

Lightner Communications, LLC
FM Translator W253CJ, Facility ID 200353, Altoona, PA
October 2019 Application for Modification of Construction Permit
ENGINEERING STATEMENT

The application requests a minor Construction Permit to change antenna location, antenna elevation, and antenna type of W253CJ. WRTA(AM) will remain as the primary station.

Figure 1 demonstrates that the proposed 60 dBu contour overlaps that of the licensed W253CJ facility (BLFT-20180405ACF) and also shows that its predicted 60 dBu coverage contour does not extend beyond a 25-mile radius of primary station WRTA(AM) Altoona, PA (Facility ID 67505) operating on 1240 kHz. All contours in the instant application are based on FCC 30-second terrain data.

Figure 2 shows that all co-channel and 1st-adjacent FM stations will be protected against prohibited contour overlap. **Figure 3** shows the relationship between the proposed translator facility and local 2nd- and 3rd-Adjacent stations. The predicted field strength of WRKW, Channel 256B at the proposed W253CJ site is 70.5 dBu; therefore, the relevant interference contour is 110.5 dBu with a maximum distance of 331 meters. These contours are shown in greater detail on a topographic map in **Figure 4**. A recent satellite image of this area showing adjacent structures is included as **Figure 5**. Please note that the closest habitable building is a residence over 400 meters west of the proposed W253CJ antenna location. Closer buildings are TV and FM transmitting stations or other communications facilities in the "Wopsy" antenna farm. WFGY, Channel 251B (Facility ID 38265) is located approximately 200 meters south of the proposed site, and with an effective radiated power of 30 kW – over 20 dB higher than that of W253CJ -- it will not be subject to objectionable 2nd-adjacent interference. Applicant believes this showing satisfies requirements of §74.1204(d) in accordance with the "Living Way" precedent.

The proposed W253CJ facility will produce a radiofrequency power density less than $6.8 \mu\text{W}/\text{cm}^2$ at two meters above ground level, 3.4 percent of the General Population/Uncontrolled guideline, as shown in **Figure 6**. In coordination with other users, applicant will reduce power or cease operation of W253CJ as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

Figure 1
Present and Proposed Coverage Contours

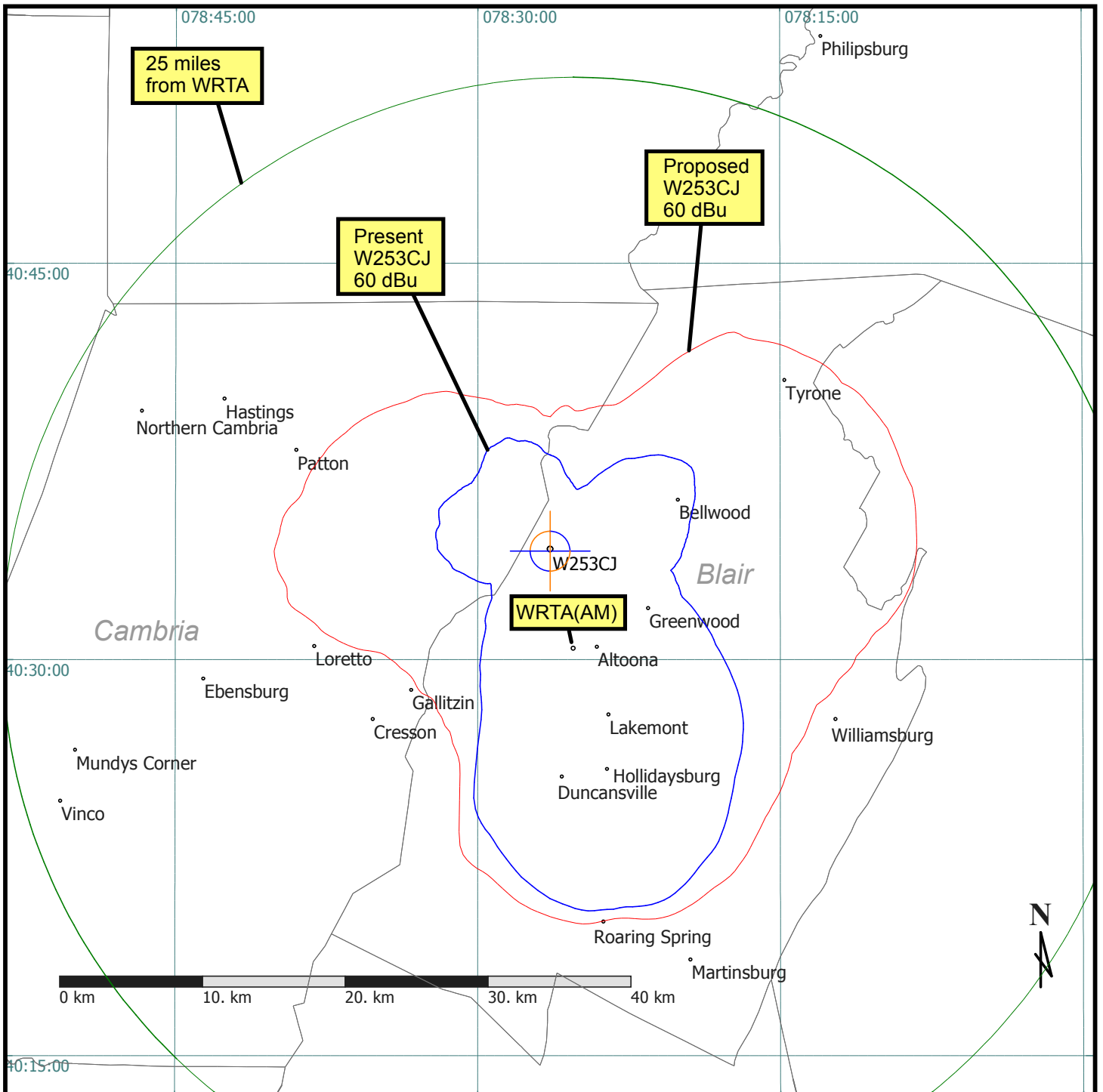


Figure 2
Co-Channel and 1st-Adjacent Interference Contours

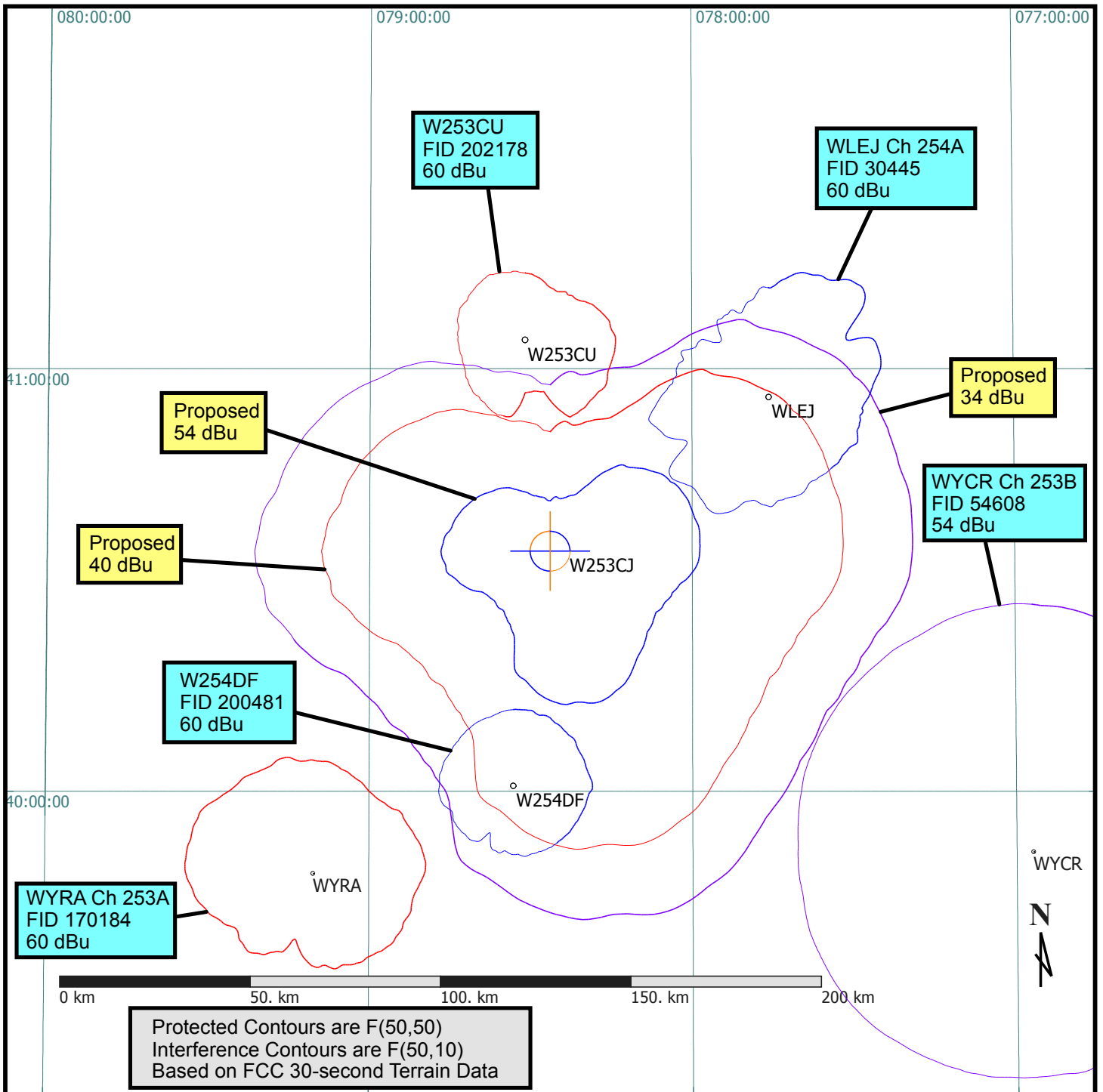


Figure 3
2nd- and 3rd-Adjacent Interference Contour

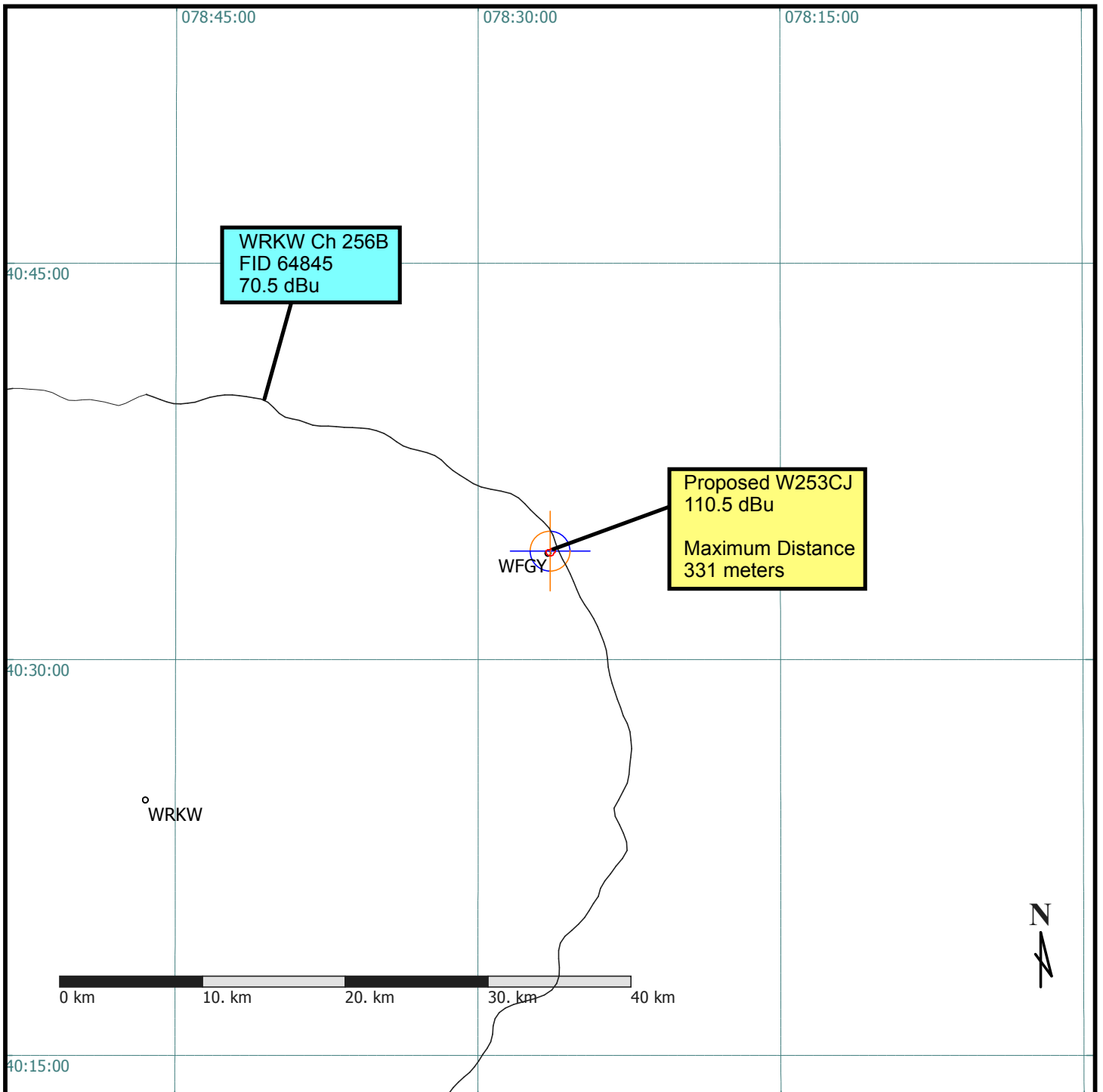


Figure 4
Vicinity of Site -- Topo Map

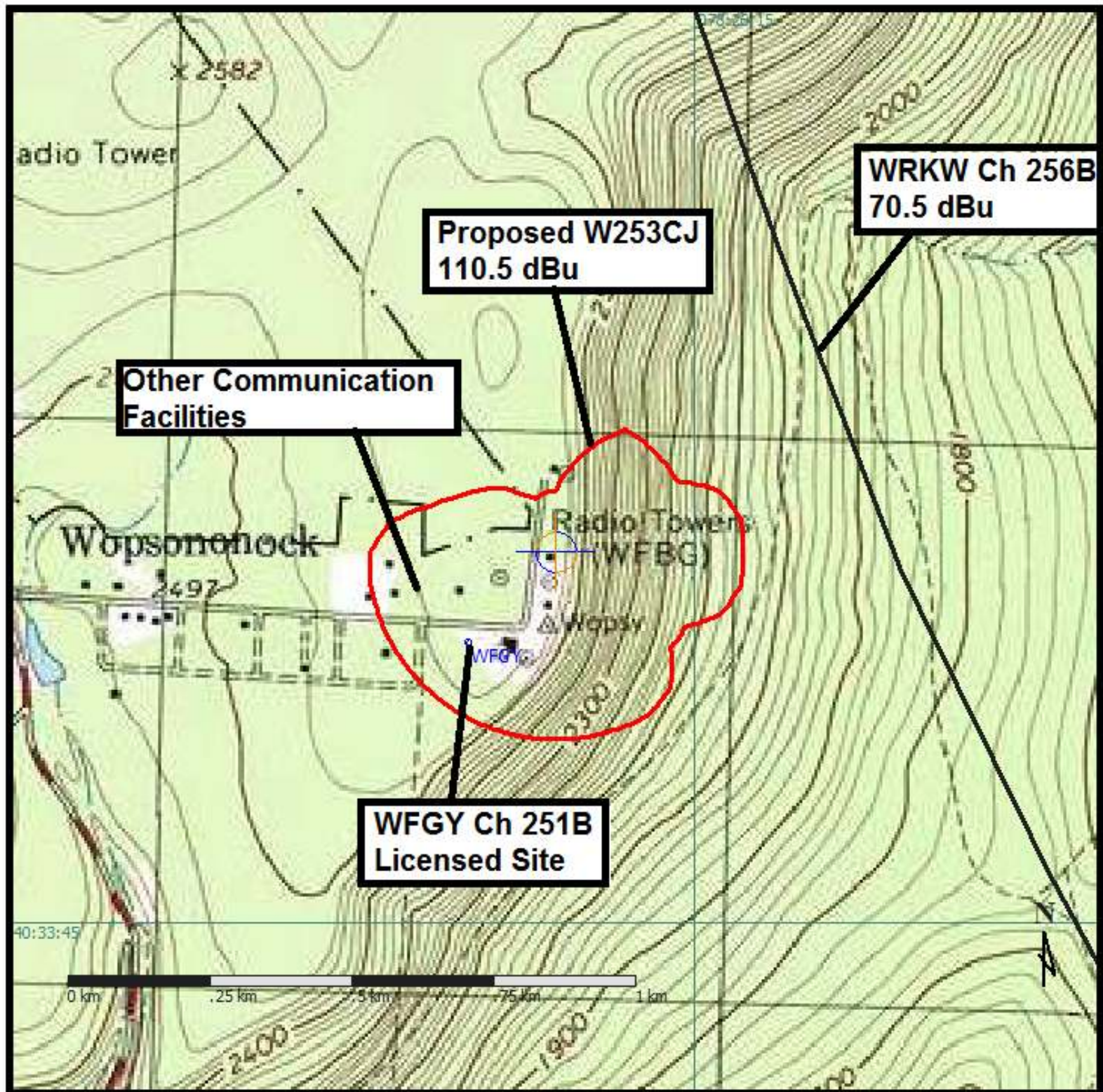


Figure 5 -- Satellite Image of Proposed Site and Vicinity

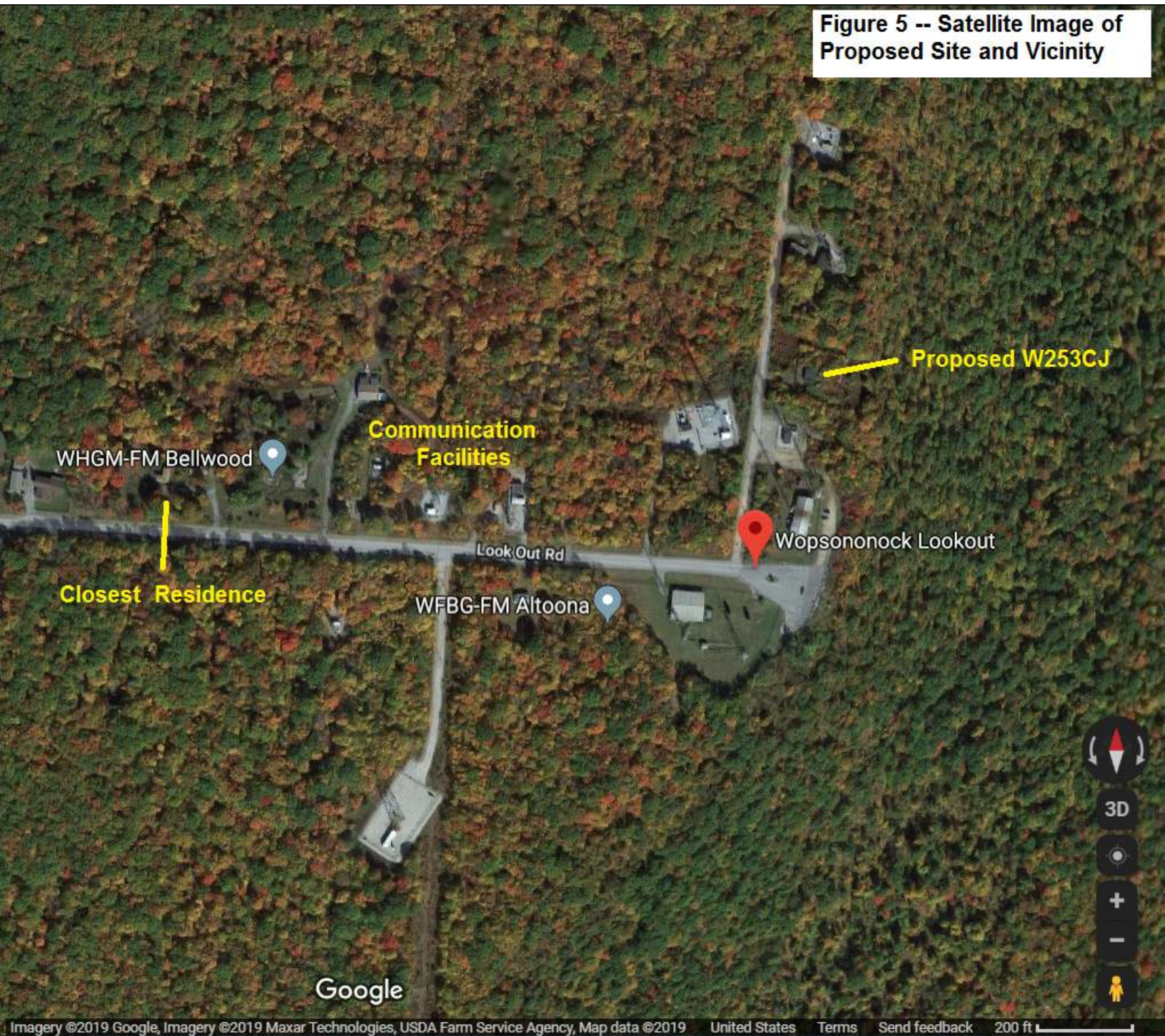
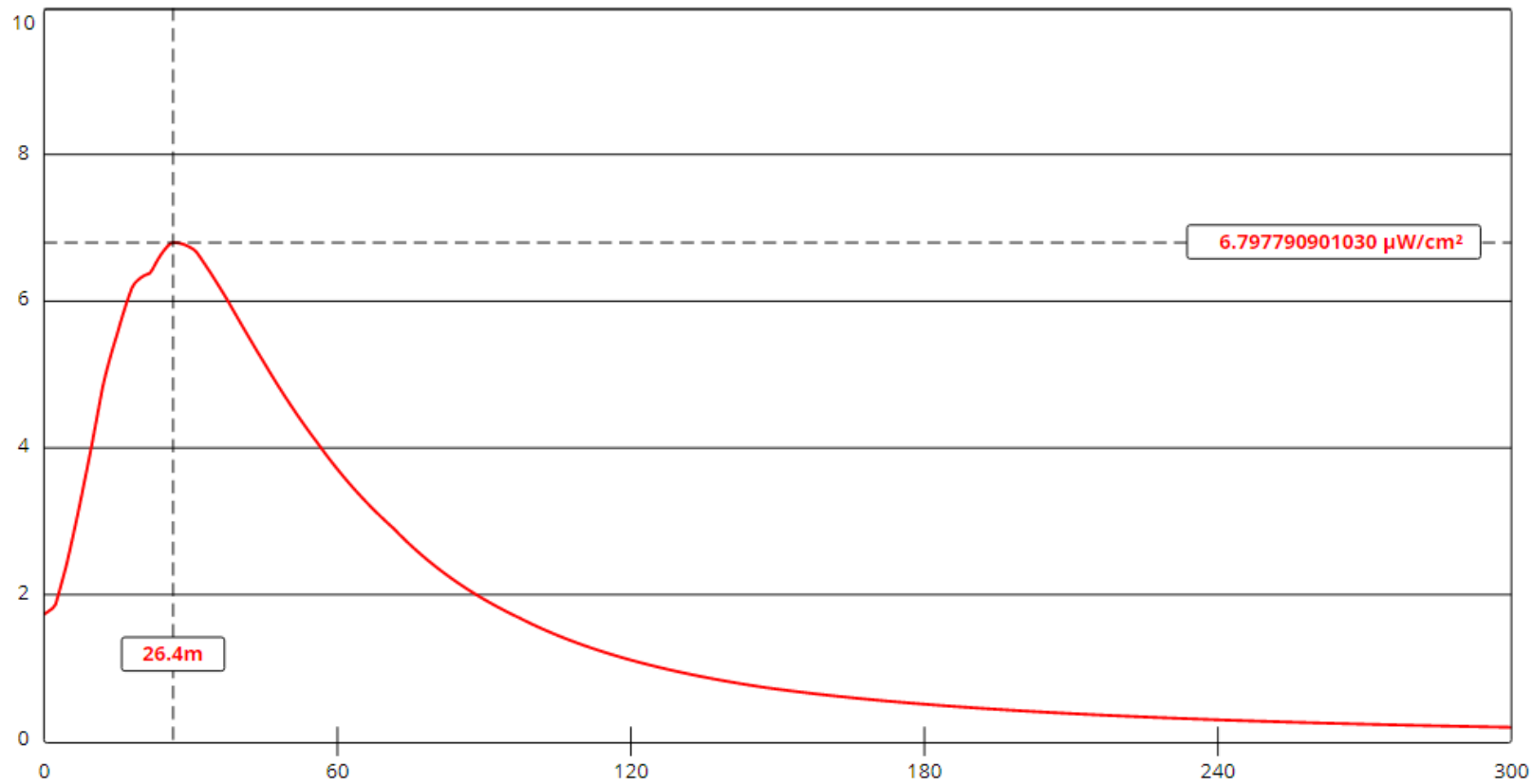


Figure 6 - 'FM Model' RF Power Density Plot



View Tabular Results +

Channel Selection	Channel 253 (98.5 MHz) ▼		
Antenna Type +	EPA Type 2: Opposed V Dipole ▼		
Height (m)	<input type="text" value="28"/>	Distance (m)	<input type="text" value="300"/>
ERP-H (W)	<input type="text" value="250"/>	ERP-V (W)	<input type="text" value="250"/>
Num of Elements	<input type="text" value="1"/>	Element Spacing (λ)	<input type="text" value="1"/>
Num of Points	<input type="text" value="500"/>	<input type="button" value="Apply"/>	