

TECHNICAL SUMMARY  
SPECIAL DISPLACEMENT WINDOW  
APPLICATION FOR CONSTRUCTION PERMIT  
LOW POWER DIGITAL STATION WUMN-LD  
MINNEAPOLIS, MINNESOTA  
CHANNEL 21 15 KW (DA)

1. Application Purpose: The instant application is a special displacement window application for WUMN-LD currently on channel 17 at Minneapolis, Minnesota (FCC File No. BLDL-20141217AAM).<sup>1</sup> As detailed below, WUMN-LD is eligible for displacement. Therefore, it is proposed to operate WUMN-LD on “in core” channel 21 with a maximum effective radiated power (ERP) of 15 kW using an ERI model ALP16L2-HSP-21 horizontally polarized directional antenna. The antenna radiation center height will be 442.4 m AMSL. There will be no change in the overall structure height (ASRN 1243823).

2. Eligibility to File in Special Displacement Window: Station WUMN-LD is eligible to file in the special displacement window as (1) it was operating with its currently licensed facilities (FCC File No. BLDL-20141217AAM) prior to April 13, 2017 – the release date of the *Closing and Channel Reassignment Public Notice*<sup>2</sup> and (2) is considered to be displaced due to impermissible interference caused to the authorized operation of full power station WEAU on repacked channel 21 at Eau Claire, Wisconsin (LMS File No. 0000034098). Specifically, as indicated by the attached *TVStudy* analysis, WUMN-LD’s licensed channel 17 operation is predicted to cause 1.97% new interference to WEAU (up to 0.5% new interference is permitted).

3. Interference Compliance: As indicated in the attached *TVStudy* analysis, WUMN-LD’s proposed channel 21 displacement operation meets the FCC’s interference protection requirements with respect to all protected facilities based on both the pre-transition and post-transition allocation environments. A cell size of 1.0 km and a profile resolution of 0.2 points/km were utilized for the *TVStudy* analysis.

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<sup>1</sup> See FCC Public Notice dated February 9, 2018 entitled “*Incentive Auction Task Force and Media Bureau Announce Post-Incentive Auction Special Displacement Window April 10, 2018 through May 15, 2018 and Make Location and Channel Data Available*” (DA 18-124, MB Docket No. 16-306, GN Docket No. 12-268) (“FCC Special Displacement Window PN”).

<sup>2</sup> See *Media Bureau Announces Date by Which LPTV and TV Translator Stations Must Be “Operating” In Order to Participate In Post-Incentive Auction Special Displacement Window, Public Notice*, 31 FCC Rcd 5383 (MB 2016).

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna will be located 184 meters above ground level. The total DTV ERP is 15 (horizontal polarization). A worst case vertical plane relative field value of 1.0 is presumed for the antenna's downward radiation (-60° to -90° elevation). The calculated power density at a point 2 meters above ground level is 15.1  $\mu\text{W}/\text{cm}^2$  which is 4.4% of the FCC's recommended limit of 343.3  $\mu\text{W}/\text{cm}^2$  for channel 21 for an uncontrolled environment. Thus, as this is less than the 5% threshold value, it is believed that the WUMN-LD facility is in full compliance with the FCC's requirements with regard to radio frequency radiation exposure.

Access to the transmitting site will be restricted and appropriately marked with RFR warning signs. Furthermore, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.