White Space DBA Group
PROTECTION CONTOUR CALCULATIONS FOR WHITE SPACES GUIDELINES

Presentation to FCC
5/25/2011
Contour Calculation Subcommittee
Peter Moncure, Chair
Peter Stanford, Vice-Chair
Voy Grohman, Secretary
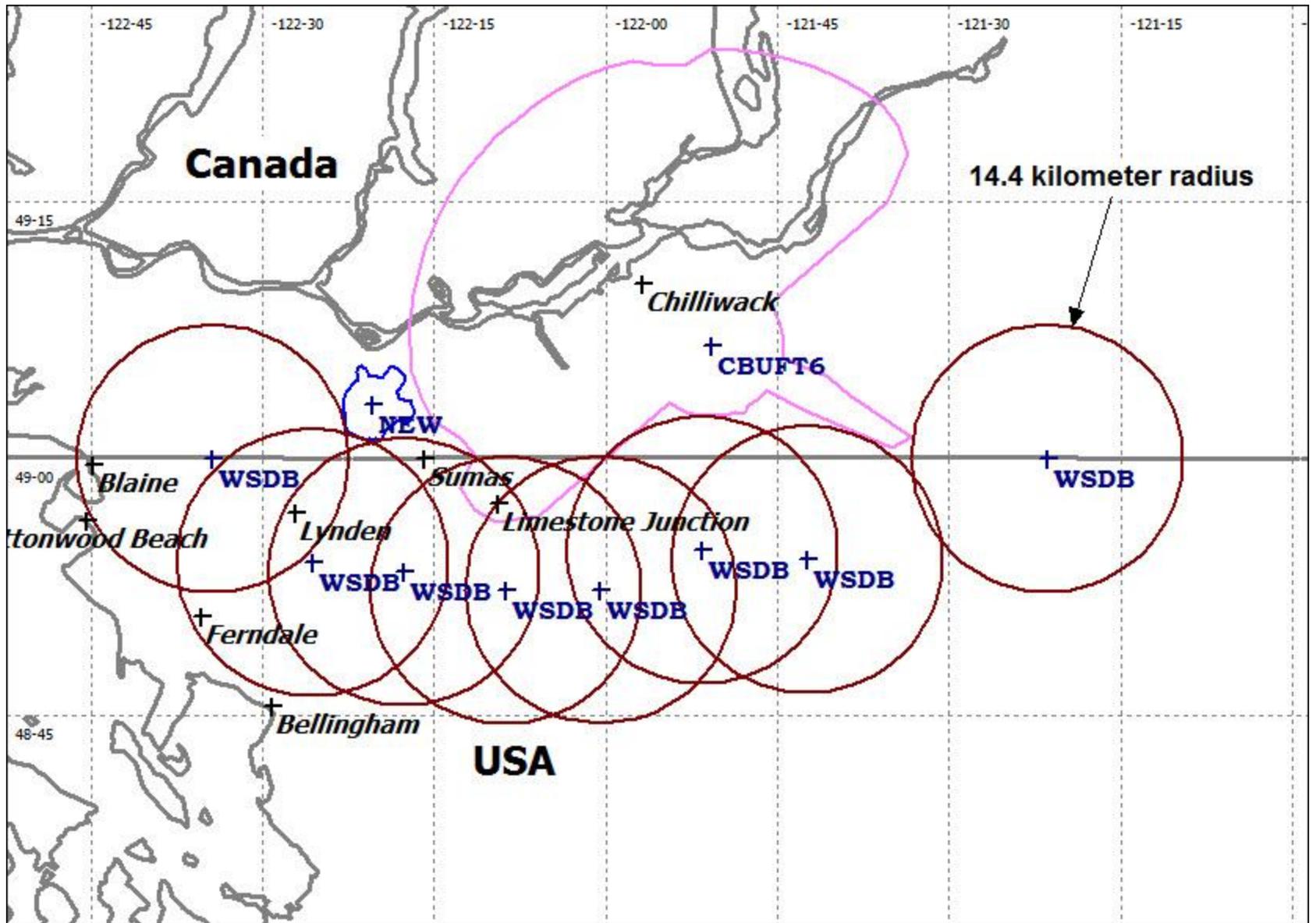
Progress since 4/20/2011

- Updated Contour Calculation specification to V 0.92

- Terrain sources revised, data tested and shared

- Non-domestic TV protection discussed

- Offshore radio service protections defined

- DTS plot slightly revised

Terrain Database

- A new, NAD83/WGS84 projected terrain database shall be generated using the publicly available National Elevation Database at http://seamless.usgs.gov/ and 1:50,000 Canadian data at: http://www.geobase.ca/geobase/en/find.do?produit=cded

- Database shall include area necessary to provide for contour calculation of any device, Canadian or Mexican station near the border.

Non-Domestic TV Protection

- Television services based in Canada, Mexico and the British Virgin Islands shall be protected within their respective national boundaries.

- Service contours (values in dBμ TBD) shall be calculated, and appropriate buffer distances (TBD) applied.

- Example plot with assumed values follows.

Canada

14.4 kilometer radius

-122-45 -122-30 -122-15 -122-00 -121-45 -121-30 -121-15

49-15

+ Chilliwack

+ CBUFT6

+ NEW

49-00

+ Blaine
+ WSDB
+ Sumas
+ WSDB

tonwood Beach

+ Lynden
+ Limestone Junction

+ WSDB
+ WSDB
+ WSDB
+ WSDB
+ WSDB
+ WSDB

+ Ferndale

+ Bellingham

48-45

USA

Offshore Radio

- Protection criteria simplified

	NW corner	NE corner	SE corner	SW corner
TV channel 15	N 30.5, W 96	N 30.5, W 92	N 28, W 92	N 28, W 98.5
TV channel 16	N 31, W 95	N31, W 86° 40'	N 29.5, W 86° 40'	N 29.5, W 95
TV channel 17	N 31, W 94	N 31, W 86.5	N 29.5, W 86.5	N 29.5, W 96
TV channel 18	N 31, W 95	N 31, W 87	N 29, W 87	N 29, W 95

DTS TV System Protection

- DTS station shall be protected within the station's combined coverage contour, excluding the population in areas that are outside both the DTV station's authorized service area and the Table of Distances area.

- Example plot follows.

Channel	Zone	F(50,90) Field Strength	Distance from Reference Point (km)
2 - 6	1	28	108
2 - 6	2 and 3	28	128
7 - 13	1	36	101
7 - 13	2 and 3	36	123
14 - 61	1, 2 and 3	41	103

Circle defining
"Maximum Service Area"
(from Table in §73.626c)

Contour defining
"Authorized Service Area"
(from Appendix B or
subsequent Order)

DTS#1

DTS#3

DTS#2

Reference Point
(from Appendix B or
Subsequent Order)
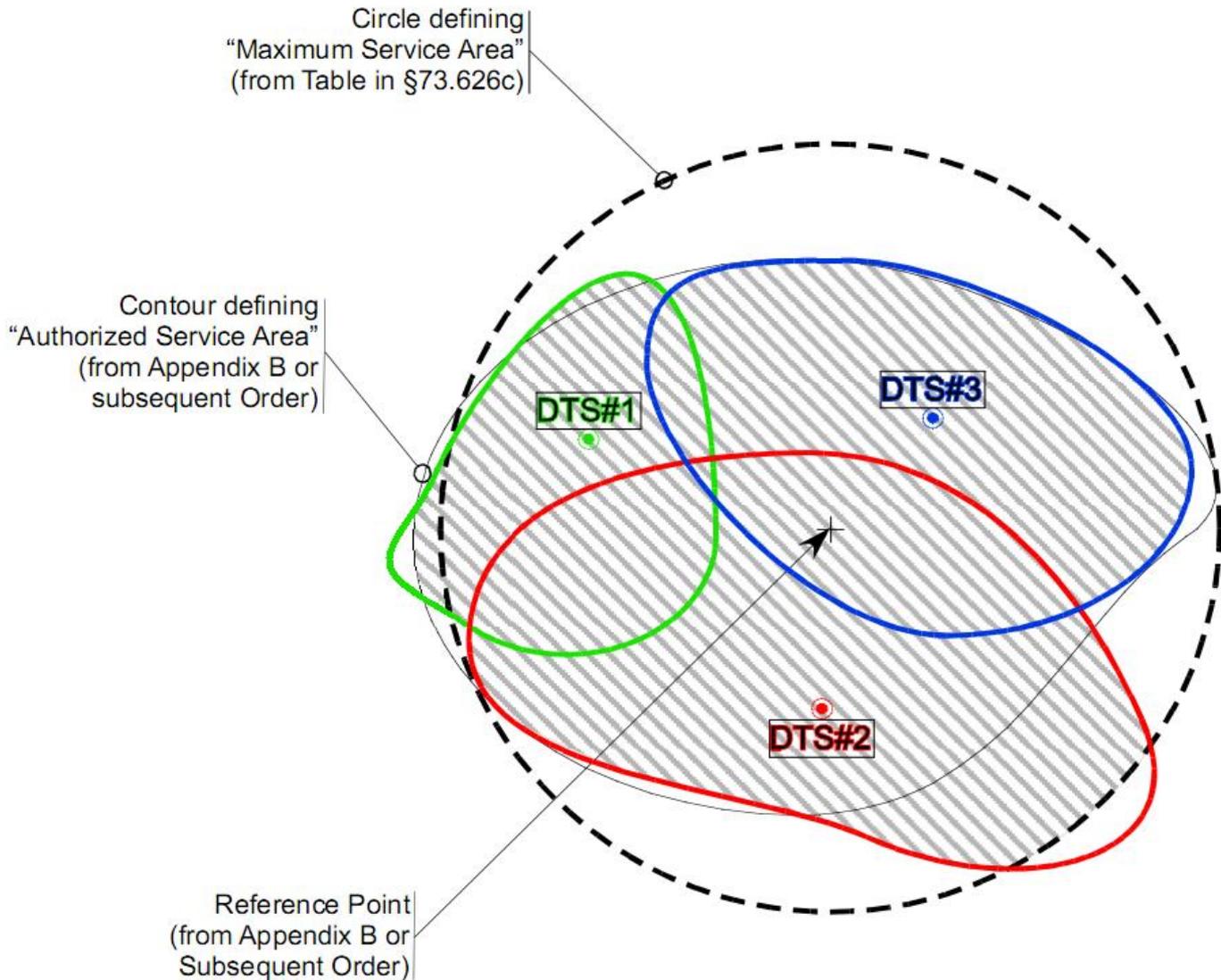
Protected area is the union of the individual DTS service areas, <u>except</u> those areas outside both the authorized service area and the maximum service area.

Previous Next Steps

- Resolve questions about DTS

- Create and share terrain database

- Establish and standardize methodology for selecting CDBS and ULS records requiring protection

- Establish and implement sufficient testing/validation protocol for determining channel lists

- DONE

- DONE

- TO DO

- TO DO

Next Steps

- Obtain US Border file for working standard
- Create examples of terrain extraction (360 x 130) and contour determination (360 coordinate pairs)
- Work toward methodology for selecting CDBS and ULS records requiring protection
- Establish and implement sufficient testing/validation protocol for determining channel lists
  - Algorithm
  - Static CDBS/ULS list extraction
  - Define missing data elements for record omission