

Exhibit 30 – Engineering Statement

CBS Radio East Inc.

WIAD(FM) Bethesda, Maryland

Facility ID 9619

Ch. 234B 22.5 kW 217 m

CBS Radio East Inc. proposes to replace the WIAD main antenna while making slight changes in antenna height, effective radiated power (ERP), and geographical coordinates. The proposed facility will operate with an antenna height of 217 meters above average terrain (HAAT), an effective radiated power (ERP) of 22.5 kW, and no change in site location.¹ This Statement addresses the allocations, environmental, and radiofrequency concerns related to this proposal.

The attached coverage map Figure 1 demonstrates that Bethesda, Maryland will be encompassed by the proposed 70 dBμ city-grade coverage contour. The following allocations study shows that the proposed facility will remain short spaced to multiple stations. Regardless, no interference from the short spaced stations is predicted within the principal community.

REFERENCE							DISPLAY DATES	
38 57 49.5 N.			CLASS = B Int = B				DATA	07-26-16
77 06 18.3 W.			Current Spacings to 3rd Adj.				SEARCH	07-26-16
----- Channel 234 - 94.7 MHz -----								
Call	Channel		Location		Azi	Dist	FCC	Margin

WIAD	LIC	234B	Bethesda	MD	156.6	0.01	241.0	-241.0
WDSD_%	LIC	234B	Dover	DE	78.3	135.81	241.0	-105.2
WDAC_%	LIC	233B	Lancaster	PA	35.4	127.55	169.0	-41.5
WRBS-FM_%	LIC-D	236B	Baltimore	MD	48.7	49.36	74.0	-24.6
WRBT	LIC-D	235B	Harrisburg	PA	5.0	150.73	169.0	-18.3
W288BS	LIC-D	288D	Reston	VA	49.6	0.07	15.0	-14.9
WWXX	LIC-N	232A	Buckland	VA	248.9	68.00	69.0	-1.0
WRVQ	LIC	233B	Richmond	VA	186.1	174.15	169.0	5.2

Based on historic FCC engineering filings, it is understood that WIAD's short spacing to WDSD Dover, WDAC(FM) Lancaster, PA; WRBS-FM Baltimore, MD; and WRBT Harrisburg, PA has existed since 1964 and is therefore grandfathered under §73.213(a). Maps showing the licensed and proposed WIAD protected and interfering contours are provided in Figure 2 for co-

¹ WIAD has operated from the proposed tower for many decades. This application seeks to correct the site coordinates to be consistent with FCC Antenna Structure Registration (ASR) 1035708 after converting to NAD27 and rounding to the nearest tenth of a second.

Exhibit 30 – Engineering Statement
CBS Radio East Inc.

channel station WDSD and in Figure 3 for first-adjacent stations WDAC and WRBT.² Interference between these stations was predicted per §73.213(a), depicted as red shading in Figures 4 – 12, and summarized in the table below. Because the proposed facility will decrease existing interference areas and population, both caused and received, the proposed changes are thought to serve the public interest.

Interference Area	Licensed WIAD	Proposed WIAD	Difference
WDSD from WIAD	Area: 2,865.3 km ² Population: 216,956 (Figure 4)	Area: 2,849.1 km ² Population: 214,743 (Figure 5)	Area: -16.2 km ² Population: -2,213
WDSD to WIAD	Area: 3,530.7 km ² Population: 1,528,038 (Figure 6)	Area: 3,447.4 km ² Population: 1,485,591 (Figure 7)	Area: -83.3 km ² Population: -42,447
WDAC from WIAD	Area: 792.8 km ² Population: 349,913 (Figure 8)	Area: 746.2 km ² Population: 339,181 (Figure 9)	Area: -46.6 km ² Population: -10,732
WDAC to WIAD	Area: 804.4 km ² Population: 850,703 (Figure 10)	Area: 759.2 km ² Population: 817,614 (Figure 11)	Area: -45.2 km ² Population: -33,089
WRBT to/from WIAD	Area: 0 km ² Population: 0 (Figure 3)	Area: 0 km ² Population: 0 (Figure 3)	Area: 0 km ² Population: 0
Total			Area: -191.3 km ² Population: -88,481

There is no further study of the WIAD proposal with respect to second-adjacent grandfathered station WRBS-FM because §73.213(a)(4) excludes such stations from distance separation and interference protection requirements.

The licensed WWXX facility was processed under the FCC's Contour Protection rule, §73.215.³ As shown in Figure 12, no prohibited contour overlap would occur between WWXX and the proposed WIAD facilities. Because the proposed facility will not alter the allocations

² All contour locations in this Exhibit were determined using three arc-second National Elevation Dataset (NED) terrain data along 360 evenly-spaced radials.

³ See FCC File Numbers BPH-20090416ACO and BLH-20091110AAQ.

Exhibit 30 – Engineering Statement
CBS Radio East Inc.

landscape with respect to WWXX, WIAD is not seeking processing under the Contour Protection rule.

The proposed site is beyond the coordination distances of Canada, Mexico, and the nearest FCC monitoring station.⁴ There are no nearby AM facilities that trigger FCC requirements to study those antenna systems.⁵ Thus, it is believed that the proposed facility satisfies all allocation matters.

The proposed facility uses an existing tower with no change in overall height, marking, or lighting specifications. Consequently, this application is categorically excluded from environmental processing.

The proposed operation was evaluated for radiofrequency exposure using the FCC Office of Engineering and Technology's updated *FMMModel* software⁶ which calculates RF power density at ground level given the height, power, and type of FM broadcast antenna. As demonstrated in the following, the proposed transmitting system complies with the FCC's general population/uncontrolled maximum permitted exposure (MPE) exposure guideline of $200 \mu\text{W}/\text{cm}^2$ for the FM broadcast band.

An Electronics Research two-bay, one wavelength-spaced, model 1183 circularly-polarized panel antenna is proposed for WIAD.⁷ Using this antenna type and WIAD's proposed parameters as input values, *FMMModel* predicts a maximum, ground-level power density of $19.04 \mu\text{W}/\text{cm}^2$ or 9.5 percent of the MPE.

⁴ The proposed facility is 33.2 km from the Laurel, Maryland monitoring station, well beyond the 16 kilometer coordination distance applicable for WIAD's proposed 22.5 kW ERP facility.

⁵ The nearest AM station, non-directional WAVA(AM) Arlington, VA, is four wavelengths away.

⁶ See FCC Public Notice DA 16-340, Released March 31, 2016.

⁷ This is an EPA "Type 1" antenna.

Exhibit 30 – Engineering Statement
CBS Radio East Inc.

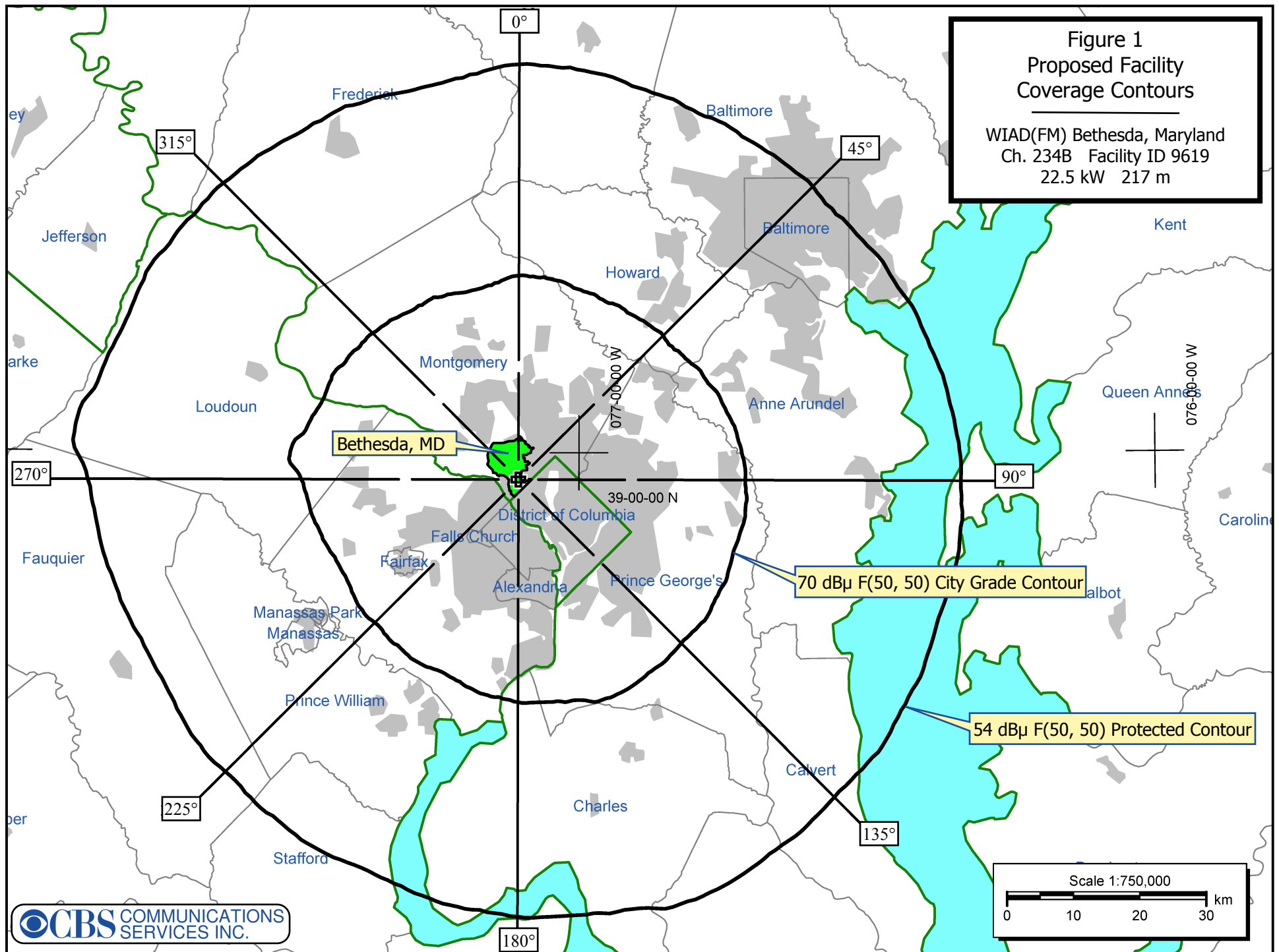
Co-located WITH(FM) Washington, DC is licensed to use a similar antenna from the same site.⁸ With WIHT's licensed parameters as input values, *FMMModel* predicts a maximum WIHT ground level power density of $16.4 \mu\text{W}/\text{cm}^2$ or 8.2 percent of the MPE. Along with WIAD, the two non-excluded facilities at this site total 17.7 percent of the MPE; well less than the FCC limit.

Tower access will continue to be controlled and appropriate RF exposure warning signs will continue to be posted. A site exposure policy is in effect that includes restriction of access, power reduction, or the complete shutdown of facilities when work must be performed where predicted RF levels exceed appropriate guidelines. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.

⁸ See FCC File BLH-19931215KE.

Figure 1
Proposed Facility
Coverage Contours

WIAD(FM) Bethesda, Maryland
Ch. 234B Facility ID 9619
22.5 kW 217 m



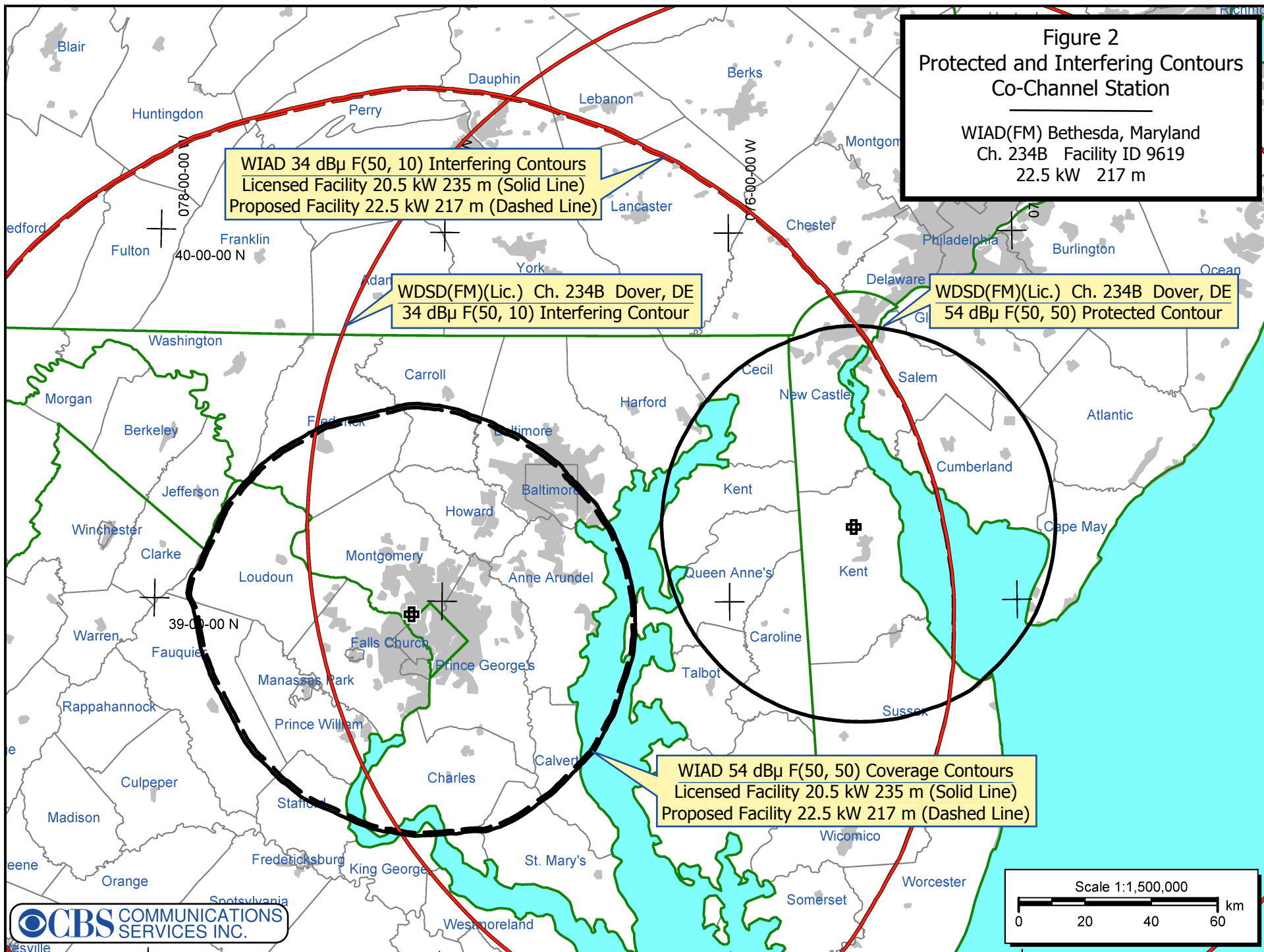


Figure 3
Protected and Interfering Contours
First-Adjacent Channel Stations

WIAD(FM) Bethesda, Maryland
Ch. 234B Facility ID 9619
22.5 kW 217 m

WRBT(FM)(Lic.) Ch. 235B Harrisburg, PA
54 dB μ F(50, 50) Protected Contour

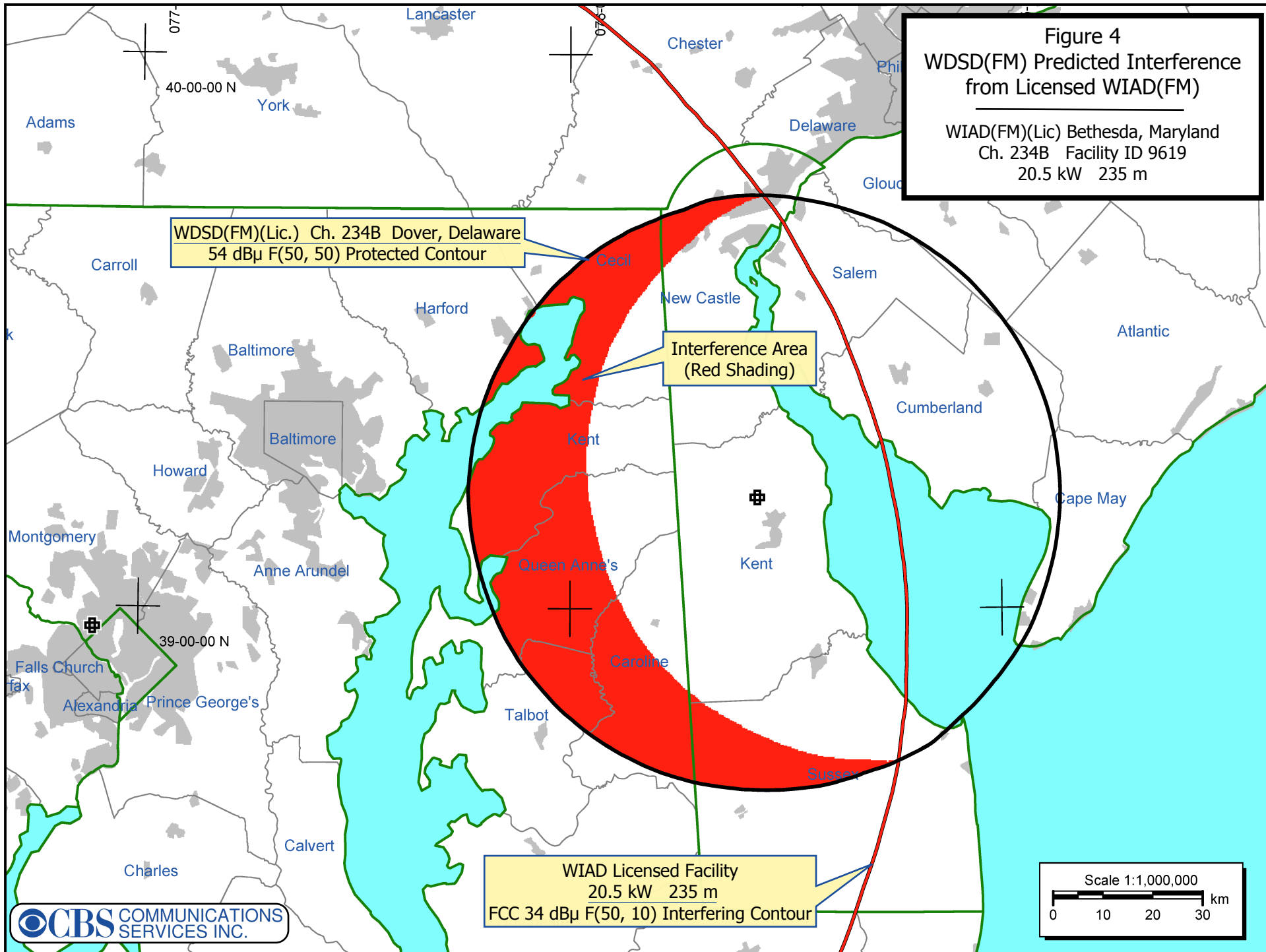
WRBT(FM)(Lic.) Ch. 235B Harrisburg, PA
48 dB μ F(50, 10) Interfering Contour

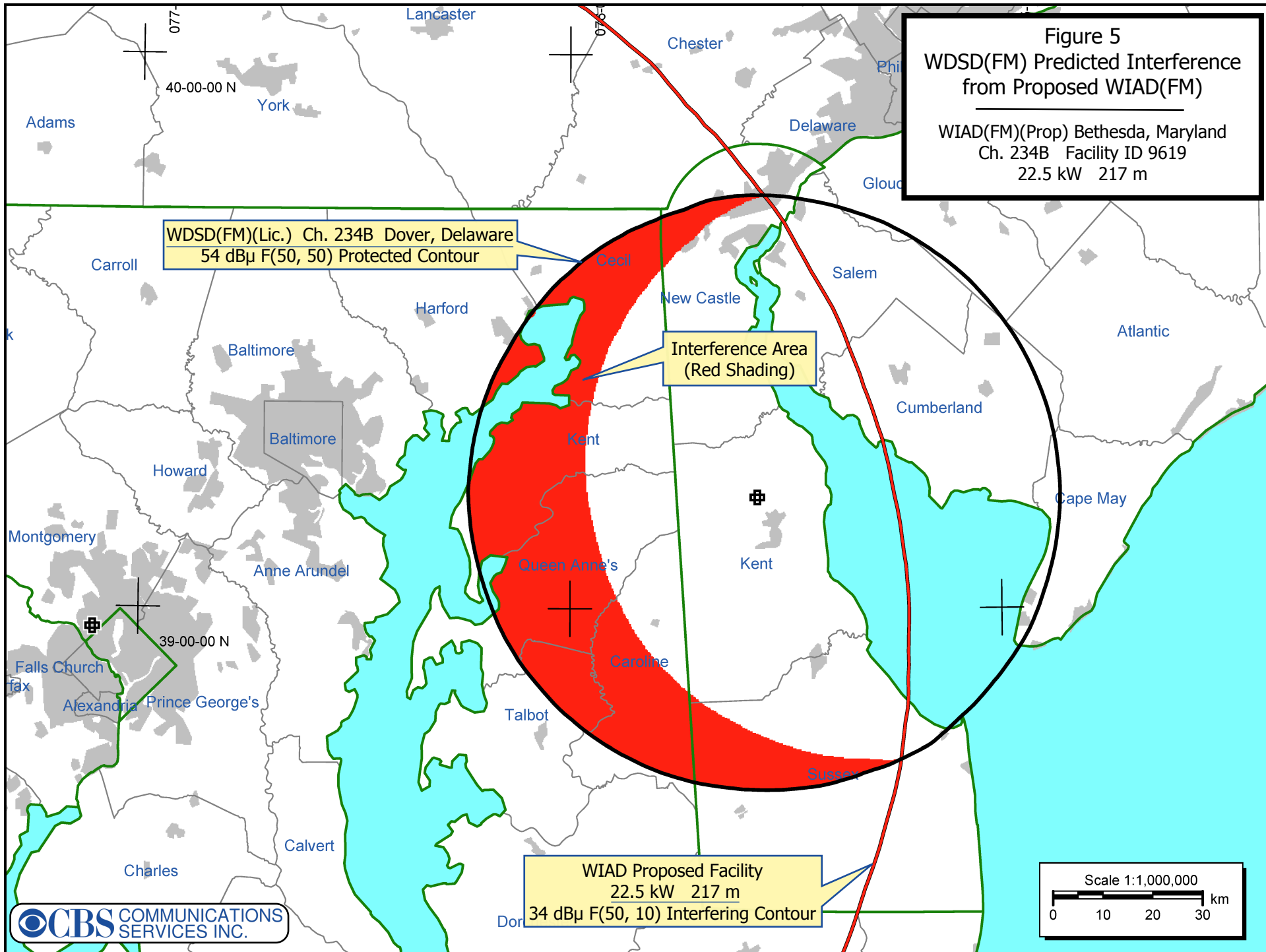
WDAC(FM)(Lic.) Ch. 233B Lancaster, PA
54 dB μ F(50, 50) Protected Contour

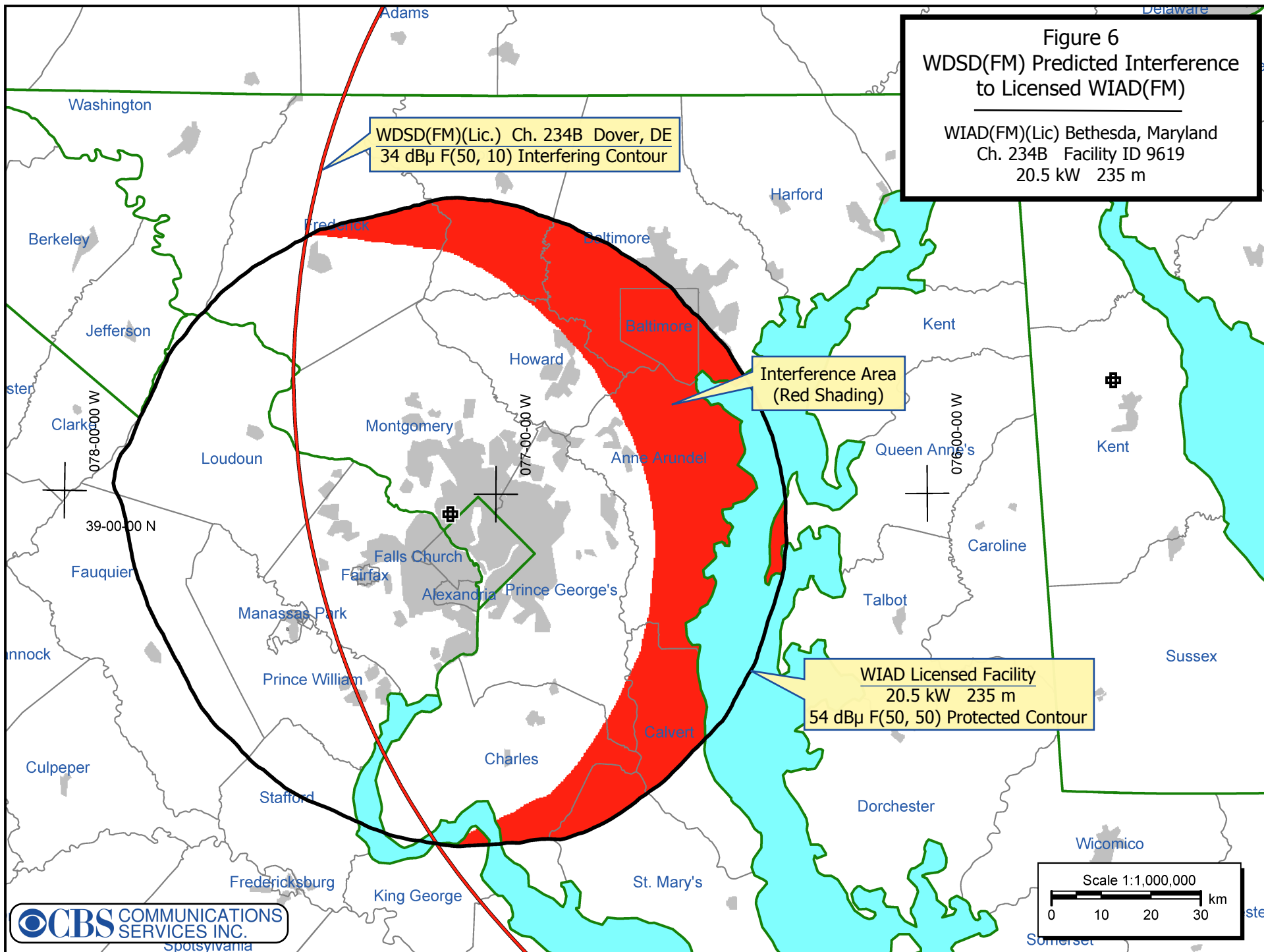
WIAD 48 dB μ F(50, 10) Interfering Contours
Licensed Facility 20.5 kW 235 m (Solid Line)
Proposed Facility 22.5 kW 217 m (Dashed Line)

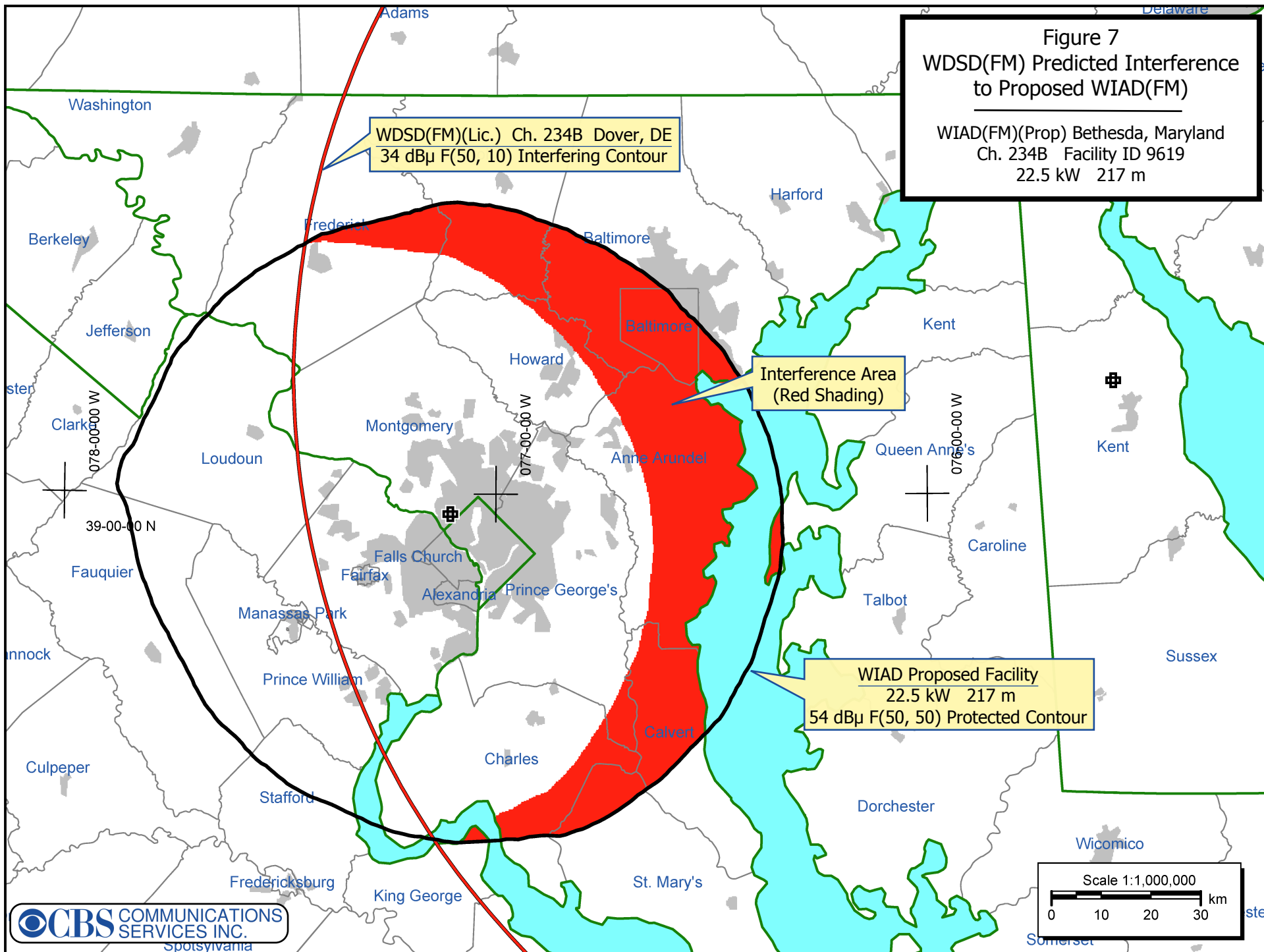
WDAC(FM)(Lic.) Ch. 233B Lancaster, PA
48 dB μ F(50, 10) Interfering Contour

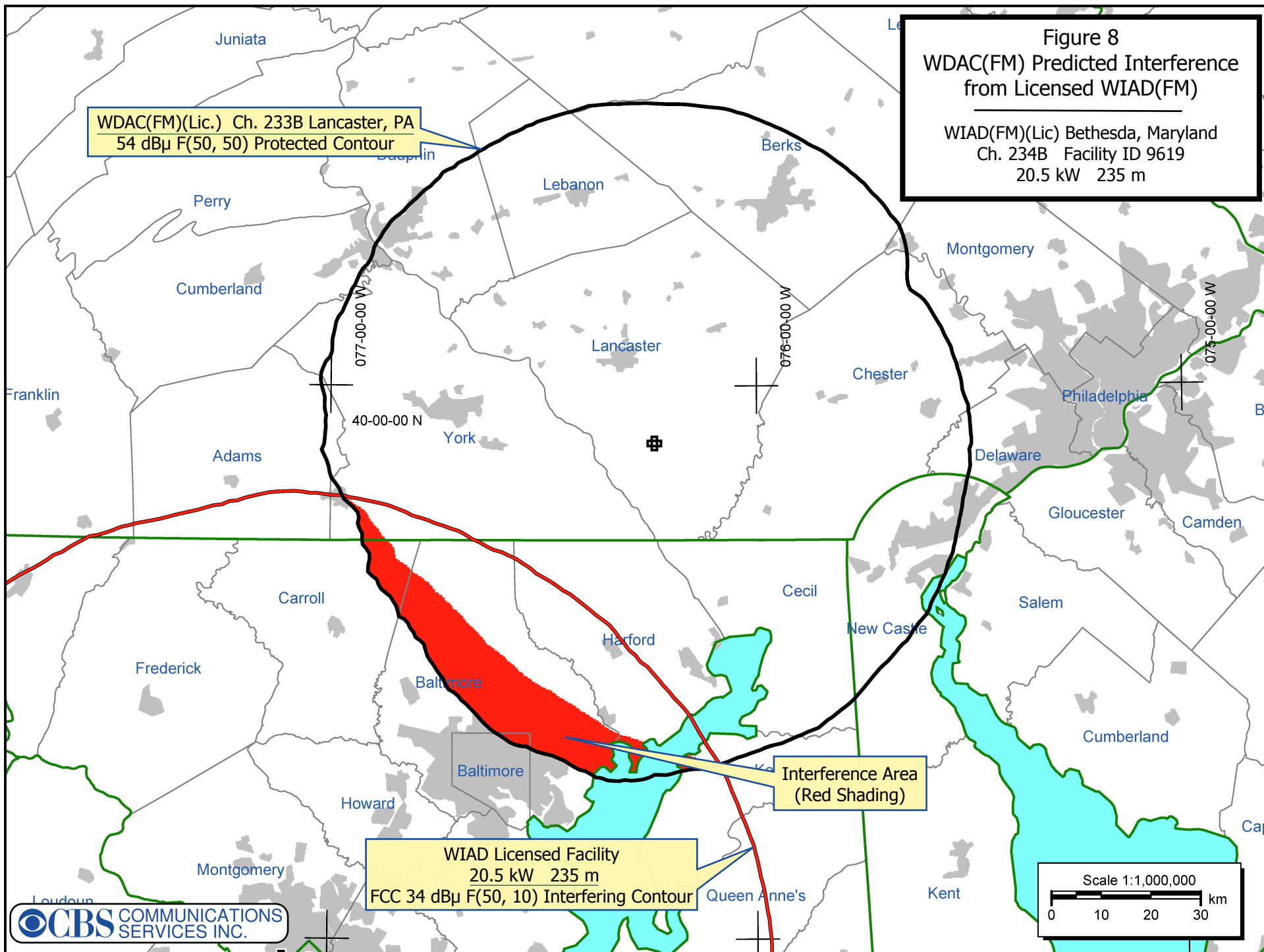
WIAD 54 dB μ F(50, 50) Coverage Contours
Licensed Facility 20.5 kW 235 m (Solid Line)
Proposed Facility 22.5 kW 217 m (Dashed Line)

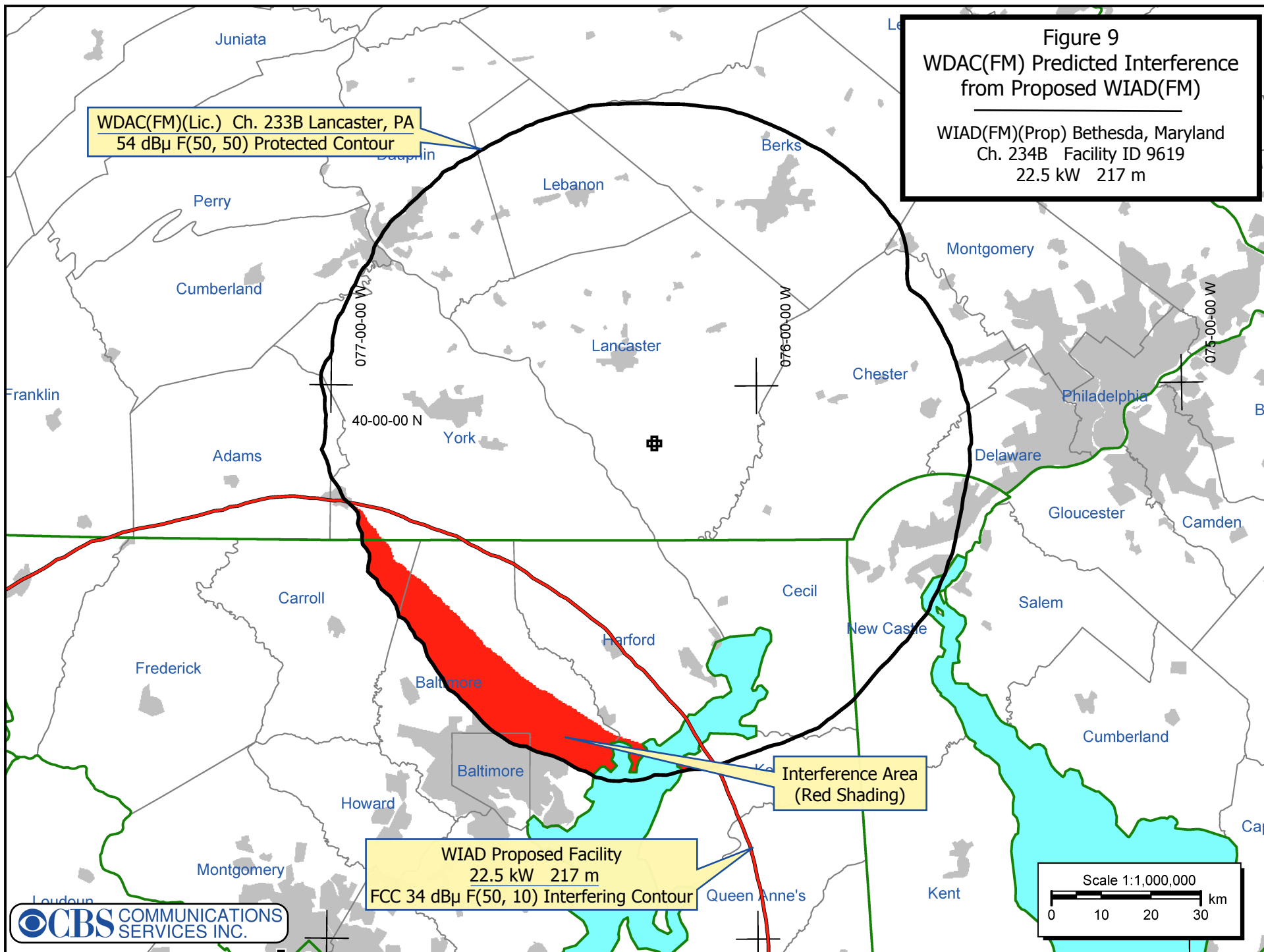


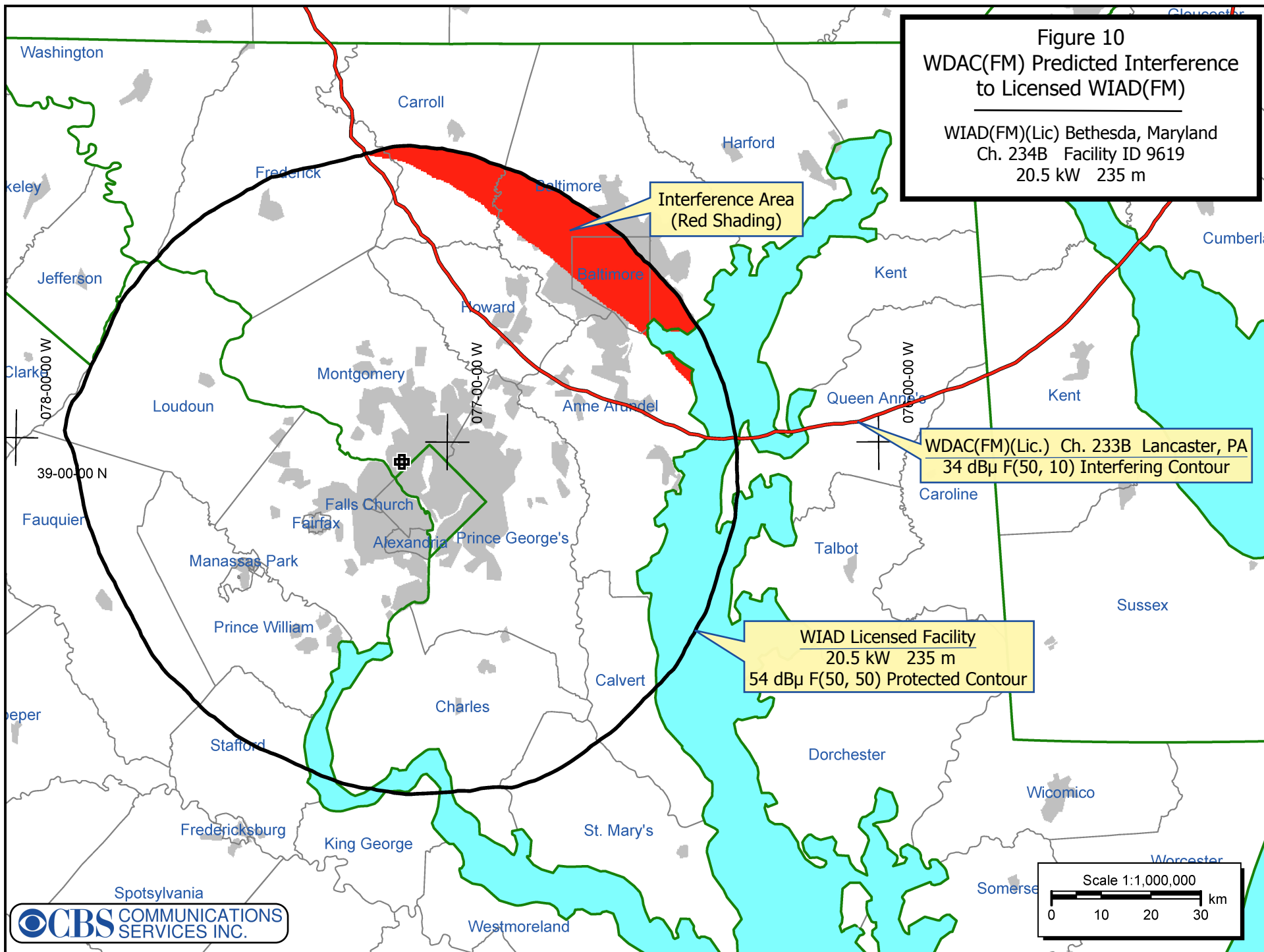












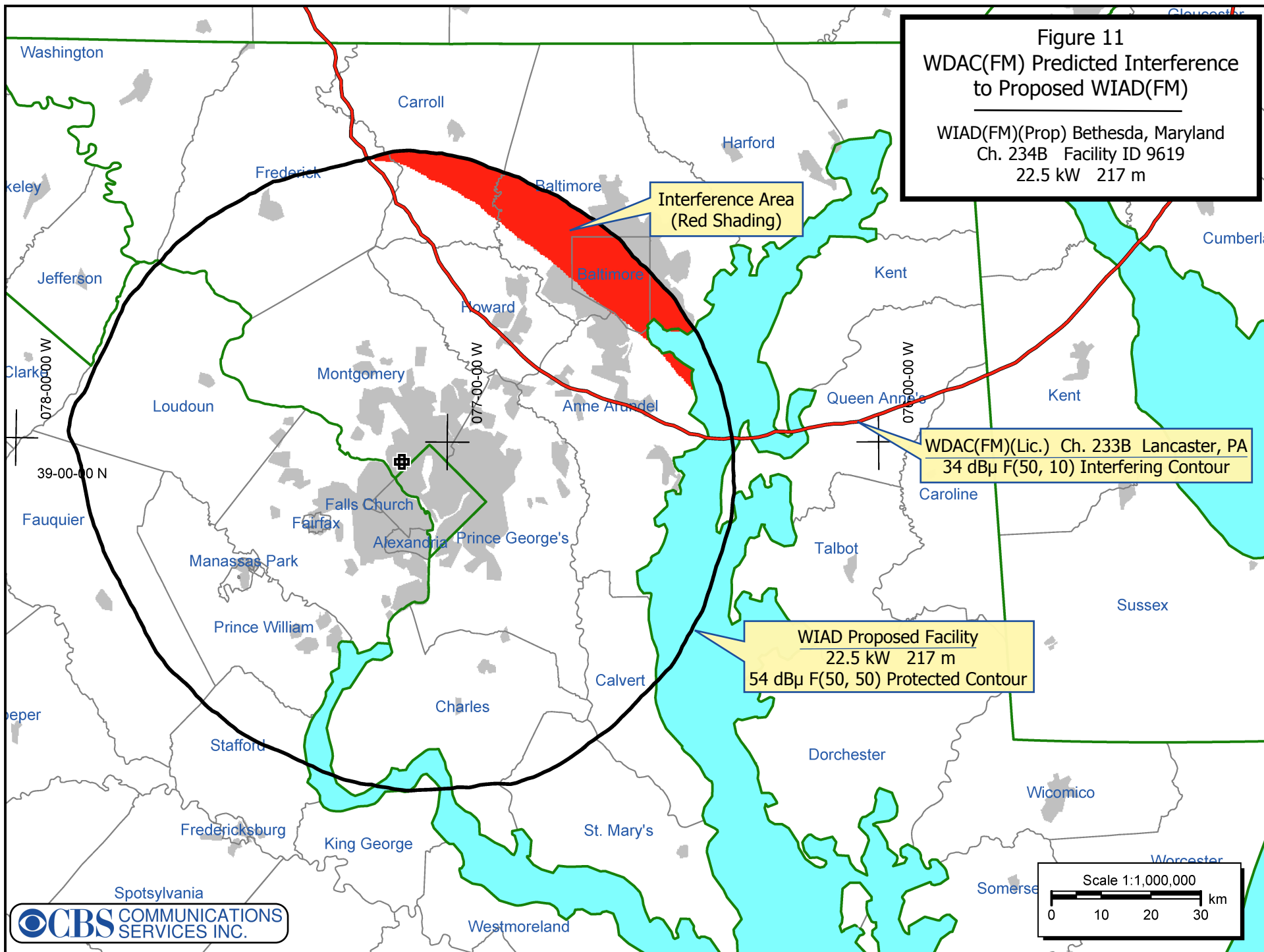


Figure 12
Protected and Interfering Contours
Second-Adjacent Channel Station

WIAD(FM) Bethesda, Maryland
Ch. 234B Facility ID 9619
22.5 kW 216 m

