

ENGINEERING EXHIBIT

Application for Auxiliary Antenna Construction Permit

prepared for

Greater Washington Educational Telecommunications Association, Inc.

WETA(FM) Washington, DC

Facility ID 65669

Ch. 215B (90.9 MHz) 5 kW 122 m

Greater Washington Educational Telecommunications Association, Inc. (“GWETA”) is the licensee of WETA(FM), Channel 215B, Washington, DC (file number BMLED-20070511AAI). *GWETA* herein proposes to construct a new auxiliary antenna facility. This will be a second auxiliary antenna for WETA at a separate location from the main and existing auxiliary facilities.

WETA’s main facility is presently licensed to operate at 75 kW effective radiated power (“ERP”) using a non-directional antenna at a height above average terrain (“HAAT”) of 164 meters. A side-mounted auxiliary antenna (BXLED-20081014AEP) is currently licensed at a lower elevation on the same supporting tower as the WETA main antenna (FCC Antenna Structure Registration “ASR” number 1018169). The existing auxiliary antenna license specifies 22.5 kW ERP (nondirectional) at 164 meters HAAT at the main site. This application proposes an additional auxiliary antenna to be located on ASR number 1045309, located 6.0 km from the main WETA site. This proposal is not intended to modify or supersede the existing auxiliary antenna license (BXLED-20081014AEP).

The proposed auxiliary antenna is located at the WAMU(FM) main transmitter site (Ch. 201B, Washington, DC) and will be shared with WAMU. This is an existing antenna which is already licensed for use by WAMU as an auxiliary (BMLED-20080805AAC). No combiner is being installed, thus simultaneous operation of WETA and WAMU with this antenna will not occur. Only one station at a time will utilize the auxiliary antenna.

As specified herein, the new auxiliary antenna will operate at 5.0 kW ERP with a nondirectional antenna at 122 meters HAAT. **Figure 1** shows that the 60 dB μ (1 mV/m) contour of the proposed auxiliary facility does not extend beyond the 60 dB μ contour of the main facility, in compliance with §73.1675(a)(1).

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposal will involve use of an existing transmitting antenna. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. No tower construction or change in structure height is proposed. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

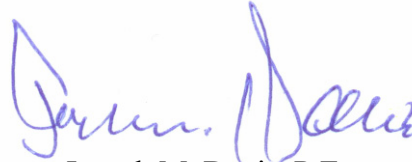
The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and considering the antenna's relative field in downward elevations (**Figure 2 and 2A**), the calculated power density attributable to the proposed WETA facility at locations near the transmitter site at a height of two meters above ground level is depicted in the attached **Figure 3**.

Figure 3 indicates that the highest RF electromagnetic field level attributable to the proposed WETA auxiliary facility is 4.7 percent of the uncontrolled / general public maximum permissible exposure limit at any location two meters above ground, which occurs at a distance of 49 meters horizontally away from the base of the tower structure. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

Certification

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.



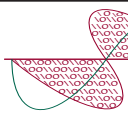
Joseph M. Davis, P.E.
March 6, 2009

Chesapeake RF Consultants, LLC
11993 Kahns Road
Manassas, VA 20112
703-650-9600

List of Attachments

Figure 1	Coverage Contour Comparison
Figure 2, 2A	Antenna Vertical Plane (Elevation) Pattern
Figure 3	Calculated RF Electromagnetic Field
Form 340	Saved Version of Engineering Sections from FCC Form at Time of Upload

This material was entered March 6, 2009 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.

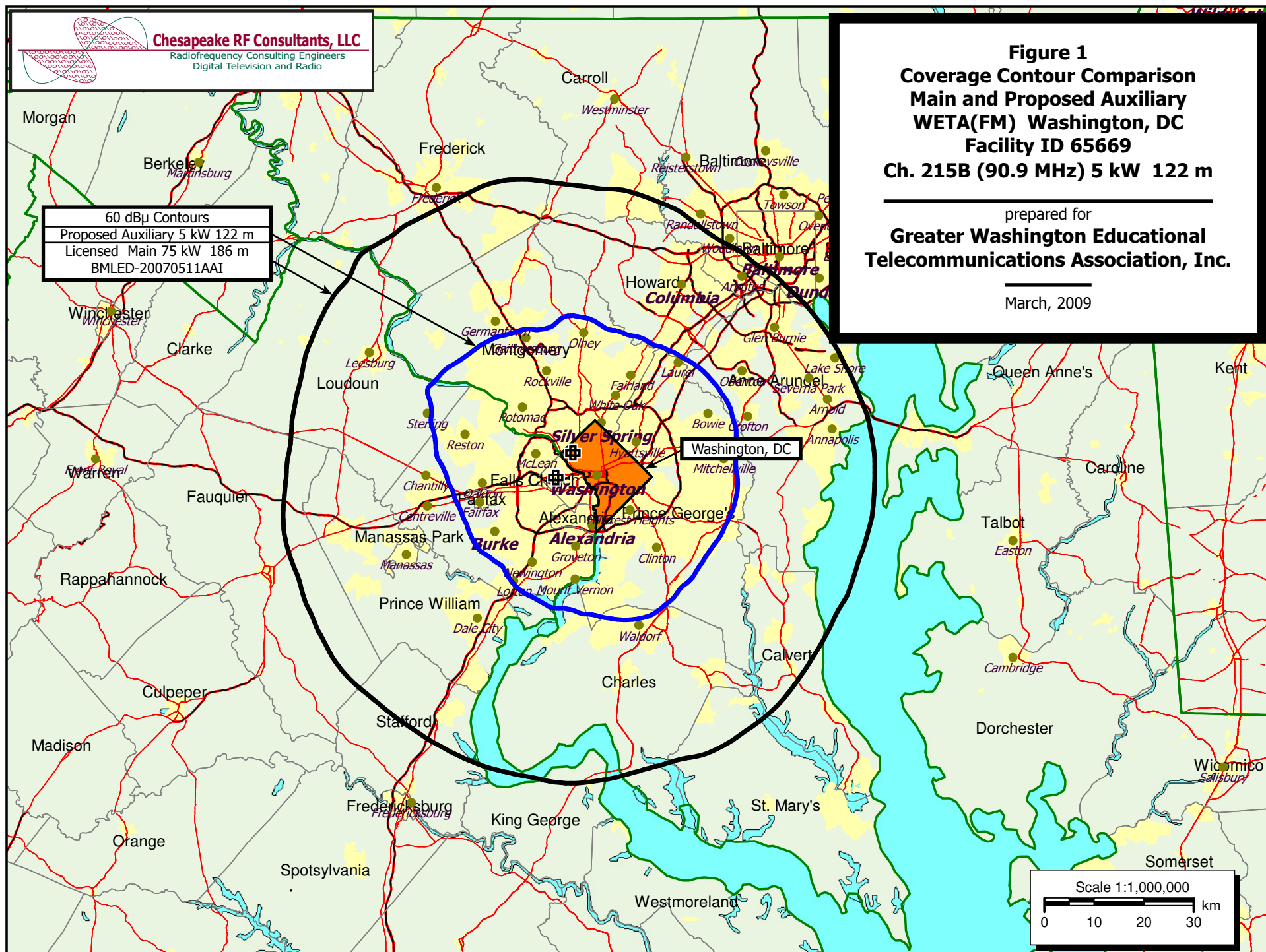


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 1
Coverage Contour Comparison
Main and Proposed Auxiliary
WETA(FM) Washington, DC
Facility ID 65669
Ch. 215B (90.9 MHz) 5 kW 122 m

prepared for
Greater Washington Educational
Telecommunications Association, Inc.

March, 2009



Antenna Mfg.: Shively Labs
Antenna Type: 6810BB-2R-PS
Station: WETA
Frequency: 90.9
Channel #: 215
Figure: 25612

Beam Tilt	0	
Gain (Max)	0.988	-0.054 dB
Gain (Horizon)	0.988	-0.054 dB

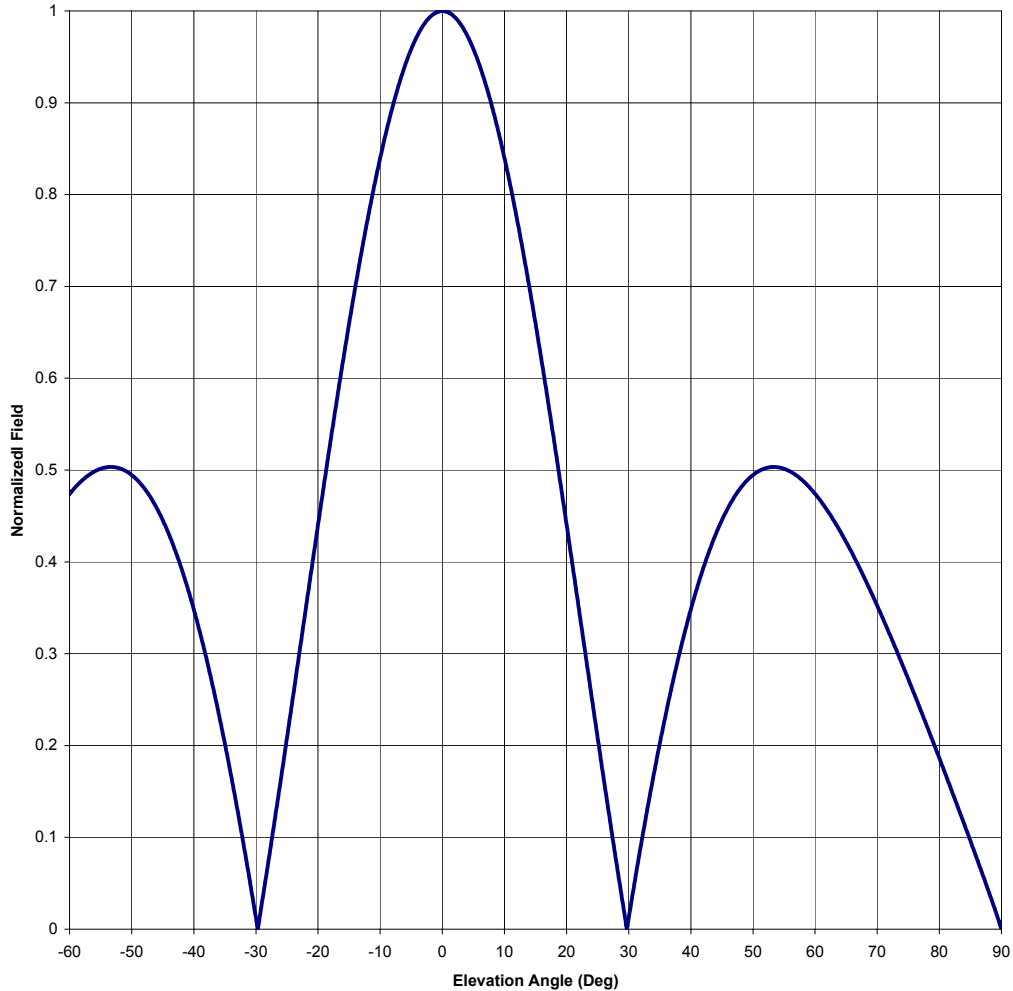


Figure 2
Antenna Vertical (Elevation)
Plane Pattern - Plot
WETA(FM) Washington, DC
Facility ID 65669
Ch. 215B (90.9 MHz) 5 kW 122 m

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Frequency: 90.9

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Figure: 25612

Beam Tilt 0

Gain (Max) 0.988

Gain (Horizon) 0.988

-0.054 dB

-0.054 dB

Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field
-90	0.000	-44	0.430	0	1.000	46	0.459
-89	0.021	-43	0.413	1	0.998	47	0.471
-88	0.040	-42	0.393	2	0.993	48	0.480
-87	0.059	-41	0.372	3	0.985	49	0.488
-86	0.078	-40	0.348	4	0.973	50	0.495
-85	0.096	-39	0.323	5	0.959	51	0.499
-84	0.114	-38	0.296	6	0.941	52	0.502
-83	0.133	-37	0.266	7	0.920	53	0.503
-82	0.151	-36	0.235	8	0.896	54	0.503
-81	0.168	-35	0.202	9	0.869	55	0.501
-80	0.186	-34	0.167	10	0.840	56	0.498
-79	0.204	-33	0.131	11	0.808	57	0.494
-78	0.221	-32	0.093	12	0.774	58	0.489
-77	0.238	-31	0.053	13	0.738	59	0.482
-76	0.255	-30	0.012	14	0.700	60	0.474
-75	0.272	-29	0.030	15	0.660	61	0.465
-74	0.289	-28	0.073	16	0.618	62	0.456
-73	0.305	-27	0.118	17	0.575	63	0.445
-72	0.321	-26	0.163	18	0.531	64	0.434
-71	0.337	-25	0.209	19	0.486	65	0.422
-70	0.352	-24	0.255	20	0.441	66	0.409
-69	0.367	-23	0.301	21	0.394	67	0.396
-68	0.382	-22	0.348	22	0.348	68	0.382
-67	0.396	-21	0.394	23	0.301	69	0.367
-66	0.409	-20	0.441	24	0.255	70	0.352
-65	0.422	-19	0.486	25	0.209	71	0.337
-64	0.434	-18	0.531	26	0.163	72	0.321
-63	0.445	-17	0.575	27	0.118	73	0.305
-62	0.456	-16	0.618	28	0.073	74	0.289
-61	0.465	-15	0.660	29	0.030	75	0.272
-60	0.474	-14	0.700	30	0.012	76	0.255
-59	0.482	-13	0.738	31	0.053	77	0.238
-58	0.489	-12	0.774	32	0.093	78	0.221
-57	0.494	-11	0.808	33	0.131	79	0.204
-56	0.498	-10	0.840	34	0.167	80	0.186
-55	0.501	-9	0.869	35	0.202	81	0.168
-54	0.503	-8	0.896	36	0.235	82	0.151
-53	0.503	-7	0.920	37	0.266	83	0.133
-52	0.502	-6	0.941	38	0.296	84	0.114
-51	0.499	-5	0.959	39	0.323	85	0.096
-50	0.495	-4	0.973	40	0.348	86	0.078
-49	0.488	-3	0.985	41	0.372	87	0.059
-48	0.480	-2	0.993	42	0.393	88	0.040
-47	0.471	-1	0.998	43	0.413	89	0.021
-46	0.459	0	1.000	44	0.430	90	0.000
-45	0.445			45	0.445		

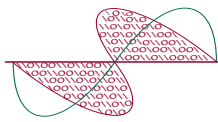


Figure 2A
Antenna Vertical (Elevation)
Plane Pattern - Data
WETA(FM) Washington, DC
Facility ID 65669

Ch. 215B (90.9 MHz) 5 kW 122 m

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March, 2009

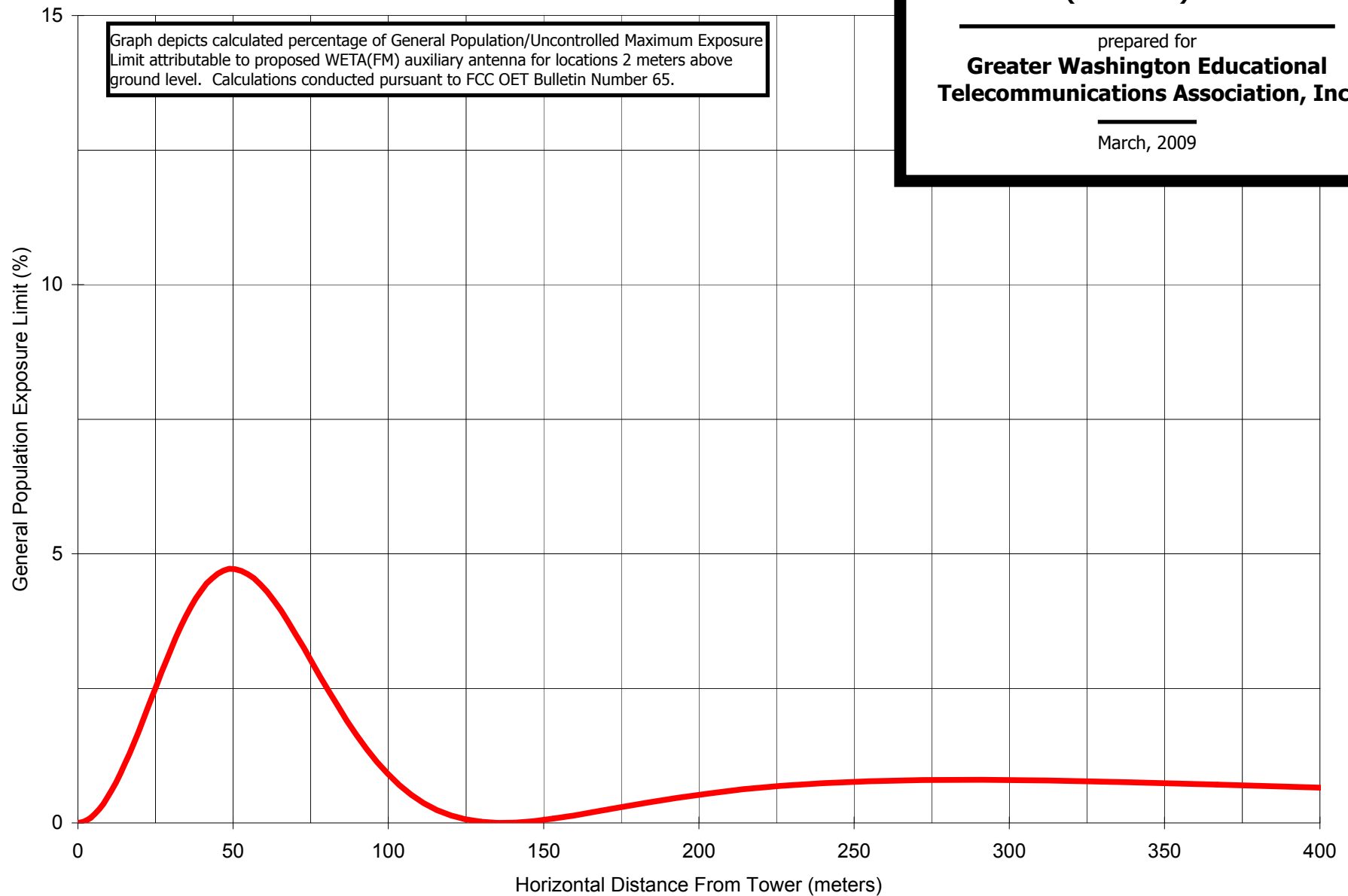


Chesapeake RF Consultants, LLC
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Figure 3
Calculated RF Electromagnetic Field
WETA(FM) Washington, DC
Facility ID 65669
Ch. 215B (90.9 MHz) 5 kW 122 m

prepared for
Greater Washington Educational
Telecommunications Association, Inc.

March, 2009



Section VII Preparer's Certification

I certify that I have prepared Section VII (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.	Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature	Date 3/6/2009	
Mailing Address CHESAPEAKE RF CONSULTANTS LLC 11993 KAHNS ROAD		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20112-
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Section VII - FM Engineering**TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1.	Channel Number: 215																																																																																																
2.	Class (select one): <input type="radio"/> D <input type="radio"/> A <input type="radio"/> B1 <input checked="" type="radio"/> B <input type="radio"/> C3 <input type="radio"/> C2 <input type="radio"/> C1 <input type="radio"/> C0 <input type="radio"/> C																																																																																																
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 38 Minutes 56 Seconds 10 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 77 Minutes 5 Seconds 33 <input checked="" type="radio"/> West <input type="radio"/> East																																																																																																
4.	Proposed Assignment Coordinates: (NAD 27) - RESERVED CHANNELS ABOVE 220 ONLY <input checked="" type="checkbox"/> Not Applicable Latitude: Degrees Minutes Seconds <input type="radio"/> North <input type="radio"/> South Longitude: Degrees Minutes Seconds <input type="radio"/> West <input type="radio"/> East																																																																																																
5.	Antenna Structure Registration Number: 1045309 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA																																																																																																
6.	Overall Tower Height Above Ground Level: 130.5 meters																																																																																																
7.	Height of Radiation Center Above Mean Sea Level: 191 meters(H) 191 meters(V)																																																																																																
8.	Height of Radiation Center Above Ground Level: 80 meters(H) 80 meters(V)																																																																																																
9.	Height of Radiation Center Above Average Terrain: 122 meters(H) 122 meters(V)																																																																																																
10.	Effective Radiated Power: 5 kW(H) 5 kW(V)																																																																																																
11.	Maximum Effective Radiated Power: (Beam-Tilt Antenna ONLY) <input checked="" type="checkbox"/> Not Applicable kW(H) kW(V)																																																																																																
12.	Directional Antenna Relative Field Values: <input checked="" type="checkbox"/> Not applicable (Nondirectional) Rotation (Degrees): <input type="checkbox"/> No Rotation <table><thead><tr><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th></tr></thead><tbody><tr><td>0</td><td></td><td>10</td><td></td><td>20</td><td></td><td>30</td><td></td><td>40</td><td></td><td>50</td><td></td></tr><tr><td>60</td><td></td><td>70</td><td></td><td>80</td><td></td><td>90</td><td></td><td>100</td><td></td><td>110</td><td></td></tr><tr><td>120</td><td></td><td>130</td><td></td><td>140</td><td></td><td>150</td><td></td><td>160</td><td></td><td>170</td><td></td></tr><tr><td>180</td><td></td><td>190</td><td></td><td>200</td><td></td><td>210</td><td></td><td>220</td><td></td><td>230</td><td></td></tr><tr><td>240</td><td></td><td>250</td><td></td><td>260</td><td></td><td>270</td><td></td><td>280</td><td></td><td>290</td><td></td></tr><tr><td>300</td><td></td><td>310</td><td></td><td>320</td><td></td><td>330</td><td></td><td>340</td><td></td><td>350</td><td></td></tr><tr><td colspan="2">Additional Azimuths</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	0		10		20		30		40		50		60		70		80		90		100		110		120		130		140		150		160		170		180		190		200		210		220		230		240		250		260		270		280		290		300		310		320		330		340		350		Additional Azimuths											
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300		310		320		330		340		350																																																																																							
Additional Azimuths																																																																																																	

[Relative Field Polar Plot](#)

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

AUXILIARY ANTENNA APPLICANTS ARE NOT REQUIRED TO RESPOND TO ITEMS 13-17. PROCEED TO ITEM 18.		
13.	Main Studio Location. The proposed main studio location complies with 47 C.F.R. Section 73.1125.	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 13]
14.	Community Coverage. The proposed facility complies with 47 C.F.R. Section 73.315. (Channels 221 and above) or 47 C.F.R. Section 73.515 (Channels 220 and below).	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 14]
15.	Interference. The proposed facility complies with all of the following applicable rule sections. Check all that apply:	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 15]
Contour Overlap Requirements. a. <input type="checkbox"/> 47 C.F.R. Section 73.509 Exhibit Required.		[Exhibit 16]
Spacing Requirements. b. <input type="checkbox"/> 47 C.F.R. Section 73.207 with respect to station(s)		
Grandfathered Short-Spaced. c. <input type="checkbox"/> 47 C.F.R. Section 73.213(a) with respect to station(s) Exhibit Required.		[Exhibit 17]
Contour Protection. d. <input type="checkbox"/> 47 C.F.R. Section 73.215(a) with respect to station(s) Exhibit Required.		[Exhibit 18]
Television Channel 6 Protection. e. <input type="checkbox"/> 47 C.F.R. Section 73.525 with respect to station(s) Exhibit Required.		[Exhibit 19]
16.	Reserved Channels Above 220. a. Availability of Channels. The proposed facility complies with the assignment requirements of 47 C.F.R. Section 73.203.	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 20]
17.	International Borders. The proposed antenna location is not within 320 kilometers of the common border between the United States and Canada or Mexico. If "No," specify the country and provide an exhibit of compliance with all provisions of the relevant International Agreement.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Canada <input type="radio"/> Mexico [Exhibit 21]
18.	Environmental Protection Act. The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Worksheet #7, an Exhibit is required. By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 22]
19.	Community of License Change - Section 307(b). If the application is being submitted to change the facility's community of license, then the applicant certifies that it has attached an exhibit containing information demonstrating that the proposed community of license change comports with the fair distribution of service policies underlying Section 307(b) of the Communications Act of 1934, as amended (47 U.S.C. Section 307(b)). An exhibit is required unless this question is not applicable.	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A [Exhibit 23]
PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.		

Exhibits

Exhibit 15

Description: ADDITIONAL AUXILIARY ANTENNA

AUXILIARY ANTENNA, NO RESPONSE REQUIRED TO ITEMS 13-17.

THIS WILL BE A SECOND AUXILIARY ANTENNA FOR WETA AT A SEPARATE LOCATION FROM THE MAIN AND EXISTING AUXILIARY FACILITIES. THIS PROPOSAL IS NOT INTENDED TO MODIFY OR SUPERSEDE THE EXISTING AUXILIARY ANTENNA LICENSE (BXLED-20081014AEP).