

**University of Massachusetts Boston  
New FM Broadcast Facility Proposal for Gloucester, Massachusetts**

**Exhibit 16 for Section VII / 15.a**

**Contour Overlap / Protection**

Pursuant to 47 CFR 73.509(a), the FCC prohibits new NCE stations that have contours overlapping nearby NCE stations, as defined by this table:

<u>Frequency separation</u>	<u>Contour of proposed station</u>	<u>Contour of other station</u>
Co-channel	0.1mV/m (40 dBu) F(50,10) 1 mV/m (60 dBu) F(50,50)	1 mV/m (60 dBu) F(50,50) 0.1 mV/m (40 dBu) F(50,10)
200 kHz	0.5 mV/m (54 dBu) F(50,10) 1 mV/m (60 dBu) F(50,50)	1 mV/m (60 dBu) F(50,50) 0.5 mV/m (54 dBu) F(50,10)
400 kHz/600 kHz	100 mV/m (100 dBu) F(50,10) 1 mV/m (60 dBu) F(50,50)	1 mV/m (60 dBu) F(50,50) 100 mV/m (100 dBu) F(50,10)

There were 50 broadcast facilities, applications and construction permits that were analyzed in relation to the proposed Gloucester facility. Of them, nine are relevant:

- WSAK 102.1 Hampton, NH
- WNEF 91.7 Newburyport, MA
- WUNH 91.3 Durham, NH
- WUML 91.5 Lowell, MA
- WMFO 91.5 Medford, MA
- WMLN 91.5 Milton, MA
- WBUR 90.9 Boston, MA
- WMWM 91.7 Salem, MA
- WBIM 91.5 Bridgewater, MA

The proposed Gloucester facility's contours cover the following areas and population:

<u>Contour</u>	<u>Type</u> <sup>1</sup>	<u>Area</u>	<u>Population</u> <sup>2</sup>
60dBu	F(50,50)	871.0 sqkm	45,355
54dBu	F(50,10)	1894.5 sqkm	78,356
40dBu	F(50,10)	9415.7 sqkm	1,165,730
100dBu	F(50,10)	7.3 sqkm	7,942

As demonstrated in the accompanying contour maps, the only contour overlap occurs over water (Atlantic Ocean) where there is zero population. There is no prohibited overlap.

<sup>1</sup> F(50,50) are service contours, F(50,10) are interfering contours.

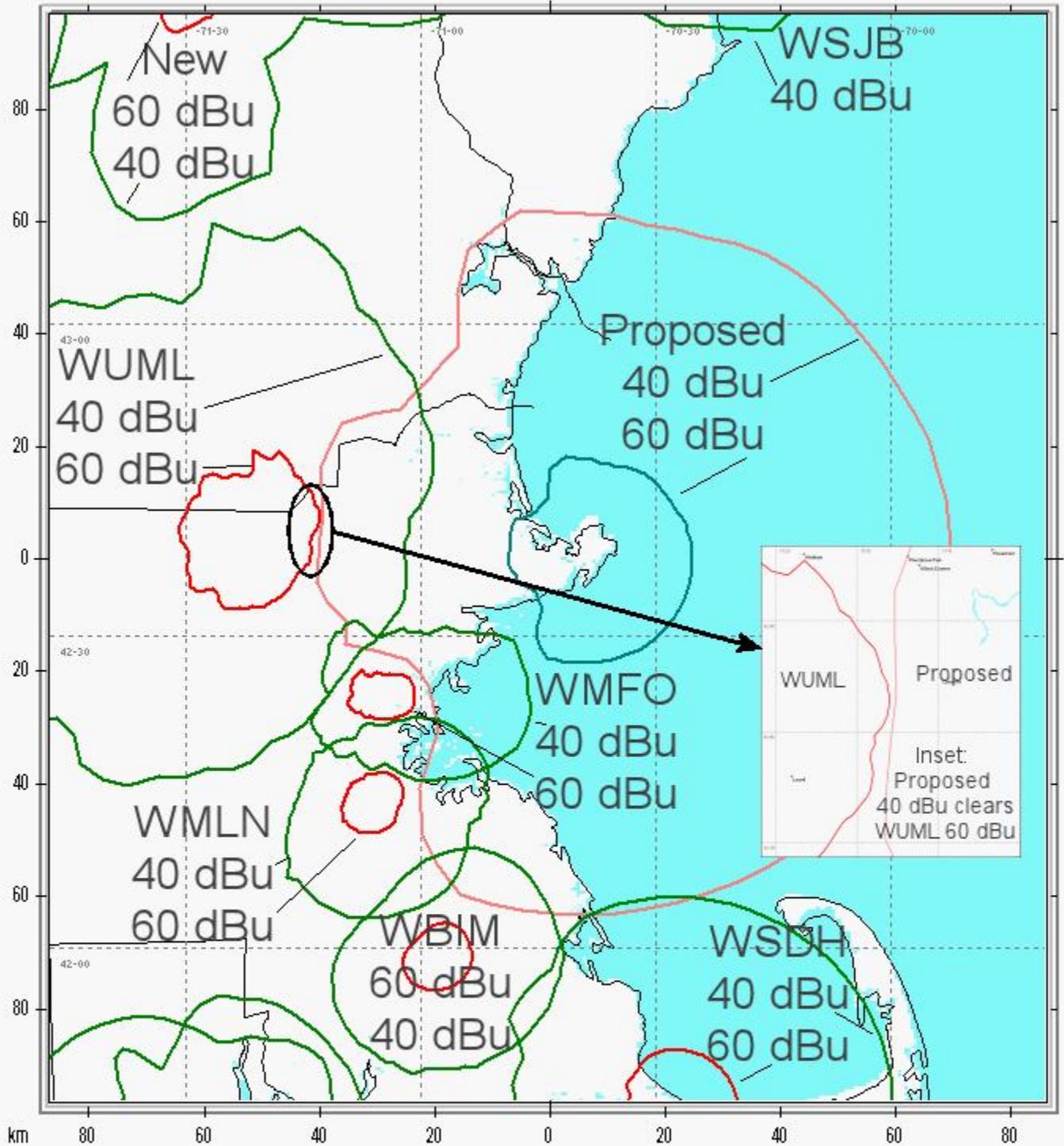
<sup>2</sup> All population figures are from the 2000 U.S. Census.

## Contour Maps : Legend / Key

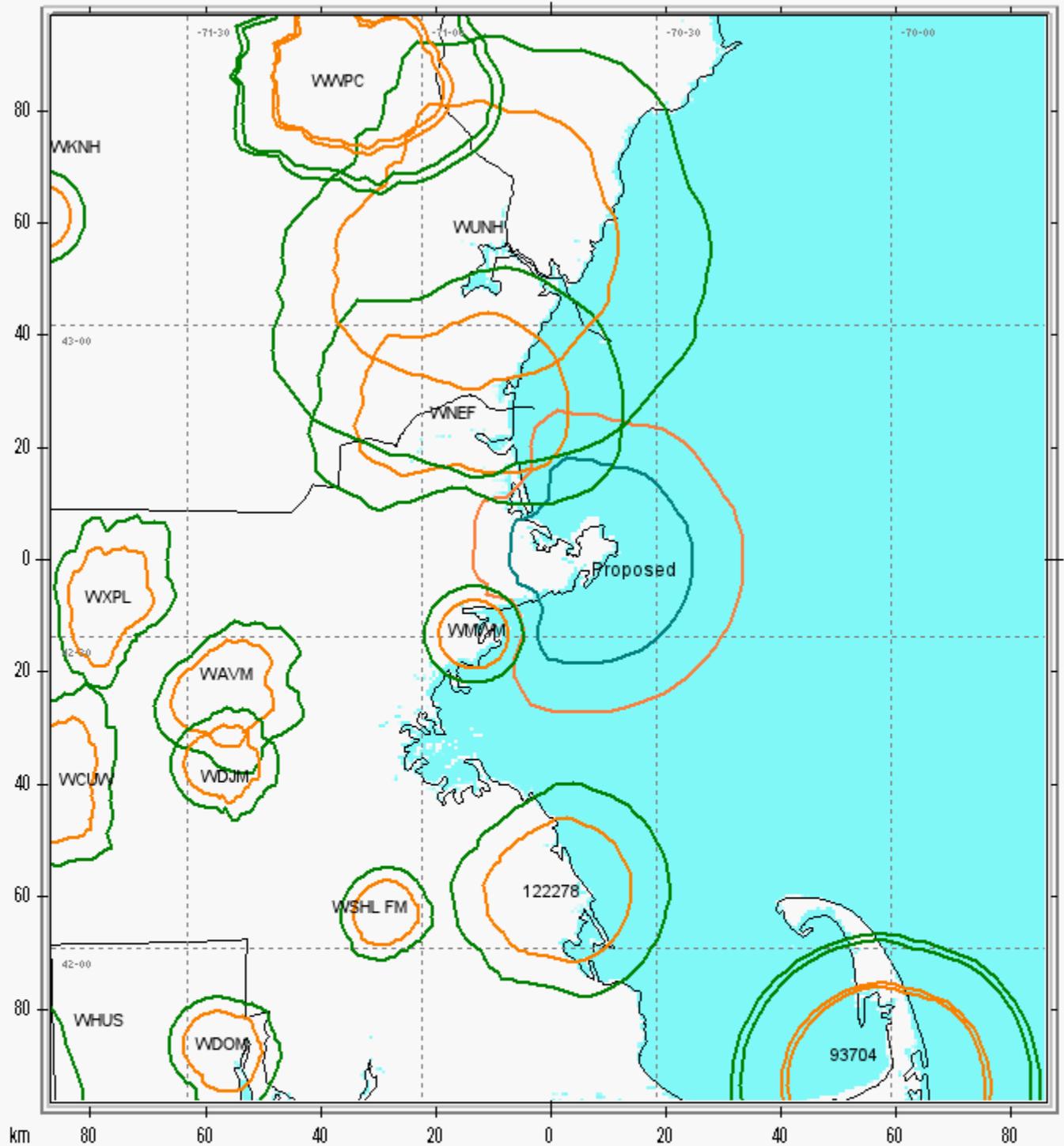
The contours are color coded for ease of interpretation. Prohibited overlap is visible only where the proposed station's (interference or protected) contour of a given color overlaps the same-color contour of another station. (protected or interference, respectively)  
Ideally, these paired-color contours should not overlap. Overlap is identified in the first-adjacent plot of WNEF and the proposed facility by color highlighting. This overlap is over water, as shown.

<u>COLOR</u>	<u>PROPOSED CONTOUR</u>	<u>OTHER STATION'S CONTOUR</u>
Green =	60 dBu protected	corresponding interference contour is green
Blue =	100 dBu interfering	60 dBu 2 <sup>nd</sup> and 3 <sup>rd</sup> adjacent
Orange =	54 dBu interfering	60 dBu 1 <sup>st</sup> adjacent
Red =	40 dBu interfering	60 dBu co-channel

# Gloucester 91.5 FM - Ch218 Contour Overlap Analysis - Co-channel

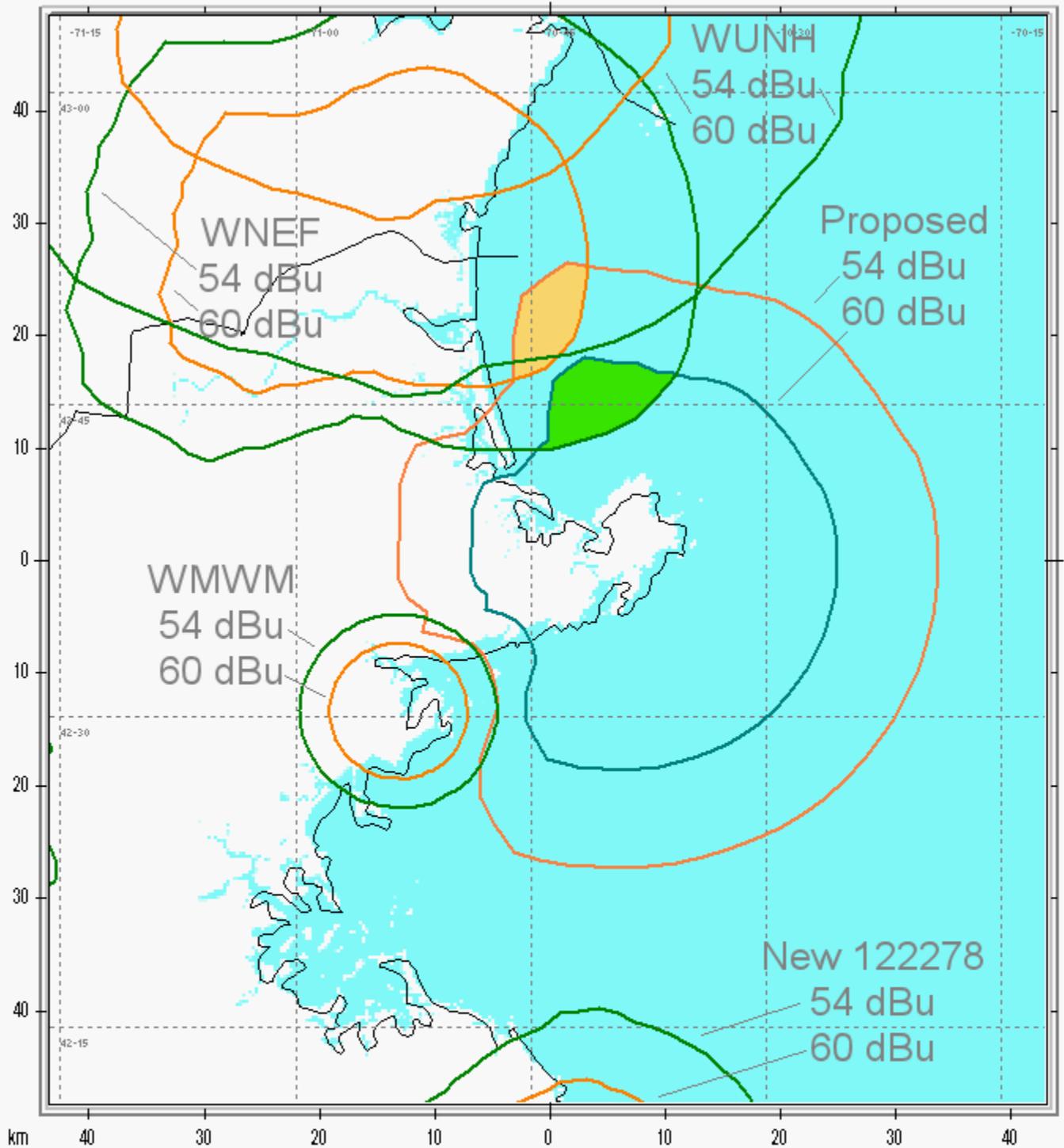


# Gloucester 91.5 FM - Ch218 Contour Overlap Analysis - 1st-adjacent channel



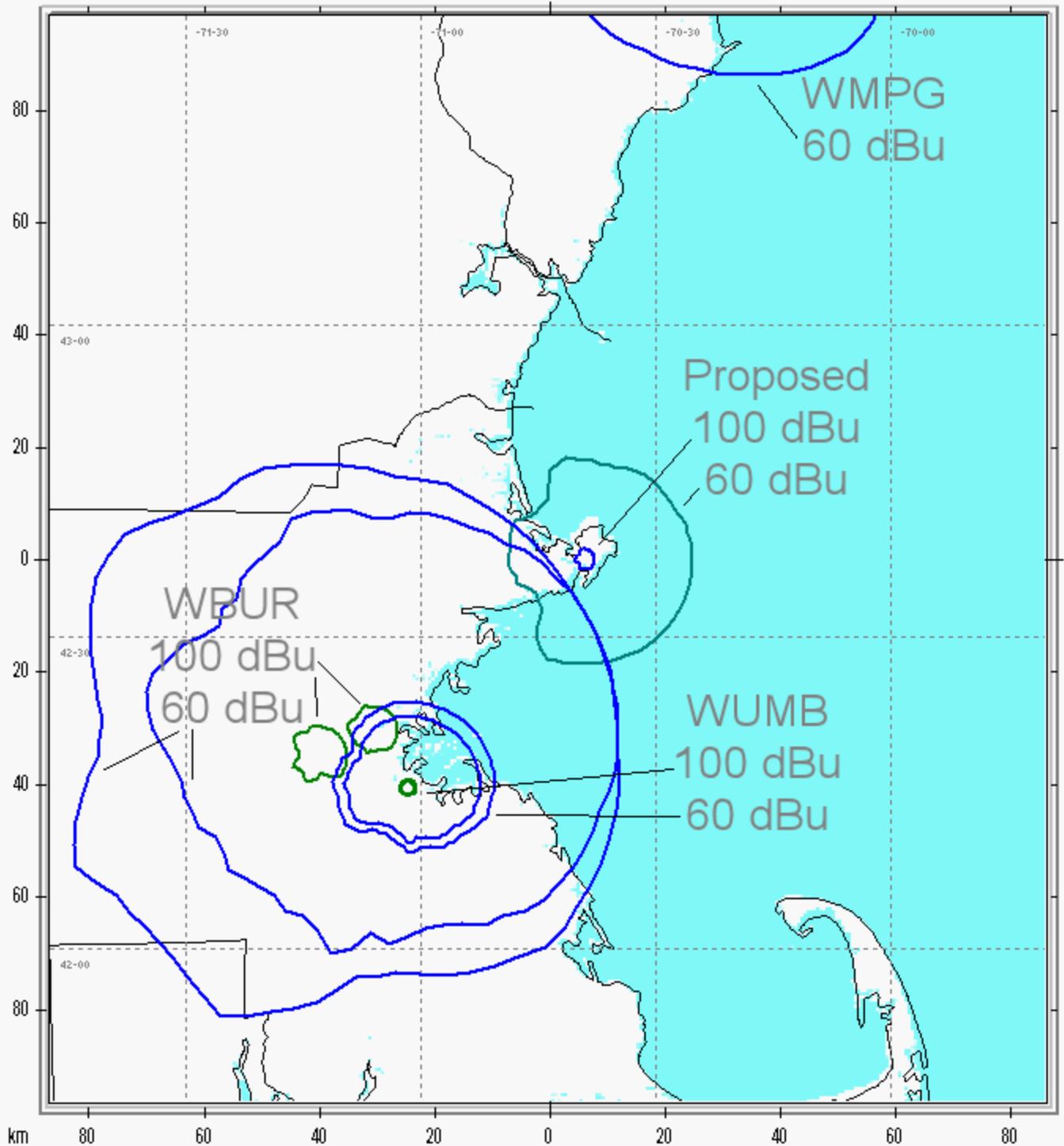
CONTOURS: Proposed: Orange = 54dBu F(50,10) Green = 60dBu F(50,50), Colors Reversed for Existing

# Gloucester 91.5 FM - Ch218 Contour Overlap Analysis - 1st-adjacent channel



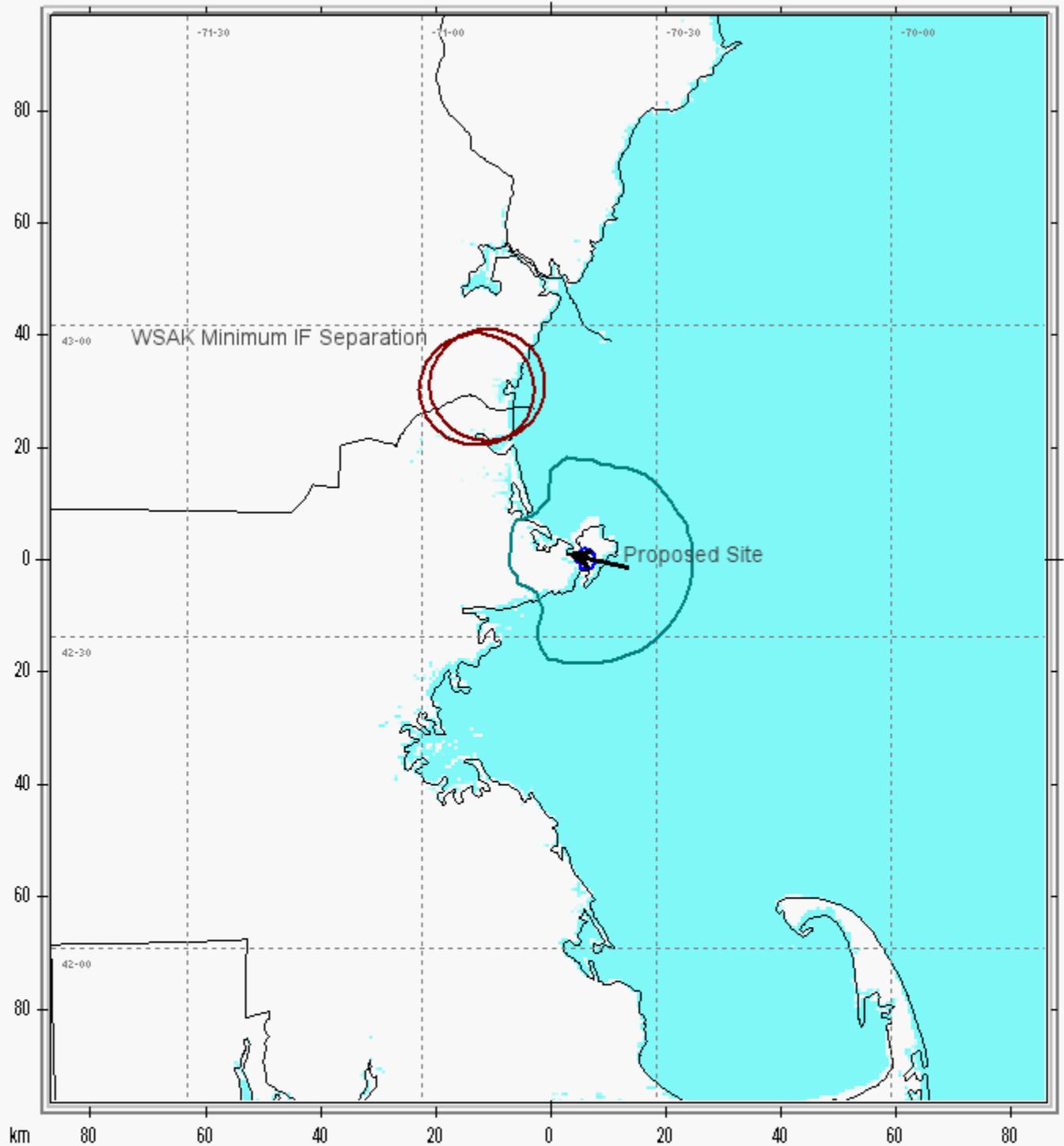
CONTOURS: Proposed: 60 dBu F(50,10) = Green, 54 dBu F(50,50) = Orange; Colors reversed for existing

**Gloucester 91.5 FM - Ch218 Contour Overlap Analysis  
2nd- & 3rd-adjacent Channels**



CONTOURS: Proposed: Blue = 100dBu F(50,10) Green = 60dBu (F(50,50), Colors Reversed for Existing

# Gloucester 91.5 FM - Ch218 Contour Overlap Analysis - IF Spacing



CONTOURS: Existing IF Separation Radius- Brown; Proposed 60 and 100 dBu indicate location