

EXHIBIT 13 - CONSOLIDATED TECHNICAL STATEMENT

prepared January 2022 for

Colonial Radio Group, Inc.

WNMB(AM) North Myrtle Beach, South Carolina

Introduction

Colonial Radio Group, Inc. (“Colonial”) is the licensee of Station WNMB(AM), located in North Myrtle Beach, South Carolina, (see FCC Facility ID 49985, FCC File No. BL-19830322AE). *Colonial* is presently authorized to operate WNMB as a directional Class B station using a frequency of 900 kHz at a power level of 0.5 kW during daytime and nighttime hours using two different directional antenna patterns. Due to the loss of its presently authorized site¹, *Colonial* is herein seeking authorization to relocate the WNMB transmitting site to an alternative location that is presently used for co-owned non-directional WMIR². The proposed non-directional power for WNMB at the new location is 0.25 kW (250 Watts) daytime. The proposed nighttime operating power is 0.08 kW (80 Watts). This application may be considered to be a “minor change” under FCC Rule §73.3571(a)(2).

Proposed New Location

The existing non-directional tower proposed to be used as the new WNMB location is shown in the *Google Earth™* overhead image provided below. There is no population in the immediate vicinity of this site.



¹ Please see FCC CDBS File Number BSTA-20160901AAD, and the most recent extension BESTA-20211108AAQ.

² WMIR, 1200 kHz, Atlantic Beach, South Carolina. (See FCC Facility ID 41499; FCC File Number BL-19970912KB.)

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The coordinates for the replacement WNMB site are as follows:

Coordinates in NAD-83 Datum

33° 50' 06.1" North Latitude
78° 47' 01.4" West Longitude

Coordinates in NAD-27 Datum

33° 50' 05.5" North Latitude
78° 47' 02.3" West Longitude

FCC Antenna Structure Registration ("ASR") Number 1219593 is associated with this structure. An apparent coordinate error of approximately 5.9 seconds latitude and 0.6 seconds longitude is believed to exist between the ASR coordinates and the actual tower location. A land surveyor and an Aeronautical Consultant have been retained to facilitate corrections. The record for this host facility will be separately updated accordingly.

Antenna and Ground System Description

The tower being proposed for use by WNMB is an existing AM antenna tower presently being used by co-owned WMIR(AM). The intention is to diplex WNMB into the WMIR tower with no physical changes being made to the WMIR tower. This existing tower is a uniform cross-section, top-loaded, guyed tower, using a folded unipole feed. The overall height of this structure is 71.9 meters above ground level; The radiating portion of this structure is 70.71 meters in length, yielding an electrical height of 76.42 degrees at the WNMB frequency of 900 kHz. The existing guywire top-loading is 2.25 degrees at the WNMB frequency of 900 kHz. The ground system installed at this site consists of 120 equally spaced, buried copper radials, each 62.46 meters (67.5 degrees) in length. Using the FCC's **Figure 8** from Rule **§73.190**, and considering the extent of ground system and antenna height (assumed for this purpose to be the sum of the tower length plus the top loading, or 78.67 electrical degrees in total), the theoretical antenna efficiency for WNMB will be 279.438 mV/m/km/kW (or 139.719 mV/m at 0.25 kW).

Predicted Coverage

All contours used in this application were predicted in accordance with the methods specified in the FCC's Rules using one degree radial intervals. Both theoretical FCC **Figure M-3** ground conductivity data and measured conductivity data were employed³. The maps that follow show the locations of the predicted existing and proposed pertinent daytime contours (0.5, 2, 5, and 25 mV/m), along with the locations of the 1 V/m (1000 mV/m) "blanketing" contours, pertinent daytime allocation study contours (0.5, 0.025, 0.25, 5 and 25 mV/m), the predicted nighttime interference free ("NIF") contours, and supporting information and tabulations.

³ No historical measured data was found to be available for the presently licensed WNMB facility, the WMIR operation or other pertinent stations in the region of interest. (The last full proof-of-performance for the authorized WNMB site could not be located, nor could any record of this proof be found in any presently available archives due to Covid protocols.)

Accordingly, the licensee of WNMB undertook a series of field strength measurements to establish measured conductivity values in support of this application. (Measurements were taken from the proposed new site to establish conductivities from that site toward areas of concern, and also from co-channel station WAYN and first adjacent station WTMZ.) These data were taken by Jeffrey M. Andrulonis using a Potomac Instruments FIM 21, Serial Number 781, which was last calibrated March 25, 2021. A measured conductivity summary, tabulation of the measured data, and graphical analysis is provided in the attached Appendices I and II.

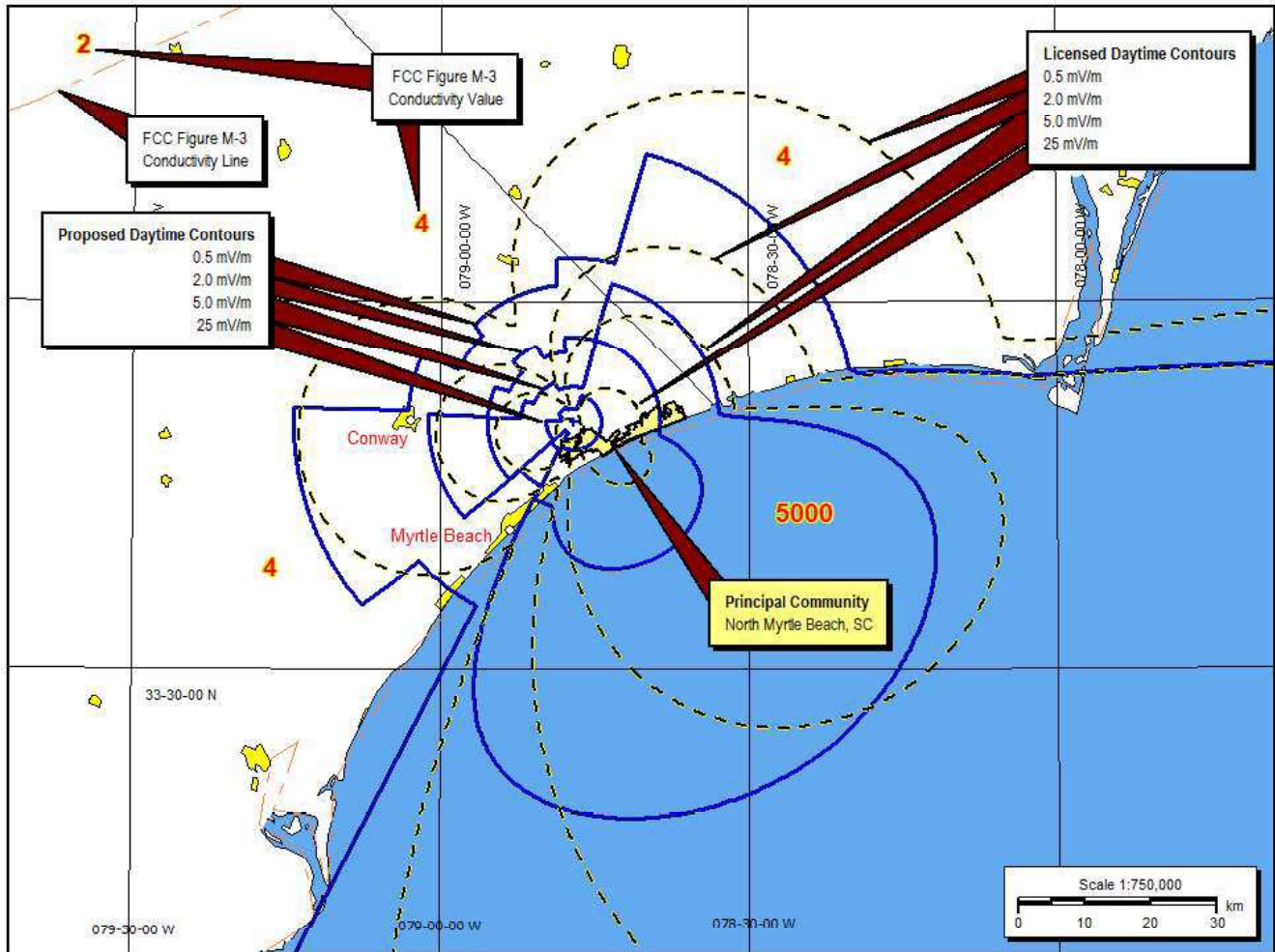
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Daytime Coverage

The predicted locations of the existing and proposed daytime 0.5 mV/m, 2 mV/m, 5 mV/m and 25 mV/m contours are shown on the map provided below.



Daytime Principal Community Coverage

The proposed daytime 5 mV/m principal community coverage contour encompasses 81.4 percent of the area and 81.0 percent of the population of the WNMB community of license, North Myrtle Beach, South Carolina, assuming the use of Year 2020 U.S. Census data. This application thus satisfies the daytime principal community coverage requirements of FCC Rule §73.24(i) for modifications of existing licensed stations.

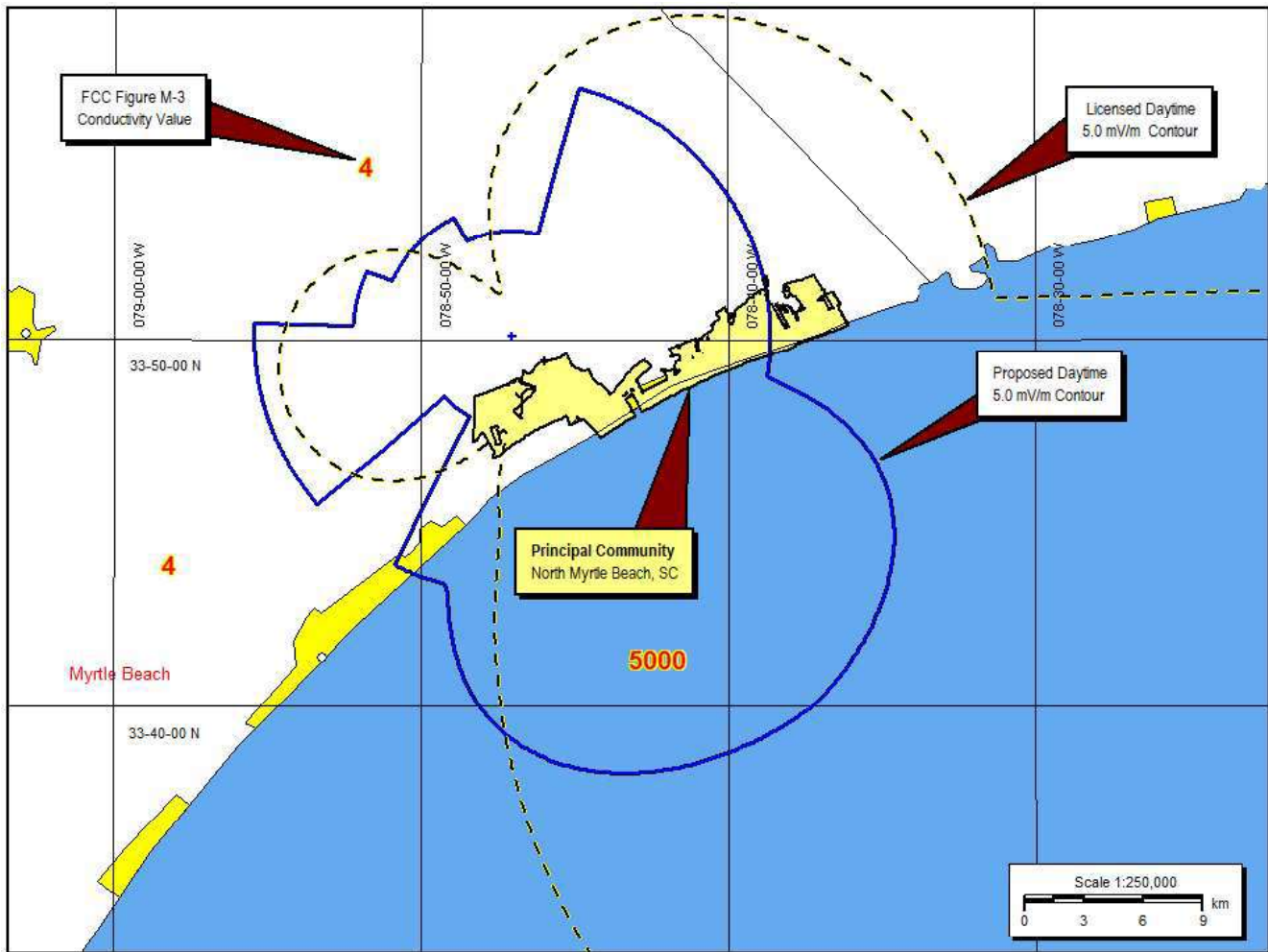
The following map shows the locations of the presently licensed and proposed daytime 5 mV/m contours with respect to the WNMB principal community.

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Daytime Principal Community Coverage



Nighttime Coverage

WNMB is presently authorized as a Class B facility, operating directionally both daytime and nighttime with a nominal of 0.5 kW. With the relocation to a non-directional tower, adequate protection to other stations cannot be maintained without reducing power to 0.08 kW. This will thus require that WNMB change its classification from Class B to Class D. It is believed that Class D stations are not required to provide minimal levels of nighttime coverage, nor are they protected from interference from other stations during nighttime hours⁴. *Colonial* herein proposes to operate with limited non-directional nighttime facilities (specifically 0.08 kW) at the proposed replacement site, and will accept whatever interference that may occur from other authorized facilities during nighttime hours.

⁴ Nighttime authority for Class D stations is only permitted on the basis of full nighttime protection being afforded to all other Class A and Class B stations. As will be shown in a following section discussing allocations considerations, full protection will be provided to all other pertinent stations during nighttime hours using the facilities proposed herein.

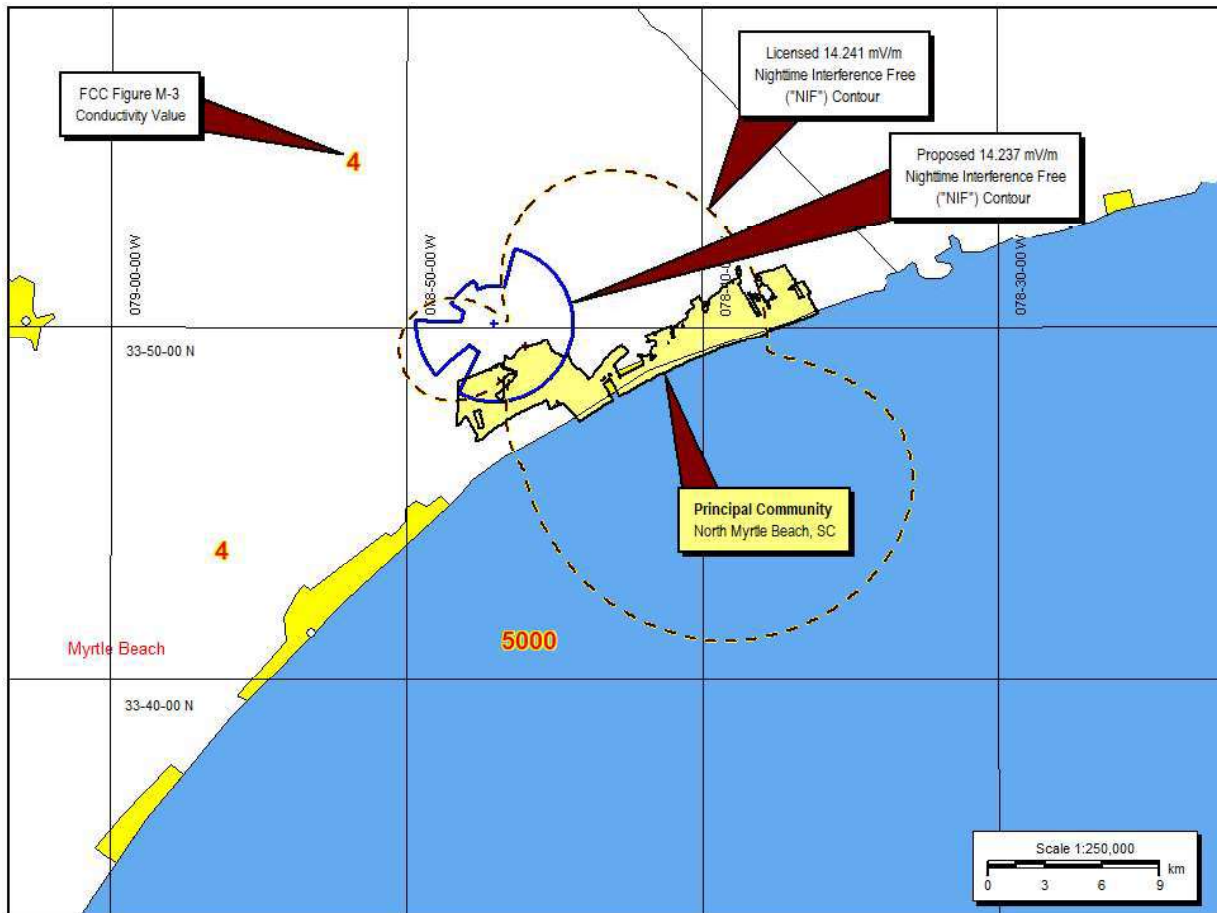
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The map shown below displays the locations of the existing and proposed nighttime interference free ("NIF") contours for WNMB. The NIF values and contours were predicted in accordance with the methods specified in the FCC's Rules, as tabulated on the following page. The proposed 14.237 mV/m NIF coverage contour encompasses 11.8 percent of the population (U.S. 2020 Census) and 19.9 percent of the area of the WNMB principal community. However, nighttime coverage over a specified portion of the principal community is no longer required by the FCC for modifications of existing stations. As such, it is believed that the proposed nighttime operation will be fully compliant with the FCC's Principal Community coverage requirements.

Predicted Existing and Proposed Nighttime Interference Free ("NIF") Contours



Incoming Nighttime Limit (NIF) Calculation for Proposed Relocated WNMB Facility

<u>Call - Location</u>	<u>Dist. (km)</u>	<u>Azi. (°T)</u>	<u>Vert. Angle (Theta)</u>	<u>Maximum Radiation</u>	<u>Skywave Factor</u>	<u>Night Limit</u>	<u>RSS Limit</u>
XEW1/A Mexico City, DF MX	2577.9	47.1°	0.0° - 0.0°	5724.2 mV/m	10.50 µV/m	12.016 mV/m	12.016 mV/m
WAYN Rockingham, NC US	149.8	143.7°	43.5° - 57.6°	108.27 mV/m	352.62 µV/m	7.636 mV/m	14.237 mV/m
----- 50% Exclusion -----							
WIAM Williamston, NC US	275.3	215.7°	27.0° - 40.3°	117.47 mV/m	231.68 µV/m	5.443 mV/m	15.242 mV/m

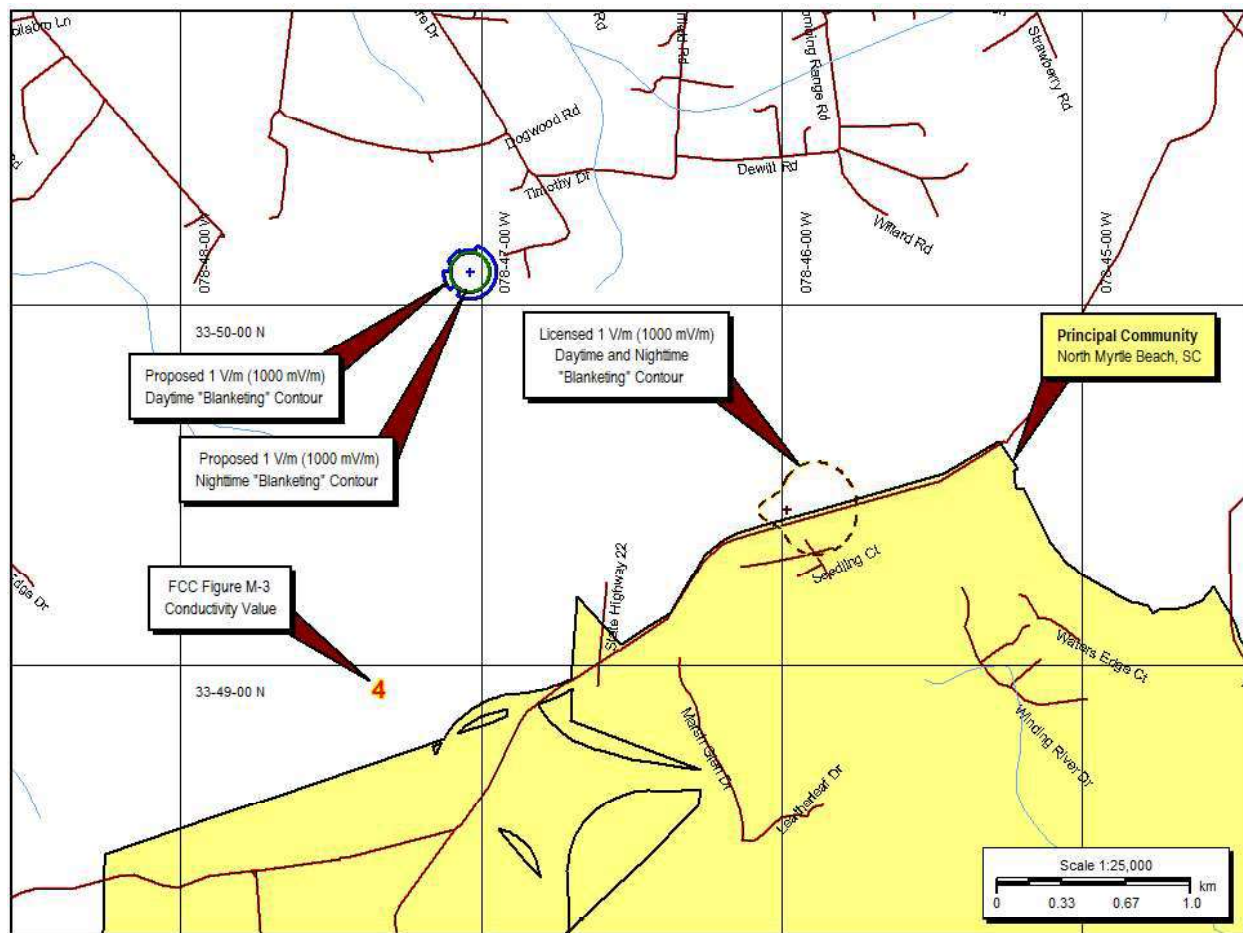
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Blanketing Contours

The locations of the licensed and proposed daytime and nighttime 1 V/m (1000 mV/m) “blanketing” contours were predicted in accordance with the FCC’s Rules and are shown in the map provided below. Using U.S. 2020 Census data, it is estimated that there are 4656 persons residing within the proposed daytime 25 mV/m contour (depicted on an earlier map), zero persons residing within the proposed daytime 1 V/m blanketing contour, and zero persons residing within the proposed 1 V/m nighttime blanketing contour. Since the number of persons within the predicted 1 V/m contour is fewer than 300, the provisions of FCC Rule §73.24(g) are not applicable. The proposed modified WNMB daytime and nighttime operation thus meets the requirements of the FCC’s Rules regarding 1 V/m blanketing interference.



Daytime Allocation Considerations

The proposed WNMB relocation was evaluated for FCC allocations rules compliance using contour predictions made at one degree radial increments and ground conductivity assumptions taken from the measurement data provided herewith and FCC **Figure M3**. As will be demonstrated in the following, *no new instances* of contour overlap would be created and *instances of existing contour overlap are reduced* under this proposal.

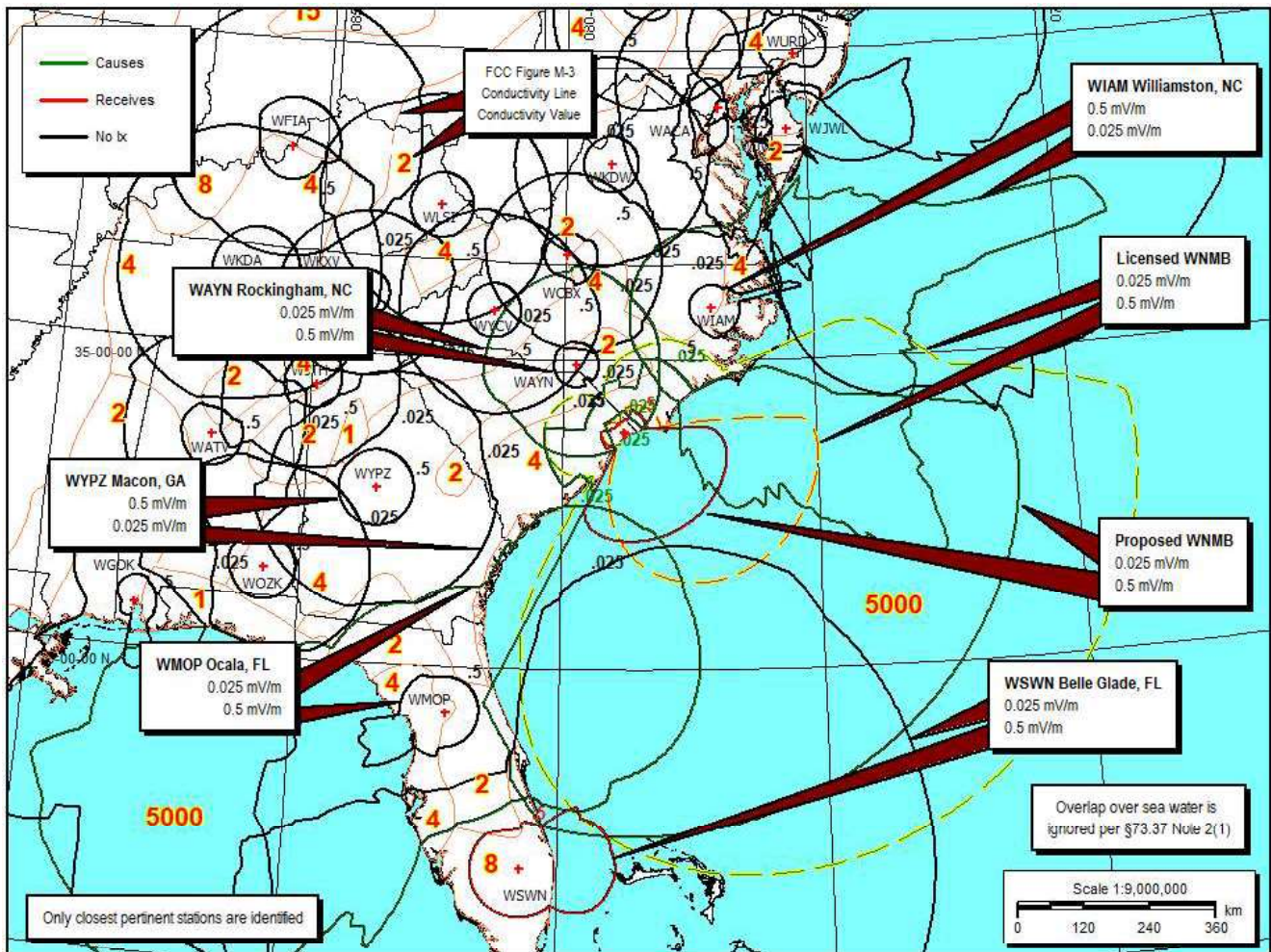
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In the following maps, the presently licensed WNMB contours are shown as dashed, yellow highlighted contour lines while all other station contours (including those of the proposed facility) are plotted with solid lines. Where instances of prohibited contour overlap occur, green contours indicate *overlap caused* while red contours indicate *overlap received*. All instances of *overlaps over water areas were electronically filtered out* of the analysis in keeping with FCC Rule §73.37(f), Note 2(1). Where existing overlaps may be difficult to visually evaluate from the maps, study results in terms of overlaps in square kilometers are provided in tabular form.

Co-Channel Allocation Study Overview Map - 0.5 mV/m vs 0.025 mV/m Contours



The above map is unfortunately very “busy” due to the number of stations operating on 900 kHz, but is supplied as an overview of the overall cochannel allocations picture. The following map will present a less congested view, focusing only on the closest stations that are pertinent to the WNMB modification proposal. Additional separate maps will also be provided where a detailed, more focused view of a particular situation would provide clarity. Where differences are difficult to visually ascertain, a tabulation showing the magnitude of pertinent existing and proposed contour overlaps, expressed in square kilometers, will be provided in the following pages.

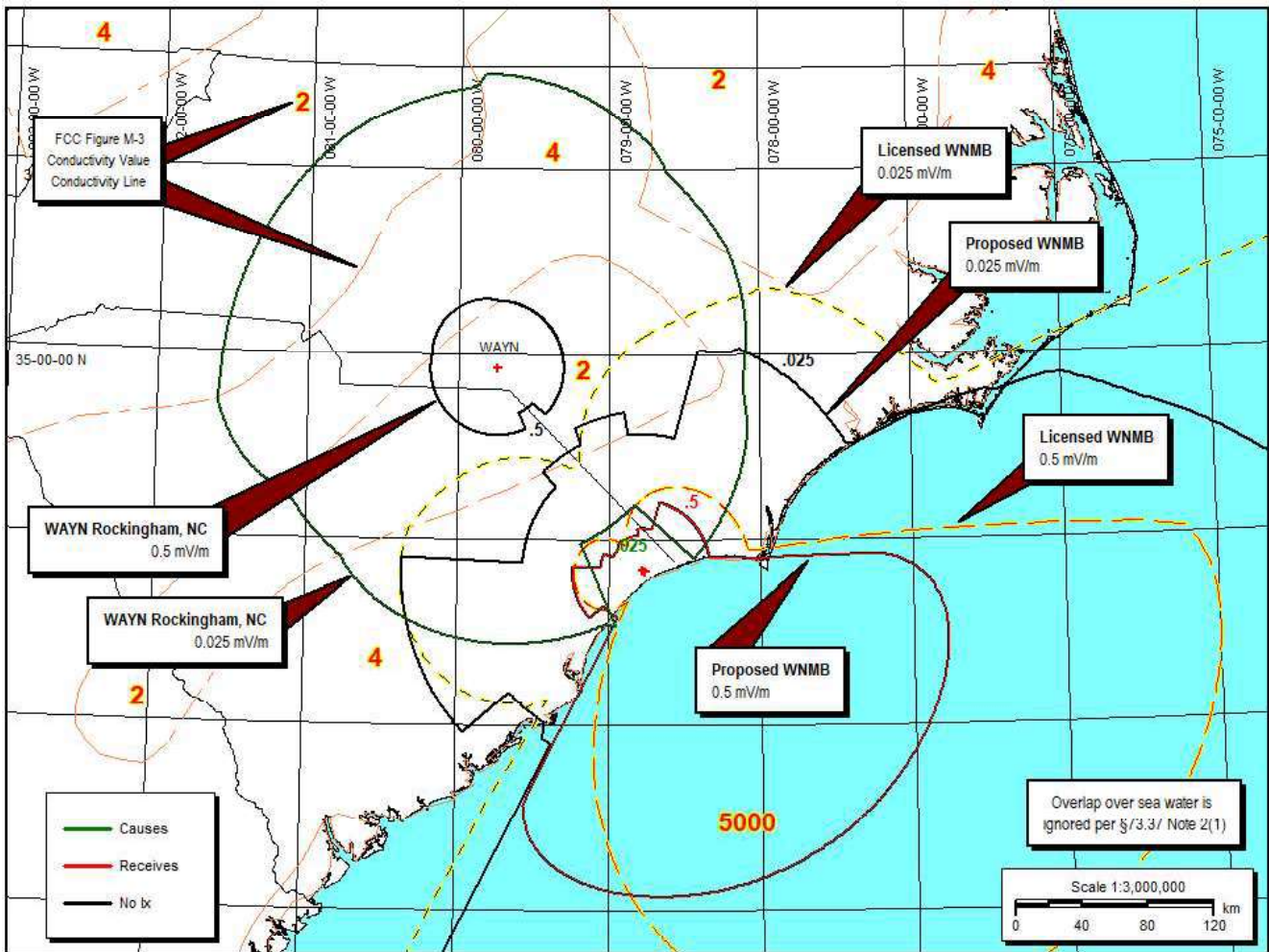
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Co-Channel Allocation Study – Detailed View for WAYN



Contour Overlap Analysis - Summary Table

<u>Existing Co-Channel Contour Overlap – WNMB as Licensed</u>						
Call	Freq	City, State	Dist.	Azi.	Incoming*	Outgoing**
WAYN	900 kHz	Rockingham, NC	151.6 km	323.4°	-1730.25 sq. km	43.79 sq. km
<u>Co-Channel Contour Overlap – WNMB as Proposed</u>						
Call	Freq	City, State	Dist.	Azi.	Incoming*	Outgoing**
WAYN	900 kHz	Rockingham, NC	149.7 km	323.6°	-944.00 sq. km	35.72 sq. km

* - "Incoming" means contour overlap received by the reference station to its protected contour.

** - "Outgoing" means contour overlap caused by the reference station's interfering contour.

- *Negative red numbers indicated calculated prohibited contour overlap.*

(Above tabulation excludes overlap over bodies of water using land cover information.)

As shown in the above map and tabulation, *the extent of existing predicted (received) WAYN prohibited overlap would be reduced under this modification proposal.*

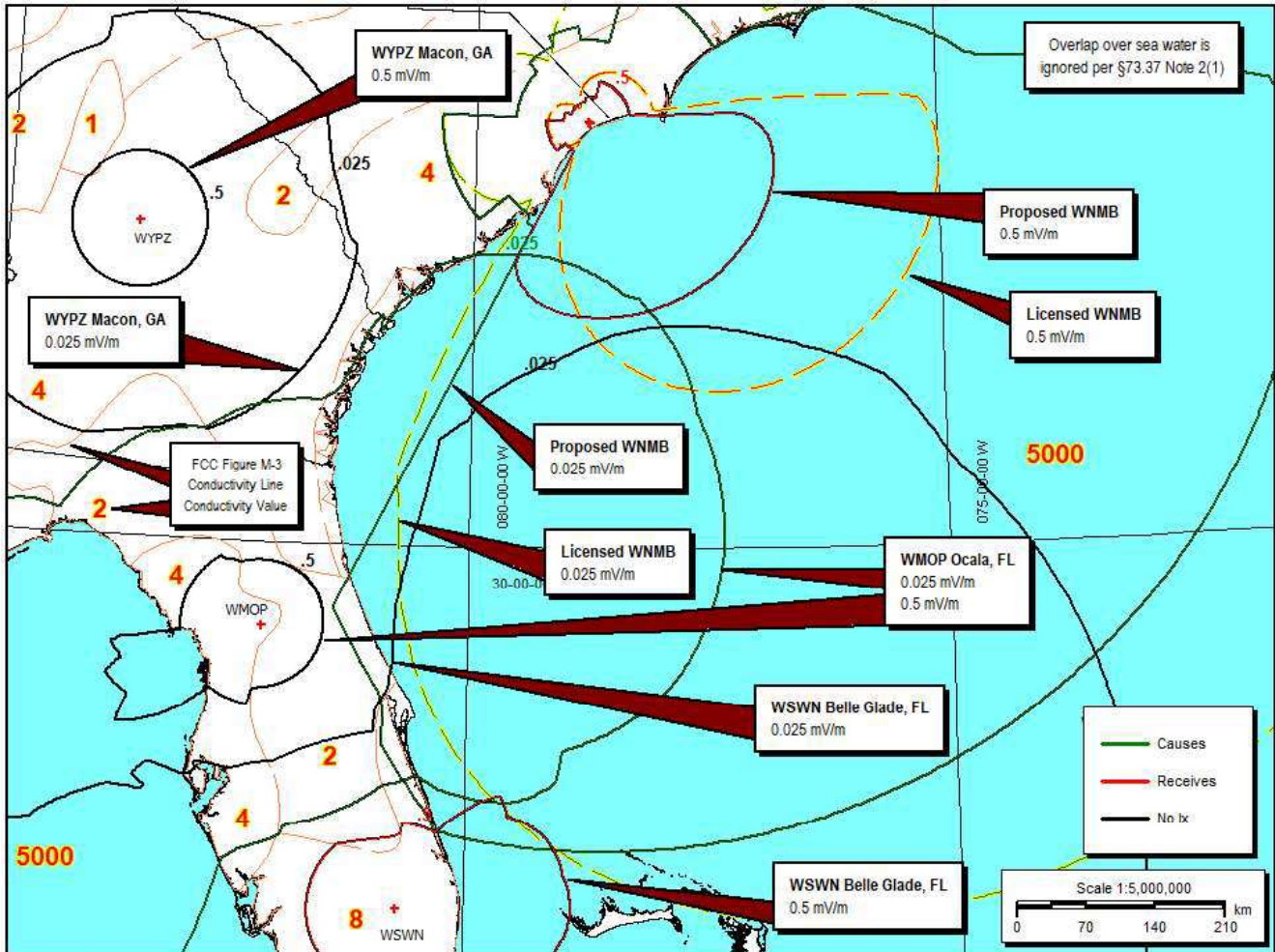
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The following map provides a clearer version of the more southerly portion of the overview map.

Co-Channel Allocation Study – Detailed View #2 – Southern Region



As shown above, the closest stations of concern in the southern region are:

- WMOP in Ocala, FL, and
- WSWN in Belle Glade, FL.

As will be demonstrated in the following, more detailed maps, there is no existing or proposed prohibited land area contour overlap with respect to either of these stations.

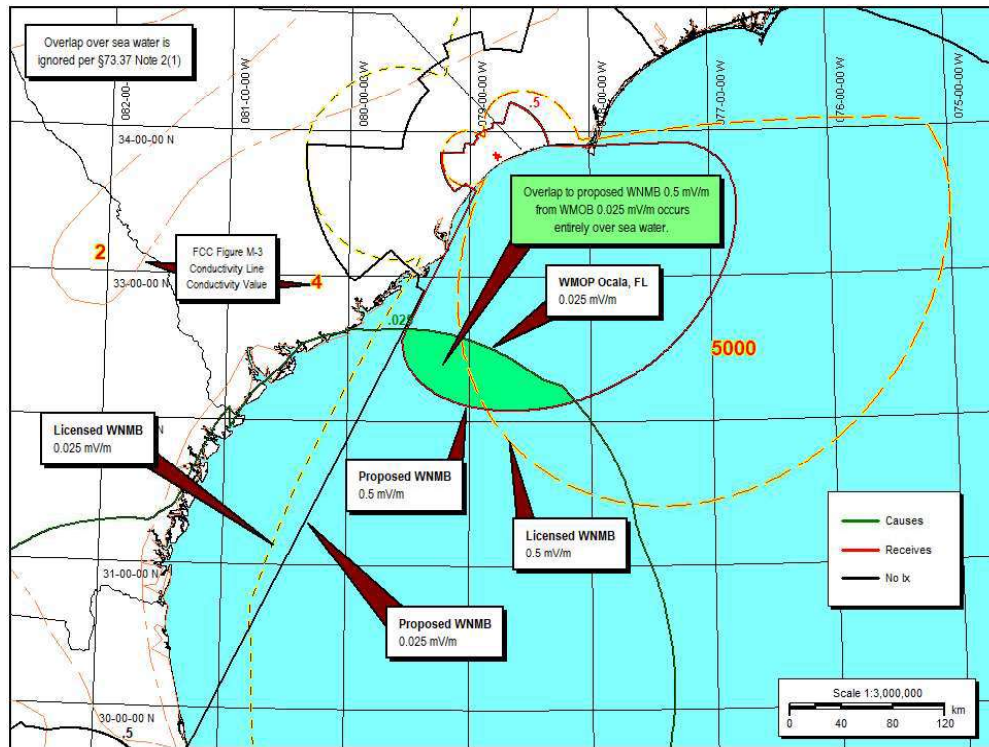
Maps showing the locations of pertinent WMOP and WNMB contours are presented on the following page.

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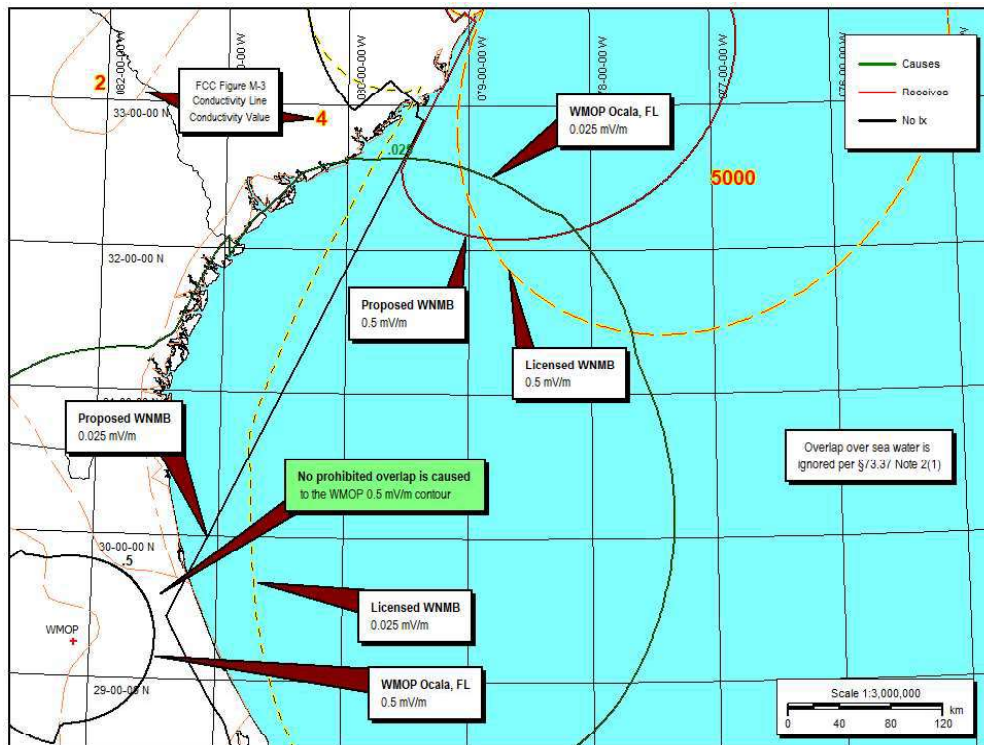
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Co-Channel Allocation Study – Detailed View for WMOP - *Overlap Received Study*



Co-Channel Allocation Study – Detailed View for WMOP - *Overlap Caused Study*

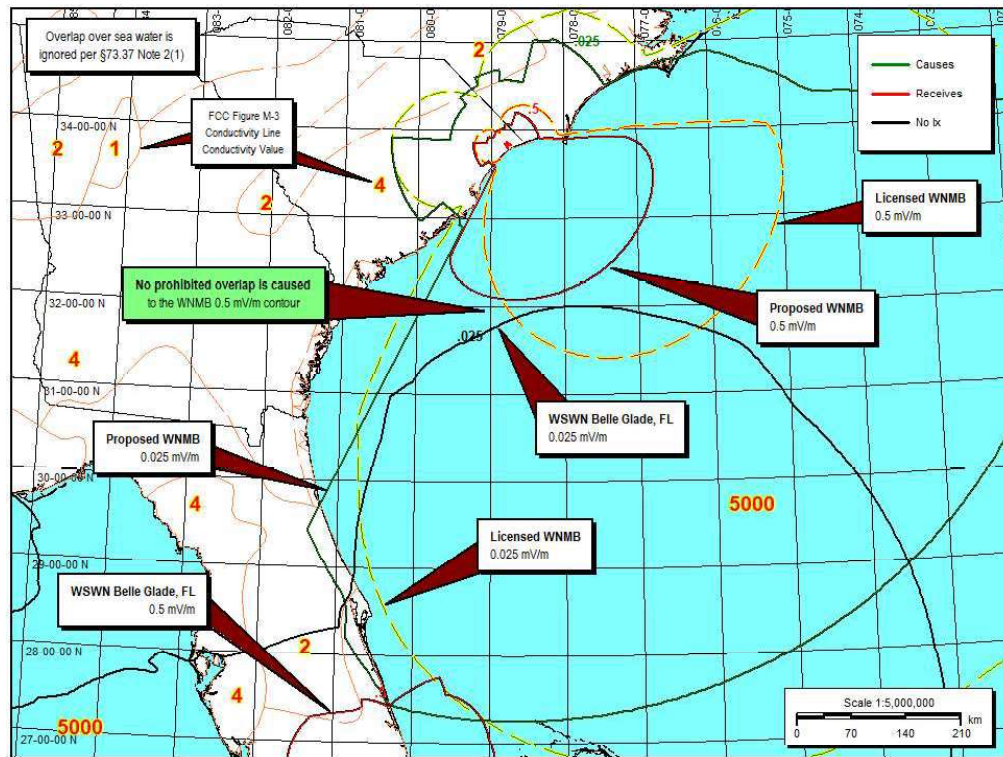


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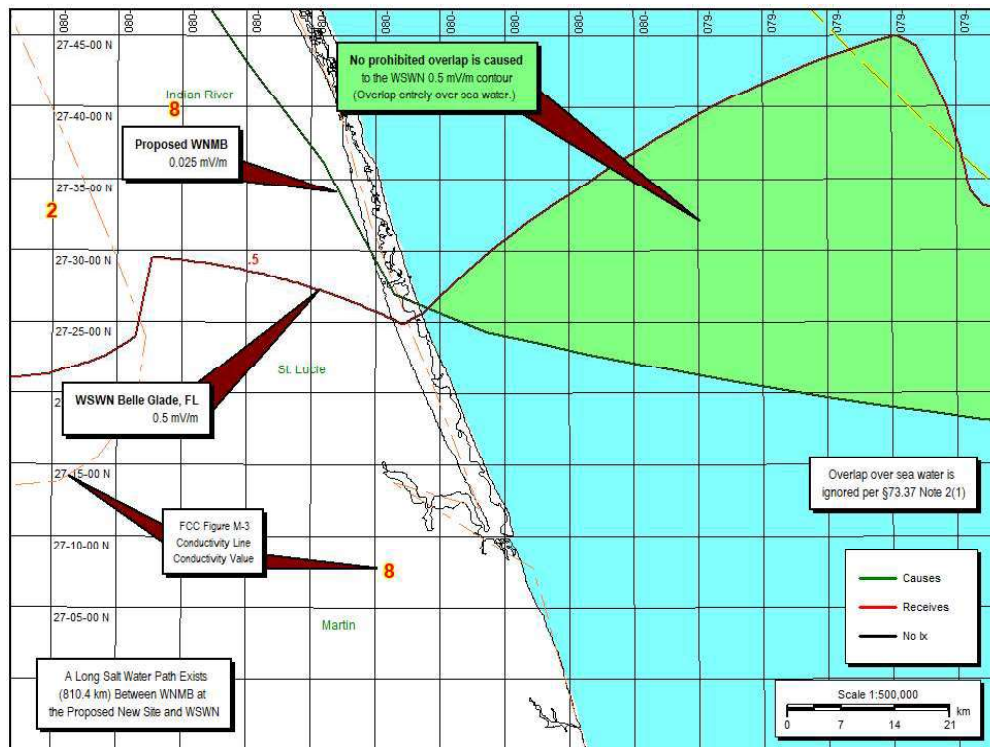
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Co-Channel Allocation Study – Detailed View for WSWN - *Overlap Received Study*



Co-Channel Allocation Study – Detailed View for WSWN - *Overlap Caused Study*



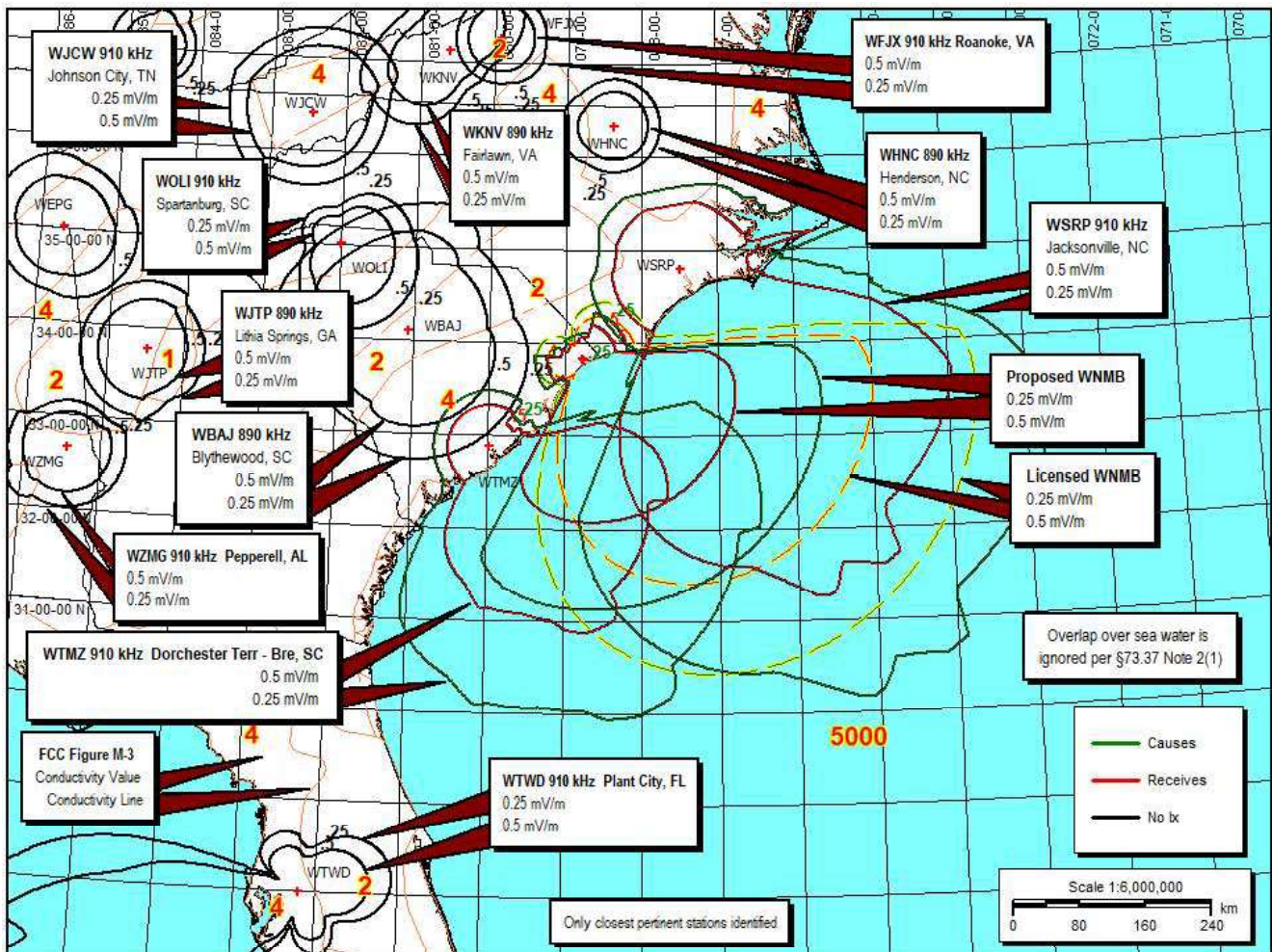
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As demonstrated, no new instances of co-channel or prohibited contour overlap would be created by the proposed relocation of WNMB, and an existing instance (with WAYN) would be reduced. It is thus believed that this proposal meets the FCC's allocation requirements for co-channel stations. An examination of the first-adjacent frequency considerations is provided in the following.

First-Adjacent Channel Allocation Study - Overview Map - (0.5 mV/m vs 0.25 mV/m Contours)



Based on the above map, it can be seen that the only first-adjacent channel situations that merit a closer scrutiny are those with respect to:

- WBAJ, 890 kHz, Blythewood, South Carolina,
- WSRP, 910 kHz, Jacksonville, North Carolina, and
- WTMZ, 910 kHz, Dorchester, Terr.– Bre, South Carolina.

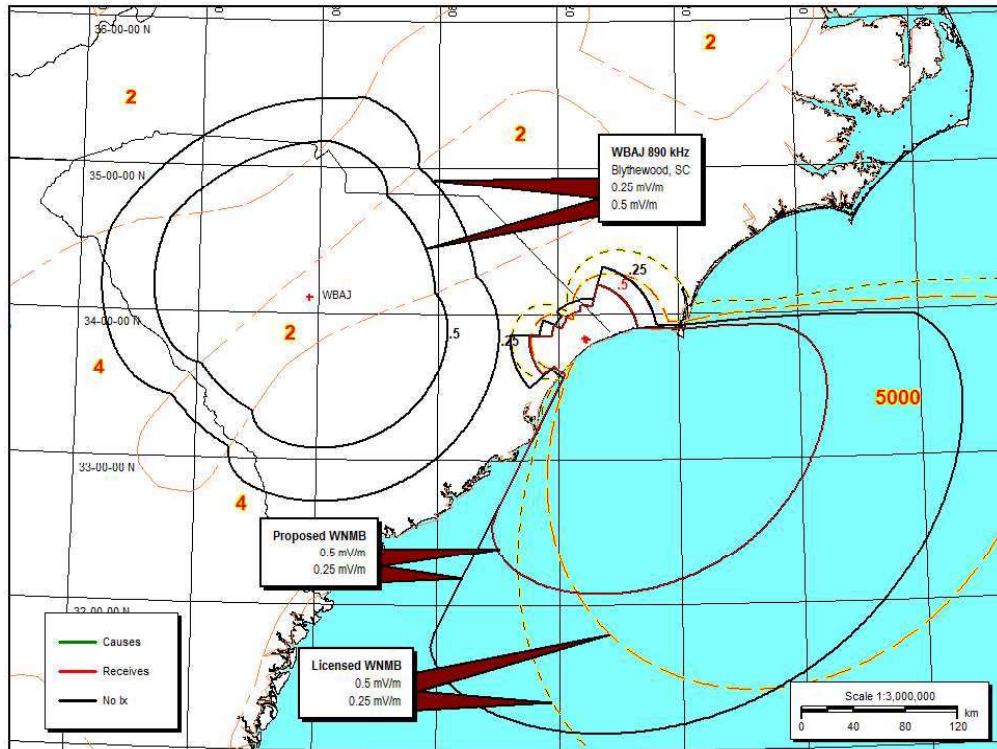
As will be shown in the following maps and tabulation, there is no prohibited contour overlap with respect to WBAJ or WTMZ, and the amount of existing overlap with respect to WSRP would be *reduced* under this proposal.

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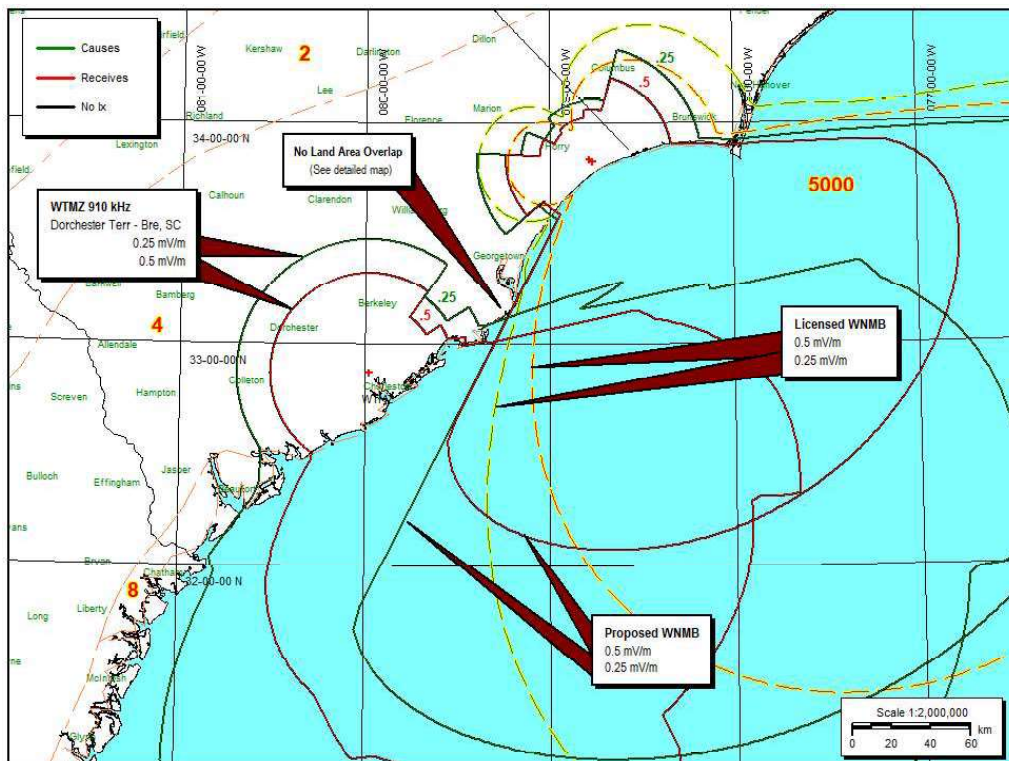
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First-Adjacent Channel Allocation Study – WBAJ Detailed View - (0.5 mV/m vs 0.25 mV/m Contours)



As shown above, there is no existing or proposed contour overlap with respect to 1st adjacent WBAJ.

First-Adjacent Channel Allocation Study – WTMZ View - (0.5 mV/m vs 0.25 mV/m Contours)

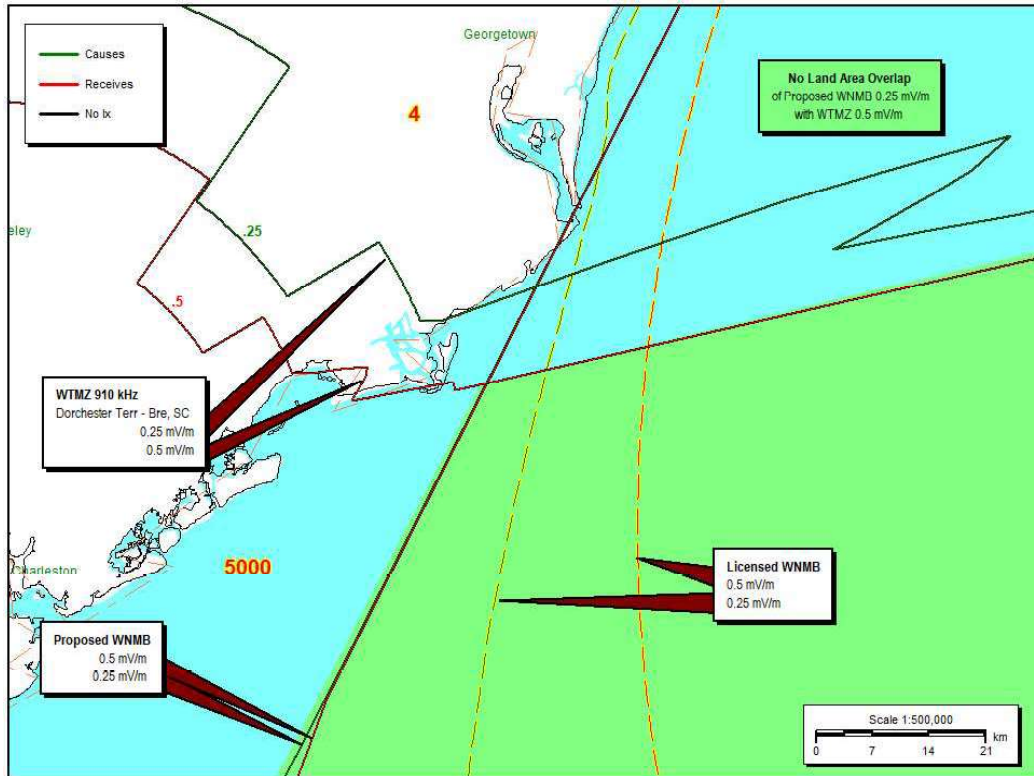


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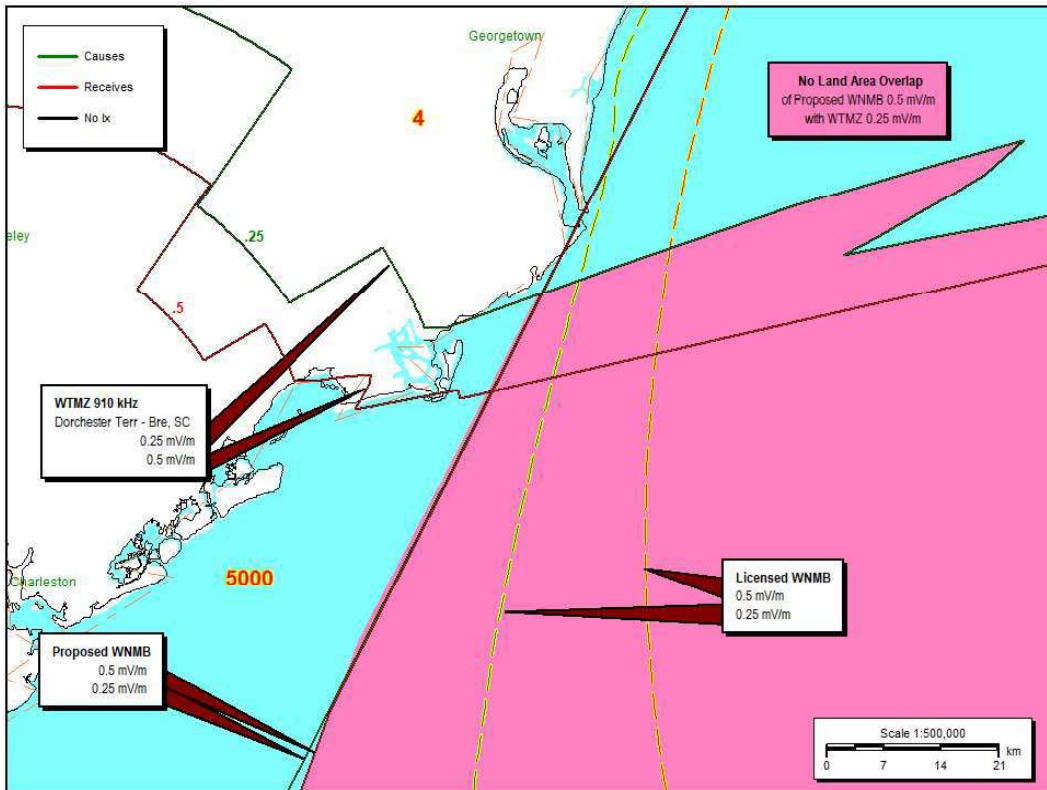
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First-Adjacent Channel Allocation Study – WTMZ Detailed View 1 - (Overlap Caused))



First-Adjacent Channel Allocation Study – WTMZ Detailed View 2 - (Overlap Received)



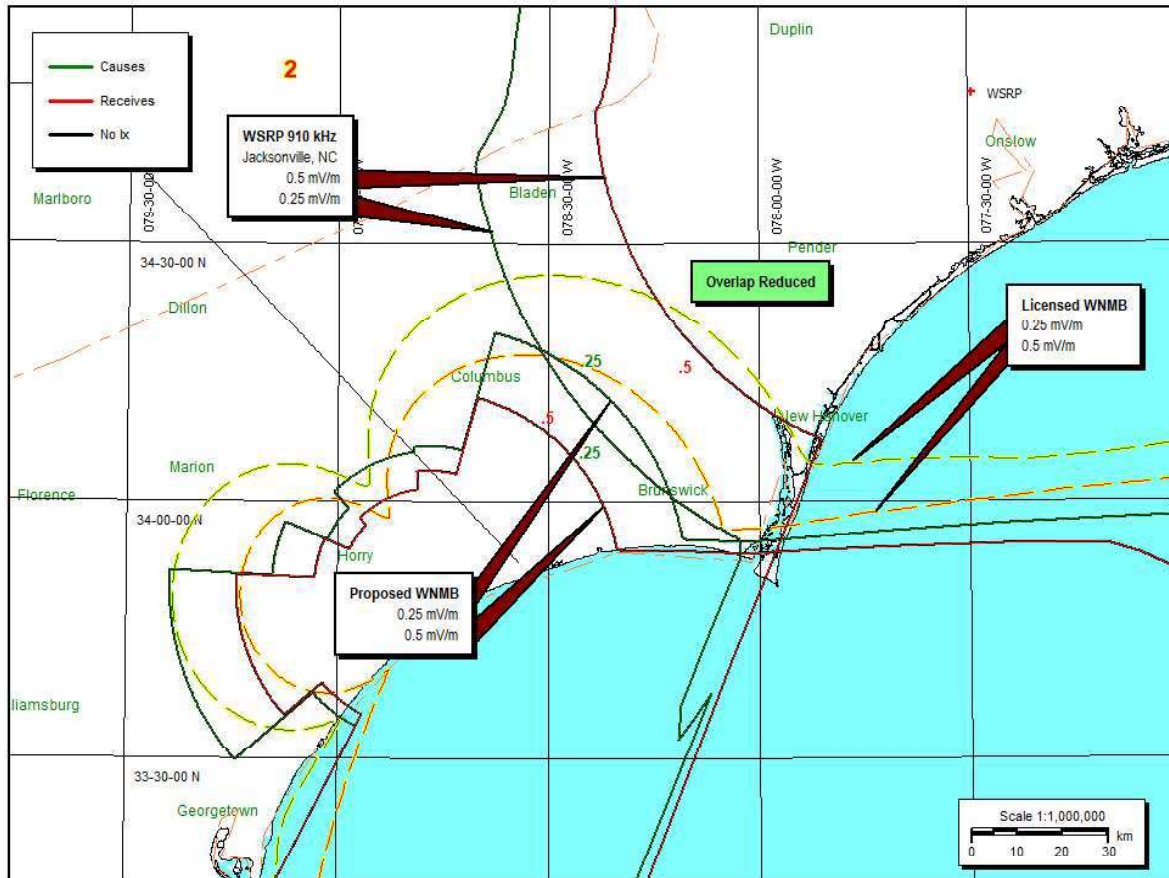
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As shown on the preceding maps, the contour overlap area between the proposed WNMB facility and WTMP would occur entirely over sea water under this proposal, and may be ignored. Per FCC §73.37 Note 2(1).

First-Adjacent Channel Allocation Study – WSRP Detailed View - (0.5 mV/m vs 0.25 mV/m Contours)



As shown above, and demonstrated in the following tabulation, the extent of WSRP contour overlap area would be decreased under this proposal.

WSRP Contour Overlap Analysis - Summary Table

<u>Existing First-Adjacent Channel Contour Overlap – WNMB as Licensed</u>						
Call	Freq	City, State	Dist.	Azi.	Incoming*	Outgoing**
WSRP	910 kHz	Jacksonville, NC	159.5 km	47.8°	-460.25 sq. km	-136.25 sq. km
<u>First-Adjacent Channel Contour Overlap – WNMB as Proposed</u>						
Call	Freq	City, State	Dist.	Azi.	Incoming*	Outgoing**
WSRP	910 kHz	Jacksonville, NC	159.8 km	48.5°	-5.75 sq. km	-1.00 sq. km

* - "Incoming" means contour overlap received by the reference station to its protected contour.

** - "Outgoing" means contour overlap caused by the reference station's interfering contour.

- Above tabulation excludes overlap over bodies of water using land cover information.

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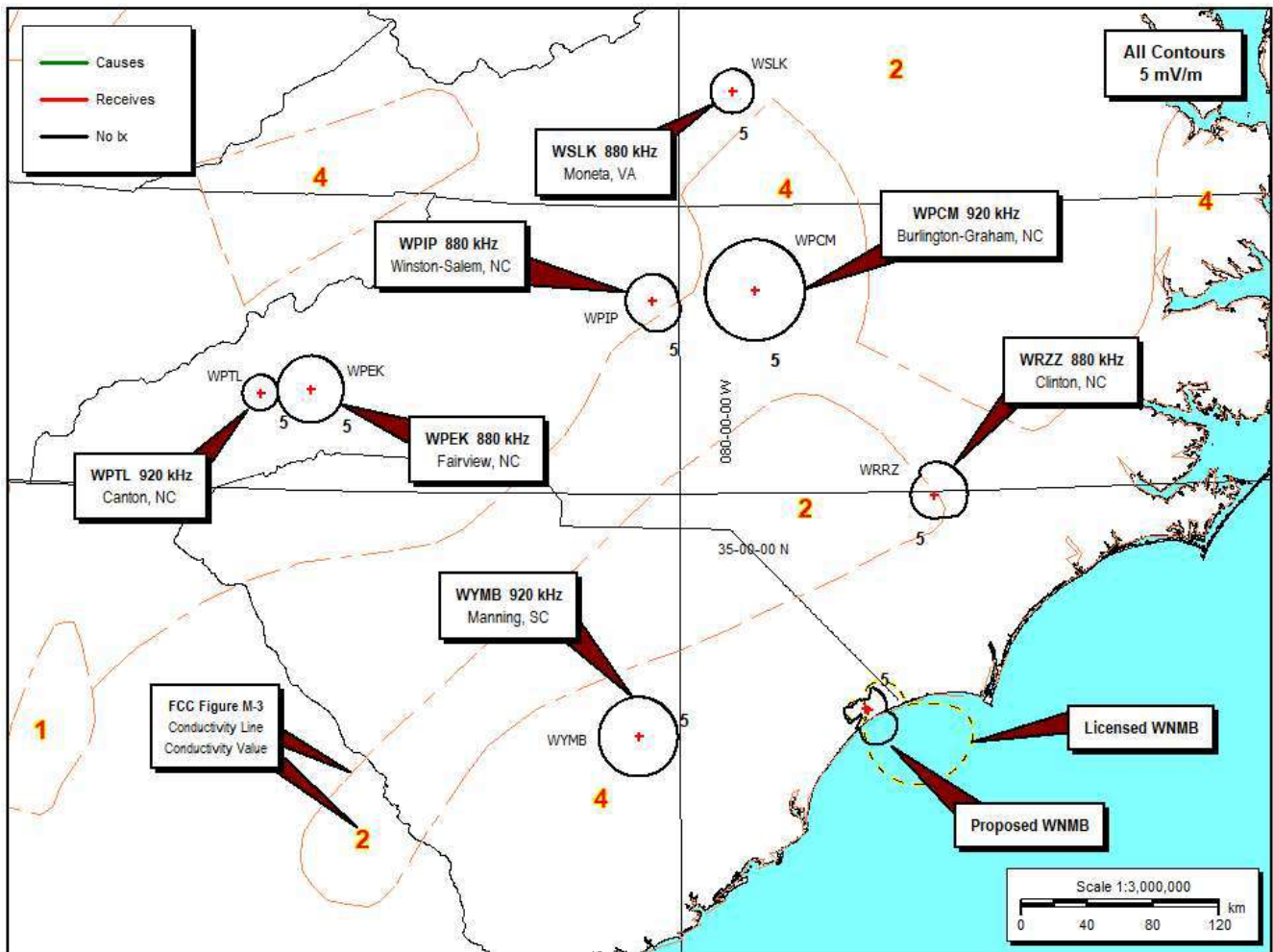
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As demonstrated in the preceding maps and tabulation, the amount of predicted caused and received first-adjacent channel contour overlap would be lessened by a grant of this application. No new instances of prohibited contour overlap would be caused. It is thus believed that this proposal meets the FCC's allocation requirements for first-adjacent channel stations.

The following provides an overview of the *second-adjacent* allocation situation in the vicinity of WNMB.

Second-Adjacent Channel Allocation Study - (5 mV/m vs 5 mV/m Contours)



As can be seen above, no new instances of second-adjacent channel prohibited contour overlap will be created by a grant of this application. It is therefore believed that this proposal meets the FCC's daytime allocations requirements with respect to stations on second-adjacent frequencies.

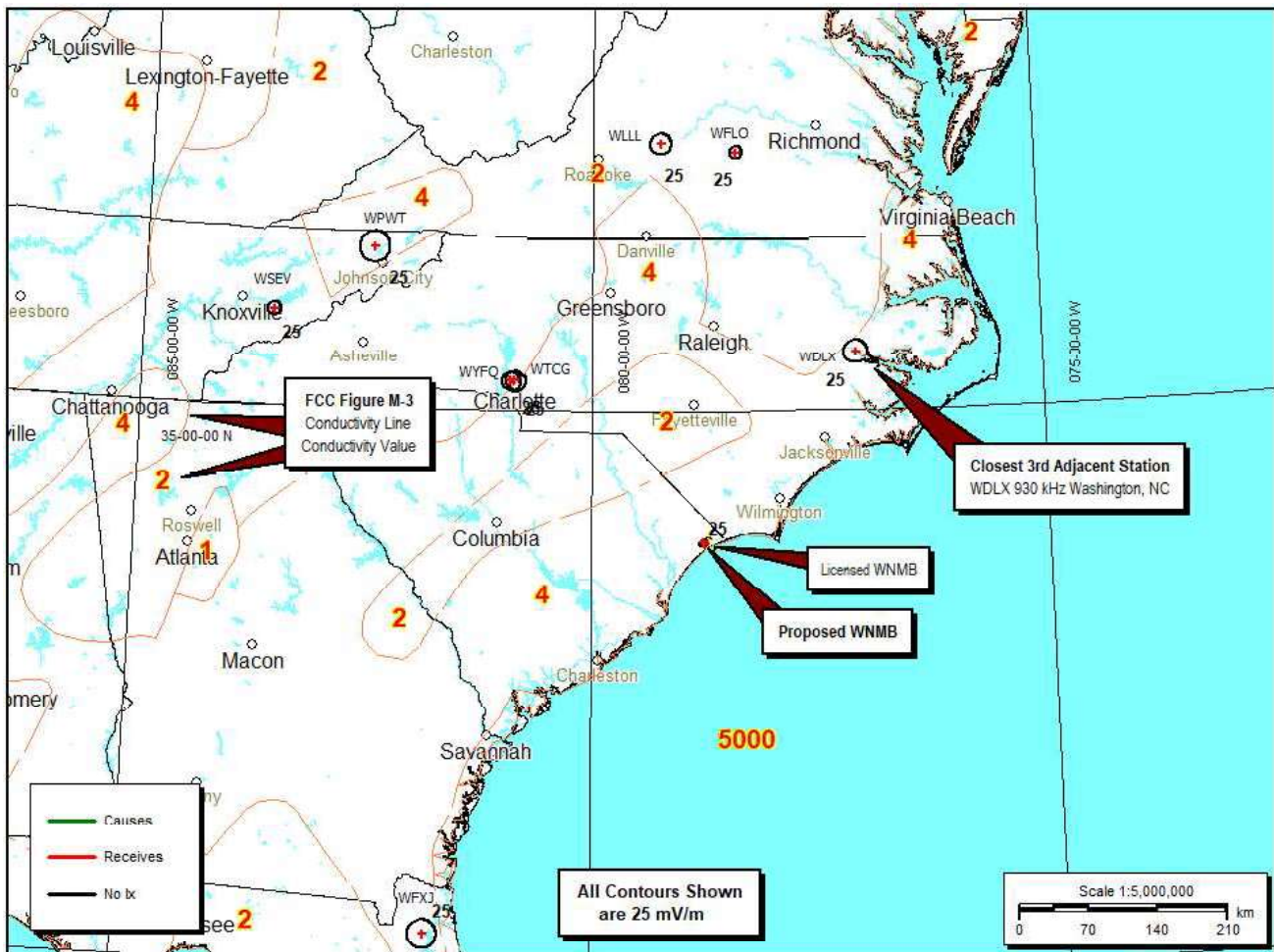
The following provides an overview of the *third-adjacent* allocation situation in the vicinity of WNMB.

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Third-Adjacent Channel Allocation Study - (25 mV/m vs 25 mV/m Contours)



Based upon the above allocation study, no new instances of third-adjacent channel prohibited contour overlap will be created by a grant of this application. It is therefore believed that this proposal meets the FCC's daytime allocations requirements with respect to stations on third-adjacent frequencies.

As demonstrated in the foregoing, it was determined that no new instances of daytime contour overlap would be created were this facility relocation application be granted. Further, known instances of existing contour overlap would be reduced.

Nighttime Allocations Considerations

A nighttime allocation study was conducted to determine if any stations would be impacted by the limited nighttime operation proposed for this facility modification application. The pertinent results of an "as proposed" study are included in summary form below.