In Re FM Auction No. 94

AU Docket No. 12-239

To: Office of the Secretary
Attn: WTB/ASAD

COMMENTS RE FM AUCTION 94

Hatfield & Dawson Consulting Engineers, LLC ("H&D") hereby files these Comments in response to the Public Notice (DA 12-1411) announcing the schedule, procedures, and inventory for FM Auction No. 94.

The inventory for the auction includes, as construction permit MM-FM1058-A, a Channel 289A allotment at Sedro-Woolley, Washington. The minimum opening bid for the Sedro-Woolley allotment has been tentatively set at $45,000.

While the Public Notice does not detail the Commission's method for calculating the minimum opening bid for each allotment included in the auction, it is assumed that the total population to be served constitutes a significant factor in that calculation.

What is not likely recognized in the Commission's calculation for the Sedro-Woolley allotment, however, is that this particular channel will be greatly impacted by interference from a cochannel station licensed at Vancouver, BC, Canada, to which the Sedro-Woolley allotment is short-spaced. Based on our extensive experience with internationally-short-spaced allotments in the Puget Sound area, dating back to *Northern Sound Public Radio*,[1] Hatfield & Dawson is concerned that the inflated minimum opening bid misrepresents the extent of interference-free service which this allotment will provide, and that potential bidders will be led down a garden path, assuming that this allotment will provide wider-area service than is in fact feasible.

As is detailed in the attached Engineering Statement prepared by the undersigned, cochannel interference from the Canadian station will significantly limit the reception of the Sedro-Woolley station. Accordingly, H&D requests that the minimum opening bid for the Sedro-Woolley 289A allotment be reduced to no more than $8,500.

Respectfully submitted,

Erik C. Swanson
Partner
Hatfield & Dawson Consulting Engineers, LLC
Dated: October 2, 2012

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[1] In *Northern Sound Public Radio*, 66 RR2D 1339 (July 13, 1989), the Commission approved the grant of a non-commercial FM station construction permit on Channel 219A at Bellingham, Washington, despite the fact that 100% of the proposed 60 dBu contour would be overlapped by the 40 dBu cochannel interfering contour from a Canadian station at Chilliwack, British Columbia.

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Engineering Statement
Comments re Sedro-Woolley 289A Allotment in FM Auction No. 94
October 2012

This Engineering Statement has been prepared in support of Comments in response to the Public Notice (DA 12-1411) announcing the schedule, procedures, and inventory for FM Auction No. 94.

The inventory for the auction includes, as construction permit MM-FM1058-A, a Channel 289A allotment at Sedro-Woolley, Washington. The minimum opening bid for the Sedro-Woolley allotment has been tentatively set at $45,000.

While the Public Notice does not detail the Commission's method for calculating the minimum opening bid for each allotment included in the auction, it is inferred that the total population to be served constitutes a significant factor in that calculation.

What is not likely recognized in the Commission's calculation of the minimum opening bid for the Sedro-Woolley allotment, however, is that this particular channel will be greatly impacted by interference from a cochannel station licensed at Vancouver, BC, Canada, on Channel 289C, to which the Sedro-Woolley allotment is short-spaced.

Based on our extensive experience with internationally-short-spaced allotments in the Puget Sound area, dating back to *Northern Sound Public Radio*,[1] Hatfield & Dawson is concerned that the inflated minimum opening bid misrepresents the extent of interference-free service which this allotment will provide, and that potential bidders will be led down a garden path, assuming that this allotment will provide wider-area service than is in fact feasible.

The Sedro-Woolley allotment is short-spaced to the Vancouver Channel 289C station by 139 kilometers. Not only does the Sedro-Woolley allotment include a significant power restriction designed to provide protection to the Canadian station, but the Sedro-Woolley station must also accept any interference received from the Canadian station.

Were the Channel 289A allotment at Sedro-Woolley fully-spaced to all stations and allotments, both domestic and foreign, one might estimate the population to be served by counting all persons

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residing within the standard 60 dBu contour distance for a Class A station, extending 28.3 kilometers from the allotment site. Based on evaluation using 2010 Census data, the population within this radius is 117,818 persons.

Assuming that minimum opening bids are calculated based on a linear relationship to the population served, we can calculate that each person within this 28.3 kilometer radius contributes $0.38 to the $45,000 minimum opening bid set forth in the Public Notice.

Analysis

The CDBS record for the Channel 289A Sedro-Woolley allotment includes the following comment regarding international coordination with Canadian authorities:

> 9/25/2006: Accepted on channel 289A by Industry Canada in 9.22.06 letter as a specially negotiated, short-spaced allotment limited to 400W ERP and 100m HAAT (or the equivalent) between the azimuths from 267 to 34 degrees to protect channel 289C in Vancouver, BC.

Thus, even on a simplified analysis the Sedro-Woolley allotment must reduce power towards Canada by 11.75 dB below the maximum Class A power of 6 kW, in order to comply with the negotiated protection requirement.

We have conducted an analysis of received interference utilizing the methodology described in Annex III 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*"), comparing the coverage contours from Sedro-Woolley and the interfering contours from Vancouver, calculated at 1 dB increments, in order to arrive at the interference-free service area for the Sedro-Woolley allotment.[2]

In performing this analysis, we have assumed a full Class A power and height (6 kW ERP at 100 meters HAAT) facility located at the Sedro-Woolley allotment site. A directional pattern was developed which would protect the Vancouver 289C facility at all points along the edge of Canadian land area, and a recovery rate of 2 dB per 10 degrees beyond that span as required by §73.316(b)(1)-(2) of the Commission's Rules. The 34 dBu F(50,10) interfering contour from Sedro-Woolley facility is depicted on the attached map exhibit as a red contour, and a polar plot of the directional antenna envelope pattern is attached.[3]

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[2] This is the same methodology used to evaluate interference areas for "pre-1964" grandfathered short-spaced stations operating on first-adjacent and co-channels under §73.213(a), and so is a method with which the Commission is very familiar.

[3] Since a full height Class A facility at this location requires a 288 meter AGL antenna height, resulting in radial HAAT values towards Canada of significantly more than 100 meters, the power restrictions towards Canadian land area were found to be as much as 21 dB below the maximum lobe ERP of 6 kW.

The Vancouver 289C station was assumed to be operating with its licensed parameters of 100 kW ERP, with the antenna located at 886 meters AMSL (567 meters HAAT).

The resulting interference-free service area for the Sedro-Woolley allotment, based on a 20 dB D/U (Desired-to-Undesired) signal ratio, is depicted on the attached map exhibit and encompasses a 2010 Census population of just 22,652 persons.

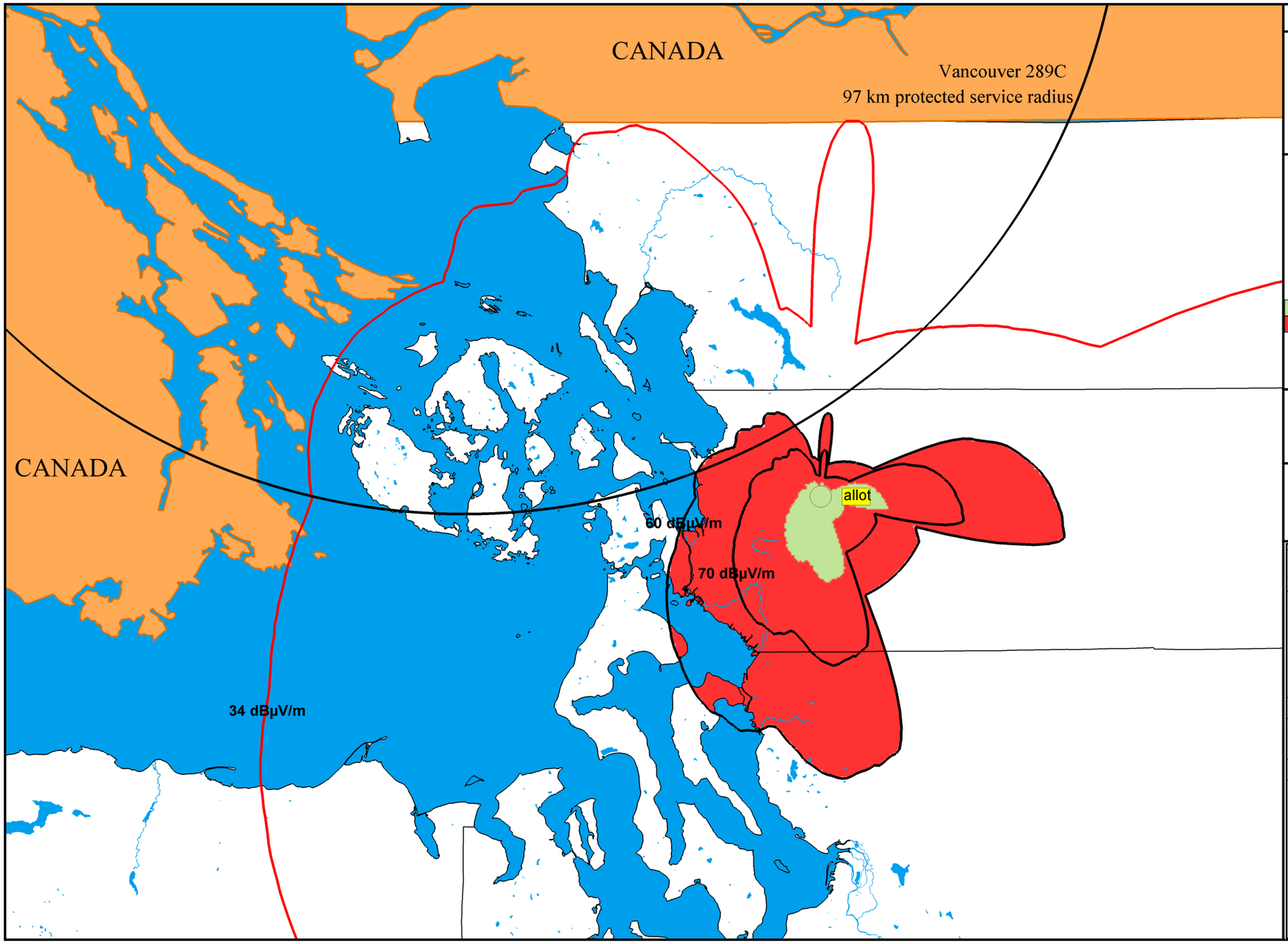
Applying the $0.38-per-person value derived above, we find that a minimum opening bid of no more than $8,500 would be an appropriate value for the interference-limited Sedro-Woolley allotment.

Statement of Engineer

This Engineering Statement has been prepared by Erik C. Swanson. I am a partner in the firm of Hatfield & Dawson Consulting Engineers and am registered as a Professional Engineer in the States of Washington and Colorado. I hereby declare that the facts set out in the foregoing Engineering Statement, except those of which official notice may be taken, are true and correct.

Signed this 2nd day of October 2012

Erik C. Swanson, P.E.



SIGNAL™: Sedro-Woolley 289A

Prop. model 1: FCC-FCC
Time: 50.0% Loc.: 50.0%
Prediction Confidence Margin: 0.0dB
Climate: Continental Temperate
Land use (clutter): none
Atmospheric Abs.: none
K Factor: 1.333

Sites

Site: allot
N48°30'14.00" W122°14'10.00" 17.0 m
allot Tx.Ht.AGL: 288.0 m Total ERPd: 7.78 dBkW
Model: 1 Use file-horizontal/0.0° 105.7000 MHz

C/I ratio Primary Group TXs to Second Group TXs

>	20.0 dB	Predicted Interference-Free
<	20.0 dB	Predicted Cochannel Int

Display threshold level: -55.5 dBmW
RX Antenna - Type: ISOTROPIC
Height: 9.1 m AGL Gain: 0.00 dBd

KILOMETERS
-5 0 20

Sedro-Woolley 289A Received Int Study

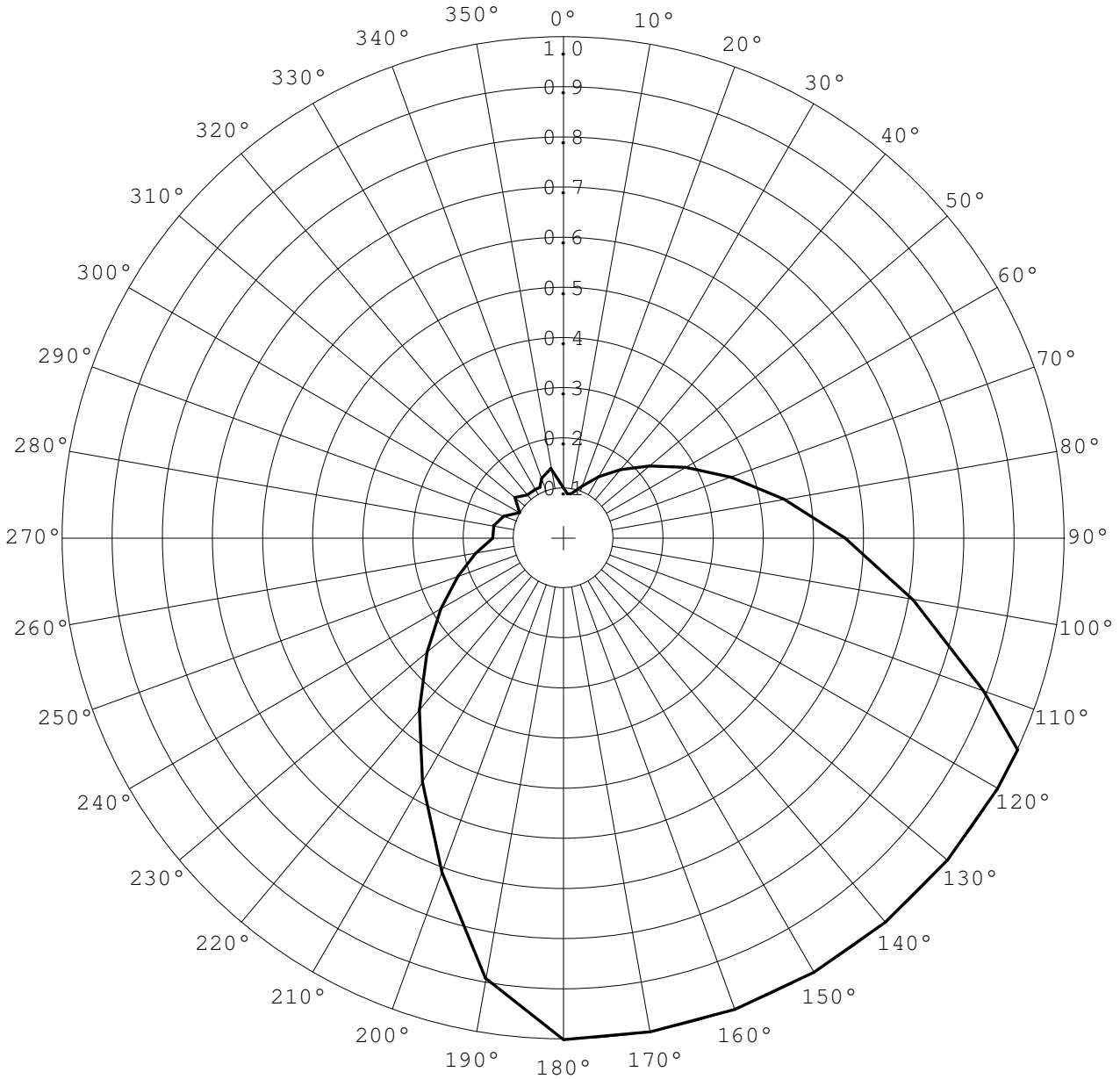
Hatfield & Dawson

Exhibit Oct 2012

This map depicts the results of an "Annex III" contour-based D/U study of the impact of Vancouver 289C on the service area of Sedro-Woolley 289A.

Contours from all stations were calculated at incremental dB values, and the intersections of the 20 dB D/U points were joined to determine the interference-free service area. The resulting interference-free service area is shaded green on this map, and encompasses 22,652 persons per the 2010 Census.

HORIZONTAL PLANE PATTERN



Relative Intensity

Pattern file: allot.pat