

T Z SAWYER TECHNICAL CONSULTANTS

2130 HUTCHISON GROVE COURT, SUITE 100
FALLS CHURCH, VIRGINIA 22043
TELEPHONE (703) 848-2130 / (202) 642-2130

DIGITAL LPTV FACILITY MINOR CHANGE APPLICATION WSIO-LD TELEVISION CHANNEL 19

APPLICATION ENGINEERING STATEMENT

FCC FACILITY ID: 1013

PEORIA, IL

ENGINEERING NARRATIVE

Minor Change Application

WSIO-LD, seeks to MODIFY its construction permit to make minor changes to the proposed antenna system (height, type, rotation, ERP) at the current construction permit location. All of the changes proposed herein are classified as “minor changes” in accordance with the Commission’s application processing rules.

The maximum effective radiated power (ERP) will be 15.0 kilowatts using horizontal polarization only.

The proposed antenna is a PSI PSILP120I, a directional UHF slot antenna, employing 0-degrees of electrical beam tilt. A full-service filter mask is to be employed. The facility requested is not contingent upon a grant or channel move of any other known facility at the time of filing.

A graphical plot and tabulation of the relative field values from the proposed directional antenna have been provided in the application.

Modification Compliance:

Pursuant to 47 CFR §74.787(b) the instant application is considered a “minor” change because;

- There is no change in transmitting antenna location such that the protected service contour resulting from the change does not overlap some portion of the protected service contour of the authorized facilities of the existing station as illustrated in Figure 1, Present & Proposed Service Contours.
- There is no change in transmitting antenna location greater than 30 miles (48 km) from the reference coordinates of the existing station’s licensed location, as noted below:

CALCULATED DISTANCE BETWEEN EXISTING LICENSED AND PROPOSED SITES

| SITE | LAT (NAD83) | LON (NAD83) | (KM) | (MI) |
|----------------------|---------------|---------------|-------|-------|
| CURRENT/EXISTING LIC | 40-50-36.20 N | 89-54-39.90 W | 23.03 | 14.31 |
| PROPOSED (CP MOD) | 40-44-28.15 N | 89-10-25.38 W | | |

FCC Tower Registration (ASR) - FAA Notification - No Hazard

The proposed site is an existing communications tower site. This is a leased tower site in which an FCC tower/structure antenna structure registration is not required. A determination of “NO HAZARD” has been issued to the tower owner by the FAA. Lighting and Marking of the support structure is not required. A copy of the FAA determination has been uploaded as a part of this application.

The overall height of the communications tower is 59.4 meters (~195') above ground level. No changes in the supporting structure are required that would require notification to the FAA. The antenna is side-mounted upon the structure.

Proposed Antenna Elevations:

The center of radiation of the proposed antenna is 44.2 meters AGL, 226.2 meters AMSL. The ground elevation at the site is 182.0 meters.

| Antenna/Structure Elevations | |
|-----------------------------------|-------|
| Site Elevation (m) | 182.0 |
| Overall Height of Structure (m) | 59.4 |
| Antenna Radiation Center AGL (m) | 44.2 |
| Antenna Radiation Center AMSL (m) | 226.2 |

FCC TVStudy Parameters and Study Results:

| FCC TVSTUDY STUDY PARAMETERS REQUESTED | |
|----------------------------------------|-----|
| STUDY CELL SIZE | 1.0 |
| STUDY PROFILE SPACING INCREMENT | 0.1 |

The results of a interference study of the proposal using the FCC TVStudy program (Version 2.2.5), shows that no prohibitive interference will occur from the proposal. A copy of the summary report has been included in this application. The applicant accepts any incoming interference that is predicted to exist to the proposed facility by any authorized or pending, primary or secondary TV station at the time this application is submitted.

Processing of the application using FCC TVStudy with a Profile Point Spacing (interval) of 0.1 km is requested due to the mixture of the basic terrain characteristics from urban river-front, to hilly country side, to farmland.

The results of an interference study of the proposal using the FCC TVStudy program (Version 2.2.5), shows that no prohibitive interference will occur from the proposal. A copy of the summary report has been included in this application.

| | |
|------------------------------------------------------|------|
| Nearby AM Radio Station of Concern | None |
| Land Mobile Stations of Concern | None |
| International Border Considerations | None |
| FCC Monitoring Stations of Concern | None |
| National Radio or Observatory Quiet Zones of Concern | None |

Incoming Interference:

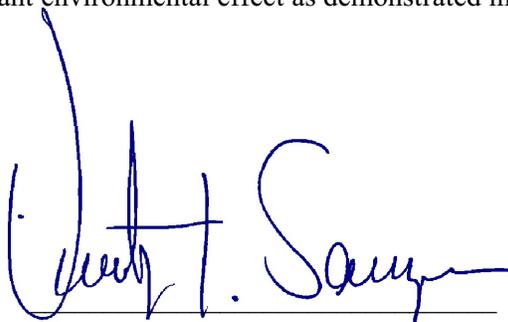
The applicant accepts any incoming interference that is predicted to occur to the proposed facility by any authorized or pending, primary or secondary TV station at the time this application is submitted.

Environmental Evaluation Statement:

The environmental evaluation statement concerning this proposal has been included in this application and can be found as a separate file upload within the application. A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in the environmental evaluation statement.

Respectfully submitted,

February 15, 2024



Timothy Z. Sawyer, Consulting Engineer

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WSIO-LD LIC
FCC LMS File: 0000121370
FCC Facility ID: 1013
NAD 83 Latitude: 40-50-36.20 N
NAD 83 Longitude: 089-54-39.90 W
ERP: 1.62 kW
Channel: 19
Frequency: 503.0 MHz
Ant. RCAMSL Height: 244.5 m
Horiz. Pattern: Directional

WSIO-LD APP
FCC LMS File: THIS APPLICATION
FCC Facility ID: 1013
NAD 83 Latitude: 40-44-28.15 N
NAD 83 Longitude: 089-40-25.38 W
ERP: 15.00 kW
Channel: 19
Frequency: 503.0 MHz
Ant. RCAMSL Height: 226.2 m
Horiz. Pattern: Directional

PRESENT AND PROPOSED SERVICE CONTOURS
FCC 51 DBU F(50,90)
MINOR CHANGE RULE COMPLIANCE MAP
WSIO-LD, CHANNEL 19
PEORIA, IL

FIGURE 1

FCC 30-MILE RADIUS
SITE TO SITE
RESTRICTION

MINOR CHANGE COMPLIANCE
PRESENT AND PROPOSED
CONTOUR OVERLAP SHOWN
(SHADED AREA)



Created on: 02-15-2024
NED 3 Second US Terrain

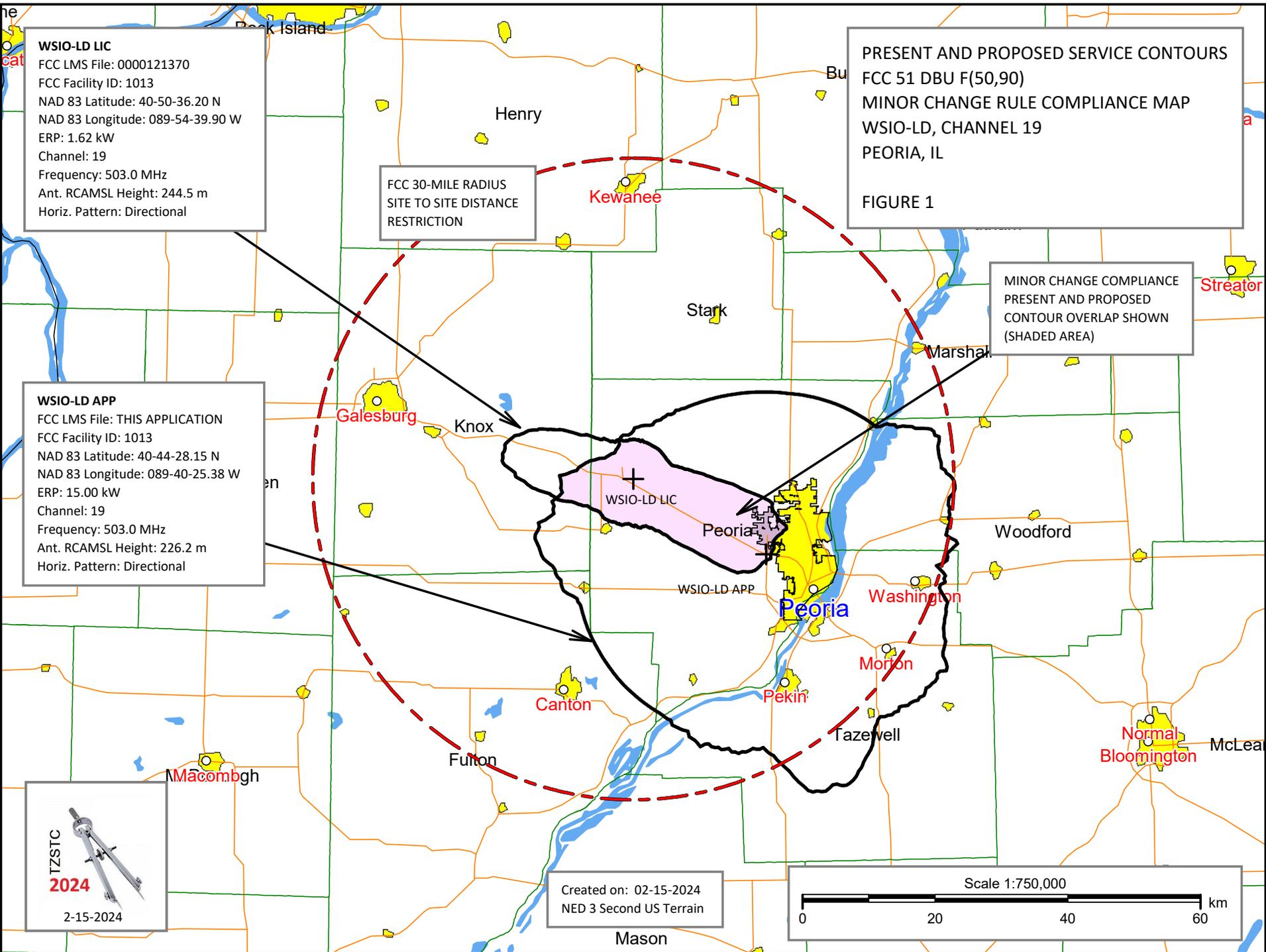
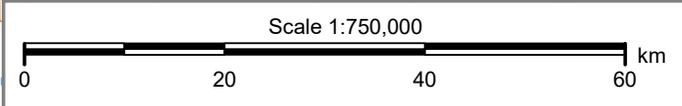


FIGURE 2 WSIO-LD PSILP12OI DA PATTERN

Pre-Rotation Antenna Pattern....

| Azimuth (deg) | Relative Field |
|---------------|----------------|
| 0.0 | 1.0 |
| 10.0 | 1.0 |
| 20.0 | 0.98 |
| 30.0 | 0.95 |
| 40.0 | 0.91 |
| 50.0 | 0.87 |
| 60.0 | 0.82 |
| 70.0 | 0.76 |
| 80.0 | 0.71 |
| 90.0 | 0.66 |
| 100.0 | 0.63 |
| 110.0 | 0.61 |
| 120.0 | 0.6 |
| 130.0 | 0.6 |
| 140.0 | 0.62 |
| 150.0 | 0.64 |
| 160.0 | 0.66 |
| 170.0 | 0.67 |
| 180.0 | 0.67 |
| 190.0 | 0.67 |
| 200.0 | 0.66 |
| 210.0 | 0.64 |
| 220.0 | 0.62 |
| 230.0 | 0.6 |
| 240.0 | 0.6 |
| 250.0 | 0.61 |
| 260.0 | 0.63 |
| 270.0 | 0.66 |
| 280.0 | 0.71 |
| 290.0 | 0.76 |
| 300.0 | 0.82 |
| 310.0 | 0.87 |
| 320.0 | 0.91 |
| 330.0 | 0.95 |
| 340.0 | 0.98 |
| 350.0 | 1.0 |

Rotation Angle = 238

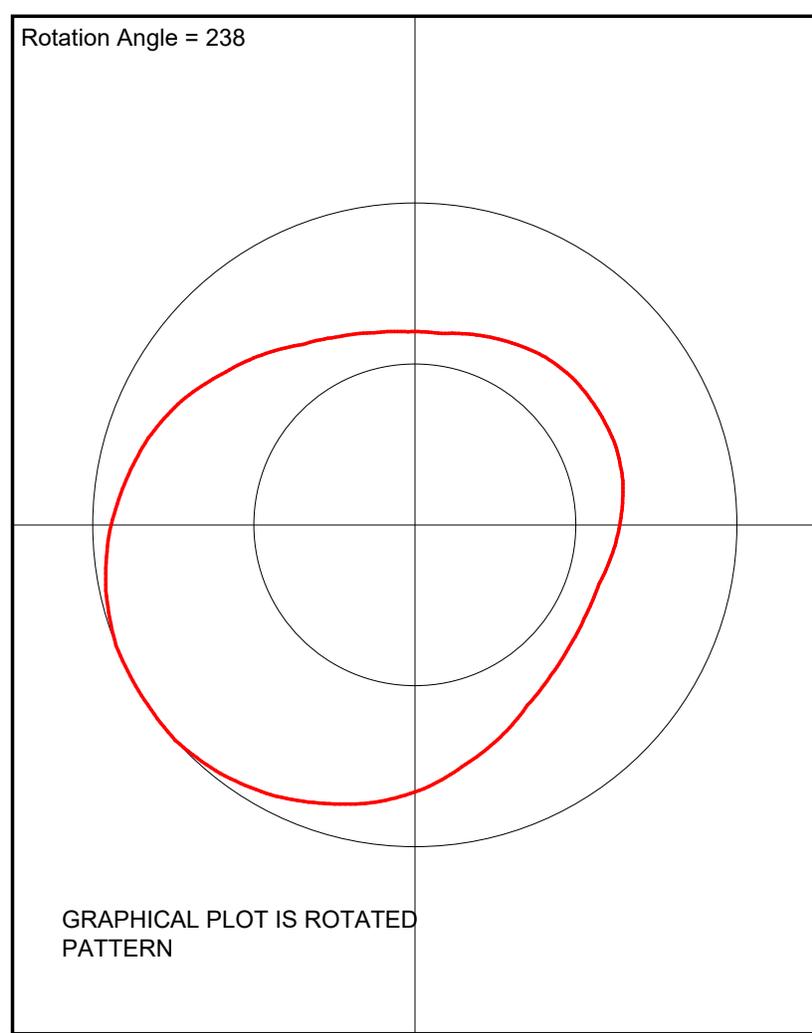


FIGURE 3 FCC TVSTUDY SUMMARY REPORT WSIO-LD MINOR CHANGE APPLICATION

TVSTUDY STUDY PARAMETERS REQUESTED

CELL SIZE 1.0

PROFILE SPACING 0.10

Proposal: WSIO-LD D19 LD APP PEORIA, IL
 File number: WSIO-LD APP CP MOD
 Facility ID: 1013
 Station data: User record
 Record ID: 748
 Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

| IX | Call | Chan | Svc | Status | City, State | File Number | Distance |
|-----|----------|------|-----|--------|----------------------|------------------|----------|
| No | K18GU-D | D18 | LD | LIC | OTTUMWA, IA | BLDTT20091229AES | 228.0 km |
| No | WBXC-CD | D18 | DC | LIC | CHAMPAIGN/URBANA, IL | BLANK0000112220 | 139.8 |
| No | WMEU-CD | D18 | DC | LIC | CHICAGO, IL | BLANK0000086889 | 212.0 |
| No | WMEU-CD | D18 | DC | CP | CHICAGO, IL | BLANK0000196962 | 214.1 |
| No | WSEC | D18 | DT | LIC | JACKSONVILLE, IL | BLANK0000150703 | 130.4 |
| No | WTVK | D18 | LD | LIC | OSWEGO, IL | BLANK0000125101 | 14.3 |
| No | W27DF-D | N18- | TX | LIC | QUINCY, IL | BLTTL20011120AAN | 164.1 |
| No | DWМКB-LP | D18z | LD | APP | Rochelle, IL | BLANK0000054707 | 144.9 |
| No | WAWV-TV | D18 | DT | LIC | TERRE HAUTE, IN | BLANK0000087258 | 256.0 |
| No | WMSN-TV | D18 | DT | LIC | MADISON, WI | BLANK0000113879 | 257.5 |
| No | KDMI | D19 | DT | LIC | DES MOINES, IA | BLCDT20120627AAE | 350.7 |
| No | K19KX-D | D19 | LD | LIC | KEOKUK, IA | BLANK0000063796 | 150.6 |
| Yes | WGN-TV | D19 | DT | LIC | CHICAGO, IL | BLANK0000235154 | 212.0 |
| No | W19EE-D | D19 | LD | LIC | JACKSONVILLE, IL | BLANK0000195988 | 107.2 |
| Yes | WGEM-TV | D19 | DT | CP | QUINCY, IL | BLANK0000235415 | 164.4 |
| No | WHBF-TV | D19 | LD | CP | ROCK ISLAND, IL | BLANK0000080887 | 114.0 |
| No | W19EW-D | D19 | LD | LIC | EVANSVILLE, IN | BLANK0000212357 | 354.3 |
| No | WIPB | D19 | DT | LIC | MUNCIE, IN | BLANK0000087336 | 369.4 |
| No | W19FD-D | D19 | LD | LIC | TERRE HAUTE, IN | BLANK0000213529 | 256.0 |
| No | WPSD-TV | D19 | DT | LIC | PADUCAH, KY | BLANK0000116960 | 399.0 |
| No | WXMI | D19 | DT | LIC | GRAND RAPIDS, MI | BLANK0000143294 | 406.0 |
| No | KPTN-LD | D19 | LD | LIC | ST. LOUIS, MO | BLANK0000124668 | 247.2 |
| No | WMTV | D19 | DT | LIC | MADISON, WI | BLCDT20100413AAW | 257.2 |
| No | K20KF-D | D20 | LD | LIC | DAVENPORT, IA | BLDTL20120821AAP | 146.4 |
| No | WME-CD | D20 | DC | LIC | CHICAGO, IL | BLANK0000086882 | 212.0 |
| No | WME-CD | D20 | DC | CP | CHICAGO, IL | BLANK0000196954 | 214.1 |
| Yes | WAND | D20 | DT | LIC | DECATUR, IL | BLANK0000203433 | 113.0 |
| No | WHA-TV | D20 | DT | LIC | MADISON, WI | BLANK0000089074 | 257.5 |

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D19
 Mask: Full Service
 Latitude: 40 44 28.15 N (NAD83)
 Longitude: 89 40 25.38 W
 Height AMSL: 226.2 m
 HAAT: 0.0 m
 Peak ERP: 15.0 kW
 Antenna: PSI-PSILP120I (ID 20364) 238.0 deg
 Elev Pattn: Generic

49.3 dBu contour:

| Azimuth | ERP | HAAT | Distance |
|---------|---------|--------|----------|
| 0.0 deg | 5.40 kW | 15.3 m | 26.5 km |
| 45.0 | 6.67 | 36.3 | 29.2 |
| 90.0 | 6.07 | 37.8 | 29.2 |
| 135.0 | 5.84 | 55.5 | 33.5 |
| 180.0 | 10.3 | 36.5 | 31.2 |
| 225.0 | 14.8 | 20.7 | 31.0 |
| 270.0 | 13.3 | 47.8 | 35.6 |
| 315.0 | 7.88 | 33.6 | 29.1 |

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m Computed HAAT: 35 m

Distance to Canadian border: 562.7 km
Distance to Mexican border: 1615.5 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 54.9 degrees Distance: 371.7 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 272.2 degrees Distance: 1315.3 km

No land mobile station failures found

Study cell size: 1.00 km
Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Proposal causes no interference to BLANK0000235154 LIC
Proposal causes 0.01% interference to BLANK0000235415 CP scenario 1
Proposal causes 0.44% interference to BLANK0000203433 LIC scenario 1

---- Below is IX received by proposal WSI0-LD APP CP MOD ----

Proposal receives 10.59% interference from scenario 1

No IX check failures found.

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DIGITAL LPTV FACILITY
MINOR CHANGE APPLICATION
WSIO-LD
TELEVISION CHANNEL 19
FCC FACILITY ID: 1013
PEORIA, IL

ENVIRONMENTAL EVALUATION STATEMENT

A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in this environmental evaluation statement. Any changes in equipment, or construction, if necessary will not trigger any event with regards to Section 106 of the National Historical Preservation Act (NHPA).

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights. Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

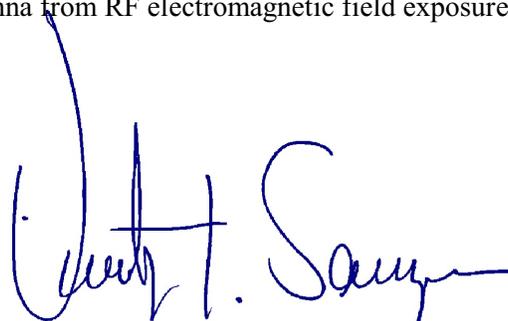
CALCULATED POWER DENSITY AT 2 METERS AGL (0.3 ANTENNA RELATIVE FIELD VALUE) ERP MAX (H)

| CR AGL 44.2 M ERP MAX 15.0 KW (H) | MPE ($\mu\text{W}/\text{CM}^2$) | CALCULATED VALUE ($\mu\text{W}/\text{CM}^2$) | % OF MPE | PASS/FAIL |
|--------------------------------------|--------------------------------------|---------------------------------------------------|-------------|-----------|
| CONTROLLED AREA | 1676.7 | 25.3195 | 1.51% | PASS |
| PUBLIC AREA | 335.3 | | 7.55% | PASS |

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs are posted at the site. The applicant will coordinate exposure procedures with any co-located facilities and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

February 15, 2024

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Falls Church, Virginia 22043
Telephone: (703) 848-2130
e Mail to: tzsawyer@tzsawyer.com



Timothy Z. Sawyer, Consulting Engineer



AMERICAN TOWER®

SITE NAME: INTERCHANGE 87

SITE NUMBER: 50693

FCC REGISTRATION: NOT REQUIRED

FOR LEASING INFORMATION:

877-282-7483

877-ATC-SITE

FOR OPERATIONS & ACCESS:

877-518-6937

877-51-TOWER

NO TRESPASSING

www.americantower.com

POSTING OF THIS SIGN REQUIRED BY LAW

04/21/2021



03/06/2019



Federal Aviation Administration
 Great Lakes Regional Office
 2300 East Devon Avenue-AGL-520
 Des Plaines, IL 60018

Interchange 87

Aeronautical Study No.
 2004-AGL-4855-OE
 Prior Study No.
 2002-AGL-6816-OE

Issued Date: 11/29/2004

Lottie Thompson # 50693
 American Tower-Schaumburg, IL
 1101 Perimeter Drive
 Schaumburg, IL 60173

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure Type: Antenna Tower
 Location: Norwood, IL
 Latitude: 40-44-28.15 NAD 83
 Longitude: 89-40-25.38
 Heights: 195 feet above ground level (AGL)
 792 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory Circular 70/7460-1 K Chg 1.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (847)294 8084.
On any future correspondence concerning this matter, please refer to Aeronautical
Study Number 2004-AGL-4855-OE.

Signature Control No: 392881-328432

(DNE)

Richard H Farrell, III
Specialist

Attachment(s)
Case Description
Frequency Data

277 Coon Rapids Boulevard, Suite 304
Coon Rapids, MN 55433
Office: 763-786-1445

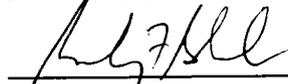
For aeronautical study no. _____ I, Bradley F. Shamla, P.E., certify the Latitude 40°44' 28.15" North and Longitude 89°40' 25.38" West are accurate to within +/- 50 feet horizontally; and the site elevations, below, are within +/- 20 feet vertically. The horizontal datum (coordinates) are in terms of the North American Datum of 1983 (NAD83) and expressed as degrees, minutes and seconds. The vertical datum (elevation) is in terms of the North American Vertical Datum of 1988 (NAVD88), and is determined to the nearest foot.

| LOCATION | ELEVATION (AMSL-FEET) | HEIGHT (AGL-FEET) |
|------------------------------------------------|--------------------------|----------------------|
| Ground at Tower Base | 597 | 0 |
| Top of Tower Steel | 785 | 188 |
| Top of Lightning Rod (Highest Appurtenance) | 792 | 195 |

I, as a duly licensed Professional Engineer under the laws of the State of Illinois do hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Bradley F. Shamla, P.E.

Printed Name



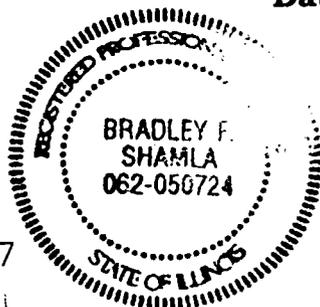
Signature

062-050724

Registration Number

6/25/04

Date



Site Name: Interchange 87
City: Peoria
County: Peoria

expires 11-30-18 *2005*

Site No.: 50693
State: Illinois
Region: Midwest