

**Comprehensive Technical Statement**

In support of

**New England Christian Media, Inc.**

Application for Minor Change for FM Translator W229AN

93.7 MHz, Channel 229, facility id # 156667

Providence, RI

**Introduction**

New England Christian Media, Inc. proposes a minor change to its translator W229AN. The translator is currently in fill-in service for WSTL (AM), facility id 9183, and will remain so. W229AN and WSTL are co-cowned.

The following changes are proposed:

- Antenna location
- Antenna height
- Effective Radiated power

**Allocation Study**

The following table lists all FM conflicts that do not exceed the 73.207 required spacings for a full power Class A FM station by at least 25km:

fac_id	adj	chan	status	call	st	city	kw	da	haat	brg	km	req	Δ
1919	0	229B	LIC	WMKK	MA	LAWRENCE	34	N	178	22	85.52	178	-92.48
1919	0	229B	LIC	WMKK	MA	LAWRENCE	34	N	179	22	85.64	178	-92.36
72298	2	231B	LIC	WHJY	RI	PROVIDENCE	50	N	139	60	1.54	69	-67.46
74069	2	227B	LIC	WSNE-FM	MA	TAUNTON	31	Y	180	58	9.38	69	-59.62
1900	0	229B	LIC	WZMX	CT	HARTFORD	17	N	259	257	124.87	178	-53.13
135357	0	229L1	LIC	WVY-LP	MA	TISBURY	0.093	N	30	123	76.67	67	9.67

**Detailed Interference Study**

The following collection of maps and the narrative accompanying each show conclusively that no prohibited overlap will occur between the proposed facility and the conflicts listed in the allocation study.

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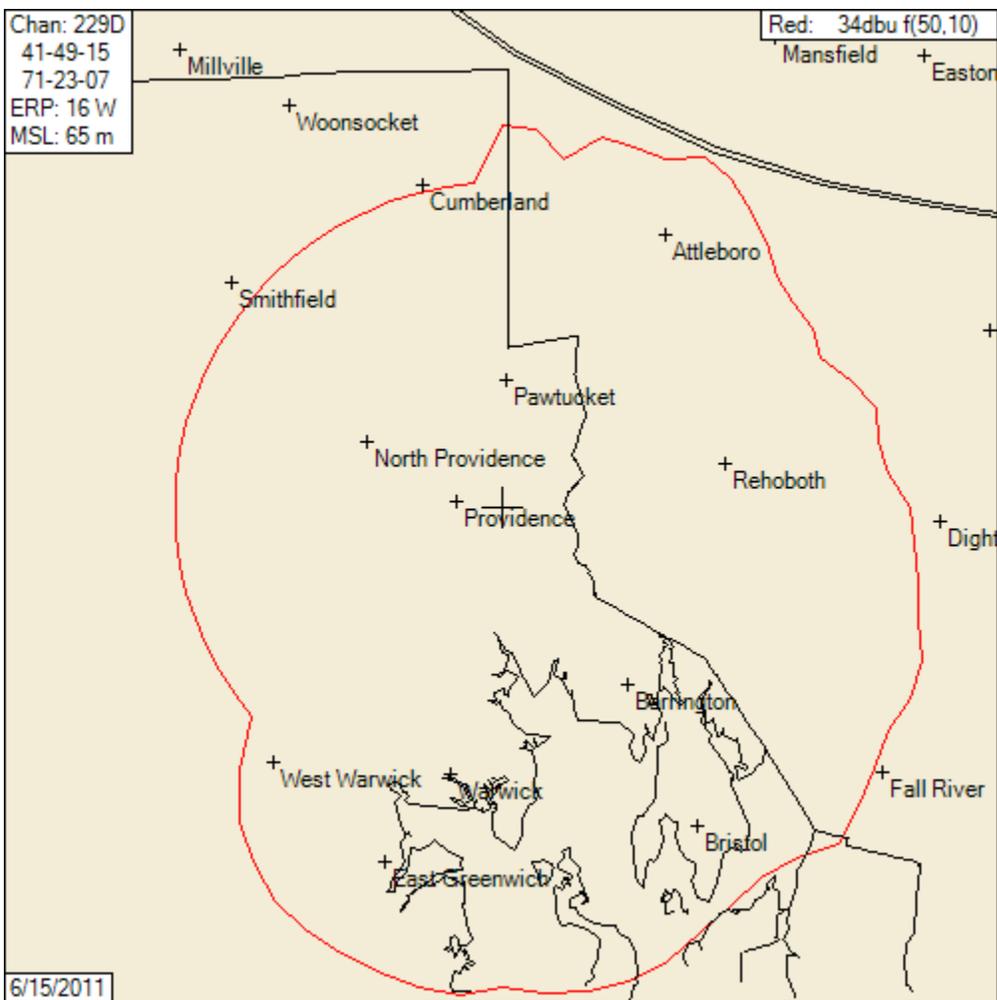
Main Number: 401-354-2400

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### Map 1 – Co-channel Outbound Interference



The proposed 34 dBu f(50,10) contour, shown in red, does not overlap the two 54 dBu f(50,50) contours generated for WMKK, shown in black.

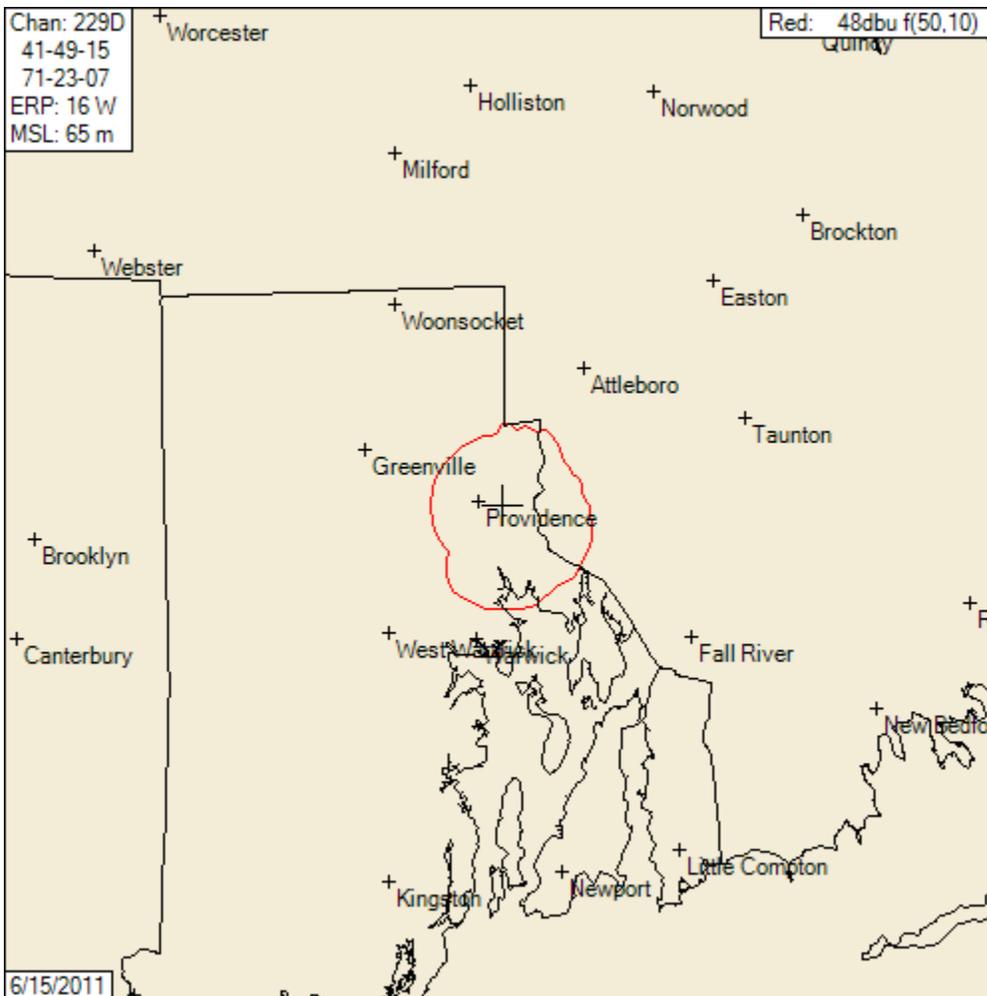
The protected contours of the other co-channel conflicts are nowhere in the vicinity.

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**Map 2 – First Adjacent Outbound Interference**



There are no first adjacent conflicts anywhere in the region.

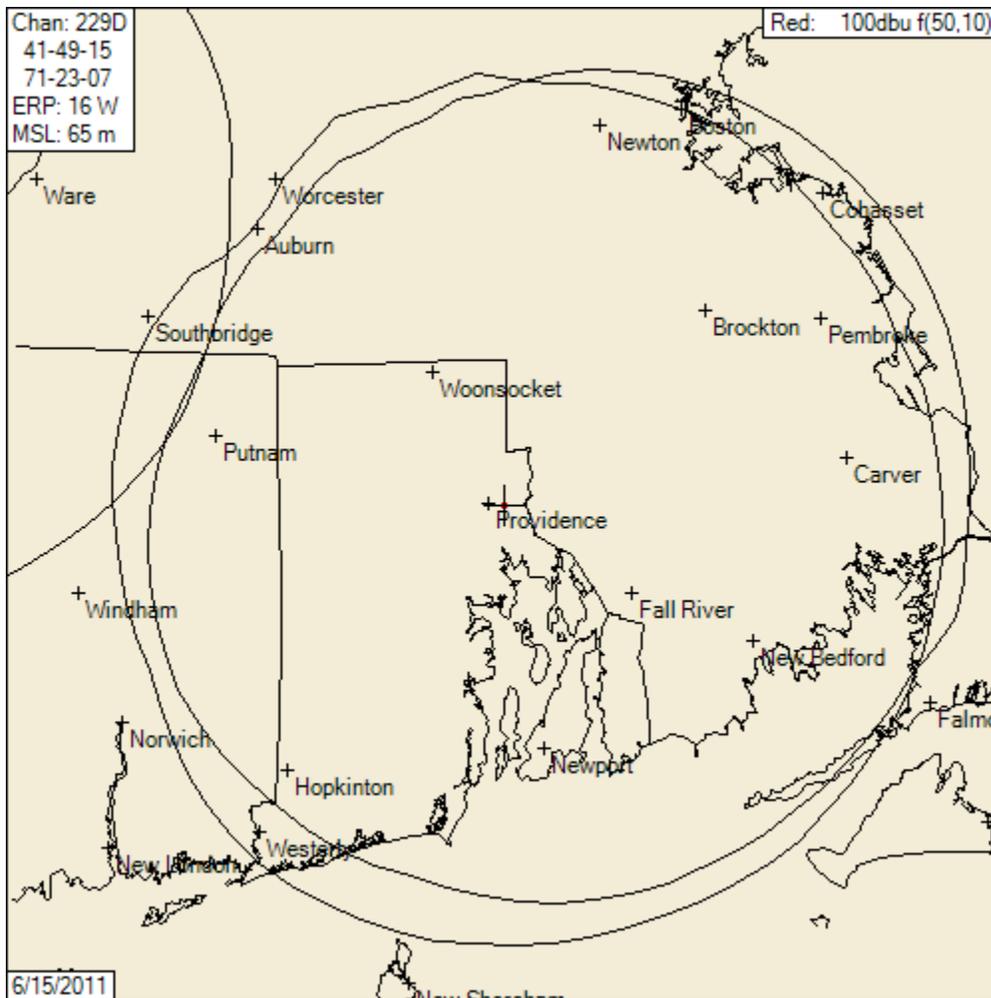
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### Map 3 – Second/Third Adjacent Outbound Interference Detail



The proposed transmitter site is located within the protected 54 dBu f(50,50) contours of WHJJ and WSNE, both of which are on second-adjacent channels.

The antenna will be mounted on an existing tower located on a tiny island in a river. It will be mounted 65 m above the river, 57 m from the nearest point of land, 195 m from the nearest major highway, and 290 m from the nearest residence.

The signal of WHJY in the vicinity of the transmitter is 118 dBu. The second adjacent signal required to cause interference is 158 dBu. At a power level of 16 Watts, this signal occurs at 0.4 m from the antenna. Therefore, the proposal complies with the requirements of 74.1204(d).

The signal of WSNE is 92.6 dBu. The interfering signal level is 132.6 dBu. This signal occurs at 6.6 m from the antenna, and again the proposal conforms with 74.1204(d).

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## **IF Separation requirements**

The proposed ERP is 16 W. The proposed facility is therefore exempt from IF separation requirements under 47 C.F.R 74.1204 (g).

## **Channel 6 Interference**

The proposed facility is not on a channel that is implicated in channel 6 interference.

## **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 355 km. Coordination with Canada is not required.

The distance to the nearest point along the US/Mexico border is 2,938 km. Coordination with Mexico is not required.

## **Quiet Zone Calculations [73.1030(a) & (b)]**

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 100km extension of the Table Mountain Radio Receiving Zone in Colorado.

## **Protected Monitoring Stations [73.1030(c)]**

The nearest Protected Monitoring Station is 346 km distant, in Belfast, ME.

## **Transmitter Location**

The antenna will be mounted on an existing tower, ASR # 1211530. This tower is located on a tiny uninhabitable island, 57 m from the nearest point of land. The antenna will be mounted 65 m above the river. The tower is also used by WSTL (AM), which is the primary station being rebroadcast.

WSTL determines operating power by use of a Direct Reading Power Meter. Therefore, an operating restriction requiring WSTL to determine power by the indirect method until base impedance measurements are taken would be inappropriate.

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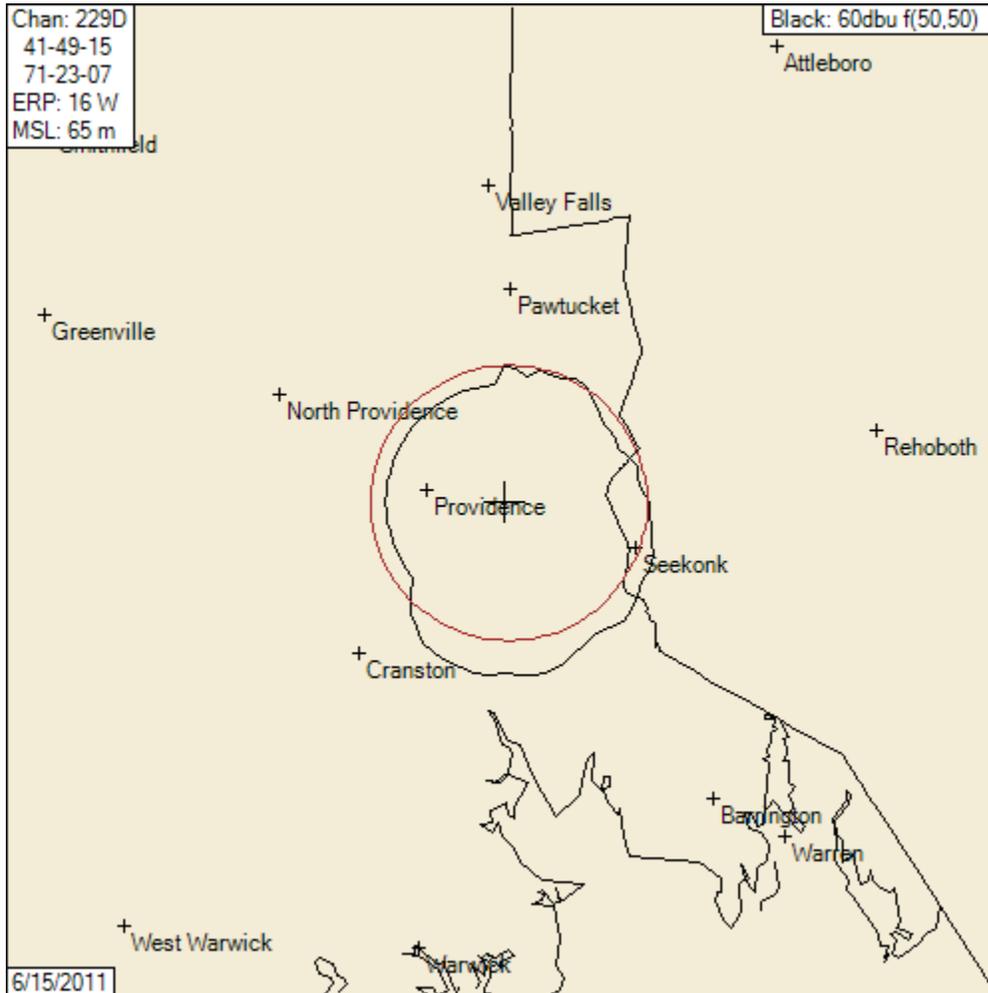
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## Minor Change Qualifications

The proposed (black) and licensed (red) 60 dBu contours are nearly congruent and clearly overlap:



There will be no change in frequency.

Therefore, this proposal is for a minor change.

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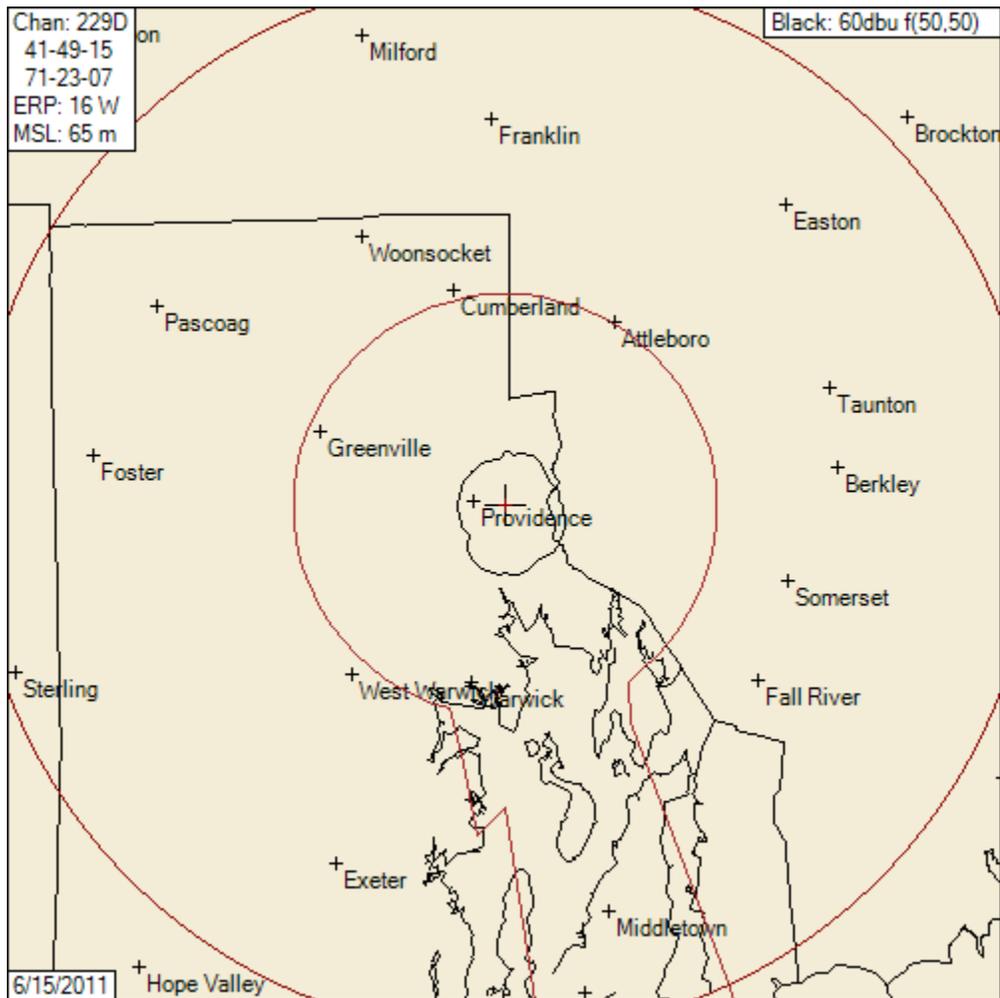
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## Fill-In Translator

The primary station is WSTL (AM), facility ID 9183.



The proposed 60 dBu f(50,50) contour (the inner black polygon) falls entirely within the 2 mV/m contour (the inner red polygon) and 40 km from the transmitter (the outer red polygon).

W229AN and WSTL are co-owned, and no retransmission consent agreement is required.

## RF Exposure

The proposed ERP is 16 W-H + 16 W-V, for a total of 32 W. With the one-bay Shively 6810-equivalent circularly polarized, antenna installed 65 m above the river, the exposure at the surface is  $0.06 \mu\text{W}/\text{cm}^2$  - 0.03% of the exposure limit for casual / uncontrolled exposure. It is therefore negligible, with WSTL being the primary contributor. The tower is fenced and appropriate signage is provided. Access to the site is extremely difficult.

The applicant agrees to reduce power or shut down in order to protect workers at the site.

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