

ENGINEERING EXHIBIT

Digital Television Station Application for Minor Modification of Licensed Facility

prepared for

Hearst Properties Inc.
WMUR-TV Manchester, NH
Facility ID 73292
Ch. 9 51 kW 312 m

Hearst Properties Inc. (“*Hearst*”) is the licensee of digital television station WMUR-TV, Channel 9, Facility ID 73292, Manchester, NH. WMUR-TV is licensed (file# 0000143119) to operate with 7.35 kW effective radiated power (“ERP”) nondirectional at 314 meters antenna height above average terrain (“HAAT”). *Hearst* proposes herein to increase the ERP to 51 kW and to utilize a directional antenna.

The proposed WMUR-TV facility will employ a new antenna system to be top-mounted on the WMUR-TV tower in lieu of the existing main antenna. The WMUR-TV tower structure corresponds to FCC Antenna Structure Registration number 1033995. No increase of overall structure height will result from this proposal.

The proposed antenna is an elliptically polarized directional Dielectric model THV-6A9/VP-R (25 percent vertical polarization). *Hearst* proposes to operate WMUR-TV with an ERP of 51 kW at 312 meters antenna HAAT. The maximum horizontally polarized ERP is 51 kW and the maximum vertically polarized ERP is 12.75 kW. The vertically polarized component will not exceed the horizontally polarized component at any azimuth. The directional antenna’s azimuthal patterns are depicted in Figures 1 and 1A for horizontal and vertical polarization, respectively. The antenna’s elevation pattern is depicted in Figure 2.

Figure 3 supplies a map that demonstrates compliance with §73.625(a)(1) regarding coverage of the entire principal community. The proposed facility's predicted population exceeds 95 percent of the Incentive Auction¹ baseline facility population.

Interference study per FCC OET Bulletin 69² shows that the proposal complies with the 0.5 percent limit of new interference caused to pertinent nearby full service and Class A television stations except with respect to WMTW (Ch. 8, Facility ID 73288, Poland Spring ME). WMTW would receive 2.64 percent additional interference from the proposed WMUR-TV. *Hearst* is also the licensee of WMTW and has provided an interference acceptance consent statement, attached separately. FCC processing of this proposal is requested using a **2 km cell size and 0.2 km terrain profile increment**. The interference study output report is provided as Table 1.

The proposed 51 kW ERP exceeds the maximum permitted by §73.622(f)(7) for the proposed antenna HAAT of 312 meters. Section 73.622(f)(5) permits the maximum ERP to be exceeded in order to provide the same geographic coverage area as the largest station within the same market. As demonstrated in Figure 4, the total area within the proposed WMUR-TV NLSC is 32,519 square kilometers, which does not exceed the NLSC area of WGBH-TV (47,588 sq. km, Ch. 5, Boston MA, file# 0000138509). WMUR-TV and WGBH-TV are both in the Boston (Manchester) Nielsen DMA. Although WMUR-TV is located in Zone I, ERP in excess of 30 kW has already been authorized for other Zone I VHF Channel 7-13 stations³ on the basis of the same "largest station in the market" exception in §73.622(f)(5). Thus, the 51 kW ERP specified herein is in compliance with §73.622(f)(5).

¹*Incentive Auction Closing and Channel Reassignment Public Notice*, DA 17-317, released April 13, 2017.

²FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, 2 km cell size, and 0.2 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC's implementation of TVStudy show excellent correlation.

³For example, Zone I stations authorized for more than 30 kW ERP include WPXS (160 kW ERP, Ch. 13, Lic file# 0000116945, Mount Vernon IL), WVFX (110 kW ERP, Ch. 13, CP file# 0000034189, Clarksburg WV), WTPC-TV (85 kW ERP, Ch. 7, Lic file# 0000021983, Virginia Beach VA), and WBPH-TV (80.6 kW, Lic file# 0000064341, Bethlehem PA). These Zone I stations relied on the "largest station in the market" exception §73.622(f)(5) to achieve their ERPs.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10), and considering the antenna relative field in downward elevations (Figure 2), the graph in Figure 5 depicts calculated power density levels attributable to the proposed facility at locations near the site at a height of two meters above ground level. The maximum calculated RF electromagnetic field attributable to the proposed facility is 15.6 percent of the general population / uncontrolled MPE limit at any location two meters above ground level, and occurs within 40 meters of the base of the tower.

One Low Power Television and several FM radio station facilities are authorized at nearby site locations. The following table supplies a summary of RF signal density calculations for the proposed WMUR-TV and the other broadcast facilities near this site, for maximum exposure at 2 meters above ground near each emitter's site. Pursuant to §1.1307(b)(1), Part 74 operations at less than 100 Watts ERP are excluded from this evaluation.

**Summary of Radiofrequency Electromagnetic Field Calculations
 For Area in Vicinity of WMUR-TV Tower**

Facility	Channel	ERP (kW)	Polar- ization	Relative Field	Height (meters)	S - Calculated ($\mu\text{W}/\text{cm}^2$)	S - Limit ($\mu\text{W}/\text{cm}^2$)	Percent of Limit
WMUR-TV Manchester NH Proposed Facility	9	51	E	See Graph Figure 2 & 5	57	31.3	200	15.6%
W07DR-D Manchester NH CP BDCCDVL-20110107ABC	7	0.3	H	0.3	29.9	1.2	200	0.6%
WLMW(FM) Manchester NH Lic BLED-19970829KB	214	0.015 H 0.011 V	E	FMModel at Worst case	27	0.9	200	0.5%
WZID(FM) Manchester NH Lic BLH-19870928KA	239	14.5	C	FMModel #3 3-bay $\lambda/2$	38	36.0	200	18.0%
WMLL(FM) Bedford NH Lic BLH-19991109ABW	243	0.73	C	FMModel #1 2-bay $\lambda/2$	30	8.6	200	4.3%
W260CF Manchester NH Lic BLFT-20151105AJJ	260	0.11	C	FMModel at Worst case	18	2.3	200	1.2%
WGIR-FM Manchester NH Lic BLH-19910718KC	266	11.5	C	FMModel #3 5-bay $\lambda/2$	65	3.3	200	1.7%
Total Calculated Signal Density:								41.9%

ERP: Effective Radiated Power
 Polarization: H – Horizontal; V – Vertical; E – Elliptical; C – Circular
 Field: Elevation Pattern Relative Field Value
 Height: Height of radiation center above ground level
 S-Cal: OET Bulletin 65 calculated value of signal density at two meters above ground level
 S-Limit §1.1310 uncontrolled/general population limit for signal density

The manufacturer's elevation pattern for each TV antenna was employed with computations per OET-65 equation (10). For FM stations the FCC's "FMModel" computer analysis⁴ was utilized, in some cases utilizing the worst-case setting for antenna type and number of elements. Individual station contributions were determined as a percentage of their respective exposure limit based on operating frequency and then all individual percentages were summed to determine the total RF exposure level. For simplicity in summing the individual RF contributions, these computations assume all stations are located at a single tower location.

Based on this analysis and considering all broadcast facilities, the summary table shows that the total maximum calculated RF density at two meters above ground level is 41.9 percent of the FCC's uncontrolled / general population MPE limit. Further analysis that considers the actual lateral separation between the various stations would show a lower total maximum RF density.

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 will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations 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. This exhibit is limited to the evaluation of exposure to RF electromagnetic field.

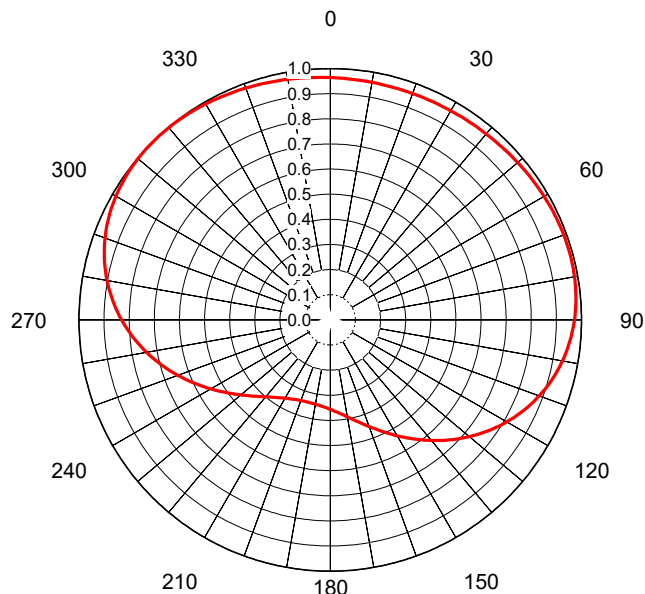
⁴Public Notice "Office of Engineering and Technology Announces Updates to FMModel Software" DA 16-340, released March 31, 2016.

List of Attachments

Figure 1, 1A	Antenna Azimuthal Pattern
Figure 2	Antenna Elevation Pattern
Figure 3	Proposed Coverage Contours
Figure 4	Maximum ERP per §73.622(f)
Figure 5	Calculated RF Electromagnetic Field
Table 1	TVStudy Analysis of Proposal
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	April 15, 2021	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600



AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-71665**
 Date **8-Jan-21**
 Call Letters **WMUR**
 Channel **9**
 Frequency **189 MHz**
 Antenna Type **THV-6A9/VP-R**
 Gain **1.52 (1.81dB)**
 Calculated

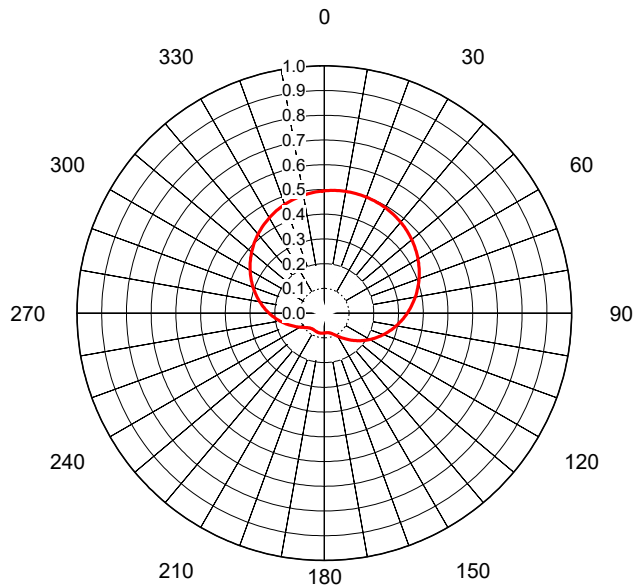
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.964	36	0.963	72	0.989	108	0.897	144	0.588	180	0.356	216	0.381	252	0.665	288	0.945
1	0.964	37	0.964	73	0.989	109	0.891	145	0.579	181	0.354	217	0.386	253	0.675	289	0.949
2	0.963	38	0.964	74	0.989	110	0.885	146	0.569	182	0.352	218	0.390	254	0.685	290	0.954
3	0.963	39	0.965	75	0.989	111	0.878	147	0.560	183	0.350	219	0.395	255	0.695	291	0.957
4	0.962	40	0.966	76	0.989	112	0.872	148	0.551	184	0.348	220	0.400	256	0.704	292	0.961
5	0.962	41	0.967	77	0.989	113	0.865	149	0.542	185	0.346	221	0.405	257	0.714	293	0.965
6	0.961	42	0.967	78	0.988	114	0.858	150	0.533	186	0.345	222	0.411	258	0.723	294	0.968
7	0.961	43	0.968	79	0.988	115	0.850	151	0.524	187	0.344	223	0.417	259	0.733	295	0.972
8	0.960	44	0.969	80	0.987	116	0.843	152	0.515	188	0.342	224	0.423	260	0.742	296	0.975
9	0.960	45	0.970	81	0.986	117	0.835	153	0.507	189	0.342	225	0.429	261	0.752	297	0.977
10	0.960	46	0.970	82	0.985	118	0.828	154	0.498	190	0.341	226	0.436	262	0.761	298	0.980
11	0.959	47	0.971	83	0.984	119	0.820	155	0.490	191	0.340	227	0.443	263	0.770	299	0.982
12	0.959	48	0.972	84	0.983	120	0.812	156	0.482	192	0.340	228	0.450	264	0.779	300	0.985
13	0.959	49	0.973	85	0.981	121	0.803	157	0.474	193	0.339	229	0.457	265	0.788	301	0.987
14	0.959	50	0.974	86	0.980	122	0.795	158	0.466	194	0.339	230	0.464	266	0.797	302	0.989
15	0.959	51	0.975	87	0.978	123	0.786	159	0.459	195	0.339	231	0.472	267	0.805	303	0.991
16	0.958	52	0.976	88	0.976	124	0.778	160	0.452	196	0.339	232	0.480	268	0.814	304	0.992
17	0.958	53	0.977	89	0.974	125	0.769	161	0.445	197	0.340	233	0.488	269	0.822	305	0.994
18	0.958	54	0.978	90	0.972	126	0.760	162	0.438	198	0.340	234	0.496	270	0.830	306	0.995
19	0.958	55	0.978	91	0.969	127	0.751	163	0.431	199	0.341	235	0.505	271	0.838	307	0.996
20	0.958	56	0.979	92	0.967	128	0.742	164	0.425	200	0.342	236	0.513	272	0.846	308	0.997
21	0.958	57	0.980	93	0.964	129	0.732	165	0.419	201	0.343	237	0.522	273	0.854	309	0.998
22	0.958	58	0.981	94	0.961	130	0.723	166	0.413	202	0.344	238	0.531	274	0.861	310	0.998
23	0.959	59	0.982	95	0.958	131	0.713	167	0.408	203	0.345	239	0.540	275	0.868	311	0.999
24	0.959	60	0.983	96	0.954	132	0.704	168	0.402	204	0.347	240	0.549	276	0.876	312	0.999
25	0.959	61	0.984	97	0.951	133	0.694	169	0.397	205	0.349	241	0.559	277	0.882	313	1.000
26	0.959	62	0.984	98	0.947	134	0.685	170	0.392	206	0.350	242	0.568	278	0.889	314	1.000
27	0.959	63	0.985	99	0.943	135	0.675	171	0.387	207	0.352	243	0.578	279	0.896	315	1.000
28	0.960	64	0.986	100	0.939	136	0.665	172	0.383	208	0.355	244	0.587	280	0.902	316	1.000
29	0.960	65	0.986	101	0.934	137	0.656	173	0.379	209	0.357	245	0.597	281	0.908	317	1.000
30	0.960	66	0.987	102	0.930	138	0.646	174	0.375	210	0.360	246	0.606	282	0.914	318	1.000
31	0.961	67	0.988	103	0.925	139	0.636	175	0.371	211	0.363	247	0.616	283	0.920	319	0.999
32	0.961	68	0.988	104	0.920	140	0.627	176	0.368	212	0.366	248	0.626	284	0.925	320	0.999
33	0.962	69	0.988	105	0.914	141	0.617	177	0.365	213	0.370	249	0.636	285	0.930	321	0.999
34	0.962	70	0.989	106	0.909	142	0.607	178	0.361	214	0.373	250	0.646	286	0.935	322	0.998
35	0.963	71	0.989	107	0.903	143	0.598	179	0.359	215	0.377	251	0.655	287	0.940	323	0.997



Figure 1
Antenna Azimuthal Pattern
Horizontal Polarization
WMUR-TV Manchester, NH
Facility ID 73292
Ch. 9 51 kW 312 m

prepared for
Hearst Properties Inc.

April, 2021



AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-71665**
 Date **8-Jan-21**
 Call Letters **WMUR**
 Channel **9**
 Frequency **189 MHz**
 Antenna Type **THV-6A9/VP-R**
 Gain **2.42 (3.83dB)**
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.495	36	0.486	72	0.401	108	0.263	144	0.124	180	0.080	216	0.080	252	0.152	288	0.298
1	0.496	37	0.484	73	0.398	109	0.258	145	0.121	181	0.081	217	0.080	253	0.156	289	0.302
2	0.496	38	0.483	74	0.394	110	0.254	146	0.118	182	0.081	218	0.080	254	0.160	290	0.306
3	0.497	39	0.481	75	0.391	111	0.250	147	0.115	183	0.081	219	0.081	255	0.163	291	0.310
4	0.497	40	0.480	76	0.388	112	0.246	148	0.113	184	0.081	220	0.081	256	0.167	292	0.314
5	0.498	41	0.478	77	0.384	113	0.242	149	0.110	185	0.081	221	0.082	257	0.171	293	0.318
6	0.498	42	0.477	78	0.381	114	0.238	150	0.107	186	0.082	222	0.082	258	0.175	294	0.322
7	0.499	43	0.475	79	0.377	115	0.234	151	0.105	187	0.082	223	0.083	259	0.179	295	0.326
8	0.499	44	0.473	80	0.373	116	0.229	152	0.103	188	0.082	224	0.084	260	0.183	296	0.330
9	0.499	45	0.472	81	0.370	117	0.225	153	0.100	189	0.082	225	0.085	261	0.187	297	0.334
10	0.500	46	0.470	82	0.366	118	0.221	154	0.098	190	0.082	226	0.086	262	0.191	298	0.338
11	0.500	47	0.468	83	0.362	119	0.217	155	0.096	191	0.082	227	0.087	263	0.195	299	0.342
12	0.500	48	0.466	84	0.359	120	0.213	156	0.094	192	0.082	228	0.088	264	0.199	300	0.346
13	0.500	49	0.464	85	0.355	121	0.209	157	0.093	193	0.082	229	0.090	265	0.203	301	0.350
14	0.500	50	0.462	86	0.351	122	0.205	158	0.091	194	0.082	230	0.091	266	0.207	302	0.354
15	0.500	51	0.459	87	0.347	123	0.201	159	0.089	195	0.082	231	0.093	267	0.211	303	0.358
16	0.500	52	0.457	88	0.343	124	0.197	160	0.088	196	0.082	232	0.095	268	0.215	304	0.361
17	0.500	53	0.455	89	0.339	125	0.193	161	0.087	197	0.082	233	0.097	269	0.219	305	0.365
18	0.499	54	0.453	90	0.336	126	0.189	162	0.086	198	0.082	234	0.099	270	0.223	306	0.369
19	0.499	55	0.450	91	0.332	127	0.185	163	0.084	199	0.082	235	0.101	271	0.227	307	0.373
20	0.499	56	0.448	92	0.328	128	0.181	164	0.084	200	0.082	236	0.103	272	0.231	308	0.376
21	0.498	57	0.445	93	0.324	129	0.177	165	0.083	201	0.082	237	0.106	273	0.236	309	0.380
22	0.498	58	0.443	94	0.320	130	0.173	166	0.082	202	0.082	238	0.108	274	0.240	310	0.383
23	0.498	59	0.440	95	0.316	131	0.169	167	0.081	203	0.081	239	0.111	275	0.244	311	0.387
24	0.497	60	0.437	96	0.312	132	0.166	168	0.081	204	0.081	240	0.114	276	0.248	312	0.390
25	0.496	61	0.435	97	0.308	133	0.162	169	0.081	205	0.081	241	0.116	277	0.252	313	0.394
26	0.496	62	0.432	98	0.304	134	0.158	170	0.080	206	0.081	242	0.119	278	0.256	314	0.397
27	0.495	63	0.429	99	0.300	135	0.155	171	0.080	207	0.080	243	0.122	279	0.261	315	0.401
28	0.494	64	0.426	100	0.295	136	0.151	172	0.080	208	0.080	244	0.125	280	0.265	316	0.404
29	0.493	65	0.423	101	0.291	137	0.147	173	0.080	209	0.080	245	0.128	281	0.269	317	0.407
30	0.492	66	0.420	102	0.287	138	0.144	174	0.080	210	0.080	246	0.132	282	0.273	318	0.410
31	0.491	67	0.417	103	0.283	139	0.140	175	0.080	211	0.080	247	0.135	283	0.277	319	0.414
32	0.490	68	0.414	104	0.279	140	0.137	176	0.080	212	0.080	248	0.138	284	0.282	320	0.417
33	0.489	69	0.411	105	0.275	141	0.134	177	0.080	213	0.080	249	0.142	285	0.286	321	0.420
34	0.488	70	0.408	106	0.271	142	0.131	178	0.080	214	0.080	250	0.145	286	0.290	322	0.423
35	0.487	71	0.404	107	0.267	143	0.127	179	0.080	215	0.080	251	0.149	287	0.294	323	0.426



Figure 1A
Antenna Azimuthal Pattern
Vertical Polarization
WMUR-TV Manchester, NH
Facility ID 73292
Ch. 9 51 kW 312 m

prepared for
Hearst Properties Inc.

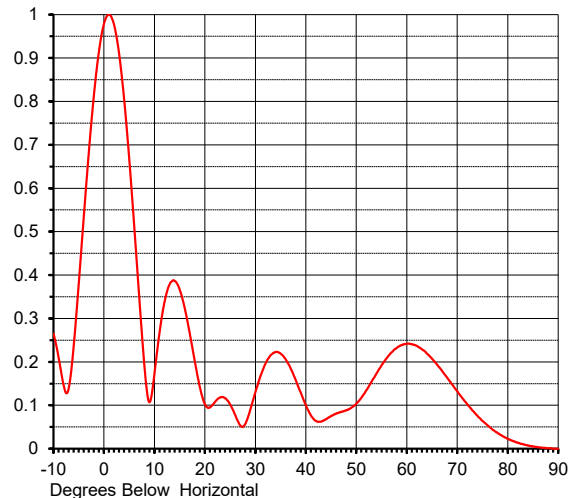
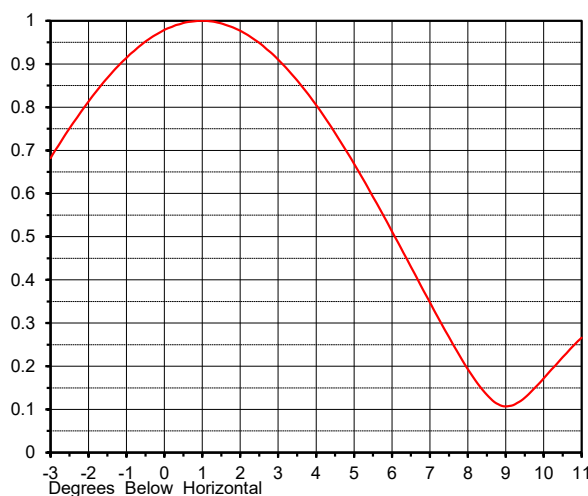
April, 2021

ELEVATION PATTERN

Proposal No. **C-71665**
 Date **8-Jan-21**
 Call Letters **WMUR**
 Channel **9**
 Frequency **189 MHz**
 Antenna Type **THV-6A9/VP-R**

RMS Directivity at Main Lobe **6.0 (7.78 dB)**
 RMS Directivity at Horizontal **5.8 (7.63 dB)**
Calculated

Beam Tilt **1.00 deg**
 Pattern Number **06V060100**

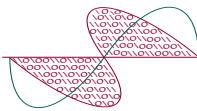


Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.265	10.0	0.172	30.0	0.130	50.0	0.104	70.0	0.132
-9.0	0.211	11.0	0.266	31.0	0.167	51.0	0.117	71.0	0.117
-8.0	0.147	12.0	0.338	32.0	0.196	52.0	0.135	72.0	0.102
-7.0	0.138	13.0	0.378	33.0	0.215	53.0	0.154	73.0	0.088
-6.0	0.236	14.0	0.387	34.0	0.223	54.0	0.173	74.0	0.076
-5.0	0.379	15.0	0.367	35.0	0.219	55.0	0.192	75.0	0.064
-4.0	0.534	16.0	0.324	36.0	0.206	56.0	0.208	76.0	0.054
-3.0	0.682	17.0	0.266	37.0	0.185	57.0	0.222	77.0	0.044
-2.0	0.813	18.0	0.201	38.0	0.158	58.0	0.232	78.0	0.036
-1.0	0.914	19.0	0.142	39.0	0.129	59.0	0.239	79.0	0.029
0.0	0.979	20.0	0.103	40.0	0.100	60.0	0.242	80.0	0.023
1.0	1.000	21.0	0.095	41.0	0.077	61.0	0.241	81.0	0.018
2.0	0.977	22.0	0.108	42.0	0.064	62.0	0.237	82.0	0.014
3.0	0.910	23.0	0.118	43.0	0.062	63.0	0.229	83.0	0.010
4.0	0.805	24.0	0.116	44.0	0.068	64.0	0.219	84.0	0.007
5.0	0.669	25.0	0.102	45.0	0.075	65.0	0.207	85.0	0.005
6.0	0.512	26.0	0.078	46.0	0.081	66.0	0.194	86.0	0.003
7.0	0.348	27.0	0.054	47.0	0.085	67.0	0.179	87.0	0.002
8.0	0.193	28.0	0.057	48.0	0.088	68.0	0.164	88.0	0.001
9.0	0.107	29.0	0.090	49.0	0.094	69.0	0.148	89.0	0.000
								90.0	0.000

Figure 2
Antenna Elevation Pattern
WMUR-TV Manchester, NH
Facility ID 73292
Ch. 9 51 kW 312 m

prepared for
Hearst Properties Inc.

April, 2021

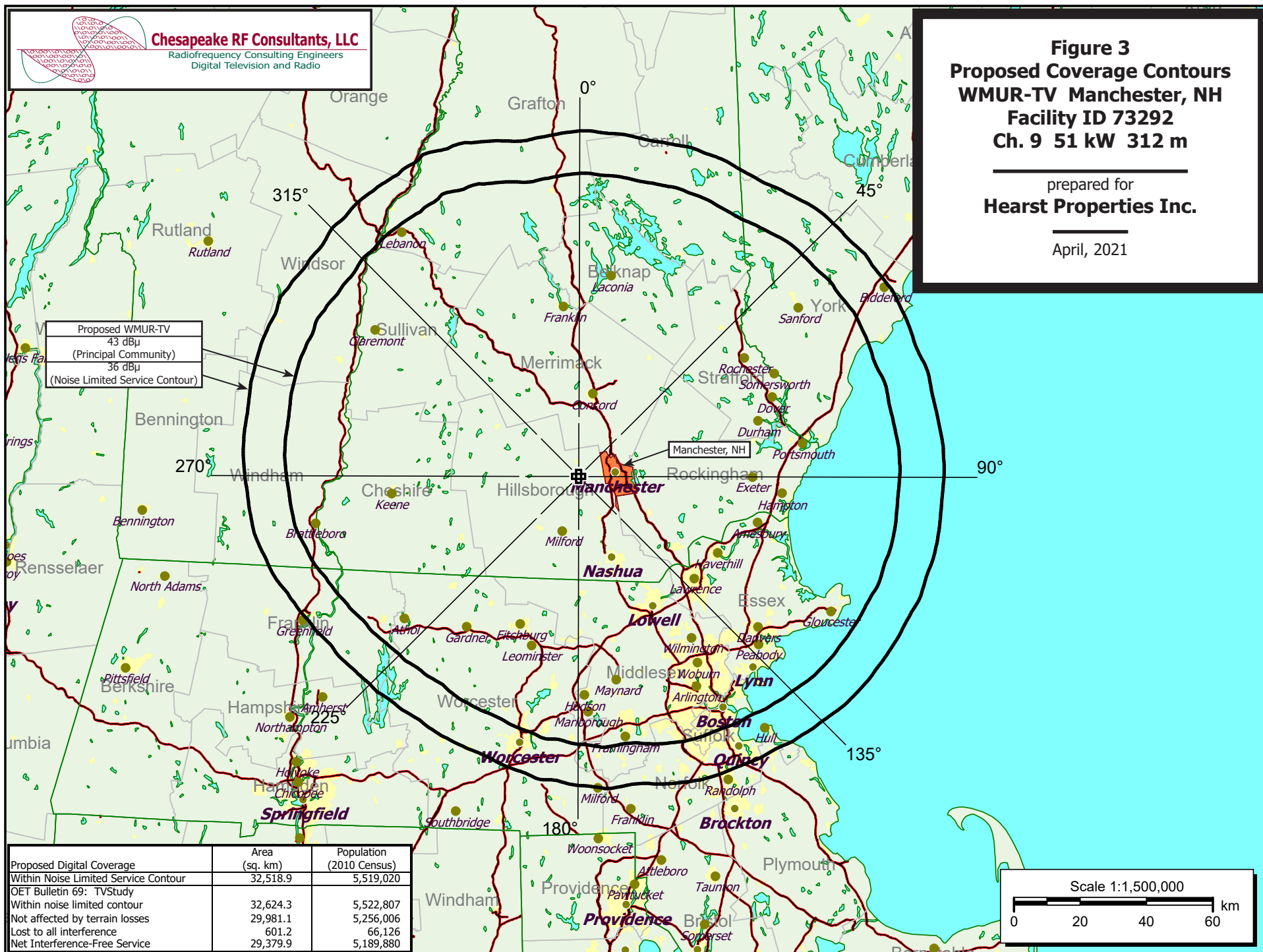


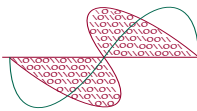
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 3
Proposed Coverage Contours
WMUR-TV Manchester, NH
Facility ID 73292
Ch. 9 51 kW 312 m

prepared for
Hearst Properties Inc.

April, 2021





Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 4
Maximum ERP per §73.622(f)
WMUR-TV Manchester, NH
Facility ID 73292
Ch. 9 51 kW 312 m

prepared for
Hearst Properties Inc.

April, 2021

Proposed WMUR-TV
36 dBμ Contour (NLSC)
Area: 32,519 sq. km

WGBH-TV Ch. 5 Boston, MA
Lic File# 0000138509
28 dBμ Contour (NLSC)
Area: 47,588 sq. km

Scale 1:2,000,000

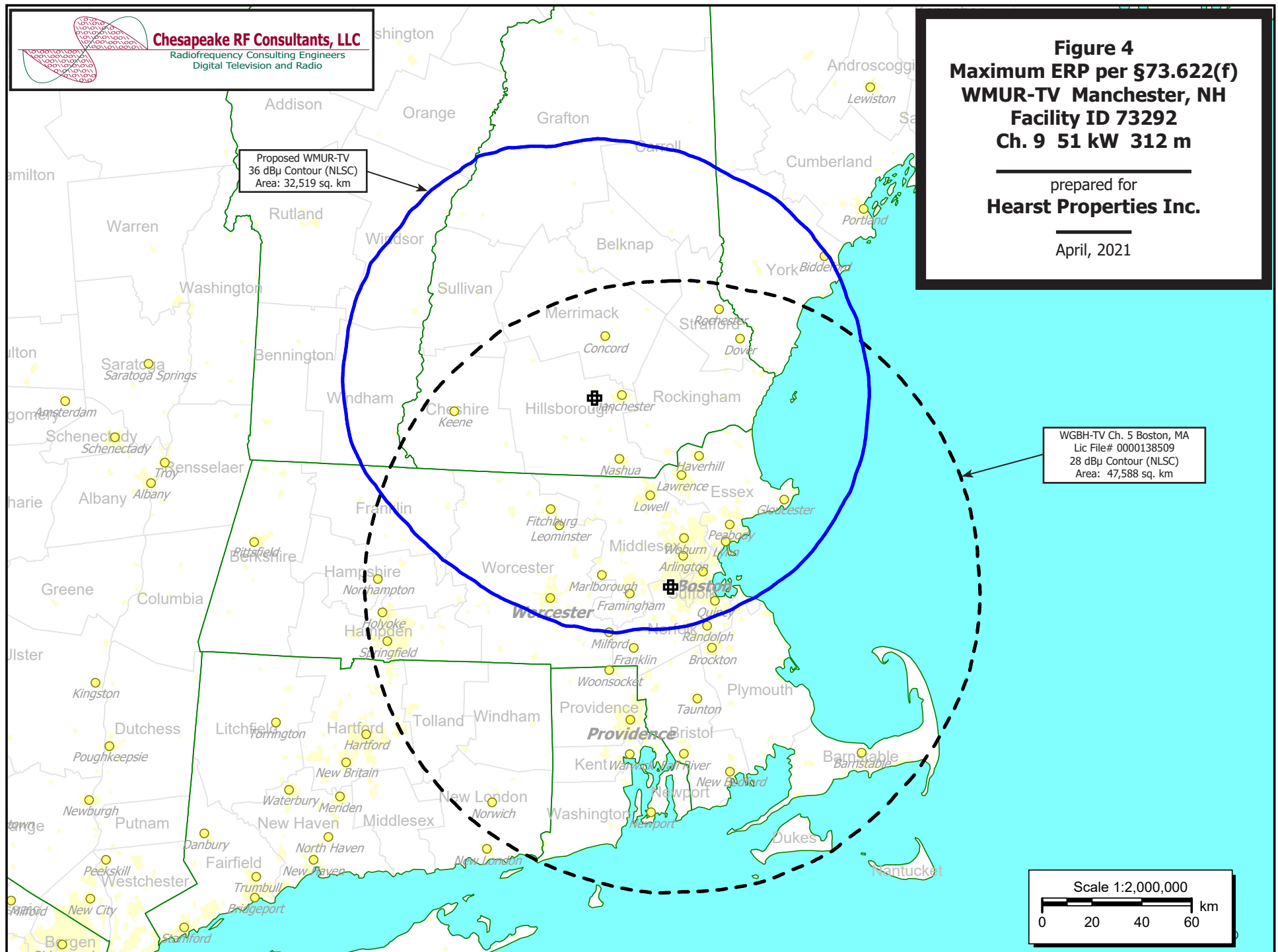
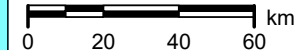


Figure 5
Calculated RF Electromagnetic Field
WMUR-TV Manchester, NH
Facility ID 73292
Ch. 9 51 kW 312 m

prepared for
Hearst Properties Inc.

April, 2021

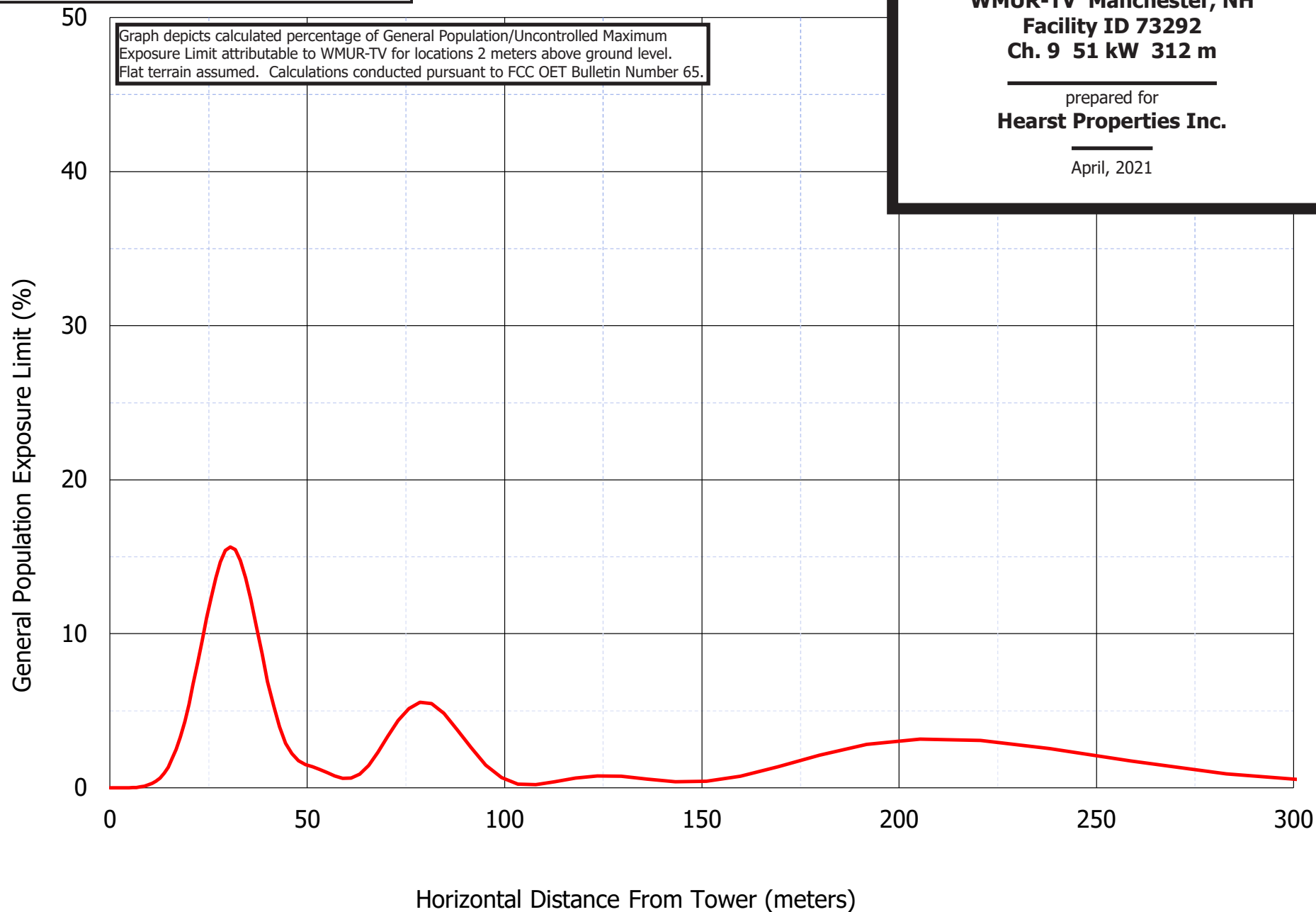


Table 1 WMUR-TV TVStudy Analysis of Proposal (page 1 of 7)



tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: WMUR-TV 51kW_C-71665, Model: Longley-Rice
Start: 2021.04.14 08:54:54

Study created: 2021.04.14 08:54:53

Study build station data: LMS TV 2021-04-13

Proposal: WMUR-TV D9 DT APP MANCHESTER, NH
File number: WMUR-TV 51kW C-71665
Facility ID: 73292
Station data: User record
Record ID: 3449
Country: U.S.
Zone: I

Search options:
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	WMTW	D8	DT	LIC	POLAND SPRING, ME	BLCDT20090622ACH	116.8 km
No	WXXA-TV	D8	DT	LIC	ALBANY, NY	BLANK0000117263	201.4
Yes	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	169.4
Yes	WMEB-TV	D9	DT	LIC	ORONO, ME	BLEDT20020508AAS	277.5
No	WBPH-TV	D9	DT	APP	BETHLEHEM, PA	BPCDT20110518ADP	417.3
No	WBPH-TV	D9	DD	APP	BETHLEHEM, PA	BLANK0000063055	417.3
No	WBPH-TV	D9	DT	LIC	BETHLEHEM, PA	BLANK0000064341	417.3
No	WBPH-TV	D9	DT	CP	BETHLEHEM, PA	BLANK0000067446	417.3
No	WBPH-TV	D9	DD	APP	BETHLEHEM, PA	BLANK0000067447	417.3
No	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	206.6
Yes	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	117.0
No	WCBB	D10	DT	APP	AUGUSTA, ME	BLANK0000035738	182.0
No	WCBB	D10	DT	LIC	AUGUSTA, ME	BLANK0000068517	182.0
Yes	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	143.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D9
Latitude: 42 59 1.30 N (NAD83)
Longitude: 71 35 23.20 W
Height AMSL: 453.2 m
HAAT: 312.4 m
Peak ERP: 51.0 kW
Antenna: C-71665 20210108 0.0 deg
Elev Pattn: Generic
Elec Tilt: 1.00

36.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	47.4 kW	288.1 m	104.1 km
45.0	48.0	337.2	107.9
90.0	48.2	361.6	110.0
135.0	23.2	364.2	104.0
180.0	6.46	354.4	93.0
225.0	9.52	231.9	88.6
270.0	35.1	263.2	100.6
315.0	51.0	298.6	105.4

ERP exceeds maximum
ERP: 51.0 kW ERP maximum: 27.7 kW

**Proposal is within coordination distance of Canadian border
Distance to Canadian border: 225.5 km

Distance to Mexican border: 2972.8 km

Conditions at FCC monitoring station: Belfast ME

Table 1 WMUR-TV TVStudy Analysis of Proposal
(page 2 of 7)



Bearing: 50.3 degrees Distance: 258.8 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 275.1 degrees Distance: 2795.9 km

Study cell size: 2.00 km
Profile point spacing: 0.20 km

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

Interference to BLCDT20090622ACH LIC scenario 1
**IX: 2.64% interference caused

WMTW is accepting 2.64% interference, see text

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMTW	D8	DT	LIC	POLAND SPRING, ME	BLCDT20090622ACH	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	116.8 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	116.8
	WVNY	D7	DT	LIC	BURLINGTON, VT	BLANK0000120365	180.3
	WAGM-TV	D8	DT	LIC	PRESQUE ISLE, ME	BMLCDT20121003ABP	379.3
	WXXA-TV	D8	DT	LIC	ALBANY, NY	BLANK0000117263	296.0
	WMEB-TV	D9	DT	LIC	ORONO, ME	BLEDT20020508AAS	164.3
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
47796.2 1,940,292		41507.9 1,651,010		41097.7 1,597,110		40823.2 1,554,940	0.67 2.64
Undesired		Total IX		Unique IX, before		Unique IX, after	
WMUR-TV D9 DT BL		338.6	48,754	330.6	45,134		
WMUR-TV D9 DT APP		617.0	90,971			605.1 87,304	
WVNY D7 DT LIC		4.0	89	4.0	89	4.0 89	
WAGM-TV D8 DT LIC		4.0	116	4.0	116	4.0 116	
WXXA-TV D8 DT LIC		43.8	4,428	35.8	808	31.9 761	
WMEB-TV D9 DT LIC		27.8	4,133	27.8	4,133	27.8 4,133	

Interference to BLEDT20090618ACB LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	169.4 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	169.4
	WBPH-TV	D9	DT	APP	BETHLEHEM, PA	BPCDT20110518ADP	294.2
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	66.2
	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	107.8
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
17351.3 3,451,170		15901.5 2,702,534		14779.1 2,291,102		14774.9 2,279,681	0.03 0.50
Undesired		Total IX		Unique IX, before		Unique IX, after	
WMUR-TV D9 DT BL		774.8	311,937	730.6	299,462		
WMUR-TV D9 DT APP		787.0	327,375			734.8 310,883	
WBPH-TV D9 DT APP		108.8	34,141	16.0	6,194	16.0 6,194	
WTNH D10 DT LIC		343.7	94,734	258.8	66,477	258.8 66,477	
WWDP D10 DT LIC		16.0	7,195	8.0	3,189	8.0 3,189	

Interference to BLEDT20090618ACB LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	169.4 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	169.4
	WBPH-TV	D9	DD	APP	BETHLEHEM, PA	BLANK0000063055	294.2
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	66.2

Table 1 WMUR-TV TVStudy Analysis of Proposal
(page 3 of 7)



WWDP		D10	DT	LIC	NORWELL, MA		BLANK0000059580		107.8		
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX			
17351.3	3,451,170	15901.5	2,702,534		14787.1	2,292,742		14782.9	2,281,321	0.03	0.50
Undesired		Total IX		Unique IX, before		Unique IX, after					
WMUR-TV D9 DT BL		774.8	311,937		734.6	299,500					
WMUR-TV D9 DT APP		787.0	327,375				738.8		310,921		
WBPH-TV D9 DD APP		72.6	26,949		8.0	4,554		8.0	4,554		
WTNH D10 DT LIC		343.7	94,734		283.0	71,991		279.0	71,523		
WWDP D10 DT LIC		16.0	7,195		8.0	3,189		8.0	3,189		

Interference to BLEDT20090618ACB LIC scenario 3											
Desired:		Call	Chan	Svc	Status	City, State		File Number		Distance	
		WEDN	D9	DT	LIC	NORWICH, CT		BLEDT20090618ACB			
Undesireds:		WMUR-TV	D9	DT	BL	MANCHESTER, NH		DTVBL73292		169.4 km	
		WMUR-TV	D9	DT	APP	MANCHESTER, NH		WMUR-TV 51kW C-71665		169.4	
		WBPH-TV	D9	DT	LIC	BETHLEHEM, PA		BLANK0000064341		294.2	
		WTNH	D10	DT	LIC	NEW HAVEN, CT		BLANK0000056790		66.2	
		WWDP	D10	DT	LIC	NORWELL, MA		BLANK0000059580		107.8	
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX			
17351.3	3,451,170	15901.5	2,702,534		14783.1	2,292,239		14778.9	2,280,818	0.03	0.50
Undesired		Total IX		Unique IX, before		Unique IX, after					
WMUR-TV D9 DT BL		774.8	311,937		734.6	299,500					
WMUR-TV D9 DT APP		787.0	327,375				738.8		310,921		
WBPH-TV D9 DT LIC		80.6	27,920		12.0	5,057		12.0	5,057		
WTNH D10 DT LIC		343.7	94,734		279.0	71,523		279.0	71,523		
WWDP D10 DT LIC		16.0	7,195		8.0	3,189		8.0	3,189		

Interference to BLEDT20090618ACB LIC scenario 4											
Desired:		Call	Chan	Svc	Status	City, State		File Number		Distance	
		WEDN	D9	DT	LIC	NORWICH, CT		BLEDT20090618ACB			
Undesireds:		WMUR-TV	D9	DT	BL	MANCHESTER, NH		DTVBL73292		169.4 km	
		WMUR-TV	D9	DT	APP	MANCHESTER, NH		WMUR-TV 51kW C-71665		169.4	
		WBPH-TV	D9	DT	CP	BETHLEHEM, PA		BLANK0000067446		294.2	
		WTNH	D10	DT	LIC	NEW HAVEN, CT		BLANK0000056790		66.2	
		WWDP	D10	DT	LIC	NORWELL, MA		BLANK0000059580		107.8	
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX			
17351.3	3,451,170	15901.5	2,702,534		14783.1	2,292,239		14778.9	2,280,818	0.03	0.50
Undesired		Total IX		Unique IX, before		Unique IX, after					
WMUR-TV D9 DT BL		774.8	311,937		734.6	299,500					
WMUR-TV D9 DT APP		787.0	327,375				738.8		310,921		
WBPH-TV D9 DT CP		80.6	27,920		12.0	5,057		12.0	5,057		
WTNH D10 DT LIC		343.7	94,734		279.0	71,523		279.0	71,523		
WWDP D10 DT LIC		16.0	7,195		8.0	3,189		8.0	3,189		

Interference to BLEDT20090618ACB LIC scenario 5											
Desired:		Call	Chan	Svc	Status	City, State		File Number		Distance	
		WEDN	D9	DT	LIC	NORWICH, CT		BLEDT20090618ACB			
Undesireds:		WMUR-TV	D9	DT	BL	MANCHESTER, NH		DTVBL73292		169.4 km	
		WMUR-TV	D9	DT	APP	MANCHESTER, NH		WMUR-TV 51kW C-71665		169.4	
		WBPH-TV	D9	DD	APP	BETHLEHEM, PA		BLANK0000067447		294.2	
		WTNH	D10	DT	LIC	NEW HAVEN, CT		BLANK0000056790		66.2	
		WWDP	D10	DT	LIC	NORWELL, MA		BLANK0000059580		107.8	
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX			
17351.3	3,451,170	15901.5	2,702,534		14783.1	2,292,239		14778.9	2,280,818	0.03	0.50
Undesired		Total IX		Unique IX, before		Unique IX, after					
WMUR-TV D9 DT BL		774.8	311,937		734.6	299,500					

Table 1 WMUR-TV TVStudy Analysis of Proposal
(page 4 of 7)



WMUR-TV D9 DT APP	787.0	327,375			738.8	310,921
WBPH-TV D9 DD APP	80.6	27,920	12.0	5,057	12.0	5,057
WTNH D10 DT LIC	343.7	94,734	279.0	71,523	279.0	71,523
WWDP D10 DT LIC	16.0	7,195	8.0	3,189	8.0	3,189

Interference to BLEDT20020508AAS LIC scenario 1

Desired:	Call WMEB-TV	Chan D9	Svc DT	Status LIC	City, State ORONO, ME	File Number BLEDT20020508AAS	Distance			
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	277.5 km			
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	277.5			
	WMTW	D8	DT	LIC	POLAND SPRING, ME	BLCDT20090622ACH	164.3			
	WCBB	D10	DT	APP	AUGUSTA, ME	BLANK0000035738	95.8			
Service area		Terrain-limited			IX-free, before	IX-free, after	Percent New IX			
27398.8	511,761	25419.1		490,251	24835.3	464,565	24594.2	462,942	0.97	0.35
Undesired				Total IX		Unique IX, before		Unique IX, after		
WMUR-TV	D9	DT	BL		44.1	708	24.1		420	
WMUR-TV	D9	DT	APP		377.2	4,856		265.2	2,043	
WMTW	D8	DT	LIC		20.0	561	4.0	79	0.0	0
WCBB	D10	DT	APP		551.7	25,074	523.7	24,530	443.7	22,307

Interference to BLEDT20020508AAS LIC scenario 2

Desired:	Call WMEB-TV	Chan D9	Svc DT	Status LIC	City, State ORONO, ME	File Number BLEDT20020508AAS	Distance				
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	277.5 km				
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	277.5				
	WMTW	D8	DT	LIC	POLAND SPRING, ME	BLCDT20090622ACH	164.3				
	WCBB	D10	DT	LIC	AUGUSTA, ME	BLANK0000068517	95.8				
Service area		Terrain-limited			IX-free, before		IX-free, after	Percent New IX			
27398.8	511,761	25419.1			490,251	24899.3	466,816	24654.3	465,165	0.98	0.35
Undesired				Total IX		Unique IX, before		Unique IX, after			
WMUR-TV	D9	DT	BL	44.1		708	24.1	420			
WMUR-TV	D9	DT	APP	377.2		4,856	269.2		2,071		
WMTW	D8	DT	LIC	20.0		561	4.0	79	0.0	0	
WCBB	D10	DT	LIC	487.7		22,823	459.7	22,279	383.7	20,084	

Interference to BLANK0000059580 LIC scenario 1

Desired:	Call WWDP	Chan D10	Svc DT	Status LIC	City, State NORWELL, MA	File Number BLANK0000059580	Distance			
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	117.0 km			
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	117.0			
	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	107.8			
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	171.2			
	WCBB	D10	DT	APP	AUGUSTA, ME	BLANK0000035738	252.6			
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	248.6			
	WENH-TV	D11	DT	APP	DURHAM, NH	BLANK0000035771	130.2			
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX			
17970.0	5,792,048	16679.0	5,543,869		15064.9	5,407,634	15056.9	5,404,478	0.05	0.06
Undesired				Total IX	Unique IX, before		Unique IX, after			
WMUR-TV D9 DT BL		4.0	1,089		0.0		0			
WMUR-TV D9 DT APP		40.1	17,667				8.0		3,156	
WEDN D9 DT LIC		12.1	191		0.0		0.0		0	
WTNH D10 DT LIC		1389.3	59,628		1136.6		41,332		1136.6	
WCBB D10 DT APP		449.3	89,780		204.7		69,535		196.7	
WVER D10 DD LIC		36.1	7,391		0.0		0		0.0	
WENH-TV D11 DT APP		28.1	9,442		8.0		3,863		4.0	
									2,354	

Interference to BLANK0000059580 LIC scenario 2

Table 1 WMUR-TV TVStudy Analysis of Proposal
(page 5 of 7)



	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	117.0 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	117.0
	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	107.8
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	171.2
	WCBB	D10	DT	LIC	AUGUSTA, ME	BLANK0000068517	252.6
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	248.6
	WENH-TV	D11	DT	APP	DURHAM, NH	BLANK0000035771	130.2

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	17970.0	5,792,048	16679.0	5,543,869	15157.2	5,433,200	15149.2	5,430,044	0.05 0.06

Undesired		Total IX	Unique IX, before	Unique IX, after
WMUR-TV D9 DT BL	4.0	1,089	0.0	0
WMUR-TV D9 DT APP	40.1	17,667		8.0 3,156
WEDN D9 DT LIC	12.1	191	0.0	0
WTNH D10 DT LIC	1389.3	59,628	1220.7	42,365 1220.7 42,365
WCBB D10 DT LIC	273.0	63,181	112.4	43,969 104.4 38,734
WVER D10 DD LIC	36.1	7,391	0.0	0
WENH-TV D11 DT APP	28.1	9,442	8.0	3,863 4.0 2,354

Interference to BLANK0000059580 LIC scenario 3

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	117.0 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	117.0
	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	107.8
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	171.2
	WCBB	D10	DT	APP	AUGUSTA, ME	BLANK0000035738	252.6
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	248.6
	WENH-TV	D11	DT	LIC	DURHAM, NH	BLEDT20090817ABS	130.2

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	17970.0	5,792,048	16679.0	5,543,869	15068.9	5,409,988	15060.9	5,406,832	0.05 0.06

Undesired		Total IX	Unique IX, before	Unique IX, after
WMUR-TV D9 DT BL	4.0	1,089	0.0	0
WMUR-TV D9 DT APP	40.1	17,667		8.0 3,156
WEDN D9 DT LIC	12.1	191	0.0	0
WTNH D10 DT LIC	1389.3	59,628	1136.6	41,332 1136.6 41,332
WCBB D10 DT APP	449.3	89,780	208.7	71,702 196.7 64,300
WVER D10 DD LIC	36.1	7,391	0.0	0
WENH-TV D11 DT LIC	20.1	4,921	4.0	1,509 0.0 0

Interference to BLANK0000059580 LIC scenario 4

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	117.0 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	117.0
	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	107.8
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	171.2
	WCBB	D10	DT	LIC	AUGUSTA, ME	BLANK0000068517	252.6
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	248.6
	WENH-TV	D11	DT	LIC	DURHAM, NH	BLEDT20090817ABS	130.2

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	17970.0	5,792,048	16679.0	5,543,869	15161.2	5,435,554	15153.2	5,432,398	0.05 0.06

Undesired		Total IX	Unique IX, before	Unique IX, after
WMUR-TV D9 DT BL	4.0	1,089	0.0	0
WMUR-TV D9 DT APP	40.1	17,667		8.0 3,156
WEDN D9 DT LIC	12.1	191	0.0	0
WTNH D10 DT LIC	1389.3	59,628	1220.7	42,365 1220.7 42,365
WCBB D10 DT LIC	273.0	63,181	116.4	46,136 104.4 38,734

Table 1 WMUR-TV TVStudy Analysis of Proposal
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WVER D10 DD LIC	36.1	7,391	0.0	0	0.0	0
WENH-TV D11 DT LIC	20.1	4,921	4.0	1,509	0.0	0

Interference to BLANK0000123122 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	143.8 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	143.8
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	248.8
	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	248.6
	WCBB	D10	DT	APP	AUGUSTA, ME	BLANK0000035738	254.0
	WENH-TV	D11	DT	APP	DURHAM, NH	BLANK0000035771	162.4
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
33943.4 888,756		29128.8 763,348		28801.9 759,214		28801.9 759,214	0.00 0.00
Undesired			Total IX	Unique IX, before		Unique IX, after	
WMUR-TV D9 DT BL			12.0 194	4.0 72			
WMUR-TV D9 DT APP			12.0 194			4.0 72	
WTNH D10 DT LIC			155.7 2,346	143.7 2,313		143.7 2,313	
WWDP D10 DT LIC			51.9 353	23.9 250		23.9 250	
WCBB D10 DT APP			139.3 1,463	103.4 1,081		103.4 1,081	
WENH-TV D11 DT APP			24.0 284	8.0 10		8.0 10	

Interference to BLANK0000123122 LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	143.8 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	143.8
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	248.8
	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	248.6
	WCBB	D10	DT	LIC	AUGUSTA, ME	BLANK0000068517	254.0
	WENH-TV	D11	DT	APP	DURHAM, NH	BLANK0000035771	162.4
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
33943.4 888,756		29128.8 763,348		28833.7 759,368		28833.7 759,368	0.00 0.00
Undesired			Total IX	Unique IX, before		Unique IX, after	
WMUR-TV D9 DT BL			12.0 194	4.0 72			
WMUR-TV D9 DT APP			12.0 194			4.0 72	
WTNH D10 DT LIC			155.7 2,346	147.7 2,320		147.7 2,320	
WWDP D10 DT LIC			51.9 353	31.9 284		31.9 284	
WCBB D10 DT LIC			95.5 1,268	71.6 927		71.6 927	
WENH-TV D11 DT APP			24.0 284	8.0 10		8.0 10	

Interference to BLANK0000123122 LIC scenario 3

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	143.8 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	143.8
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	248.8
	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	248.6
	WCBB	D10	DT	APP	AUGUSTA, ME	BLANK0000035738	254.0
	WENH-TV	D11	DT	LIC	DURHAM, NH	BLEDT20090817ABS	162.4
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
33943.4 888,756		29128.8 763,348		28805.9 759,214		28805.9 759,214	0.00 0.00
Undesired			Total IX	Unique IX, before		Unique IX, after	
WMUR-TV D9 DT BL			12.0 194	4.0 72			
WMUR-TV D9 DT APP			12.0 194			4.0 72	
WTNH D10 DT LIC			155.7 2,346	143.7 2,313		143.7 2,313	
WWDP D10 DT LIC			51.9 353	23.9 250		23.9 250	
WCBB D10 DT APP			139.3 1,463	103.4 1,081		103.4 1,081	

Table 1 WMUR-TV TVStudy Analysis of Proposal
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WENH-TV D11 DT LIC 19.9 284 4.0 10 4.0 10

Interference to BLANK0000123122 LIC scenario 4

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	
Undesireds:	WMUR-TV	D9	DT	BL	MANCHESTER, NH	DTVBL73292	143.8 km
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	143.8
	WTNH	D10	DT	LIC	NEW HAVEN, CT	BLANK0000056790	248.8
	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	248.6
	WCBB	D10	DT	LIC	AUGUSTA, ME	BLANK0000068517	254.0
	WENH-TV	D11	DT	LIC	DURHAM, NH	BLEDT20090817ABS	162.4
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
33943.4 888,756		29128.8 763,348		28837.7 759,368		28837.7 759,368	0.00 0.00
Undesired			Total IX		Unique IX, before		Unique IX, after
WMUR-TV D9 DT BL			12.0 194		4.0 72		
WMUR-TV D9 DT APP			12.0 194		4.0 72		
WTNH D10 DT LIC			155.7 2,346		147.7 2,320		147.7 2,320
WWDP D10 DT LIC			51.9 353		31.9 284		31.9 284
WCBB D10 DT LIC			95.5 1,268		71.6 927		71.6 927
WENH-TV D11 DT LIC			19.9 284		4.0 10		4.0 10

Interference to proposal scenario 1
1.26% interference received

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMUR-TV	D9	DT	APP	MANCHESTER, NH	WMUR-TV 51kW C-71665	
Undesireds:	WMTW	D8	DT	LIC	POLAND SPRING, ME	BLCDDT20090622ACH	116.8 km
	WEDN	D9	DT	LIC	NORWICH, CT	BLEDT20090618ACB	169.4
	WMEB-TV	D9	DT	LIC	ORONO, ME	BLEDT20020508AAS	277.5
	WWDP	D10	DT	LIC	NORWELL, MA	BLANK0000059580	117.0
	WCBB	D10	DT	APP	AUGUSTA, ME	BLANK0000035738	182.0
	WVER	D10	DD	LIC	RUTLAND, VT	BLANK0000123122	143.8
Service area		Terrain-limited		IX-free		Percent IX	
32624.3 5,522,807		29981.1 5,256,006		29379.9 5,189,880		2.01 1.26	
Undesired			Total IX		Unique IX		Prcnt Unique IX
WMTW D8 DT LIC			282.2 25,820		182.9 20,016		0.61 0.38
WEDN D9 DT LIC			231.8 31,941		195.9 27,850		0.65 0.53
WMEB-TV D9 DT LIC			119.0 6,938		23.8 1,126		0.08 0.02
WWDP D10 DT LIC			12.0 9,389		8.0 6,386		0.03 0.12
WVER D10 DD LIC			83.3 1,787		79.4 1,556		0.26 0.03

Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	73292
	State	New Hampshire
	City	MANCHESTER
	DTV Channel	9
	Designated Market Area	Boston (Manchester)
Facility Type	Facility Type	Commercial
	Station Type	Main
Zone	Zone	1

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1033995
Coordinates (NAD83)	Latitude	42° 59' 01.3" N+
	Longitude	071° 35' 23.2" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	63.7 meters
	Support Structure Height	44.8 meters
	Ground Elevation (AMSL)	396.2 meters
Antenna Data	Height of Radiation Center Above Ground Level	57 meters
	Height of Radiation Center Above Average Terrain	312.4 meters
	Height of Radiation Center Above Mean Sea Level	453.2 meters
	Effective Radiated Power	51 kW

**Antenna
Technical Data**

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	No
	Antenna ID	
Antenna Manufacturer and Model	Manufacturer:	Dielectric
	Model	THV-6A9/VP-R
	Rotation	0 degrees
	Electrical Beam Tilt	1
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Elliptical
DTV and DTS: Elevation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	0.964	90	0.972	180	0.356	270	0.830
10	0.960	100	0.939	190	0.341	280	0.902
20	0.958	110	0.885	200	0.342	290	0.954
30	0.960	120	0.812	210	0.360	300	0.985
40	0.966	130	0.723	220	0.400	310	0.998
50	0.974	140	0.627	230	0.464	320	0.999
60	0.983	150	0.533	240	0.549	330	0.992
70	0.989	160	0.452	250	0.646	340	0.982
80	0.987	170	0.392	260	0.742	350	0.972

Additional Azimuths

Degree	V _A
315	1.000