



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

**DIGITAL TELEVISION
TRANSLATOR POST
TRANSITION CHANNEL
DISPLACEMENT
RELIEF APPLICATION
FOR WMUB-LD
FACILITY ID 181177**

Warner Robins, GA

Prepared For:

The Corporation of Mercer University
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1.0 MINOR MODIFICATION CHANNEL DISPLACEMENT RELIEF ELIGIBILITY

The Corporation of Mercer University (“Mercer”) is the licensee of a digital Low Power Television Translator Station having call sign WMUB-LD, Facility ID 181177. WMUB-LD is licensed to operate on channel 38 with an ERP of 15KW through an omni-directional antenna using a stringent Emission Mask.

LPTV/translator stations that currently broadcast on channels (38-51) are automatically displaced because they are in the new 600 MHz band for mobile broadband service and thus WMUB-LD is clearly eligible to file for channel displacement relief in the April 10, 2018 through June 1, 2018 post-incentive auction special displacement window and is the purpose of the instant application.

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

- The change in frequency is related to displacement relief as outlined above.
- There is no change in transmitting antenna location such that the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized facilities of the existing station as illustrated in Appendix C.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station’s antenna location.

2.0 STATION TRANSMITTER LOCATION AND ELEVATION

It is proposed to keep WMUB-LD at its licensed location on an existing tower as illustrated in Appendix A which has an FCC Antenna Structure Registration (“ASR”) number of 1045776. The instant application does not propose to increase or modify the existing support structure and thus modification of the ASR is not necessary.

3.0 ALLOCATION ANALYSIS AND WAIVER REQUEST

Appendix B are the summarized results from TVStudy V2.2.5. As indicated the proposed facility is predicted to receive 2.49% aggregate inbound interference, which is acceptable to Mercer. Appendix B also demonstrates that the proposed facility is predicted to cause 73.50% interference to pre-transition station WDMA-CD Facility ID 21150, FCC File No.: BLDTA-20140602AAA.

Using TVStudy V2.2.5, all UHF channels were studied in detail far beyond the Channel Study data provided by the Commission released in Public Notice DA 18-124. It was determined that there are no channels available which could replicate the licensed WMUB-LD facility and comply with the provisions of 47 CFR Section 73.3700(g). TVStudy analysis has indicated that Channel 31 allows the best replication of the Channel 38 WMUB-LD licensed facility in the post transition period, even though some coverage area is lost as illustrated in Appendix C.

It is therefore respectfully requested to waive 47 CFR Section 73.3700(g)(2)(i) requiring protection to the pre-auction channel 31 WDMA-CD facility. Mercer understands and agrees to a condition that it will not begin transmitting on channel 31 prior to the discontinuation of WDMA-CD from using channel 31. Mercer also understands that if a conditionally granted WMUB-LD facility is to remain silent for a consecutive 12-month period prior to discontinuation of operation by WDMA-CD, the Commission will consider a request for extension or reinstatement pursuant to Section 312(g) of the Act and a request for waiver of the applicable Commission rule.

4.0 AM STATION PROXIMITY

No AM stations are located within 3.2 km of the proposed facility. Pursuant to 47 C.F.R. Section 1.30002(e), the construction or extension of an antenna-supporting structure shall be considered subject to the moment method analysis

and prior notification requirement; however, the instant application does not propose to extend the existing structure or build a new structure. Thus, the proposed facility is exempt from further AM analysis consideration.

5.0 INTERNATIONAL COORDINATION

The WMUB-LD transmitter site is 1496.6 km from the Mexican border and 993.6 km from the Canadian border and thus is not required to coordinate with foreign entities.

6.0 RADIO FREQUENCY RADIATION 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:

Terrain¹ extraction is compiled from the proposed tower site to 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

¹ Terrain extraction is based upon a 3 arc second point spacing terrain database.

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.

The resulting RFR study in Appendix D demonstrates that the peak exposure is 0.02% of the most restrictive permissible exposure threshold. Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of the proposed facility were not taken into account. The instant application is compliant with the FCC limits for human exposure to RF radiation and is excluded from further environmental processing since no changes are proposed to the tower structure in order to accommodate the proposed antenna.

A chain link fence encloses the support structure and the applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off to protect maintenance workers on the tower.

7.0 CERTIFICATION

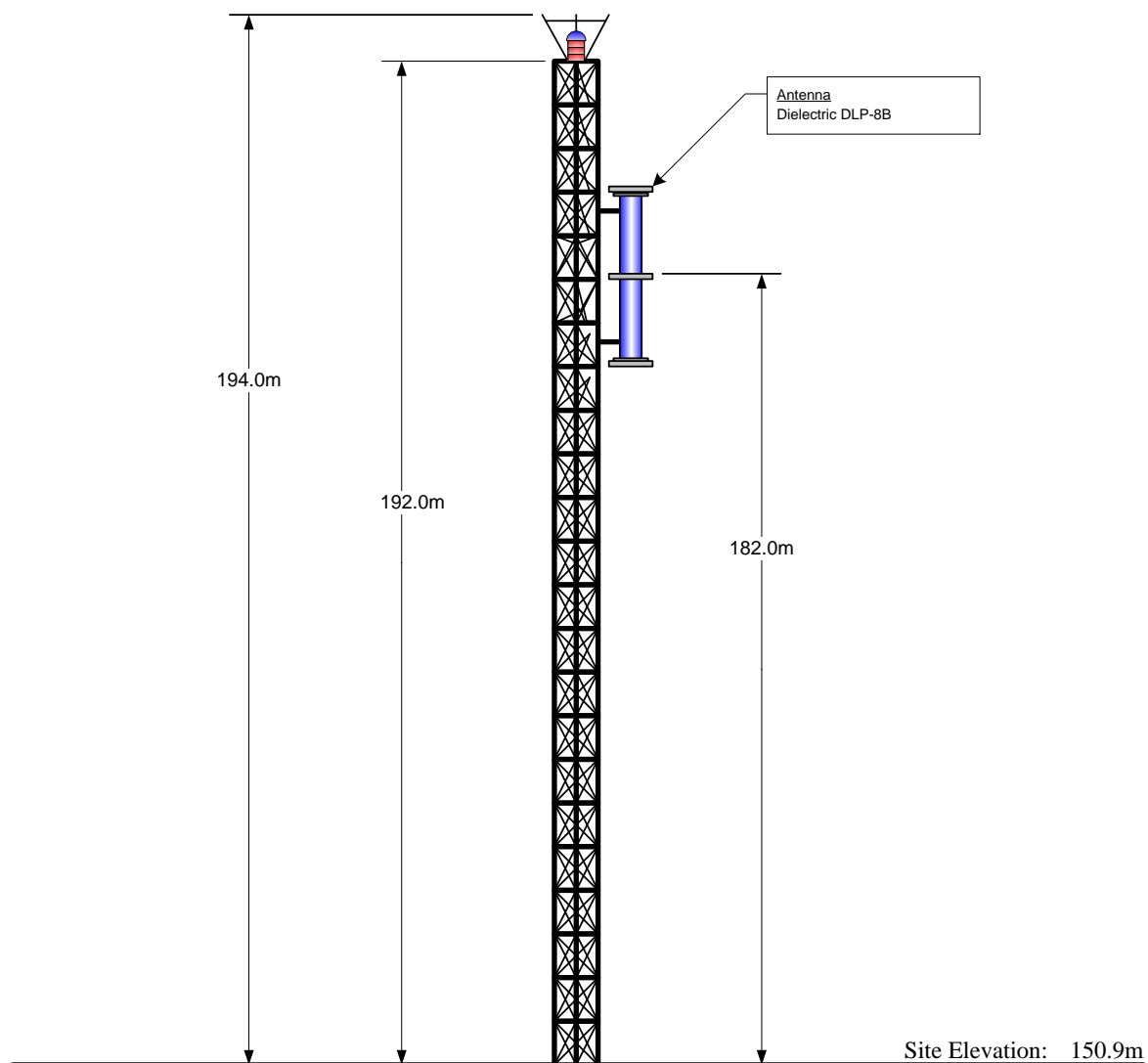
The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed April 25, 2018.

Kessler and Gehman Associates, Inc.



Ryan Wilhour
Consulting Engineer

APPENDIX A – Tower Elevation Diagram



Antenna CRAGL:	182.0 m
Antenna CRAMSL:	332.9 m
Antenna HAAT:	222.1 m

NAD 83 Coordinates:	
N. Latitude:	32° 45' 52.0"
W. Longitude:	83° 33' 32.0"

FCC Tower Registration Number: 1045776

FAA Study Number 97-ASO-6564-OE

NOTE: NOT TO SCALE

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APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2018.04.25 09:16:44

Study build station data: LMS TV 2018-04-25

Proposal: WMUB-LD D31 LD LIC WARNER ROBINS, GA
File number: WMUB Channel 31
Facility ID: 181177
Station data: User record
Record ID: 3019
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel
Protect baseline records from LPTV

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	W30BD	N30z	TX	LIC	EUFULA, AL	BLTTL19960628JF	178.3 km
No	WGIQ	D30	DT	CP	LOUISVILLE, AL	BLANK0000027851	211.2
No	WGIQ	D30	DT	BL	LOUISVILLE, AL	DTVBL710	211.2
Yes	WLGA	D30	DT	LIC	OPELIKA, AL	BLCDT20140827ABB	125.5
No	WTBS-LD	D30	LD	LIC	ATLANTA, GA	BLDTL20110105ABR	136.7
No	WAGT-CD	D30	DC	APP	AUGUSTA, GA	BLANK0000048939	175.8
Yes	WMGT-TV	D30	DT	CP	MACON, GA	BLANK0000026604	1.3
Yes	WMGT-TV	D30	DT	BL	MACON, GA	DTVBL43847	1.3
No	W30DW-D	D30	LD	LIC	TIFTON, GA	BLDTT20141124ARP	151.6
No	WYFF	D30	DT	CP	GREENVILLE, SC	BLANK0000034525	275.3
No	WYFF	D30	DT	BL	GREENVILLE, SC	DTVBL53905	275.3
No	WAXC-LD	D31	LD	LIC	ALEXANDER CITY, AL	BLDTL20110329ABN	223.5
No	WSFG-LD	D31	LD	APP	BERRY, AL	BLANK0000029418	386.4
No	W31EB-D	D31	LD	CP	MIDLAND CITY, AL	BNPDTL20100510ALJ	244.4
No	WNCF	D31	DT	LIC	MONTGOMERY, AL	BLANK0000001319	309.6
No	WPAN	D31	DT	BL	FORT WALTON BEACH, FL	DTVBL31570	417.9
No	NEW	D31	LD	APP	MADISON, FL	BNPDTL20090825AHL	260.4
No	WOGX	D31	DT	LIC	OCALA, FL	BLCDT20020730ABS	396.2
No	WSRE	D31	DT	LIC	PENSACOLA, FL	BLEDT20060621AAS	451.5
No	WDDM-LD	D31	LD	LIC	TALLAHASSEE, FL	BLANK0000001335	285.3
No	W31DS-D	D31	LD	CP	ASHBURN, GA	BNPDTL20100510ABE	114.0
Yes	WPCH-TV	D31	DT	CP	ATLANTA, GA	BLANK0000025264	136.7
Yes	WSB-TV	D31	LD	LIC	ATLANTA, GA	BLCDT20100429ADZ	131.3
Yes	WPCH-TV	D31	DT	BL	ATLANTA, GA	DTVBL64033	136.7
Yes	WFXG	D31	DT	LIC	AUGUSTA, GA	BLANK0000013467	176.2
Yes	WDMA-CD	D31	DC	LIC	MACON, GA	BLDTA20140602AAA	13.5
Yes	WPXA-TV	D31	DT	LIC	ROME, GA	BLANK0000001920	199.6
Yes	WSWG	D31	DT	CP	VALDOSTA, GA	BLANK0000034639	178.0
No	W31EE-D	D31	LD	CP	VALDOSTA, GA	BNPDTL20090825CAJ	218.8
Yes	WSWG	D31	DT	BL	VALDOSTA, GA	DTVBL28155	178.0
No	W31DH-D	D31	LD	LIC	FRANKLIN, ETC, NC	BLDTT20090615AAP	285.7
No	W31AZ-D	D31	LD	LIC	HENDERSONVILLE, NC	BLANK0000011016	294.3
No	W31AZ-D	N31-	TX	LIC	HENDERSONVILLE, NC	BLTTL19940525JJ	294.3
No	WUNU	D31	DT	LIC	LUMBERTON, NC	BLEDT20091113ABG	474.3
No	W31AN-D	D31	LD	LIC	MURPHY, NC	BLDTT20090615AAV	261.2
No	W31DI-D	D31	LD	LIC	SPRUCE PINE, NC	BLDTT20090506ABZ	371.1
No	WUNI-LD	D31	LD	LIC	NORTH CHARLESTON, SC	BLDTL20100916ADG	323.2
No	W31DY-D	D31	LD	CP	PICKENS, SC	BDCCDTT20120614AAI	264.1
No	WKTC	D31	DT	CP	SUMTER, SC	BLANK0000027544	299.6
No	WKTC	D31	DT	BL	SUMTER, SC	DTVBL40902	299.6
No	WBXX-TV	D31	DT	CP	CROSSVILLE, TN	BLANK0000025087	378.6
No	WBXX-TV	D31	DT	BL	CROSSVILLE, TN	DTVBL72971	378.6
No	WAXC-LD	D32	LD	CP	ALEXANDER CITY, AL	BDISDTL20120831ABQ	223.5
No	WSB-TV	D32	DT	CP	ATLANTA, GA	BLANK0000025134	133.9
No	WSB-TV	D32	DT	APP	ATLANTA, GA	BLANK0000034812	133.9
No	WSB-TV	D32	DT	BL	ATLANTA, GA	DTVBL23960	133.8

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No	W32DU-D	D32	LD	CP	Columbus, GA	BLANK0000009479	159.3
No	W32DU-D	D32	LD	LIC	Columbus, GA	BLDTL20140226AGL	156.6
Yes	WPGA-TV	D32	DT	LIC	PERRY, GA	BLCDT20071213AAD	1.5
No	WJWJ-TV	D32	DT	CP	BEAUFORT, SC	BLANK0000025030	269.1
No	WJWJ-TV	D32	DT	BL	BEAUFORT, SC	DTVBL61007	269.1
No	WDYH-LD	D32	LD	APP	Columbia, SC	BLANK0000051602	176.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D31
Mask: Full Service
Latitude: 32 45 52.00 N (NAD83)
Longitude: 83 33 32.00 W
Height AMSL: 332.9 m
HAAT: 222.1 m
Peak ERP: 15.0 kW
Antenna: Dielectric DLP-8B 305.0 deg
Elev Pattnr: Generic
Elec Tilt: 1.50

50.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	10.9 kW	203.9 m	49.1 km
45.0	6.40	206.6	46.5
90.0	6.42	195.0	45.9
135.0	7.10	212.0	47.3
180.0	5.94	250.1	48.5
225.0	7.97	239.7	49.5
270.0	13.1	248.3	52.5
315.0	14.9	221.4	51.6

Distance to Canadian border: 993.6 km

Distance to Mexican border: 1496.6 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 318.8 degrees Distance: 163.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 299.1 degrees Distance: 2095.7 km

Study cell size: 1.00 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%

**IX check failure to BLDTA20140602AAA LIC scenario 1, 73.50% interference caused

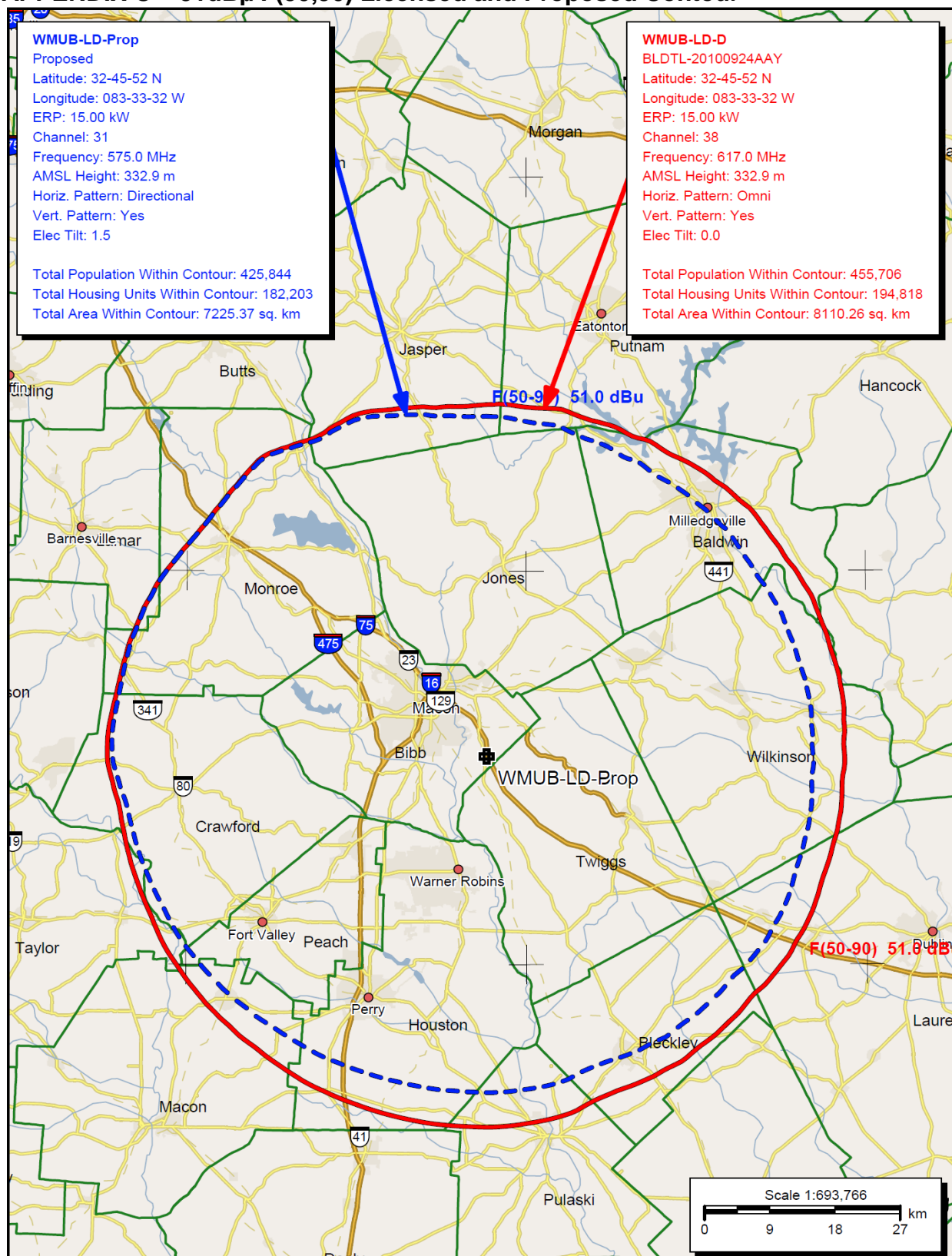
---- Below is IX received by proposal WMUB Channel 31 ----

Proposal receives 2.49% interference from scenario 1

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APPENDIX C – 51dB μ F(50,90) Licensed and Proposed Contour



APPENDIX D – Far Field Exposure to RF Emissions

