

W250CV CP-Mod Engineering Statement

Background Information:

The applicant was unable to agree on terms for a final agreement with the previous tower owner and was then granted a modification resulting in the current authorization for a different tower than for the initial CP. The parties agreed on terms for the second tower but the subsequent structural analysis determined that tower had already surpassed its capacity. The applicant now has an agreement on terms with the owner of a different nearby tower, although it is much shorter than those for the previous authorizations. Windloading is known to be acceptable for this instant proposal.

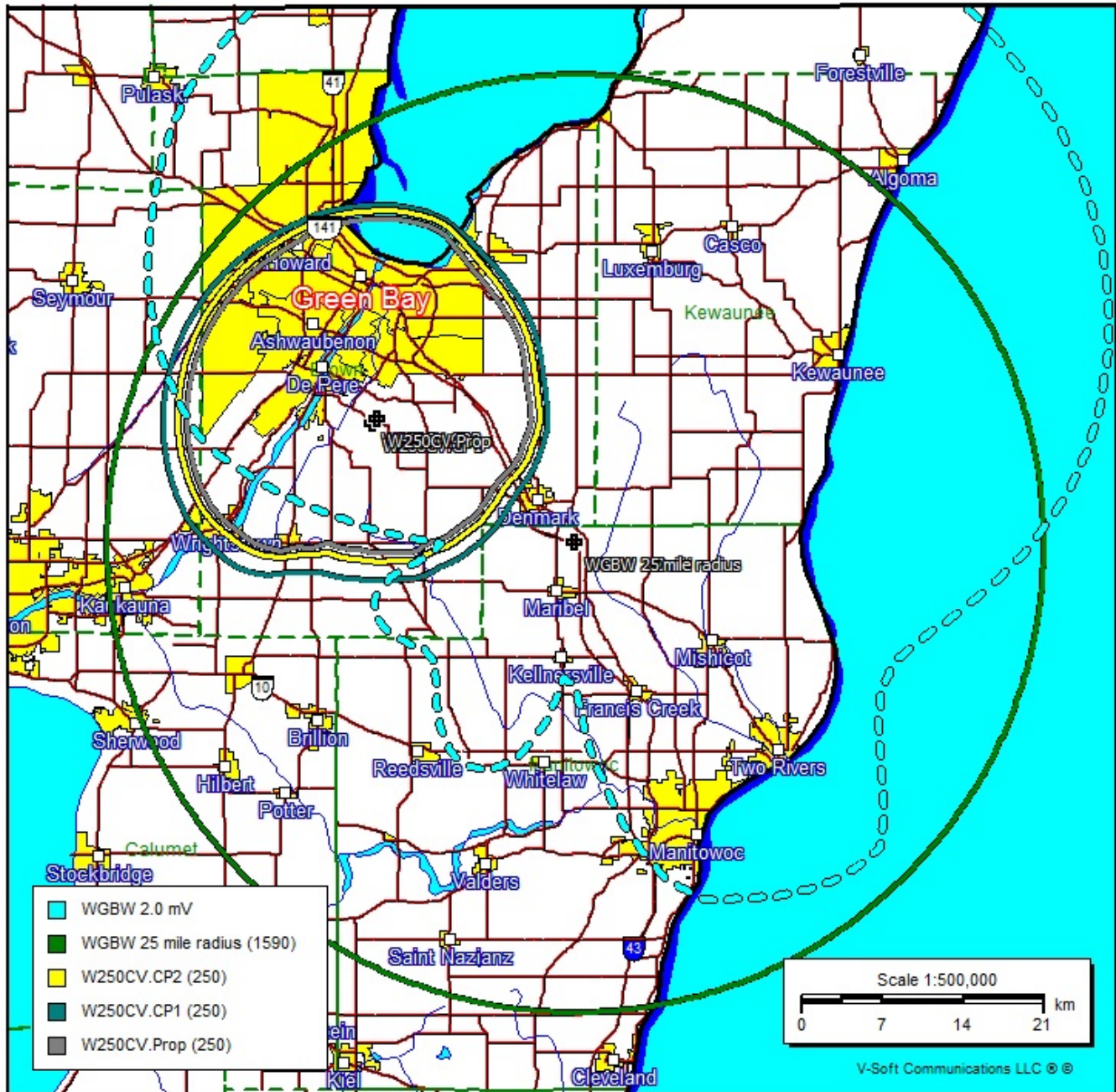


Figure 1

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Minor Change for AM Primary Station as a Fill-In Commercial FM Translator:

This is a minor-change CP-Mod request in compliance with §74.1233. There is significant contour overlap between the current and prior CP authorizations and this instant proposal, as observed in **Figure 1**. This clearly demonstrates that the sequential CP-Mods are not an attempt to walk the proposed facility to another community. It also shows compliance with §74.1201(g) for WGBW as the AM Primary Station for a Fill-In Commercial FM Translator.

Potential Intermodulation Products:

The facility is proposed to be in an antenna farm area where multiple broadcast facilities are on closely located towers. Applicant proposes to install additional band-pass filtering for its transmitter output to prevent prohibited intermodulation products due to the proximity to other nearby FM authorizations.

OET-65:

The OET-65 uncontrolled area, determined by formula $RAD = (33.4 * KWERP) / (DIST^2)$, is located within a 9.1-meter radius of the transit antenna radiation center (RC). The controlled area is within a 4.1-meter radius of the RC. Due to the significantly higher RC AGL, these areas of concern are far above and away from public locations.

A locked fence prevents unauthorized personnel from accessing the affected areas on the tower near the antenna. Radiation warning signs are properly displayed and the licensee shall cooperate with others by reducing power or terminating broadcasts during times when they are within the areas of concern.

Protected Zones Report:

Protected zones report for W250CV.Pr on channel 250D 10-29-2020

Lat. 44 24 32.0 Lng. 88 00 03.0, ERP= 0.25 kw, HAAT= 126.98 m

Facility is okay with respect to Canada. Distance = 352.9 km.

Facility is okay with respect to AM station towers.

Closest AM Facility is WTAQ, GREEN BAY, WI, L, DA2 at 291.0° at a distance of 6.8 km

Facility is okay with respect to FCC monitoring stations.

Closest FCC Monitoring Station is 259.8 km= Allegan, MI

Facility is okay toward West Virginia Quiet Zone. Distance to center = 977.0 km

Facility is okay toward Table Mountain. Distance to Center = 1499.3 km, Azimuth = 257.4 Degrees True

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FM Channel Study

Ethoplex tower
Wtrw, Inc.

REFERENCE 44 24 32.00 N. 88 00 03.00 W.		CH#	250D		- 97.9 MHz, Pwr= 0.25 kW, HAAT= 127.0 M, COR= 351.9 M	DISPLAY DATES DATA 10-27-20 SEARCH 10-29-20					
		Average Protected F(50-50)= 14.46 km Omni-directional									
CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
250D Green Bay	W250CV	CP WI	---	331.3 151.3	0.10 0000121650	44 24 35.00 88 00 05.30	0.250	365	---Reference---		
250C1 Stevens Point	WSPT	LIC WI	---	277.0 95.9	127.68 BLH19961015KB	44 32 16.80 89 35 43.40	100.000 103	145.3 436	49.6 Muzzy Broadcast Group, LLC	-33.9*<	25.4
253C1 Green Bay	WQLH	LIC WI	---	337.7 157.6	28.35 BMLH19910422KJ	44 38 40.90 88 08 13.30	100.000 152	7.4 367	60.2 Cumulus Licensing LLC	4.1 -32.9*<	
248A Glenmore	WTAQ-FM	LIC WI	---	226.8 46.8	0.49 BLH20100209AAC	44 24 21.00 88 00 19.40	3.000 143	2.6 371	28.6 Midwest Communications, Inc	-17.1*<	-29.2*<
251A Cleveland	WLKN	LIC WI	N---	158.2 338.4	50.80 BLH19991025AET	43 59 03.00 87 45 55.30	5.800 89	35.4 310	23.4 Seehafer Broadcasting Corp	4.1 11.1	
249A Sturgeon Bay	WQDC	LIC WI	N---	42.0 222.4	74.33 BLH19960422KC	44 54 13.90 87 22 13.30	1.850 182	41.0 378	27.2 Case Communications LLC	18.6 25.0	
249C3 Lomira	WFDL-FM	LIC WI	Z---	202.9 22.6	90.98 BLH20020422AAE	43 39 14.00 88 26 25.40	17.500 122	60.5 421	40.2 Radio Plus, Inc.	19.3 34.8	
247D New London	W247AS	LIC WI	---	271.1 90.6	63.33 BLFT20070402JTS	44 25 01.90 88 47 45.40	0.010 145	0.2 391	7.2 Educational Media Foundati	46.8 55.0	
252D Oshkosh	W252DR	LIC WI	---	229.9 49.5	65.59 BLFT20170605AAE	44 01 39.90 88 37 39.40	0.250	1.1 294	10.0 Hometown Broadcasting, LLC	49.3 54.5	

Terrain database is USGS 03 SEC ; R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference zone= East Zone, Co to 3rd adjacent.
 All separation margins (if shown) include rounding.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
 < = Contour Overlap

Figure 2

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FM Channel Interference Study:

The FM Channel Study is illustrated in **Figure 2**. Two authorizations (WQLH and WTAQ-FM) are Potentially Affected Stations; they are addressed in following paragraphs to show that no actual interference will occur using the proposed TFC2K2-75WS antenna.

WQLH Interference

The site for the proposed facility is located within the protected contour on a channel which is second-adjacent to WQLH (the “Affected Station”). We predict the affected station protected contour at the proposed site will be 76.4 dBu F[50,50]. According to established third-adjacent channel contour Undesired-to-Desired (U/D) protection ratios, the contour from the interfering station should be 40 dB higher than the protected contour. Therefore the respective interfering contour for this proposed amendment is 116.4 dBu F[50,10].

Protection to WQLH from Interference

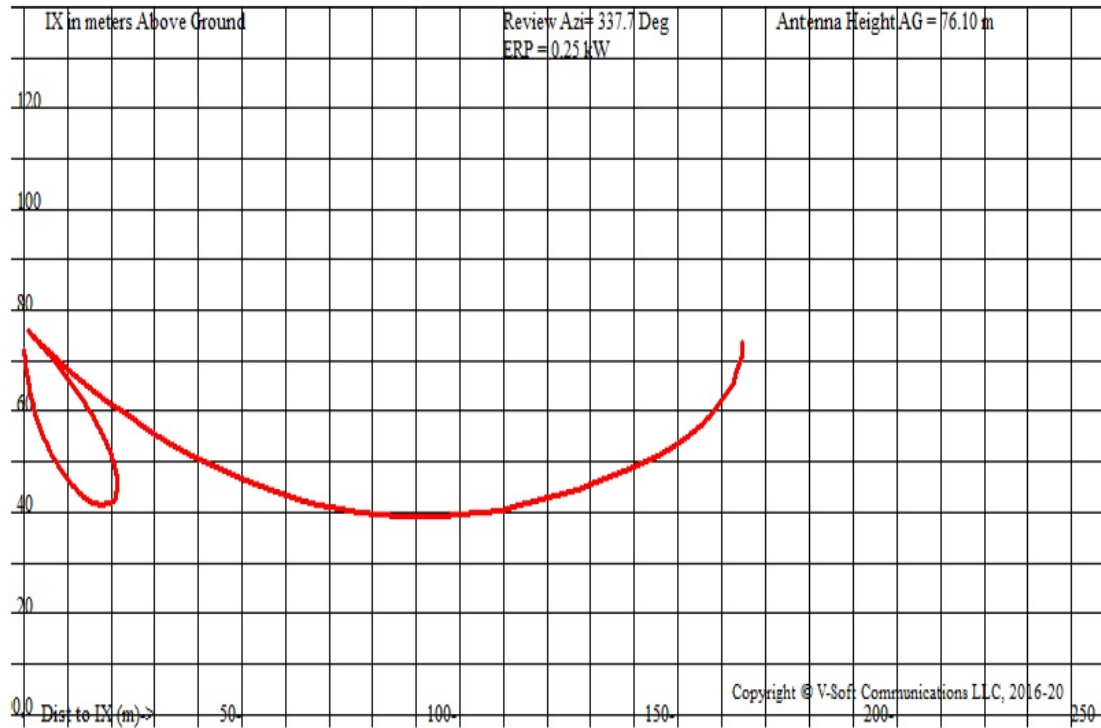
The predicted interfering contour at maximum radiation is 168.1 meters (the Affected Area). The proposed radiation center is 76.1m AGL. **Figure 3** displays the actual 116.2dBu interference radiating downward no more than 38 meters AGL, far above locations inhabitable by the public. Therefore, all structures and public locations within the Affected Area are well below the actual interference area.

WTAQ-FM Interference

The site for the proposed facility is located within the protected contour on a channel which is second-adjacent to WTAQ-FM (the “Affected Station”). We predict the affected station protected contour at the proposed site will be 117.8 dBu F[50,50]. According to established third-adjacent channel contour Undesired-to-Desired (U/D) protection ratios, the contour from the interfering station should be 40 dB higher than the protected contour. Therefore the respective interfering contour for this proposed amendment is 157.8 dBu F[50,10].

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XField (C) 2016-20, V-Soft Communications LLC



W250CV.Prop , , Showing Protection to WQLH , Channel: 253
 Geographic Coordinates: N. 442432.00 W. 880003.00
 74.1204(d) Study - Using USGS 03 SEC Terrain Database
 Translator or LPFM Maximum Antenna ERP = 0.25 kW, Channel: 250
 Translator or LPFM Antenna Height AG = 76.10 meters
 W250CV.Prop Antenna Azimuth Model = Reference Station Antenna (NAD 83), Vertical Model = TFC2K2-75WS

Protected Station's Contour = 76.38749 dBu
 Translator's or LPFM's full Interference contour 116.38749

Review Azimuth = 337.7 Degrees True
 Relative Field on the horizontal at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW
 Distance between stations = 28.4 km
 Protected Station= WQLH, 100 kW, 367 M meters COR AMSL

Depression Angle From Horiz. (Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle (m)	Dist to IX Contour From Tower Base (m)	Height IX Above Ground (m)
00.0	1.0	1.0	0.2500	168.1108	168.1108	076.100
05.0	0.978	1.0	0.2389	164.3283	163.7030	061.778
10.0	0.891	1.0	0.1985	149.7867	147.5111	050.090
15.0	0.768	1.0	0.1473	129.0250	124.6286	042.706
20.0	0.646	1.0	0.1043	108.5996	102.0502	038.957
25.0	0.517	1.0	0.0667	86.8292	78.6940	039.404
30.0	0.372	1.0	0.0346	62.5372	54.1588	044.831
35.0	0.210	1.0	0.0110	35.2192	28.8499	055.899
40.0	0.050	1.0	0.0006	08.4055	06.4390	070.697
45.0	0.084	1.0	0.0017	014.0372	009.9258	066.174
50.0	0.178	1.0	0.0079	029.9237	019.2346	053.177
55.0	0.227	1.0	0.0128	038.0771	021.8401	044.909
60.0	0.240	1.0	0.0144	040.3466	020.1733	041.159
65.0	0.228	1.0	0.0130	038.3293	016.1986	041.362
70.0	0.200	1.0	0.0100	033.6222	011.4995	044.506
75.0	0.160	1.0	0.0064	026.8137	006.9399	050.200
80.0	0.114	1.0	0.0032	019.1646	003.3279	057.227
85.0	0.064	1.0	0.0010	010.6750	000.9304	065.466
90.0	0.028	1.0	0.0002	004.7071	000.0000	071.393

Figure 3

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Protection to WTAQ-FM from Interference

Due to the close proximity of the WTAQ-FM, the predicted interfering contour at maximum radiation is less than one meter (the Affected Area). The proposed radiation center is 76.1m AGL. Therefore, all structures and public locations within the Affected Area are well below the actual interference area.

Request for Waiver

Since this proposal complies with 47CFR74.1204(d) based upon the fact that no actual interference will occur due to no population and no public locations within the Affected Area, we hereby request waiver of 47CFR74.1204(a)(3) for separation between this proposed facility and the Potentially Affected Stations.
