

Comprehensive Technical Statement
In Support of

Rhode Island Public Radio

Application for New Non-Commercial / Educational FM Station

Channel 220A, 91.9 MHz
Block Island, RI

Introduction

Rhode Island Public Radio is applying for a new Non-Commercial / Educational (NCE) FM station in the 2021 filing window.

This Comprehensive Technical Statement includes all technical and population data required to support the application.

The application is entirely rule-compliant. No waivers of any kind are requested.

\$73.215 processing is requested with respect to WLNG.

International coordination is not required.

An existing tower will be used. The proposal is not for a major environmental action.

Details are provided below.

Skywaves Consulting LLC
PO Box 12666, Portland, OR 97232
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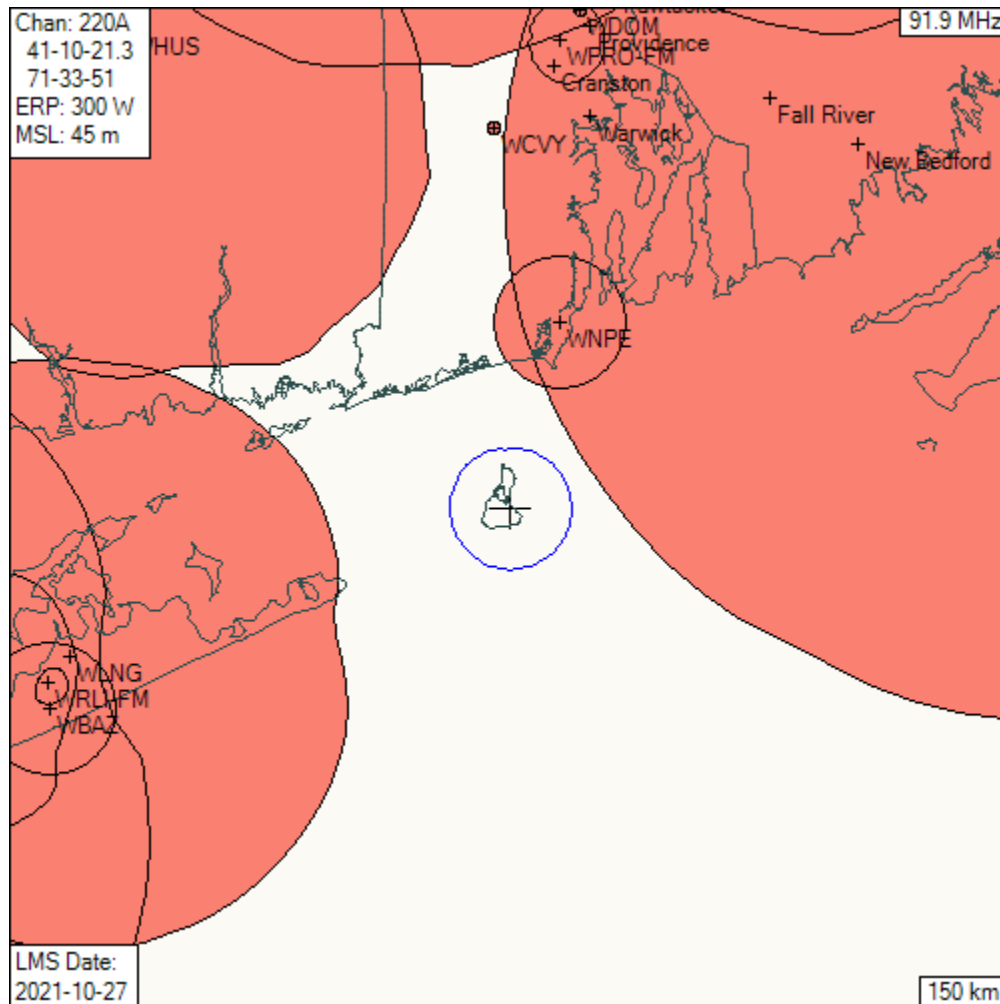
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Overlap Study

Inbound Interference

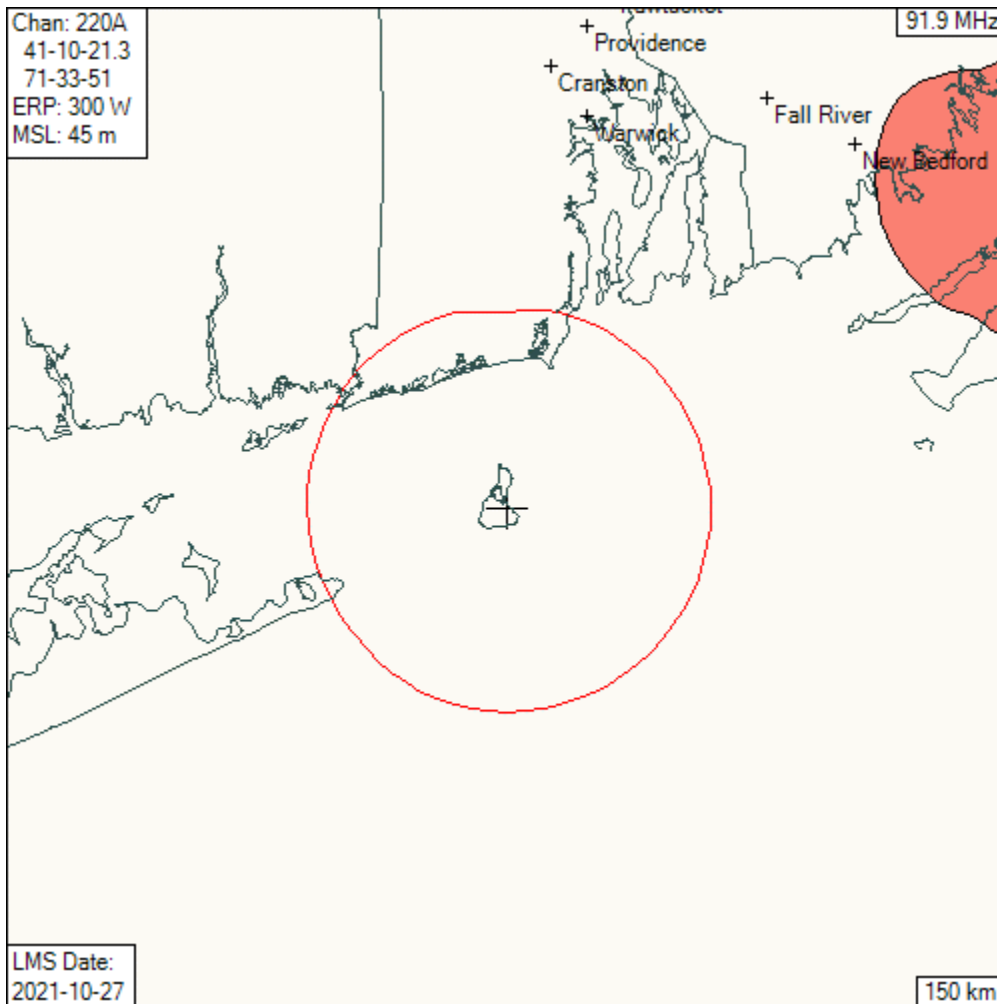
Interfering contours of other stations are filled in salmon. Protected contours of second- and third-adjacent stations are filled in yellow. The proposed 60 dBu f(50,50) contour is shown as a blue polygon:



As shown above, the interfering contours of other stations do not overlap the proposed protected contour over land.

Outbound Interference

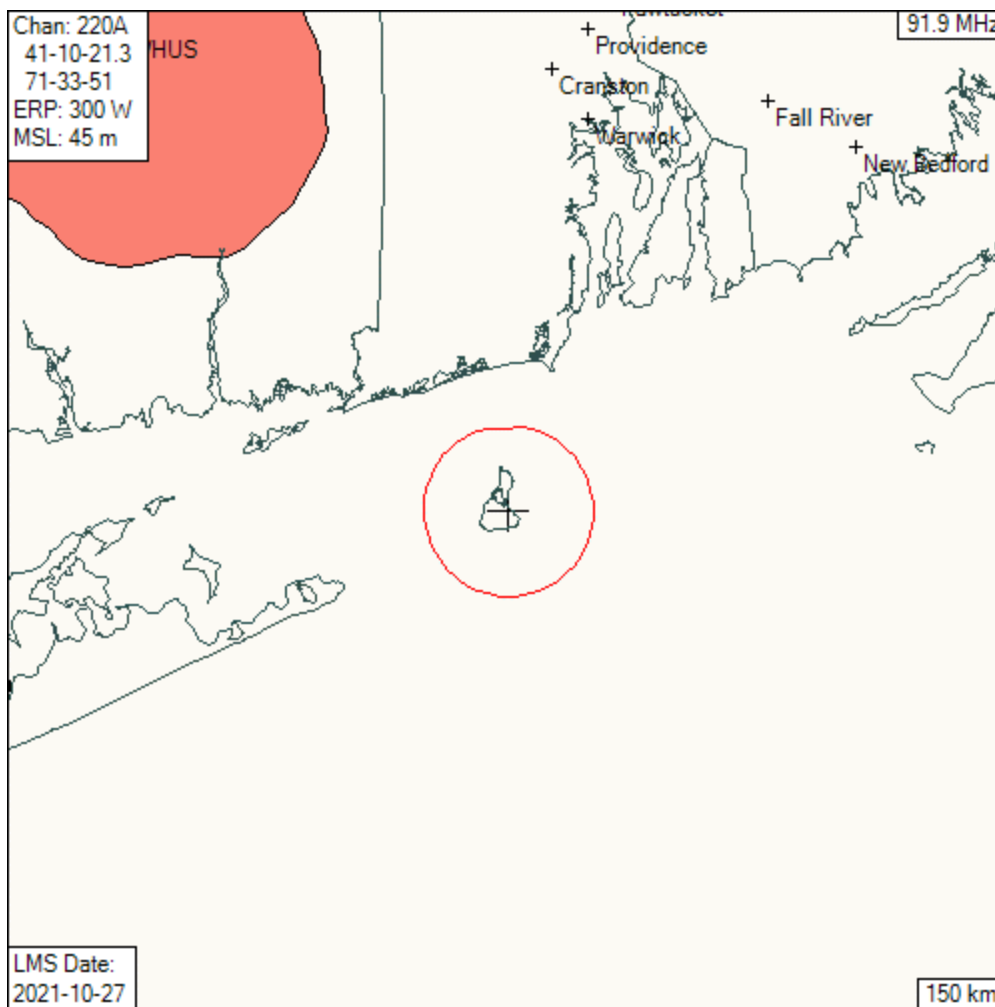
Outbound co-channel overlap



The protected contours of co-channel stations are shown as filled polygons. The 40 dBu f(50,10) interfering contour is shown as a red polygon.

The interfering contour does not overlap any existing station.

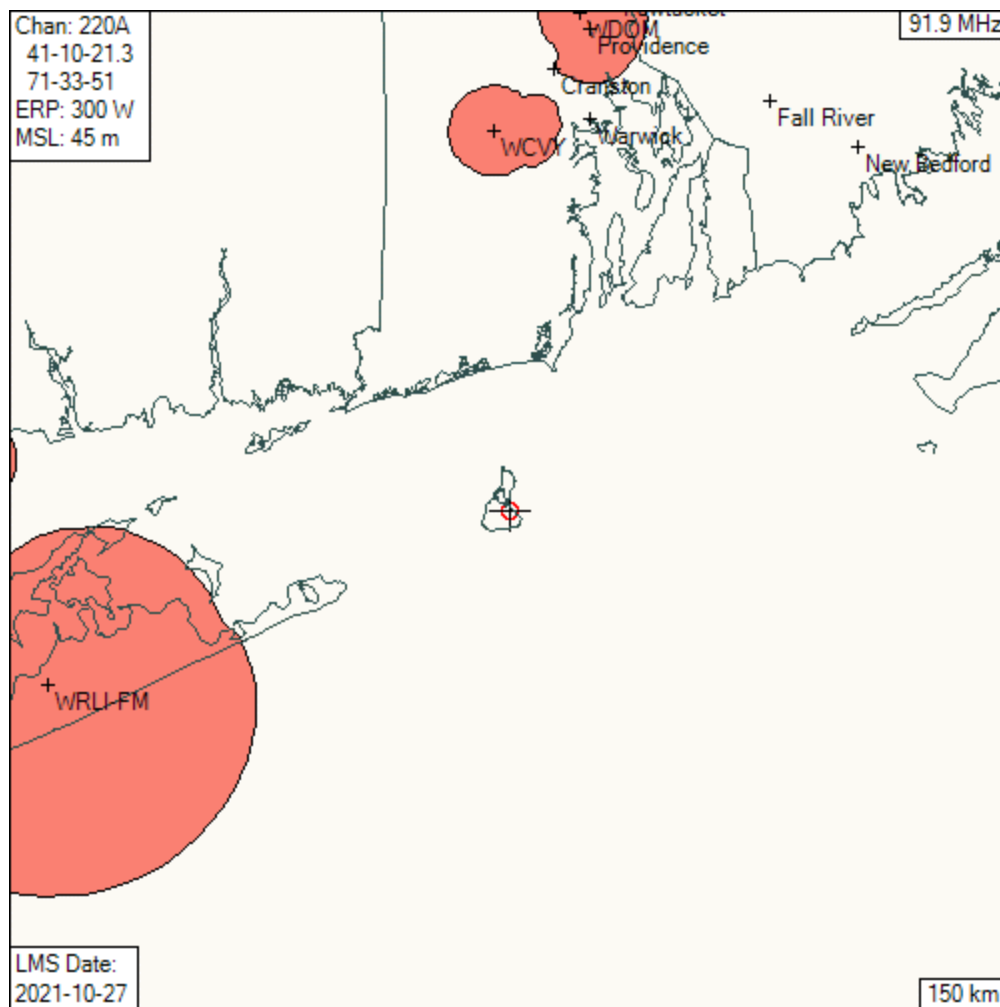
Outbound first-adjacent overlap



The protected contours of co-channel stations are shown as filled polygons. The 54 dBu f(50,10) interfering contour is shown as a red polygon.

It is clear that no overlap is involved.

Outbound second- and third-adjacent overlap



The protected contours of co-channel stations are shown as filled polygons. The 100 dBu f(50,10) interfering contour is shown as a red polygon.

It is clear that no overlap is involved.

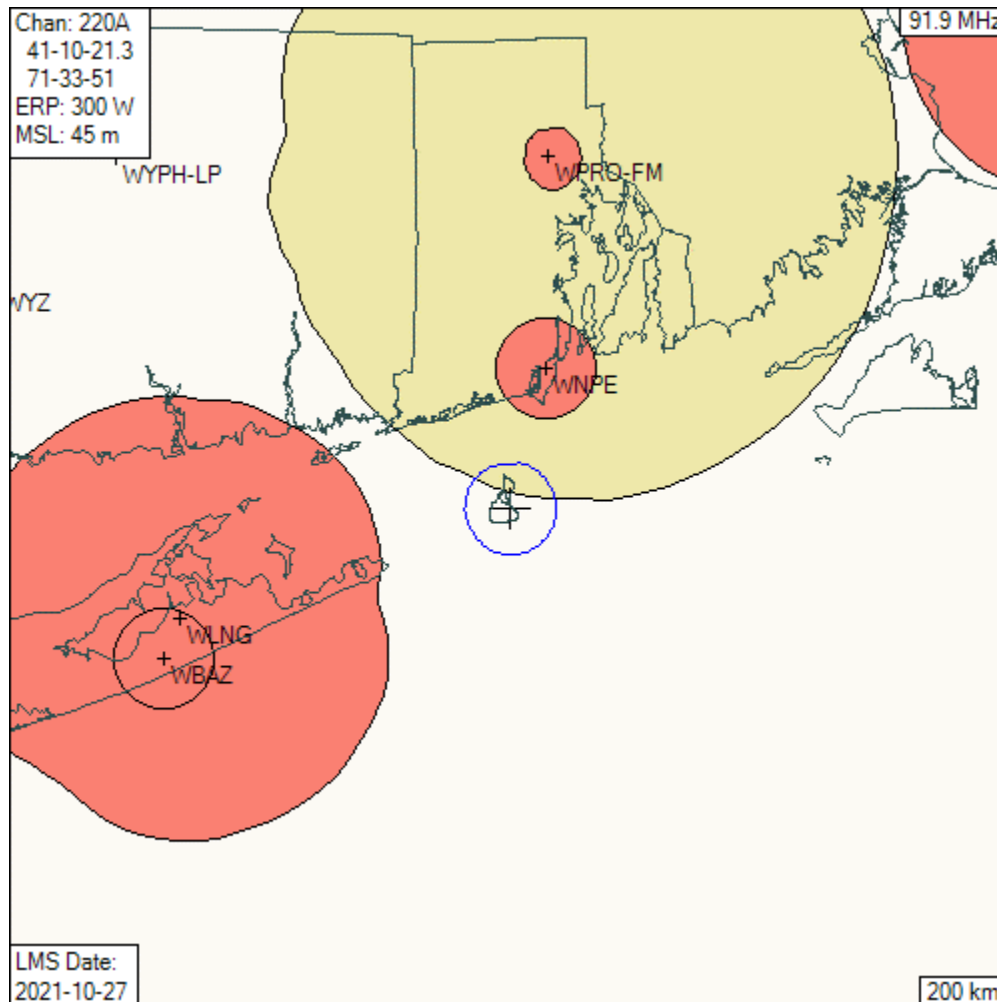
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Separations to Non-Reserved Band Stations

The spacing requirements to non-reserved band stations on the proposed channel 220 involve the closely-MX facilities on channels 221-223 and the 53/54 channel IF spacing requirement.



There are four nearby stations on any of these channels:

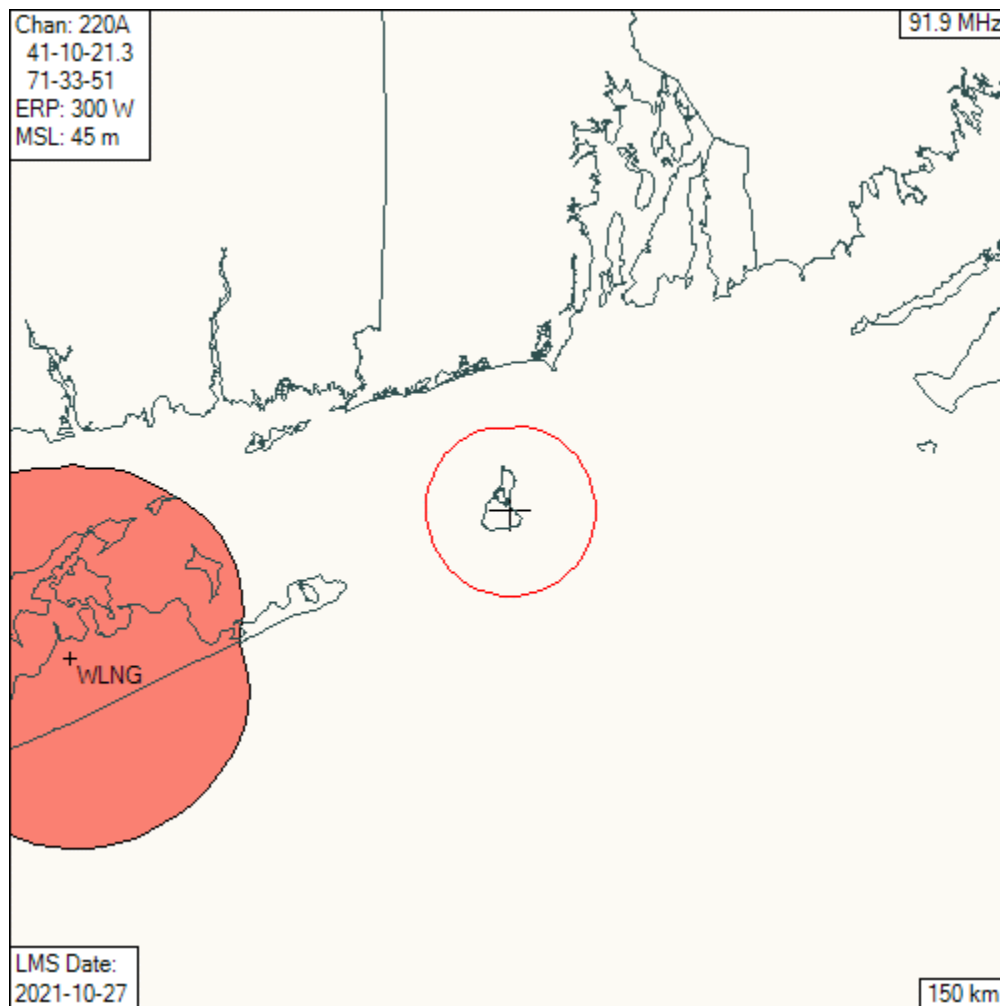
- WNPE and WBAZ are IF-separated Class A stations. The minimum separation is 10 km. WNPE is more than 28 km from the proposed site and WBAZ is more than 75 km away. The IF-separation requirements are met for these stations.
- WPRO, FCC Facility ID # 64841, Providence, RI. The spacing requirement is 69 km. The proposed site is more than 70 km from WPRO, and the requirement is met.
- WLNG, FCC Facility ID # 39640, Sag Harbor, NY. The §73.207 spacing requirement is 72 km. The actual spacing is 70.7 km, which meets the minimum spacing requirements for short-spacing under §73.215.

A §73.215 short-spacing study with respect to WLNG provided below.

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§73.215 Short-Spacing Study

Outbound to WLNG



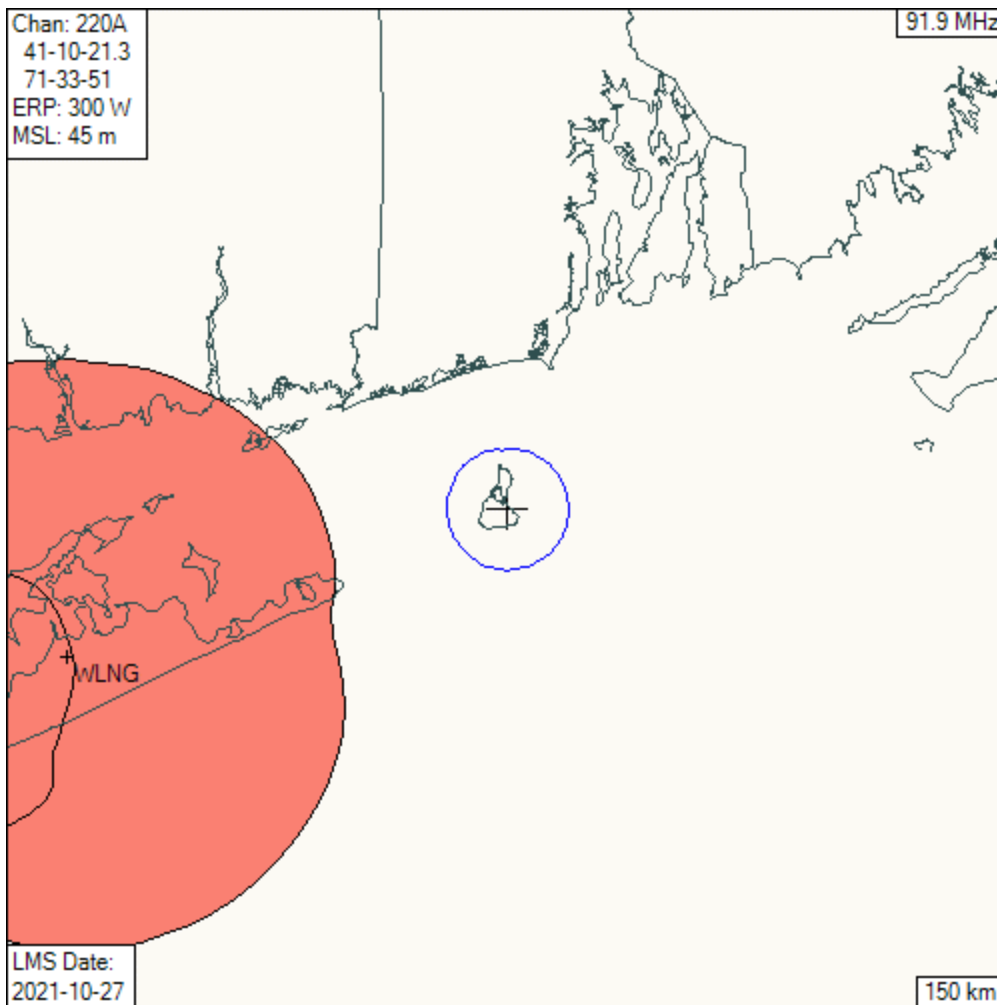
The proposed 54 dBu f(50,10) contour is shown in red. The protected 60 dBu f(50,50) contour of WLNG is shown as a filled polygon. The contours do not overlap.

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Inbound from WLNG:



The proposed 60 dBu f(50,50) contour is shown in blue. The interfering 54 dBu f(50,10) contour of WLNG is shown as a filled polygon. The contours do not overlap.

The proposal meets the requirements of §73.215 with respect to WLNG.

TV Channel 6 Interference

On channel 220, all full-service TV6 stations within 154 km must be studied for interference. There are no full-service Channel 6 television stations within 154 km of the proposed site. The nearest, WRGB, is 259 km from the proposal.

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Blanketing Interference

At the proposed ERP of 0.3 kW, the distance to the blanketing contour is 0.22 km. The 2010 population within the blanketing contour is 11 persons.

The applicant commits to handling any complaints of blanketing interference in accordance with the requirements of §73.318.

International

The FM Agreements with Canada and Mexico require evaluation and potential coordination of any proposal within 320 km of the border.

The distance to the nearest point along the US/Canada border is 427 km. Coordination with Canada is not required.

The distance to the nearest point along the US/Mexico border is 2,891 km. Coordination with Mexico is not required.

Quiet Zones

The proposed site is outside the National Radio Quiet Zone (National Radio Astronomy Observatory Notification Area) in West Virginia.

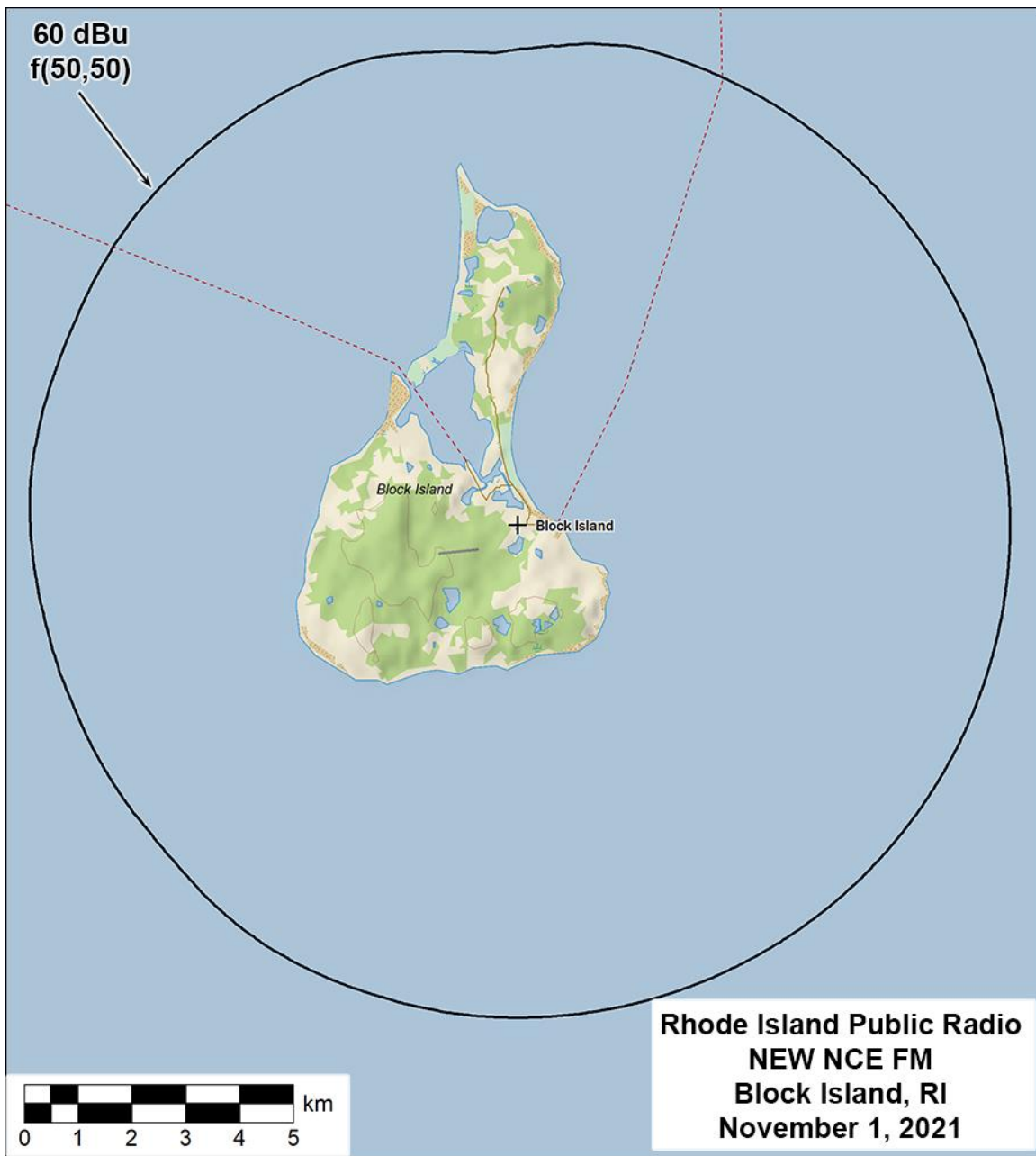
The proposed site is outside the Arecibo Observatory notification area in Puerto Rico.

The proposed site is not within a 100 km extension of the Table Mountain Radio Receiving Zone in Colorado.

Protected Monitoring Stations

The nearest Protected Monitoring Station is 416 km distant, in Belfast, ME. This is well beyond any potential 80 dBu contour.

Community Coverage



The proposed 60 dBu f(50,50) contour contains 100% of the area and population of the principal community, Block Island, RI.

The land area of Block Island is 25.2 km², and the 2010 population is 1,051 persons.

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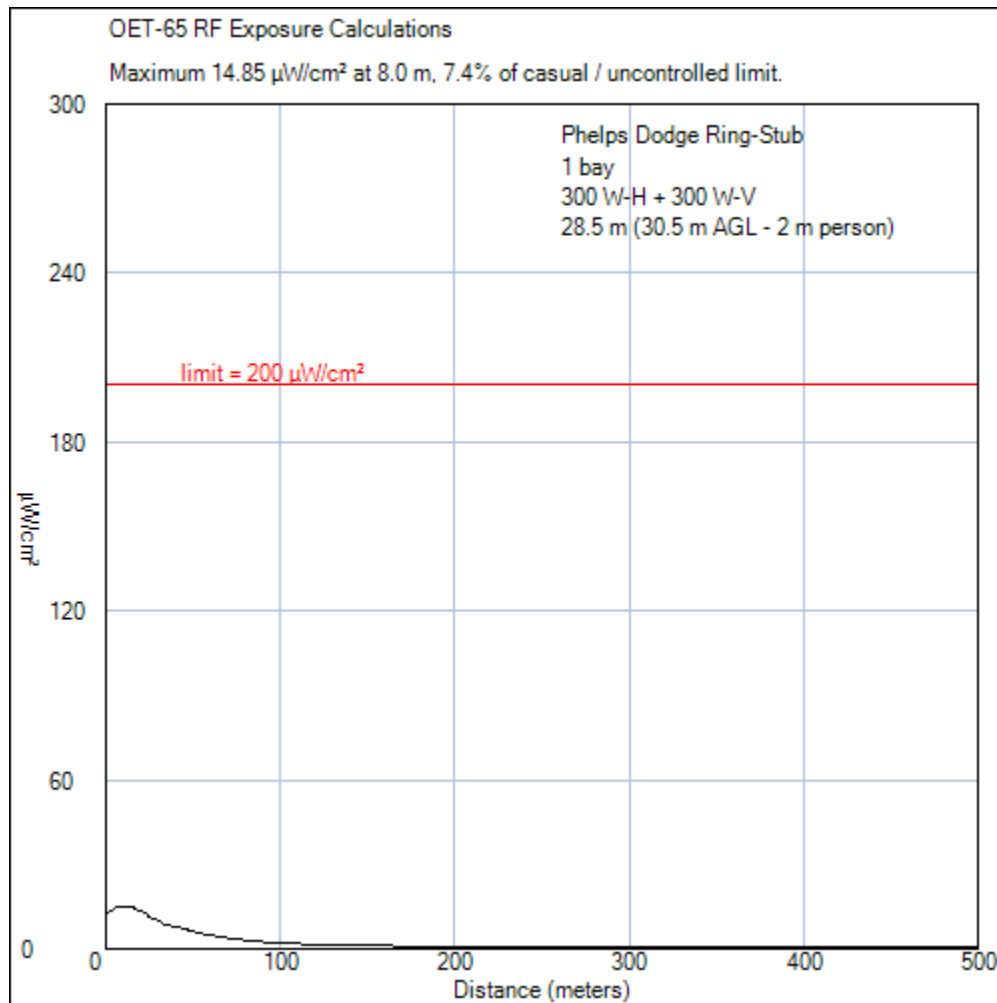
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Environmental / RF Exposure

The proposed antenna would be mounted on an existing tower, ASR 1211820. No change to the tower height, construction, or excavation is proposed.

No other broadcast stations occupy this tower. The antenna will be mounted 30.5 m above the ground. With 300 W-H + 300 W-V, one bay of the worst case antenna, the ring-stub, will produce a maximum exposure of $14.82 \mu\text{V}/\text{m}^2$, which is less than 7.5% of the limit for casual / uncontrolled exposure:



Appropriate access control and safety signage are provided.

Therefore, the proposal is not for a major environmental action.

Diversity of Ownership

Rhode Island Public Radio claims one credit for diversity of ownership. The organization is the licensee of the following stations:

| Call | Facility ID | Service | State | City |
|-----------------------|-------------|---------|-------|-------------------|
| WPVD | 48308 | AM | RI | Providence |
| WNPN | 163899 | FM | RI | Newport |
| WNPE | 22874 | FM | RI | Narragansett Pier |
| WJHD* | 53078 | FM | RI | Portsmouth |
| * proposed assignment | | | | |

Pursuant to §73.7003(b)(2), the 5 mV/m contour of WPVD and the 70 dBu contours of WNPN, WNPE, and WJHD were plotted, along with the proposed 70 dBu f(50,50) contour:



There is no overlap between the proposal and the contours of any of these existing stations.

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Point and Tie-Breaker Evaluation

Service Priorities:

- The proposal would not provide first aural service to any area or population.
- The proposal would provide first NCE service to the entire population of Block Island. That population amounts to 1,051, which does not meet the minimum criterion for service priority credit of 2,000.
- The proposal would not provide second NCE service to any area or population.

Established Local Applicant:

- The applicant is not an Established Local Applicant.

Diversity of Ownership:

- The applicant holds no station licenses, assignment applications, or technical applications that overlap the proposed facility. Please see the exhibit above.

Technical Parameters:

- The land area within the proposed 60 dBu f(50,50) contour is 25.2 km².
- The 2010 population within the proposed 60 dBu f(50,50) contour is 1,051.

Tiebreakers:

- The applicant is the licensee of two full-service FM stations and one AM station:
 - WNPE (FM), FCC Facility ID # 22874, Narragansett Pier, RI
 - WNPN (FM), FCC Facility ID # 163899, Newport, RI
 - WPVD (AM), FCC Facility ID # 48308, Providence, RI
- The applicant is proposed assignee of one station:
 - WJHD (FM), FCC Facility ID 53078, Portsmouth, RI
- The applicant has the following technical applications in progress:
 - WJHD application for facility improvement
 - Bradford, RI application for new station
- The applicant is filing the following additional applications in this Window:
 - Block Island, RI, Channel 205 A.
 - Westerly, RI, Channel 208A.
- The applicant does not claim a tiebreaker credit for a prior NCE window application.

LMS Technical Data

Channel and Facility Information

Proposed Community

| | |
|---------------|--------------|
| State | RI |
| City | Block Island |
| Channel | 220 |
| Frequency | 91.9 |
| Facility Type | NCE |
| Station Class | A |

Antenna Location Data

Antenna Structure Registration

| | |
|------------------|---------|
| Do you have ASR? | Y |
| ASR Number | 1211820 |

Coordinates (NAD83)

| | |
|--------------------------|------------|
| Latitude | 41 10 21.3 |
| Longitude | 71 33 51.0 |
| Structure Type | LTOWER |
| Overall Structure Height | 51.8 |
| Support Structure Height | 51.8 |
| Ground Elevation (AMSL) | 14.0 |

Antenna Data

| | | |
|--------|--------|--------|
| RCAGL | 30.5 H | 30.5 V |
| RCAAT | 44.0 H | 44.0 V |
| RCAMSL | 44.5 H | 44.5 V |
| ERP | 0.3 H | 0.3 V |

Antenna Technical Data

| | |
|--------------|-----------------|
| Antenna Type | Non-Directional |
|--------------|-----------------|

Technical Certifications

| | |
|---------------------------|---------------------|
| Environmental Effect | N |
| Broadcast Facility | Y |
| Contour Protection | Y |
| Reasonable Site Assurance | |
| Owned | N |
| Contacted Owner | Y |
| Contact | Stephanie Texeira |
| | 508-851-4636 |
| | Transaction Manager |

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Statement regarding calculation of contours, areas, and population counts.

All contours in this application were generated using the Height Above Mean Sea Level (HAMSL) of the antenna and the FCC online Height Above Average Terrain (HAAT) calculator, set to use the FCC 30 Second terrain dataset. The calculator outputs results for 360 radials. The distance to the contour on each radial is determined based on the Effective Radiated Power (ERP) in that direction and the HAAT associated with the radial. Each contour is a 360-sided polygon.

The area within the contour is determined as follows:

$$A = \sum_{i=0}^{359} r(i)^2 * \pi/360$$

Where A is area, i is azimuth, and $r(i)$ is the distance to the contour at azimuth i .

Each contour is imported into GIS software and the area is verified. The area of any significant water feature (ie: at least 1% of the total area within the contour) is subtracted manually from the overall area.

The population counts are derived from the 2010 US Census Summary File 1 Block data files. A bounding box is generated based on the minimum and maximum latitude and longitude of the contour. All block centroid data is retrieved within the bounding box. Each centroid is tested as to whether it is in the contour. The population is the sum of the total population of all centroids that test positive.

First / Second NCE Service

Skywaves maintains a database of protected contours of all FM stations in the US.

Each population centroid within the proposed protected contour is tested against the contours of all reserved-band stations, and non-reserved band stations on reserved allocations. The software counts the number of positive tests (serving stations, or servers) for each centroid and sums the populations of the centroids according to the number of existing servers. It also identifies the station(s) involved in the positive tests. Unexpired Construction Permits (CPs) are included, except where the station has a current license and has not applied for a license to cover the CP.

If the total first and second NCE service population exceeds 2000, contours are generated for the stations and imported into GIS software for further analysis and creation of a detailed exhibit.

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