

ENGINEERING EXHIBIT

Application for Modification of Construction Permit

prepared for

Hampton Roads Educational Telecommunications Association Inc.

WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

Hampton Roads Educational Telecommunications Association Inc. (“HRETA”) is the permittee of WHRG(FM), Facility ID 173962, Gloucester Point, VA. The WHRG Construction Permit (“CP”, BNPED-20071022BGC) authorizes operation with 8.0 kW effective radiated power (“ERP”) with a directional antenna having an antenna height above average terrain (“HAAT”) of 122 meters. *HRETA* herein seeks to modify the CP to reduce the antenna height by 10 meters and increase the ERP to 9.6 kW while maintaining the authorized site location. A coordinate correction of one second is also specified. No other changes are proposed.

The proposed transmitting antenna will be side mounted on an existing tower structure, having FCC Antenna Structure Registration (“ASR”) number 1027467¹. No change in overall structure height is proposed. No change to the currently authorized directional antenna system is proposed. The attached Figure 1 supplies relative field data and a plot of the proposed directional antenna “envelope” pattern, as revised. Tabulated relative field data is also supplied in the accompanying FCC Form 340 Section VII “Tech Box” item 12. The principal community of Gloucester Point is encompassed by the proposed WHRG 60 dB μ coverage contour as depicted in the coverage contour map of Figure 2.

¹The WHRG geographic coordinates are corrected herein by one second longitude to 37° 26’ 11” N-Lat, 76° 19’ 54” W-Lon (NAD-27) to match those in the ASR.

The CP contains a special condition concerning facility modifications as follows:

CP Condition #6: Pursuant to 47 CFR Sections 73.7002(c) and 73.7005(b) the permittee/licensee is required to construct and operate for a period of four years of on-air operations technical facilities substantially as proposed and shall not downgrade service to the area on which the preference was based.

The proposed antenna height decrease is offset by a commensurate increase in ERP to maintain the authorized 60 dBμ protected contour location. Since there is no change in site location or directional antenna pattern, there is no loss area within the authorized 60 dBμ coverage contour as shown in the coverage contour comparison map of Figure 3. The land area and population within the 60 dBμ contour increases slightly, from the currently authorized 1,340.1 square km and 63,775 persons to the proposed 1,354.7 square km and 63,989 persons. Thus, the proposal complies with the CP's special condition regarding facility modification.

HRETA requests continuation of the waiver of §73.1125 concerning the location of the WHRG main studio.

CP Condition #7: Waiver of the main studio rule, 47 CFR Section 73.1125, IS GRANTED to permit Hampton Roads Educational Telecommunications Association to operate the station authorized by this construction permit as a satellite of WHRV, Norfolk, VA (Facility ID No. 25933). The permittee shall abide by each representation made in its waiver request.

Allocation Considerations

A study of the interstation separation distances for the proposed transmitter site shows that the FM facilities listed in the following² are close enough to warrant study in regard to prohibited overlap under §73.509 of the Commission's Rules.

| Channel Status | Call Sign Service | City/State File Number | Fac. ID | Latitude Longitude | Power HAAT | Distance Bearing |
|----------------|-------------------|--|---------|----------------------|-------------|------------------|
| 201B1 LIC | WHOV FM | HAMPTON, VA BLED-19920701KA | 25952 | 37 01 03 76 20 13 | 8.0 59 | 46.49 180.58 |
| 202B LIC | WRAU FM | OCEAN CITY, MD BLED-20100625AZD | 81959 | 38 23 12 75 17 27 | 50.0 150 | 139.65 40.51 |
| 203A LIC | WJLZ FM | VIRGINIA BEACH, VA BLED-20050318AAJ | 69636 | 36 50 31 76 05 37 | 1.2 36 | 69.29 162.23 |

²The WHRG CP (BNPED-20071022BGC) was recently granted out of a group of 13 mutually exclusive ("MX") applications (DA 10-1046, released June 9, 2010). The other applications in the MX group have been dismissed and are not considered herein.

**Engineering Exhibit
Hampton Roads Educational
Telecommunications Association Inc.**

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| | | | | | | |
|--------------|------------|-------------------------------------|-------|----------------------|-------------|------------------|
| 203B LIC | WAMU FM | WASHINGTON, DC BMLD-20070112AHP | 65399 | 38 56 10 77 05 33 | 50.0 152 | 179.32 338.49 |
| 204B1 LIC | WFOS FM | CHESAPEAKE, VA BLED-19900921KA | 10757 | 36 43 18 76 18 03 | 15.5 48 | 79.36 178.02 |
| 206B LIC | WWIP FM | CHERITON, VA BLED-20050429AEW | 90265 | 37 10 53 75 57 47 | 20.0 137 | 43.23 130.90 |
| 206A LIC | WCNV FM | HEATHSVILLE, VA BLED-20070221ACN | 90292 | 37 54 22 76 29 09 | 3.8 97 | 53.88 345.48 |

The attached Figures 4, 5, and 6 depict the pertinent protected and interfering contours of the stations listed and the proposed WHRG. Co-channel stations and first-adjacent channel stations protected and interfering contours are depicted in Figures 4 and 5, respectively. Figure 6 provides an allocation map regarding second and third adjacent stations.

Regarding co-channel stations, Figure 4A supplies a detailed map of the contours which are close but do not overlap with WAMU(FM) (Ch. 203B, Washington, DC). Table 1 provides a companion “FM Over” computation for the WAMU interfering contour at one-degree increments. A detail map regarding WJLZ(FM) (Ch. 203A, Virginia Beach, VA) is provided in Figure 4B, where the contours overlap over water but no contour overlap occurs on land area (such overlap over water is permitted under §73.509(e)). These exhibits demonstrate compliance with §73.509 with respect to WAMU and WJLZ.

The allocation study summarized above concludes that the WHRG proposal is in compliance with §73.509 regarding prohibited contour overlap. The contour locations were determined using the actual ERP and height above terrain along each radial for each facility, as specified in §73.509(c). For the facilities under study, the antenna elevation above mean sea level, geographic coordinates, and ERP (including directional antenna relative field values, where appropriate) were retrieved from the FCC’s engineering database. The requisite contours were determined using U.S.G.S. NED 3-second digitized terrain data along each radial of interest from each transmitter site and an implementation of the Commission’s TVFMFS computer program which simulates the FM propagation curves. The F(50,10) distances are used to calculate distance to interfering contours, however if the distance is less than 16 km the F(50,50) curves are used, as specified by §73.509(c)(2).

A spacing study was performed as required by §73.507(c) (regarding facilities differing in frequency by 10.6 or 10.8 MHz from the proposal). The proposed facility meets the minimum distance separation requirements of §73.207 in all such instances. The nearest station on the pertinent channels is summarized in the following.

| Channel Status | Call Sign Service | City/State File Number | Fac. ID | Latitude Longitude | Power HAAT | Distance Bearing | Required Clear |
|----------------|-------------------|-------------------------------|---------|----------------------|------------|------------------|----------------|
| 256A LIC | WXGM-FM FM | GLOUCESTER, VA BLH-19910805KE | 74209 | 37 24 36 76 32 52 | 6.0 100 | 19.35 261.32 | 12.00 7.35 |

TV Channel 6 Considerations

Under §73.525(a)(1), an affected TV Channel 6 station must be considered with a proposed non-commercial educational facility on Channel 203 if the distance between the respective transmitter sites is 246 km or less. There are no authorized full-power digital TV Channel 6 or Class A Television facilities within a 246 km radius of WHRG. Although protection to Channel 6 Low Power Television (“LPTV”) and Television Translator stations (both are secondary services) is not believed to be needed by a full-power FM station, for completeness all such facilities within 246 km of WHRG are considered and listed below.

| Channel Status | Call Sign Service | City/State File Number | Fac. ID | Latitude Longitude | Power HAAT | Distance Bearing |
|----------------|-------------------|----------------------------------|---------|----------------------|------------|------------------|
| 6Z LIC | WDCO-LP TX | SALISBURY, MD BLTVL-20090326ADA | 130439 | 38 23 12 75 17 26 | 1.0 0 | 139.65 40.52 |
| 6Z LIC | WDCN-LP TX | FAIRFAX, VA BLTVL-20070410ACR | 20450 | 38 53 45 77 08 08 | 3.0 0 | 176.65 336.83 |
| 6+ CP | WDCN-LP TX | FAIRFAX, VA BPTVL-20090416ARB | 20450 | 38 53 45 77 08 08 | 3.0 0 | 176.65 336.83 |
| 6- LIC | WMTO-LP TX | WANCHESE, NC BLTVL-20041207AAQ | 127802 | 35 50 48 75 37 19 | 0.6 0 | 187.48 160.08 |
| 6Z CP | W06CP TX | MT. OLIVE, VA BNPTVL-20000831CKO | 131101 | 38 57 57 78 26 32 | 3.0 0 | 250.99 313.33 |

Figure 7 depicts the protected contour for each TV Channel 6 LPTV/translator facility, along with the corresponding interfering contour from WHRG. As shown on Figure 7, there no overlap between the 62 dBμ F(50,50) service contour of the various analog LPTV/translator facilities and the proposed WHRG 62.6 dBμ F(50,10) contour. Accordingly, the instant proposal complies with the television Channel 6 protection criteria of §73.525.

Other Allocation Matters

The site is not within a border area requiring international coordination. The nearest FCC monitoring station is 197 km distant at Laurel, MD. This exceeds by a great margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The proposed site is also located outside the areas specified in §73.1030(a)(1) and §73.1030(b). There are no AM broadcast stations located within 3.2 km (2 miles) of the proposed site, according to information extracted from the Commission's engineering database.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed transmitting antenna will be side-mounted on an existing antenna support structure. 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 change in structure height is proposed, thus no change in current structure marking and lighting requirements is anticipated. 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 WHRG 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 a worst-case situation of 100 percent field in downward elevations, the calculated RF electromagnetic field attributable to the proposed facility is 27.5 percent of the "uncontrolled / general public" maximum permissible exposure limit at the base of the antenna structure two meters above ground level. The calculated RF exposure will be even lower when the antenna's actual elevation pattern is considered. No other FM, AM, or Television stations are authorized to operate at or within 5 km of this site according to CDBS data.

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 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.
December 17, 2010

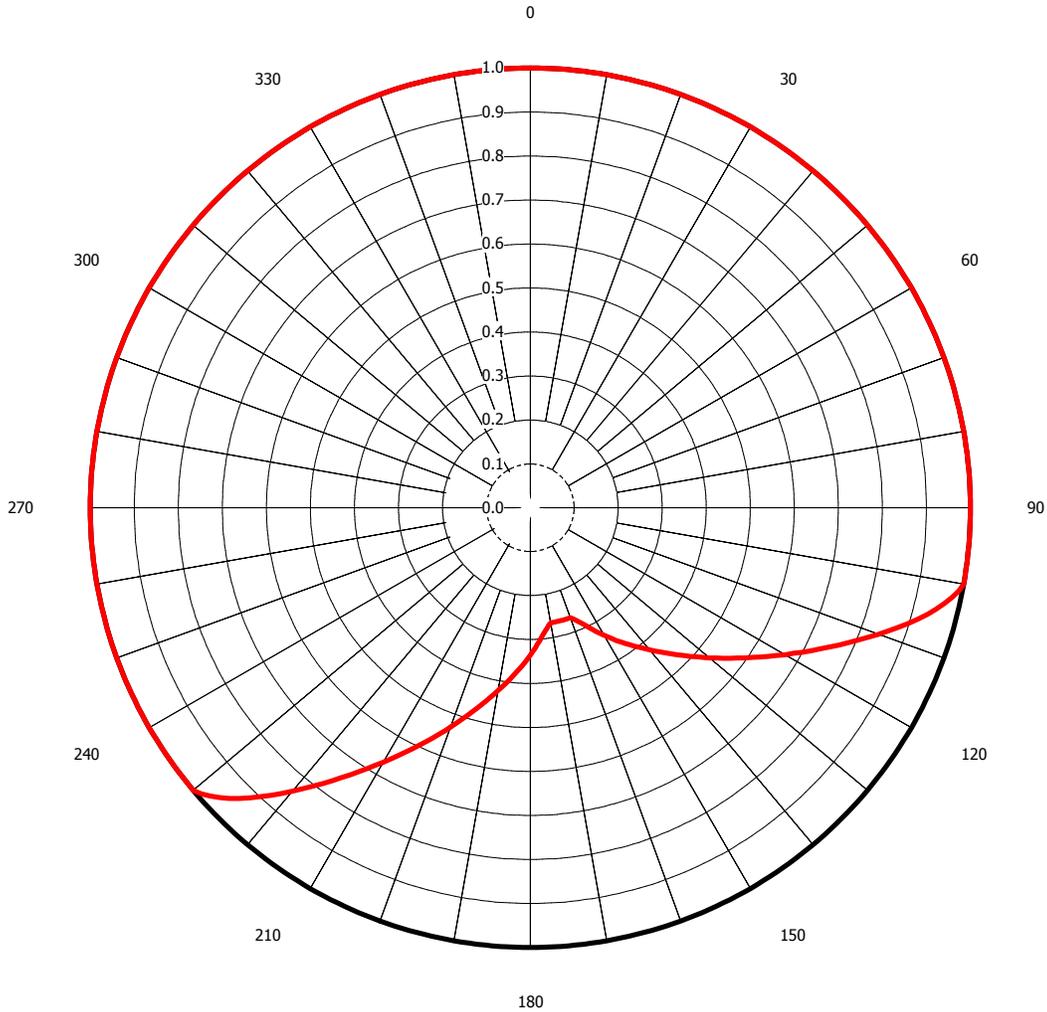
Chesapeake RF Consultants, LLC
207 Old Dominion Road
Yorktown, VA 23692
703-650-9600

List of Attachments

| | |
|-----------|---|
| Figure 1 | Directional Antenna Envelope Pattern |
| Figure 2 | Proposed Coverage Contour |
| Figure 3 | Coverage Contour Comparison |
| Figure 4 | Co-Channel Allocation Study |
| Figure 4A | Co-Channel Allocation Study - Detail to WAMU |
| Table 1 | Contour Protection "FM Over" Report |
| Figure 4B | Co-Channel Allocation Study - Detail to WJLZ |
| Figure 5 | First-Adjacent Channel Allocation Study |
| Figure 6 | Second and Third-Adjacent Channel Allocation Study |
| Figure 7 | TV Channel 6 Allocation Study |
| Form 340 | Saved Version of Engineering Sections from FCC Form at Time of Upload |

This material was entered December 17, 2010 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number 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.

**Azimuth Pattern - Relative Field
(True North)**



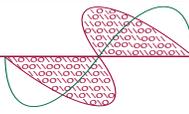
| Azimuth (°T) | Relative Field |
|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|
| 0 | 1.000 | 90 | 1.000 | 180 | 0.335 | 270 | 1.000 |
| 10 | 1.000 | 100 | 1.000 | 190 | 0.422 | 280 | 1.000 |
| 20 | 1.000 | 110 | 0.841 | 200 | 0.531 | 290 | 1.000 |
| 30 | 1.000 | 120 | 0.668 | 210 | 0.668 | 300 | 1.000 |
| 40 | 1.000 | 130 | 0.531 | 220 | 0.841 | 310 | 1.000 |
| 50 | 1.000 | 140 | 0.422 | 230 | 1.000 | 320 | 1.000 |
| 60 | 1.000 | 150 | 0.335 | 240 | 1.000 | 330 | 1.000 |
| 70 | 1.000 | 160 | 0.266 | 250 | 1.000 | 340 | 1.000 |
| 80 | 1.000 | 170 | 0.266 | 260 | 1.000 | 350 | 1.000 |



Figure 1
Directional Antenna Envelope Pattern
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

prepared for
Hampton Roads Educational
Telecommunications Association Inc.

December, 2010



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 Radiofrequency Consulting Engineers
 Digital Television and Radio

Figure 2
Proposed Coverage Contour
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

prepared for
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December, 2010

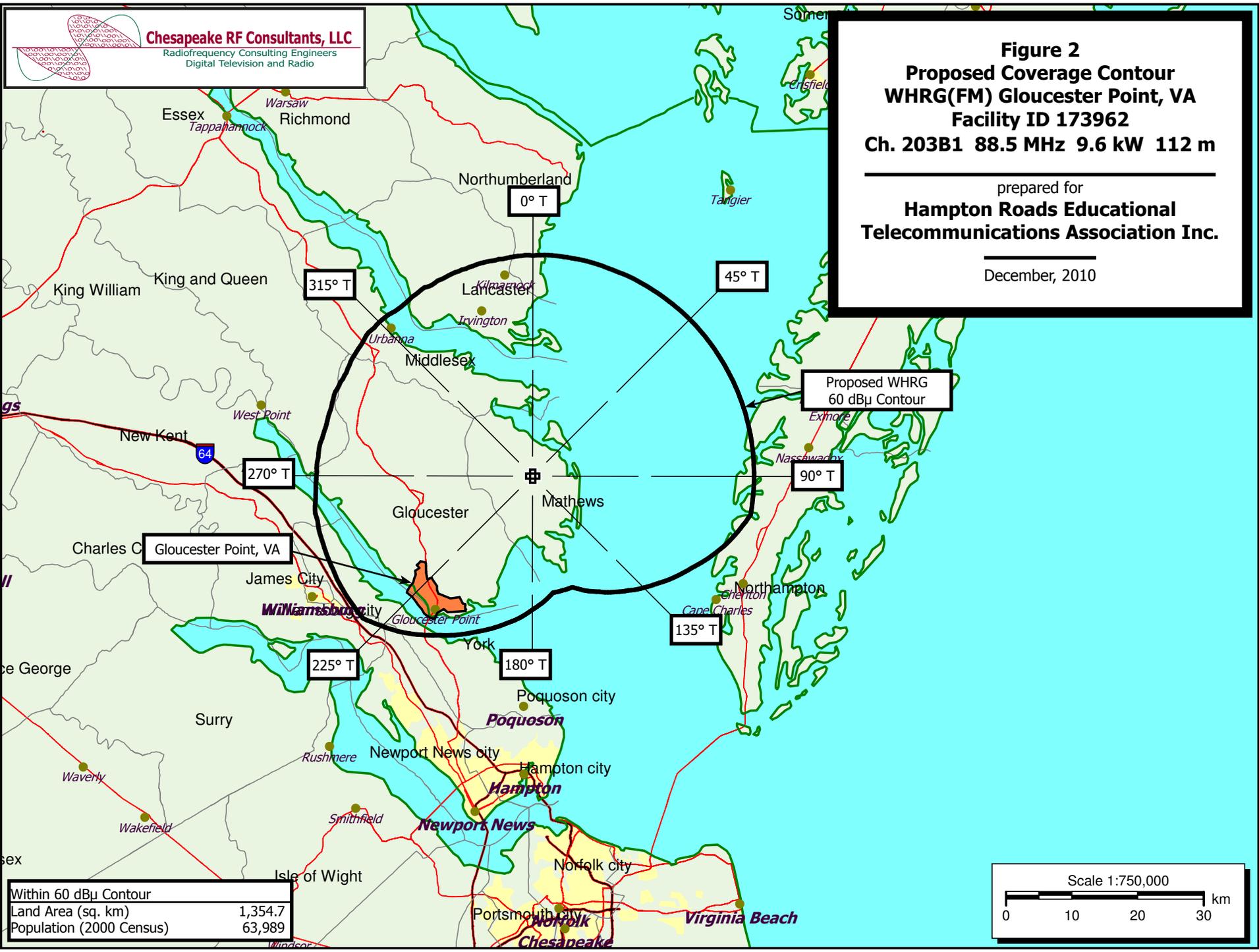


Figure 3
Coverage Contour Comparison
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

prepared for
Hampton Roads Educational
Telecommunications Association Inc.

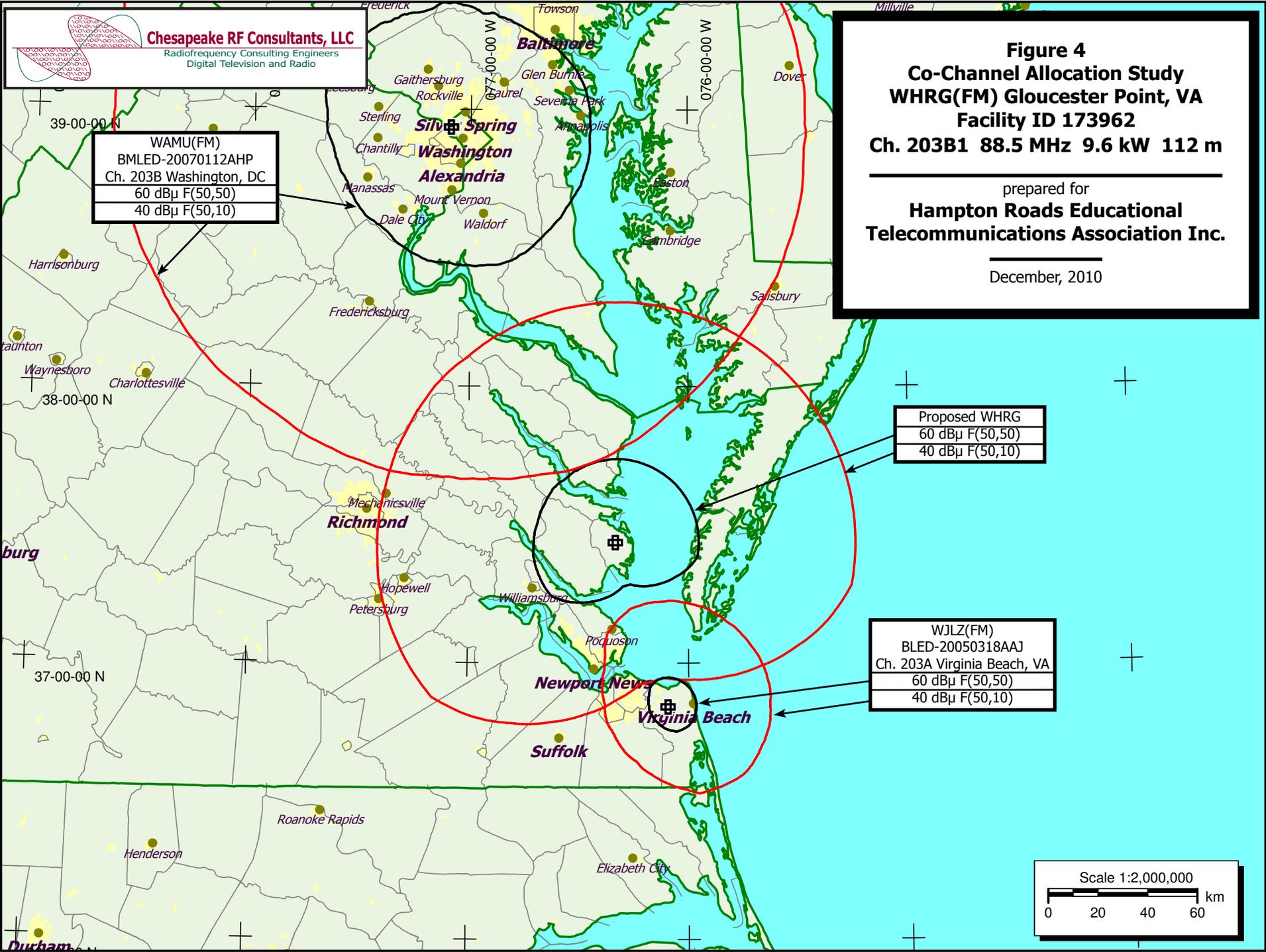
December, 2010



WHRG Proposed
 9.6 kW 112 m
 60 dBu Contour
 Land Area: 1,354.7 sq. km
 Population: 63,989

WHRG CP BNPED-20071022BGC
 8.0 kW 122 m
 60 dBu Contour
 Land Area: 1,340.1 sq. km
 Population: 63,775

Scale 1:500,000
 0 7 14 21 km



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

Figure 4
Co-Channel Allocation Study
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

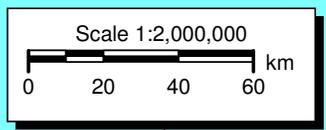
prepared for
Hampton Roads Educational
Telecommunications Association Inc.

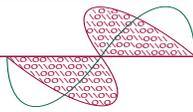
December, 2010

WAMU(FM)
 BMLD-20070112AHP
 Ch. 203B Washington, DC
 60 dBμ F(50,50)
 40 dBμ F(50,10)

Proposed WHRG
 60 dBμ F(50,50)
 40 dBμ F(50,10)

WJLZ(FM)
 BLED-20050318AAJ
 Ch. 203A Virginia Beach, VA
 60 dBμ F(50,50)
 40 dBμ F(50,10)





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Digital Television and Radio

WAMU(FM)
BMLED-20070112AHP
Ch. 203B Washington, DC
40 dB μ F(50,10)

Proposed WHRG
60 dB μ F(50,50)

**Figure 4A - Detail to WAMU
Co-Channel Allocation Study
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m**

prepared for
**Hampton Roads Educational
Telecommunications Association Inc.**

December, 2010

076-40-00 W

37-40-00 N

076-30-00 W

076-20-00 W

076-

37-30-00 N

Scale 1:250,000

0 3 6 9 km

Table 1

**Contour Protection "FM Over" Report
Hampton Roads Educational
Telecommunications Association Inc.
WHRG(FM) Gloucester Point, VA
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12-15-2010 NED 03 SEC Terrain Data FMOver Analysis
WHRG proposed WAMU BMLED20070112AHP

Channel = 203B1
Max ERP = 9.6 kW
RCAMSL = 114.2 M
N. Lat. 37 26 11.0
W. Lng. 76 19 54.0
Protected
60 dBu

Channel = 203B
Max ERP = 50 kW
RCAMSL = 223 M
N. Lat. 38 56 10.0
W. Lng. 77 05 33.0
Interfering
40 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 278.0 | 009.6000 | 0106.5 | 032.5 | 167.9 | 050.0000 | 0193.9 | 165.8 | 36.16 | |
| 279.0 | 009.6000 | 0106.0 | 032.5 | 167.8 | 050.0000 | 0193.8 | 165.3 | 36.25 | |
| 280.0 | 009.6000 | 0105.4 | 032.4 | 167.7 | 050.0000 | 0193.8 | 164.8 | 36.34 | |
| 281.0 | 009.6000 | 0104.9 | 032.3 | 167.6 | 050.0000 | 0193.9 | 164.3 | 36.43 | |
| 282.0 | 009.6000 | 0104.6 | 032.3 | 167.5 | 050.0000 | 0194.0 | 163.8 | 36.52 | |
| 283.0 | 009.6000 | 0104.1 | 032.2 | 167.4 | 050.0000 | 0194.0 | 163.3 | 36.60 | |
| 284.0 | 009.6000 | 0103.9 | 032.2 | 167.3 | 050.0000 | 0194.2 | 162.8 | 36.69 | |
| 285.0 | 009.6000 | 0104.1 | 032.2 | 167.3 | 050.0000 | 0194.3 | 162.3 | 36.79 | |
| 286.0 | 009.6000 | 0104.0 | 032.2 | 167.2 | 050.0000 | 0194.5 | 161.8 | 36.88 | |
| 287.0 | 009.6000 | 0104.0 | 032.2 | 167.1 | 050.0000 | 0194.8 | 161.3 | 36.97 | |
| 288.0 | 009.6000 | 0104.0 | 032.2 | 167.0 | 050.0000 | 0195.1 | 160.8 | 37.06 | |
| 289.0 | 009.6000 | 0104.3 | 032.2 | 166.9 | 050.0000 | 0195.4 | 160.3 | 37.16 | |
| 290.0 | 009.6000 | 0105.1 | 032.3 | 166.8 | 050.0000 | 0195.7 | 159.8 | 37.26 | |
| 291.0 | 009.6000 | 0105.2 | 032.3 | 166.7 | 050.0000 | 0196.0 | 159.3 | 37.35 | |
| 292.0 | 009.6000 | 0105.9 | 032.5 | 166.6 | 050.0000 | 0196.3 | 158.8 | 37.45 | |
| 293.0 | 009.6000 | 0106.0 | 032.5 | 166.5 | 050.0000 | 0196.7 | 158.3 | 37.53 | |
| 294.0 | 009.6000 | 0105.1 | 032.3 | 166.3 | 050.0000 | 0197.1 | 158.0 | 37.61 | |
| 295.0 | 009.6000 | 0105.1 | 032.3 | 166.2 | 050.0000 | 0197.5 | 157.5 | 37.69 | |
| 296.0 | 009.6000 | 0105.2 | 032.4 | 166.1 | 050.0000 | 0197.7 | 157.1 | 37.77 | |
| 297.0 | 009.6000 | 0104.8 | 032.3 | 165.9 | 050.0000 | 0197.9 | 156.7 | 37.84 | |
| 298.0 | 009.6000 | 0104.9 | 032.3 | 165.8 | 050.0000 | 0198.0 | 156.2 | 37.91 | |
| 299.0 | 009.6000 | 0104.6 | 032.3 | 165.6 | 050.0000 | 0198.0 | 155.8 | 37.98 | |
| 300.0 | 009.6000 | 0105.3 | 032.4 | 165.5 | 050.0000 | 0198.1 | 155.4 | 38.06 | |
| 301.0 | 009.6000 | 0105.5 | 032.4 | 165.4 | 050.0000 | 0198.1 | 154.9 | 38.13 | |
| 302.0 | 009.6000 | 0106.4 | 032.5 | 165.3 | 050.0000 | 0198.2 | 154.5 | 38.21 | |
| 303.0 | 009.6000 | 0106.6 | 032.6 | 165.1 | 050.0000 | 0198.4 | 154.0 | 38.29 | |
| 304.0 | 009.6000 | 0106.7 | 032.6 | 165.0 | 050.0000 | 0198.6 | 153.7 | 38.35 | |
| 305.0 | 009.6000 | 0107.1 | 032.6 | 164.8 | 050.0000 | 0198.9 | 153.2 | 38.43 | |
| 306.0 | 009.6000 | 0107.2 | 032.6 | 164.7 | 050.0000 | 0199.3 | 152.9 | 38.50 | |
| 307.0 | 009.6000 | 0107.3 | 032.7 | 164.5 | 050.0000 | 0199.7 | 152.5 | 38.57 | |
| 308.0 | 009.6000 | 0107.9 | 032.8 | 164.3 | 050.0000 | 0200.2 | 152.1 | 38.65 | |
| 309.0 | 009.6000 | 0108.6 | 032.9 | 164.2 | 050.0000 | 0200.7 | 151.7 | 38.73 | |
| 310.0 | 009.6000 | 0109.5 | 033.0 | 164.0 | 050.0000 | 0201.1 | 151.2 | 38.82 | |
| 311.0 | 009.6000 | 0109.7 | 033.0 | 163.9 | 050.0000 | 0201.7 | 150.9 | 38.89 | |
| 312.0 | 009.6000 | 0109.0 | 032.9 | 163.7 | 050.0000 | 0202.7 | 150.6 | 38.95 | |
| 313.0 | 009.6000 | 0108.5 | 032.8 | 163.5 | 050.0000 | 0203.5 | 150.4 | 39.01 | |
| 314.0 | 009.6000 | 0108.7 | 032.9 | 163.3 | 050.0000 | 0204.2 | 150.1 | 39.07 | |
| 315.0 | 009.6000 | 0108.8 | 032.9 | 163.1 | 050.0000 | 0204.8 | 149.8 | 39.14 | |

Table 1

**Contour Protection "FM Over" Report
Hampton Roads Educational
Telecommunications Association Inc.
WHRG(FM) Gloucester Point, VA
(page 2 of 3)**



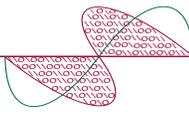
| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 316.0 | 009.6000 | 0108.2 | 032.8 | 162.9 | 050.0000 | 0205.4 | 149.6 | 39.18 | |
| 317.0 | 009.6000 | 0108.1 | 032.8 | 162.7 | 050.0000 | 0206.0 | 149.4 | 39.24 | |
| 318.0 | 009.6000 | 0107.6 | 032.7 | 162.5 | 050.0000 | 0206.6 | 149.2 | 39.28 | |
| 319.0 | 009.6000 | 0106.8 | 032.6 | 162.2 | 050.0000 | 0207.3 | 149.1 | 39.32 | |
| 320.0 | 009.6000 | 0105.8 | 032.4 | 162.0 | 050.0000 | 0208.0 | 149.0 | 39.35 | |
| 321.0 | 009.6000 | 0105.7 | 032.4 | 161.8 | 050.0000 | 0208.7 | 148.8 | 39.40 | |
| 322.0 | 009.6000 | 0105.7 | 032.4 | 161.6 | 050.0000 | 0209.5 | 148.6 | 39.45 | |
| 323.0 | 009.6000 | 0105.9 | 032.5 | 161.4 | 050.0000 | 0210.4 | 148.4 | 39.51 | |
| 324.0 | 009.6000 | 0106.2 | 032.5 | 161.2 | 050.0000 | 0211.0 | 148.2 | 39.56 | |
| 325.0 | 009.6000 | 0106.4 | 032.5 | 161.0 | 050.0000 | 0211.5 | 148.0 | 39.61 | |
| 326.0 | 009.6000 | 0107.2 | 032.7 | 160.8 | 050.0000 | 0212.0 | 147.7 | 39.67 | |
| 327.0 | 009.6000 | 0107.3 | 032.7 | 160.6 | 050.0000 | 0212.3 | 147.5 | 39.70 | |
| 328.0 | 009.6000 | 0107.7 | 032.7 | 160.4 | 050.0000 | 0212.7 | 147.4 | 39.74 | |
| 329.0 | 009.6000 | 0108.5 | 032.8 | 160.2 | 050.0000 | 0212.9 | 147.1 | 39.79 | |
| 330.0 | 009.6000 | 0108.7 | 032.9 | 159.9 | 050.0000 | 0213.1 | 147.0 | 39.82 | |
| 331.0 | 009.6000 | 0107.6 | 032.7 | 159.7 | 050.0000 | 0213.2 | 147.0 | 39.81 | |
| 332.0 | 009.6000 | 0107.2 | 032.6 | 159.5 | 050.0000 | 0213.3 | 147.0 | 39.82 | |
| 333.0 | 009.6000 | 0107.6 | 032.7 | 159.3 | 050.0000 | 0213.5 | 146.9 | 39.85 | |
| 334.0 | 009.6000 | 0108.4 | 032.8 | 159.1 | 050.0000 | 0213.6 | 146.7 | 39.88 | |
| 335.0 | 009.6000 | 0108.4 | 032.8 | 158.8 | 050.0000 | 0213.8 | 146.7 | 39.89 | |
| 336.0 | 009.6000 | 0108.3 | 032.8 | 158.6 | 050.0000 | 0213.8 | 146.6 | 39.90 | |
| 337.0 | 009.6000 | 0108.8 | 032.9 | 158.4 | 050.0000 | 0214.0 | 146.6 | 39.92 | |
| 338.0 | 009.6000 | 0109.2 | 032.9 | 158.2 | 050.0000 | 0214.1 | 146.5 | 39.93 | |
| 339.0 | 009.6000 | 0109.4 | 033.0 | 157.9 | 050.0000 | 0214.3 | 146.4 | 39.94 | |
| 340.0 | 009.6000 | 0109.1 | 032.9 | 157.7 | 050.0000 | 0214.5 | 146.5 | 39.94 | |
| 341.0 | 009.6000 | 0109.7 | 033.0 | 157.5 | 050.0000 | 0214.6 | 146.4 | 39.95 | |
| 342.0 | 009.6000 | 0109.6 | 033.0 | 157.2 | 050.0000 | 0214.8 | 146.5 | 39.94 | |
| 343.0 | 009.6000 | 0110.1 | 033.1 | 157.0 | 050.0000 | 0214.9 | 146.5 | 39.95 | |
| 344.0 | 009.6000 | 0110.0 | 033.1 | 156.8 | 050.0000 | 0215.1 | 146.6 | 39.94 | |
| 345.0 | 009.6000 | 0110.5 | 033.1 | 156.6 | 050.0000 | 0215.3 | 146.6 | 39.95 | |
| 346.0 | 009.6000 | 0110.5 | 033.1 | 156.3 | 050.0000 | 0215.6 | 146.6 | 39.94 | |
| 347.0 | 009.6000 | 0110.8 | 033.2 | 156.1 | 050.0000 | 0215.9 | 146.7 | 39.93 | |
| 348.0 | 009.6000 | 0111.0 | 033.2 | 155.9 | 050.0000 | 0216.1 | 146.8 | 39.92 | |
| 349.0 | 009.6000 | 0110.8 | 033.2 | 155.7 | 050.0000 | 0216.2 | 146.9 | 39.90 | |
| 350.0 | 009.6000 | 0110.6 | 033.1 | 155.5 | 050.0000 | 0216.4 | 147.1 | 39.87 | |
| 351.0 | 009.6000 | 0111.1 | 033.2 | 155.2 | 050.0000 | 0216.5 | 147.2 | 39.86 | |
| 352.0 | 009.6000 | 0110.9 | 033.2 | 155.0 | 050.0000 | 0216.6 | 147.4 | 39.83 | |
| 353.0 | 009.6000 | 0111.1 | 033.2 | 154.8 | 050.0000 | 0216.6 | 147.5 | 39.80 | |
| 354.0 | 009.6000 | 0111.6 | 033.3 | 154.6 | 050.0000 | 0216.5 | 147.6 | 39.78 | |
| 355.0 | 009.6000 | 0112.0 | 033.3 | 154.3 | 050.0000 | 0216.4 | 147.8 | 39.75 | |
| 356.0 | 009.6000 | 0112.4 | 033.4 | 154.1 | 050.0000 | 0216.5 | 147.9 | 39.73 | |
| 357.0 | 009.6000 | 0112.3 | 033.4 | 153.9 | 050.0000 | 0216.5 | 148.2 | 39.69 | |
| 358.0 | 009.6000 | 0112.7 | 033.4 | 153.7 | 050.0000 | 0216.5 | 148.4 | 39.66 | |
| 359.0 | 009.6000 | 0112.6 | 033.4 | 153.5 | 050.0000 | 0216.5 | 148.6 | 39.61 | |
| 000.0 | 009.6000 | 0112.3 | 033.4 | 153.3 | 050.0000 | 0216.3 | 148.9 | 39.56 | |
| 001.0 | 009.6000 | 0112.6 | 033.4 | 153.1 | 050.0000 | 0216.1 | 149.1 | 39.51 | |
| 002.0 | 009.6000 | 0112.9 | 033.5 | 152.9 | 050.0000 | 0215.5 | 149.4 | 39.46 | |
| 003.0 | 009.6000 | 0113.2 | 033.5 | 152.7 | 050.0000 | 0215.0 | 149.6 | 39.40 | |
| 004.0 | 009.6000 | 0113.3 | 033.5 | 152.5 | 050.0000 | 0214.4 | 149.9 | 39.34 | |
| 005.0 | 009.6000 | 0113.4 | 033.5 | 152.3 | 050.0000 | 0213.7 | 150.2 | 39.27 | |
| 006.0 | 009.6000 | 0113.5 | 033.5 | 152.1 | 050.0000 | 0213.0 | 150.5 | 39.20 | |
| 007.0 | 009.6000 | 0113.2 | 033.5 | 151.9 | 050.0000 | 0212.4 | 150.9 | 39.13 | |

Table 1

**Contour Protection "FM Over" Report
Hampton Roads Educational
Telecommunications Association Inc.
WHRG(FM) Gloucester Point, VA
(page 3 of 3)**



| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 008.0 | 009.6000 | 0113.2 | 033.5 | 151.7 | 050.0000 | 0211.7 | 151.2 | 39.05 | |
| 009.0 | 009.6000 | 0113.3 | 033.5 | 151.6 | 050.0000 | 0211.3 | 151.5 | 38.99 | |
| 010.0 | 009.6000 | 0113.3 | 033.5 | 151.4 | 050.0000 | 0211.3 | 151.9 | 38.92 | |
| 011.0 | 009.6000 | 0113.5 | 033.5 | 151.2 | 050.0000 | 0211.1 | 152.3 | 38.86 | |
| 012.0 | 009.6000 | 0113.5 | 033.5 | 151.0 | 050.0000 | 0211.0 | 152.6 | 38.79 | |
| 013.0 | 009.6000 | 0113.5 | 033.5 | 150.9 | 050.0000 | 0210.9 | 153.0 | 38.73 | |
| 014.0 | 009.6000 | 0113.5 | 033.5 | 150.7 | 050.0000 | 0211.0 | 153.4 | 38.66 | |
| 015.0 | 009.6000 | 0113.4 | 033.5 | 150.5 | 050.0000 | 0211.2 | 153.8 | 38.60 | |
| 016.0 | 009.6000 | 0113.4 | 033.5 | 150.4 | 050.0000 | 0211.6 | 154.2 | 38.53 | |
| 017.0 | 009.6000 | 0113.4 | 033.5 | 150.2 | 050.0000 | 0211.9 | 154.7 | 38.47 | |
| 018.0 | 009.6000 | 0113.3 | 033.5 | 150.1 | 050.0000 | 0212.1 | 155.1 | 38.40 | |
| 019.0 | 009.6000 | 0113.1 | 033.5 | 150.0 | 050.0000 | 0212.2 | 155.6 | 38.32 | |
| 020.0 | 009.6000 | 0113.0 | 033.5 | 149.8 | 050.0000 | 0212.4 | 156.0 | 38.25 | |
| 021.0 | 009.6000 | 0113.1 | 033.5 | 149.7 | 050.0000 | 0212.7 | 156.4 | 38.18 | |
| 022.0 | 009.6000 | 0113.1 | 033.5 | 149.5 | 050.0000 | 0212.8 | 156.9 | 38.11 | |
| 023.0 | 009.6000 | 0113.2 | 033.5 | 149.4 | 050.0000 | 0213.0 | 157.4 | 38.03 | |
| 024.0 | 009.6000 | 0113.3 | 033.5 | 149.3 | 050.0000 | 0213.1 | 157.8 | 37.95 | |
| 025.0 | 009.6000 | 0113.4 | 033.5 | 149.1 | 050.0000 | 0213.2 | 158.3 | 37.87 | |
| 026.0 | 009.6000 | 0113.4 | 033.5 | 149.0 | 050.0000 | 0213.3 | 158.8 | 37.79 | |
| 027.0 | 009.6000 | 0113.5 | 033.5 | 148.9 | 050.0000 | 0213.5 | 159.3 | 37.71 | |
| 028.0 | 009.6000 | 0113.6 | 033.6 | 148.8 | 050.0000 | 0213.5 | 159.8 | 37.63 | |
| 029.0 | 009.6000 | 0113.5 | 033.5 | 148.7 | 050.0000 | 0213.5 | 160.3 | 37.54 | |
| 030.0 | 009.6000 | 0113.6 | 033.6 | 148.6 | 050.0000 | 0213.5 | 160.8 | 37.45 | |
| 031.0 | 009.6000 | 0113.5 | 033.5 | 148.5 | 050.0000 | 0213.4 | 161.3 | 37.35 | |
| 032.0 | 009.6000 | 0113.4 | 033.5 | 148.4 | 050.0000 | 0213.3 | 161.8 | 37.26 | |
| 033.0 | 009.6000 | 0113.6 | 033.6 | 148.3 | 050.0000 | 0213.1 | 162.3 | 37.16 | |
| 034.0 | 009.6000 | 0113.6 | 033.6 | 148.2 | 050.0000 | 0212.9 | 162.9 | 37.06 | |
| 035.0 | 009.6000 | 0113.5 | 033.6 | 148.1 | 050.0000 | 0212.6 | 163.4 | 36.97 | |
| 036.0 | 009.6000 | 0113.5 | 033.5 | 148.0 | 050.0000 | 0212.4 | 163.9 | 36.87 | |
| 037.0 | 009.6000 | 0113.5 | 033.5 | 148.0 | 050.0000 | 0212.2 | 164.5 | 36.77 | |



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

**Figure 4B - Detail to WJLZ
 Co-Channel Allocation Study
 WHRG(FM) Gloucester Point, VA
 Facility ID 173962
 Ch. 203B1 88.5 MHz 9.6 kW 112 m**

prepared for
**Hampton Roads Educational
 Telecommunications Association Inc.**

December, 2010

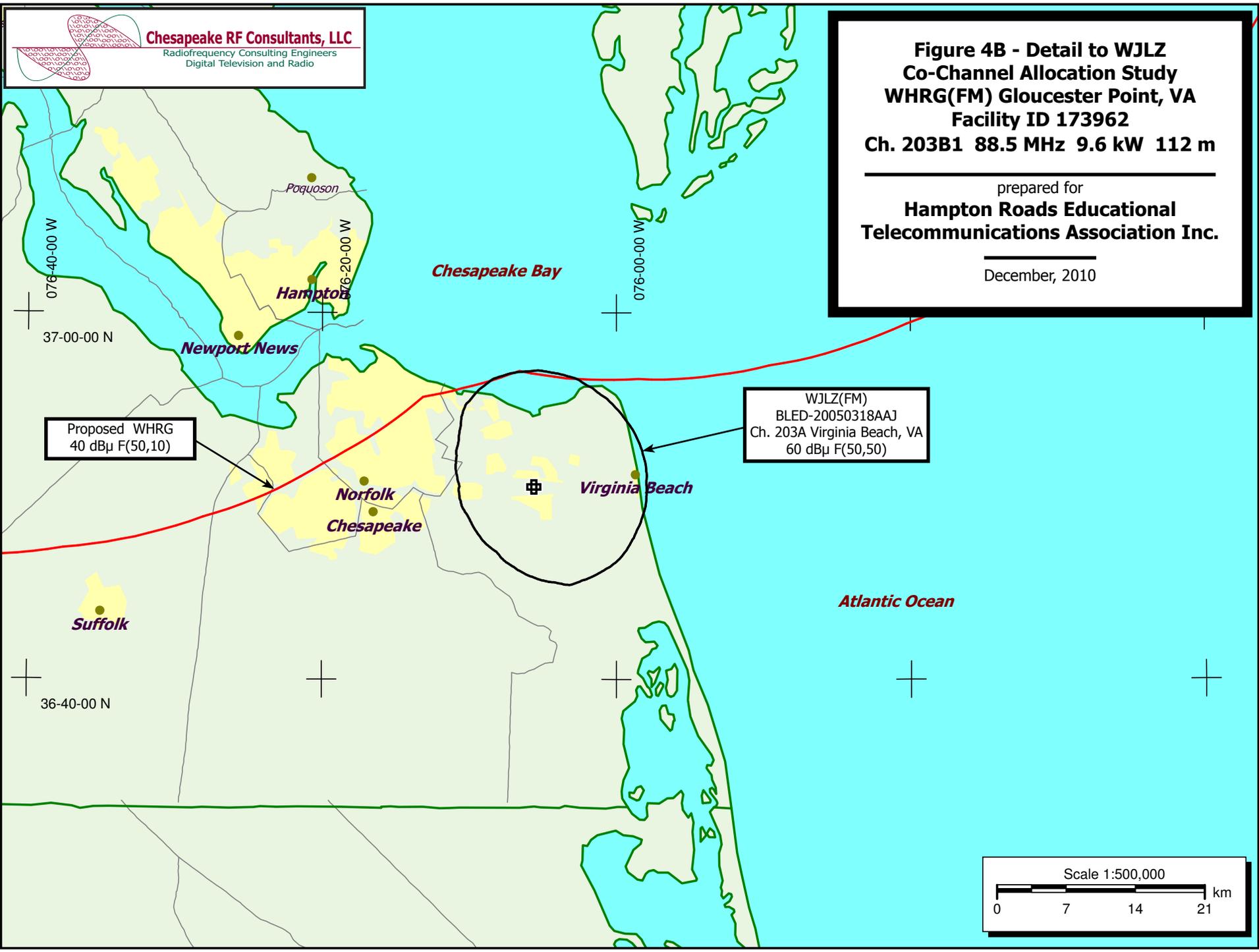
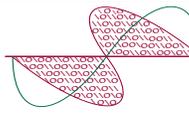


Figure 5
First-Adjacent Channel Allocation Study
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

prepared for
Hampton Roads Educational
Telecommunications Association Inc.

December, 2010

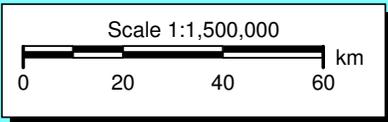
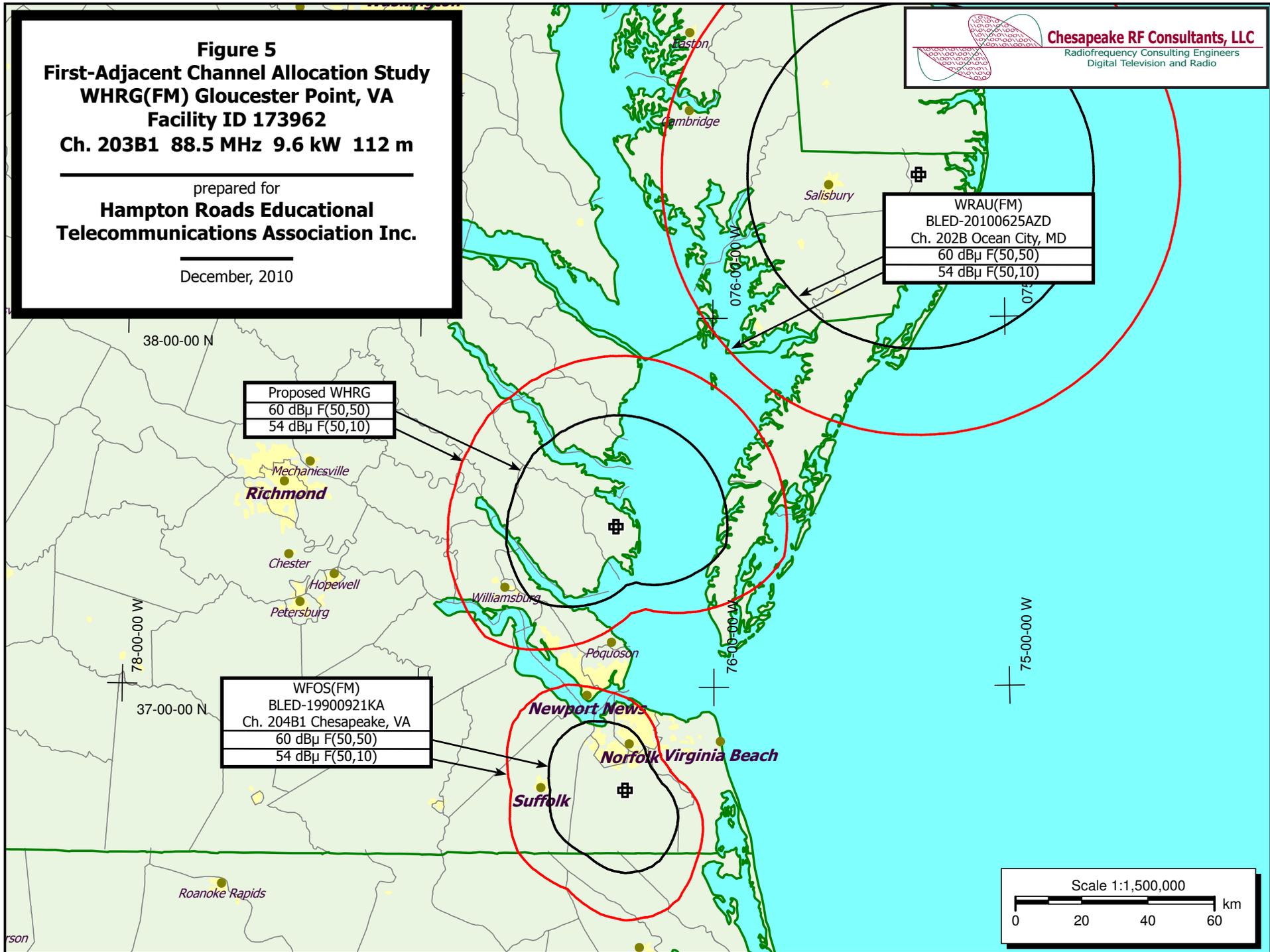


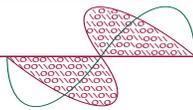
Chesapeake RF Consultants, LLC
 Radiofrequency Consulting Engineers
 Digital Television and Radio

WRAU(FM)
 BLED-20100625AZD
 Ch. 202B Ocean City, MD
 60 dBμ F(50,50)
 54 dBμ F(50,10)

Proposed WHRG
 60 dBμ F(50,50)
 54 dBμ F(50,10)

WFOS(FM)
 BLED-19900921KA
 Ch. 204B1 Chesapeake, VA
 60 dBμ F(50,50)
 54 dBμ F(50,10)



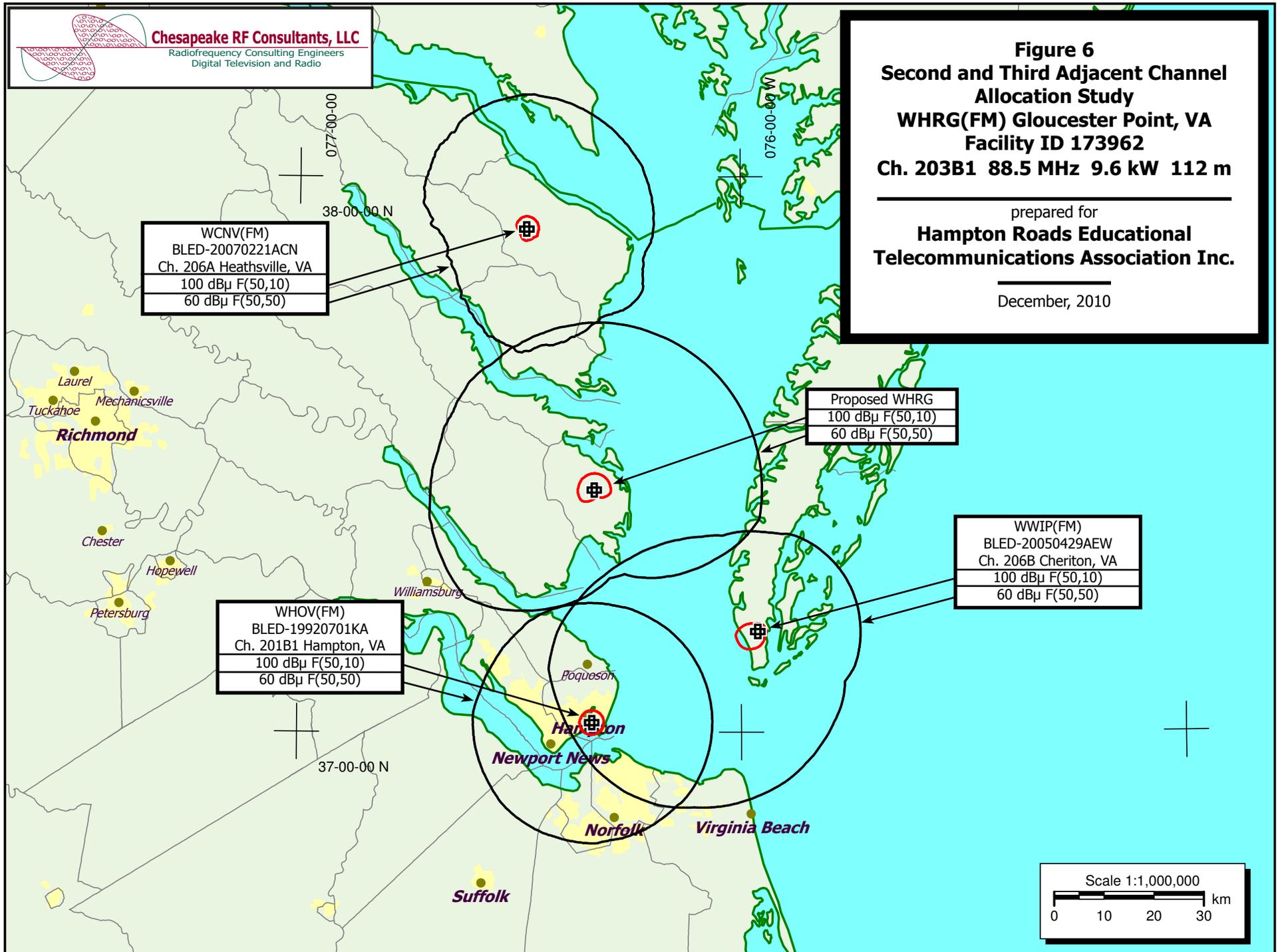


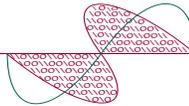
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 6
Second and Third Adjacent Channel
Allocation Study
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

prepared for
Hampton Roads Educational
Telecommunications Association Inc.

December, 2010



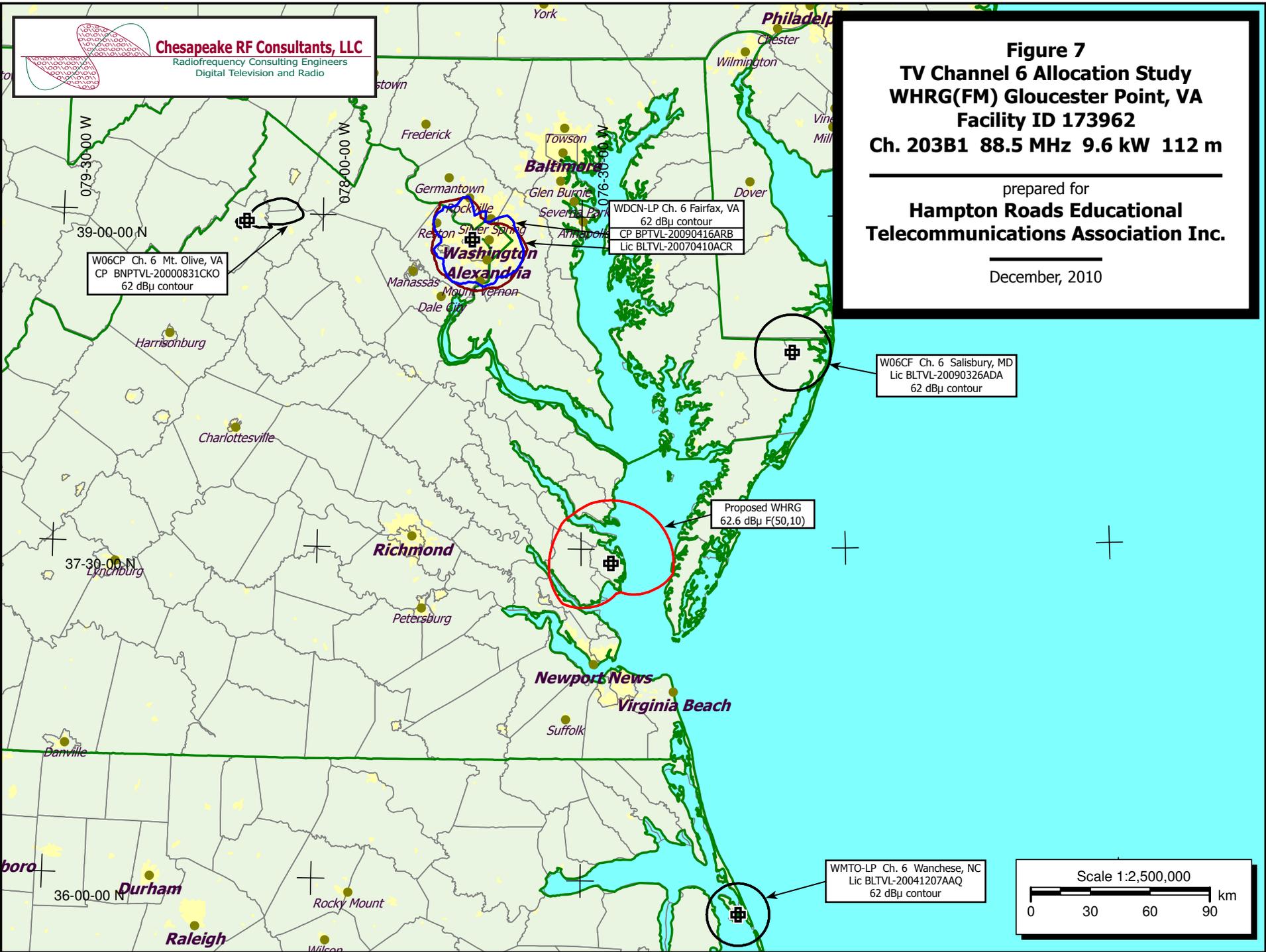


Chesapeake RF Consultants, LLC
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Digital Television and Radio

Figure 7
TV Channel 6 Allocation Study
WHRG(FM) Gloucester Point, VA
Facility ID 173962
Ch. 203B1 88.5 MHz 9.6 kW 112 m

prepared for
Hampton Roads Educational Telecommunications Association Inc.

December, 2010



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 12/17/2010 | |
| Mailing Address CHESAPEAKE RF CONSULTANTS LLC 207 OLD DOMINION ROAD | | | |
| City YORKTOWN | | State or Country (if foreign address) VA | Zip Code 23692- |
| 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: 203 | | | | | | | | | | | |
| 2. | Class (select one): <input type="radio"/> D <input type="radio"/> A <input checked="" type="radio"/> B1 <input 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 37 Minutes 26 Seconds 11 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 76 Minutes 19 Seconds 54 <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: 1027467 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA | | | | | | | | | | | |
| 6. | Overall Tower Height Above Ground Level: | | | | | | | | | | 128.9 meters | |
| 7. | Height of Radiation Center Above Mean Sea Level: | | | | | | | | | | 114.2 meters(H) 114.2 meters(V) | |
| 8. | Height of Radiation Center Above Ground Level: | | | | | | | | | | 110 meters(H) 110 meters(V) | |
| 9. | Height of Radiation Center Above Average Terrain: | | | | | | | | | | 112 meters(H) 112 meters(V) | |
| 10. | Effective Radiated Power: | | | | | | | | | | 9.6 kW(H) 9.6 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 type="checkbox"/> Not applicable (Nondirectional) Rotation (Degrees): <input checked="" type="checkbox"/> No Rotation | | | | | | | | | | | |
| | Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value |
| | 0 | 1 | 10 | 1 | 20 | 1 | 30 | 1 | 40 | 1 | 50 | 1 |
| | 60 | 1 | 70 | 1 | 80 | 1 | 90 | 1 | 100 | 1 | 110 | 0.841 |
| | 120 | 0.668 | 130 | 0.531 | 140 | 0.422 | 150 | 0.335 | 160 | 0.266 | 170 | 0.266 |
| | 180 | 0.335 | 190 | 0.422 | 200 | 0.531 | 210 | 0.668 | 220 | 0.841 | 230 | 1 |
| | 240 | 1 | 250 | 1 | 260 | 1 | 270 | 1 | 280 | 1 | 290 | 1 |
| | 300 | 1 | 310 | 1 | 320 | 1 | 330 | 1 | 340 | 1 | 350 | 1 |
| | Additional Azimuths | | | | | | | | | | | |

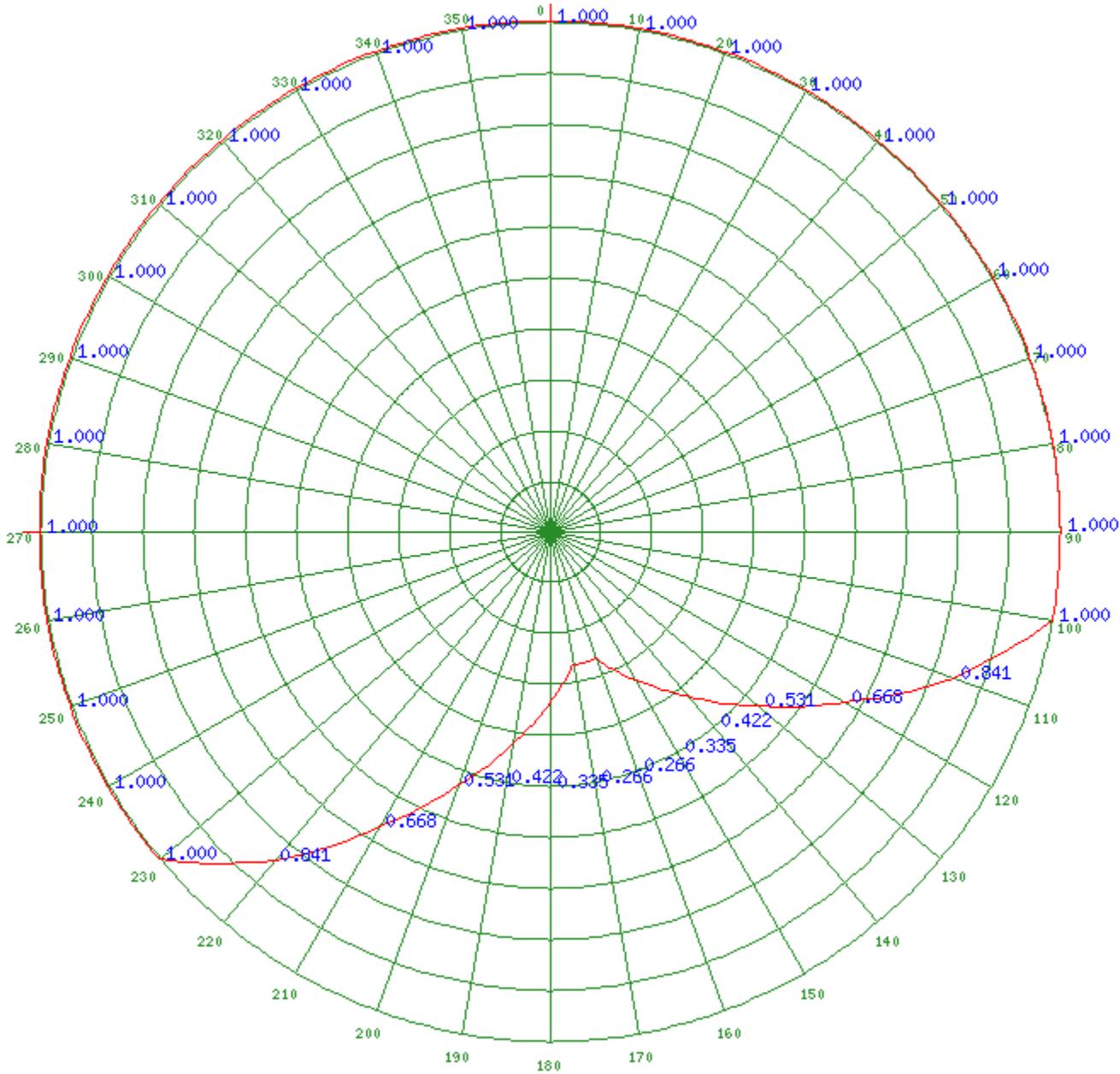
[Relative Field Polar Plot](#)

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

| | |
|--|--|
| <p>CERTIFICATION</p> <p>AUXILIARY ANTENNA APPLICANTS ARE NOT REQUIRED TO RESPOND TO ITEMS 13-17. PROCEED TO ITEM 18.</p> | |
| 13. | <p>Main Studio Location. The proposed main studio location complies with 47 C.F.R. Section 73.1125.</p> <p><input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>See Explanation in [Exhibit 15]</p> |
| 14. | <p>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).</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 16]</p> |
| 15. | <p>Interference. The proposed facility complies with all of the following applicable rule sections. Check all that apply:</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 17]</p> |
| | <p>Contour Overlap Requirements.</p> <p>a. <input checked="" type="checkbox"/> 47 C.F.R. Section 73.509 Exhibit Required. [Exhibit 18]</p> |
| | <p>Spacing Requirements.</p> <p>b. <input checked="" type="checkbox"/> 47 C.F.R. Section 73.207 with respect to station(s)</p> |
| | <p>Grandfathered Short-Spaced.</p> <p>c. <input type="checkbox"/> 47 C.F.R. Section 73.213(a) with respect to station(s) Exhibit Required. [Exhibit 19]</p> |
| | <p>Contour Protection.</p> <p>d. <input type="checkbox"/> 47 C.F.R. Section 73.215(a) with respect to station(s) Exhibit Required. [Exhibit 20]</p> |
| | <p>Television Channel 6 Protection.</p> <p>e. <input checked="" type="checkbox"/> 47 C.F.R. Section 73.525 with respect to station(s) Exhibit Required. [Exhibit 21]</p> |
| 16. | <p>Reserved Channels Above 220.</p> <p>a. Availability of Channels. The proposed facility complies with the assignment requirements of 47 C.F.R. Section 73.203.</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 22]</p> |
| 17. | <p>International Borders. The proposed antenna location is not within 320 kilometers of the common border between the United States and Canada or Mexico.</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> Canada</p> <p><input type="radio"/> Mexico</p> <p>If "No," specify the country and provide an exhibit of compliance with all provisions of the relevant International Agreement. [Exhibit 23]</p> |
| 18. | <p>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.</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 24]</p> <p>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.</p> |
| 19. | <p>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)).</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input checked="" type="radio"/> N/A</p> <p>[Exhibit 25]</p> <p>An exhibit is required unless this question is not applicable.</p> |
| <p>PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.</p> | |

Any specified rotation has already been applied to the plotted pattern.
Field strength values shown on a rotated pattern may differ from the listed values
because intermediate azimuths are interpolated between entered azimuths.

Close Window



[FM Query](#) [FCC](#) [TV Query](#)