WTVJ Application for CP for Minor Modification of Licensed Facility (Amended)
August 9, 2022

Engineering Exhibit (updated with amendment to LMS file number 0000189331)
The purpose of this application is to request modification of the main license (file number BLCDT-20030707ABG) for WTVJ, Miami, FL, Facility ID 63154, licensed to NBC Telemundo License LLC. It is being amended to reflect a small discrepancy in structure heights discovered during a tower survey that resulted in the proposed height of the new antenna slightly exceeding the overall height currently authorized for American Tower Corporation's tower ASR #1026553 where the proposed antenna will be mounted.

The ASR number has been removed from the application and replaced with values from FAA Study 2022-ASO-14780-OE. The tower owner, American Tower Corporation, will modify the ASR once the FAA study is completed and approved. WTVJ requests a grant of a construction permit conditioned on FAA approval so that the existing antenna, which an IR drone study showed has overheating at the center feed point, can be replaced as soon as possible after FAA approval is received.

This application proposes replacing the existing non-directional antenna with a new directional antenna with less electrical beam tilt and adding a vertically polarized component at an ERP of 521.3 kW. Horizontally polarized ERP is unchanged at 1,000 kW. The proposed antenna center of radiation after correction for the revised structure height is 313.7 meters above mean sea level (AMSL) with a height above average terrain (HAAT) of 312.0 meters

A TVStudy 2.2.5 analysis of the proposed facility using the default 2 km cell size and 1 km terrain profile spacing showed no increase in interference created to any application or authorized facility in the LMS database dated August 9, 2022.

Antenna System
The proposed facility uses a TFU-18ETT/VP-R 4C140 top mounted slot antenna with 0.5 degrees electrical beam tilt. The main beam axis of symmetry is 292 degrees.

Tabular and plotted antenna data is attached. The antenna will be elliptically polarized. As shown in the main beam azimuth plots in the attached 73.625(c) data, the vertically polarized effective radiated power does not exceed the horizontally polarized effective radiated power in any direction.

In the "Antenna Technical Data" section the question "Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?" is checked "Yes" solely to allow upload of elevation pattern data and not because of a variation in elevation pattern.

Environmental Statement (Amended)
The requested facility will replace an existing antenna on an existing tower at a site shared by other broadcasters. No new tower construction is required but the new antenna will increase the overall height of the tower from 317.3 meters to 319.1 meters above ground level (AGL). As of August 9, 2022, status of the proposed height increase in FAA Study # 2022-ASO-14780-OE is "in progress". The heights in the application are based on values in the FAA study and not those on the current ASR # 1026553.

Environmental Statement (continued)

RF power density from the facility using a combined horizontal and vertically polarized ERP of 1,521.3 kW was calculated using the procedures described in FCC Office of Engineering and Technology Bulletin 65. The maximum calculated RF power density on the ground from the proposed facility, in any location around the tower, after including an additional 2 meters for the height of a person and an additional 61 meters to allow for surrounding neighborhood building roof tops is 0.002533 mW/cm^2 or 0.66% of the public exposure limit of 0.383 mW/cm^2 for an uncontrolled environment as specified in FCC rule §1.1310 for WTVJ's frequency of 575 Mhz. The tower itself is protected by fence and gates and is not accessible to the general public.

RF exposure in the main beam of the antenna is calculated to drop below the maximum permissible occupational limit for a controlled environment at horizontal distances greater than 163 meters from the tower and below 5% 0f the public exposure limit at distances greater than 1,629 meters from the tower. The tower is shared with other facilities and power will be reduced or shut off as required to protect workers on this tower from RF exposure above the limits specified in FCC rule §1.1310 There are no structures other than two broadcast/wireless towers above 61meters in height within 1,629 meters of the tower. These towers are greater than 1,000 meters from the WTVJ and the maximum calculated main beam RF power density on those towers is less than 0.05083 mW/cm^2 (assuming maximum ERP) or 2.65% of the controlled environment exposure limit at 575 MHz.

Broadcast Facility

Compliance with 73.616:

A study using TVStudy 2.2.5 and the FCC LMS database dated 08/09/2022 showed the proposed facility complies with the interference requirements of Section 73.616 with regards to any applications or authorized facilities when studied with the default settings of 2 km cell size and 1 km terrain profile point spacing. A copy of the TVStudy results is attached as separate exhibit “tvixstudy.txt”.

Compliance with 73.622(i):

The proposed facility will operate on the channel currently assigned to WTVJ. The proposed facility has a reduced service area of 28,429.0 sq. km compared to its currently licensed coverage area of 31,054.5 sq. km as calculated in TVStudy.

Compliance with 73.623(e):

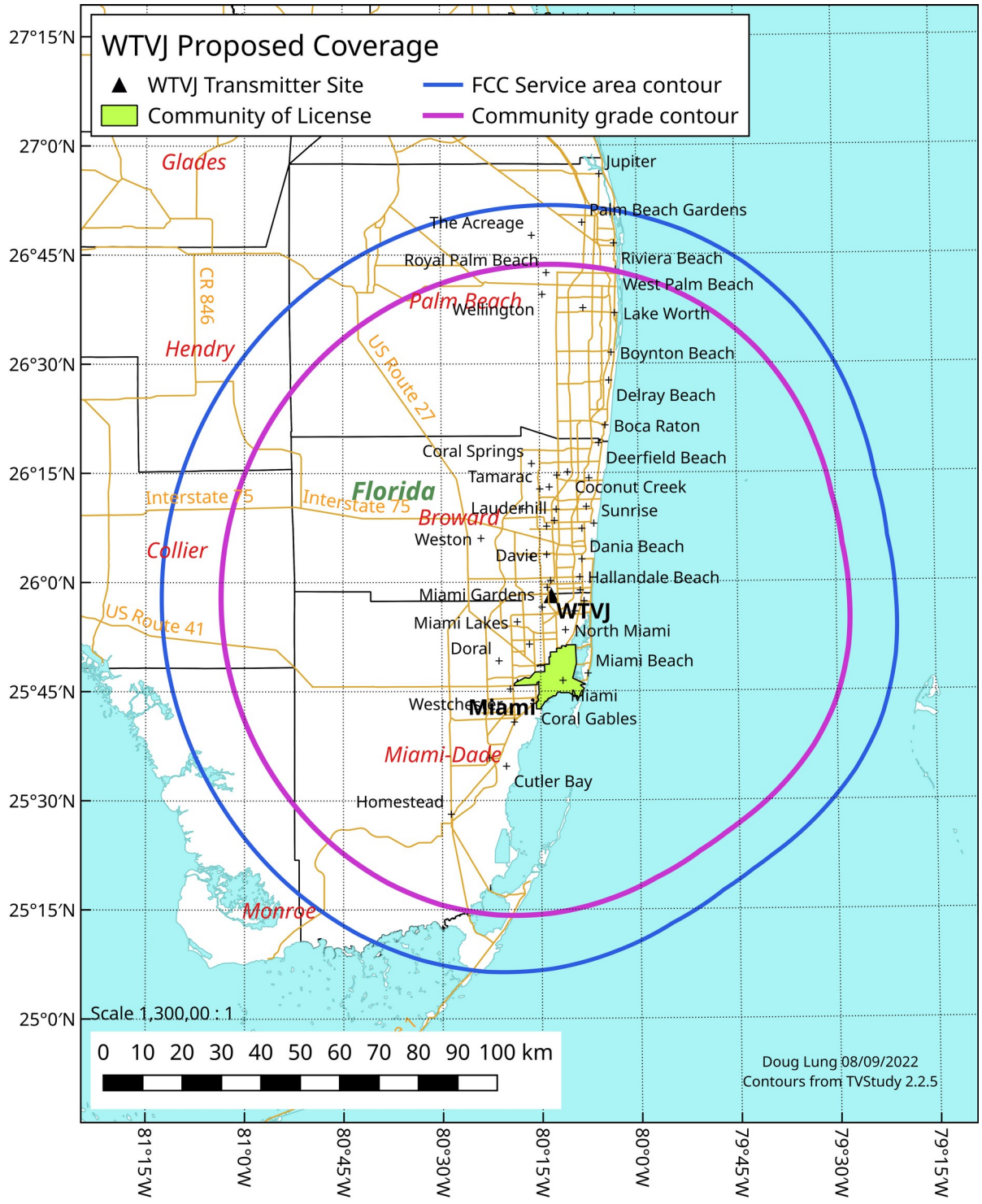
Not applicable. This application does not change the assigned channel or location of the authorized station.

Compliance with 73.625:

The proposed facility will place a 48 dBμv/m principle community contour over Miaimi, FL, the community of license. See “WTVJ Proposed Coverage” map, attached.

Compliance with 73.1030:

A TVStudy analysis did not show a requirement for notification or coordination with any facility listed in Section 73.1030.


WTVJ Proposed Coverage
WTVJ Transmitter Site
Community of License
FCC Service area contour
Community grade contour
27°15′N
27°0′N
26°45′N
26°30′N
26°15′N
26°0′N
25°45′N
25°30′N
25°15′N
25°0′N
81°15′W
81°0′W
80°45′W
80°30′W
80°15′W
80°0′W
79°45′W
79°30′W
79°15′W
Glades
Hendry
Collier
Monroe
Miami-Dade
Broward
Palm Beach
Florida
CR 846
US Route 27
Interstate 75
Interstate 75
US Route 41
Jupiter
Palm Beach Gardens
The Acreage
Royal Palm Beach
Riviera Beach
West Palm Beach
Wellington
Lake Worth
Boynton Beach
Delray Beach
Boca Raton
Coral Springs
Deerfield Beach
Tamarac
Coconut Creek
Lauderhill
Sunrise
Weston
Davie
Dania Beach
Hallandale Beach
Miami Gardens
WTVJ
Miami Lakes
North Miami
Doral
Miami Beach
Miami
Coral Gables
Cutler Bay
Homestead
Scale 1,300,00 : 1
0 10 20 30 40 50 60 70 80 90 100 km
Doug Lung 08/09/2022
Contours from TVStudy 2.2.5