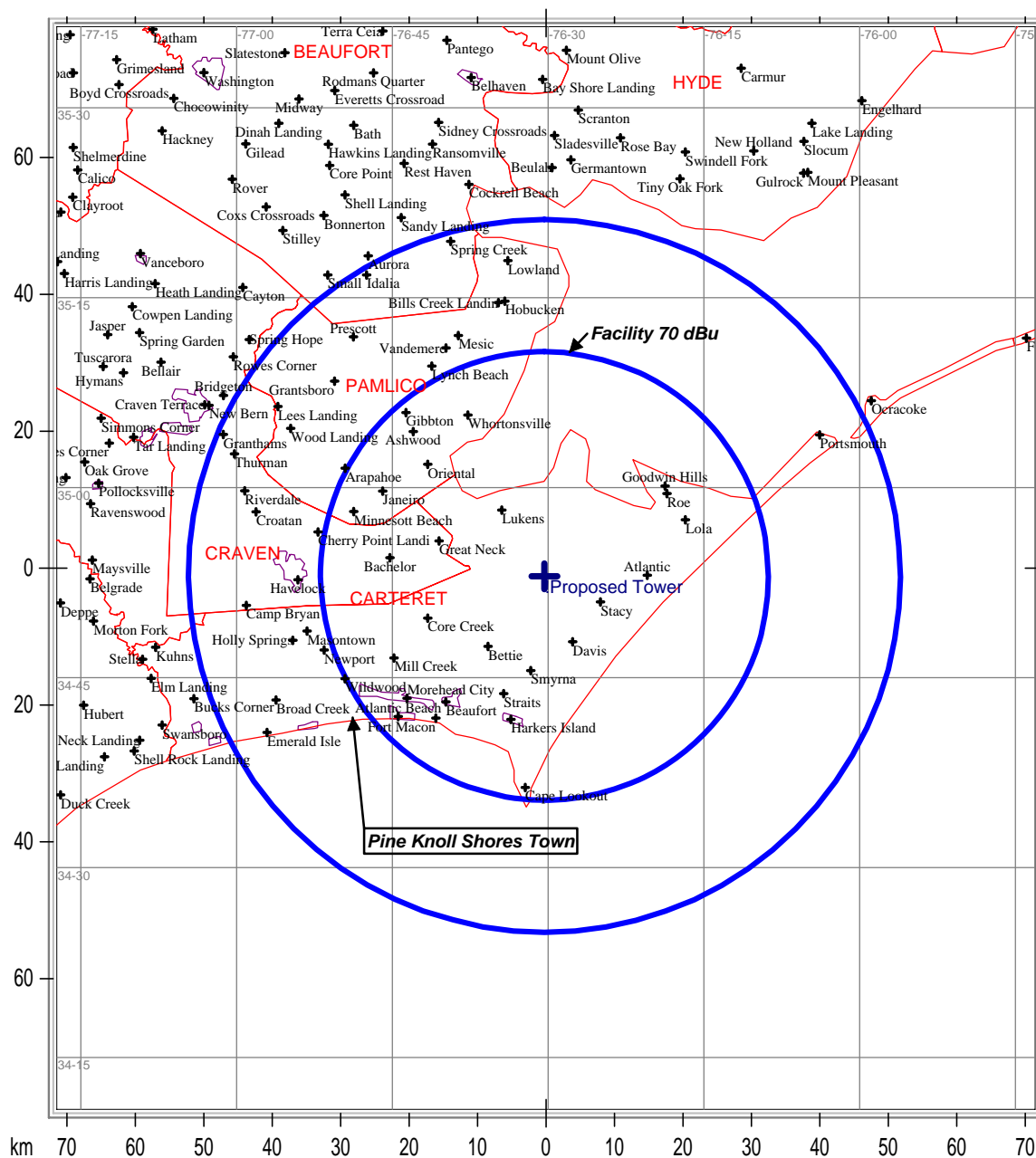


Communications Technologies, Inc. Marlton, New Jersey

— County Borders   
 — City Borders   
 — Lat/Lon Grid

Figure 2

CH 224C2 92.7 MHz 26 kW @ 209 M HAAT (RC 209.4 M AMSL) PINE KNOLL SHORES, NORTH CAROLINA



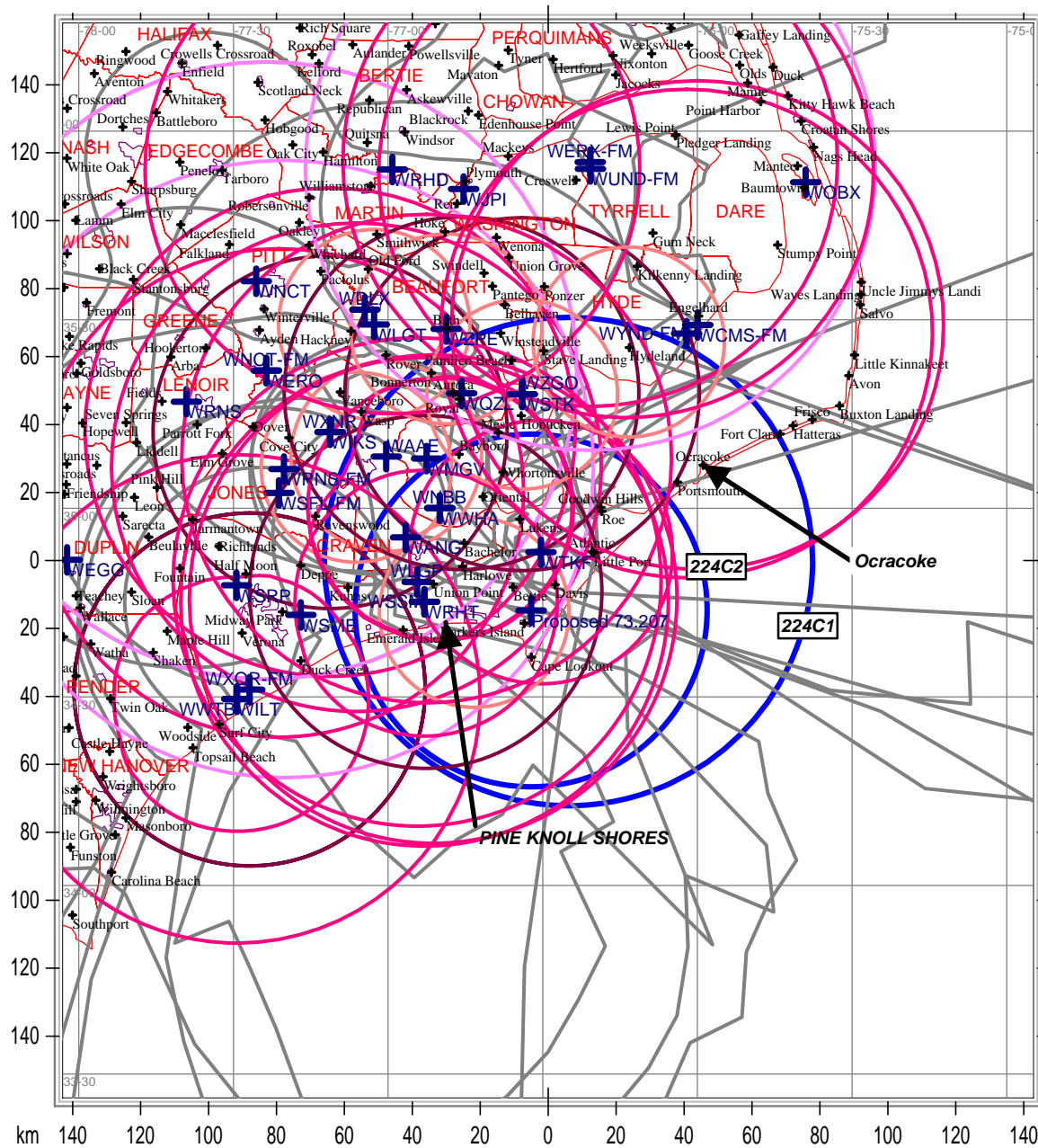
Communications Technologies, Inc. Marlton, New Jersey

— County Borders   
 — City Borders   
 — Lat/Lon Grid

Map Scale: 1:1000000 1 cm = 10.00 km V/H Size: 158.19 x 142.91 km

Figure 3

## CH 224 92.7 MHz OCRACOKE &amp; PINE KNOLL SHORES , NORTH CAROLINA

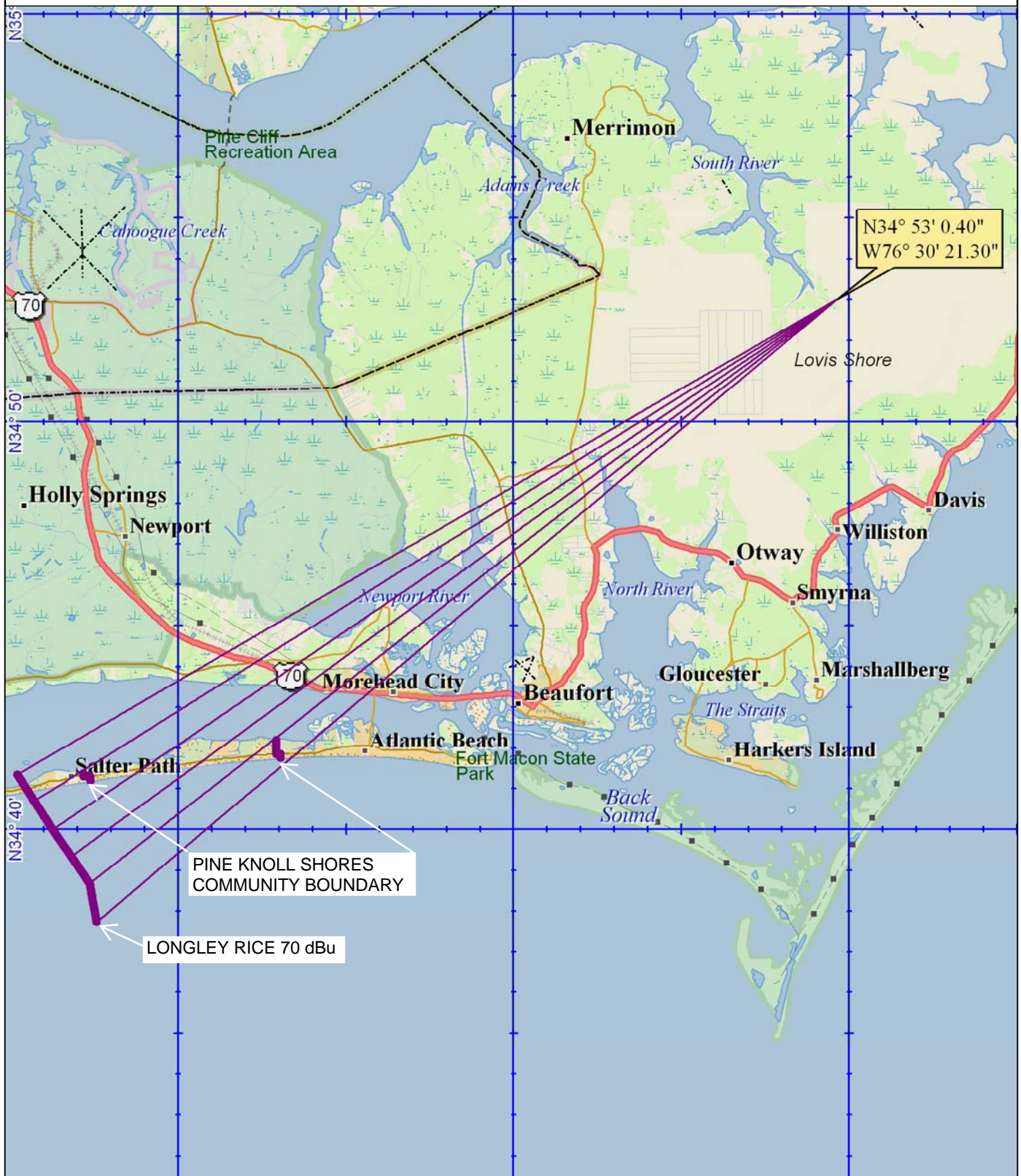


Communications Technologies, Inc. Marlton, New Jersey

— County Borders   
 — City Borders   
 — Lat/Lon Grid

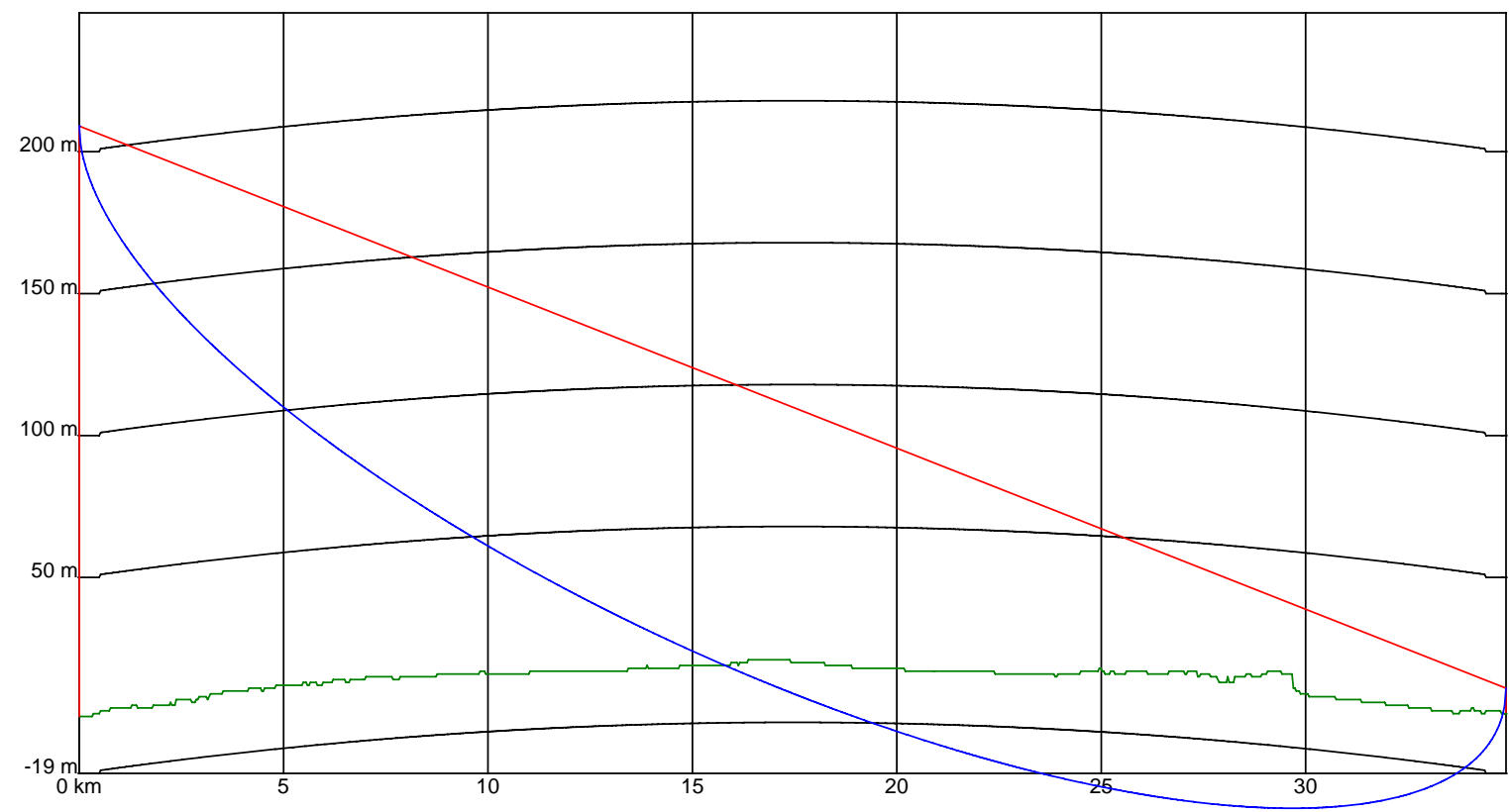


FIGURE 5 - COMMUNITY BOUNDARY PINE KNOLL SHORES, NORTH CAROLINA  
WITH LONGLEY RICE 70 dBu





ComStudy 2 Path Profile



PROPOSED

Lat: 34-53-00.4 N  
Lon: 76-30-21.3 W  
AMSL: 1 m  
Tower AGL: 208 m

COMMUNITY

Lat: 34-41-49.9 N  
Lon: 76-48-49.0 W  
AMSL: 2 m  
Tower AGL: 9 m

Profile Info

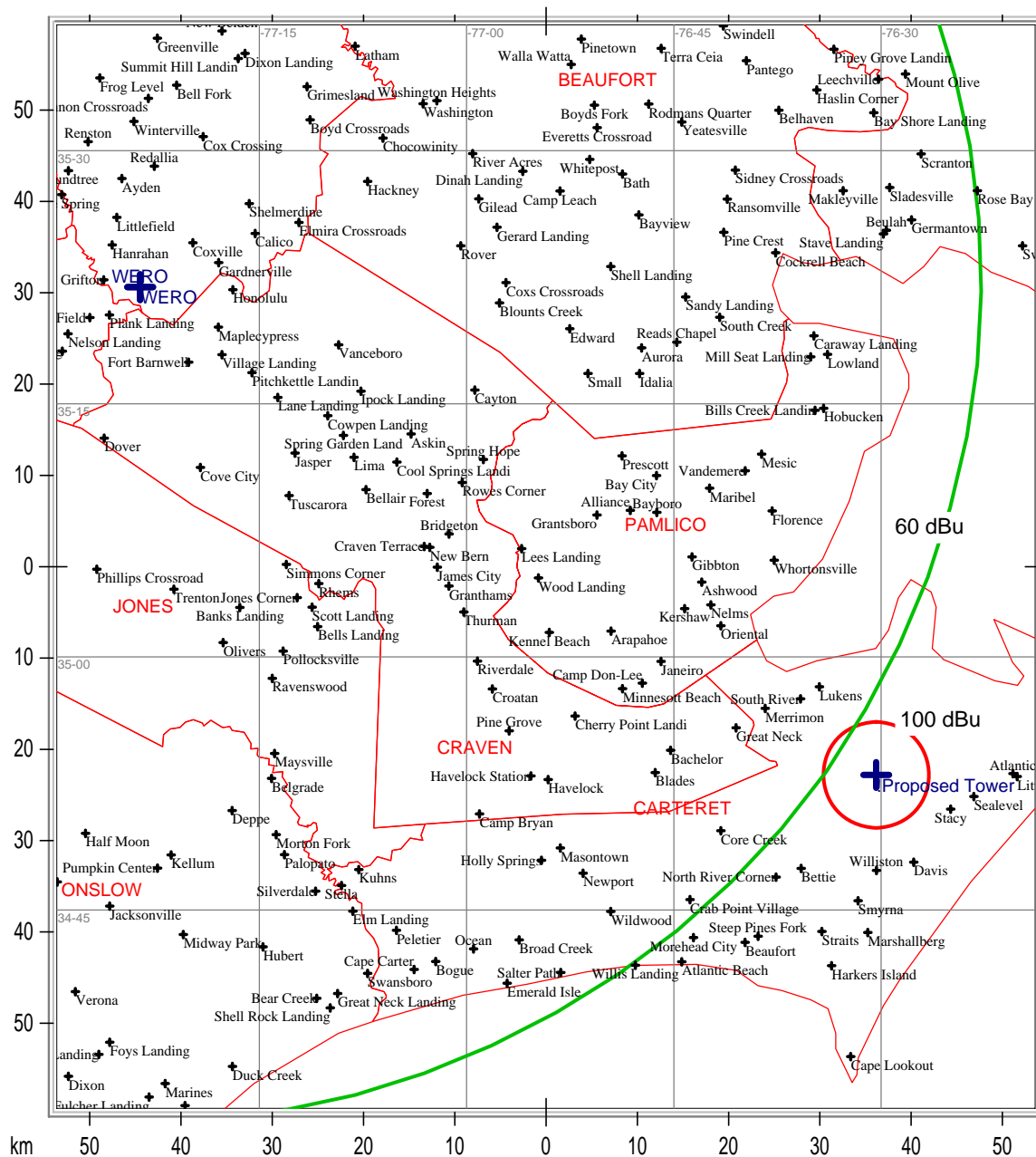
Distance: 34.90 Km  
Bearing: 233.70 deg  
# of points: 1000  
K value: 1.333  
Frequency: 92.7000  
Clearance: 0.6

Losses

Base Loss: 115.0 dB  
Fade Margin: N/A  
Diffraction: 0.0 dB  
Fresnel: 5.8 dB

FIGURE 5P

CH 224C2 92.7 MHz 26 kW @ 209 M HAAT (RC 209.4 M AMSL) PINE KNOLL SHORES, NORTH CAROLINA



Communications Technologies, Inc. Marlton, New Jersey

County Borders      Lat/Lon Grid

Map Scale: 1:750000   1 cm = 7.50 km   V/H Size: 118.64 x 107.18 km

Figure 6

Carteret County  
Comprehensive Plan

Land Suitability Analysis Map

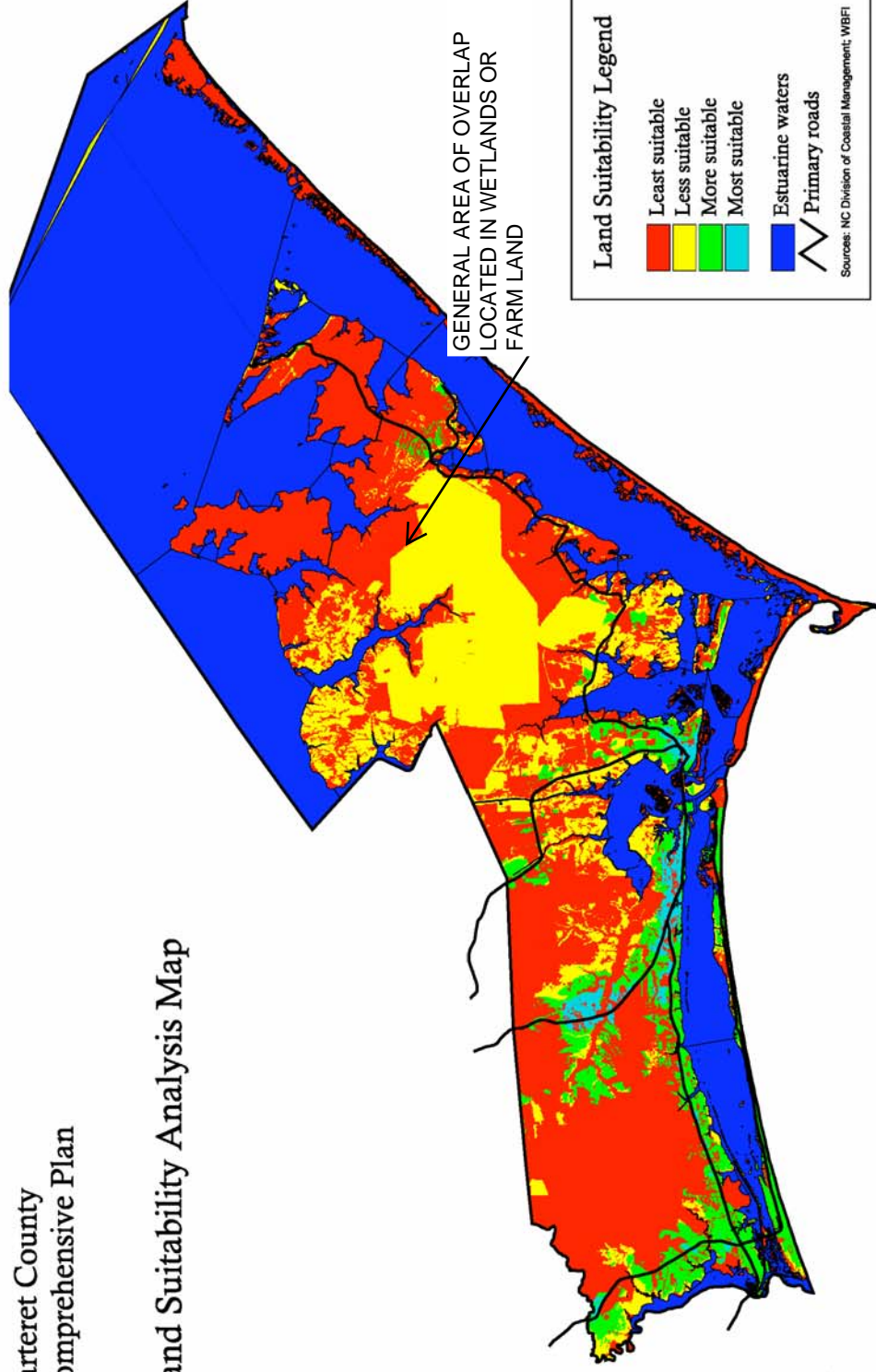


FIGURE 7 AREA OF OVERLAP WITH WERO