May 2015
KNBQ(FM)   Channel 253C2
Central Park, Washington
Principal Community Coverage Study

The 70 dBu contour from the proposed facility, as calculated using the standard contour prediction methodology described in §73.313 of the Commission's Rules, does not encompass the entire community of Central Park. The far side of Central Park is located approximately 46.2 kilometers from the proposed transmitter site. The standard 70 dBu contour extends approximately 31 kilometers towards Central Park. However, it is believed that a supplemental showing using alternative contour prediction methodology is justified in this instance in accordance with §73.313(e).

The entire community of Central Park is encompassed by the proposed 60 dBu contour. The attached map exhibit depicts the community boundary of Central Park as taken from the 2010 Census.

Longley-Rice
Study has been made of the predicted 70 dBu field strength over Central Park, using the Longley-Rice v1.2.2 methodology. This study has been conducted using the software program SIGNAL™ from EDX Wireless, utilizing the 3-second terrain database.

A sample calculation has been made to a location within the community boundary of Central Park to verify the presence of 70 dBu service, using the formula:

Field Strength = Free Space - Diffraction Loss - Clutter
Where Free Space = 106.9 + power in dBk - 20log(distance in km to point of interest)

For the path studied (2.30 dBk over a 42.1 km path), the result of this calculation is:

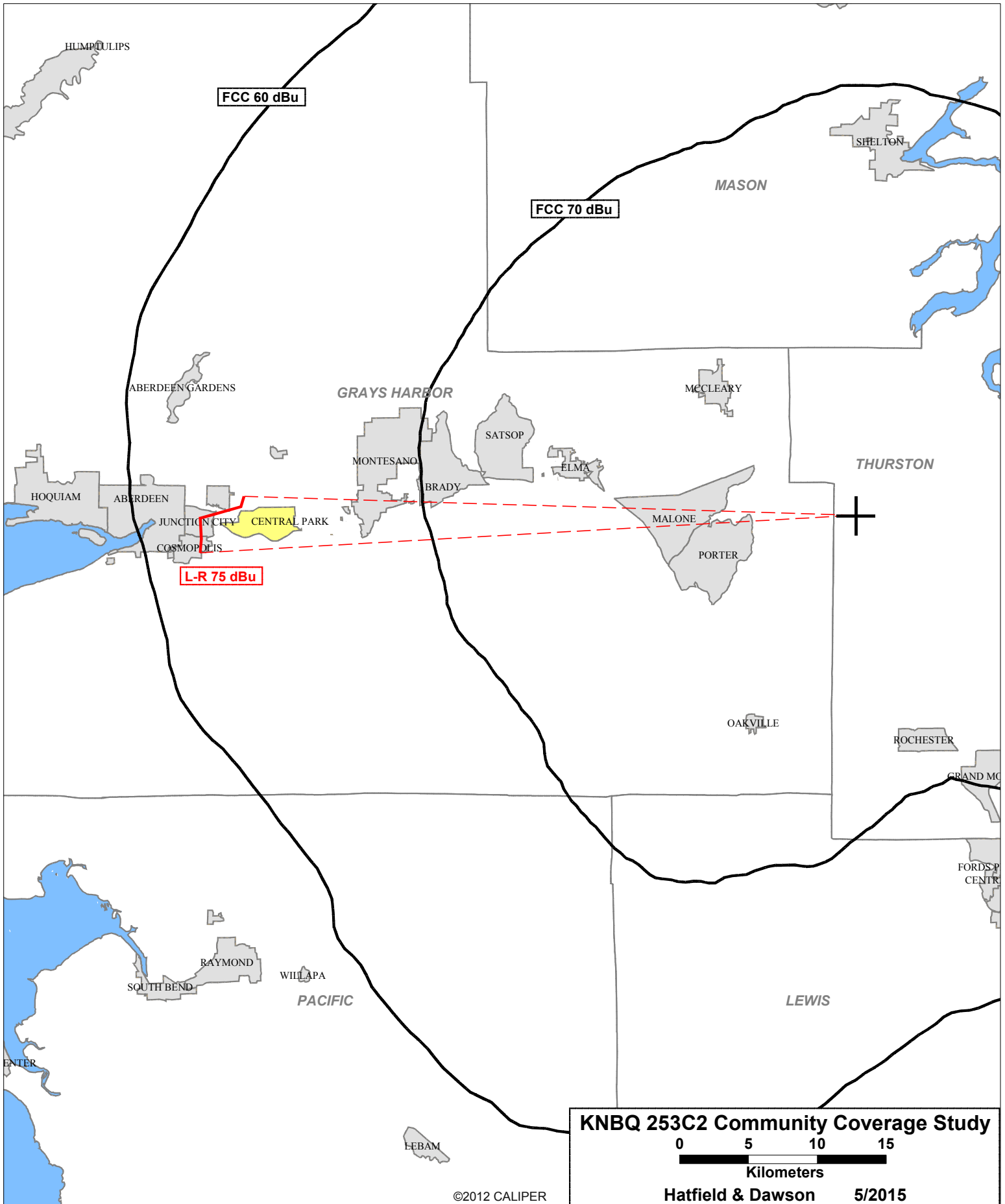| Radial	Free Space Field	Minus Diffraction Loss	Yields
270 deg	76.7 dBu	0.0 dB	76.7 dBu

Attached is a plot of the terrain path from the transmitter site to the sample location in Central Park. The attached terrain path plot includes a list of the Longley-Rice study parameters.
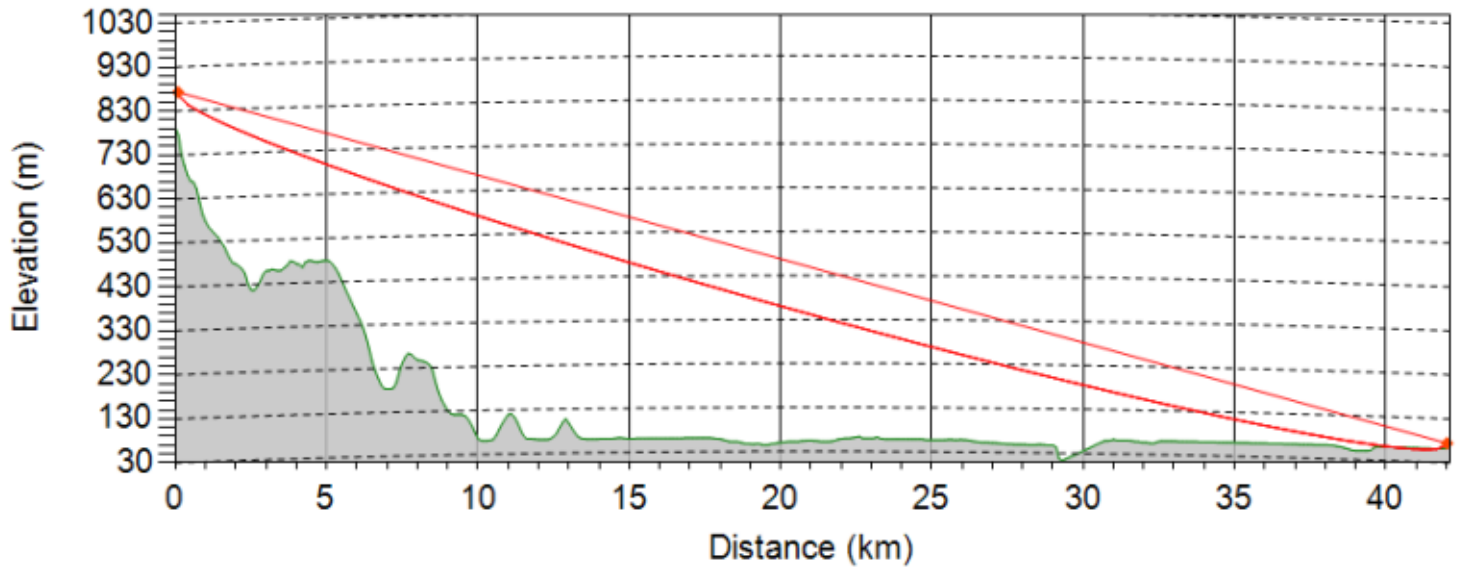
Longley-Rice Contour
The location of the Longley-Rice 75 dBu contour (chosen to allow for 5 dB of local clutter loss at the receive locations) in the direction of Central Park has been determined for 1-degree increment radials passing through Central Park. This contour has been plotted on the attached contour map exhibit, and encompasses 100% of the area and population of Central Park.

Radial	F(50,50) 70 dBu	L-R 75 dBu	L-R exceeds F(50,50) by
267	30.5 km	47.6 km	56%
268	30.6 km	47.5 km	55%

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269	30.8 km	47.5 km	54%
270	31.0 km	47.5 km	53%
271	31.1 km	44.5 km	43%
272	31.2 km	44.3 km	42%

HUMPTULIPS

FCC 60 dBu

SHELTON

MASON

FCC 70 dBu

ABERDEEN GARDENS

GRAYS HARBOR

McCLEARY

SATSOP

MONTESANO

THURSTON

HOQUIAM

ABERDEEN

ELMA

JUNCTION CITY   CENTRAL PARK

BRADY

COSMOPOLIS

MALONE

L-R 75 dBu

PORTER

OAKVILLE

ROCHESTER

GRAND MO

FORDS P
CENTR

RAYMOND

WILLAPA

SOUTH BEND

PACIFIC

LEWIS

ENTER

LEBAM

KNBQ 253C2 Community Coverage Study

| 0 | 5 | 10 | 15 |

Kilometers

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Link: Tx002 -> Rx002

Link end 1 ID:	Tx002	Link end 2 ID:	Rx002
Site name:	KNBQ	Site name:	Central Park
Latitude:	N46°58'31.00"	Latitude:	N46°58'31.90"
Longitude:	W123°08'16.00"	Longitude:	W123°41'34.70"
Transmitter Frequency:	98.5 MHz	Received signal level:	-38.17 dBmW = 76.7 dBu
Polarization:	horizontal	Receiver noise level:	-100.63 dBmW
Antenna elevation (AMSL):	873.00 m	Antenna elevation (AMSL):	74.34 m (9.1m AGL)
Point az. to link end 2:	270.24°	Point az. to link end 1:	89.83°
Pointing elev. to link end 2:	-1.25°	Pointing elev. to link end 1:	0.90°
Antenna gain toward link end 2:	0.00 dBd	Antenna gain toward link end 1:	0.00 dBd
ERPd toward link end 2:	2.30 dBkW	Net diversity gain:	0.00 dB

Path:	Tx002 -> Rx002
Length:	42.1145 km
Number of obstacles:	0
Excess pathloss:	-0.04 dB
Atm. Absorption loss:	0.00 dB
Path loss for Stats:	104.77 dB
Path Fresnel zone clearance:	----
K factor:	1.333