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*Consultants in Electronic Media Technology/Management*

**Technical Statement for  
GM La Crosse Licensing LLC  
DTV Maximization Construction Permit:**

**WLAX-DT  
Channel 17  
La Crosse, WI**

**Amendment to Application for Construction Permit  
in File No. BMPCDT-20080326AGW**

#### ***Introduction***

This Technical Statement provides the supplemental technical data and information required for an application on FCC Form 301 “Application for Construction Permit for Commercial Broadcast Station” by GM La Crosse Licensing LLC (“La Crosse”) for its digital television facilities at La Crosse, WI. La Crosse seeks to amend an existing construction permit application to maximize the post-transition facility of its digital television station, Station WLAX-DT, on Channel 17. WLAX-DT holds an authorized construction permit in File Number BMPCDT-20071228AAT and has an outstanding application on file to further modify its construction permit in File Number BMPCDT-20080326AGW. The current filing seeks to amend the latter application only to increase the power of the WLAX-DT facility currently under construction. The antenna radiation center will remain at the same height, and the azimuth and elevation patterns will be unchanged from the most recent application. This Technical Statement addresses the additional information required by Section III-D – DTV Engineering of the Form 301 application.

## ***Facility***

The only change proposed by the current application is an increase in power from 700 kW to 852 kW ERP. The facility will continue to include the currently applied-for top-mounted antenna on the tower proposed in the current application. The proposed height above ground level to the center of radiation of the antenna will remain 198.3 meters. This level corresponds to a height above average terrain of 297.3 meters. Full specifications for the amended proposed facility are provided below in Figure 1. Since the location of the antenna on the tower and the location of the tower itself at the Tschumper Ridge site are not proposed to be changed from those in the most recently filed application, no tower layout drawing or map of the site is included in this document. Similarly, since the antenna is not to be changed, the pattern plots and tabulated data also are not included herewith. Complete specifications of the antenna system and its mounting were provided within the exhibits that accompanied the original application for the currently-sought facilities in File Number BMPCDT-20080326AGW, and they remain unchanged. An update of the contour map required by §73.625(b) is provided in Figure 2.

The combination of height above average terrain (HAAT) and effective radiated power (ERP) now proposed for WLAX-DT does not exceed the maximum facilities permitted for UHF DTV operations under §73.622(f)(8)(i) of the Commission's rules and, thus, is permissible under the rules.

## ***Principal Community Coverage***

As required by Section 73.625(a)(1), the DTV transmitter location must be chosen so as to put a minimum F(50,90) field strength of 48 dBu over the entire principal community to be served. Section 73.625(a)(2) further requires that "the location of the antenna must be so chosen that there is not a major obstruction in the path over the principal community to be served." As demonstrated by the 48-dBu contour on the coverage map of Figure 2, the transmitter location chosen, combined with the other characteristics of the transmission system, does deliver the minimum required field strength over the entire

principal community to be served. Furthermore, a shadow study demonstrates that there is not a major obstruction in the path over La Crosse – the principal community.

### ***Interference to Other Stations***

Since the proposal is to increase the power of the station, new interference studies were conducted to determine that adequate protection would be provided to all stations within the distances prescribed by the FCC rules. A version of the Commission’s TV\_Process program designed to evaluate post-transition interference was used to perform those studies. A summary of the studies is shown in Table 1. In the table, the channel, call sign, city of license, and application record number of each station studied are given in the left four columns. These are followed by the DTV baseline or Class A service contour population in the fifth column, the total population predicted to be impacted by interference with WLAX-DT assumed to be operating with the parameters included in the Table of Allotments (Appendix B) in the sixth column, and the number of scenarios studied for each station in the seventh column. In the two columns on the right, the populations predicted to be impacted by additional interference with use of the proposed facilities are shown alongside the percent changes in population impacted from the Table of Allotment values. The dashes shown on two rows indicate instances in which the TV\_Process program reported that the “proposal causes no interference,” meaning that there were no cells in its initial culling study that indicated interference. Thus, in these cases, no further examination was required, and the number of scenarios studied was zero. When multiple scenarios existed and TV\_Process studied them, the worst-case population impact was selected for presentation in the table.

Table 1 summarizes six cases involving three stations implicated in the power increase of WLAX-DT and therefore requiring analysis. Two cases show that analysis beyond the initial culling study was unnecessary. Three of the cases requiring full study report minuscule levels of new predicted interference, while the fourth shows a slight reduction in predicted interference. Thus, there is no impermissible interference predicted for the proposed WLAX-DT facility with its effective radiated power increased to 852 kW.

**Table 1 – WLAX-DT Interference Studies to Neighboring Stations Using FCC TV\_Process Program**

Chnl	Station	City	ARN	DTV Baseline / Service Pop	Appendix B Interference Population	Scen- arios	CP Mod Interference Population	% Change
17	WYIN-DT	Gary, IN	BLEDT-20040206AAA	—	—	—	—	—
17	WYIN-D	Gary, IN	DTVPLN-DTVP0597	—	—	—	—	—
17	KQDS-DT	Duluth, MN	BPCDT-19991028ABI	294,799	448	1	635	0.0635
17	KQDS-DT	Duluth, MN	DTVPLN-DTVP0603	294,799	448	1	635	0.0635
18	KYIN-DT	Mason City, IA	BLEDT-20070924AFU	479,495	238	1	332	0.0196
18	KYIN-DT	Mason City, IA	DTVPLN-DTVP0637	463,308	158	1	127	-0.0067

## ***Consideration of Class A Stations***

The Commission's Rules specify protection to be afforded by full service DTV stations to analog and digital LPTV stations that have achieved Class A status.<sup>1</sup> For purposes of this application, the Commission's TV\_Process program was used to locate any Class A stations that might be impacted by the power increase of WLAX-DT. The TV\_Process program discovered in the CDBS database contour no overlaps to facilities of any Class A stations. The TV\_Process program also found no Class A stations to which to conduct further analysis using its terrain-based propagation model. Thus, there is no impermissible interference to Class A stations predicted for the proposed WLAX-DT facility with its effective radiated power increased to 852 kW.

## ***International Coordination***

The WLAX-DT transmitter site is within neither the Canadian nor the Mexican coordination zone. Thus, no coordination with either country is required for this application.

## ***Environmental Impact / Radio Frequency Radiation***

As explained in the application that this application seeks to amend, none of the conditions specified in §1.1307 that would require the preparation of an Environmental Assessment pertain with respect to the proposed facility at Tschumper Ridge. In particular, because the antenna will be mounted on a replacement tower at an existing site, the new operation does not implicate many of the causes for further investigation and preparation of further reports.

With respect to Radio Frequency Radiation (RFR), the Maximum Permissible Exposure (MPE) limits in §1.1310 for both General Population/Uncontrolled Exposure and Occupational/Controlled Exposure are computed not to be exceeded in the area surrounding the tower, as determined using methods of OET Bulletin Number 65 and Supplement A thereto (Edition 97-01). In fact, the maximum exposure in the area surrounding the tower is calculated to be less than 0.87 percent of the General

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<sup>1</sup> Section 73.623(c)(5), *Minimum technical criteria for modification of DTV allotments included in the initial DTV Table of Allotments and for applications filed pursuant to this section.*

Population/ Uncontrolled MPE and less than 0.18 percent of the Occupational/Controlled MPE.

Given that the predicted levels of RFR are below 5 percent of the MPE for the General Population/Uncontrolled Exposure situation, the proposed facility is categorically excluded from requirements for the making of measurements to confirm the radiation levels in the region around the tower and for the submission of a detailed RF exposure analysis of the site. Nevertheless, La Crosse recognizes its responsibility for the safety and health of employees and contractors when exposed to RF radiation conditions. It undertakes to assure protection to workers when they must enter into areas with high radiation levels, such as when necessary to work on antennas and towers. Steps to be taken will include measurements and monitoring as well as power reductions or turning off the transmitter if necessary to ensure a safe working environment.

### ***Notifications***

The site at Tschumper Ridge is not in proximity to any of the government radio astronomy installations named in Section 73.1030, nor is it proximate to any of the named radio receiving locations. The nearest FCC monitoring station, furthermore, is over 450 km distant. Thus, none of the notifications mandated or recommended by Section 73.1030 is required in this instance.

### ***Summary***

The increase in effective radiated power of the WLAX-DT facility to 852 kW has been shown to fall within the maximum value permitted by the Commission's rules and also has been shown not to produce impermissible interference to any other station.

Furthermore, the station is not in an international coordination zone. As a result, the WLAX-DT application to amend its construction permit to increase its ERP to 852 kW post transition should be immediately grantable.

**Figure 1 — Technical Specifications — Proposed WLAX-DT Facility  
Channel 17 — La Crosse, WI**

**Frequency**

Channel	17
Frequency Band	488 - 494 MHz
Center Frequency	491 MHz

**Location**

Site	Tschumper Ridge, La Crescent, MN
Geographic Coordinates (NAD27)	43° 48' 16.14" N 91° 22' 19.29" W
Tower Registration (FAA Study Number)	TBD (2008-AGL-2326-OE)

**Elevation**

Elevation of site above mean sea level	367.6 m
Overall height of tower above site elevation	206.0 m
Overall height of tower above mean sea level	573.6 m
Height of antenna radiation center above site elevation	198.3 m
Elevation of average terrain (45-degree spaced radials, 3.2-16.1 km)	268.6 m
Height of antenna radiation center above mean sea level	565.9 m
Height of antenna radiation center above average terrain (HAAT)	297.3 m

**Antenna**

Manufacturer	Dielectric
Model	TFU-22JTH-R T180
Description	Top-Mounted UHF Cavity
Orientation (rotation around vertical axis)	Peaks at 60, 180, & 300 degrees true
Electrical beam tilt	1.0°
Mechanical beam tilt	None
Polarization	Horizontal
Gain (in horizontal plane – 0° depression)	21.60 (13.34 dB)
Gain (peak of beam – 1.0° depression)	36.00 (15.56 dB)

**Power**

Effective radiated power (ERP) (main beam – 1.0° depression)	852 kW
Effective radiated power (ERP) (toward avg. radio horizon – 0.477° dn.)	740.0 kW
Effective radiated power (ERP) (horizontal plane)	511.2 kW

# Technical Statement – WLAX-DT Construction Permit

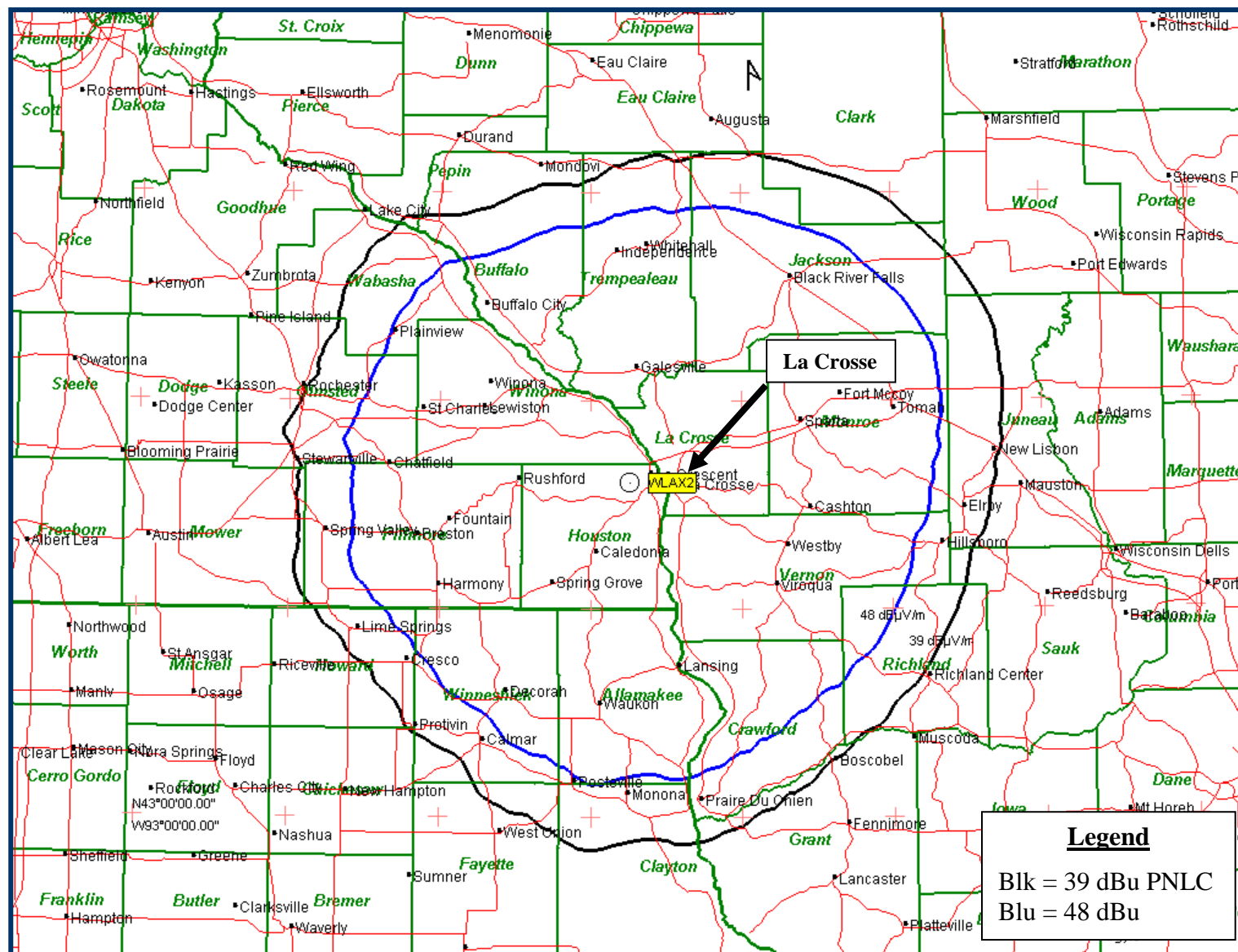


Figure 2 — 39 dBu Noise Limited and 48 dBu Principal Community Contours of Proposed WLAX-DT Facility