

ENGINEERING STATEMENT
APPLICATION FOR
DIGITAL LOW POWER COMPANION CHANNEL
CONSTRUCTION PERMIT
WILM-LD, WILMINGTON, NORTH CAROLINA
CHANNEL 40 7.5 KW ERP 66.2 METERS RC/AMSL

OCTOBER 2006

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.


City of Washington)
) ss
District of Columbia)

Ryan Felmlee, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the Pennsylvania State University, has successfully completed the Engineer-In-Training examination ("EIT") in the State of Virginia, and is a staff engineer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

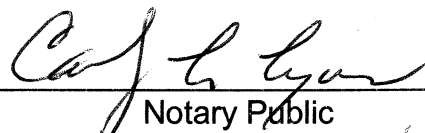
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



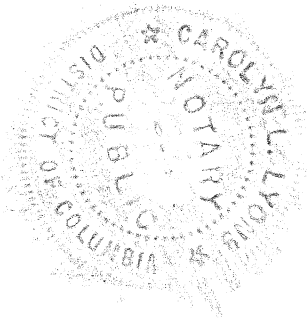
Ryan Felmlee
District of Columbia

Subscribed and sworn to before me this 6th day of October, 2006.



Notary Public

My Commission Expires: 2/28/2008



Introduction

This engineering statement has been prepared on behalf of WILM, Inc., (“WILM”), licensee of low power television station WILM-LP, Wilmington, North Carolina. This statement supports the licensee’s request for a digital companion channel to be operated simultaneously with WILM’s licensed channel 10 analog operation. WILM filed an application (FCC File No. BSFDTL-20060630BOO) for a digital low power television companion channel during the Auction 85 filing window and the Commission has identified this application as not mutually exclusive with any other submitted proposal and is therefore deemed a “singleton”. In accordance with the procedures outlined in the FCC Public Notice, dated August 31, 2006, WILM hereby requests digital low power facilities on channel 40 with an effective radiated power (“ERP”) of 7.5 kW at a radiation center above mean sea level (“RCAMSL”) of 66.2 meters.

Transmitter Site

The proposed digital low power operation will utilize the existing WILM tower located at 3330 Wrightsville Avenue, Wilmington, NC. The geographic coordinates of the existing site are as follows:

North Latitude: 34° 13' 22"

West Longitude: 77° 54' 9"

NAD-27

Elevation Data

Elevation of site above mean sea level

11.9 meters
(39.0 feet)

Center of radiation of antenna above ground level	54.3 meters (178.1 feet)
Center of radiation of antenna above mean sea level	66.2 meters (217.2 feet)
Overall tower height above mean sea level	72.9 meters (239.2 feet)

The Antenna Structure Registration Number ("ASRN") for the existing tower is 1000002.

Equipment Data

Transmitter:	Type-approved
Transmission Line:	ERI, Type LDF7-50A, 1-5/8", 80 meters (262.5 feet) with 70.4% efficiency
Antenna:	ERI, AL8 with maximum gain of 9.39 dBd and 1.75° electrical beam tilt

Power Data

Transmitter:	1.15 kW	0.61 dBk
Transmission Line Loss:	0.29 kW	1.52 dB
Input Into Antenna:	0.86 kW	-0.64 dBk
Antenna Gain:	8.68	9.39 dB
ERP:	7.5 kW	8.75 dBk

As indicated above, the transmitter with typical power output of 1.15 kW will deliver 0.86 kW to the input of the antenna. The antenna, having a maximum power gain of 8.68 and an electrical beam tilt of 1.75°, will produce a maximum ERP of 7.5 kW. A coverage map providing the protected contour of the proposed digital facility relative to the currently licensed

analog operation of WILM-LP has been included as Exhibit E-1 of this report. The ERI AL8 antenna elevation pattern and the associated tabulation are included as Exhibit E-2.

Other Broadcast Facilities

A brief analysis was completed to determine the presence of stations in the vicinity of the WILM tower using the October 3, 2006, data contained within the Commission's Consolidated Database System ("CDBS"). Within 1km of the proposed site, there are no authorized FM radio stations, DTV and NTSC television stations, and no low-power analog television or television translator stations aside from the licensed WILM-LP operation. There are no AM facilities within 3.22 km of the existing tower. Although no adverse technical affects are expected due to the proposed changes, the licensee will take measures to resolve any problems proven to be related to the changes proposed in this application.

Interference Analysis

A study of predicted interference caused by the proposed channel 40 WILM low-power digital operation has been performed using the Longley-Rice program for which the source data has been posted by the Commission on its website at http://www.fcc.gov/oet/dtv/dtv_apps.html. The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Microsoft Windows XP/Intel platform. Comparison of service/interference areas and population indicates this model closely matches the FCC's digital low-power TV/translator evaluation program. Best efforts have been made to use data and calculation identical to the FCC's program. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 1 sq. km. Using 3-second

terrain data sampled approximately every 1.0 km at one-degree azimuth intervals with 1990 census centroids, all studies are based upon data in the current CDBS database. A Longley-Rice study was performed with the proposed channel 40 WILM low-power digital facilities and all potentially affected stations listed in the FCC database as of October 3, 2006. The results of the study are included as Exhibit E-3.

FCC Rule, Section 1.1307

The proposed 7.5 kW nondirectional operation will utilize an ERI, Type AL8 antenna (or equivalent) described above with a center of radiation above ground of 54.3 meters. The antenna will be side-mounted on an existing tower with an overall height of 61 meters above ground. The proposed digital operation of WILM will create a radio frequency field level of $2.1 \mu\text{W}/\text{cm}^2$ at the base of the tower. This level is less than 0.5% of the Maximum Permissible Exposure (“MPE”) level for the general population and uncontrolled environment.

Authorized personnel and rigging contractors will be alerted to the potential zone of high radio frequency field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on or near the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Assessment

An environmental assessment (“EA”) is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the applicant indicates:

- (a)(1) The existing tower is not located in an officially designated wilderness area.
- (a)(2) The existing tower is not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities will be located on a tower which was built prior to the adoption of WT Docket No. 03-128 and will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The existing tower is not located near any known Indian religious sites.
- (a)(6) The existing tower is not located in a flood plain.
- (a)(7) The installation of the DTV facilities on an existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

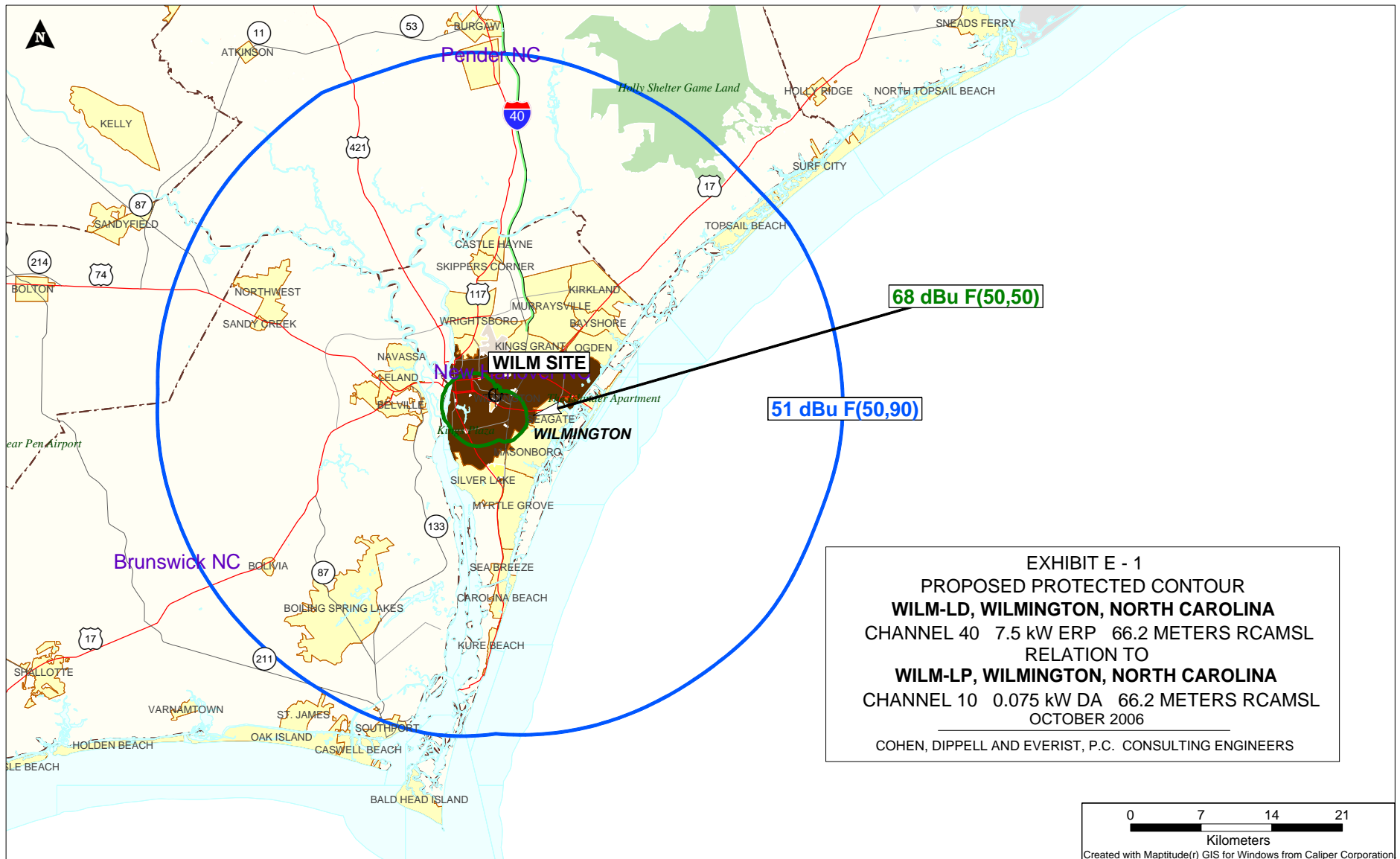
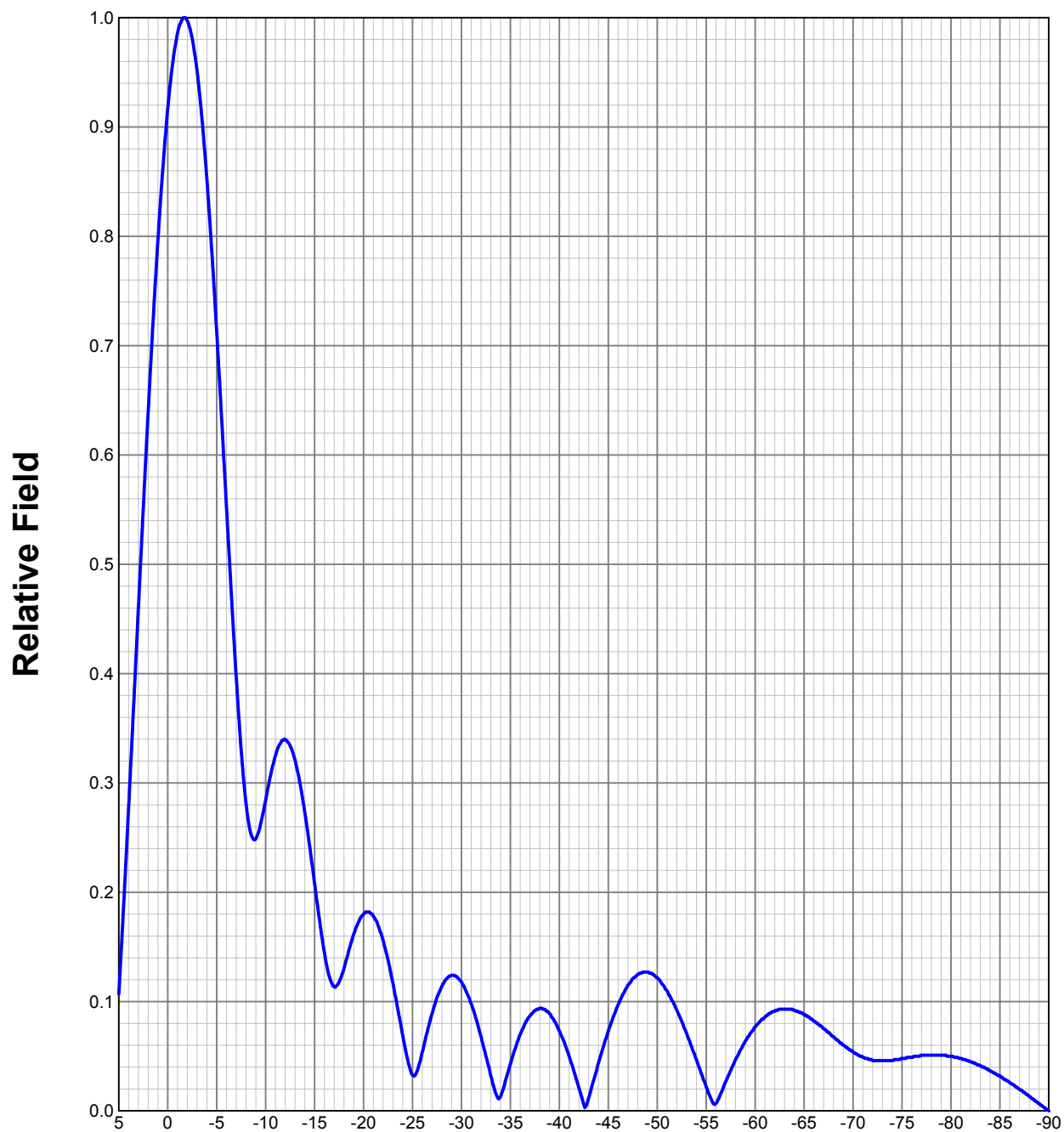


EXHIBIT E-2

ANTENNA DATA

ELEVATION PATTERN**Type:****AL8****Channel:****40****Directivity:****Numeric****dBd****Location:****Wilmington, NC****Main Lobe:****8.68****9.39****Beam Tilt:****-1.75****Horizontal:****7.30****8.63****Polarization:****Horizontal**

TABULATED DATA FOR ELEVATION PATTERN

Type: AL8

Polarization Horizontal

ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB
5.00	0.107	-19.41	-6.75	0.433	-7.27	-27.00	0.089	-21.01	-50.50
4.75	0.147	-16.65	-7.00	0.396	-8.05	-27.50	0.104	-19.66	-51.00
4.50	0.189	-14.47	-7.25	0.361	-8.84	-28.00	0.114	-18.86	-51.50
4.25	0.232	-12.69	-7.50	0.330	-9.63	-28.50	0.121	-18.34	-52.00
4.00	0.277	-11.15	-7.75	0.303	-10.37	-29.00	0.124	-18.13	-52.50
3.75	0.322	-9.84	-8.00	0.281	-11.03	-29.50	0.123	-18.20	-53.00
3.50	0.368	-8.68	-8.25	0.264	-11.57	-30.00	0.118	-18.56	-53.50
3.25	0.413	-7.67	-8.50	0.253	-11.94	-30.50	0.109	-19.25	-54.00
3.00	0.460	-6.74	-8.75	0.248	-12.09	-31.00	0.098	-20.18	-54.50
2.75	0.506	-5.92	-9.00	0.249	-12.08	-31.50	0.084	-21.51	-55.00
2.50	0.551	-5.18	-9.25	0.255	-11.89	-32.00	0.068	-23.35	-55.50
2.25	0.596	-4.50	-9.50	0.263	-11.60	-32.50	0.050	-26.02	-56.00
2.00	0.639	-3.89	-9.75	0.273	-11.28	-33.00	0.032	-29.90	-56.50
1.75	0.681	-3.33	-10.00	0.284	-10.93	-33.50	0.016	-35.92	-57.00
1.50	0.722	-2.83	-10.50	0.307	-10.26	-34.00	0.013	-37.72	-57.50
1.25	0.760	-2.38	-11.00	0.325	-9.76	-34.50	0.028	-31.06	-58.00
1.00	0.797	-1.97	-11.50	0.336	-9.47	-35.00	0.043	-27.33	-58.50
0.75	0.831	-1.61	-12.00	0.340	-9.37	-35.50	0.057	-24.88	-59.00
0.50	0.862	-1.29	-12.50	0.334	-9.53	-36.00	0.070	-23.10	-59.50
0.25	0.891	-1.00	-13.00	0.321	-9.87	-36.50	0.080	-21.94	-60.00
0.00	0.917	-0.75	-13.50	0.300	-10.46	-37.00	0.087	-21.21	-60.50
-0.25	0.939	-0.55	-14.00	0.273	-11.28	-37.50	0.092	-20.72	-61.00
-0.50	0.958	-0.37	-14.50	0.242	-12.32	-38.00	0.094	-20.54	-61.50
-0.75	0.974	-0.23	-15.00	0.208	-13.64	-38.50	0.093	-20.63	-62.00
-1.00	0.986	-0.12	-15.50	0.175	-15.14	-39.00	0.089	-21.01	-62.50
-1.25	0.994	-0.05	-16.00	0.145	-16.77	-39.50	0.082	-21.72	-63.00
-1.50	0.999	-0.01	-16.50	0.123	-18.20	-40.00	0.073	-22.73	-63.50
-1.75	1.000	0.00	-17.00	0.114	-18.86	-40.50	0.063	-24.01	-64.00
-2.00	0.997	-0.03	-17.50	0.118	-18.56	-41.00	0.050	-26.02	-64.50
-2.25	0.990	-0.08	-18.00	0.130	-17.72	-41.50	0.036	-28.87	-65.00
-2.50	0.981	-0.17	-18.50	0.147	-16.65	-42.00	0.021	-33.56	-65.50
-2.75	0.967	-0.29	-19.00	0.162	-15.81	-42.50	0.006	-44.44	-66.00
-3.00	0.951	-0.44	-19.50	0.173	-15.24	-43.00	0.012	-38.42	-66.50
-3.25	0.931	-0.63	-20.00	0.180	-14.89	-43.50	0.028	-31.06	-67.00
-3.50	0.907	-0.85	-20.50	0.182	-14.80	-44.00	0.044	-27.13	-67.50
-3.75	0.881	-1.11	-21.00	0.178	-14.99	-44.50	0.059	-24.58	-68.00
-4.00	0.852	-1.39	-21.50	0.169	-15.44	-45.00	0.073	-22.73	-68.50
-4.25	0.820	-1.72	-22.00	0.156	-16.14	-45.50	0.086	-21.31	-69.00
-4.50	0.786	-2.09	-22.50	0.138	-17.20	-46.00	0.097	-20.26	-69.50
-4.75	0.750	-2.49	-23.00	0.117	-18.64	-46.50	0.107	-19.41	-70.00
-5.00	0.713	-2.94	-23.50	0.093	-20.63	-47.00	0.115	-18.79	-70.50
-5.25	0.674	-3.43	-24.00	0.069	-23.22	-47.50	0.121	-18.34	-71.00
-5.50	0.634	-3.96	-24.50	0.047	-26.56	-48.00	0.125	-18.06	-71.50
-5.75	0.593	-4.54	-25.00	0.033	-29.63	-48.50	0.127	-17.92	-72.00
-6.00	0.552	-5.16	-25.50	0.037	-28.64	-49.00	0.127	-17.92	-72.50
-6.25	0.512	-5.81	-26.00	0.054	-25.35	-49.50	0.125	-18.06	-73.00
-6.50	0.472	-6.52	-26.50	0.072	-22.85	-50.00	0.122	-18.27	-73.50

EXHIBIT E-3
LONGLEY-RICE ANALYSIS
FOR THE PROPOSED DIGITAL OPERATION OF
WILM-LD, WILMINGTON, NC
CH 40 7.5 KW ERP 66.2 METERS RC/AMSL
OCTOBER 2006

<u>Station</u>	<u>City</u>	<u>State</u>	<u>Channel</u>	<u>Distance</u> km	<u>Status</u>	<u>FCC File No.</u>	<u>Interference</u>
WZDC-LP	WASHINGTON	DC	25	532.6	CP	BDISTTL-20060213ABC	Beyond Distance
W25CQ	STATESBORO	GA	25	409.5	LIC	BLTT-19990603JE	Beyond Distance
NEW	VIDALIA GA	GA	25	474.8	APP	BNPTTL-20000828AEZ	Beyond Distance
WJJV-LP	ASHEVILLE	NC	25	443.2	LIC	BLTTL-19990120JB	Beyond Distance
WDMC-LP	CHARLOTTE	NC	25	278.8	APP	BPTTL-20060323ABK	Beyond Distance
WDMC-LP	CHARLOTTE	NC	25	278.8	LIC	BLTTL-19940627JF	Beyond Distance
WSFX-TV	WILMINGTON	NC	26	28.1	LIC	BLCT-20000120AAF	No Interference
WMBF-TV	MYRTLE BEACH	SC	32	123.6	CP	BPCT-19960920WV	No Interference
WEPX	GREENVILLE	NC	38	138.4	LIC	BLCT-19981221KH	Beyond Distance
WUNJ-TV	WILMINGTON	NC	39	28.1	LIC	BMLET-20041104ARV	< 0.5 %
WUVC-TV	FAYETTEVILLE	NC	40	173.7	LIC	BMLCT-20040615ABO	No New Interference
WHKY-TV	HICKORY	NC	40	354.5	PRTCT	BMPCDT-20040716AAE	No Interference
WMYA-TV	ANDERSON	SC	40	403.1	LIC	BLCT-19841010KJ	Beyond Distance
WTAT-TV	CHARLESTON	SC	40	218.8	CP MOD	BMPCDT-20040514AEK	No Interference
WYAT-LP	MARTINSVILLE	VA	40	327	LIC	BLTTL-20060508AAA	No Interference
WYAT-LP	MARTINSVILLE	VA	40	322.4	STA	BSTA-20040806AGR	No Interference
WTKR	NORFOLK	VA	40	314.1	LIC	BLCDDT-20050617AAW	No Interference
WWIW-LP	RALEIGH	NC	41	185.1	CP	BPTTL -20030220AAM	Beyond Distance
WNCR-LP	TARBORO	NC	41	187.1	LIC	BLTTL -20050623ABK	Beyond Distance
WPJT-DT	GEORGETOWN	SC	41	153.8	APP	BPET-19960628KO	No Interference
W49AN	MYRTLE BEACH	SC	41	126.9	CP	BPTTL-20031104AAM	No Interference
WHFL-LP	GOLDSBORO	NC	43	127.5	CP	BPTTL-20040412ACF	Beyond Distance
WFXB	MYRTLE BEACH	SC	43	117.8	CP	BPCT-20060516ADO	No Interference
WFXB	MYRTLE BEACH	SC	43	117.8	LIC	BLCT-19970711KE	Beyond Distance
WPEM-LP	LUMBERTON	NC	47	115.8	LIC	BLTTL-19960530JB	Beyond Distance
W47CK	SHALLOTTE	NC	47	44.2	LIC	BLTTL-20021220AAC	No Interference