

ENGINEERING EXHIBIT

Incentive Auction Channel Reassignment

Application for Modification of Digital Class A Television Station Construction Permit

prepared for

Gray Television Licensee, LLC

WSVF-CD Harrisonburg, VA

Facility ID 190915

Ch. 36 15 kW

Gray Television Licensee, LLC (“Gray”) is the licensee of Class A television station WSVF-CD, Channel 43, Facility ID 190915, Harrisonburg, VA. Reassignment of WSVF-CD from Channel 43 to Channel 36 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice* (“CCRPN”, DA 17-317, released April 13, 2017). Gray herein proposes modification of the WSVF-CD Channel 36 Construction Permit (“CP”, file# 0000025837). This application is intended to be filed during the second filing window.¹ The CP authorizes operation at 11.4 kW effective radiated power (“ERP”). Gray proposes herein to increase the ERP to 15 kW.

As with the current authorization, the proposed Channel 36 operation will employ a replacement main antenna system to be installed on the WSVF-CD tower in lieu of the existing main Channel 36 antenna. The overall structure elevation is less than 61 meters above ground and passes the FCC’s TOWAIR program for the transmitter location, thus FCC antenna structure registration is not necessary. No change to the overall structure height will result.

The site is located within the quiet zone area specified in §73.1030(a) requiring coordination with the National Radio Astronomy Observatory (“NRAO”) at Green Bank, WV. The NRAO has been notified and supplied with technical details of this proposal, and does not object. A copy of NRAO’s coordination letter is provided as a separate attachment. The

¹Public Notice “*Incentive Auction Task Force and Media Bureau Announce the Opening of the Second Filing Window for Eligible Full Power and Class A Television Station—October 3 Through November 2, 2017*” DA 17-911, released September 20, 2017.

proposal complies with the limit indicated thereon of 4.5 Watts maximum ERP at 273 degrees True.

The proposed antenna is an ERI model AL8O-36 composite system with a parabolic cancellation element. The cancellation element will be oriented at 273 degrees True North which will create the required minima towards the NRAO. As part of the reassignment to Channel 36, the main antenna (presently ERI model AL8O-43) will be replaced with the AL8O-36, while the existing parabolic cancellation element is broadband and will continue to be utilized.

Figure 1 depicts the 51 dB μ coverage contour of the authorized and proposed facilities, demonstrating compliance with §73.3572 for a minor change.

Interference study per OET Bulletin 69² shows that the proposal complies with the FCC's interference protection requirements toward all post-auction digital television and Class A television stations, as well as existing and previously proposed television translator and low power television stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

The nearest FCC monitoring station is 190 km distant at Laurel, MD. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site location is beyond the border areas requiring international coordination. There are no authorized AM stations within 3 kilometers of the site.

²FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, 1 km cell size, and 1 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC's implementation of TVStudy show excellent correlation.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 12 percent antenna relative field in downward elevations (pattern data shows less than 12 percent relative field at angles 25 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $17 \mu\text{W}/\text{cm}^2$, which is 4.2 percent of the general population/uncontrolled maximum permitted exposure limit. 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. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

List of Attachments

Figure 1	Coverage Contour Comparison
Table 1	OET Bulletin 69 Interference Study
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	October 27, 2017	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600

Figure 1
Coverage Contour Comparison
WSVF-CD Harrisonburg, VA
Facility ID 190915
Ch. 36 15 kW

prepared for
Gray Television Licensee, LLC

October, 2017

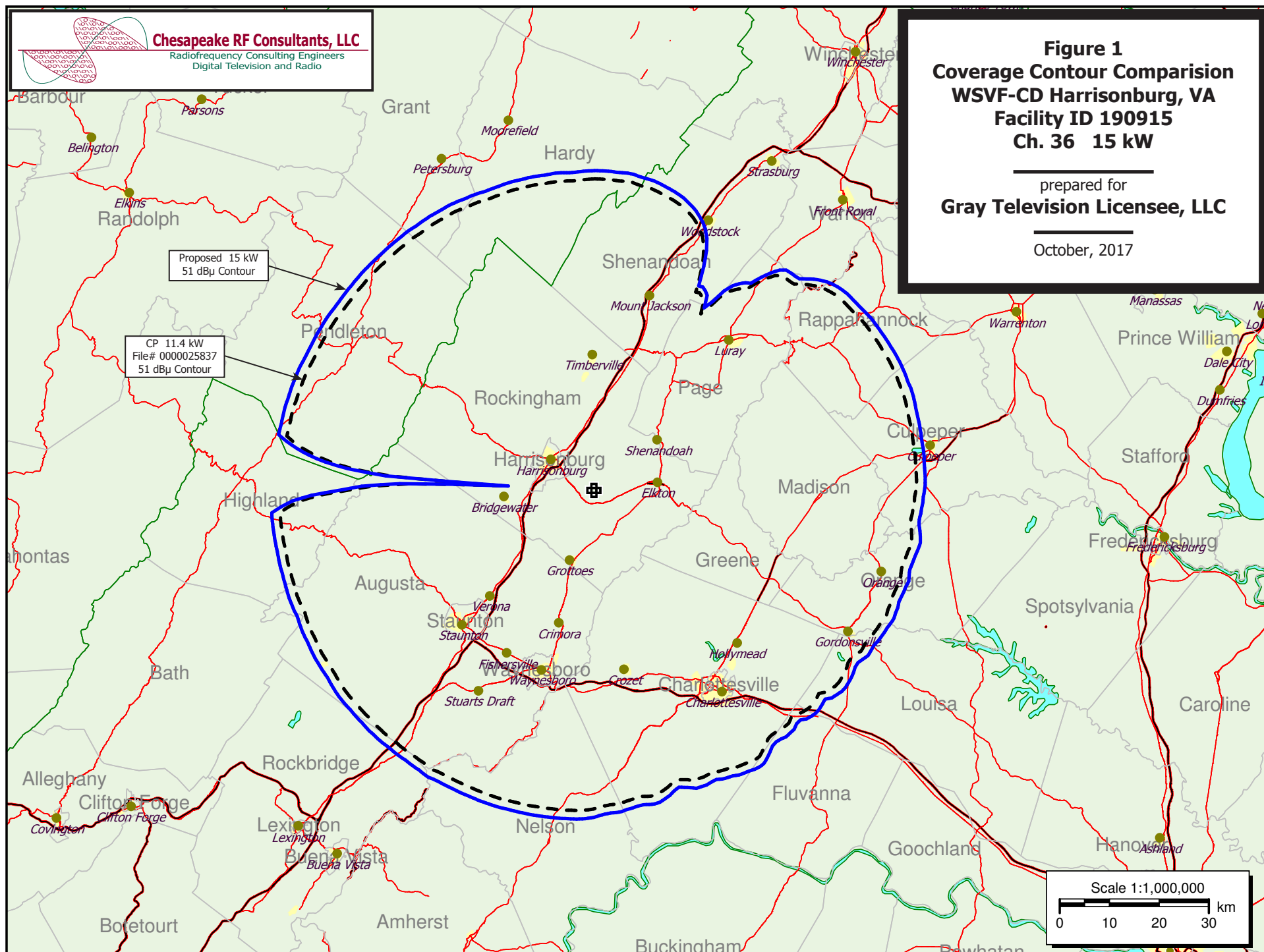
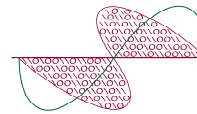


Table 1 WSVF-CD OET Bulletin 69 Interference Study
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Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

tvstudy v2.2.3 (6K70F1)
Database: localhost, Study: WSVF-CD 15kW_Prop, Model: Longley-Rice
Start: 2017.10.27 09:00:16

Study created: 2017.10.27 08:58:52

Study build station data: LMS TV 2017-10-07 LMSTV

Proposal: WSVF-CD D36 DC APP HARRISONBURG, VA
File number: WSVF-CD 15kW_Prop
Facility ID: 190915
Station data: User record
Record ID: 1426
Country: U.S.

Build options:
Protect LPTV records from Class A

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	W22CY	N22-	TX	LIC	CLARKSBURG, WV	BLTTL20060120ADM	164.5 km
No	WJAC-TV	D35	DT	CP	JOHNSTOWN, PA	BLANK0000027312	220.7
Yes	WAHU-CD	D35	DC	CP	CHARLOTTESVILLE, VA	BLANK0000025654	52.0
No	WUDJ-LD	D35	LD	LIC	CROZET, VA	BLANK0000014021	111.2
No	WUDJ-LD	D35	LD	APP	CROZET, VA	BLANK0000018932	141.6
No	WPXW-TV	D35	DT	CP	MANASSAS, VA	BLANK0000027028	159.2
No	W35DI-D	D35	LD	CP	ROANOKE, WV	BNPDTL20100514AAS	165.2
Yes	WTTG	D36	DT	LIC	WASHINGTON, DC	BLCDT20080507AAA	159.2
No	WKAS	D36	DT	CP	ASHLAND, KY	BLANK0000025282	335.3
No	WEPX-TV	D36	DT	CP	GREENVILLE, NC	BLANK0000026974	353.4
No	WAXN-TV	D36	LD	LIC	KANNAPOLIS, NC	BLCDT20100630BZK	352.3
No	WUNE-TV	D36	DT	CP	LINVILLE, NC	BLANK0000025396	375.4
No	WBFT-CD	D36	DC	CP	SANFORD, NC	BLANK0000028437	325.7
No	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	356.5
No	WQHS-DT	D36	DT	CP	CLEVELAND, OH	BLANK0000025113	415.8
No	W47AO-D	D36-	DC	CP	BERWICK, PA	BLANK0000028230	363.5
No	W36DO-D	D36	LD	LIC	DARBY, PA	BLDTT20110711ACA	355.2
No	W36DO-D	D36	LD	CP	DARBY, PA	BLANK0000024606	355.2
Yes	WITF-TV	D36	DT	LIC	HARRISBURG, PA	BLANK0000001676	271.6
No	W36BE-D	D36	LD	LIC	STATE COLLEGE, PA	BLDTT20091023AIW	269.1
No	WWLM-CD	D36	DC	CP	WASHINGTON, PA	BLANK0000027840	236.0
No	WMYT-TV	D36	LD	CP	ROCK HILL, SC	BDRTCDT20140402AAM	383.6
No	WPMC-CD	D36	DC	LIC	MAPPSVILLE, VA	BLANK0000001499	286.3
Yes	WFXR	D36	DT	CP	ROANOKE, VA	BLANK0000027724	180.2
No	WYSJ-CA	D36	DC	APP	YORKTOWN, VA	BLANK0000027947	251.1
No	WYSJ-CA	D36	DC	CP	YORKTOWN, VA	BLANK0000027947	251.1
No	W36ER-D	D36	LD	CP	PARKERSBURG, WV	BMPDTL20121001AEO	285.3
No	W43BP	N43-	TX	LIC	CRESAPTOWN, MD	BLTT19981124JI	132.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

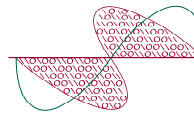
Record parameters as studied:

Channel: D36
Mask: Stringent
Latitude: 38 23 34.80 N (NAD83)
Longitude: 78 46 11.90 W
Height AMSL: 913.2 m
HAAT: 0.0 m
Peak ERP: 15.0 kW
Antenna: ERI-AL80-36 WITH CANCELLATION 0.0 deg
Elev Pattn: Generic
Elec Tilt: 1.75

50.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	15.0 kW	495.9 m	64.4 km
45.0	15.0	392.3	60.2
90.0	15.0	565.2	66.5
135.0	15.0	457.7	63.3

Table 1 WSVF-CD OET Bulletin 69 Interference Study
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Digital Television and Radio

180.0	15.0	543.5	65.8
225.0	15.0	553.4	66.1
270.0	1.65	509.7	51.6
315.0	15.0	484.1	64.1

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 500 m

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 458.3 km

Distance to Mexican border: 2188.5 km

Conditions at FCC monitoring station: Laurel MD
Bearing: 62.5 degrees Distance: 189.4 km

**Proposal is within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 283.3 degrees Distance: 2276.3 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

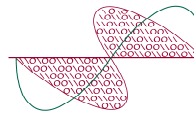
Interference to BLANK0000025654 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WAHU-CD	D35	DC	CP	CHARLOTTESVILLE, VA	BLANK0000025654	
Undesireds:	WSVF-CD	D36	DC	BL	HARRISONBURG, VA	DTVBL190915	51.9 km
	WSVF-CD	D36	DC	APP	HARRISONBURG, VA	WSVF-CD 15kW_Prop	52.0
	WFMY-TV	D35	DT	CP	GREENSBORO, NC	BLANK0000028086	264.2
	WPXW-TV	D35	DT	CP	MANASSAS, VA	BLANK0000027028	162.5
	WTAP-TV	D35	DT	APP	PARKERSBURG, WV	BLANK0000025208	307.7
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
	10077.5 391,670		8283.6 281,466		8097.9 278,545	8097.9 278,545	0.00 0.00
Undesired				Total IX	Unique IX, before	Unique IX, after	
WSVF-CD D36 DC BL		7.1		0	6.0	0	
WSVF-CD D36 DC APP		7.1		0		6.0	0
WFMY-TV D35 DT CP		18.2		483	4.0	73	73
WPXW-TV D35 DT CP		174.5		2,848	161.4	2,438	2,438

Interference to BLCDT20080507AAA LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WTTG	D36	DT	LIC	WASHINGTON, DC	BLCDT20080507AAA	
Undesireds:	WSVF-CD	D36	DC	BL	HARRISONBURG, VA	DTVBL190915	159.2 km
	WSVF-CD	D36	DC	APP	HARRISONBURG, VA	WSVF-CD 15kW_Prop	159.2
	WAHU-CD	D35	DC	CP	CHARLOTTESVILLE, VA	BLANK0000025654	162.7
	WPXW-TV	D35	DT	CP	MANASSAS, VA	BLANK0000027028	0.7
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	201.0
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	326.7
	WITF-TV	D36	DT	LIC	HARRISBURG, PA	BLANK0000001676	155.5
	WFXR	D36	DT	CP	ROANOKE, VA	BLANK0000027724	332.3
	WYSJ-CA	D36	DC	APP	YORKTOWN, VA	BLANK0000027947	216.0
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
	23595.7 8,070,059		22762.7 8,022,446		21818.9 7,928,605	21809.0 7,926,409	0.05 0.03
Undesired				Total IX	Unique IX, before	Unique IX, after	
WSVF-CD D36 DC BL		167.7		21,023	109.1	15,107	
WSVF-CD D36 DC APP		178.6		23,244		119.0	17,303
WAHU-CD D35 DC CP		2.0		51	1.0	51	51

Table 1 WSVF-CD OET Bulletin 69 Interference Study
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Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

WPXW-TV D35 DT CP	88.8	11,568	75.8	9,985	75.8	9,985
WMGM-TV D36 DT LIC	96.5	7,746	38.9	5,157	37.9	5,157
WCBS-TV D36 DT CP	8.9	568	1.0	54	1.0	54
WITF-TV D36 DT LIC	684.1	62,806	590.6	53,298	590.6	53,298
WFXR D36 DT CP	50.9	3,976	12.0	76	12.0	76

Interference to BLCDT20080507AAA LIC, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WTTG	D36	DT	LIC	WASHINGTON, DC	BLCDT20080507AAA	
Undesireds:	WSVF-CD	D36	DC	BL	HARRISONBURG, VA	DTVBL190915	159.2 km
	WSVF-CD	D36	DC	APP	HARRISONBURG, VA	WSVF-CD 15kW_Prop	159.2
	WAHU-CD	D35	DC	CP	CHARLOTTESVILLE, VA	BLANK0000025654	162.7
	WPXW-TV	D35	DT	CP	MANASSAS, VA	BLANK0000027028	0.7
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	201.0
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	326.7
	WITF-TV	D36	DT	LIC	HARRISBURG, PA	BLANK0000001676	155.5
	WFXR	D36	DT	CP	ROANOKE, VA	BLANK0000027724	332.3
	WYSJ-CA	D36	DC	CP	YORKTOWN, VA	BLANK0000027947	216.0

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23595.7 8,070,059	22762.7 8,022,446	21818.9 7,928,605	21809.0 7,926,409	0.05 0.03

Undesired	Total IX	Unique IX, before	Unique IX, after
WSVF-CD D36 DC BL	167.7 21,023	109.1 15,107	
WSVF-CD D36 DC APP	178.6 23,244		119.0 17,303
WAHU-CD D35 DC CP	2.0 51	1.0 51	1.0 51
WPXW-TV D35 DT CP	88.8 11,568	75.8 9,985	75.8 9,985
WMGM-TV D36 DT LIC	96.5 7,746	37.8 5,157	36.9 5,157
WCBS-TV D36 DT CP	8.9 568	1.0 54	1.0 54
WITF-TV D36 DT LIC	684.1 62,806	590.6 53,298	590.6 53,298
WFXR D36 DT CP	50.9 3,976	12.0 76	12.0 76
WYSJ-CA D36 DC CP	1.0 0	0.0 0	0.0 0

Interference to BLANK0000001676 LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WITF-TV	D36	DT	LIC	HARRISBURG, PA	BLANK0000001676	
Undesireds:	WSVF-CD	D36	DC	BL	HARRISONBURG, VA	DTVBL190915	271.6 km
	WSVF-CD	D36	DC	APP	HARRISONBURG, VA	WSVF-CD 15kW_Prop	271.6
	WFPA-CD	D35	DC	CP	PHILADELPHIA, PA	BLANK0000025111	142.7
	WPXW-TV	D35	DT	CP	MANASSAS, VA	BLANK0000027028	156.1
	WTTG	D36	DT	LIC	WASHINGTON, DC	BLCDT20080507AAA	155.5
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	225.3
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	244.7
	WSPX-TV	D36	DT	APP	SYRACUSE, NY	BLANK0000029579	335.9
	W47AO-D	D36-	DC	CP	BERWICK, PA	BLANK0000028230	91.8
	WYSJ-CA	D36	DC	APP	YORKTOWN, VA	BLANK0000027947	365.0

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
19485.5 2,409,697	17125.1 2,207,263	14876.1 2,012,984	14874.1 2,012,984	0.01 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WSVF-CD D36 DC BL	1.0 27	0.0 0	
WSVF-CD D36 DC APP	6.0 27		2.0 0
WFPA-CD D35 DC CP	10.0 6,288	3.0 3,521	3.0 3,521
WPXW-TV D35 DT CP	9.9 1,436	1.0 134	1.0 134
WTTG D36 DT LIC	1816.9 158,918	1326.2 125,276	1323.2 125,276
WMGM-TV D36 DT LIC	256.5 25,534	24.0 7,518	24.0 7,518
WCBS-TV D36 DT CP	290.2 22,715	64.0 6,108	64.0 6,108
WSPX-TV D36 DT APP	2.0 18	0.0 0	0.0 0
W47AO-D D36- DC CP	575.1 28,091	273.2 11,158	273.2 11,158

Interference to BLANK0000001676 LIC, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WITF-TV	D36	DT	LIC	HARRISBURG, PA	BLANK0000001676	

Table 1 WSVF-CD OET Bulletin 69 Interference Study
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Undesireds:	WSVF-CD	D36	DC	BL	HARRISONBURG, VA	DTVBL190915	271.6 km
	WSVF-CD	D36	DC	APP	HARRISONBURG, VA	WSVF-CD 15kW_Prop	271.6
	WFFA-CD	D35	DC	CP	PHILADELPHIA, PA	BLANK0000025111	142.7
	WPXW-TV	D35	DT	CP	MANASSAS, VA	BLANK0000027028	156.1
	WTTG	D36	DT	LIC	WASHINGTON, DC	BLCDT20080507AAA	155.5
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	225.3
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	244.7
	W47AO-D	D36-	DC	CP	BERWICK, PA	BLANK0000028230	91.8
	WYSJ-CA	D36	DC	APP	YORKTOWN, VA	BLANK0000027947	365.0

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
19485.5 2,409,697	17125.1 2,207,263	14876.1 2,012,984	14874.1 2,012,984	0.01 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WSVF-CD D36 DC BL	1.0 27	0.0 0	
WSVF-CD D36 DC APP	6.0 27		2.0 0
WFFA-CD D35 DC CP	10.0 6,288	3.0 3,521	3.0 3,521
WPXW-TV D35 DT CP	9.9 1,436	1.0 134	1.0 134
WTTG D36 DT LIC	1816.9 158,918	1326.2 125,276	1323.2 125,276
WMGM-TV D36 DT LIC	256.5 25,534	24.0 7,518	24.0 7,518
WCBS-TV D36 DT CP	290.2 22,715	64.0 6,108	64.0 6,108
W47AO-D D36- DC CP	575.1 28,091	273.2 11,158	273.2 11,158

Interference to BLANK0000027724 CP, scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WFXR	D36	DT	CP	ROANOKE, VA	BLANK0000027724	
Undesireds:	WSVF-CD	D36	DC	BL	HARRISONBURG, VA	DTVBL190915 180.2 km
	WSVF-CD	D36	DC	APP	HARRISONBURG, VA	WSVF-CD 15kW_Prop 180.2
	WFMY-TV	D35	DT	CP	GREENSBORO, NC	BLANK0000028086 150.1
	WAHU-CD	D35	DC	CP	CHARLOTTESVILLE, VA	BLANK0000025654 171.4
	WTTG	D36	DT	LIC	WASHINGTON, DC	BLCDT20080507AAA 332.3
	WKAS	D36	DT	CP	ASHLAND, KY	BLANK0000025282 258.2
	WEPX-TV	D36	DT	CP	GREENVILLE, NC	BLANK0000026974 315.8
	WUNE-TV	D36	DT	CP	LINVILLE, NC	BLANK0000025396 196.3
	WFXB	D36	DT	CP	MYRTLE BEACH, SC	BLANK0000027052 345.6
	WYSJ-CA	D36	DC	APP	YORKTOWN, VA	BLANK0000027947 328.8

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
38852.6 1,431,370	32909.2 1,276,249	31617.1 1,238,525	31578.7 1,235,925	0.12 0.21

Undesired	Total IX	Unique IX, before	Unique IX, after
WSVF-CD D36 DC BL	347.9 6,568	308.5 5,706	
WSVF-CD D36 DC APP	400.5 9,698		346.9 8,306
WFMY-TV D35 DT CP	264.6 12,924	115.7 4,441	115.7 4,441
WAHU-CD D35 DC CP	32.4 523	20.3 129	20.3 129
WTTG D36 DT LIC	112.3 3,292	56.7 1,514	49.6 1,097
WKAS D36 DT CP	32.4 391	32.4 391	31.4 391
WEPX-TV D36 DT CP	90.4 1,885	22.1 166	21.1 166
WUNE-TV D36 DT CP	672.7 23,649	463.5 13,582	462.5 13,525
WFXB D36 DT CP	68.3 1,666	7.0 241	6.0 241

Interference to proposal, scenario 1
0.95% interference

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WSVF-CD	D36	DC	APP	HARRISONBURG, VA	WSVF-CD 15kW_Prop	
Undesireds:	WAHU-CD	D35	DC	CP	CHARLOTTESVILLE, VA	BLANK0000025654 52.0 km
	WTTG	D36	DT	LIC	WASHINGTON, DC	BLCDT20080507AAA 159.2
	WFXR	D36	DT	CP	ROANOKE, VA	BLANK0000027724 180.2
	WYSJ-CA	D36	DC	APP	YORKTOWN, VA	BLANK0000027947 251.1

Service area	Terrain-limited	IX-free	Percent IX
12906.8 517,570	7941.9 303,289	7764.1 300,419	2.24 0.95

Undesired	Total IX	Unique IX	Prct Unique IX
WAHU-CD D35 DC CP	16.1 1,065	5.0 0	0.06 0.00
WTTG D36 DT LIC	85.4 1,270	48.1 4	0.61 0.00
WFXR D36 DT CP	117.5 1,863	86.4 1,600	1.09 0.53

**Channel and
Facility
Information**

Section	Question	Response
Proposed Community of License	Facility ID	190915
	State	Virginia
	City	HARRISONBURG
	DCA Channel	36

**Antenna Location
Data**

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	No
	ASR Number	
Coordinates (NAD83)	Latitude	38° 23' 34.8" N+
	Longitude	078° 46' 11.9" W-
	Structure Type	LTOWER-Lattice Tower
	Overall Structure Height	24.4 meters
	Support Structure Height	20.7 meters
	Ground Elevation (AMSL)	890.6 meters
Antenna Data	Height of Radiation Center Above Ground Level	22.6 meters
	Height of Radiation Center Above Mean Sea Level	913.2 meters
	Effective Radiated Power	15.0 kW

Antenna Technical Data

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	No
	Antenna ID	
Antenna Manufacturer and Model	Manufacturer:	ERI
	Model	AL8O-36 WITH CANCELLATION
	Rotation	0 degrees
	Electrical Beam Tilt	1.75
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Horizontal
Elevation Radiation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	
	Out-of-Channel Emission Mask:	Stringent

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)
0	1	90	1	180	1	270	0.332
10	1	100	1	190	1	280	1
20	1	110	1	200	1	290	1
30	1	120	1	210	1	300	1
40	1	130	1	220	1	310	1
50	1	140	1	230	1	320	1
60	1	150	1	240	1	330	1
70	1	160	1	250	1	340	1
80	1	170	1	260	1	350	1

Additional Azimuths

Degree	V _A
278	0.707
273	0.017
268	0.707
266	1