July 2019
FM Translator W292FZ
Gardiner, Maine Channel 292D
Allocation Study

Allocation Study

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. The attached allocation study maps demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

The spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

WBCI 290B Bath

The proposed translator transmitter site is located within the 54 dBu protected contour of second-adjacent channel station WBCI 290B Bath. The following calculation, performed using the *Living Way* methodology, demonstrates interference protection to that station.

Protected Station	Distance & Bearing to Proposal	Station ERP and HAAT on that azimuth	Station Field Strength at Proposal	Corresponding Translator Interfering Contour	Distance to Translator Interfering Contour
WBCI 290B	11.68 km 324 deg True	50 kW 113 meters	85.8 dBu F(50,50)	125.8 dBu	47.6 meters Free Space

The 125.8 dBu contour from the proposed facility extends just 47.6 meters from the antenna and does not reach ground level, which is located 152 meters below the antenna. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to WBCI.

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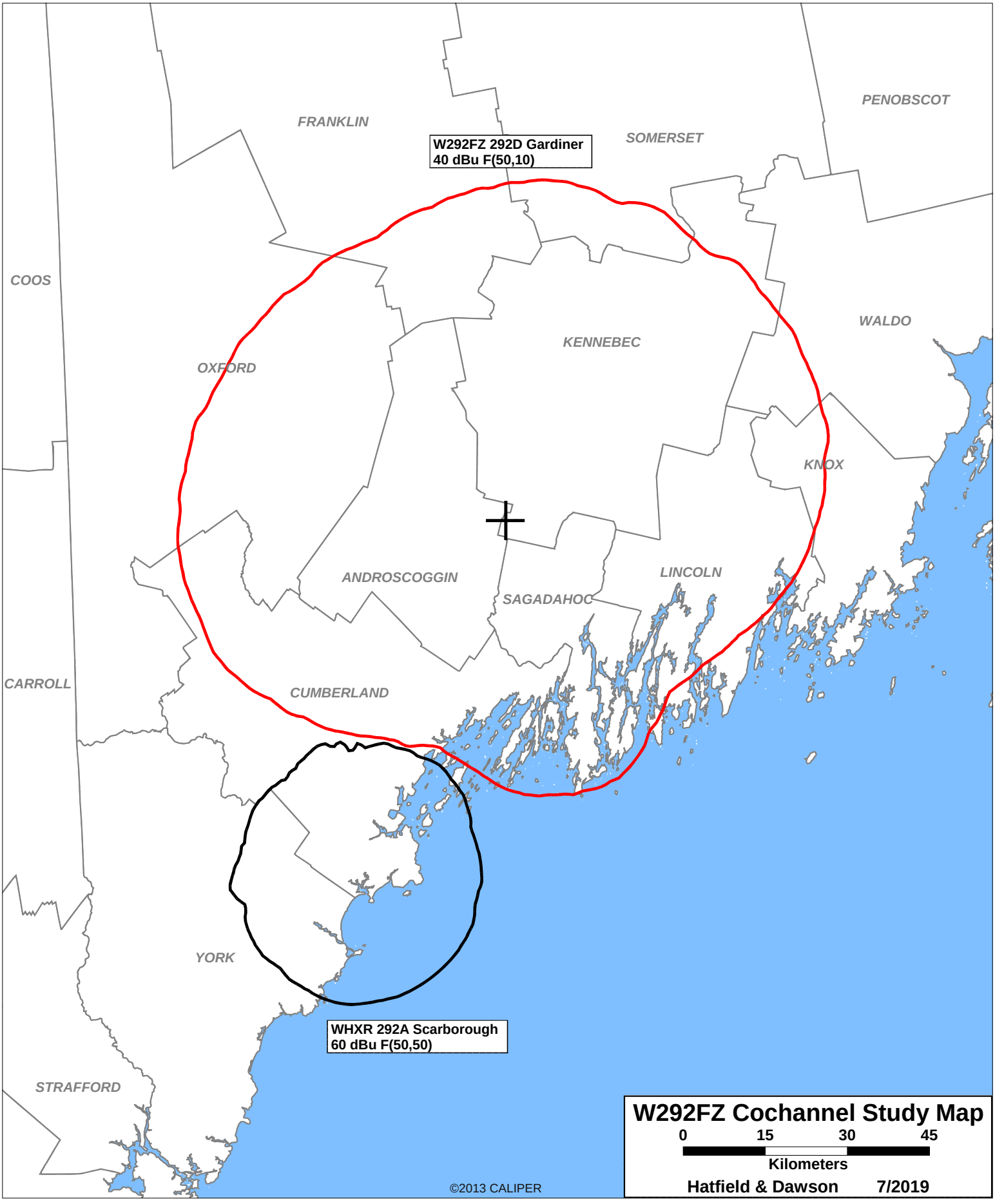
SEARCH PARAMETERS FM Database Date: 190716

Channel: 292A 106.3 MHz
Latitude: 44 9 15
Longitude: 70 0 37
Safety Zone: 50 km
Job Title: W292FZ AT OAK HILL

Call	City	Channel	ERP(kW)		Latitude	Bearing	Dist	Req
Status	St FCC File No.	Freq.	HAAT(m)		Longitude	deg-True	(km)	(km)
WPPI	TOPSHAM	238A	3.000		43-54-12	184.4	27.95	10
LIC	ME BLH-930525KC	95.5	139.0		070-02-13		17.95	CLEAR
WBCI	BATH	290B	50.000		44-04-09	144.0	11.68	69
LIC	ME BLH-7422	105.9	152.0		069-55-28		-57.32	SHORT
W294AZ	BERLIN	291D	0.175		44-28-58	291.9	100.00	0
LIC	NH BLFT-71030ACG	106.1	371.0		071-10-38		0.00	TRANS
W292FZ	GARDINER	292D	0.150		44-14-56	56.0	18.90	0
CP	ME BNPFT-80507AAZ	106.3	88.0		069-48-50		0.00	TRANS
WHXR	SCARBOROUGH	292A	3.000		43-35-22	204.9	69.17	115
LIC	ME BMLH-51229ACB	106.3	91.0		070-22-21		-45.83	SHORT
WMTK	LITTLETON	292A	0.390		44-21-14	279.8	139.89	115
LIC	NH BLH-910927KC	106.3	383.0		071-44-23		24.89	CLEAR
WMTK-FM1	ST. JOHNSBURY	292D	0.099		44-25-02	281.2	160.93	0
CP	VT BNPFTB-70523AAT	106.3	0.0		071-59-34		0.00	BOOST
WQCB	BREWER	293C	100.000		45-03-26	32.6	119.59	165
LIC	ME BMLH-860730MN	106.5	329.0		069-11-27		-45.41	SHORT
WXTP	NORTH WINDHAM	294A	0.810	DA	43-51-06	217.2	42.17	31
LIC	ME BMLED-20515ABK	106.7	190.0		070-19-40	SS	11.17	CLEAR
WBQX	THOMASTON	295B	29.500		44-06-30	94.0	68.42	69
LIC	ME BLH-920611KC	106.9	193.0		069-09-28		-0.58	SHORT

==== END OF FM SPACING STUDY FOR CHANNEL 292 ====


FRANKLIN
SOMERSET
PENOBSCOT
W292FZ 292D Gardiner
40 dBu F(50,10)
COOS
WALDO
KENNEBEC
OXFORD
KNOX
ANDROSCOGGIN
LINCOLN
SAGADAHOC
CARROLL
CUMBERLAND
YORK
WHXR 292A Scarborough
60 dBu F(50,50)
STRAFFORD
W292FZ Cochannel Study Map
0 15 30 45
Kilometers
Hatfield & Dawson 7/2019
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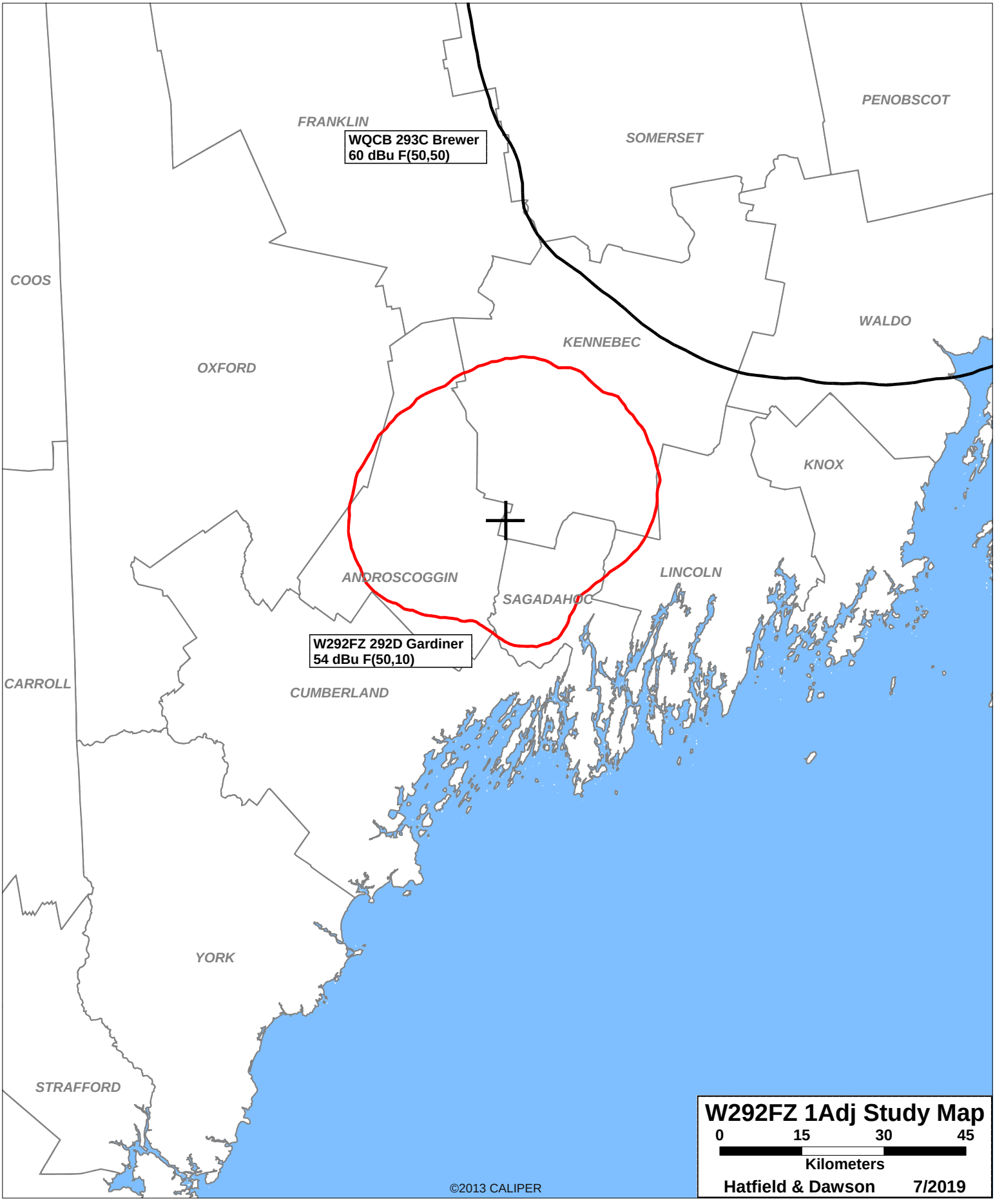
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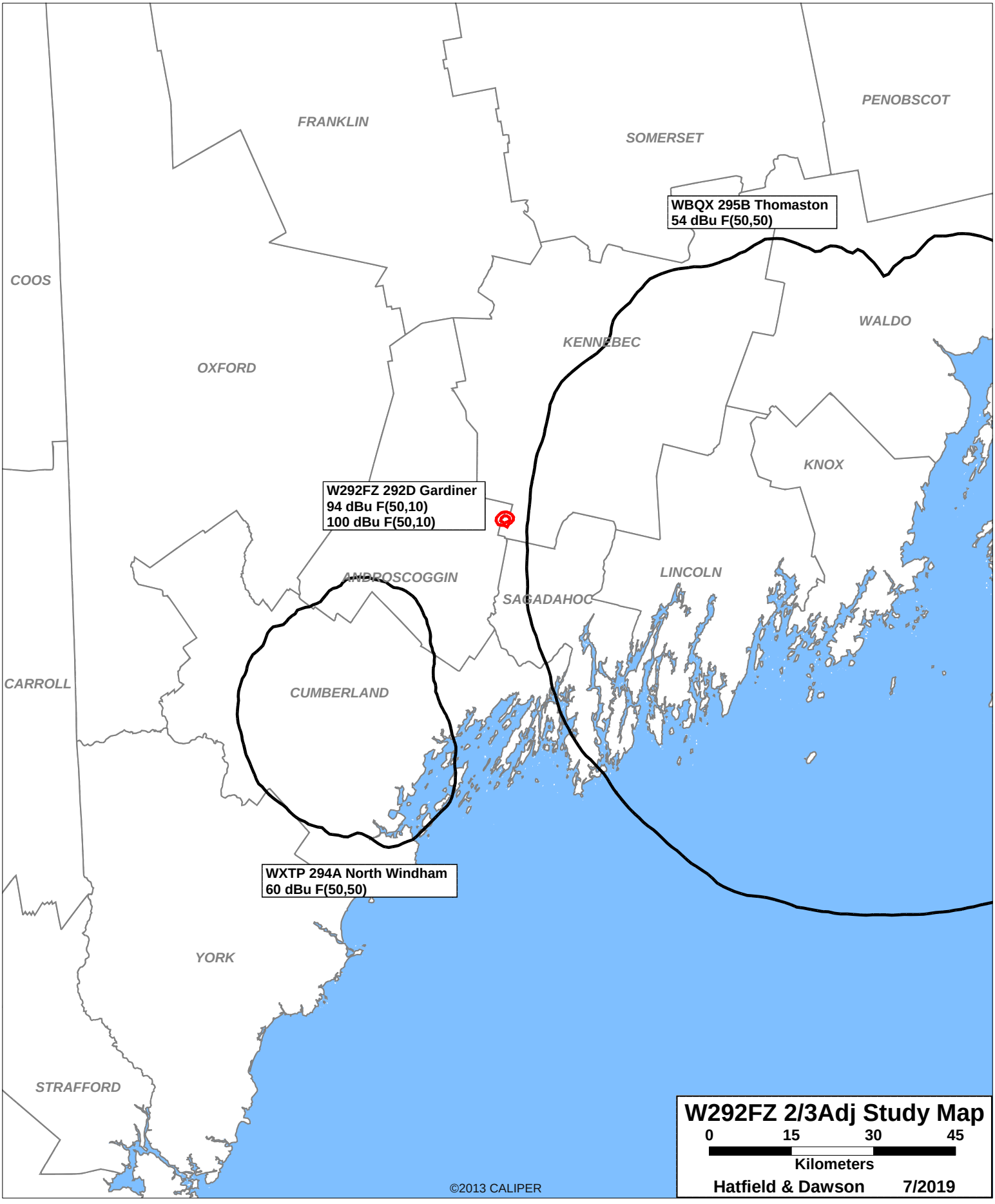
WQCB 293C Brewer
60 dBu F(50,50)
SOMERSET
PENOBSCOT
COOS
OXFORD
KENNEBEC
WALDO
KNOX
ANDROSCOGGIN
SAGADAHOC
LINCOLN
W292FZ 292D Gardiner
54 dBu F(50,10)
CARROLL
CUMBERLAND
YORK
STRAFFORD
©2013 CALIPER
W292FZ 1Adj Study Map
0 15 30 45
Kilometers
Hatfield & Dawson 7/2019


FRANKLIN
SOMERSET
PENOBSCOT
WBQX 295B Thomaston
54 dBu F(50,50)
COOS
WALDO
KENNEBEC
OXFORD
KNOX
W292FZ 292D Gardiner
94 dBu F(50,10)
100 dBu F(50,10)
AMBROSCOGGIN
LINCOLN
SAGADAHOC
CARROLL
CUMBERLAND
WXTP 294A North Windham
60 dBu F(50,50)
YORK
STRAFFORD
©2013 CALIPER
W292FZ 2/3Adj Study Map
0 15 30 45
Kilometers
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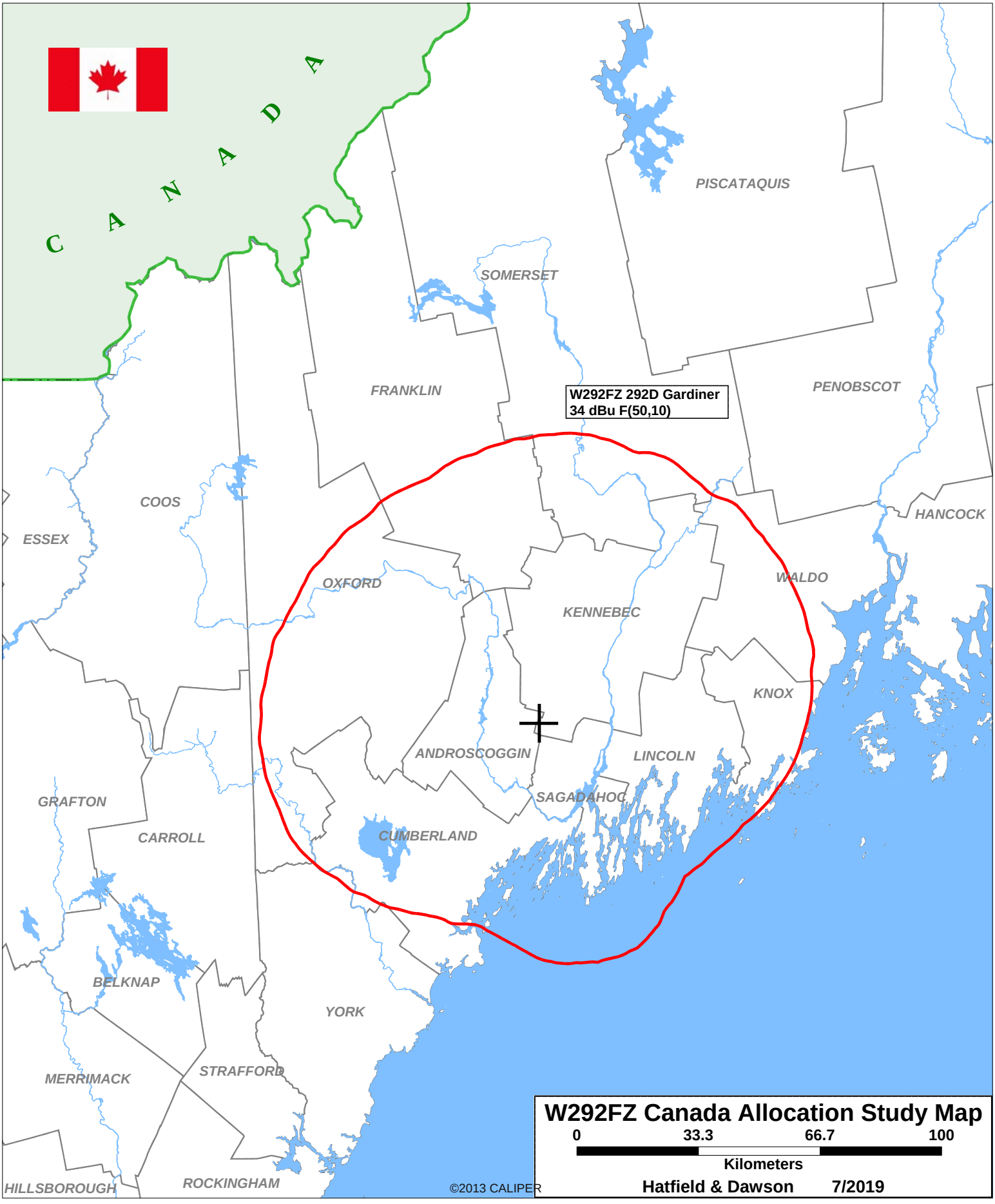
C A N A D A
PISCATAQUIS
SOMERSET
FRANKLIN
W292FZ 292D Gardiner
34 dBu F(50,10)
PENOBSCOT
COOS
ESSEX
HANCOCK
OXFORD
WALDO
KENNEBEC
KNOX
ANDROSCOGGIN
LINCOLN
SAGADAHOC
GRAFTON
CARROLL
CUMBERLAND
BELKNAP
YORK
MERRIMACK
STRAFFORD
HILLSBOROUGH
ROCKINGHAM
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W292FZ Canada Allocation Study Map
0
33.3
66.7
100
Kilometers
Hatfield & Dawson
7/2019

July 2019
FM Translator W292FZ
Gardiner, Maine Channel 292D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 292D (106.3 MHz) with a maximum lobe effective radiated power of 175 watts. Operation is proposed with a one-element directional antenna to be mounted on an existing tower on Oak Hill, with FCC Antenna Structure Registration Number 1205322.

RF Exposure Calculations

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

> When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . .For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation of W292FZ will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

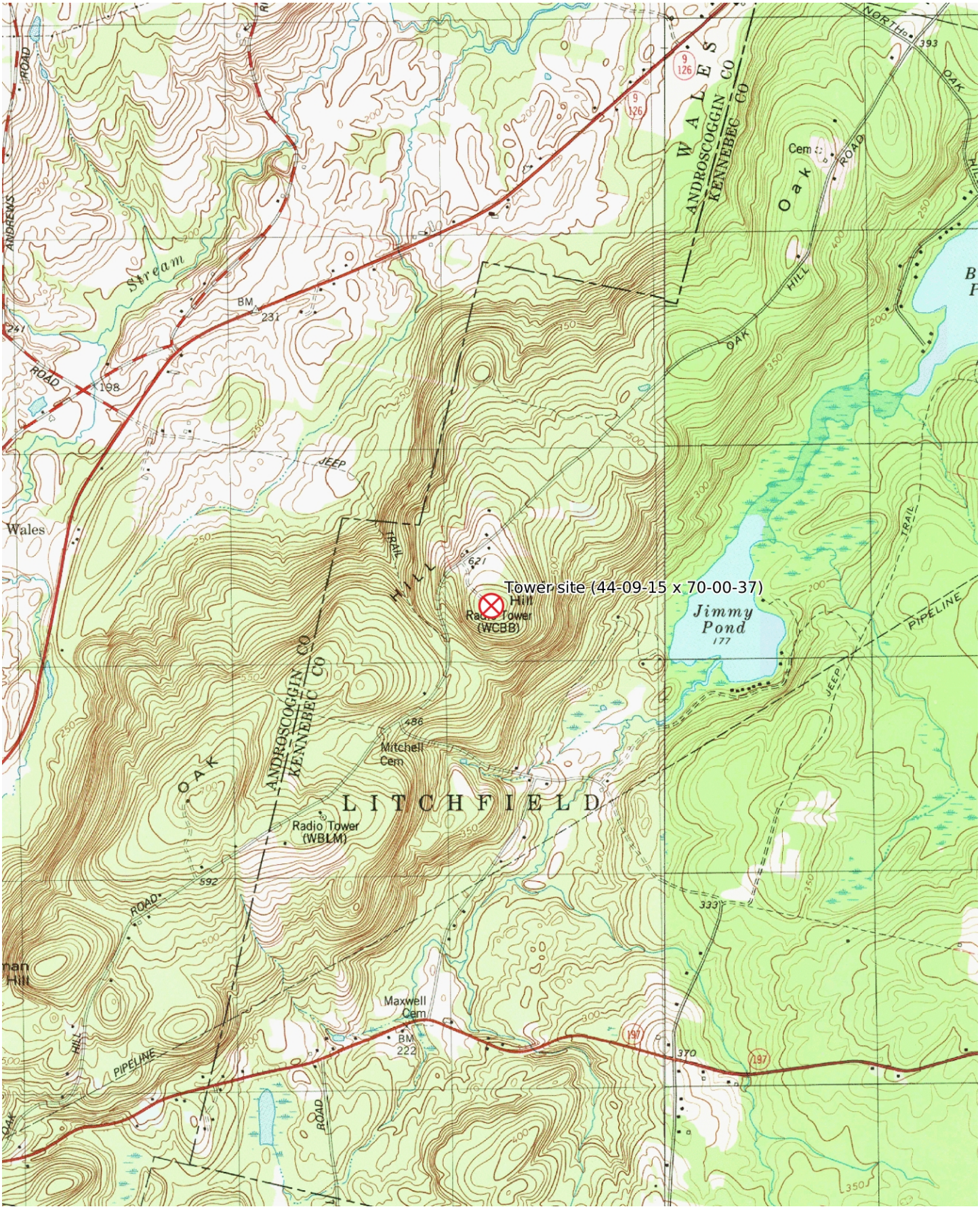
Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Calculations of the power density produced by the W292FZ antenna system have been made assuming that the antenna will radiate 100% power straight down to a point 2 meters above ground at the base of the tower (150 meters below the antenna). Under this worst-case assumption, the highest calculated ground level power density from W292FZ occurs at the base of the antenna support structure. At this point the power density is calculated to be 0.5 μW/cm², which is 0.05% of 1000 μW/cm² (the FCC standard for controlled environments) and 0.25% of 200 μW/cm² (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of W292FZ alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.



Mercator Projection
NAD27 Conus
USNG Zone 19TDJ

CalTopo

0.5 1.0 1.5 2.0 2.5 km

0.5 1.0 1.5 mi

Scale **1:24000** 1 inch = 2000 feet

MN -15°

N