



Comprehensive Technical Statement
in support of
Talking Information Center, Incorporated
Application for Minor Modification
WRRS (FM), Facility ID # 177016
Channel 203A, 88.5 MHz
Middleborough Center, MA

Introduction

The following changes are proposed:

- Transmitter location
- Effective radiated power
- Change antenna type to non-directional

Data Sources

Distances were calculated using the FCC method defined in 73.208 of the Commission's Rules. Dates shown on maps are the last change date in the CDBS data downloads in use at the time the maps were generated.

All contours shown in this report were generated using antenna center above mean sea level, NAD-27 coordinates, and the FCC online HAAT calculator, which uses 30-second terrain data.

The interference tabulation was done using the USGS03 3-second terrain database.

Allocation Study – Non-reserved (commercial) channels

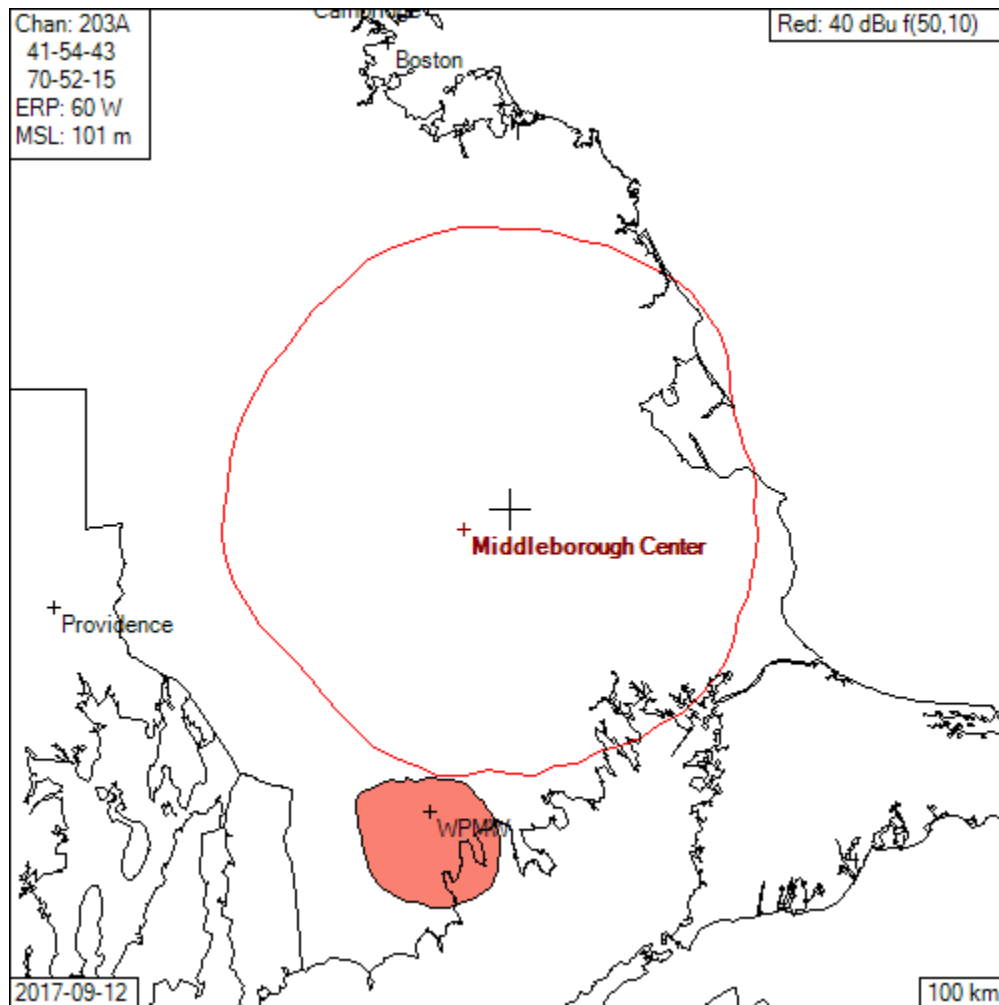
Only IF-spaced channels 256 and 257 are of concern. The closest IF-separated station is WPLM-FM, Class B. The required separation is 15 km, and the proposed site is 15.4 km from WPLM. The proposal satisfies the IF spacing requirements of §73.207.

Allocation Study – Reserved (NCE) channels

Detailed Interference Study

All outbound interference maps show the 60dbu f(50,50) protected contours of the conflicting records in black filled with salmon. The outbound interfering contour of the proposed facility is shown in red and labeled in the upper-right corner of each map.

Outbound co-channel



There is no overlap with any co-channel station or proposal. WPMW is close. A tabulation is provided on the following page.

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WPMW Tabulation

az	eRel	kW	terht	eah	km	lat	lon	km	brg	eRel	kW	terht	eah	fs	margin
21	0.180	0.005	28.3	47.5	3.28	41 40 02.08	70 57 12.11	28.03	194.1	1	0.060	17.1	83.9	39.73	0.27
22	0.182	0.005	28.0	47.8	3.31	41 40 02.44	70 57 09.25	28.00	194	1	0.060	17.1	83.9	39.75	0.25
23	0.185	0.005	27.1	48.7	3.37	41 40 03.35	70 57 06.00	27.96	193.9	1	0.060	17.1	83.9	39.78	0.22
24	0.187	0.005	26.4	49.4	3.41	41 40 03.96	70 57 02.85	27.92	193.7	1	0.060	17.1	83.9	39.80	0.20
25	0.189	0.005	26.0	49.8	3.45	41 40 04.22	70 56 59.83	27.90	193.6	1	0.060	17.1	83.9	39.81	0.19
26	0.191	0.005	25.5	50.3	3.49	41 40 04.56	70 56 56.71	27.87	193.5	1	0.060	17.1	83.9	39.83	0.17
27	0.193	0.005	24.8	51.0	3.53	41 40 04.99	70 56 53.45	27.84	193.3	1	0.060	17.1	83.9	39.85	0.15
28	0.196	0.005	23.7	52.1	3.60	41 40 05.89	70 56 49.79	27.79	193.2	1	0.060	17.1	83.9	39.88	0.12
29	0.198	0.006	22.2	53.6	3.67	41 40 07.05	70 56 45.80	27.74	193	1	0.060	17.1	83.9	39.91	0.09
30	0.200	0.006	20.8	55.0	3.74	41 40 07.97	70 56 41.88	27.69	192.8	1	0.060	17.1	83.9	39.94	0.06
31	0.203	0.006	19.5	56.3	3.81	41 40 08.80	70 56 37.91	27.65	192.7	1	0.060	17.2	83.8	39.96	0.04
32	0.205	0.006	18.7	57.1	3.86	41 40 09.05	70 56 34.30	27.62	192.5	1	0.060	17.2	83.8	39.98	0.02
33	0.208	0.006	18.0	57.8	3.91	41 40 09.20	70 56 30.68	27.60	192.3	1	0.060	17.2	83.8	39.99	0.01
34	0.210	0.006	17.5	58.3	3.95	41 40 09.04	70 56 27.25	27.59	192.2	1	0.060	17.3	83.7	39.99	0.01
35	0.213	0.006	17.3	58.5	3.98	41 40 08.55	70 56 24.07	27.58	192	1	0.060	17.3	83.7	39.99	0.01
36	0.215	0.007	17.3	58.5	4.00	41 40 07.84	70 56 21.04	27.59	191.9	1	0.060	17.4	83.6	39.98	0.02
37	0.218	0.007	18.0	57.8	4.00	41 40 06.51	70 56 18.58	27.62	191.7	1	0.060	17.4	83.6	39.95	0.05
38	0.220	0.007	19.0	56.8	3.99	41 40 04.87	70 56 16.45	27.66	191.6	1	0.060	17.5	83.5	39.92	0.08
39	0.223	0.007	19.6	56.2	3.99	41 40 03.48	70 56 14.08	27.69	191.5	1	0.060	17.6	83.4	39.89	0.11
40	0.225	0.007	19.7	56.1	4.01	41 40 02.47	70 56 11.26	27.71	191.3	1	0.060	17.6	83.4	39.87	0.13
41	0.228	0.007	19.6	56.2	4.04	41 40 01.73	70 56 08.10	27.72	191.2	1	0.060	17.7	83.3	39.86	0.14
42	0.230	0.007	19.6	56.2	4.06	41 40 00.74	70 56 05.18	27.73	191	1	0.060	17.8	83.2	39.84	0.16
43	0.233	0.008	19.5	56.3	4.09	41 39 59.86	70 56 02.07	27.75	190.9	1	0.060	17.9	83.1	39.82	0.18
44	0.236	0.008	19.1	56.7	4.13	41 39 59.16	70 55 58.68	27.75	190.7	1	0.060	17.9	83.1	39.81	0.19
45	0.239	0.008	18.6	57.2	4.17	41 39 58.46	70 55 55.19	27.76	190.5	1	0.060	18.0	83.0	39.80	0.20
46	0.241	0.008	18.0	57.8	4.22	41 39 57.81	70 55 51.55	27.76	190.4	1	0.060	18.1	82.9	39.78	0.22
47	0.244	0.008	17.1	58.7	4.27	41 39 57.27	70 55 47.65	27.76	190.2	1	0.060	18.2	82.8	39.77	0.23
48	0.247	0.009	16.6	59.2	4.31	41 39 56.40	70 55 44.11	27.78	190	1	0.060	18.3	82.7	39.76	0.24
49	0.249	0.009	15.9	59.9	4.36	41 39 55.56	70 55 40.44	27.79	189.8	1	0.060	18.4	82.6	39.74	0.26
50	0.252	0.009	15.4	60.4	4.40	41 39 54.58	70 55 36.86	27.80	189.6	1	0.060	18.5	82.5	39.72	0.28

The first six columns show the calculation of distance to the WPMW 60 dBu f(50,50) contour, followed by the latitude and longitude of the point described by the azimuth and distance from the proposal. The following columns show the calculation of the inbound f(50,10) signal from the proposal, and margin below the 40 dBu limit. (A negative margin indicates prohibited overlap.) The inbound signal strength does not exceed the 40 dBu limit. The terrain data source is USGS03.

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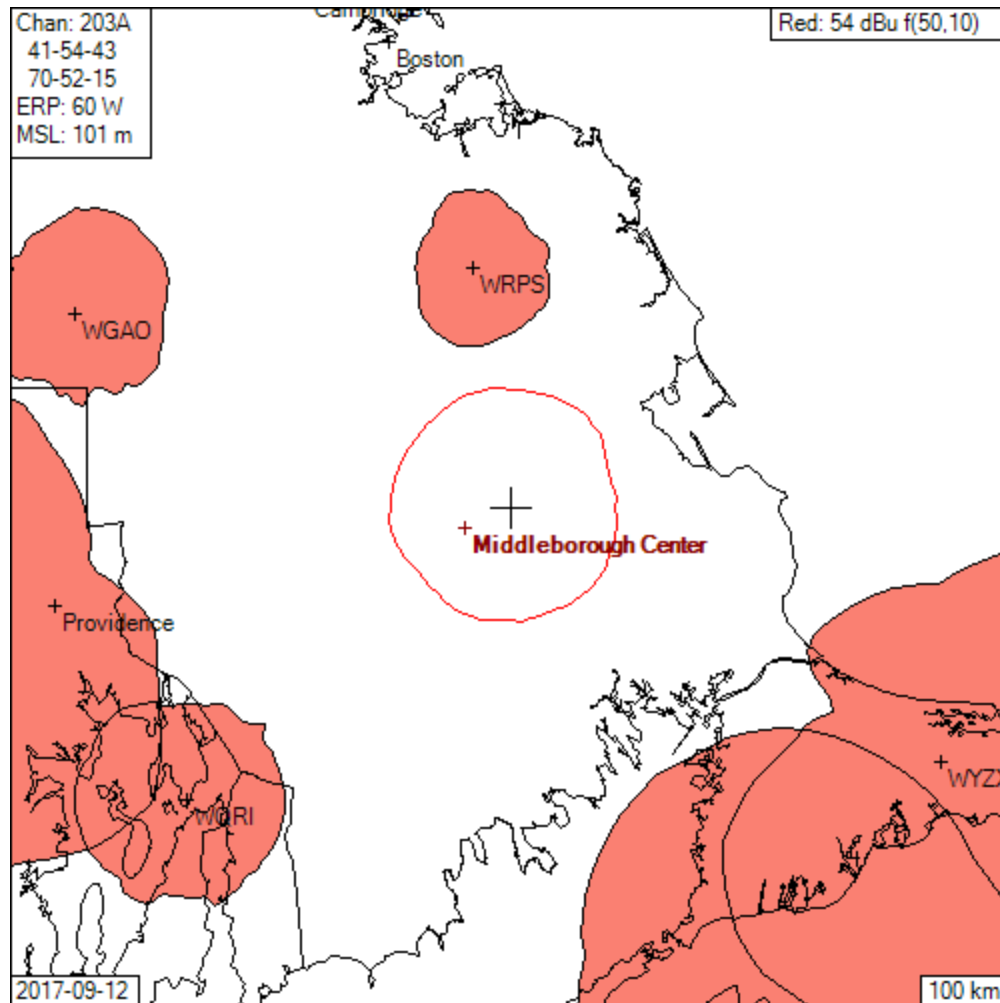
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Outbound first adjacent



There are no nearby first-adjacent records.

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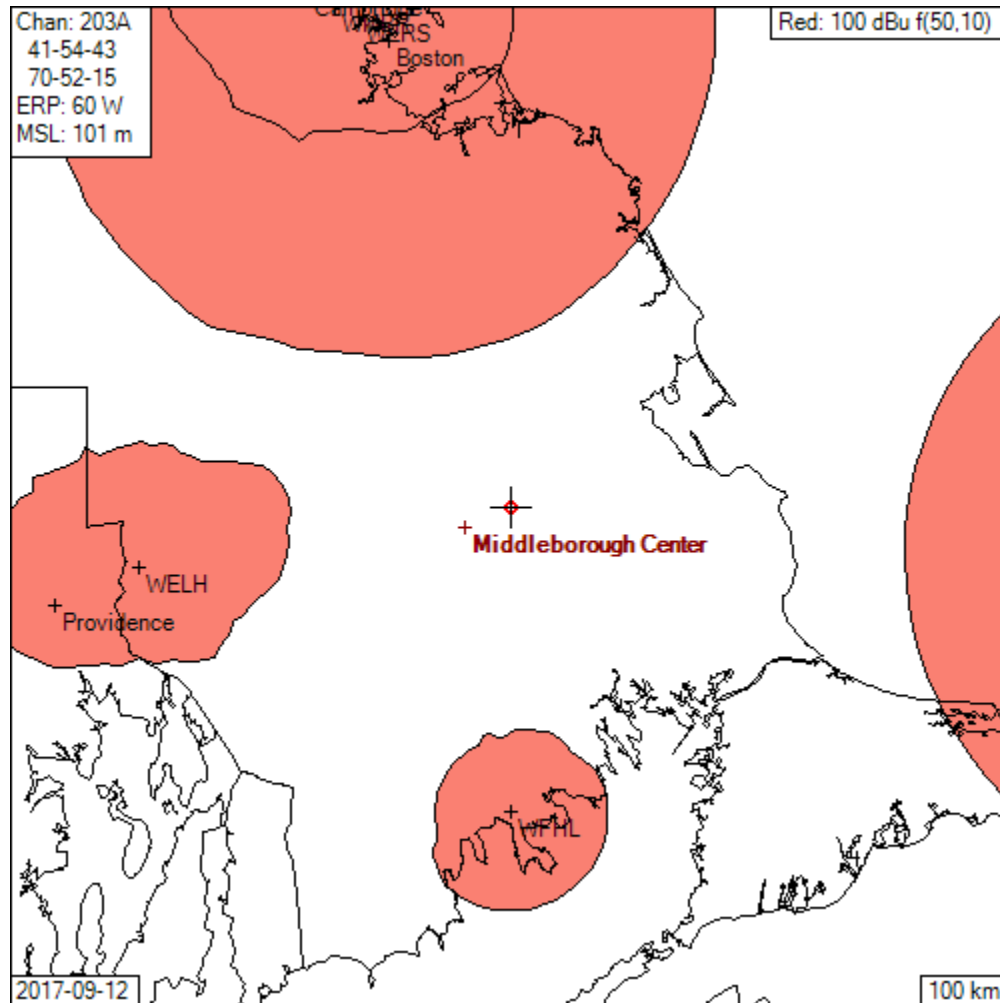
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Outbound second and third adjacent



The proposed site is not close to any second or third adjacent records.

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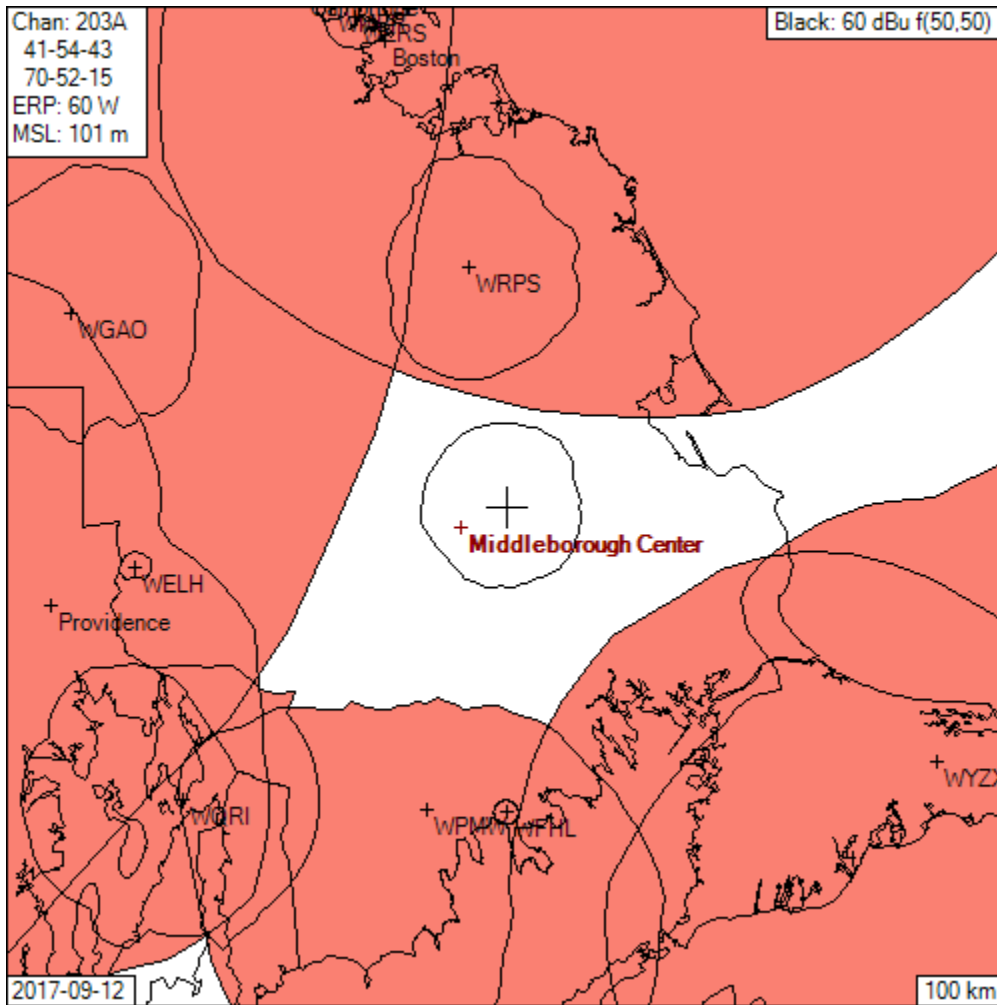
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Inbound

The inbound interference map shows the proposed 60 dBu f(50,50) in black, and the channel-appropriate interfering contours in black filled with salmon.



The proposed 60 dBu f(50,50) contour is not close to any interfering contour.

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Class A Qualification

73.211(a)(1) requires a 100 W minimum power for Class A.

However, 73.211(a)(3) allows for reduced power in case of adequate antenna height;

Class A stations may have an ERP less than 100 watts provided that the reference distance, determined in accordance with paragraph (b)(1)(i) of this section, equals or exceeds 6 kilometers.

The proposed reference distance, based on an ERP of 60 W and HAAT of 80 m, is 8.1 km, which exceeds the 6 km requirement.

Therefore, the proposal qualifies as Class A.

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 348 km. Coordination with Canada is not required.

The distance to the nearest point along the US/Mexico border is 2,980 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.

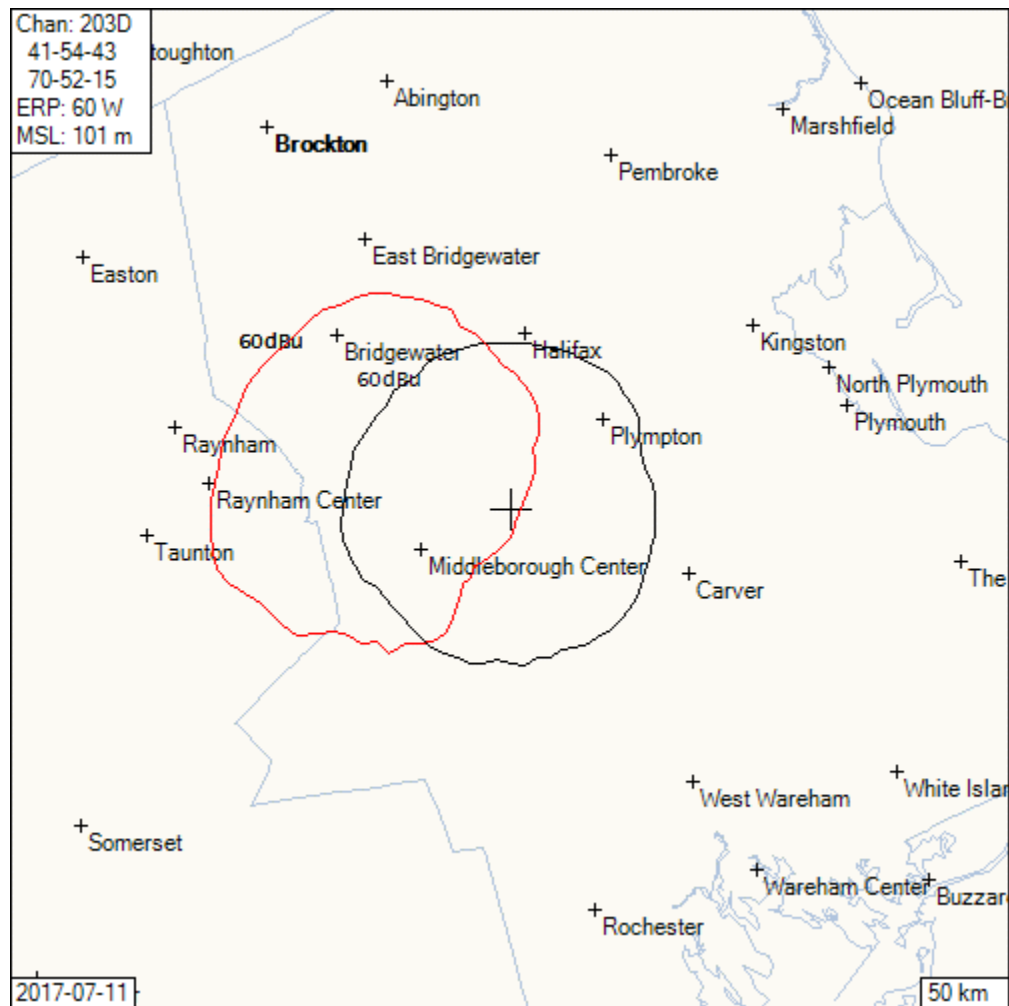
The proposed site is outside the Arecibo Observatory notification area in Puerto Rico.

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 317 km distant, in Belfast, ME. This is well beyond any potential 80 dBu contour.

Minor Change



The licensed 60 dBu f(50,50) contour is shown as a red polygon. The proposed 60 dBu f(50,50) contour is shown as a black polygon.

The 60 dBu polygons overlap. No change in frequency is proposed.

Therefore, the proposal is for a minor change.

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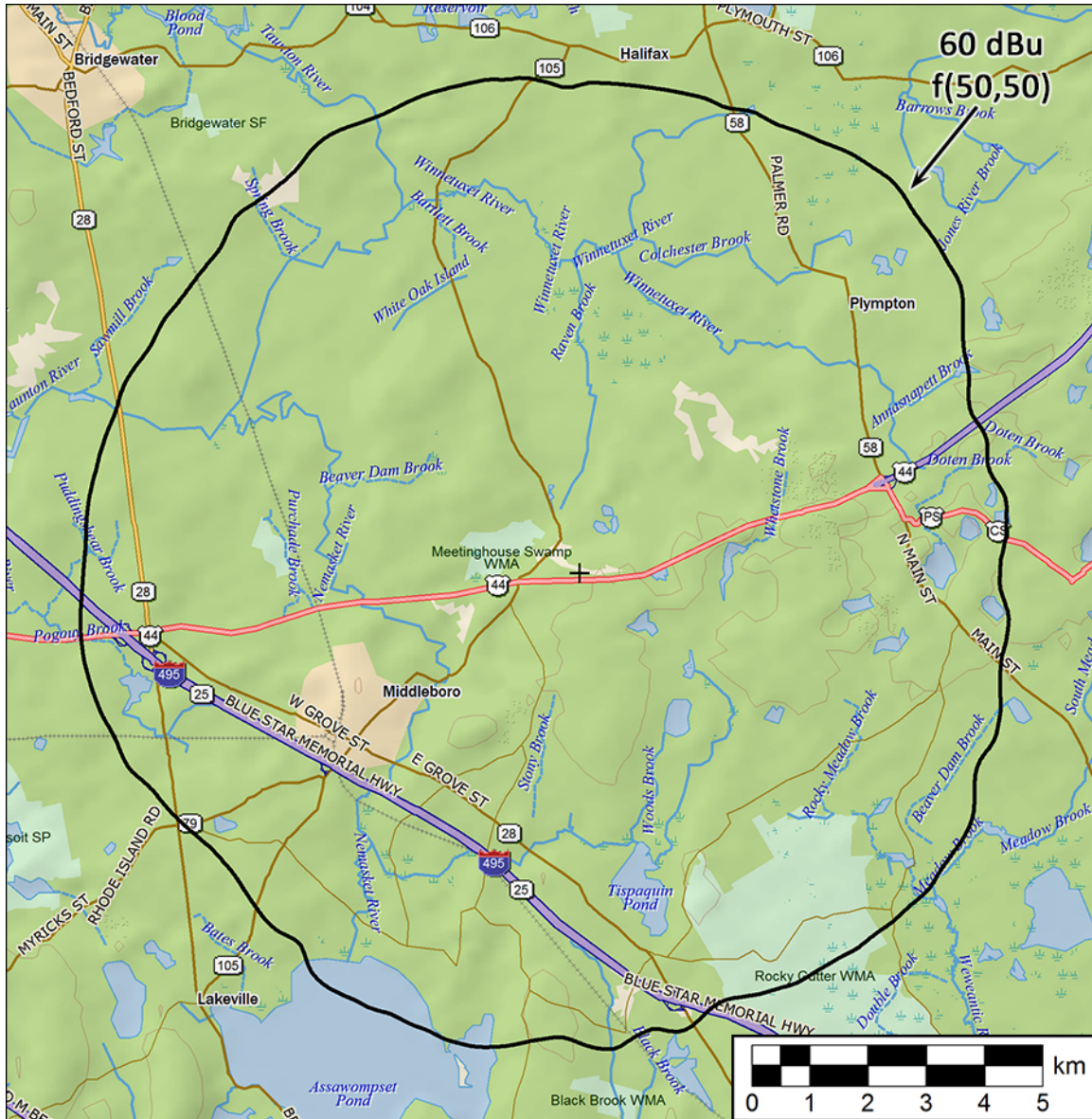
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Community Coverage



The principal community of Middleborough Center is shown as “Middleboro” on the map. 100% of the population of Middleborough Center CDP lies within the proposed 60 dBu f(50,50) contour, thus satisfying the requirements of 73.515.

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Transmitter Location

Tower data:

ASR	1216830
Coordinates (NAD-27)	
	41 54 43 N Lat
	70 52 15 W Lon

Antenna data:

Description	Non-directional, single bay, circularly polarized
Antenna center	60 m AGL 101 m AMSL 80 m AAT (from FCC online HAAT calculator)

ERP:

Horizontal	0.060 kW
Vertical	0.060 kW

-0-