



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

**ANALOG-TO-DIGITAL
REPLACEMENT
TELEVISION
TRANSLATOR POST
TRANSITION CHANNEL
DISPLACEMENT
RELIEF APPLICATION
FOR WWTV(DT)
FACILITY ID 26994**

Traverse City, MI

Prepared For:

Heritage Broadcasting
Company Of Michigan
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1.0 MINOR MODIFICATION CHANNEL DISPLACEMENT RELIEF ELIGIBILITY

Heritage Broadcasting Company Of Michigan (“HBCM”) is the licensee of an analog-to-digital replacement television translator station having call sign WWTV(DT), Facility ID 26994. WWTV(DT) is licensed¹ to operate on channel 40 with an ERP of 15.0 kW through an onmi-directional antenna using a stringent Emission Mask. LPTV/translator stations that currently broadcast on channels (38-51) are automatically displaced because they are in the new 600 MHz band for mobile broadband service and thus WWTV(DT) is clearly eligible to file for channel displacement relief in the April 10, 2018 through May 15, 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 WWTV(DT) at its licensed location on an existing tower having ASR number 1061421 as illustrated in Appendix A. The instant application does not propose to increase or modify the existing support structure.

¹ FCC File No.: BLCDT-20121009ACS

3.0 ALLOCATION ANALYSIS

Appendix B are the summarized results from TVStudy V2.2.5. The proposed facility is compliant in both the pre-transition and post-transition periods.

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 WWTV(TV) Proposal has a 24.85 dBu contour which does not cross Canadian border. The facility is not within coordination distance of Mexico

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:

Terrain² 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

² Terrain extraction is based upon a 3 arc second point spacing terrain database.

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 0.01% of the most restrictive permissible exposure threshold when standing anywhere ground level. 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 in order to accommodate the proposed antenna.

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

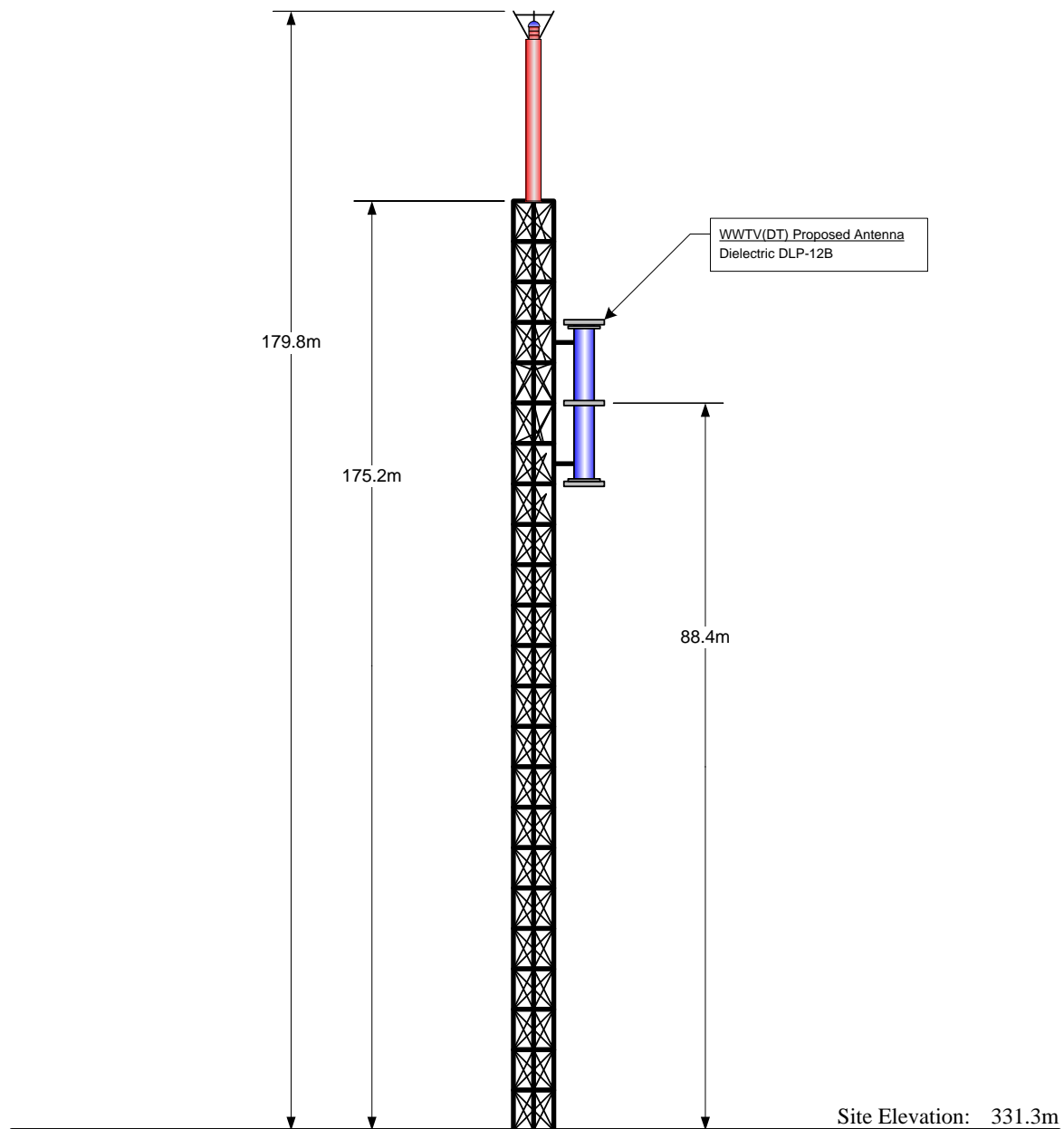
The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed April 11, 2018.

Kessler and Gehman Associates, Inc.



Ryan Wilhour
Consulting Engineer

APPENDIX A – Tower Elevation Diagram



Antenna CRAGL:	88.4 m
Antenna CRMSL:	419.7 m
Antenna HAAT:	184.6 m

NAD 83 Coordinates:	
N. Latitude:	44° 45' 37.0"
W. Longitude:	85° 40' 58.0"

FCC Tower Registration Number: 1061421

FAA Study Number 72-GL-0482

NOTE: NOT TO SCALE

WWTV(DT) – Post Transition Channel Displacement Relief

Traverse City, MI

APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2018.04.11 12:08:47

Study build station data: LMS TV 2018-04-11

Proposal: WWTV D25 LD LIC CADILLAC, MI
File number: WWTV Channel 25
Facility ID: 26994
Station data: User record
Record ID: 2946
Country: U.S.

Build options:

Protect pre-transition records not on baseline channel
Protect baseline records from LPTV

Search options:

Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	W18BT	N18-	TX	LIC	ALPENA, MI	BLTTL19981113JB	179.7 km
Yes	WCML	D24	DT	LIC	ALPENA, MI	BLEDT20110707ABQ	126.8
No	WTLJ	D24	DT	LIC	MUSKEGON, MI	BLANK0000001674	201.2
No	W24DL-D	D24	LD	LIC	SAGINAW, MI	BLDTL20120905AAM	174.2
No	W25DW-D	D25	LD	LIC	ARBURY HILLS, IL	BLDTL20110224ACQ	355.9
No	WTTW	D25	DT	CP	CHICAGO, IL	BLANK0000034877	357.1
No	WTTW	D25	DT	BL	CHICAGO, IL	DTVBL10802	357.1
No	WCWW-LD	D25	LD	LIC	SOUTH BEND, IN	BLDTL20121022ABV	351.9
No	WXYZ-TV	D25	DT	CP	DETROIT, MI	BLANK0000034678	321.0
No	WXYZ-TV	D25	DT	BL	DETROIT, MI	DTVBL10267	321.0
No	WOGC-CD	D25	DC	LIC	HOLLAND, MI	BLDTA20120316ADA	217.2
No	WLAJ	D25	DT	LIC	LANSING, MI	BLANK0000001564	276.3
No	KSET-LD	D25	LD	LIC	MIDLAND, MI	BLANK0000013388	212.6
No	KSET-LD	D25	LD	CP	MIDLAND, MI	BLANK0000036625	198.6
Yes	W25EV-D	D25	LD	CP	VANDERBILT, MI	BNPDTL20100223ADJ	97.2
No	WQOW	D25	DT	CP	EAU CLAIRE, WI	BLANK0000027863	456.2
No	WQOW	D25	DT	BL	EAU CLAIRE, WI	DTVBL64550	456.2
Yes	WPNE-TV	D25	DT	CP	GREEN BAY, WI	BLANK0000031831	187.7
Yes	WPNE-TV	D25	DT	BL	GREEN BAY, WI	DTVBL18798	187.7
No	WTSJ-LP	D25	LD	APP	MILWAUKEE, WI	BLANK0000051670	256.6
No	WCMU-TV	D26	DT	LIC	MOUNT PLEASANT, MI	BLEDT20130710ABN	118.2
No	WBWM-LP	N32z	TX	LIC	MOUNT PLEASANT, MI	BLTTL20001220ABG	150.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D25
Mask: Full Service
Latitude: 44 45 37.00 N (NAD83)
Longitude: 85 40 58.00 W
Height AMSL: 419.7 m
HAAT: 184.6 m
Peak ERP: 15.0 kW
Antenna: Omnidirectional
Elev Pattn: Generic
Elec Tilt: 1.50

49.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	15.0 kW	181.8 m	50.1 km
45.0	15.0	236.3	53.2
90.0	15.0	233.7	53.0
135.0	15.0	178.2	49.9

WWTV(DT) – Post Transition Channel Displacement Relief

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180.0	15.0	148.1	47.9
225.0	15.0	154.2	48.3
270.0	15.0	148.0	47.9
315.0	15.0	196.8	50.9

Proposal 24.85 dBu contour does not cross Canadian border
Distance to Canadian border: 197.3 km

Distance to Mexican border: 2162.0 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 185.3 degrees Distance: 240.5 km

Proposal is not within the West Virginia quiet zone area

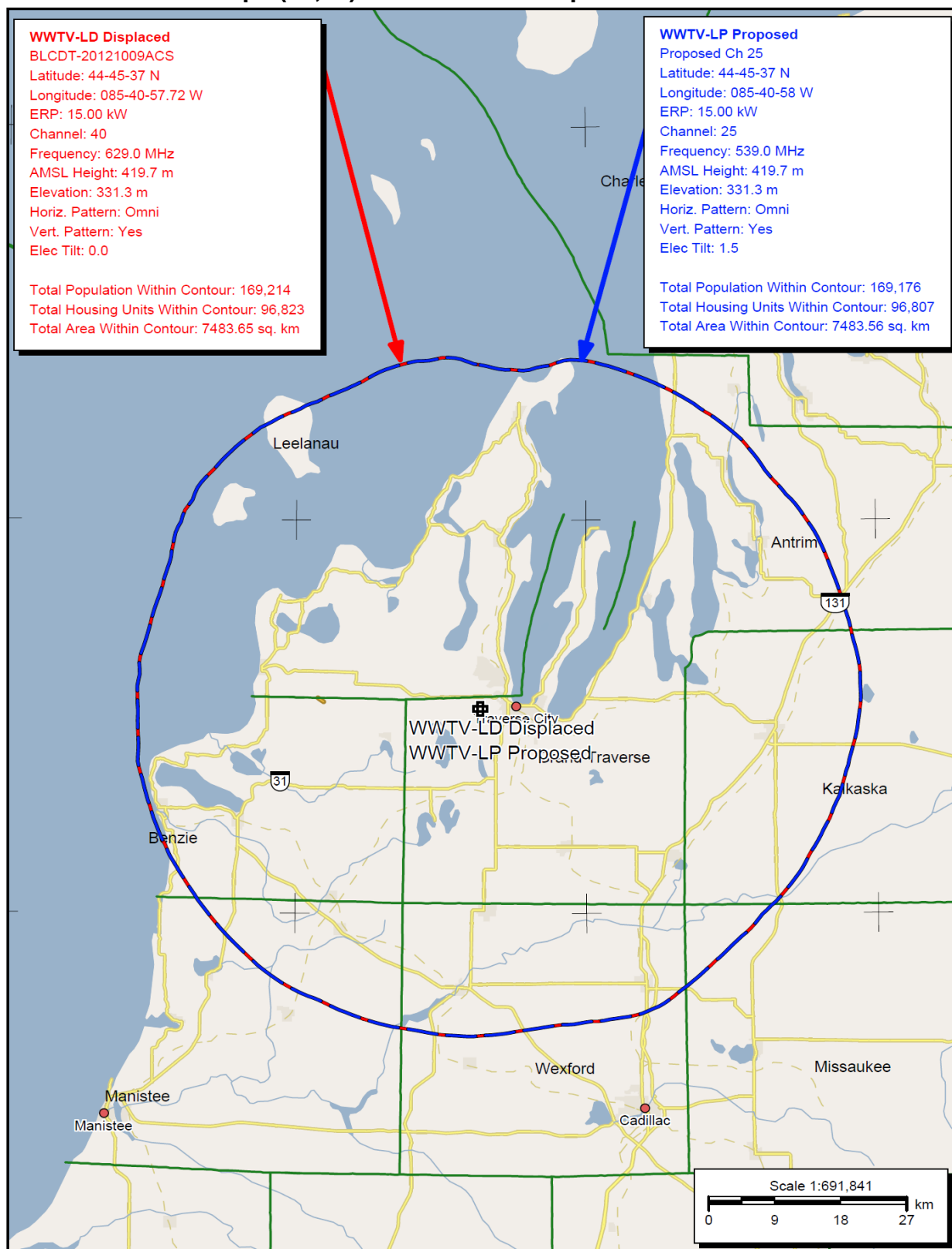
Conditions at Table Mountain receiving zone:
Bearing: 259.1 degrees Distance: 1677.6 km

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%

No IX check failures found.

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



APPENDIX D – Far Field Exposure to RF Emissions

