

Purpose of Application

This minor modification of Construction Permit Number 0000120351 is to specify the geographic coordinates to be that of WDOE(AM). The W268CX proposed transmit antenna will be mounted on the WDOE(AM) tower.

Channel Study

REFERENCE CH# 268D - 101.5 MHz, Pwr= 0.25 kW DA, HAAT= 4.1 M, COR= 246.7 M DISPLAY DATES
 42 27 49.2 N. Average Protected F(50-50)= 7.1 km DATA 10-02-20
 79 21 20.2 W. Standard Directional SEARCH 10-05-20

CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr (kW) HAAT (M)	INT (km) COR (M)	PRO (km) LICENSEE	*IN* (Overlap in km)	*OUT*
268D Dunkirk	W268CX!	CP	DH NY	288.1 108.1	0.07 0000120351	42 27 49.90 79 21 23.10	0.250	246	---	Reference---	
266B Fort Erie	AL9012	VAC	ON	33.9 214.1	58.23	42 53 52.21 78 57 26.13	50.000 150	6.1 327	65.0	42.0	-11.1*
265A Westfield	AU9814370	VAC	NY	232.4 52.2	27.17 RM11647	42 18 51.21 79 37 03.16	6.000 100	3.5 382	37.5	18.0	-10.6*
266B Fort Erie	95549	LIC D	ON	34.1 214.3	58.66	42 54 00.20 78 57 08.10	50.000 77	4.5 257	54.3	43.9	4.7
270A Jamestown	WHUG	LIC	NY	163.2 343.2	38.58 BLH19970613KD	42 07 53.20 79 13 12.10	6.000 100	2.9 561	31.9	31.8	5.0
268A Olean	WMXO	LIC	NY	116.3 297.0	88.86 BMLH20051104AAT	42 06 18.20 78 23 24.10	4.000 123	77.4 650	24.0	5.4	45.4
268A Hamilton	R29199	ADD	ON	333.4 153.1	96.20	43 14 12.19 79 53 12.29	6.000 100	80.1 274	38.0	10.3	51.1
268D Corry	W268CJ	LIC D	PA	208.8 28.6	58.88 BLFT20180823AAS	41 59 57.10 79 41 58.10	0.250	40.3 596	11.5	13.9	38.5
267D Jamestown	W267CN	LIC	NY	172.6 352.6	42.44 BLFT20180604AAO	42 05 06.20 79 17 21.20	0.060	18.2 637	11.5	21.1	28.6
269A Elma	WLOF	LIC	NY	63.9 244.5	81.59 BLH20110107AAW	42 46 58.20 78 27 27.10	2.800 148	46.6 510	30.7	25.1	36.8
269L1 Kane	WXZY-LP	CP	PA	153.1 333.5	100.03 0000108342	41 39 35.00 78 48 41.00	10.000 90	664		36.9	58.9
215B Jamestown	WCOT	LIC	NY	154.2 334.4	57.00 BLED20010529ABF	42 00 06.20 79 03 18.10	12.000 199	30.5 705	20.7	14.5R	42.5M
268A Guelph	R12413	VAC	ON	329.7 149.1	138.46	43 32 07.17 80 13 24.35	6.000 100	89.1 437	38.0	43.9	93.4
271C1 Brampton	CFNYFM	LIC D	ON	359.2 179.2	131.53	43 38 52.20 79 22 42.20	61.000 291	9.2 392	83.0	114.2	45.2
268A Guelph	R12507	VAC	ON	329.1 148.4	142.49	43 33 34.16 80 15 53.36	6.000 100	89.6 444	38.0	47.5	97.4
268AA Orangeville	R14955	VAC	ON	339.5 159.0	176.55	43 56 59.15 80 07 36.37	6.000 100	122.1 815	38.0	47.9	131.5

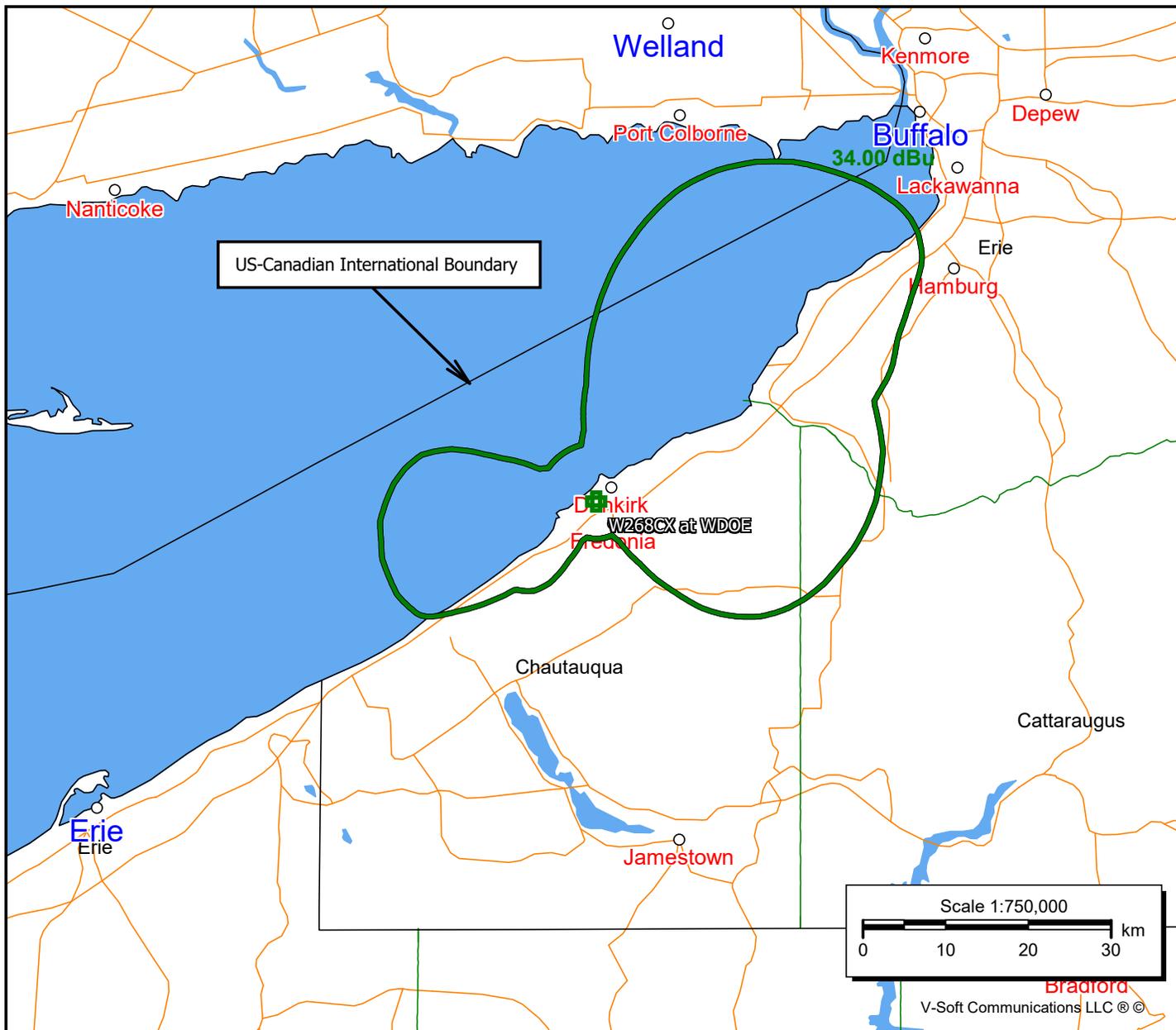
Terrain database is FCC NGDC 30 Sec, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
 In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.
 All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.
 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.
 < = Station meets FCC minimum distance spacing for its class.
 Reference station has protected zone issue: Canada- AM tower

Compliance with International Requirements

The proposed FM translator is located approximately 20km from the Canadian border. Exhibit 2-A shows the proposed 34dBu interfering contour extending beyond the Canadian border but at no point extends over Canadian Soil. Therefore, no interference will occur to any existing or proposed Canadian facilities.

Exhibit 2-A
W268CX Proposed 34dbu(F50-10) Contour

W268CX at WDOE
BNPFT20171212ABK
Latitude: 42-27-49.2 N
Longitude: 079-21-20.2 W
ERP: 0.25 kW
Channel: 268
Frequency: 101.5 MHz
AMSL Height: 246.0 m
Elevation: 190.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None



Multiple Translator Overlap

WDOE(AM) is the primary station for this proposed modification to W68CX as well as the primary station for W235BP. The proposed 60dbu service contour of W268CX overlaps the 60dbu service contour of W235BP by 28% which is less than the prohibited 50% area. The overlap area is seen in Exhibit 3-A. Only the area over land has been taken into consideration.

The overlap study is seen below:

W268CX Proposed Contour Total Area: 92.1 sq. km
W268CX Proposed 60dbu Area Over Water: 32.1sq.km
W268CX Proposed 60dbu Area Over Land: 60 sq.km

W235BP Overlap Area #1
Polygon Population Report
Population Database: 2010 US Census (PL)
Total Area: 14.5 sq. km

W235BP Overlap Area #2
Polygon Population Report
Population Database: 2010 US Census (PL)
Total Area: 2.3 sq. km

Total Overlap Area: $14.5 + 2.3 = 16.8$

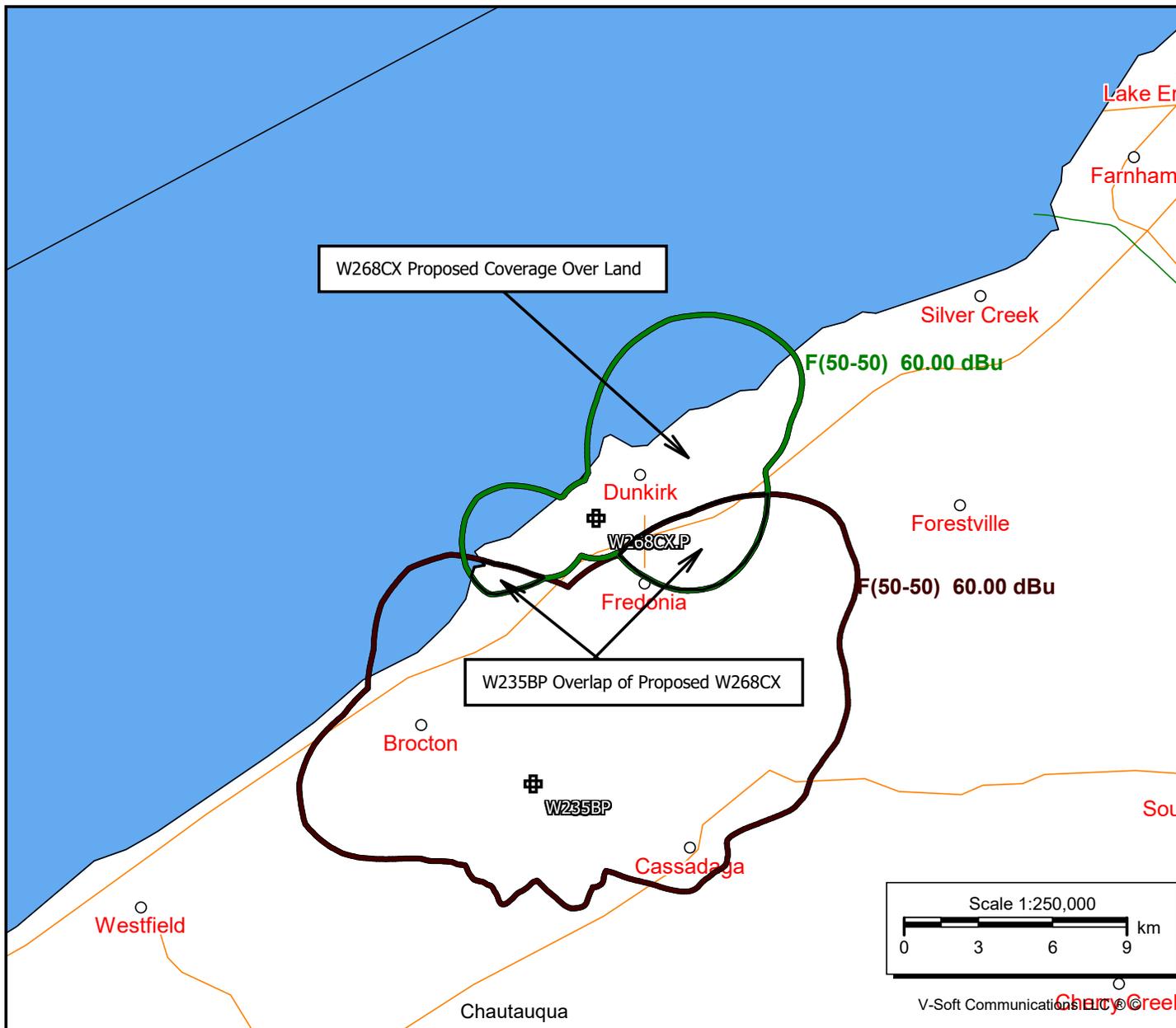
$16.8/60.0 = 28\%$ overlap when considering land coverage areas.

Exhibit 3-A Overlap Area of W235BP and W268CX

- W268CX.P (268)
- W235BP (235)

W268CX.P
 0000120351
 Latitude: 42-27-49.20 N
 Longitude: 079-21-20.20 W
 ERP: 0.25 kW
 Channel: 268
 Frequency: 101.5 MHz
 AMSL Height: 246.0 m
 Elevation: 190.0 m
 Horiz. Pattern: Directional
 Vert. Pattern: No
 Prop Model: None

W235BP
 BLFT20140730AAU
 Latitude: 42-22-02.20 N
 Longitude: 079-23-11.20 W
 ERP: 0.20 kW
 Channel: 235
 Frequency: 94.9 MHz
 AMSL Height: 543.0 m
 Elevation: 455.0 m
 Horiz. Pattern: Directional
 Vert. Pattern: No
 Prop Model: None



Human exposure to excess levels of radiofrequency radiation

The proposed facility is to be built using a 1-bay circularly polarized full-wave spaced antenna.

According to OET 65, “Applicants and licensees should be able to calculate, based on considerations of frequency, power and antenna characteristics the distance from their transmitter where their signal produces an RF field equal to, or greater than, the 5% threshold limit. The applicant or licensee then shares responsibility for compliance in any accessible area or areas within this 5% “contour” where the appropriate limits are found to be exceeded.”

As can be seen in Exhibit 4-A, the proposed facility’s maximum contribution to RF on the site is $0.788\mu\text{W}/\text{cm}^2$ at a distance of 50 meters from the tower, which is less than 1% of the uncontrolled (public) exposure limit.

Therefore, because the proposed facility will not cause an RF field that is equal to or greater than 5% of the $200\ \mu\text{W}/\text{cm}^2$ limit for uncontrolled exposure at any point, the proposed facility complies with the requirements of OET 65.

Chadwick Bay Broadcasting will fully cooperate with other site users to temporarily reduce power or cease broadcasting, as necessary, to protect workers and others having access to the site from excessive levels of RF Radiation.

Specific Antenna RF Power Density Calculator

Based on Equation 10 of OET-65
Exhibit 4-A / Detailed Report

ERP	0.25 kW	% of OET-65
Height above ground	56.0 meters	0.4% Uncontrolled
Height above head	2.0 meters	0.1% Controlled
Antenna Brand	Scala	
Antenna Model	CA2-CP	

Horizontal distance from tower (meters)	Angle (°)	Distance (m)	Field	Power (W)	Power Density (uW/cm2)
0	90	54.0	0.03	7.5	0.003
10	80	54.9	0.045	11.25	0.006
20	70	57.6	0.187	46.75	0.088
30	61	61.8	0.388	97	0.329
40	53	67.2	0.57	142.5	0.601
50	47	73.6	0.715	178.75	0.788
60	42	80.7	0.715	178.75	0.655
70	38	88.4	0.829	207.25	0.734
80	34	96.5	0.829	207.25	0.616
90	31	105.0	0.829	207.25	0.521
100	28	113.6	0.92	230	0.547

