

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of FOUR SEASONS PEORIA, LLC, licensee of full-power digital television station WTVK-DT, Channel 10 in Oswego, Illinois, in support of its Application for Construction Permit. The present WTVK-DT license authorizes operation with a Distributed Transmission System (DTS) comprised of two single-frequency network (SFN) nodes and a new DTS reference site. The purpose of this application is to propose a slight increase in the effective radiated power for the DTS-2 node at the John Hancock Center building in Chicago. No change in the DTS-1 facility or in the site location, antenna height or antenna pattern of the DTS-2 node is proposed herein.

AUTHORIZED DTS REFERENCE COORDINATES

As part of the original DTS application (LMS-0000189533), we requested that the reference coordinates for the proposed WTVK-DT DTS facility be changed to 41-22-31.0 N, 88-38-59.6 W (NAD83). That change was subsequently authorized by the Commission.

Below, for completeness, is the justification we used to get the change in the DTS reference coordinates:

The Commission has explained that “[g]enerally, a station would use its current reference point based on its [] facility [as set forth in the Post-Transition DTV Table of Allotments, §73.622(i)], or the Order granting it a new channel, as appropriate.”¹ However,

¹ See Digital Television Distributed Transmission System Technologies, Report and Order, 23 FCC Rcd 16731, 16748-49, para. 29 (2008) (“DTS R&O”).

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“upon the appropriate public interest showing, a station may request a change in its reference point, just as stations have done historically, providing certain criteria are met. Such changes in reference points are subject to a station showing that the resulting service area circle fully encompasses the station’s authorized service area.”

In 47 U.S.C. § 73.626(b), the Commission stated that for the purpose of the DTS rules a station’s “authorized service area” is defined as “the area within its predicted noise-limited service contour determined using the facilities authorized for the station in a license or construction permit for non-DTS, single-transmitter-location operation.”

The change the Commission authorized in the WTVK-DT reference point served the public interest because it allowed WTVK-DT to place a transmitter on the John Hancock Building, extending the station’s service into Northeast Illinois, while preserving service to all of the viewers within the WTVK-DT service area (as determined with reference to its authorized construction permit). The addition of a transmitter in downtown Chicago makes WTVK-DT’s signal more accessible to over-the-air viewers in Oswego, Illinois, who as part of the Chicago market typically would direct their antennas northeast, toward Chicago, rather than southwest, where WTVK-DT’s originally licensed (DTS-1) transmitter is located.²

Moreover, the resulting service area circle fully encompasses the original WTVK-DT service area as authorized in LMS-0000168790. In the DTS R&O, the Commission determined that “[a]s an alternative to the Table of Distances Approach for determining the hypothetically maximized service area, full-power stations may use the ‘largest station’ provision in section

² See In the Matter of Application of Connecticut Public Broadcasting, Inc. to Convert to DTS Operation, Memorandum Opinion and Order, 35 FCC Rcd. 8978 ¶ 14 (2020), aff’d *PMCM TV, LLC v. FCC*, No. 20-1334 (D.C. Cir. June 25, 2021).

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73.622(f)(5) of the rules.” When the Commission revised its DTS Rules in 2021, it confirmed that “the largest station alternative, an alternative to the Table of Distances by which stations may seek to use DTS to match the geographic coverage of the largest station in their market, remains unchanged.”

In the Chicago Designated Market Area (DMA), the largest station, from a coverage area standpoint, is WLS-TV, Channel 22. That station has a maximization authorization with file number LMS-0000086908. The dipole-adjusted noise-limited F(50,90) service contour of authorized WLS-TV comprises 41,867 square kilometers. The resulting F(50,90) allowable service arc from the proposed WTVK-DT DTS reference site extends 115.4 kilometers. In Exhibit B, we have plotted the new WTVK-DT DTS reference site, the 115.4-kilometer F(50,90) reference service arc and the 36 dBu F(50,90) service contour of WTVK-DT, as authorized in LMS-0000168790, which forms the first SFN node (DTS-1) as described below. As shown in Exhibit B, the authorized service area of the WTVK-DT DTS nodes lie completely within the allowable 115.4-kilometer service arc derived from the service area of WLS-TV, the largest station in the Chicago market. Therefore, the newly authorized change in reference coordinates for the DTS facility meets the Commission’s requirements in this regard.

We will now describe each SFN node separately and then treat the entire DTS facility as a whole. It is again important to note that no change in the Oswego Node (DTS-1) is proposed herein.

OSWEGO NODE (WTVK-DT DTS-1)

The DTS-1 facility was recently licensed in LMS- 0000216800. Since no change in that facility is proposed herein, it is important to note that, as a result, no “loss area” within this DTS node’s service contour will be created by this proposal. It is intended to continue to employ the licensed Dielectric TLS-V6/VP-R C260 elliptically-polarized directional antenna with FCC Antenna ID No.1010067. The antenna is currently mounted at the 404-meter level of an existing 418.6-meter tower. The effective radiated power for the facility is 30.0 kW in the horizontal plane.

It should be noted that the licensed WTVK-DT DTS-1 facility exceeds the power/height limits for a high-band VHF station located in Zone 1, as set forth in Section 73.622(f)(7)(ii) of the Commission’s Rules. However, since the area within the WTVK-DT DTS-1 F(50,90) service contour, as licensed in LMS-0000216800, comprises 30,582 square kilometers, and it is smaller than that of the WLS-TV authorized service contour (41,867 square kilometers), it means that the WTVK-DT DTS-1 facility proposed herein continues to meet the requirements of Section 73.622(f)(5) of the Rules, which stipulates that the Commission’s power/height limitations of Section 73.622(f)(7)(ii) can be exceeded as long as the coverage area of the proposed operation does not exceed that of the largest station in the same market.

Below are operating parameters for the Oswego SFN node (DTS-1) on Channel 10:

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Site coordinates: 41-16-54.6 N, 88-56-11.1 W (NAD83)

Site elevation: 192.6 meters AMSL

Overall tower height: 418.6 meters AMSL

FCC Antenna Structure Registration Number: 1028357

Antenna height above ground: 404 meters

Antenna height above mean sea level: 596.6 meters

Antenna height above average terrain: 212 meters

Antenna make/model: Dielectric TLS-V6/VP-R C260

Polarization: Elliptical

FCC Antenna ID Number: 1010067

Antenna orientation: 45 degrees true

Electrical beam tilt: 7.1 degrees

Effective radiated power: 30.0 kW

Exhibit C is a map upon which the predicted service contours are plotted. As shown, the community of Oswego, Illinois, is completely encompassed by the proposed 43 dBu city-grade service contour. Azimuth and elevation pattern data for the existing antenna are provided in Exhibit D. A power density calculation appears as Exhibit E.

Since no change in the overall height or location of the existing WTVK-DT DTS-1 tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the FCC issued Antenna Structure Registration Number 1028357 to this tower.

CHICAGO NODE (WTVK-DT DTS-2 Facility)

No change in the site location, antenna height, antenna pattern, or antenna pattern orientation of the DTS-2 facility is proposed herein. Only a small increase in effective radiated power is specified in the instant application.

It is proposed to continue to operate this DTS node with the licensed Dielectric elliptically-polarized directional panel antenna on the west tower atop the existing 425.2-meter John Hancock Center building in Chicago. The antenna radiation center is 387.9 meters above street level. The proposed effective radiated power for the facility will be 13.85 kW in the horizontal plane.

It should be noted that the newly proposed WTVK-DT DTS-2 facility exceeds the power/height limits for a high-band VHF station located in Zone 1, as set forth in Section 73.622(f)(7)(ii) of the Commission's Rules. However, since the area within the proposed DTS-2 F(50,90) service contour comprises 11,609 square kilometers, and it is smaller than that of the largest station in the Chicago market (as previously mentioned, WLS-TV, with an authorized service contour comprising 41,867 square kilometers), it means that the WTVK-DT DTS-2 facility proposed herein continues to meet the requirements of Section 73.622(f)(5) of the Rules, which stipulates that the Commission's power/height limitations of Section 73.622(f)(7)(ii) can be exceeded as long as the coverage area of the proposed operation does not exceed that of the largest station in the same market.

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Below are the revised operating parameters for the Chicago DTS-2 node on Channel 10:

Site coordinates: 41-53-56.1 N, 87-37-23.2 W (NAD83)

Site elevation: 180.7 meters AMSL

Overall structure height: 425.2 meters AMSL

FCC Antenna Structure Registration Number: 1009013

Antenna height above ground: 386.2 meters

Antenna height above mean sea level: 566.9 meters

Antenna height above average terrain: 387.8 meters

Antenna make/model: Dielectric THA-C1-2H/2H-1-R-S-H70V30

FCC Antenna ID Number: 1009013

Antenna orientation: 230 degrees

Polarization: Elliptical

Electrical beam tilt: none

Effective radiated power: 13.85 kW

Exhibit F is a map upon which we have plotted the predicted service contours of the Chicago DTS-2 node. Azimuth and elevation pattern data for the licensed Dielectric antenna are provided in Exhibit G, and detailed power density calculation appears in Exhibit H.

Since no change in the overall height or location of the existing communications tower is proposed herein, the Federal Aviation Administration has not been notified of this

EXHIBIT A

application. In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1009013 to this tower.

PROPOSAL MEETS THE REQUIREMENTS OF THE FCC'S DTS RULES

The proposed WTVK-DT Channel 10 facility meets all of the requirements of Section 73.626(f) of the Commission's DTS Rules based on the following analysis.

Exhibit I is a map on which we have plotted the 36 dBu F(50,90) coverage contours of the two SFN nodes in the proposed WTVK-DT DTS facility. As shown, each node's contour overlaps the contour of the other facility in the system. In addition, in Exhibits C and F, we plotted the 43 dBu city-grade coverage contours resulting from the Oswego and Chicago DTS nodes. As shown in those exhibits, the community of Oswego lies within both of these contours.

In Exhibit J, we have plotted the transmitter sites of the two DTS nodes in relation to an arc originating from the authorized WTVK-DT DTS reference site and defined by the service contour coverage area of the largest station in the Chicago DMA, of which WTVK-DT is a part. As noted previously the largest station in this market is WLS-TV, Channel 22, and its authorization LMS-0000086908. Based upon its noise-limited dipole-adjusted F(50,90) service area, the resultant arc has a radius of 115.4 kilometers. As shown, both of the DTS nodes have transmitter sites located within the Largest Station in the Market arc.

In Exhibit K, we have demonstrated that the 36 dBu F(50,90) service contours of the DTS facilities are completely contained within the same 115.4 kilometer arc from the authorized

EXHIBIT A

WTVK-DT reference site. Thus, the instant proposal even meets the requirements of the FCC's prior DTS service contour Rules.

The new DTS Rules recently adopted by the Commission state that the 36 dBu F(50,50) contour of a high-band VHF SFN node must be located within an F(50,50)-based arc originating from the DTS reference site. Again, we utilized the Largest Station in the Market exception to define the radius of this arc. WLS-TV has a noise-limited dipole adjusted F(50,50) contour that encompasses an area containing 74,024 square kilometers. This translates to an arc with a radius of 153.5 kilometers. We provide a map in Exhibit L that shows both WTVK-DT SFN nodes have 36 dBu F(50,50) service contours that are completely contained within the allowable reference arc.

The newly adopted Rules also require that the 23.8 dBu F(50,10) contour of the DTS node be located within an interference F(50,10)-based arc from the reference site. Once again, we utilized WLS-TV, the largest station in the Chicago DMA to define the radius of this arc. WLS-TV has a 36 dBu F(50,10) interference contour that encompasses an area containing 196,589 square kilometers. This translates to an arc with a radius of 250.1 kilometers. We provide a map in Exhibit M that shows that both of the proposed WTVK-DT SFN nodes have 23.8 dBu F(50,10) interference contours that are completely contained within the above-defined reference arc.

Finally, in Exhibit N, we provide the summary results from a TVStudy interference study, which was conducted using a cell size of 1.0 kilometer as well as an increment spacing of 0.4 kilometer. It concludes that, with respect to outgoing interference, the newly proposed

EXHIBIT A

WTVK-DT DTS facility on Channel 10 meets the Commission's de minimis interference criteria to all co-channel and adjacent-channel full-power and Class A facilities.

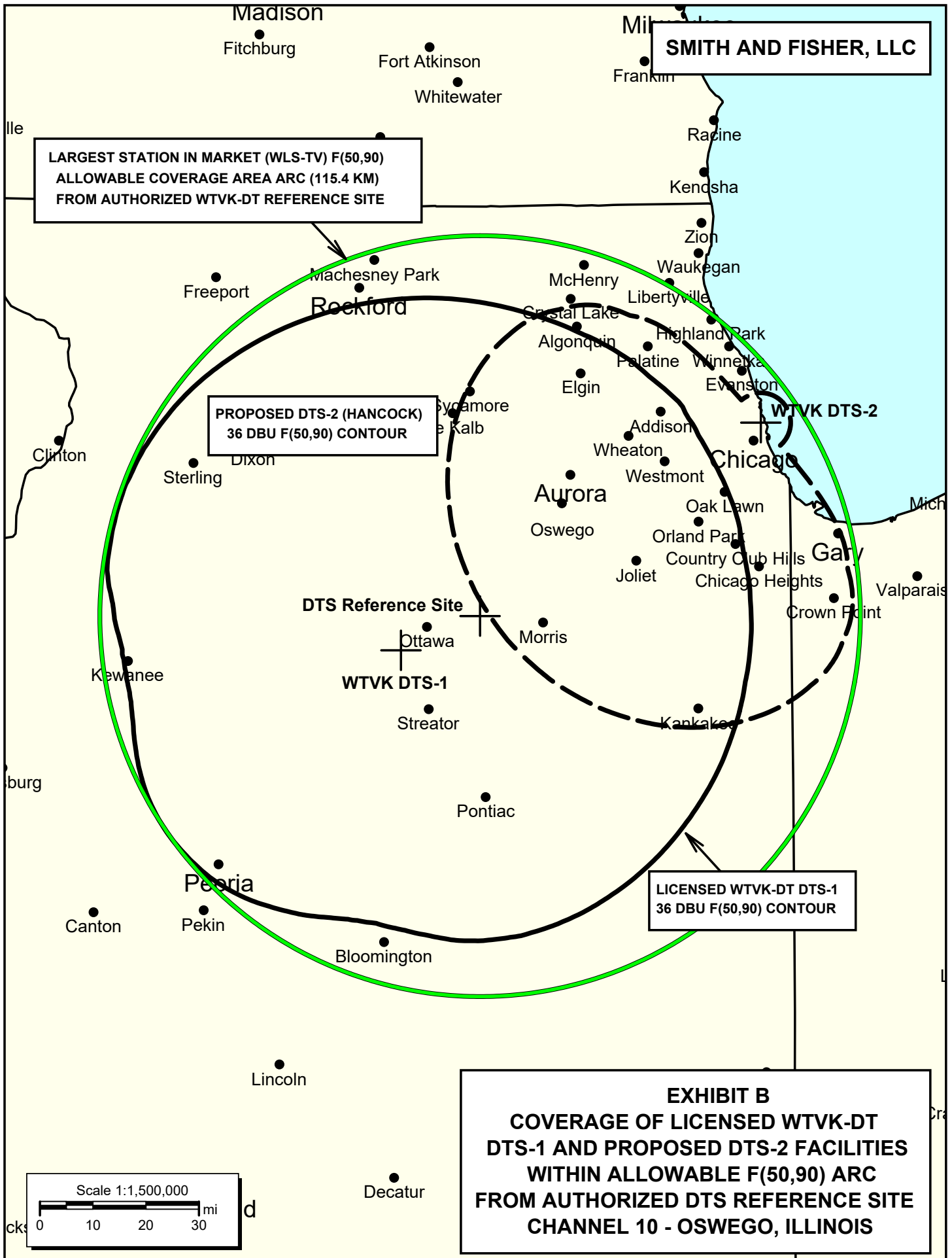
It is important to note that the interference study indicates that the newly proposed WTVK-DT DTS facility would receive predicted interference to 1.71% of its service population from a proposed full-power television station on Channel 9 in Freeport, Illinois (LMS-0000195673). That interference is hereby accepted by WTVK-DT and can be ignored.

I declare under penalty of perjury that the foregoing statements and the attached engineering 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", with a stylized flourish at the end.

KEVIN T. FISHER

July 5, 2023



CONTOUR POPULATION
2020 U.S. CENSUS DATA
CITY-GRADE : 2,235,594 (863,093 HH)
NOISE-LIMITED : 4,129,179 (1,615,650 HH)
AREA WITHIN N/L CONTOUR : 30,582 SQ. KM

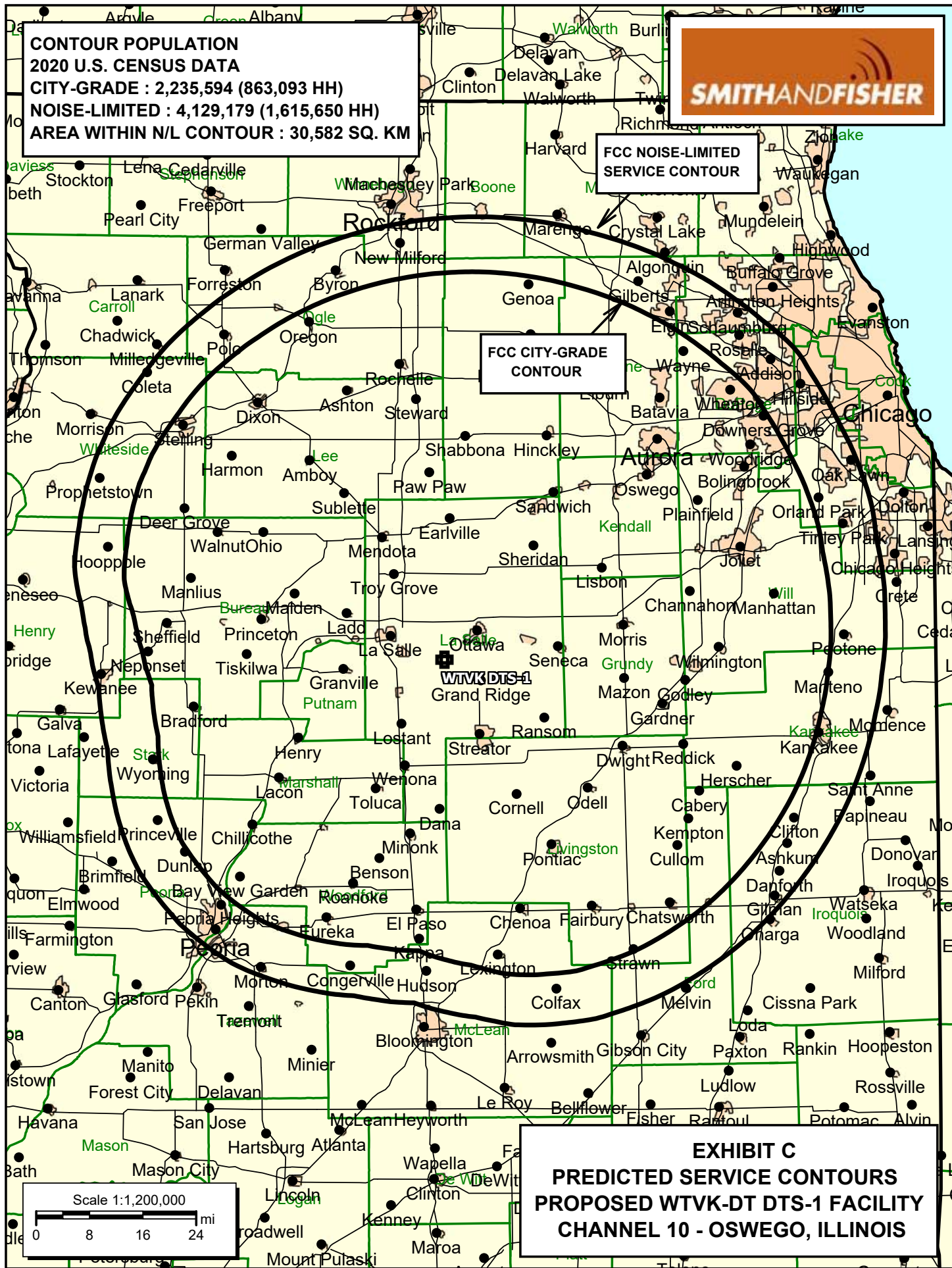
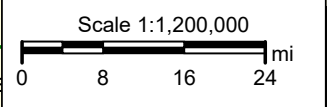


**FCC NOISE-LIMITED
SERVICE CONTOUR**

**FCC CITY-GRADE
CONTOUR**

**WTVK-DT
DTS-1**

EXHIBIT C
PREDICTED SERVICE CONTOURS
PROPOSED WTVK-DT DTS-1 FACILITY
CHANNEL 10 - OSWEGO, ILLINOIS



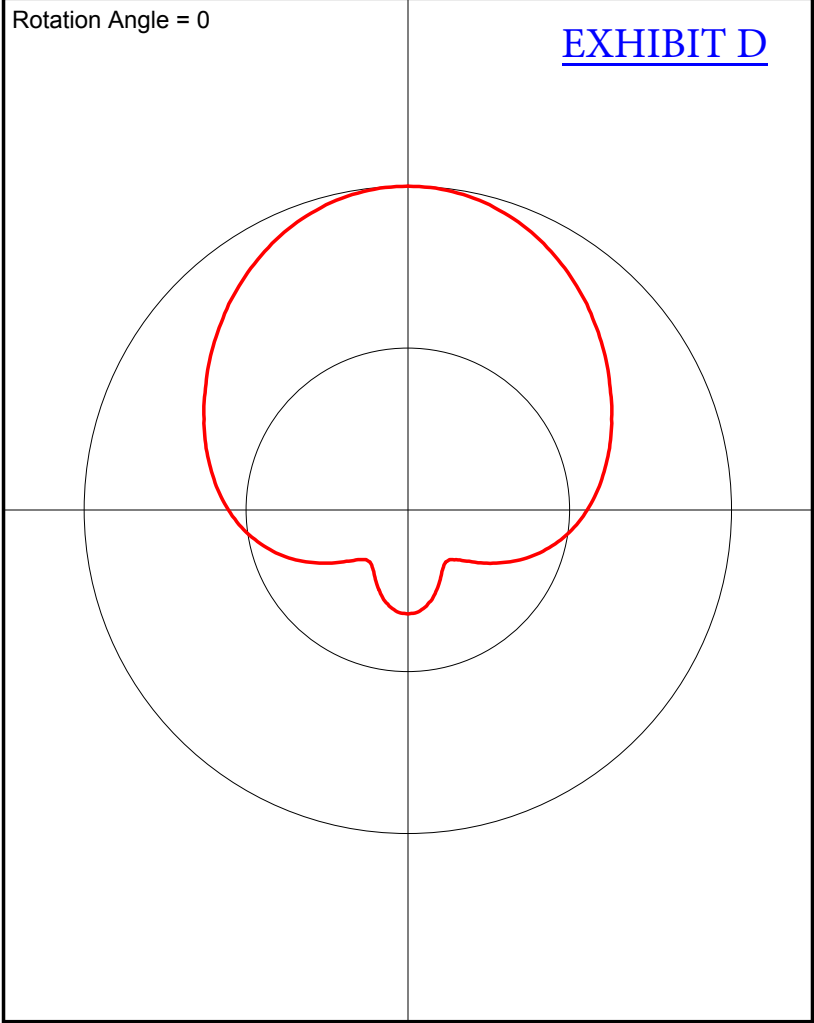
Antenna Pattern

Pre-Rotation Antenna Pattern....

| Azimuth (deg) | Relative Field |
|---------------|----------------|
| 0.0 | 1.0 |
| 10.0 | 0.989 |
| 20.0 | 0.956 |
| 30.0 | 0.907 |
| 40.0 | 0.848 |
| 50.0 | 0.785 |
| 60.0 | 0.723 |
| 70.0 | 0.667 |
| 80.0 | 0.612 |
| 90.0 | 0.554 |
| 100.0 | 0.489 |
| 110.0 | 0.413 |
| 120.0 | 0.328 |
| 130.0 | 0.247 |
| 140.0 | 0.2 |
| 150.0 | 0.214 |
| 160.0 | 0.262 |
| 170.0 | 0.306 |
| 180.0 | 0.322 |
| 190.0 | 0.306 |
| 200.0 | 0.262 |
| 210.0 | 0.214 |
| 220.0 | 0.2 |
| 230.0 | 0.247 |
| 240.0 | 0.328 |
| 250.0 | 0.413 |
| 260.0 | 0.489 |
| 270.0 | 0.554 |
| 280.0 | 0.612 |
| 290.0 | 0.667 |
| 300.0 | 0.723 |
| 310.0 | 0.785 |
| 320.0 | 0.848 |
| 330.0 | 0.907 |
| 340.0 | 0.956 |
| 350.0 | 0.989 |

Rotation Angle = 0

EXHIBIT D



POWER DENSITY CALCULATION

PROPOSED WTVK-DT DTS-1 FACILITY
CHANNEL 10 – OSWEGO, ILLINOIS

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Oswego DTS-1 facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 30.0 kW (H,V), an antenna radiation center 402.6 meters above ground, and the specific elevation pattern of the proposed Alive antenna, maximum power density two meters above ground of 0.00030 mW/cm^2 is calculated to occur 126 meters northeast of the base of the tower. Since this value is only 0.1 percent of the 0.2 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the High VHF Television 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 in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.

CONTOUR POPULATION

2020 U.S. CENSUS DATA

CITY-GRADE : 7,065,766 (2,876,592 HH)

NOISE-LIMITED : 7,749,209 (3,184,177 HH)

AREA WITHIN N/L CONTOUR : 11,609 SQ. KM

SMITHANDFISHER

**FCC NOISE-LIMITED
SERVICE CONTOUR**

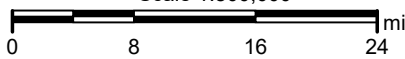
**FCC CITY-GRADE
CONTOUR**

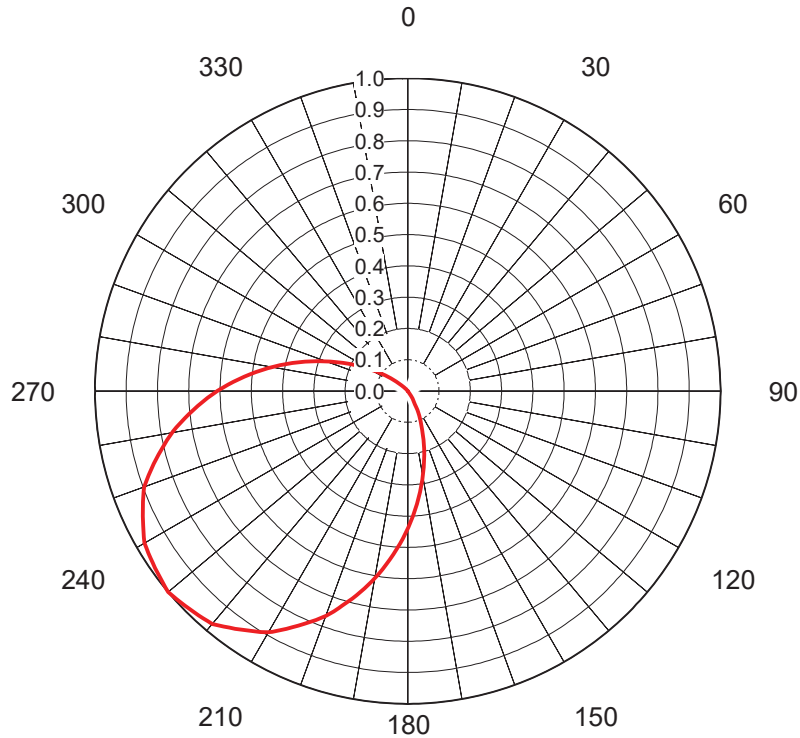
WTVK-DT5-2

EXHIBIT F

**PREDICTED SERVICE CONTOURS
PROPOSED WTVK-DT DTS-2 FACILITY
CHANNEL 10 - OSWEGO, ILLINOIS**

Scale 1:800,000





AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71915-3**
 Date **9-Jul-22**
 Call Letters **WAOE**
 Channel **10**
 Frequency **195 MHz**
 Antenna Type **THA-C1-2H/2H-1-R-S -H70V**
 Gain **5.19 (7.15dB)**
 Calculated

| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0 | 0.000 | 36 | 0.000 | 72 | 0.000 | 108 | 0.000 | 144 | 0.015 | 180 | 0.440 | 216 | 0.939 | 252 | 0.871 | 288 | 0.308 |
| 1 | 0.000 | 37 | 0.000 | 73 | 0.000 | 109 | 0.000 | 145 | 0.019 | 181 | 0.456 | 217 | 0.948 | 253 | 0.857 | 289 | 0.292 |
| 2 | 0.000 | 38 | 0.000 | 74 | 0.000 | 110 | 0.000 | 146 | 0.023 | 182 | 0.473 | 218 | 0.956 | 254 | 0.844 | 290 | 0.276 |
| 3 | 0.000 | 39 | 0.000 | 75 | 0.000 | 111 | 0.000 | 147 | 0.027 | 183 | 0.490 | 219 | 0.964 | 255 | 0.831 | 291 | 0.262 |
| 4 | 0.000 | 40 | 0.000 | 76 | 0.000 | 112 | 0.000 | 148 | 0.031 | 184 | 0.507 | 220 | 0.972 | 256 | 0.818 | 292 | 0.248 |
| 5 | 0.000 | 41 | 0.000 | 77 | 0.000 | 113 | 0.000 | 149 | 0.035 | 185 | 0.524 | 221 | 0.975 | 257 | 0.805 | 293 | 0.234 |
| 6 | 0.000 | 42 | 0.000 | 78 | 0.000 | 114 | 0.000 | 150 | 0.039 | 186 | 0.541 | 222 | 0.978 | 258 | 0.792 | 294 | 0.220 |
| 7 | 0.000 | 43 | 0.000 | 79 | 0.000 | 115 | 0.000 | 151 | 0.048 | 187 | 0.558 | 223 | 0.980 | 259 | 0.778 | 295 | 0.206 |
| 8 | 0.000 | 44 | 0.000 | 80 | 0.000 | 116 | 0.000 | 152 | 0.058 | 188 | 0.575 | 224 | 0.983 | 260 | 0.765 | 296 | 0.192 |
| 9 | 0.000 | 45 | 0.000 | 81 | 0.000 | 117 | 0.000 | 153 | 0.068 | 189 | 0.592 | 225 | 0.986 | 261 | 0.750 | 297 | 0.178 |
| 10 | 0.000 | 46 | 0.000 | 82 | 0.000 | 118 | 0.000 | 154 | 0.077 | 190 | 0.609 | 226 | 0.989 | 262 | 0.734 | 298 | 0.164 |
| 11 | 0.000 | 47 | 0.000 | 83 | 0.000 | 119 | 0.000 | 155 | 0.087 | 191 | 0.625 | 227 | 0.992 | 263 | 0.718 | 299 | 0.150 |
| 12 | 0.000 | 48 | 0.000 | 84 | 0.000 | 120 | 0.000 | 156 | 0.097 | 192 | 0.640 | 228 | 0.994 | 264 | 0.703 | 300 | 0.136 |
| 13 | 0.000 | 49 | 0.000 | 85 | 0.000 | 121 | 0.000 | 157 | 0.107 | 193 | 0.656 | 229 | 0.997 | 265 | 0.687 | 301 | 0.126 |
| 14 | 0.000 | 50 | 0.000 | 86 | 0.000 | 122 | 0.000 | 158 | 0.116 | 194 | 0.672 | 230 | 1.000 | 266 | 0.672 | 302 | 0.116 |
| 15 | 0.000 | 51 | 0.000 | 87 | 0.000 | 123 | 0.000 | 159 | 0.126 | 195 | 0.687 | 231 | 0.997 | 267 | 0.656 | 303 | 0.107 |
| 16 | 0.000 | 52 | 0.000 | 88 | 0.000 | 124 | 0.000 | 160 | 0.136 | 196 | 0.703 | 232 | 0.994 | 268 | 0.640 | 304 | 0.097 |
| 17 | 0.000 | 53 | 0.000 | 89 | 0.000 | 125 | 0.000 | 161 | 0.150 | 197 | 0.718 | 233 | 0.992 | 269 | 0.625 | 305 | 0.087 |
| 18 | 0.000 | 54 | 0.000 | 90 | 0.000 | 126 | 0.000 | 162 | 0.164 | 198 | 0.734 | 234 | 0.989 | 270 | 0.609 | 306 | 0.077 |
| 19 | 0.000 | 55 | 0.000 | 91 | 0.000 | 127 | 0.000 | 163 | 0.178 | 199 | 0.750 | 235 | 0.986 | 271 | 0.592 | 307 | 0.068 |
| 20 | 0.000 | 56 | 0.000 | 92 | 0.000 | 128 | 0.000 | 164 | 0.192 | 200 | 0.765 | 236 | 0.983 | 272 | 0.575 | 308 | 0.058 |
| 21 | 0.000 | 57 | 0.000 | 93 | 0.000 | 129 | 0.000 | 165 | 0.206 | 201 | 0.778 | 237 | 0.980 | 273 | 0.558 | 309 | 0.048 |
| 22 | 0.000 | 58 | 0.000 | 94 | 0.000 | 130 | 0.000 | 166 | 0.220 | 202 | 0.790 | 238 | 0.978 | 274 | 0.541 | 310 | 0.039 |
| 23 | 0.000 | 59 | 0.000 | 95 | 0.000 | 131 | 0.000 | 167 | 0.234 | 203 | 0.803 | 239 | 0.975 | 275 | 0.524 | 311 | 0.035 |
| 24 | 0.000 | 60 | 0.000 | 96 | 0.000 | 132 | 0.000 | 168 | 0.248 | 204 | 0.815 | 240 | 0.972 | 276 | 0.507 | 312 | 0.031 |
| 25 | 0.000 | 61 | 0.000 | 97 | 0.000 | 133 | 0.000 | 169 | 0.262 | 205 | 0.828 | 241 | 0.964 | 277 | 0.490 | 313 | 0.027 |
| 26 | 0.000 | 62 | 0.000 | 98 | 0.000 | 134 | 0.000 | 170 | 0.276 | 206 | 0.841 | 242 | 0.957 | 278 | 0.473 | 314 | 0.023 |
| 27 | 0.000 | 63 | 0.000 | 99 | 0.000 | 135 | 0.000 | 171 | 0.292 | 207 | 0.853 | 243 | 0.949 | 279 | 0.456 | 315 | 0.019 |
| 28 | 0.000 | 64 | 0.000 | 100 | 0.000 | 136 | 0.000 | 172 | 0.308 | 208 | 0.866 | 244 | 0.942 | 280 | 0.440 | 316 | 0.015 |
| 29 | 0.000 | 65 | 0.000 | 101 | 0.000 | 137 | 0.000 | 173 | 0.325 | 209 | 0.878 | 245 | 0.934 | 281 | 0.423 | 317 | 0.012 |
| 30 | 0.000 | 66 | 0.000 | 102 | 0.000 | 138 | 0.000 | 174 | 0.341 | 210 | 0.891 | 246 | 0.927 | 282 | 0.407 | 318 | 0.008 |
| 31 | 0.000 | 67 | 0.000 | 103 | 0.000 | 139 | 0.000 | 175 | 0.358 | 211 | 0.899 | 247 | 0.919 | 283 | 0.390 | 319 | 0.004 |
| 32 | 0.000 | 68 | 0.000 | 104 | 0.000 | 140 | 0.000 | 176 | 0.374 | 212 | 0.907 | 248 | 0.912 | 284 | 0.374 | 320 | 0.000 |
| 33 | 0.000 | 69 | 0.000 | 105 | 0.000 | 141 | 0.004 | 177 | 0.390 | 213 | 0.915 | 249 | 0.904 | 285 | 0.358 | 321 | 0.000 |
| 34 | 0.000 | 70 | 0.000 | 106 | 0.000 | 142 | 0.008 | 178 | 0.407 | 214 | 0.923 | 250 | 0.897 | 286 | 0.341 | 322 | 0.000 |
| 35 | 0.000 | 71 | 0.000 | 107 | 0.000 | 143 | 0.012 | 179 | 0.423 | 215 | 0.931 | 251 | 0.884 | 287 | 0.325 | 323 | 0.000 |

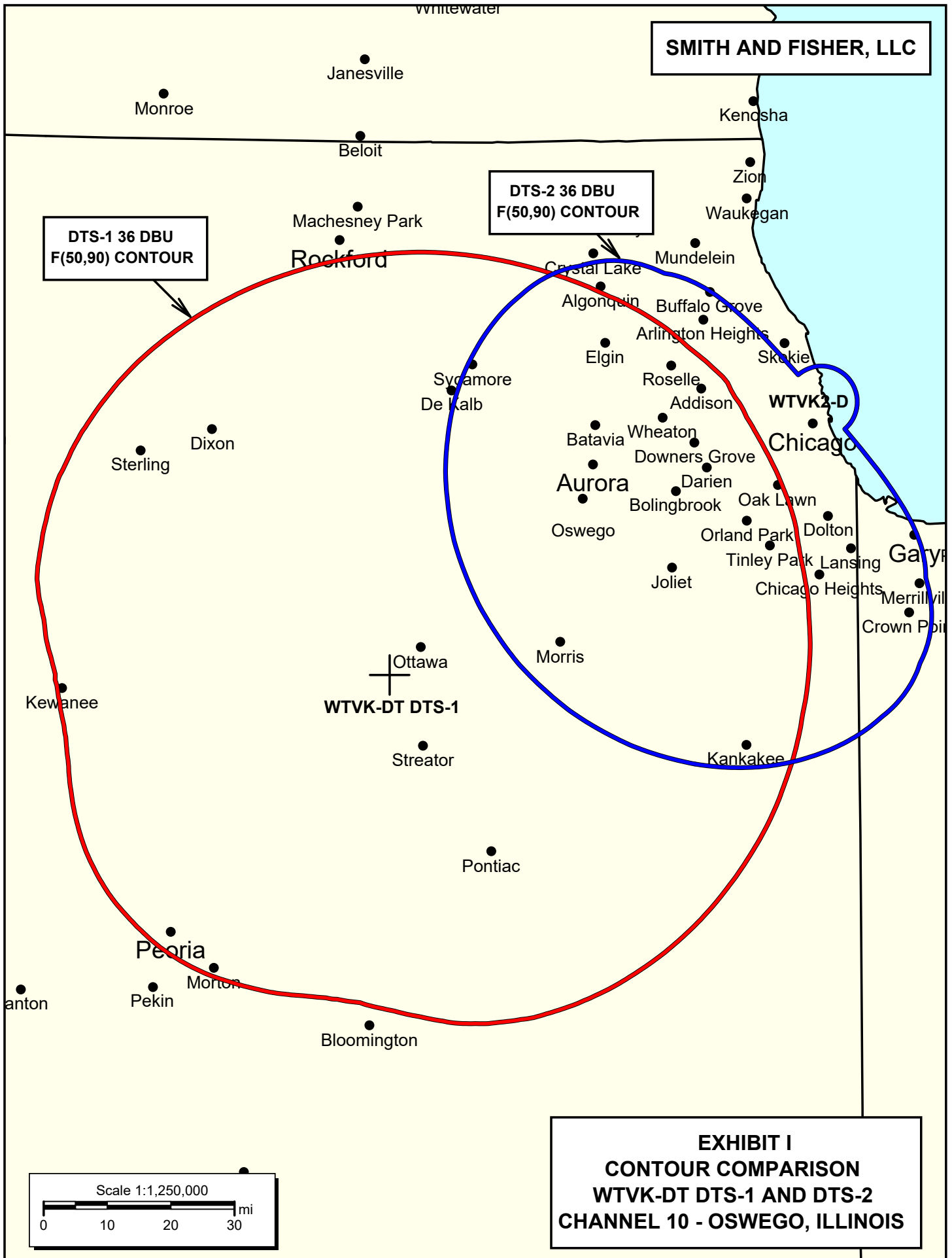
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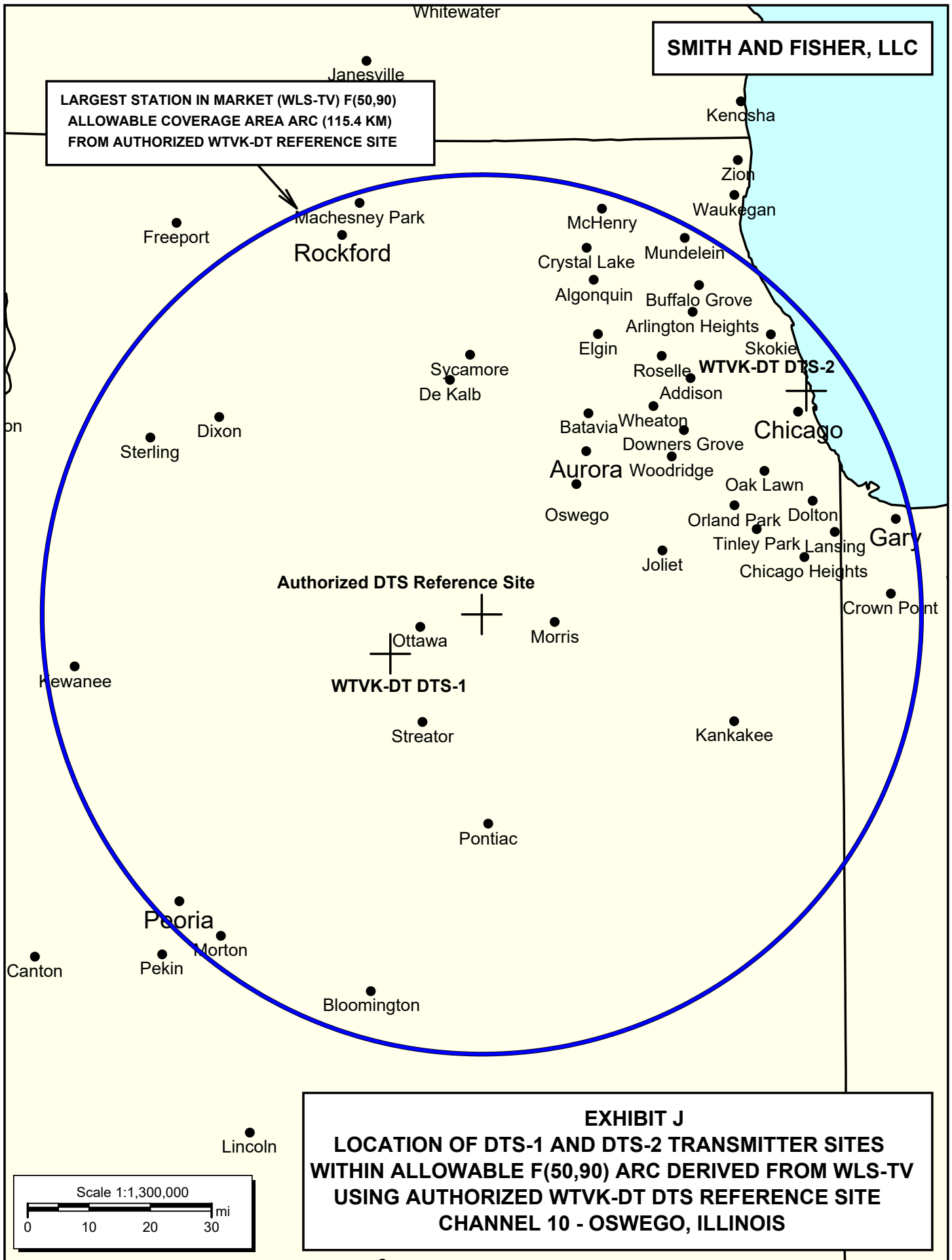
POWER DENSITY CALCULATION

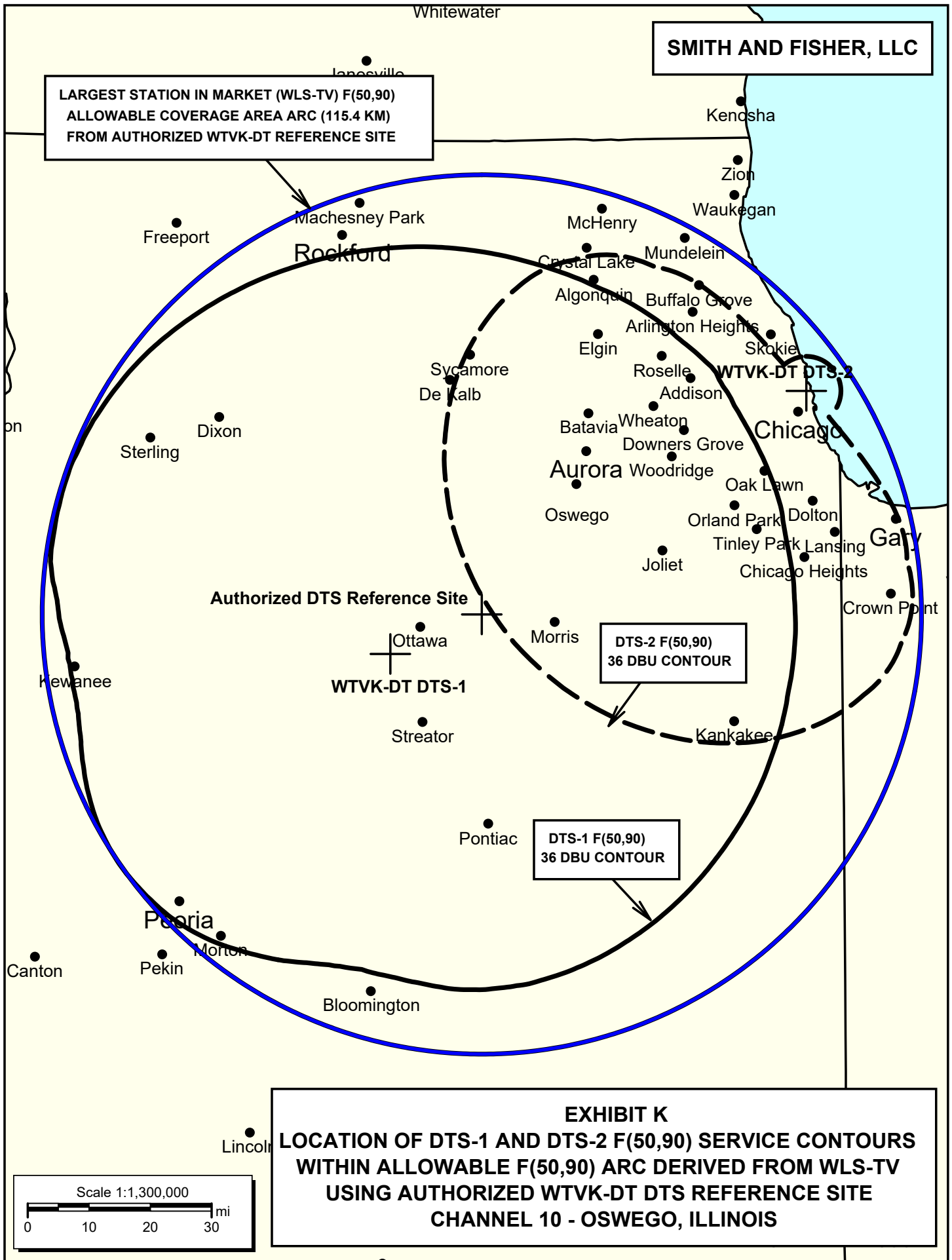
PROPOSED WTVK-DT DTS-2
CHANNEL 10 – OSWEGO, ILLINOIS

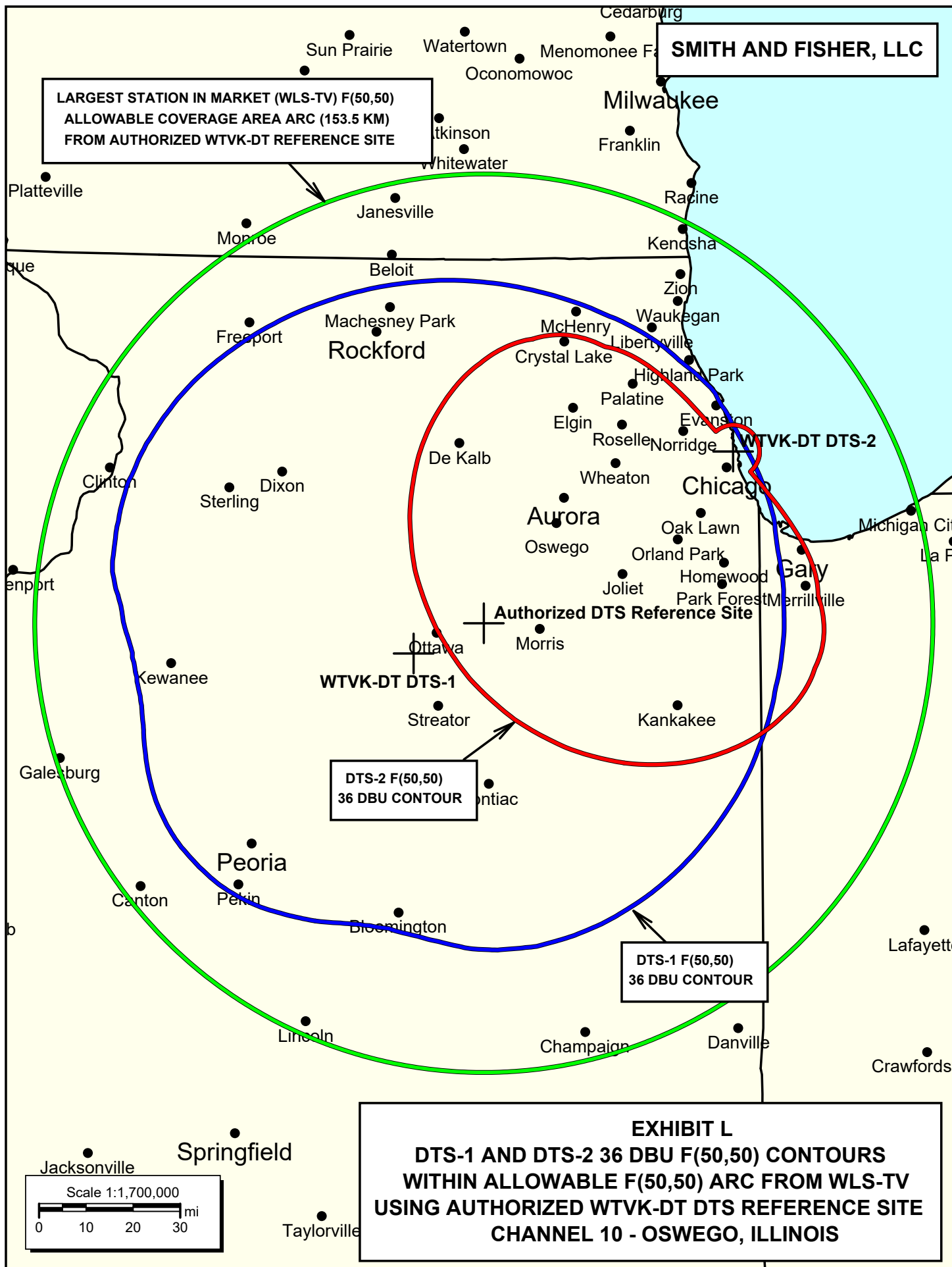
Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Oswego facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 18.0 kW (H+V), an antenna radiation center 409 meters above ground, and the specific elevation pattern of the proposed Dielectric antenna, maximum power density two meters above ground of 0.00029 mW/cm^2 is calculated to occur 330 meters southwest of the base of the building. Since this is only 0.15 percent of the 0.2 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the High VHF Television Band, a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

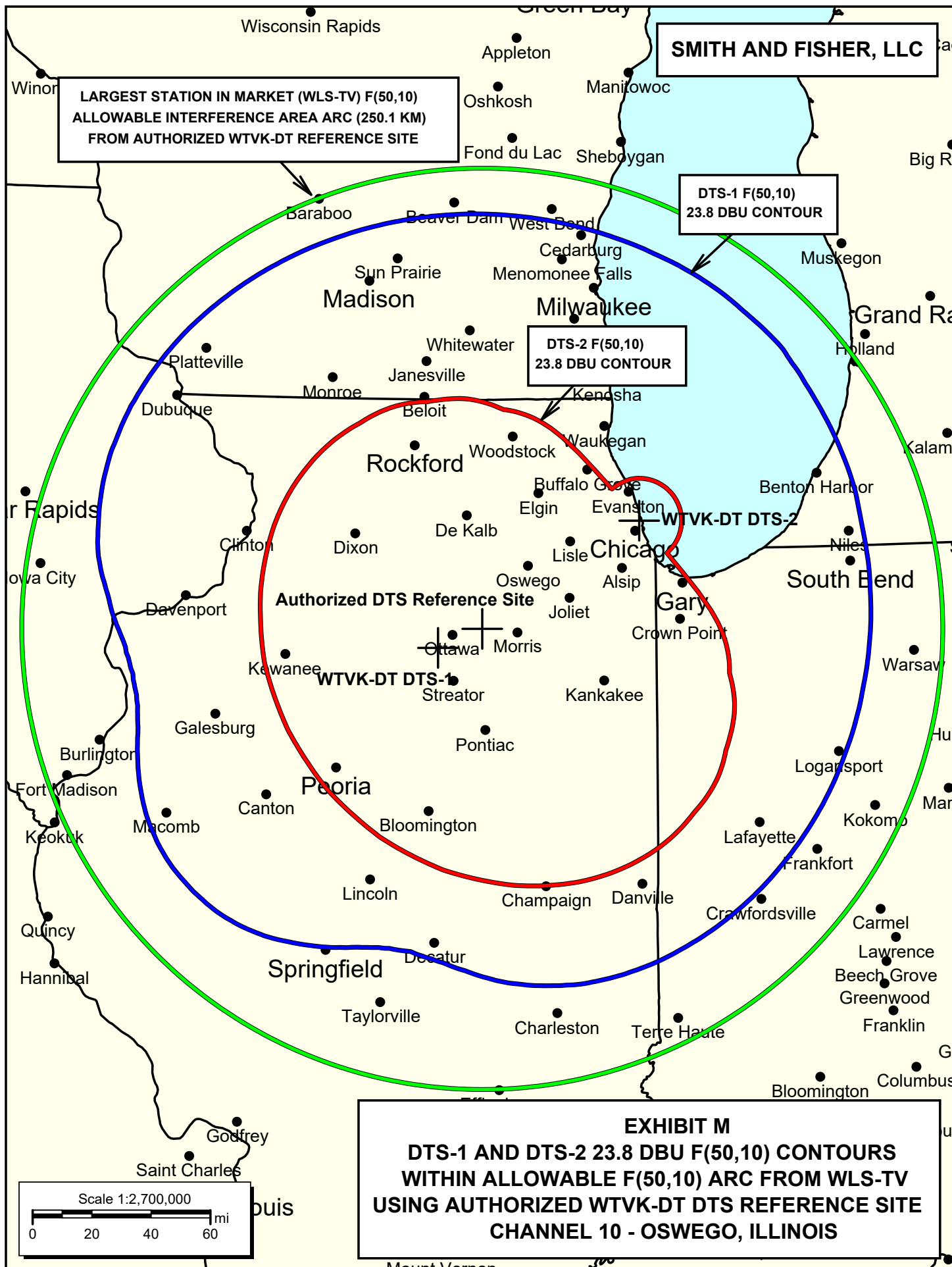
Further, the station owner will participate in the John Hancock Center RF safety protocols and take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.











TVSTUDY INTERFERENCE ANALYSIS RESULTS
PROPOSED WTVK-DT DTS
CHANNEL 10 – OSWEGO, ILLINOIS

Study created: 2023.07.05 13:38:07

Study build station data: LMS TV 2023-07-04

Proposal: WTVK D10 DD LIC OSWEGO, IL

File number: BLANK0000216800

Facility ID: 52280

Station data: User record

Record ID: 164

Country: U.S.

Zone: I

Ref. lat.: 41 22 31.00 N

Ref. long.: 88 38 59.60 W

DTS sites: 2

Stations potentially affected by proposal:

| IX | Call | Chan | Svc | Status | City, State | File Number | Distance |
|-----|---------|------|-----|--------|------------------|------------------|----------|
| Yes | WSLN | D9 | DT | CP | FREEPORT, IL | BLANK0000195673 | 111.1 km |
| Yes | WILL-TV | D9 | DT | APP | URBANA, IL | BPEDT20100406ABJ | 148.5 |
| Yes | WILL-TV | D9 | DT | LIC | URBANA, IL | BLEDT20050920AEE | 148.5 |
| No | WISH-TV | D9 | DT | LIC | INDIANAPOLIS, IN | BLANK0000055426 | 264.1 |
| Yes | WGEM-TV | D10 | DT | LIC | QUINCY, IL | BLANK0000105998 | 276.0 |
| Yes | WTHI-TV | D10 | DT | LIC | TERRE HAUTE, IN | BLANK0000199121 | 260.2 |
| Yes | WILX-TV | D10 | DT | LIC | ONONDAGA, MI | BLCDT20120404ACG | 357.5 |
| Yes | KTTC | D10 | DT | LIC | ROCHESTER, MN | BLCDT20101102ACA | 394.2 |
| Yes | KTTC | D10 | DT | CP | ROCHESTER, MN | BLANK0000035728 | 394.2 |
| No | WCIX | D11 | DT | CP | SPRINGFIELD, IL | BLANK0000203114 | 190.6 |
| No | WCIX | D11 | DT | LIC | SPRINGFIELD, IL | BLANK0000203671 | 190.6 |
| No | WLFI-TV | D11 | DT | LIC | LAFAYETTE, IN | BLCDT20040520AIX | 203.3 |
| No | WISC-TV | D11 | DT | LIC | MADISON, WI | BLANK0000126605 | 200.5 |

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied, DTS site # 1:

Channel: D10

Latitude: 41 16 54.60 N (NAD83)

Longitude: 88 56 11.10 W

Height AMSL: 596.6 m

HAAT: 410.7 m

Peak ERP: 30.0 kW

Antenna: Dielectric-TLS-V6/VP-R C260 (ID 1010067) 45.0 deg

Elev Pattn: Generic

Elec Tilt: 7.10

36.0 dBu contour:

| Azimuth | ERP | HAAT | Distance |
|---------|---------|---------|----------|
| 0.0 deg | 20.0 kW | 415.3 m | 106.6 km |
| 45.0 | 30.0 | 442.6 | 112.7 |
| 90.0 | 20.0 | 406.6 | 105.9 |
| 135.0 | 9.21 | 396.9 | 98.7 |
| 180.0 | 1.50 | 401.6 | 85.0 |
| 225.0 | 3.11 | 394.4 | 90.1 |
| 270.0 | 1.50 | 401.7 | 85.0 |
| 315.0 | 9.21 | 423.6 | 100.5 |

Database HAAT does not agree with computed HAAT

Database HAAT: 411 m Computed HAAT: 410 m

ERP exceeds maximum

ERP: 30.0 kW ERP maximum: 11.2 kW

Record parameters as studied, DTS site # 2:

Channel: D10

Latitude: 41 53 56.10 N (NAD83)

Longitude: 87 37 23.20 W

Height AMSL: 566.9 m

HAAT: 387.8 m

Peak ERP: 13.8 kW

Antenna: Dielectric-THA-C1-2H/2H-1-R-S-H70V30 (ID 1010817) 0.0 deg

Elev Pattn: Generic

36.0 dBu contour:

| Azimuth | ERP | HAAT | Distance |
|---------|----------|---------|----------|
| 0.0 deg | 0.000 kW | 391.5 m | 7.8 km |
| 45.0 | 0.000 | 391.8 | 7.8 |
| 90.0 | 0.000 | 391.4 | 7.8 |
| 135.0 | 0.000 | 391.8 | 7.8 |
| 180.0 | 2.67 | 385.3 | 88.4 |
| 225.0 | 13.4 | 385.2 | 101.0 |
| 270.0 | 5.12 | 380.8 | 93.1 |
| 315.0 | 0.006 | 384.5 | 41.1 |

ERP exceeds maximum

ERP: 13.8 kW ERP maximum: 13.5 kW

Distance to Canadian border: 370.0 km

Distance to Mexican border: 1701.7 km

Conditions at FCC monitoring station: Allegan MI

DTS site # 1 Bearing: 58.2 degrees Distance: 287.0 km

DTS site # 2 Bearing: 59.6 degrees Distance: 158.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

DTS site # 1 Bearing: 270.1 degrees Distance: 1375.9 km

DTS site # 2 Bearing: 268.4 degrees Distance: 1486.0 km

Study cell size: 1.00 km

Profile point spacing: 0.40 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal BLANK0000216800 ----

Proposal receives 1.71% interference from scenario 1

Proposal receives 1.71% interference from scenario 2

No IX check failures found.