

Charlotte, North Carolina
Application for New FM Translator
On Channel 256
by
Isothermal Community College

Exhibit 12
Interference Analysis

June 2008

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 12, Interference Analysis, for Isothermal Community College, and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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17 June 2008

Narrative

This Exhibit provides details of the allocations for the proposed new to serve Charlotte, North Carolina. This proposal complies fully with the requirements of 74 C.F.R. §74.1204(a), with the exception of facilities protected under 74 C.F.R. §74.1204(d) by the Undesired to Desired (U/D) method described below.

This application is in compliance with the requirements of Public Notice DA-03-2095, FM Translator Auction No. 83 Non-Mutually Exclusive Applications dated June 30, 2003, Footnote 8. No changes are proposed. Therefore there are no new mutual exclusivities as shown in the allocation table in this exhibit.

Figure 1 shows the proposed 60 dBu F(50,50) coverage area.

Allocations

This application proposes service to Charlotte, North Carolina, on channel 256. An updated Allocations Table is included in this exhibit with a list of the stations, construction permits, allocations, and applications studied. All are protected by this application. Facilities protected by the U/D method are listed in Table 1. The allocations table was prepared using the NED 3 arcsecond terrain database which is described below.

Figure 2 shows the relationship between the proposed translator and other facilities where the lack of overlap is no more than 16 kilometers (10 miles).

Undesired to Desired Method

Protection to some facilities is provided through the use of Undesired to Desired Signal Strength Ratio (U/D) calculations. Table 2 lists the parameters studied. Figure 3 shows the relevant contours. Note that the distance to the predicted 151.5 dBu F(50,10) contour is too small to be visible on the Figure. For the translator interference contour, free space

calculations are used. There is no population within the predicted interference area and therefore this facility is permitted under §74.1204(d). There is also no population within the 100 dBu F(50,10) interference contour, where population is calculated by the centroid method.

The proposed site is a communications tower. The undesired signal will not reach the ground. There is significant unpopulated land area in the guy field for the communications tower, resulting in a much lower translator signal at any occupied area than that studied for the U/D calculations.

The applicant recognizes that the U/D method is only a tool for predicting likely interference. Should any actual interference be experienced, the applicant will cooperate fully in correcting the interference. Corrective steps may require changes in the transmitting antenna or other steps which would require Commission authorization, may require that the translator cease operation except for brief equipment tests, or may require filtering at the receivers which report interference.

Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments. Terrain data for the comparative contours is extracted from the NGDC 30 arcsecond terrain database. The Height Above Average Terrain, ERP, and Distance to Contour for the licensed facilities and for the proposed auxiliary facilities are tabulated in this exhibit.

The contours were also evaluated using terrain extracted from the V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS National Elevation Data 30 meter terrain database. The USGS National Elevation Dataset has been developed by merging the highest-resolution, best-quality elevation data available across the United States into a seamless raster format. NED is the result of the maturation of the USGS effort to provide 1:24,000-scale Digital Elevation Model (DEM) data for the conterminous US and 1:63,360-scale DEM data for Alaska.

All population data is from 2000 U.S. Census SF1 data files. Population is counted by considering the location of the centroid of each census bloc. The data for each block is counted if it falls within the area being counted.

Television Channel 6 Protection

There are no television channel 6 stations requiring protection. This application proposes a channel which is not subject to television channel 6 separation requirements.

Table 1: Allocations

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Isothermal Community College

Allocation Study

REFERENCE	CH#	256D	-	99.1	MHZ,	Pwr=	0.01	kw,	HAAT=	0.0	M,	COR=	360	M	DISPLAY	DATES
35 15 05.0 N.															DATA	06-10-08
80 41 12.0 W.															SEARCH	06-10-08
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kW)	INT(km)	PRO(km)	*OUT*						
CITY	STATE			<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)						
256D	649897	APP	C	0.0	0.00	35 15 05.0	0.010	24.0	7.1	-31.12*						
Charlotte	NC			0.0	BNPFT20030317IGJ	80 41 12.0		360	Isothermal Community College							
259C1	WRFX-FM	LIC	DCN	348.2	4.06	35 17 14.0	84.000	9.6	70.4	-66.55*<						
Kannapolis	NC			168.2	BLH19940128KC	80 41 45.0	322	522	Capstar TX Limited Partner							
255C	WSPA-FM	CP	CX	266.9	146.37	35 10 11.0	100.000	142.8	96.8	40.09						
Spartanburg	SC			86.0	BMPH20080213ACW	82 17 28.0	600	1047	Entercom Greenville License							
255C	WSPA-FM	LIC	C	266.9	146.37	35 10 11.0	100.000	141.3	95.6	41.30						
Spartanburg	SC			86.0	BLH19991026ACQ	82 17 28.0	580	1016	Entercom Greenville License							
256C1	WZFX	LIC	CN	107.9	182.38	34 44 05.0	100.000	171.0	71.6	85.20						
Whiteville	NC			288.9	BLH19860909KB	78 47 25.0	299	333	WDAS License Limited Partn							
253D	W253BA	LIC	C	156.1	16.63	35 06 52.0	0.019	0.3	3.7	12.71						
Indian Trail	NC			336.1	BLFT20071002ACT	80 36 45.0		246	Positive Alternative Radio							
257C3	WBT-FM	LIC	CX	226.2	73.62	34 47 30.0	7.700	55.7	37.5	26.52						
Chester	SC			45.9	BLH20031201APJ	81 16 06.0	182	350	Greater Media Charlotte In							
256C	WSLQ	LIC	CY	12.3	220.85	37 11 41.0	200.000	200.4	87.5	108.37						
Roanoke	VA			192.6	BMLH19830922AA	80 09 22.0	607	1184	MeI wheeler, Inc.							
GRANDFATHERED AT 200KW @ 607M HAAT.																
254D	W254AZ	LIC	C	271.8	30.90	35 15 34.0	0.088	0.7	5.5	25.23						
Belmont	NC			91.6	BLFT20070503AAN	81 01 34.0		228	Positive Alternative Radio							
254C0	WSMW	LIC	NCX	43.8	107.24	35 56 42.0	100.000	11.3	78.3	28.73						
Greensboro	NC			224.3	BLH20031229AAZ	79 51 45.0	375	613	Entercom Greensboro Licens							
258C	WMAG	LIC	DCX	47.8	102.97	35 52 13.0	100.000	6.9	65.7	37.05						
High Point	NC			228.3	BMLH20050613AFW	79 50 25.0	456	681	Capstar TX Limited Partner							
255L1	WVOY-LP	LIC		156.2	68.90	34 40 59.0	0.058	4.1	2.9	56.21						
Jefferson	SC			336.4	BLL20070329AAD	80 22 57.0	39	174	The Church Of God, Inc. Em							
257L1	WLRZ-LP	LIC		313.1	80.15	35 44 33.0	0.018	1.3	0.6	69.91						
Hickory	NC			132.8	BLL20050103ACW	81 20 04.0	70	386	Lenoir-Rhyne College							

Terrain database is NED 03 SEC Distance + R = 73.215 or FCC spacings in KM, Distance + M = Margin in KM
Contour distances are on direct line to and from reference station. Reference Zone = 2. with 3rd Adj Channels.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
Incoming contour overlap is ignored.

"*"affixed to 'IN' or 'OUT' values = site inside protected contour.

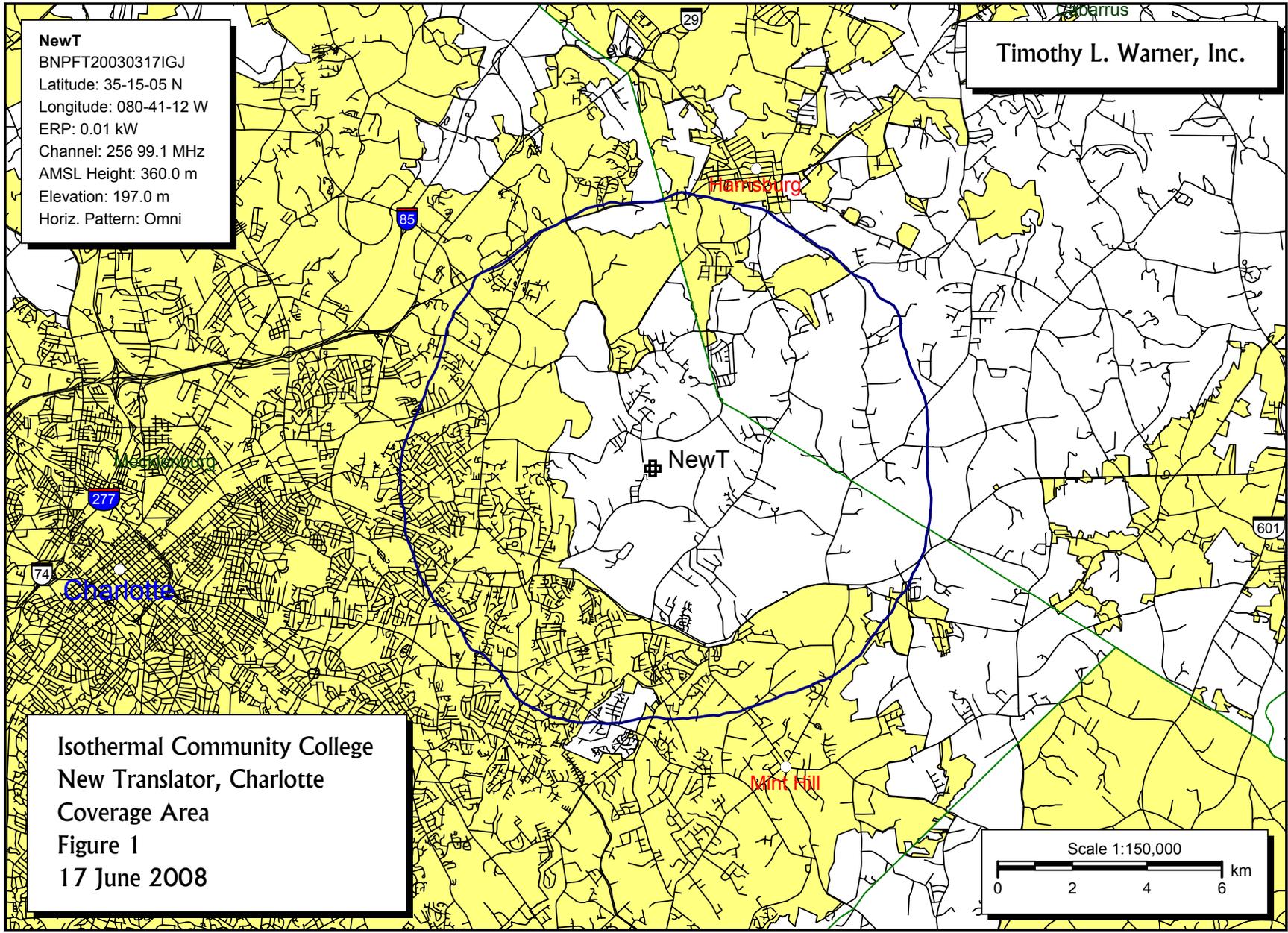
"<" = Contour Overlap

Table 2: Facilities Protected by U/D Method

Facility	WRFX-FM Kannapolis, North Carolina
Relationship	259C1 third adjacent
Distance (km)	4.06
Bearing (degrees)	168.2
ERP (kW, on azimuth)	82.7
HAAT (m, on azimuth)	299.2
Ratio	40
Signal Strength (dBu)	111.5
Translator Signal Strength	151.5
Translator distance (km)	.001

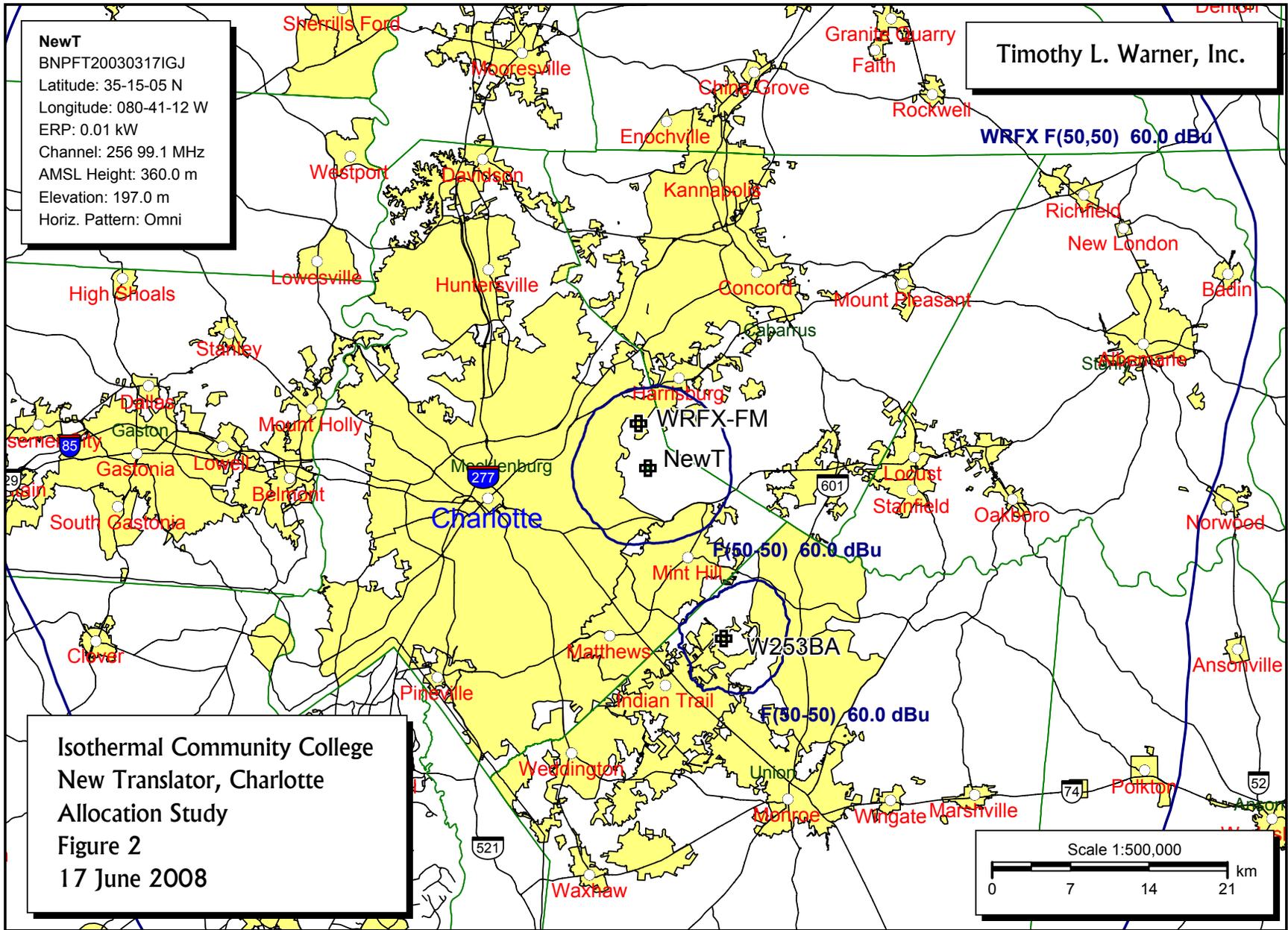
NewT
BNPFT20030317IGJ
Latitude: 35-15-05 N
Longitude: 080-41-12 W
ERP: 0.01 kW
Channel: 256 99.1 MHz
AMSL Height: 360.0 m
Elevation: 197.0 m
Horiz. Pattern: Omni

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**Isothermal Community College
New Translator, Charlotte
Coverage Area
Figure 1
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NewT
BNPFT20030317IGJ
Latitude: 35-15-05 N
Longitude: 080-41-12 W
ERP: 0.01 kW
Channel: 256.99.1 MHz
AMSL Height: 360.0 m
Elevation: 197.0 m
Horiz. Pattern: Omni

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WRFX-FM

F(50-50) 111.5 dBu

F(50-10) 100.0 dBu

NewT
F(50-10) 151.5 dBu

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New Translator, Charlotte
Allocation Study: WRFX
Figure 3
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