

**January 2022
New FM Channel 205A
Ocean Shores, WA
Allocation Study**

Background

The instant amendment proposes to change the output channel proposed in application 0000165561 for a new NCE FM station at Ocean Shores, Washington, from Channel 208A to third-adjacent Channel 205A, with a change in transmitter site and addition of a directional antenna pattern. As is demonstrated by the following allocation study, this amendment will remove the Ocean Shores application from the MX group #221.

Domestic Allocation Study

The attached spacing study shows the co-channel and adjacent channel spacing between stations and demonstrates that the proposed operation meets the IF channel spacing requirements as prescribed in §73.207 of the Commission's Rules.

Individual stations were examined to confirm the lack of prohibited contour overlap as prescribed in §73.509 of the Commission's Rules. The attached allocation study exhibits demonstrate requisite contour protection for the following domestic stations:

Cochannel	KSWS	205C3	Chehalis
First-adjacent	KLOY 0000167652 KGHE	204C3 204A 206A	Ocean Park Forks Montesano
Second-adjacent	0000166813	207C3	Ocean Park
Third-adjacent	0000167800 0000167561	208A 208A	Central Park Aberdeen

International Allocation Study

The proposed operation is short-spaced to a Canadian allotment on Channel 205C1 at Victoria, British Columbia. Under the terms of the *Working Arrangement for the Allotment and Assignment of FM Broadcasting Channels Under the Agreement Between the Government of Canada and the Government of the United States of America Relating to the FM Broadcasting Service*, as amended

in 1997 ("Working Arrangement"), the required co-channel Class C1 to Class A spacing is 243 kilometers, whereas the distance between the proposed Ocean Shores 205A site and the Victoria 205C1 allotment site is 161 kilometers. The attached allocation study map demonstrates that the proposed Ocean Shores 34 dBu F(50,10) contour will not overlap any Canadian land areas, thereby satisfying the requirements of the *Working Arrangement*.

TV Channel 6

Section 73.525 of the Commission's Rules specifies a threshold distance of 225 kilometers for FM stations operating on Channel 205. There is no domestic TV Channel 6 station located within this threshold distance.

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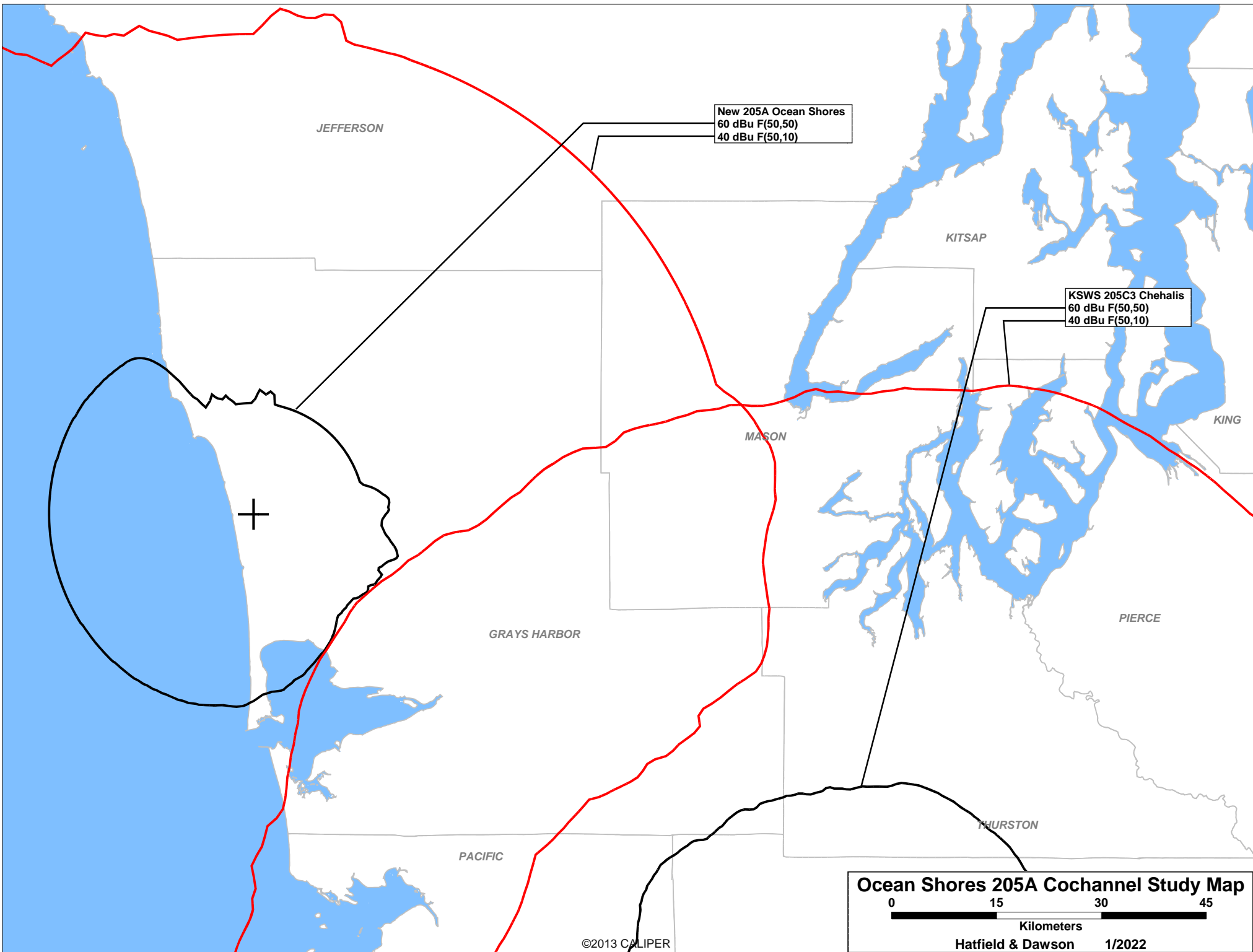
SEARCH PARAMETERS FM Database Date: 20220118
 Channel: 205A 88.9 MHz Page 1
 Latitude: 47 12 16.7 (NAD83)
 Longitude: 124 9 50.6
 Safety Zone: 50 km
 Job Title: 205A AT 1269935

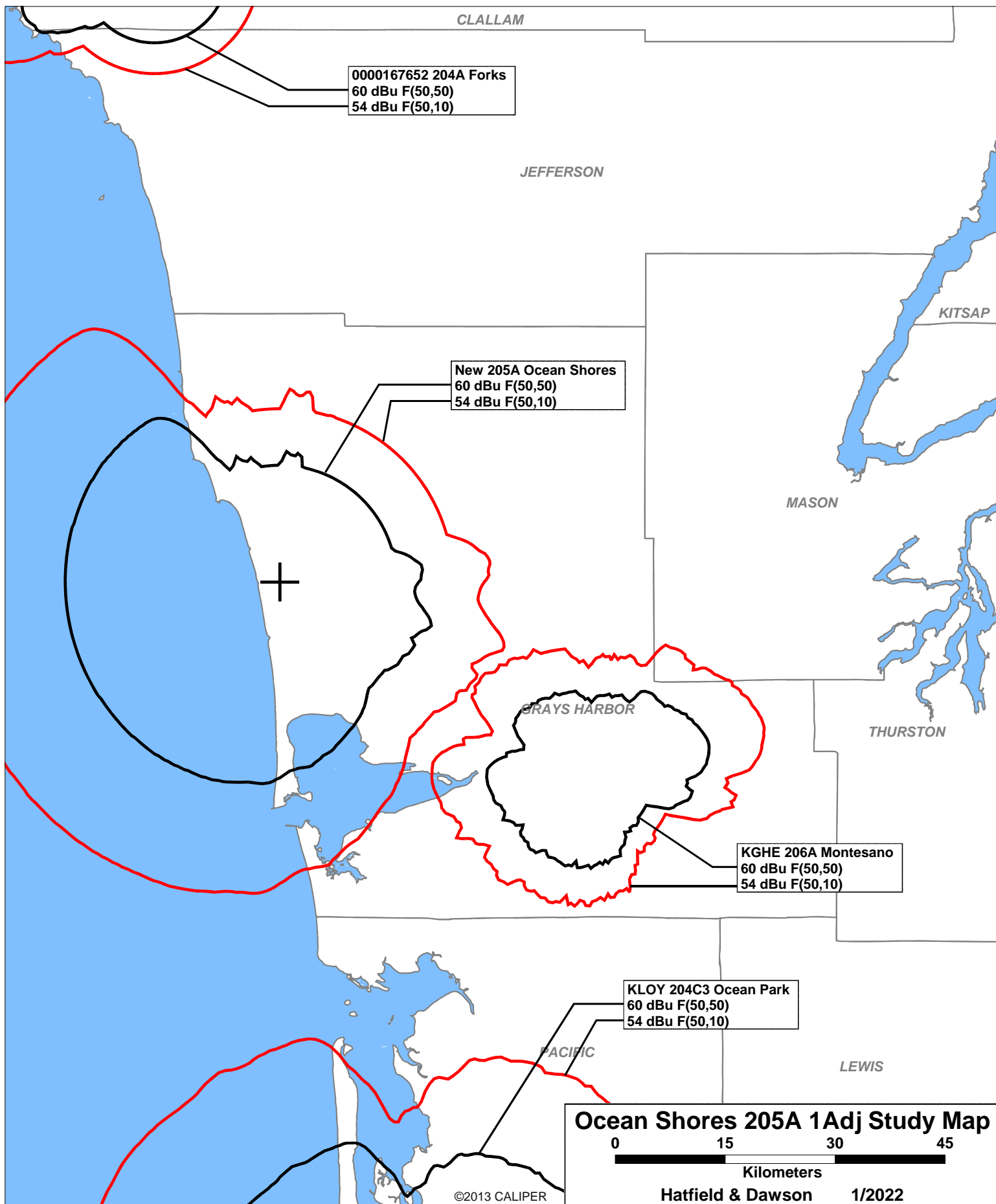
Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KLOY LIC	OCEAN PARK WA	BLED-20180830AAA	204C3 88.7	0.900 317.0	46 15 45.3 123 53 13.5	168.5	106.84 17.84	89 CLEAR
NEW CP	FORKS WA	0000167652	204A 88.7	0.900 -33.0	47 57 13.2 124 23 24.4	348.6	85.00 13.00	72 CLEAR
K204ET LIC	ABERDEEN WA	BMLFT-20130322AE	204D 88.7	0.115 0.0	46 55 57.3 123 43 59.5	132.7	44.56 0.00	0 TRANS
KMIH LIC	MERCER ISLAND WA	BLED-20081014AFI	205D 88.9	0.030 69.0	47 34 20.3 122 13 9.4	73.7	152.42 0.00	0 CLS=D
NEW ALC	VICTORIA BC		205C1 88.9	0.000 0.0	48 35 40.3 123 32 41.7	16.4	161.32 -81.68	243 SHORT
KQMI LIC	MANZANITA OR	BLED-20140421AAA	205A 88.9	0.190 -31.0	45 43 26.3 123 55 57.4	173.8	165.55 50.55	115 CLEAR
KSWS LIC	CHEHALIS WA	BLED-20100618AWV	205C3 88.9	1.000 306.0	46 33 15.4 123 3 30.5	130.3	111.04 -30.96	142 SHORT
KGHE CP	MONTESANO WA	BPED-20190415AAC	206A 89.1	0.255 94.0	46 57 30.3 123 35 22.6	122.0	51.50 -20.50	72 SHORT
KXPB-LP CP	PACIFIC BEACH WA	BPL-20190821ABK	206L1 89.1	0.100 16.0	47 13 6.3 124 12 17.6	296.4	3.45 0.00	0 LPFM
KXPB-LP LIC	PACIFIC BEACH WA	BLL-20041124AEL	206L1 89.1	0.017 71.0	47 13 6.3 124 12 17.6	296.4	3.45 0.00	0 LPFM
KGHE LIC	MONTESANO WA	0000088798	206A 89.1	0.255 94.0	46 57 30.3 123 35 22.6	122.0	51.50 -20.50	72 SHORT
K206CL LIC	CHINOOK WA	BLFT-20160204AAR	206D 89.1	0.015 0.0	46 17 9.3 123 53 54.5	168.7	104.13 0.00	0 TRANS
K206DM LIC	BREMERTON WA	BLFT-20160628AAK	206D 89.1	0.013 0.0	47 32 57.3 122 47 0.5	69.3	111.08 0.00	0 TRANS
APP	OCEAN PARK WA	0000166813	207C3 89.3	0.950 291.0	DA 46 41 43.6 123 46 21.2	152.2	63.97 21.97	42 CLEAR

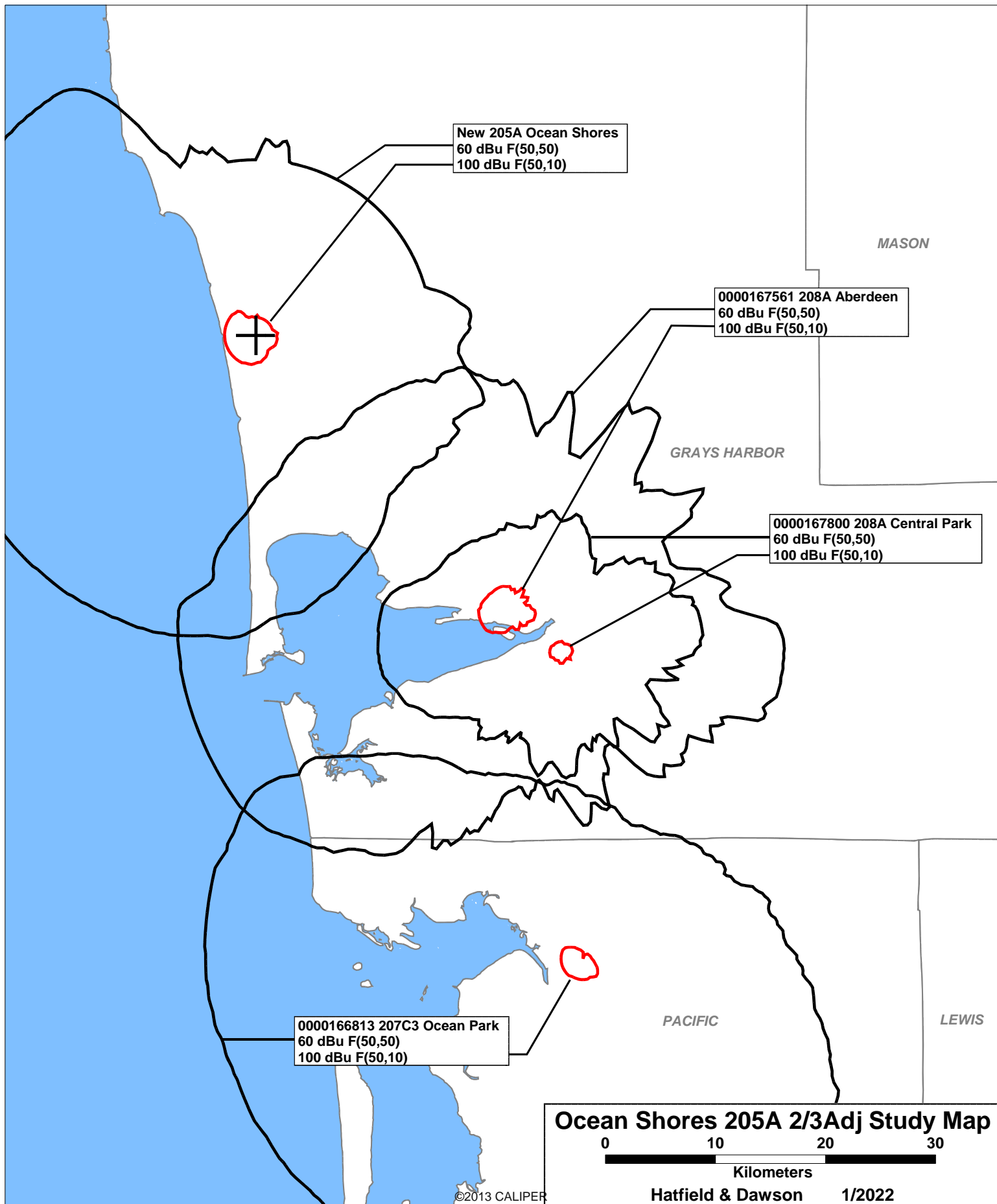
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SEARCH PARAMETERS                               FM Database Date: 20220118
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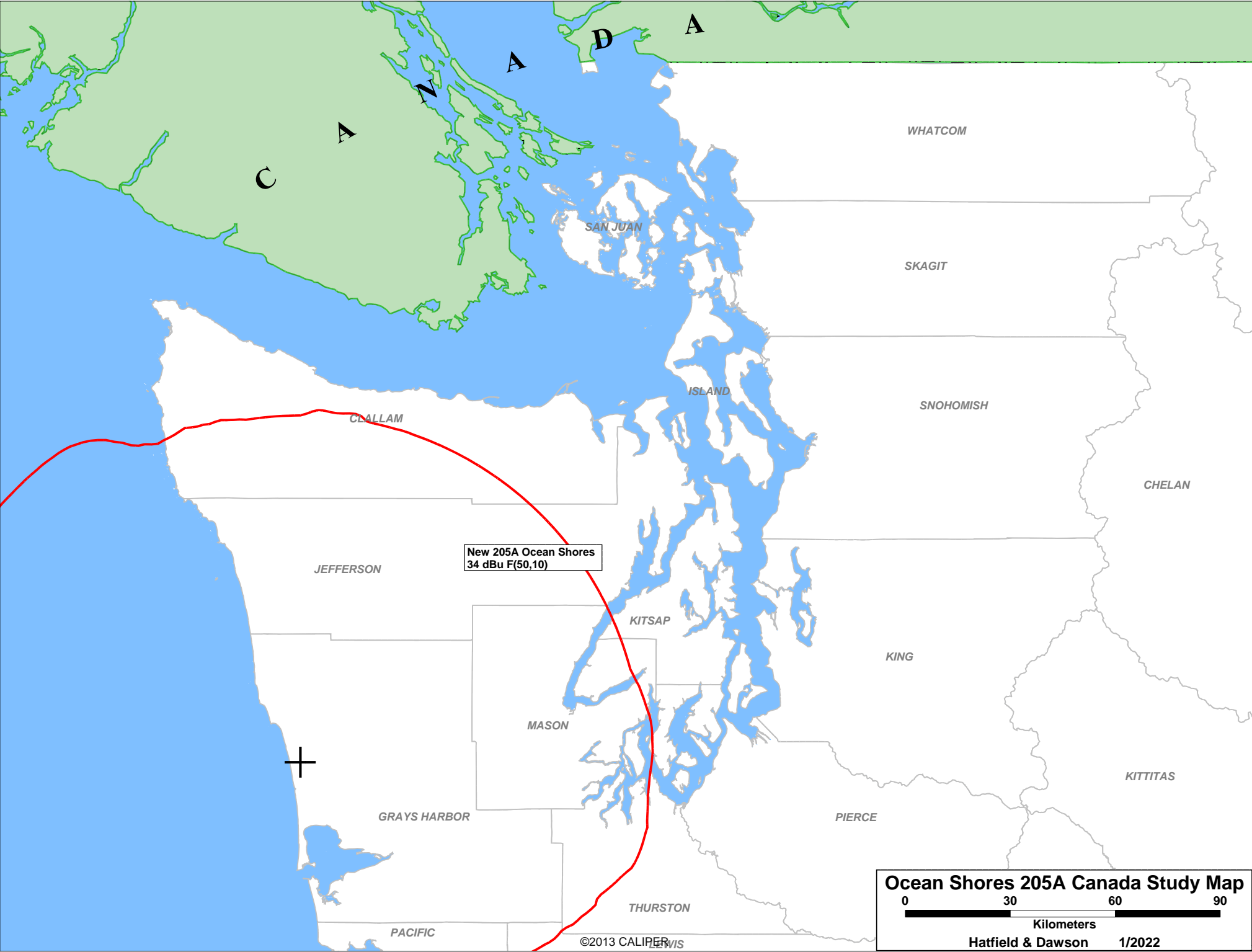
Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
	CENTRAL PARK		208A	0.330	46 56 44.0	136.0	40.04	31
APP	WA	0000167800	89.5	79.8	123 47 52.5		9.04	CLOSE
	OCEAN SHORES		208A	1.000	46 59 3.1	178.2	24.52	31
APP	WA	0000165561	89.5	35.2	124 9 13.6		-6.48	SHORT
NOTE: THIS IS THE APPLICATION BEING AMENDED								
	ABERDEEN		208A	5.000	46 58 49.8	137.2	33.93	31
APP	WA	0000167561	89.5	23.6	123 51 38.4		2.93	CLOSE

===== END OF FM SPACING STUDY FOR CHANNEL 205 =====









Ocean Shores 205A Canada Study Map

0 30 60 90
Kilometers
Hatfield & Dawson 1/2022

**January 2022
New FM Channel 205A
Ocean Shores, WA
RF Exposure Study**

Facilities Proposed

The proposed operation will be on Channel 205A (88.9 MHz) with a maximum lobe effective radiated power of 6 kilowatts. Operation is proposed with a 2-element circularly-polarized directional antenna. The antenna will be side-mounted on an existing tower with FCC Antenna Structure Registration Number 1269935.

RF Exposure Calculations

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.

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

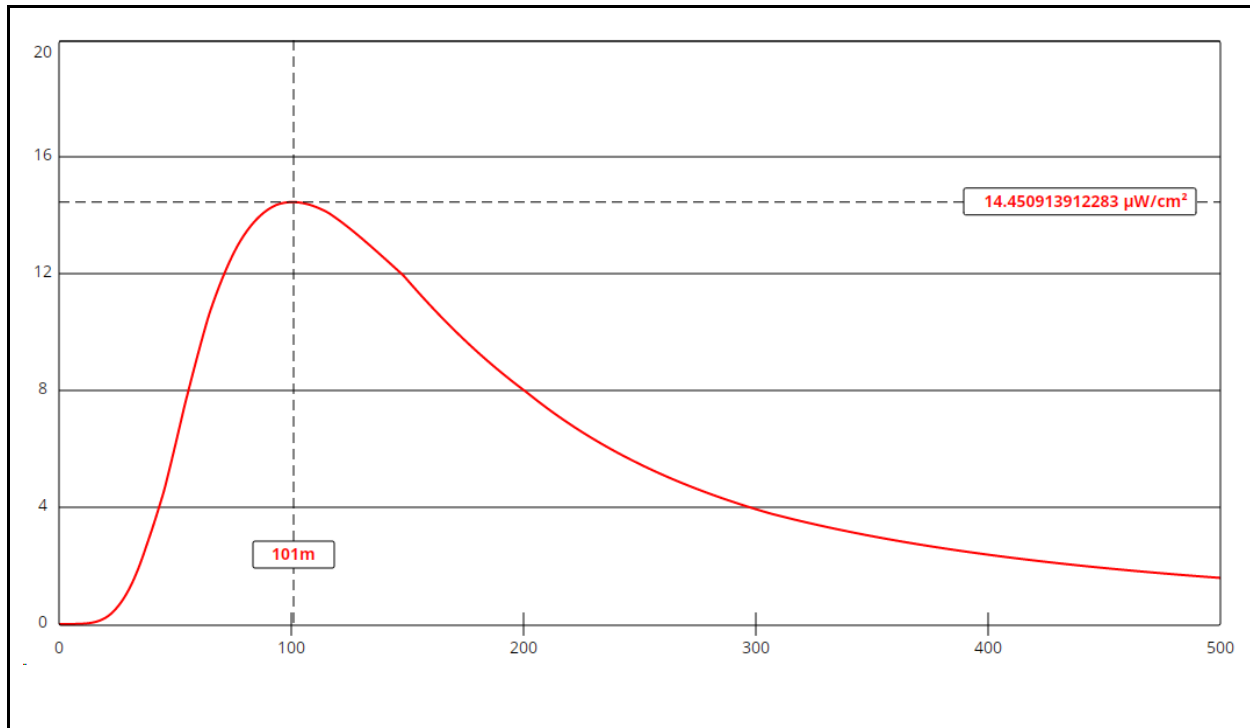
Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

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

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 2 element pattern, which is the element pattern for the "double V" type antenna proposed for use. The highest calculated ground level power density occurs at a distance of 101 meters from the base of the antenna support structure. At this point the power density is calculated to be 14.5 $\mu W/cm^2$, which is 7.3% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments). There are no other broadcast users of this site.

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.



Ground-Level RF Exposure

OET FMModel

Ocean Shores 205A

Antenna Type: Type 2
No. of Elements: 2
Element Spacing: 0.5 wavelength

Distance: 500 meters
Horizontal ERP: 6 kW
Vertical ERP: 6 kW

Antenna Height: 56 meters AGL

Maximum Calculated Power Density is $14.5 \mu\text{W}/\text{cm}^2$ at 101 meters from the antenna structure.

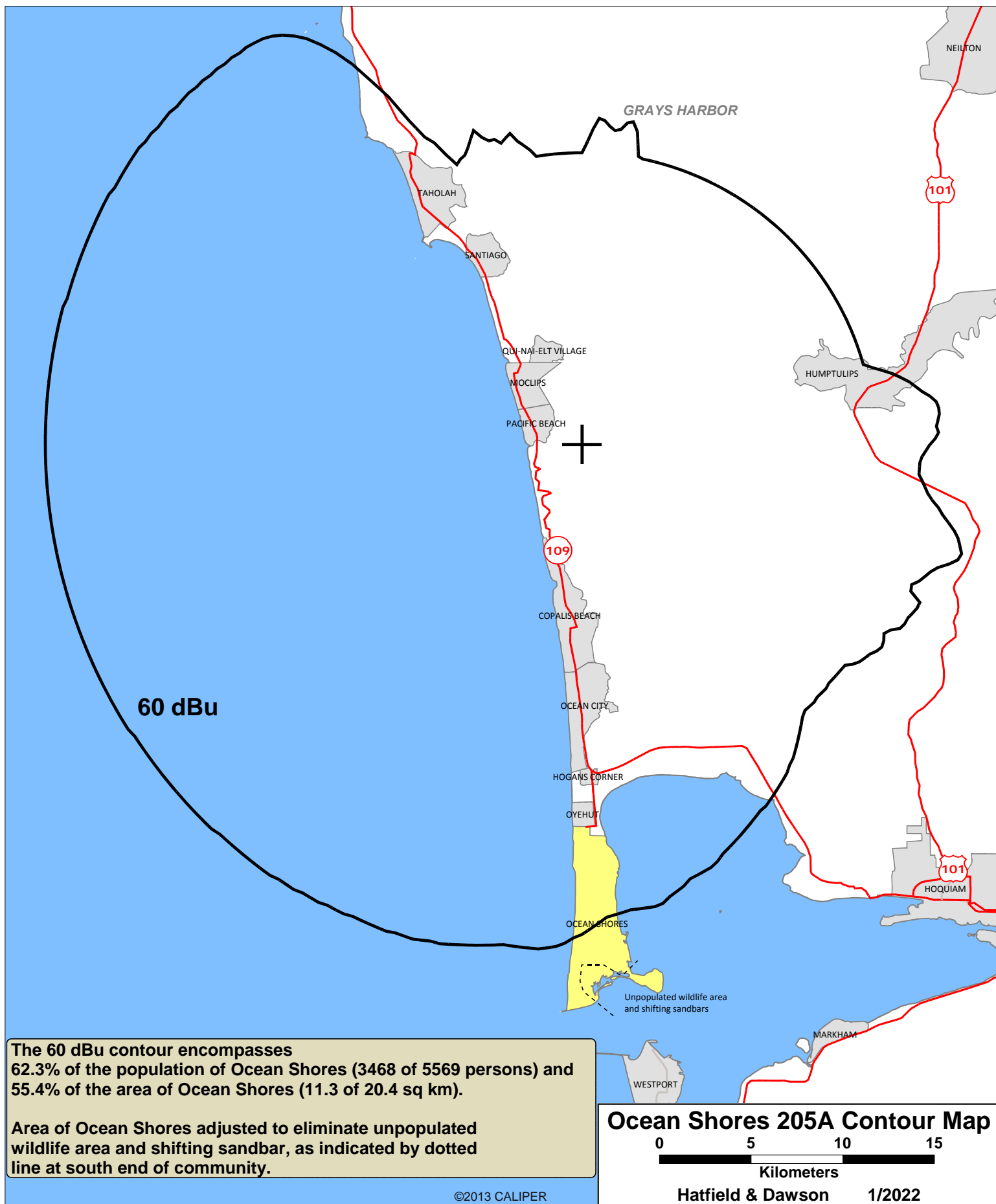
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Area and Population Calculation Methodology

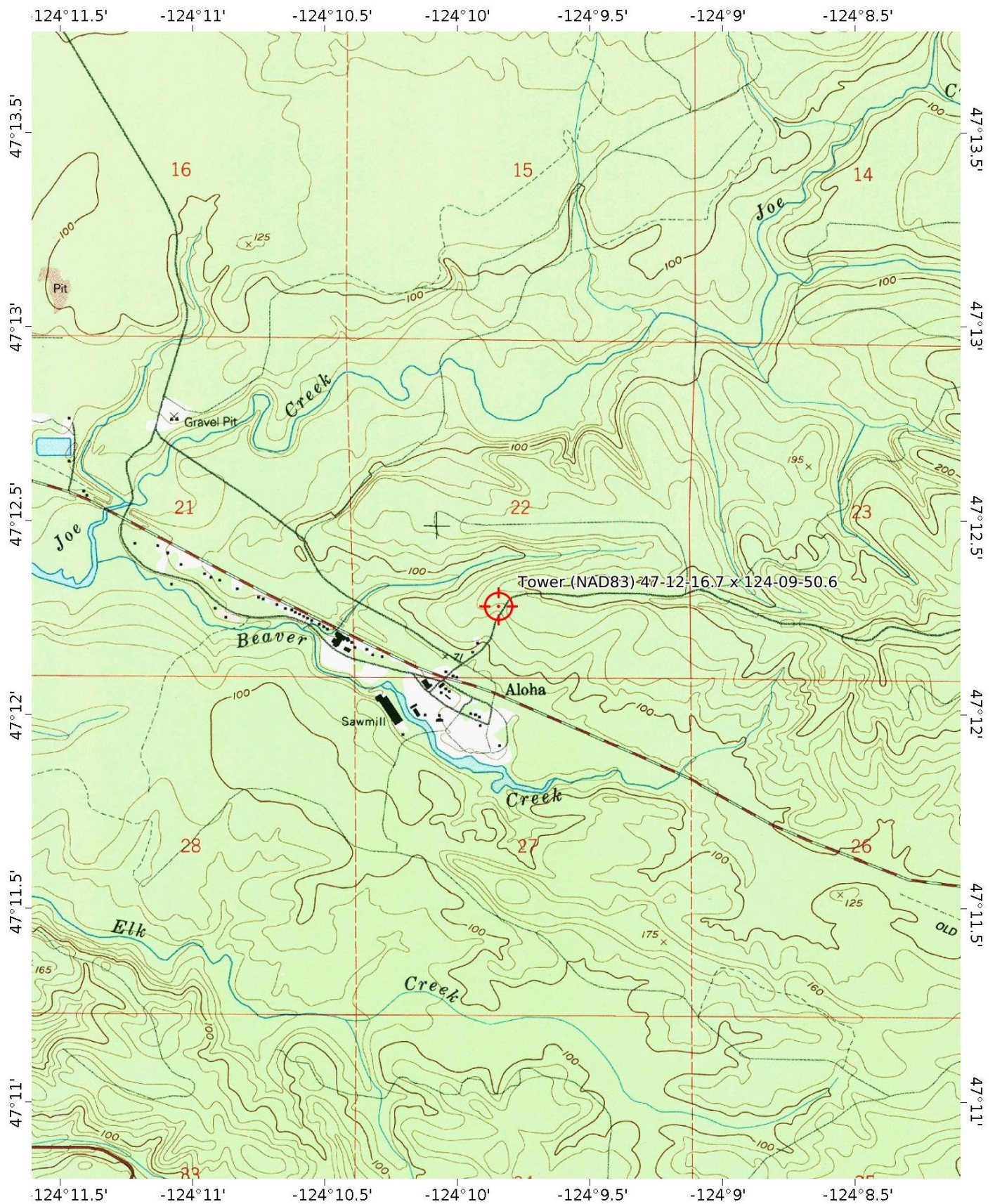
Calculation of the area within the 60 dBu contour was performed by the mapping program Maptitude, which includes a function which automatically calculates the area within irregular polygons. In cases where the 60 dBu contour included any large water areas, those were excluded by using a related tool in the program which allows the user to “clip” to the land area within the contour. The software returns the area of the land area.

Total area inside 60 dBu contour:	1,729 sq km
Water area excluded:	1,064 sq km Pacific Ocean & Grays Harbor
Total land area inside 60 dBu contour:	665 sq km

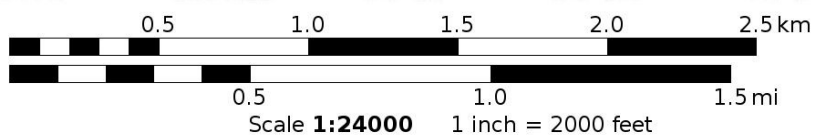
Population was calculated by summing the individual populations of each of the census blocks from the 2010 Census whose centroids are encompassed by the proposed 60 dBu contour.

Population inside 60 dBu contour:	7,057
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Mercator Projection
WGS84
UTM Zone 10T



Hatfield & Dawson Consulting Engineers