

Exhibit 13-3
Waiver Request for 2nd adjacent Spacing

(Grand Rapids, MN Proposal, channel 258, 99.5 MHz)

8/15/2013

Refuge Media Group respectfully requests waiver of 47 C.F.R. § 74.1204(b)

This application is 2nd adjacent to Station WUSZ. The distance from this proposal's location to WUSZ's transmitting facility is *less* than what is required pursuant to § 74.1204(b). However, pursuant to the *lack of population* criteria set forth in § 74.1204(d), a waiver of § 74.1204(b) can be granted. As shown below, the predicted interference signal reaches a population of zero as the interfering signal does not reach the ground.

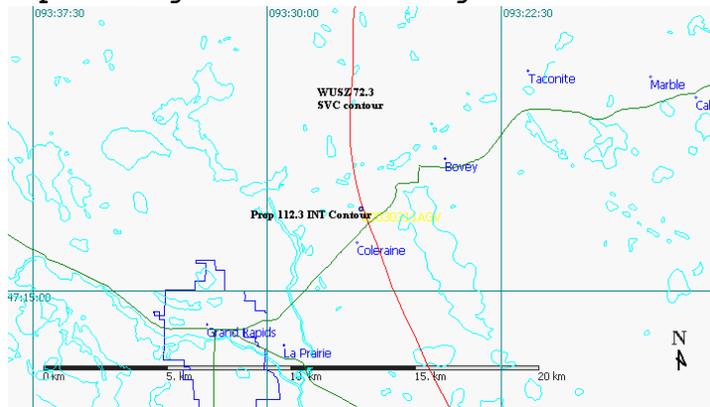
WUSZ Ch 260C1 (99.9 MHz)
47° 22' 24" NL, 93° 0' 48" WL
RCAMSL: 596 m
RCAGL: 148 meters
Bearing toward Proposal: 253° True
ERP: 100.0 kW
HAAT @ 253° True: 171.2 meters
Distance to Proposed site: 34.5 km
Signal @ 34.5 km in 253° radial: 72.3 dBu F(50,50)

Translator Proposal: Ch 258FX (99.5 MHz)
47° 16' 48" NL, 93° 26' 59" WL
RCAMSL: 505 meters
RCAGL: 45 meters
Bearing to WUSZ: 73° True
MERP: 0.019 kW
HAAT: (avg of 12 radials:) 101.8 m
Interference Signal: 112.3 dBu F(50,10)¹
Distance to Interference signal: 74 meters

Terrain Source: FCC 30-sec DEM (NGDC)

Interference Reaches Zero Population:

Map Showing WUSZ 72.3 dBu Signal at Site



Terrain Source: FCC 30-sec DEM (NGDC)

Based on the above data, the predicted interference *does* reach the ground. However, the field strength of the proposed translator's antenna *varies* with angle of depression from horizontal. The antenna relative fields are tabulated in the next page of this exhibit². As shown in the table below, the interference contour **stays above** the ground. Therefore granting this proposal will not cause predicted interference with anyone trying to receive station WUSZ.³

¹Based on the ratios set forth in § 74.1204(a) for stations separated by 2 or 3 channels, the interference signal of this proposed 2nd adjacent translator must be 40 dB (100:1 ratio) higher before *predicted* interference to WUSZ will occur. (72.3 + 40 = 112.3)

² See Exhibit 13-4 Proposed Antenna Vertical Pattern

³ Even though the predicted interference remains above ground, reaching zero population; in the event actual interference should occur to *any* station, Refuge Media Group recognizes it must comply with provisions of 47 C.F.R. § 74.1203 concerning such interference.

Ground Clearance Tabulations

Proposed Antenna Manufacturer: Nicom

Max ERP: 0.019 kW

Proposed Antenna Model: BKG77 (Single Element)

RCAGL: 45 meters

Interfering contour: F(50,10) 112.3 dBu

Depression Angle (from COR) θ	Antenna Relative Field	ERP (watts)	Dist to F(50,10) Interfering Contour from antenna (m) D	Horizontal Dist of F(50,10) Interfering from Tower (m) $h = D(\cos \theta)$	Vertical Clearance of F(50,10) Interfering Contour above ground (m) $v = RCAGL - D(\sin \theta)$
5	.999	19.0	74	73.7	38.5
10	.982	18.3	72	70.9	32.5
30	.818	12.7	61	52.8	14.5
40	.691	9.1	51	39.1	12.2
43	.646	7.9	48	35.1	12.3
44	.631	7.6	47	33.8	12.4
45	.616	7.2	46	32.5	12.5
46 ⁴	.600	6.8	44	30.6	13.3

Distance to interference signal closest to ground level:

12.2 meters

⁴ At angles of 46° to 90°, distance to interference contour is less than RCAGL (45 m.)