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**CONSIDERED OPINION REGARDING  
POTENTIAL POWER INCREASE FOR WOI-DT**

My name is Gregory L. Best and I am consulting engineer. I am a registered professional engineer licensed in Missouri, Colorado, Kansas, and Kentucky New Mexico. My education and experience background are a matter of record with the FCC.

I have undertaken to examine the potential benefits and consequences of increasing the ERP of WOI-DT to a significantly higher amount. There is no doubt that increasing the power will increase the existing signal-to-noise ratios present in the environment but the question is whether how much power would it take. For the purposes of discussion, an ERP of 45 kW was considered. This figure was determined by looking at the highest ERP in Zone 2 for HAAT's below 305 meters.

The factor that needs to be taken into account is the decrease in the signal-to-noise for VHF stations due to the presence of significant man-made noise. This factor was discussed at the FCC Broadcast Engineering Forum section on VHF reception. The simplified conclusion from noted experts in the broadcast industry regarding VHF power levels, is that VHF ERP values need to be upgraded roughly 10 dB to overcome the man-made noise that has increased since the inception of NTSC and has continued increase since the transition to ATSC reception. More and more Part 15 devices are inhabiting households creating impairments to DTV reception due to their increased noise spectrum. Portable laptops, tablets, and other such devices can be located all through the households contributing to the existing noise levels.

Increasing ERP is also a concern for potential interference to other broadcasters and service providers. The attached map shows the solid circle contour of the WOI-DT transmission facility at 45 kW and the dashed contour shows the existing contour at the existing ERP of 13.9 kW. The WOI contour extends further into adjacent DMA's (Cedar Rapids) and overlaps the protected contour of WHBF. It is expected that many LPTV will migrate their operations to low band VHF channels so a power increase may prevent locating displaced LPTV and translators as well.

Based upon the information above and reviewing the documentation provided by WOI-DT regarding its constituents' inability to receive its signal, it is doubtful that the proposed increase in ERP for WOI-DT will provide sufficient signal strength or sufficient signal-to-noise ratios to overcome the reception problems.

Sincerely,



President  
Attachments

### WOI-DT CONTOUR AT 45 KW ERP

Greg Best Consulting, Inc.

**WOI-DT**  
BLCDT-20100702AOM  
Latitude: 41-49-33 N  
Longitude: 093-36-54 W  
ERP: 45.00 kW  
Channel: 5  
Frequency: 79.0 MHz  
AMSL Height: 857.2 m  
Elevation: 301.2 m  
HAAT: 566.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: Yes  
Elec Tilt: 1.0  
Prop Model: Longley-Rice  
Climate: Cont temperate  
Conductivity: 0.0050  
Dielec Const: 15.0  
Refractivity: 301.0  
Receiver Ht AG: 10.0 m  
Receiver Gain: 0 dB  
Time Variability: 10.0%  
Sit. Variability: 50.0%  
ITM Mode: Broadcast

