



**Kessler and Gehman Associates**  
Consultants • Broadcast • Wireless

**DIGITAL TELEVISION  
TRANSLATOR POST  
TRANSITION CHANNEL  
DISPLACEMENT  
RELIEF APPLICATION  
FOR W51EG-D  
FACILITY ID 167359**

Parkersburg, WV

***Prepared For:***

West Virginia Educational  
Broadcasting Authority  
600 Capitol Street  
Charleston, WV 25301

***Prepared By:***

Ryan Wilhour  
Consulting Engineer  
Kessler and Gehman Associates  
507 NW 60<sup>th</sup> Street, Suite D  
Gainesville, FL 32607-2055  
352-332-3157 Extension 3  
[ryan@kesslerandgehman.com](mailto:ryan@kesslerandgehman.com)  
[www.kesslerandgehman.com](http://www.kesslerandgehman.com)

***Prepared On:***

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## **1.0 MINOR MODIFICATION CHANNEL DISPLACEMENT RELIEF ELIGIBILITY**

West Virginia Educational Broadcasting Authority (“WVEBA”) is the licensee of a digital Low Power Television Station (“LPTV”) having call sign W51EG-D, Facility ID 167359 which is licensed<sup>1</sup> to operate on channel 51 with an ERP of 15KW through a directional antenna using a stringent Emission Mask.

LPTV/translator stations which currently broadcast on channels (38-51) are automatically displaced because they are in the new 600 MHz band for mobile broadband service and thus W51EG-D is clearly eligible to file for channel displacement relief in the April 10, 2018 through June 1, 2018 post-incentive auction special displacement window and is the purpose of the instant application.

Pursuant to 47 CFR Section 74.787(b) the instant application is considered a “minor” change because:

- The change in frequency is related to displacement relief as outlined above.
- There is no change in transmitting antenna location such that the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized facilities of the existing station as illustrated in Appendix C.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station’s antenna location.

## **2.0 STATION TRANSMITTER LOCATION AND ELEVATION**

It is proposed to keep W51EG-D at its licensed location on an existing tower which has an FCC Antenna Structure Registration (“ASR”) number of 1035125.

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<sup>1</sup> FCC File No.: BLDTT-20081103ACQ

The instant application does not propose to increase or modify the existing support structure nor modify the existing ASR number.

### **3.0 ALLOCATION ANALYSIS**

Appendix B are the summarized results from TVStudy V2.2.5. **It is respectfully requested that the Commission analyze the instant application using a profile point spacing of 0.10km and a cell size of 0.5km.** As indicated the proposed W51EG-D facility on its new channel is not predicted to cause prohibited interference to pre or post transition facilities; however, 7.11% aggregate inbound interference is predicted to which is acceptable to WVEBA.

### **4.0 AM STATION PROXIMITY**

No AM stations are located within 3.2 km of the proposed facility. Pursuant to 47 C.F.R. Section 1.30002(e), the construction or extension of an antenna-supporting structure shall be considered subject to the moment method analysis and prior notification requirement; however, the instant application does not propose to extend the existing structure or build a new structure. Thus, the proposed facility is exempt from further AM analysis consideration.

### **5.0 INTERNATIONAL COORDINATION**

The W51EG-D transmitter site is 2049.9 km and 282.3 km from the Mexican and Canadian border respectively and will not require international coordination.

### **6.0 RADIO FREQUENCY RADIATION COMPLIANCE**

A theoretical analysis has been conducted of the human exposure to radio frequency radiation (“RFR”) using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain<sup>2</sup> extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360 degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

The resulting RFR study in Appendix D demonstrates that the peak exposure is 1.77% of the most restrictive permissible exposure threshold. Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources near the proposed facility were not taken into account. The instant application is compliant with the FCC limits for human exposure to RF radiation and is excluded from further environmental processing since no changes are proposed to the tower structure to accommodate the proposed antenna.

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<sup>2</sup> Terrain extraction is based upon a 3 arc second point spacing terrain database.

A chain link fence encloses the support structure and the applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off to protect maintenance workers on the tower.

## **7.0 CERTIFICATION**

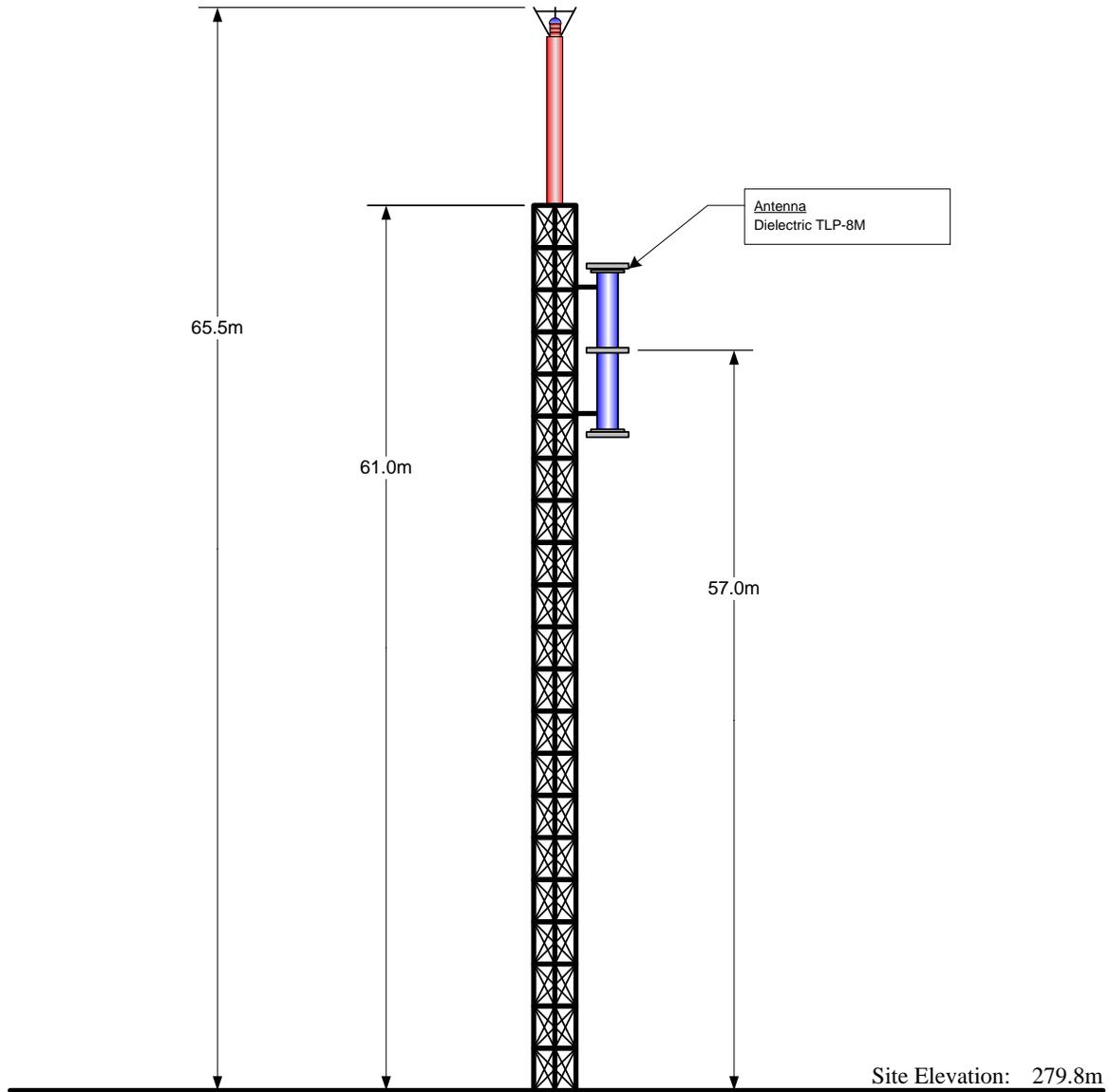
The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed May 25, 2018.

Kessler and Gehman Associates, Inc.



Ryan Wilhour  
Consulting Engineer

APPENDIX A – Tower Elevation Diagram



Antenna CRAGL:	57.0 m
Antenna CRAMSL:	336.8 m
Antenna HAAT:	103.8 m

NAD 83 Coordinates:	
N. Latitude:	39° 12' 44.1"
W. Longitude:	81° 35' 29.7"

FCC Tower Registration Number:	1035125
FAA Study Number	2014-AEA-1912-OE

NOTE: NOT TO SCALE

# W51EG-D – Post Transition Channel Displacement Relief

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## APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2018.05.25 12:06:36

Study build station data: LMS TV 2018-05-25

Proposal: W51EG-D D34 LD LIC PARKERSBURG, WV  
File number: W51EG-D Channel 34  
Facility ID: 167359  
Station data: User record  
Record ID: 3183  
Country: U.S.

Build options:  
Protect pre-transition records not on baseline channel

Search options:  
Non-U.S. records included  
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	W30CH	N30-	TX	LIC	CLARKSBURG, WV	BLTTL20070319AAK	107.9 km
No	WKHA	D33	DT	CP	HAZARD, KY	BLANK0000029749	264.2
No	WSTR-TV	D33	DT	LIC	CINCINNATI, OH	BLCDT20091117ACS	252.4
No	WCSN-LD	D33	LD	LIC	COLUMBUS, OH	BLDTL20100728AAG	151.5
No	WHIO-TV	D33	DT	CP	DAYTON, OH	BLANK0000025295	235.2
No	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000033638	222.8
No	WOCW-LP	D33+	LD	APP	CHARLESTON, WV	BLANK0000053615	93.4
No	WNPB-TV	D33	DT	LIC	MORGANTOWN, WV	BLEDT20121205ACJ	165.9
No	WRC-TV	D34	DT	CP	WASHINGTON, DC	BLANK0000034340	390.3
No	WISE-TV	D34	DT	CP	FORT WAYNE, IN	BLANK0000027665	370.5
No	WKMJ-TV	D34	DT	CP	LOUISVILLE, KY	BLANK0000034636	379.1
No	WKBD-TV	D34	DT	CP	DETROIT, MI	BLANK0000034396	391.3
No	WSOC-TV	D34	DT	LIC	CHARLOTTE, NC	BLCDT20040526ANW	445.7
No	WKBW-TV	D34	DT	CP	BUFFALO, NY	BLANK0000034829	455.2
No	WCET	D34	DT	LIC	CINCINNATI, OH	BLEDT20061031AAR	252.7
No	WQHS-DT	D34	DT	LIC	CLEVELAND, OH	BLCDT20031030AGJ	241.4
No	WKEF	D34	DT	CP	DAYTON, OH	BLANK0000034522	235.5
No	W38ET-D	D34	LD	APP	EASTLAKE, OH	BLANK0000054261	279.4
No	W45BT-D	D34	LD	APP	BROOKVILLE, PA	BLANK0000050401	298.7
No	NEW	D34	LD	APP	ERIE, PA	BNPDTL20090825BRL	339.5
No	WJAC-TV	D34	DT	LIC	JOHNSTOWN, PA	BLCDT20051123AKN	257.4
No	WVLT-TV	D34	DT	CP	KNOXVILLE, TN	BLANK0000025085	413.7
No	WTNZ	D34	DT	LIC	KNOXVILLE, TN	BMLCDT20040706ABG	412.3
No	W34EV-D	D34	LD	CP	Charlottesville, VA	BLANK0000008300	277.8
No	WUDW-LD	D34	LD	APP	CROZET, VA	BLANK0000053751	395.7
No	WPXW-TV	D34	DT	LIC	MANASSAS, VA	BLCDT20090612AIZ	390.4
No	WZTD-LD	D34	LD	APP	RICHMOND, VA	BLANK0000053792	395.7
Yes	WLSL-TV	D34	DT	CP	ROANOKE, VA	BLANK0000029619	256.7
Yes	WVPB-TV	D34	DT	LIC	HUNTINGTON, WV	BLEDT20120214AAS	95.6
Yes	WNPB-TV	D34	DT	CP	MORGANTOWN, WV	BLANK0000034624	165.9
Yes	WOUC-TV	D35	DT	LIC	CAMBRIDGE, OH	BLEDT20050427AAB	101.2
No	WLWT	D35	DT	LIC	CINCINNATI, OH	BLCDT20050502ABC	252.7
No	WVIZ	D35	DT	CP	CLEVELAND, OH	BLANK0000034584	241.8
No	WPTD	D35	DT	CP	DAYTON, OH	BLANK0000026763	235.0
No	WJAC-TV	D35	DT	CP	JOHNSTOWN, PA	BLANK0000027312	257.4
No	WJDW-LD	D35	LD	LIC	TAZEWELL, VA	BLDTL20110525ADU	224.7
No	WTAP-TV	D35	DT	CP	PARKERSBURG, WV	BLANK0000025208	15.5
No	W35DI-D	D35	LD	CP	ROANOKE, WV	BNPDTL20100514AAS	95.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D34

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Mask: Full Service  
Latitude: 39 12 44.10 N (NAD83)  
Longitude: 81 35 29.70 W  
Height AMSL: 336.8 m  
HAAT: 103.8 m  
Peak ERP: 15.0 kW  
Antenna: Dielectric TLP-8M 145.0 deg  
Elev Pattn: Generic  
Elec Tilt: 1.00

50.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.835 kW	110.1 m	29.5 km
45.0	7.10	123.8	41.5
90.0	14.9	127.3	45.5
135.0	12.2	92.5	41.2
180.0	13.8	59.1	36.8
225.0	11.2	99.4	41.6
270.0	2.96	107.7	35.8
315.0	0.766	110.9	29.1

Proposal 25.68 dBu contour does not cross Canadian border  
Distance to Canadian border: 282.3 km

Distance to Mexican border: 2049.9 km

Conditions at FCC monitoring station: Laurel MD  
Bearing: 89.2 degrees Distance: 411.0 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 280.5 degrees Distance: 2018.4 km

**Study cell size: 0.50 km**

**Profile point spacing: 0.10 km**

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

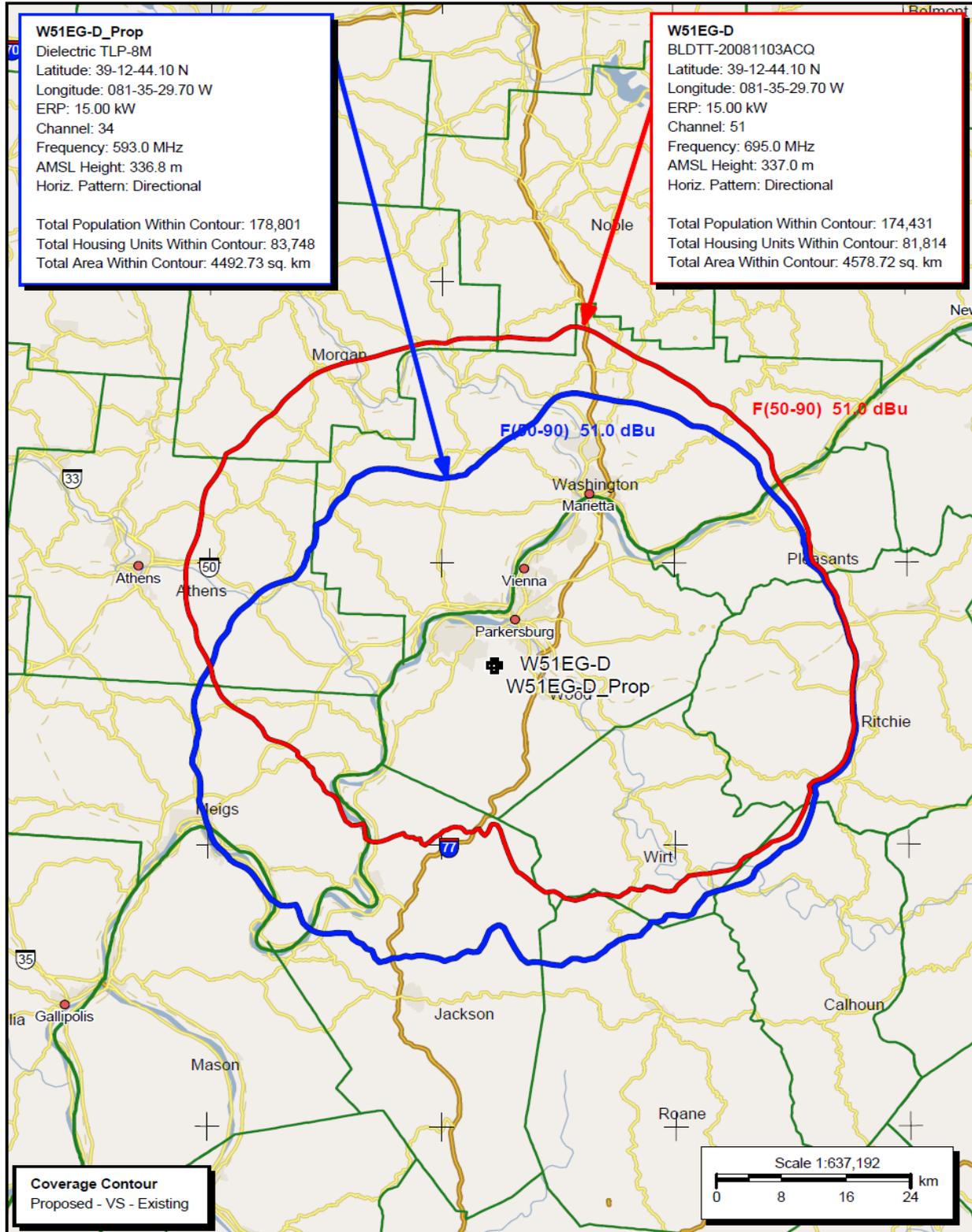
---- Below is IX received by proposal W51EG-D Channel 34 ----

Proposal receives 7.11% interference from scenario 1  
No IX check failures found.

# W51EG-D – Post Transition Channel Displacement Relief

Parkersburg, WV

## APPENDIX C – 51dBμ F(50,90) Licensed and Proposed Contour



APPENDIX D – Far Field Exposure to RF Emissions

