



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

**ENGINEERING STATEMENT IN
SUPPORT OF A PETITION FOR
RULEMAKING TO AMEND
47 CFR §73.622(I) DIGITAL
TELEVISION TABLE OF
ALLOTMENTS**

CALL SIGN: WTLV
FACILITY ID: 65046
LOCATION: JACKSONVILLE, FL

Prepared For:

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1.0 EXECUTIVE SUMMARY

The instant engineering statement has been prepared upon behalf of Multimedia Holdings Corporation licensee of WTLV¹ in support for a petition for rulemaking to change its channel assignment from 13 to 33. WTLV's Channel 13 operation is in the High-Band VHF spectrum which has proven to be ineffective for satisfactory viewership of ATSC digital emissions. Substituting channel 33 for 13 will provide a more robust signal for a typical ATSC tuner with a set top antenna.

Viewers of WTLV experience significant difficulty in receiving the WTLV channel 13 signal. Since the 2009 digital transition, problems with over the air reception of digital VHF stations have been regularly documented. Indoor reception is difficult for digital VHF stations due to the longer wavelength signal's inability to pass-through buildings and is further compounded by the ineffectiveness of indoor antennas which are designed to emphasize the shorter wavelengths for UHF reception. To mitigate this well documented issue it is herein proposed to

- change the channel from 13 to 33,
- Increase the ERP from 53.3kW to 1000kW,
- change the antenna from a Dielectric THB-C3SP-3H/6HD1H-1-T to a Dielectric TFU-26DSC/VP-R 4C170, and
- change the Polarity from Horizontal to Elliptical.

No other changes are proposed.

¹ Facility ID: 65046

2.0 ALLOCATION ANALYSIS

Appendix A are the summarized results from TVStudy V2.2.5 which illustrates that the proposed facility does not cause prohibited interference to surrounding stations.

3.0 SECTION § 73.625 PREDICTED CONTOUR COMPLIANCE

Appendix B illustrates the § 73.625 predicted F(50,90) 40.60 dB μ V/m noise limited protected contour and the F(50,90) 48.0 dB μ V/m principal community coverage contour. As illustrated the 48 dB μ V/m contour completely subsumes the principal community of license as required. The proposed facility requires an antenna null pulled along the Florida coastline to protect WOFL².

The Appendix B predicted coverage contours were generated using V-Soft Probe-5³ software in accordance with § 73.625(b) methodology using F(50,90) propagation curves. The average terrain was extracted from three arc second terrain along eight equally spaced cardinal radials from 3 kilometers to 16 kilometers from the site and beginning from true north.

4.0 POPULATION LOSS AND COVERAGE ANALYSIS

The Commission considers population to be lost when a station is modified such that it no longer covers an area currently covered by its licensed facility, and furthermore the lost area has less than five full-service/Class A facilities from the surrounding market covering it. The commission will allow a population loss of up to 556 people⁴ and is considered the bright-line threshold.

² FCC File No.: 0000216446

³ Version 5.40a

⁴ Bright-line population loss figured established in a Public Notice regarding WSET, Incorporated (WSET-TV), FCC 80-471 Released August 12, 1980

The following population loss methodology is based upon TVStudy v2.2.5 output and demonstrates that the population predicted to receive service from less than five full-service/Class A facilities due to the proposed channel change is 0 people which is well below the established 556 bright-line absolute threshold.

The FCC allows TVStudy Longley Rice noise and terrain limited coverage⁵ to demonstrate lack of population loss in regions where the licensed station contour covers, but the proposed station contour does not. This contour loss region is demonstrated by the shaded area in Figure 1 between the red and blue noise limited contour of the proposed and licensed facilities respectively.

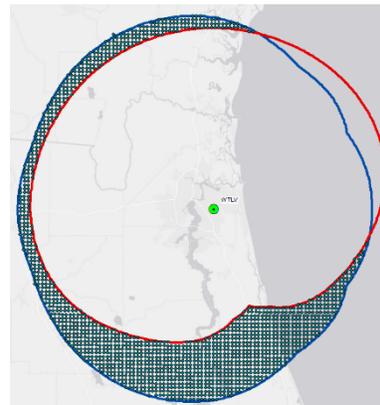


Figure 1 - Lost Contour Area

Using TVStudy, the coverage areas of both the

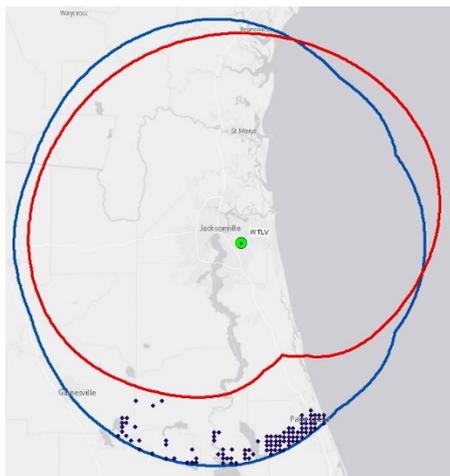


Figure 2 - Lost Coverage Area Mask

licensed and proposed facilities are analyzed in a 2 km grid within the shaded region. All grid points containing zero population, or are not covered by the licensed facility or are covered by both the licensed and proposed facility are removed since they are not considered lost coverage. What remains are populated grid point locations that the licensed facility covers but the proposed facility does not cover which is demonstrated in Figure 2. These points will be further

⁵ TVStudy calculates the following result codes:

- 1 = Interference-free service
- 2 = Interference
- 3 = No service
- 11 = Interference-free service, but encountered a warning flag
- 12 = Interference, but encountered a warning flag
- 13 = No service, but encountered a warning flag

“Coverage” is considered result code 1 and 11, other result codes are thrown out.

analyzed to determine the quantity of licensed full-service and/or Class A stations which cover them. The further analysis requires culling all licensed TV and Class A stations that could potentially serve the loss region. Figure 3 displays the TVStudy options chosen to cull stations for analysis around the WTLV licensed facility. A radius of 300 km is chosen since it is the maximum culling distance TVStudy uses for various

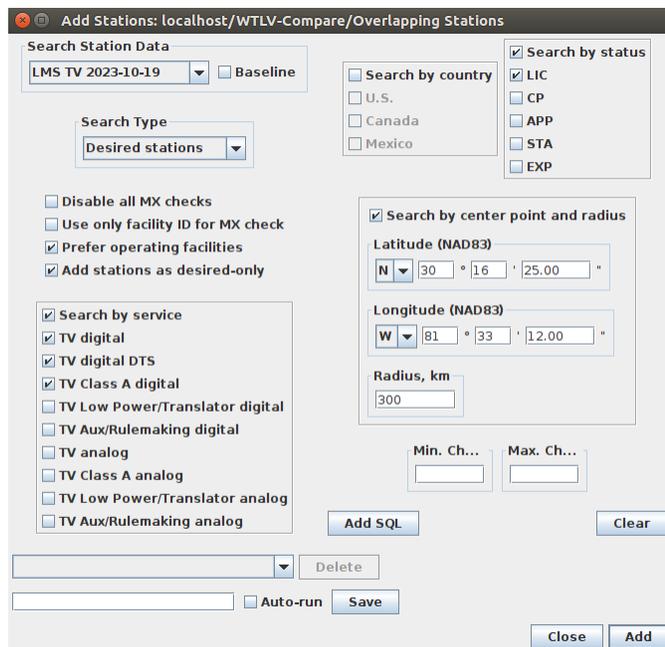


Figure 3 - TVStudy Station Culling

scenarios. By default, the “Study Area Mode” is set to calculate coverage only within the noise limited contour; however, in this instance “Study Area Mode” was set to “unrestricted” to predict coverage inside and outside each station’s noise limited service contour since coverage does not stop at contours particularly where there is excessively smooth terrain. The licensed WTLV facility is manually removed from the culling before the study was run. Once TVStudy processes the coverage area, the resulting grid is plotted and areas outside the points shown in in Figure 2 are discarded since they are not needed for analysis. Remaining points that do not have a result code of 1 or 11 are also discarded since they are not considered noise and terrain limited coverage.

The result of the population loss study is demonstrated in Appendix C. The location with the least amount of overlapping coverage is illustrated in blue which contains 13 overlapping stations and is shown in more detail in the table below. The most covered point has 30 stations which overlap it.

Latitude Longitude	2010 Census Population of Cell	Callsigns Covering Point	FCC File Number
29.540992 -82.109809	100	WOTF-TV	0000097961
		WNBW-DT	0000113424
		WCJB-TV	BLCDT-20071119AJB
		WYME-CD	0000098965
		WUFT	BLEDT-20040304AAF
		WGFL	0000100460
		WFOX-TV	0000120746
		WJXT	0000097950
		WJAX-TV	BLCDT-20030328ANV
		WCWJ	0000097952
		WJEB-TV	0000105949
		WOGX	BLCDT-20020730ABS
		WJGV-CD	BLDTA-20110519ACL

The map demonstrates that there are no lost locations that are covered by less than 5 television broadcast stations.

5.0 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

5.1 General Environmental Requirements

The proposed antenna is to be mounted to an existing tower which is registered with the FAA and FCC and will not require modification since there is no change in overall height. Since the existing structure has been previously accepted by the FAA and the FCC, it is thus presumed that the following has already been mitigated:

- Require high intensity white lighting.
- Is not located in an official designated wilderness area or wildlife preserve.
- Does not threaten the existence or habitat of endangered species.
- Does not affect districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering or culture that are listed in the National Register of Historic Places or are eligible for listing.

- Does not affect Indian religious sites.
- Is not located in a floodplain
- Does not require construction that involves significant changes in surface features (e.g., wetland fill, deforestation, or water diversion).

5.2 Radio Frequency Radiation (RFR) Compliance.

A theoretical analysis has been conducted of the human exposure to radio frequency radiation (“RFR”) using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain extraction is compiled from the support structure site, if the support structure is on a rooftop with no higher elevations (e.g., elevator shaft) then flat terrain is compiled. Terrain is extracted using radial lengths of 0.25 miles in 0.001-mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360-degree radials for each 0.001-mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

Appendix D is an RFR analysis which demonstrates that the peak RFR exposure is less than 5% of the most restrictive permissible exposure threshold standing anywhere at ground level and in any proximity to the proposed support structure. Pursuant to OET Bulletin 65, since the proposed operation does not exceed 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR and other sources of RFR need not be taken into consideration for a net effect. The instant application is compliant with the FCC limits for human exposure to RFR and thus is excluded from further environmental processing.

6.0 CERTIFICATION

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on January 8, 2024

Ryan Wilhour



Consulting Engineer

WTLV – Engineering Statement in Support of a Petition for Rulemaking to Amend §73.622(i)

Jacksonville, FL

APPENDIX A – WTLV Proposed TVStudy V2.2.5 Allocation Analysis

Study created: 2024.01.08 08:05:16
Study build station data: LMS TV 2024-01-07

Proposal: WTLV D33 DT APP JACKSONVILLE, FL
File number: WTLV Channel 33
Facility ID: 65046
Station data: User record
Record ID: 1656
Country: U.S.
Zone: III

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WHLV-TV	D32	DT	LIC	COCOA, FL	BLANK0000100511	192.9 km
No	WDFX-TV	D33	DT	LIC	OZARK, AL	BLANK0000207078	401.5
Yes	WOPF	D33	DT	LIC	ORLANDO, FL	BLANK0000216446	191.0
No	WPCT	D33	DT	LIC	PANAMA CITY BEACH, FL	BLANK0000062892	406.0
No	WVHB-CD	D33	DC	LIC	STUART, FL	BLANK0000184779	385.1
No	WRXY-TV	D33	DT	LIC	TICE, FL	BLANK0000112726	388.4
No	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679	335.8
No	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852	431.3
No	WBXJ-CD	D34	DC	LIC	JACKSONVILLE, ETC., FL	BLANK0000108581	1.1
No	WUCF-TV	D34	DT	LIC	ORLANDO, FL	BLANK0000150045	191.0

No non-directional AM stations found within 0.8 km
No directional AM stations found within 3.2 km
Record parameters as studied:

Channel: D33
Latitude: 30 16 25.00 N (NAD83)
Longitude: 81 33 12.00 W
Height AMSL: 296.5 m
HAAT: 290.4 m
Peak ERP: 1000 kW
Antenna: Dielectric TFU-26DSC/VP-R 4C170 0.0 deg
Elev Pattn: Generic
Elec Tilt: 0.75

40.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	951 kW	287.5 m	95.7 km
45.0	1000	288.8	96.3
90.0	375	290.1	87.2
135.0	20.2	288.7	69.1
180.0	12.1	288.9	66.4
225.0	286	293.4	85.4
270.0	992	293.0	96.8
315.0	947	292.4	96.3

Distance to Canadian border: 1269.7 km

Distance to Mexican border: 1579.1 km

Conditions at FCC monitoring station: Vero Beach FL
Bearing: 163.0 degrees Distance: 309.7 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 303.5 degrees Distance: 2402.1 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

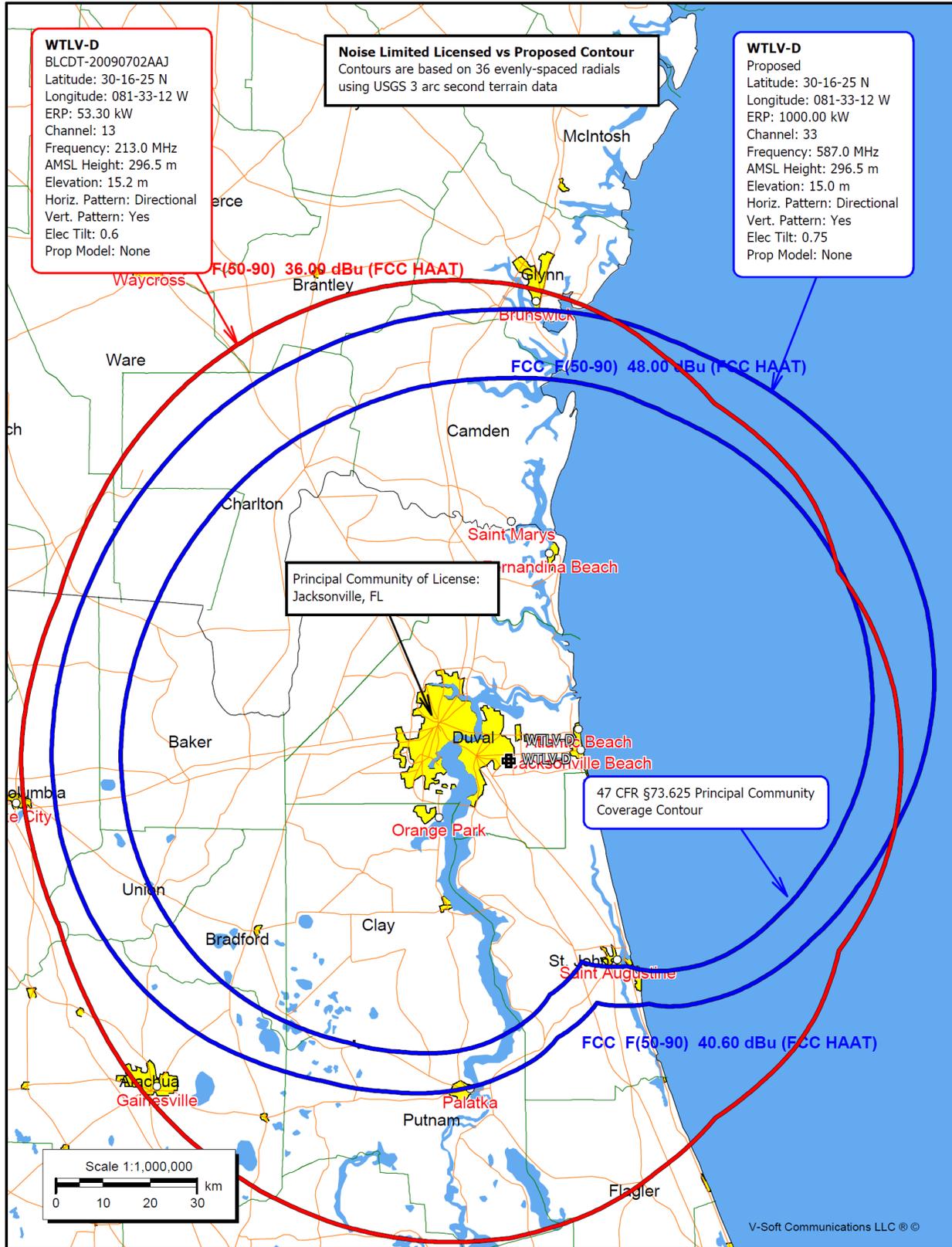
Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Proposal causes 0.08% interference to BLANK0000216446 LIC scenario 1

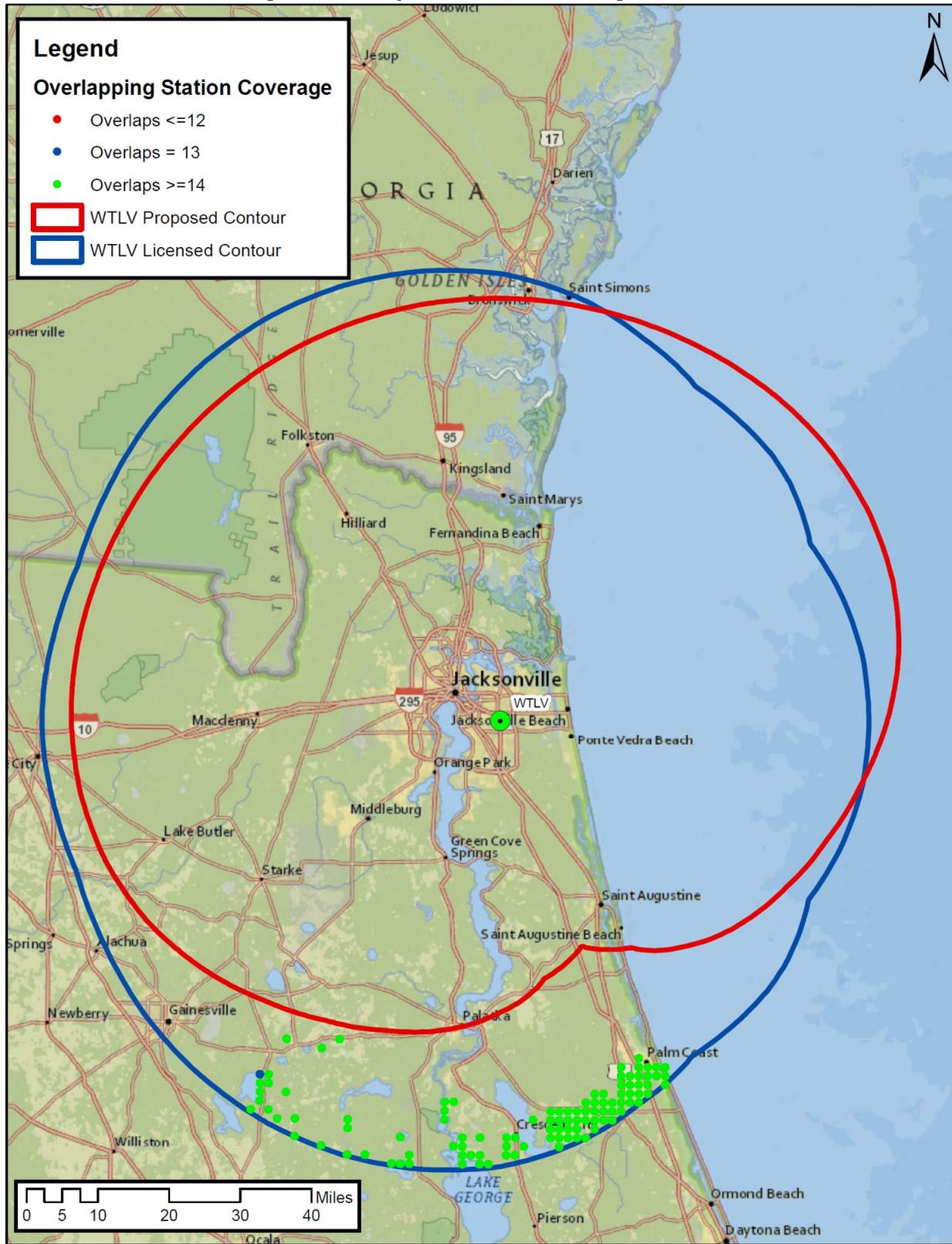
---- Below is IX received by proposal WTLV Channel 33 ----

Proposal receives 0.49% interference from scenario 1
No IX check failures found.

APPENDIX B – 47 CFR § 73.625 Predicted Contours



APPENDIX C – TVStudy V2.2.5 Population Loss Analysis



APPENDIX D – Far Field Exposure to RF Emissions

