

ENGINEERING STATEMENT

This engineering data contained herein have been prepared on behalf of LEXINGTON CHRISTIAN NETWORK, licensee of LPFM station WXCN-LP, Channel 259 in Lexington, Kentucky, in support of this Application for Construction Permit to correct the site coordinates, height above average terrain, and effective radiated power. The applicant continues to request a waiver of the Commission's 2nd-adjacent-channel spacing Rules with regard to WKQQ(FM), Channel 261C2 in Winchester, Kentucky.

The licensed WXCN-LP antenna is mounted to a 15-foot supporting structure atop the 30-foot roof of an industrial building. The corrected coordinates of the transmitter site are 38-01-47.6 N, 84-27-01.7 W (NAD27). With a site elevation of 316 meters above mean sea level and an antenna radiation center 12.2 meters above ground, the station's antenna height above average terrain (using the U.S.G.S 3-arc-second terrain database) is 34.3 meters. According to the FCC's online propagation software (<https://www.fcc.gov/media/radio/fm-and-tv-propagation-curves>), the allowable effective radiated power for an LPFM station at that height is 76 watts, assuming a protected 60 dBu contour distance of 5.6 kilometers. The predicted service contour of the newly proposed facility is plotted in Exhibit B. Exhibit C is the justification for continued waiver of the Commission's 2nd-adjacent-channel spacing requirement with respect to WKQQ. A power density calculation is provided in Exhibit D.

Since the increase in the height of the building on which the WXCN-LP antenna is mounted is less than 20 feet, the FAA has not been notified of this application. For the same reason, FCC antenna structure registration is not required.

EXHIBIT A

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher". The signature is stylized with a large "K" and "F" and a smaller "T".

KEVIN T. FISHER

March 11, 2016

CONTOUR POPULATION
2010 U.S. CENSUS DATA
121,583 (58,337 HH)

WXCN-LP
BLL20150916ADO
Latitude: 38-01-47.60 N
Longitude: 084-27-01.70 W
ERP: 0.076 kW
Channel: 259
Frequency: 99.7 MHz
AMSL Height: 328.22 m
Elevation: 316.02 m
Horiz. Pattern: Omni

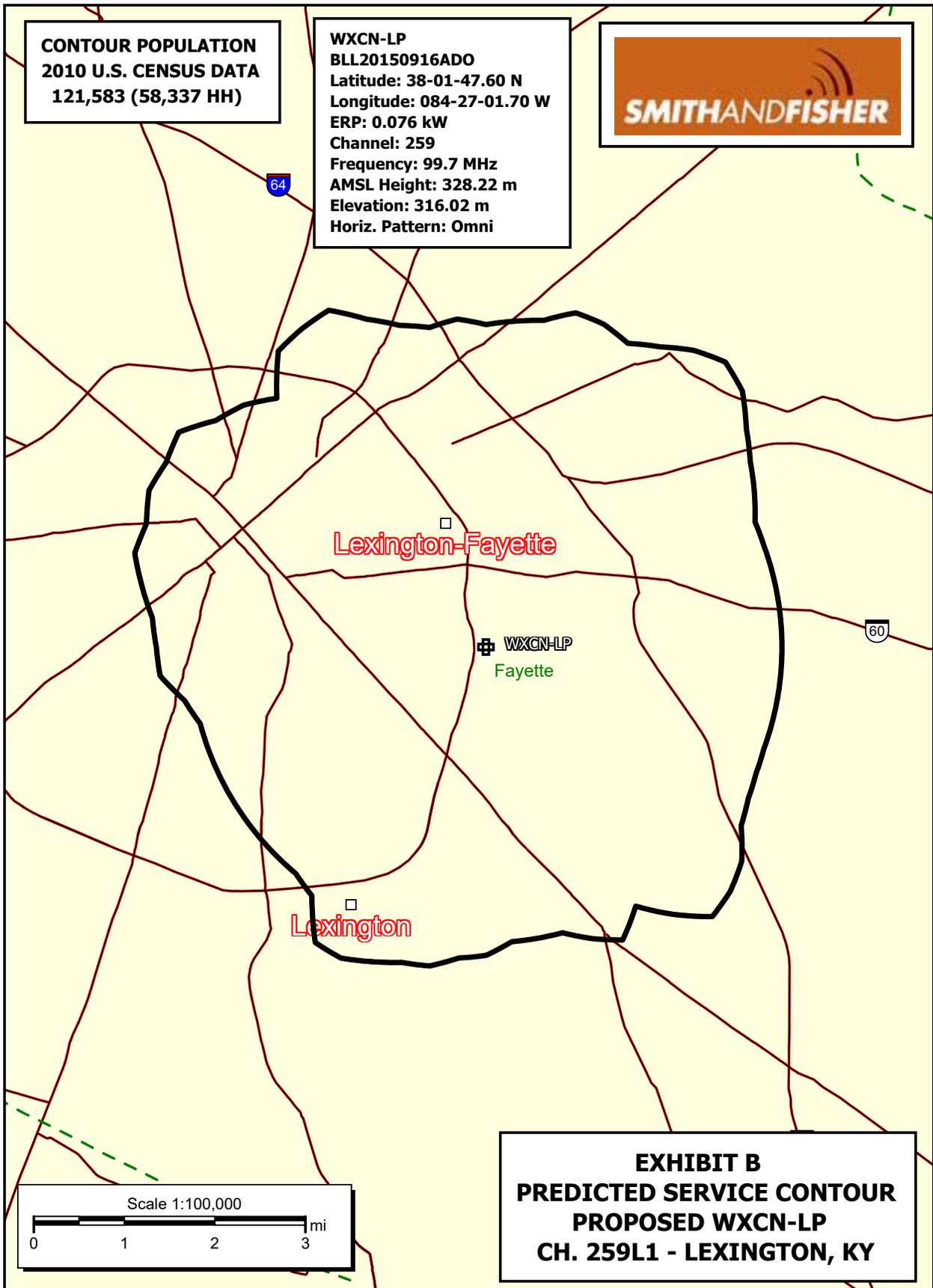


EXHIBIT B
PREDICTED SERVICE CONTOUR
PROPOSED WXCN-LP
CH. 259L1 - LEXINGTON, KY

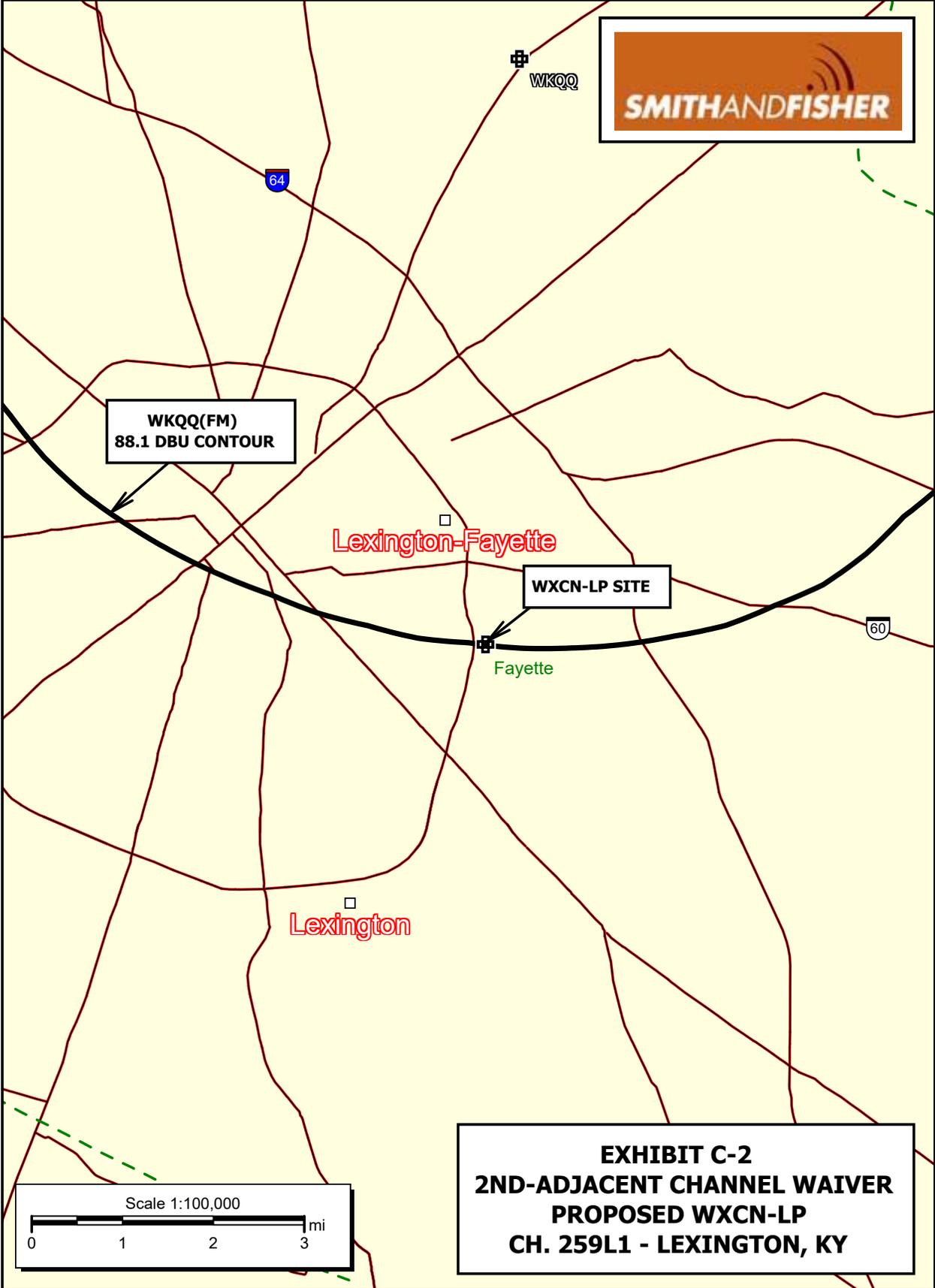
SECOND-ADJACENT-CHANNEL WAIVER REQUEST
PROPOSED WXCN-LP
CHANNEL 259L1 – LEXINGTON, KENTUCKY

The corrected site remains 10.4 kilometers from that of WKQQ(FM), which operates on Channel 261C2 in Winchester, Kentucky. Since the required spacing to this station is 53 kilometers, a waiver of the Commission's spacing rules with regard to this station is requested and believed to be justified for the reasons stated below.

Attached as Exhibit C-2 is a map upon which the corrected site is plotted. To that map, we have added the WKQQ 88.1 dBu service contour, which passes very close to the proposed site. Based on the FCC's 40 dB desired-to-undesired ratio that applies to second-adjacent-channel situations such as these, the proposed interference contour to WKQQ is the WXCN-LP 128.1 dBu contour. If one assumes a maximum effective radiated power of 76 watts in all depression angles for the LPFM antenna (which is certainly not the case), the interference contour toward WKQQ would extend only 24 meters from the proposed antenna.

In Exhibit C-3, we provide a Google Earth map showing the corrected site as well as the 24-meter interference contour arc. As shown, the arc is completely contained within the perimeter of the industrial building and does not adversely impact any nearby residence.

As a result, a waiver of the FCC's 2nd-adjacent-channel spacing Rule with regard to WKQQ(FM) is respectfully requested and believed to be justified.



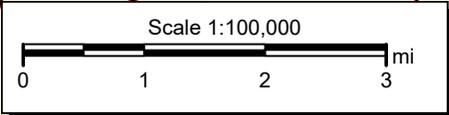
**WKQQ(FM)
88.1 DBU CONTOUR**

Lexington-Fayette

WXCN-LP SITE

Fayette

Lexington



**EXHIBIT C-2
2ND-ADJACENT CHANNEL WAIVER
PROPOSED WXCN-LP
CH. 259L1 - LEXINGTON, KY**

EXHIBIT C-3

WXCN-LP Transmitter Site
with 24-meter interference arc
(please note that coordinates are in
terms of NAD83)

Legend

 WXCN-LP Transmitter Site



38 01 47.9 N, 84 27 01.5 W



POWER DENSITY CALCULATION
PROPOSED WXCN-LP
CHANNEL 259L1 – LEXINGTON, KENTUCKY

Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 76 watts (horizontal and vertical), an antenna radiation center located 12.2 meters above ground level, and assuming a vertical relative field value of 40 percent at the steeper elevation angles for the proposed antenna, maximum power density two meters above ground of 0.0078 mW/cm^2 is calculated to near the base of the building. Since this value is only 3.9 percent of the 0.20 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the FM band, a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating on the roof and in the vicinity of the antenna are not exposed to excessive non-ionizing electromagnetic radiation.