

## **ENGINEERING STATEMENT – SECOND ADJACENT CHANNEL PROTECTION**

WVKL (18 kilometers at 256 degrees True from LPFM site) and WPTE (5 kilometers at 188 degrees True from LPFM site) (Norfolk, VA, 239B and Virginia Beach, VA, 235B, respectively) are second adjacent-channel stations to the proposed channel 237 LPFM facility. The 54 dBu F50,50 service contour of each extends well beyond the LPFM transmitter site. Using the well-established *Living Way Ministries* Methodology, no actual interference to any population is predicted to exist to WVKL or WPTE.

Note that a rule waiver of Section 73.807 for this second adjacent-channel protection using the well-established *Living Way Ministries* Methodology is respectfully requested if such a rule waiver is deemed necessary for protection to any station.

The F50,50 signal strength from WVKL at the proposed LPFM transmitter site is greater than 85 dBu (the “desired” signal for WVKL). The F50,50 signal strength from WPTE at the proposed LPFM transmitter site is greater than 95 dBu (the “desired” signal for WPTE). The second/third adjacent-channel protection is an undesired-to-desired (“U/D”) dB signal strength ratio of 40:1. Therefore, predicted interference to the worst-case of the above two protected facilities is to that of WVKL and is a LPFM signal of greater than or equal to 125 dBu.

The 125 dBu signal based on a free space field determination is predicted to extend out to 40 meters from the proposed LPFM transmit antenna. As demonstrated by the attached aerial photo of the proposed site, there are no homes, buildings or major roads inside of the proposed 125 dBu free space loss contour. Therefore, both WVKL and WPTE are adequately protected by the proposed facility.