

Comprehensive Technical Exhibit
Application for Construction Permit
WNWO-DT - Toledo, Ohio
Barrington Toledo License LLC
October, 2009

Application for Construction Permit

The following engineering statement and attached exhibits have been prepared for **Barrington Toledo License LLC** ("Barrington"), licensee of digital television station WNWO-TV at Toledo, Ohio, and are in support of their application for construction permit to modify that facility.¹

At present, WNWO-TV operates with a maximum effective radiated power of 59 kW at a center of radiation of 409 meters above average terrain utilizing a directional antenna.² Under this application, no change in the height of the antenna or directional pattern is proposed. A maximum effective radiated power of 118 kW is, however, proposed.

The proposed facility would continue to operate on channel 49, which is the channel that was allocated to WNWO-TV in Section 73.622 of the Commission's Rules. At present WNWO-TV is operating pursuant to the parameters allocated in Appendix B of the Seventh Report and Order. This application, therefore, would describe facilities that would expand the noise limited service contour. Since the noise limited service contour is being expanded, there would necessarily be an increase in the population served by the proposed facility relative to the licensed facility. Exhibit E-1 is a contour map comparing the proposed noise limited service contour to the authorized noise limited service contour.

The proposed facility would satisfy the community coverage requirements under Section 73.625 of the Commission's Rules. Exhibit E-2 illustrates the predicted Longley-Rice coverage for the facility, neglecting interference, bounded by the noise limited service contour. As this map demonstrates, the entire community of Toledo would not only lie within the 48 dBu F(50,90) service

¹ The Facility ID for WNWO-TV at Toledo, Ohio is 73354.

² Center of radiation is 410.5 meters AMSL. See Antenna ID 42576.

contour, but would also receive a signal of 48 dBu F(50,90) or greater as predicted by Longley-Rice.

Exhibits E-3 and E-4 depict the predicted service area for the proposed facility. Exhibit illustrates predicted incoming interference overlaid on Longley-Rice coverage of 41 dBu or greater. As tabulated in Exhibit E-4, the predicted interference-free population for the proposed facility is 2,275,516 persons by the 2000 US Census. This is an increase of 18.8 percent above the 1915 thousand listed in the Appendix B allocation table.

The proposed facility complies with the post-transition interference protection requirements of Section 73.616 of the Commission's Rules. Exhibits E-5 and E-6 tabulate the predicted outgoing interference for the licensed WNWO-TV facilities, which are equivalent to the Appendix B allocated facilities. As these two exhibits demonstrate, the licensed facility is predicted to cause 1.3 percent interference to the authorized facilities of WDLI-TV at Canton, Ohio.³ In addition, predicted interference of less than 0.1 percent is predicted to occur to the minor change application for WPXD at Ann Arbor, Michigan.⁴

In Exhibits E-7 and E-8, the outgoing interference study is repeated based on the proposed facilities. As previously stated, no change in location or antenna height is proposed. The proposed change is merely an increase in the maximum effective radiated power. Although several proposed or authorized facilities are predicted to receive interference, only the aforementioned WDLI-TV authorized facilities are predicted to receive interference to 0.1 percent

³ The Facility ID for WDLI-TV at Canton, Ohio is 67893. See FCC File No. BPCDT-20090723AFG.

⁴ The Facility ID for WPXD at Ann Arbor, Michigan is 5800. See FCC File No. BPCDT-20090901AGQ.

or more of their respective service area populations. The calculations and interference areas illustrated in these two exhibits do not consider the effect of interference masking from any facility.

Once masking from the licensed facilities is considered, Exhibits E-9 and E-10 result. Exhibits E-9a and E-9b are the maps illustrating the areas of predicted interference. On Exhibit E-9b, additional detail is illustrated in the vicinity of WDLI-TV. As indicated on the Exhibit E-10 tabulation, the increase in interference to WDLI results in a loss of an additional 0.1 percent of the service area population. This complies with the provisions of Section 73.616 of the Commission's Rules, which permits no more than 0.5 percent above the interference that would be caused by the allocated WNWO-TV facilities. Similarly the interference to other facilities is considered *de minimus* in nature.

The proposed facility would continue to be located on the current tower it utilizes. This tower is registered with the Commission, and the proposed construction would not affect the physical location of the structure, nor would additional excavation be required.⁵ As a result, the current environmental impact resulting from the licensed facility would not be increased through the proposed modification to WNWO-TV.

In addition, the proposed facility would not constitute an RF exposure hazard to persons at ground level in the vicinity of the tower. The center of radiation proposed is 410.5 meters above ground level. Utilizing the equations in OET Bulletin 65, a power density of $23.6 \mu\text{W}/\text{cm}^2$ is the worst case that would result.⁶ Under the applicable safety standards, the maximum permissible power density for the uncontrolled environment condition is $453 \mu\text{W}/\text{cm}^2$, which is considerably

⁵ See ASRN 1012091.

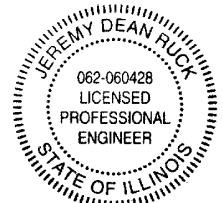
⁶ Under the worst case scenario, the assumption is made that all energy radiated from the antenna is directed downward at the ground.

larger than the worst case calculated value.⁷ The proposed facility would therefore not constitute an RF exposure hazard.

Barrington certifies that it will coordinate with any other present and all future users to ensure that workers having access to the site will not be exposed to levels of radiofrequency radiation in excess of applicable safety standards. Such coordination will include, but is not necessarily limited to a reduction in transmitter power or cessation of operation.

Affidavit

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2009

Jeremy D. Ruck, PE
October 16, 2009

⁷ The uncontrolled environment condition imposes a limit of $f/1500 \text{ mW/cm}^2$. Channel 49 occupies the spectrum from 680 to 686 MHz. The frequency of 680 MHz was utilized in determining the limit, as it resulted in the lowest possible value for the permissible upper limit.

WNWO-TV-D

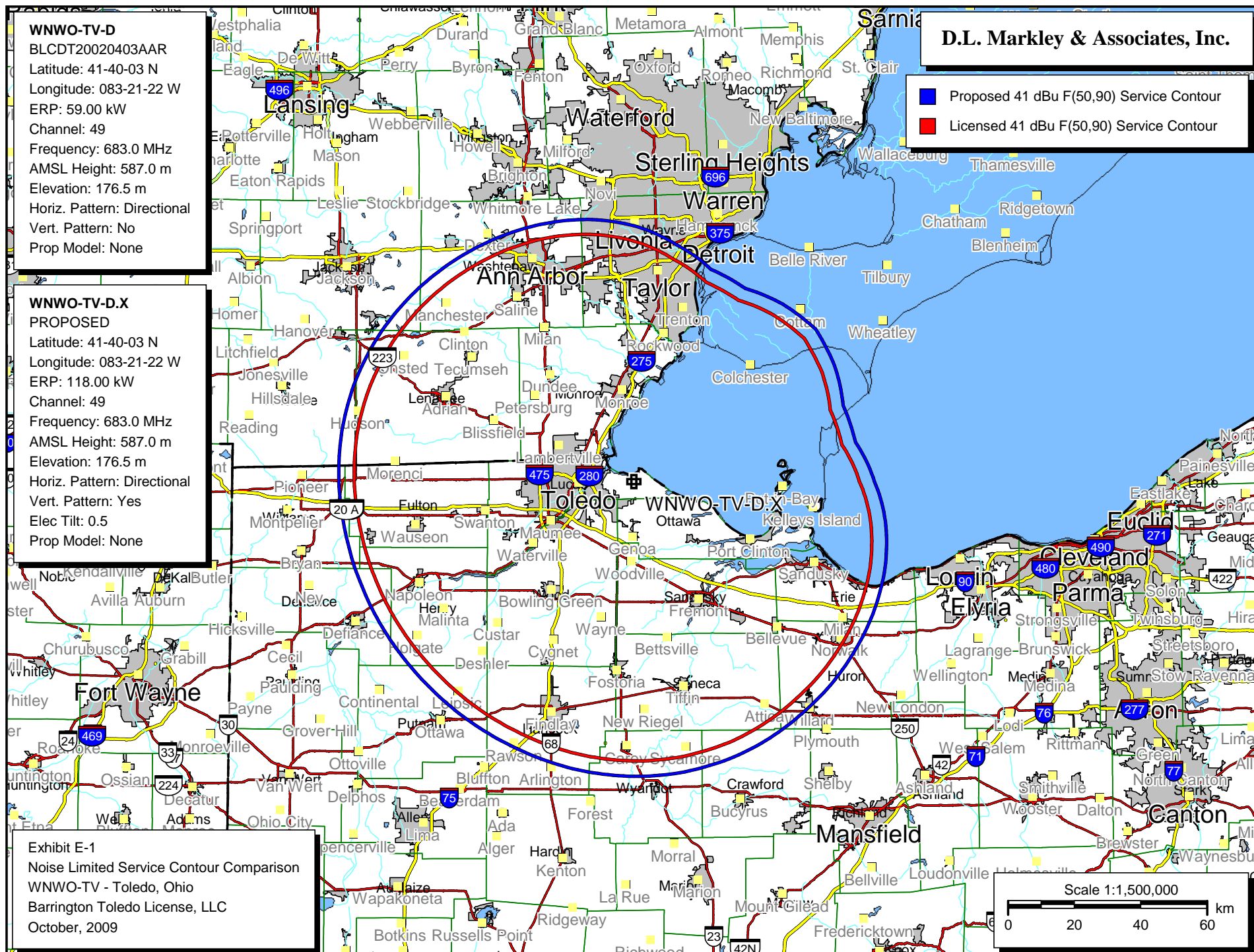
BLCDT20020403AAR
Latitude: 41-40-03 N
Longitude: 083-21-22 W
ERP: 59.00 kW
Channel: 49
Frequency: 683.0 MHz
AMSL Height: 587.0 m
Elevation: 176.5 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

WNWO-TV-D.X

PROPOSED
Latitude: 41-40-03 N
Longitude: 083-21-22 W
ERP: 118.00 kW
Channel: 49
Frequency: 683.0 MHz
AMSL Height: 587.0 m
Elevation: 176.5 m
Horiz. Pattern: Directional
Vert. Pattern: Yes
Elec Tilt: 0.5
Prop Model: None

D.L. Markley & Associates, Inc.

- Proposed 41 dBu F(50,90) Service Contour
- Licensed 41 dBu F(50,90) Service Contour

**Exhibit E-1**

Noise Limited Service Contour Comparison
WNWO-TV - Toledo, Ohio
Barrington Toledo License, LLC
October, 2009

WNWO-TV-D.X**PROPOSED**

Latitude: 41-40-03 N

Longitude: 083-21-22 W

ERP: 118.00 kW

Channel: 49

Frequency: 683.0 MHz

AMSL Height: 587.0 m

Elevation: 176.5 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 0.5

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 311.0

Receiver Ht AG: 10.0 m

Receiver Gain: 0 dB

Time Variability: 90.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

City of License
Toledo, Ohio**D.L. Markley & Associates, Inc.**

■ > 48.0 dBu
■ 41.0 - 48.0

Exhibit E-2

Predicted Coverage Area

WNWO-TV - Toledo, Ohio

Barrington Toledo License, LLC

October, 2009

Scale 1:1,250,000

0 10 20 30 km

WNWO-TV-D.X**PROPOSED**

Latitude: 41-40-03 N

Longitude: 083-21-22 W

ERP: 118.00 kW

Channel: 49

Frequency: 683.0 MHz

AMSL Height: 587.0 m

Elevation: 176.5 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 0.0

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 301.0

Receiver Ht AG: 10.0 m

Receiver Gain: 0 dB

Time Variability: 90.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

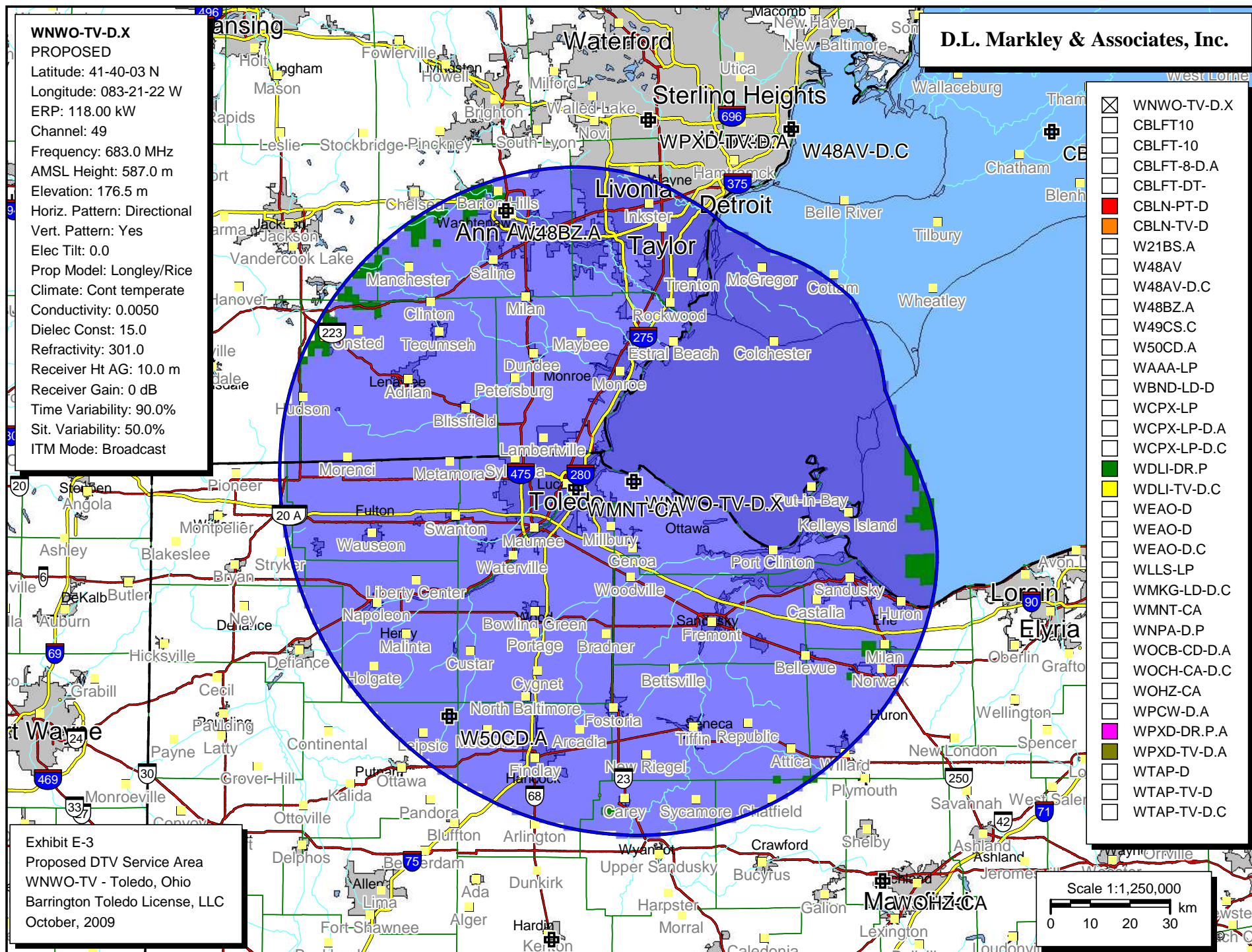
D.L. Markley & Associates, Inc.

Exhibit E-4
Incoming DTV Population Report

WNWO-TV-D.X (49) Toledo, OH - PROPOSED
Broadcast Type: Digital Service: T
Lat: 41-40-03 N Lng: 083-21-22 W ERP: 118.0 kW AMSL: 587.0 m
TV Incoming Interference Study
Interference Considered Within: FCC F(50-90): 41 dBu
Signal Resolution: 2.0 km
LR Profile Spacing Increment: 1.0 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
of radials computed for protected contour: 360
Protected contour calculated using 8 radial HAAT.
Threshold for reception: 41.9109
Pop Centroid DB: 1990 US Census

Study Date: 10/13/2009
TV Database Date: 10/9/2009

Primary Terrain: V-Soft 30 Second US Database
Secondary Terrain: V-Soft 3 Second US Terrain

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 2,297,726.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
CBLN-PT-D (49)	1032	2888	0.126	10.85
CBLN-TV-D (49)	1032	2888	0.126	10.85
W21BS.A (49Z)	119	198	0.009	3.63
WDLI-DR.P (49)	11137	22210	0.967	393.46
WDLI-TV-D.C (49)	11137	22210	0.967	393.46
WPXD-DR.P.A (50)	317	847	0.037	3.62
WPXD-TV-D.A (50)	317	847	0.037	3.62

Masking Summary:

Call Letters	Total Interference Population	%	Unique Interference Population	%
CBLN-PT-D (49)	2888	0.126	0	0.000
CBLN-TV-D (49)	2888	0.126	0	0.000
W21BS.A (49Z)	198	0.009	0	0.000
WDLI-DR.P (49)	22210	0.967	0	0.000
WDLI-TV-D.C (49)	22210	0.967	0	0.000
WPXD-DR.P.A (50)	847	0.037	0	0.000
WPXD-TV-D.A (50)	847	0.037	0	0.000

Stations considered which do not cause interference:

CBLFT10 (48Z)
CBLFT-10 (48Z)
CBLFT-8-D.A (49Z)
CBLFT-DT- (49)

W48AV (48-)
 W48AV-D.C (48)
 W48BZ.A (48Z)
 W49CS.C (49Z)
 W50CD.A (48Z)
 WAAA-LP (49-)
 WBND-LD-D (49)
 WCPX-LP (48+)
 WCPX-LP-D.A (48)
 WCPX-LP-D.C (48)
 WEAO-D (50)
 WEAO-D (50)
 WEAO-D.C (50)
 WLLS-LP (49Z)
 WMKG-LD-D.C (49)
 WMNT-CA (48+)
 WNPA-D.P (49)
 WOCB-CD-D.A (48)
 WOCH-CA-D.C (49)
 WOHZ-CA (50Z)
 WPCW-D.A (49)
 WTAP-D (49)
 WTAP-TV-D (49)
 WTAP-TV-D.C (49)

Call Letters	City	State	Dist	Bear
CBLFT10 (48Z)	Chatham	ON	136.6	50.1
CBLFT-10 (48Z)	Chatham	ON	136.6	50.1
CBLFT-8-D.A (49Z)	Kitchener	ON	300.5	47.9
CBLFT-DT- (49)	Kitchener	ON	300.5	47.9
CBLN-PT-D (49)	London	ON	218.3	48.4
CBLN-TV-D (49)	London	ON	218.3	48.4
W21BS.A (49Z)	Battle Creek	MI	165.0	295.3
W48AV (48-)	Detroit	MI	96.8	24.1
W48AV-D.C (48)	Detroit	MI	96.8	24.1
W48BZ.A (48Z)	Ann Arbor	MI	75.1	334.7
W49CS.C (49Z)	Erie	PA	286.4	79.7
W50CD.A (48Z)	Bowling Green	OH	74.8	218.2
WAAA-LP (49-)	Westville	IN	306.2	268.2
WBND-LD-D (49)	South Bend	IN	235.8	269.5
WCPX-LP (48+)	Columbus	OH	185.4	171.1
WCPX-LP-D.A (48)	Columbus	OH	171.4	167.6
WCPX-LP-D.C (48)	Columbus	OH	185.4	171.1
WDLI-DR.P (49)	Canton	OH	162.4	114.2
WDLI-TV-D.C (49)	Canton	OH	162.4	114.2
WEAO-D (50)	Akron	OH	158.0	113.7
WEAO-D (50)	AKRON	OH	158.0	113.7
WEAO-D.C (50)	Akron	OH	158.0	113.7
WLLS-LP (49Z)	Indiana	PA	366.4	107.0
WMKG-LD-D.C (49)	Muskegon	MI	289.6	308.4
WMNT-CA (48+)	Toledo	OH	14.6	264.0
WNPA-D.P (49)	Jeannette	PA	332.2	114.0
WOCB-CD-D.A (48)	Marion	OH	116.7	190.2
WOCH-CA-D.C (49)	Chicago	IL	355.6	275.6

WOHZ-CA (50Z)	Mansfield	OH	117.9	148.1
WPCW-D.A (49)	Jeannette	PA	332.2	114.0
WPXD-DR.P.A (50)	Ann Arbor	MI	90.7	2.3
WPXD-TV-D.A (50)	Ann Arbor	MI	90.7	2.3
WTAP-D (49)	PARKERSBURG	WV	298.7	148.9
WTAP-TV-D (49)	Parkersburg	WV	298.7	148.9
WTAP-TV-D.C (49)	Parkersburg	WV	298.7	148.9

Totals for WNWO-TV-D.X (49)

Calculation Area Population:	2,297,726	(	21126.9 sq. km)
Not Affected by Terrain Loss:	2,297,726	(	21126.9 sq. km)
Total NTSC Interference:	198	(	3.6 sq. km)
DTV Only Interference:	22,012	(	389.8 sq. km)
Total DTV Interference:	22,210	(	393.5 sq. km)
Interfered Population:	22,210	(	393.5 sq. km)
Interference Free:	2,275,516	(	20733.5 sq. km)

Percent Interference: 0.97

Terrain Blocked Population:	0	(	0.0 sq. km)
Contour Area Population:	2,305,793		

Interference Free Breakdown:

White:	1,896,793	(	83.4%)
Black:	204,686	(	9.0%)
Hispanic:	83,992	(	3.7%)
Native American:	6,542	(	0.3%)
Asian:	46,498	(	2.0%)
Pacific Islander:	415	(	0.0%)
Mixed Race:	33,597	(	1.5%)
Other:	2,993	(	0.1%)
Total:	2,275,516		

	Housing Units	Population	% of County
Ohio			
Crawford County			
County Pop	20,178	46,966	
WNWO-TV-D.X (49)	609	1,572	
WDLI-DR.P (49)	22	62	3.94
WDLI-TV-D.C (49)	22	62	3.94
Ix Free	587	1,510	96.06
Defiance County			
County Pop	16,040	39,500	
WNWO-TV-D.X (49)	601	1,591	
Ix Free	601	1,591	100.00

Erie County			
County Pop	35,909	79,551	
WNWO-TV-D.X (49)	30,193	66,422	
WDLI-DR.P (49)	494	1,191	1.79
WDLI-TV-D.C (49)	494	1,191	1.79
Ix Free	29,699	65,231	98.21
Fulton County			
County Pop	16,232	42,084	
WNWO-TV-D.X (49)	16,232	42,084	
Ix Free	16,232	42,084	100.00
Hancock County			
County Pop	29,785	71,295	
WNWO-TV-D.X (49)	27,535	65,521	
Ix Free	27,535	65,521	100.00
Henry County			
County Pop	11,622	29,210	
WNWO-TV-D.X (49)	11,548	29,045	
Ix Free	11,548	29,045	100.00
Huron County			
County Pop	23,594	59,487	
WNWO-TV-D.X (49)	13,867	34,620	
WDLI-DR.P (49)	165	464	1.34
WDLI-TV-D.C (49)	165	464	1.34
Ix Free	13,702	34,156	98.66
Lucas County			
County Pop	196,259	455,054	
WNWO-TV-D.X (49)	196,259	455,054	
Ix Free	196,259	455,054	100.00
Ottawa County			
County Pop	25,532	40,985	
WNWO-TV-D.X (49)	25,532	40,985	
Ix Free	25,532	40,985	100.00
Putnam County			
County Pop	12,753	34,726	
WNWO-TV-D.X (49)	2,008	5,475	
Ix Free	2,008	5,475	100.00
Sandusky County			
County Pop	25,253	61,792	
WNWO-TV-D.X (49)	25,253	61,792	
Ix Free	25,253	61,792	100.00
Seneca County			
County Pop	23,692	58,683	
WNWO-TV-D.X (49)	23,692	58,683	
WDLI-DR.P (49)	27	67	0.11
WDLI-TV-D.C (49)	27	67	0.11
Ix Free	23,665	58,616	99.89
Williams County			
County Pop	16,140	39,188	
WNWO-TV-D.X (49)	321	1,462	
Ix Free	321	1,462	100.00
Wood County			
County Pop	47,468	121,065	
WNWO-TV-D.X (49)	47,468	121,065	
Ix Free	47,468	121,065	100.00
Wyandot County			
County Pop	9,324	22,908	

WNWO-TV-D.X (49)	3,794	9,679	
WDLI-DR.P (49)	13	32	0.33
WDLI-TV-D.C (49)	13	32	0.33
Ix Free	3,781	9,647	99.67

	Housing Units	Population	% of County

Michigan			
Hillsdale County			
County Pop	20,189	46,527	
WNWO-TV-D.X (49)	524	1,150	
WDLI-DR.P (49)	5	6	0.52
WDLI-TV-D.C (49)	5	6	0.52
Ix Free	519	1,144	99.48
Jackson County			
County Pop	62,906	158,422	
WNWO-TV-D.X (49)	2,107	3,763	
WDLI-DR.P (49)	788	1,335	35.48
WDLI-TV-D.C (49)	788	1,335	35.48
Ix Free	1,319	2,428	64.52
Lenawee County			
County Pop	39,769	98,890	
WNWO-TV-D.X (49)	38,745	96,519	
W21BS.A (49Z)	119	198	0.21
WDLI-DR.P (49)	2,535	3,554	3.68
WDLI-TV-D.C (49)	2,535	3,554	3.68
Ix Free	36,210	92,965	96.32
Monroe County			
County Pop	56,471	145,945	
WNWO-TV-D.X (49)	56,471	145,945	
Ix Free	56,471	145,945	100.00
Washtenaw County			
County Pop	131,069	322,895	
WNWO-TV-D.X (49)	116,094	285,147	
CBLN-PT-D (49)	1,032	2,888	1.01
CBLN-TV-D (49)	1,032	2,888	1.01
WDLI-DR.P (49)	7,088	15,499	5.44
WDLI-TV-D.C (49)	7,088	15,499	5.44
WPXD-DR.P.A (50)	317	847	0.30
WPXD-TV-D.A (50)	317	847	0.30
Ix Free	109,006	269,648	94.56
Wayne County			
County Pop	826,145	2,061,162	
WNWO-TV-D.X (49)	316,702	770,152	
Ix Free	316,702	770,152	100.00

WNWO-TV-D

BLCDDT20020403AAR
Latitude: 41-40-03 N
Longitude: 083-21-22 W
ERP: 59.00 kW
Channel: 49
Frequency: 683.0 MHz
AMSL Height: 587.0 m
Elevation: 176.5 m
Horiz. Pattern: Directional
Vert. Pattern: Yes
Elec Tilt: 0.0
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 301.0
Receiver Ht AG: 10.0 m
Receiver Gain: 0 dB
Time Variability: 10.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast

D.L. Markley & Associates, Inc.

- ☒ WNWO-TV-D
- ☐ 1177735-D.A
- ☐ 1330452-D.A
- ☐ CBLFT10
- ☐ CBLFT-10
- ☐ CBLFT-8-D.A
- ☐ CBLFT-DT-
- ☐ CBLN-PT-D
- ☐ CBLN-TV-D
- ☐ W21BS.A
- ☐ W48AV
- ☐ W48AV-D.C
- ☐ W48BZ.A
- ☐ W50CD.A
- ☐ WAAA-LP
- ☐ WAQP-D
- ☐ WAQP-D
- ☐ WBND-LD-D
- ☐ WDLI-DR.P
- ☐ WDLI-TV-D.C
- ☐ WEOA-D
- ☐ WEOA-D
- ☐ WEOA-D.C
- ☐ WMKG-LD-D.C
- ☐ WMNT-CA
- ☐ WNPA-D.P
- ☐ WOHZ-CA
- ☐ WPCW-D.A
- ☐ WPXD-DR.P.A
- ☐ WPXD-TV-D.A
- ☐ WTAP-D
- ☐ WTAP-TV-D
- ☐ WTAP-TV-D.C

Exhibit E-5

Outgoing Interference Study
WNWO-TV - Toledo, Ohio
Barrington Toledo License, LLC
October, 2009

Scale 1:1,500,000

0 20 40 60 km

Exhibit E-6
 Outgoing Interference Population Report
 Based on Licensed WNWO-TV Facilities.

WNWO-TV-D (49) Toledo, OH - BLCDT20020403AAR
 Broadcast Type: Digital Service: T
 Lat: 41-40-03 N Lng: 083-21-22 W ERP: 59.0 kW AMSL: 587.0 m
 TV Outgoing Interference Study
 Signal Resolution: 1.0 km
 Consider NTSC Taboo: Yes
 KWX error points are considered to
 be interference free coverage.
 Default # of radials computed for contours: 72
 Contours calculated using 8 radial HAAT.
 LR Profile Spacing Increment: 0.1 km
 Masked interference points are being
 counted as interference.
 Pop Centroid DB: 2000 US Census (SF1)

Study Date: 10/15/2009
 TV Database Date: 10/15/2009

Primary Terrain: V-Soft 3 Second US Terrain
 Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

 Stations Considered:

Call Letters	City	State	Dist	Bear
1177735-D.A (50)	Toledo	OH	15.1	263.2
1330452-D.A (49)	Monticello	IN	304.6	251.8
CBLFT10 (48Z)	Chatham	ON	136.6	50.1
CBLFT-10 (48Z)	Chatham	ON	136.6	50.1
CBLFT-8-D.A (49Z)	Kitchener	ON	300.5	47.9
CBLFT-DT- (49)	Kitchener	ON	300.5	47.9
CBLN-PT-D (49)	London	ON	218.3	48.4
CBLN-TV-D (49)	London	ON	218.3	48.4
W21BS.A (49Z)	Battle Creek	MI	165.0	295.3
W48AV (48-)	Detroit	MI	96.8	24.1
W48AV-D.C (48)	Detroit	MI	96.8	24.1
W48BZ.A (48Z)	Ann Arbor	MI	75.1	334.7
W50CD.A (48Z)	Bowling Green	OH	74.8	218.2
WAAA-LP (49-)	Westville	IN	306.2	268.2
WAQP-D (48)	Saginaw	MI	181.9	341.8
WAQP-D (48)	SAGINAW	MI	181.9	341.8
WBND-LD-D (49)	South Bend	IN	235.8	269.5
WDLI-DR.P (49)	Canton	OH	162.4	114.2
WDLI-TV-D.C (49)	Canton	OH	162.4	114.2
WEAO-D (50)	AKRON	OH	158.0	113.7
WEAO-D (50)	Akron	OH	158.0	113.7
WEAO-D.C (50)	Akron	OH	158.0	113.7
WMKG-LD-D.C (49)	Muskegon	MI	289.6	308.4

WMNT-CA (48+)	Toledo	OH	14.6	264.0
WNPA-D.P (49)	Jeannette	PA	332.2	114.0
WOHZ-CA (50Z)	Mansfield	OH	117.9	148.1
WPCW-D.A (49)	Jeannette	PA	332.2	114.0
WPXD-DR.P.A (50)	Ann Arbor	MI	90.7	2.3
WPXD-TV-D.A (50)	Ann Arbor	MI	90.7	2.3
WTAP-D (49)	PARKERSBURG	WV	298.7	148.9
WTAP-TV-D (49)	Parkersburg	WV	298.7	148.9
WTAP-TV-D.C (49)	Parkersburg	WV	298.7	148.9

Call	Area	HUnits	Contour	Masked	Ix	Unmasked	Ix	%
1177735-D.A (50)	0.0	0	594,417		0		0	0.0
1330452-D.A (49)	0.0	0	245,811		0		0	0.0
CBLFT10 (48Z)	0.0	0	14		0		0	0.0
CBLFT-10 (48Z)	0.0	0	0		0		0	0.0
CBLFT-8-D.A (49Z)	0.0	0	0		0		0	0.0
CBLFT-DT- (49)	0.0	0	0		0		0	0.0
CBLN-PT-D (49)	0.0	0	0		0		0	0.0
CBLN-TV-D (49)	0.0	0	0		0		0	0.0
W21BS.A (49Z)	0.0	0	97,640		0		0	0.0
W48AV (48-)	0.0	0	354,723		0		0	0.0
W48AV-D.C (48)	0.0	0	1,102,484		0		0	0.0
W48BZ.A (48Z)	0.0	0	72,615		0		0	0.0
W50CD.A (48Z)	0.0	0	86,338		0		0	0.0
WAAA-LP (49-)	0.0	0	314,092		0		0	0.0
WAQP-D (48)	0.0	0	1,960,607		0		0	0.0
WAQP-D (48)	0.0	0	2,053,568		0		0	0.0
WBND-LD-D (49)	0.0	0	731,874		0		0	0.0
WDLI-DR.P (49)	1070.4	24,732	4,108,039		0	58,194		1.4
WDLI-TV-D.C (49)	1070.4	24,732	4,108,039		0	58,194		1.4
WEAO-D (50)	0.0	0	3,929,274		0		0	0.0
WEAO-D (50)	0.0	0	3,929,274		0		0	0.0
WEAO-D.C (50)	0.0	0	4,029,149		0		0	0.0
WMKG-LD-D.C (49)	0.0	0	271,253		0		0	0.0
WMNT-CA (48+)	0.0	0	469,882		0		0	0.0
WNPA-D.P (49)	0.0	0	3,118,448		0		0	0.0
WOHZ-CA (50Z)	0.0	0	138,465		0		0	0.0
WPCW-D.A (49)	0.0	0	3,121,642		0		0	0.0
WPXD-DR.P.A (50)	2.7	112	5,222,635		0	296		0.0
WPXD-TV-D.A (50)	2.7	112	5,222,635		0	296		0.0
WTAP-D (49)	0.0	0	367,959		0		0	0.0
WTAP-TV-D (49)	0.0	0	367,959		0		0	0.0
WTAP-TV-D.C (49)	0.0	0	582,097		0		0	0.0

	Housing Units	Population
Michigan		
Lenawee County		
Total	39,769	98,890
WPXD-DR.P.A (50)	112	296
WPXD-TV-D.A (50)	112	296
Ohio		
Ashland County		
Total	20,832	52,523

WDLI-DR.P (49)	81	195
WDLI-TV-D.C (49)	81	195
Carroll County		
Total	13,016	28,836
WDLI-DR.P (49)	0	0
WDLI-TV-D.C (49)	0	0
Erie County		
Total	35,909	79,551
WDLI-DR.P (49)	7,322	15,740
WDLI-TV-D.C (49)	7,322	15,740
Huron County		
Total	23,594	59,487
WDLI-DR.P (49)	4,212	10,634
WDLI-TV-D.C (49)	4,212	10,634
Lorain County		
Total	111,368	284,664
WDLI-DR.P (49)	12,186	28,858
WDLI-TV-D.C (49)	12,186	28,858
Richland County		
Total	53,062	128,852
WDLI-DR.P (49)	931	2,767
WDLI-TV-D.C (49)	931	2,767

WNWO-TV-D.X**PROPOSED**

Latitude: 41-40-03 N

Longitude: 083-21-22 W

ERP: 118.00 kW

Channel: 49

Frequency: 683.0 MHz

AMSL Height: 587.0 m

Elevation: 176.5 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 0.0

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 301.0

Receiver Ht AG: 10.0 m

Receiver Gain: 0 dB

Time Variability: 10.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

D.L. Markley & Associates, Inc.

- ☒ WNWO-TV-D.X
- 1177735-D.A
- 1330452-D.A
- CBLFT10
- CBLFT-10
- CBLFT-8-D.A
- CBLFT-DT-
- CBLN-PT-D
- CBLN-TV-D
- W21BS.A
- W48AV
- W48AV-D.C
- W48BZ.A
- W50CD.A
- WAAA-LP
- WAQP-D
- WAQP-D
- WBND-LD-D
- WDLI-DR.P
- WDLI-TV-D.C
- WEO-D
- WEO-D
- WEO-D.C
- WMKG-LD-D.C
- WMNT-CA
- WNPA-D.P
- WOHZ-CA
- WPCW-D.A
- WPXD-DR.P.A
- WPXD-TV-D.A
- WTAP-D
- WTAP-TV-D
- WTAP-TV-D.C

Exhibit E-7

Outgoing Interference Study

WNWO-TV - Toledo, Ohio

Barrington Toledo License, LLC

October, 2009

Scale 1:1,500,000

0 20 40 60 km

Exhibit E-8

Outgoing Interference Population Report

Based on proposed facility with no masking consideration.

WNWO-TV-D.X (49) Toledo, OH - PROPOSED

Broadcast Type: Digital Service: T

Lat: 41-40-03 N Lng: 083-21-22 W ERP: 118.0 kW AMSL: 587.0 m

TV Outgoing Interference Study

Signal Resolution: 1.0 km

Consider NTSC Taboo: Yes

KWX error points are considered to
be interference free coverage.

Default # of radials computed for contours: 72

Contours calculated using 8 radial HAAT.

LR Profile Spacing Increment: 0.1 km

Masked interference points are being
counted as interference.

Pop Centroid DB: 2000 US Census (SF1)

Study Date: 10/15/2009

TV Database Date: 10/15/2009

Primary Terrain: V-Soft 3 Second US Terrain

Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Stations Considered:

Call Letters	City	State	Dist	Bear
1177735-D.A (50)	Toledo	OH	15.1	263.2
1330452-D.A (49)	Monticello	IN	304.6	251.8
CBLFT10 (48Z)	Chatham	ON	136.6	50.1
CBLFT-10 (48Z)	Chatham	ON	136.6	50.1
CBLFT-8-D.A (49Z)	Kitchener	ON	300.5	47.9
CBLFT-DT- (49)	Kitchener	ON	300.5	47.9
CBLN-PT-D (49)	London	ON	218.3	48.4
CBLN-TV-D (49)	London	ON	218.3	48.4
W21BS.A (49Z)	Battle Creek	MI	165.0	295.3
W48AV (48-)	Detroit	MI	96.8	24.1
W48AV-D.C (48)	Detroit	MI	96.8	24.1
W48BZ.A (48Z)	Ann Arbor	MI	75.1	334.7
W50CD.A (48Z)	Bowling Green	OH	74.8	218.2
WAAA-LP (49-)	Westville	IN	306.2	268.2
WAQP-D (48)	Saginaw	MI	181.9	341.8
WAQP-D (48)	SAGINAW	MI	181.9	341.8
WBND-LD-D (49)	South Bend	IN	235.8	269.5
WDLI-DR.P (49)	Canton	OH	162.4	114.2
WDLI-TV-D.C (49)	Canton	OH	162.4	114.2
WEAO-D (50)	AKRON	OH	158.0	113.7
WEAO-D (50)	Akron	OH	158.0	113.7
WEAO-D.C (50)	Akron	OH	158.0	113.7
WMKG-LD-D.C (49)	Muskegon	MI	289.6	308.4

WMNT-CA (48+)	Toledo	OH	14.6	264.0
WNPA-D.P (49)	Jeannette	PA	332.2	114.0
WOHZ-CA (50Z)	Mansfield	OH	117.9	148.1
WPCW-D.A (49)	Jeannette	PA	332.2	114.0
WPXD-DR.P.A (50)	Ann Arbor	MI	90.7	2.3
WPXD-TV-D.A (50)	Ann Arbor	MI	90.7	2.3
WTAP-D (49)	PARKERSBURG	WV	298.7	148.9
WTAP-TV-D (49)	Parkersburg	WV	298.7	148.9
WTAP-TV-D.C (49)	Parkersburg	WV	298.7	148.9

Call	Area	HUnits	Contour	Masked	Ix	Unmasked	Ix	%
1177735-D.A (50)	1.8	0	594,417		0		0	0.0
1330452-D.A (49)	0.0	0	245,811		0		0	0.0
CBLFT10 (48Z)	0.0	0	14		0		0	0.0
CBLFT-10 (48Z)	0.0	0	0		0		0	0.0
CBLFT-8-D.A (49Z)	0.0	0	0		0		0	0.0
CBLFT-DT- (49)	0.0	0	0		0		0	0.0
CBLN-PT-D (49)	0.0	0	0		0		0	0.0
CBLN-TV-D (49)	0.0	0	0		0		0	0.0
W21BS.A (49Z)	0.0	0	97,640		0		0	0.0
W48AV (48-)	0.0	0	354,723		0		0	0.0
W48AV-D.C (48)	0.0	0	1,102,484		0		0	0.0
W48BZ.A (48Z)	0.0	0	72,615		0		0	0.0
W50CD.A (48Z)	0.0	0	86,338		0		0	0.0
WAAA-LP (49-)	0.0	0	314,092		0		0	0.0
WAQP-D (48)	0.0	0	1,960,607		0		0	0.0
WAQP-D (48)	0.0	0	2,053,568		0		0	0.0
WBND-LD-D (49)	0.0	0	731,874		0		0	0.0
WDLI-DR.P (49)	1233.2	27,134	4,108,039		0	64,279		1.6
WDLI-TV-D.C (49)	1233.2	27,134	4,108,039		0	64,279		1.6
WEAO-D (50)	0.0	0	3,929,274		0		0	0.0
WEAO-D (50)	0.0	0	3,929,274		0		0	0.0
WEAO-D.C (50)	0.0	0	4,029,149		0		0	0.0
WMKG-LD-D.C (49)	0.0	0	271,253		0		0	0.0
WMNT-CA (48+)	0.0	0	469,882		0		0	0.0
WNPA-D.P (49)	0.0	0	3,118,448		0		0	0.0
WOHZ-CA (50Z)	0.0	0	138,465		0		0	0.0
WPCW-D.A (49)	0.0	0	3,121,642		0		0	0.0
WPXD-DR.P.A (50)	5.4	129	5,222,635		0	351		0.0
WPXD-TV-D.A (50)	5.4	129	5,222,635		0	351		0.0
WTAP-D (49)	1.9	2	367,959		0	4		0.0
WTAP-TV-D (49)	1.9	2	367,959		0	4		0.0
WTAP-TV-D.C (49)	3.8	27	582,097		0	61		0.0

	Housing Units	Population
Michigan		
Lenawee County		
Total	39,769	98,890
WPXD-DR.P.A (50)	129	351
WPXD-TV-D.A (50)	129	351
Ohio		
Ashland County		
Total	20,832	52,523

WDLI-DR.P (49)	199	481
WDLI-TV-D.C (49)	199	481
Carroll County		
Total	13,016	28,836
WDLI-DR.P (49)	54	141
WDLI-TV-D.C (49)	54	141
Columbiana County		
Total	46,083	112,075
WDLI-DR.P (49)	54	148
WDLI-TV-D.C (49)	54	148
Erie County		
Total	35,909	79,551
WDLI-DR.P (49)	7,402	15,956
WDLI-TV-D.C (49)	7,402	15,956
Geauga County		
Total	32,805	90,895
WDLI-DR.P (49)	5	13
WDLI-TV-D.C (49)	5	13
Guernsey County		
Total	18,771	40,792
WTAP-TV-D.C (49)	4	10
Huron County		
Total	23,594	59,487
WDLI-DR.P (49)	4,390	11,117
WDLI-TV-D.C (49)	4,390	11,117
Lake County		
Total	93,487	227,511
WDLI-DR.P (49)	593	1,505
WDLI-TV-D.C (49)	593	1,505
Lorain County		
Total	111,368	284,664
WDLI-DR.P (49)	13,020	30,917
WDLI-TV-D.C (49)	13,020	30,917
Lucas County		
Total	196,259	455,054
1177735-D.A (50)	0	0
Mahoning County		
Total	111,762	257,555
WDLI-DR.P (49)	28	28
WDLI-TV-D.C (49)	28	28
Muskingum County		
Total	35,163	84,585
WTAP-D (49)	2	4
WTAP-TV-D (49)	2	4
Perry County		
Total	13,655	34,078
WTAP-TV-D.C (49)	23	51
Richland County		
Total	53,062	128,852
WDLI-DR.P (49)	1,372	3,934
WDLI-TV-D.C (49)	1,372	3,934
Tuscarawas County		
Total	38,113	90,914
WDLI-DR.P (49)	17	39
WDLI-TV-D.C (49)	17	39

WNWO-TV-D.X**PROPOSED**

Latitude: 41-40-03 N

Longitude: 083-21-22 W

ERP: 118.00 kW

Channel: 49

Frequency: 683.0 MHz

AMSL Height: 587.0 m

Elevation: 176.5 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 0.0

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 301.0

Receiver Ht AG: 10.0 m









Receiver Gain: 0 dB

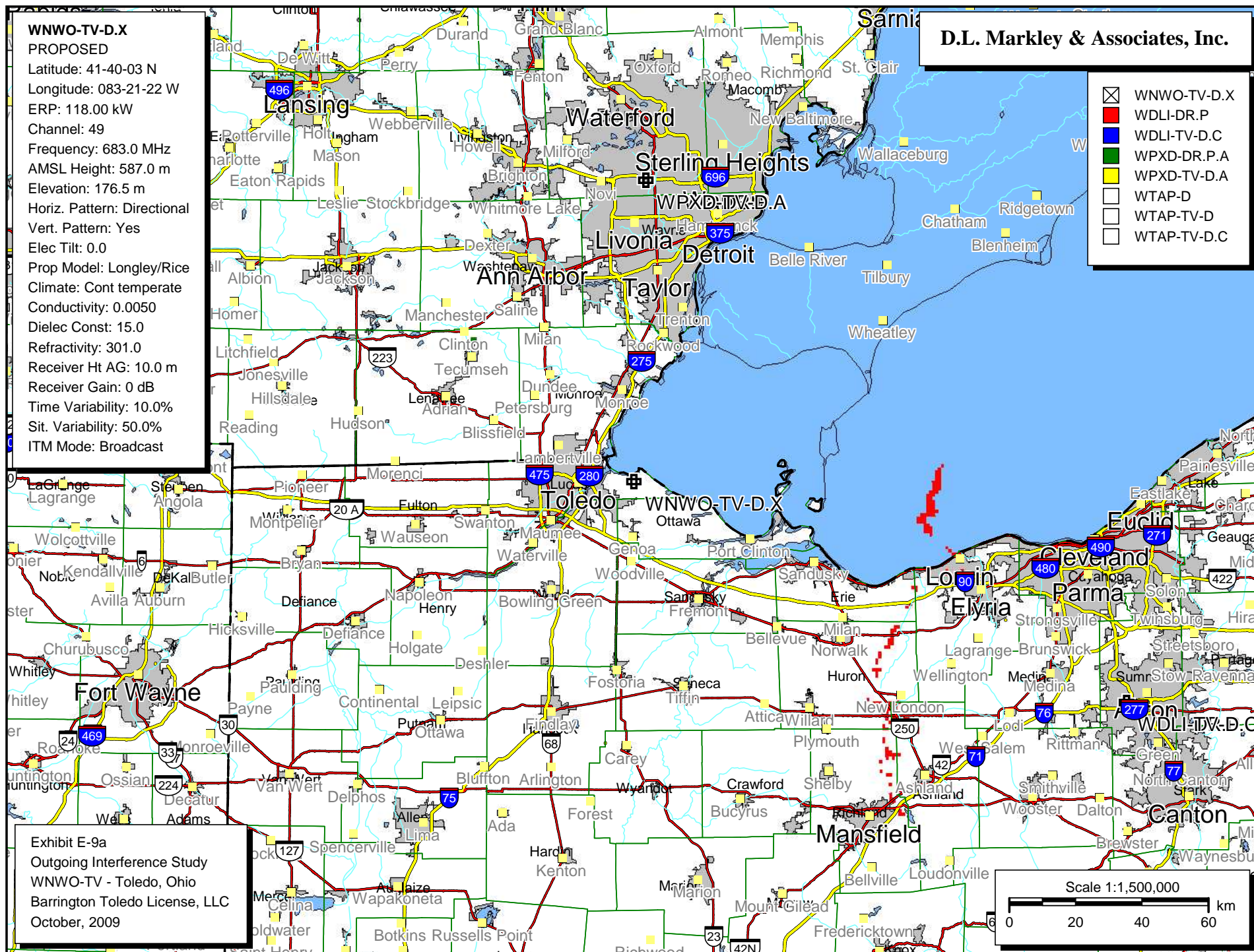
Time Variability: 10.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

D.L. Markley & Associates, Inc.

-  WNWO-TV-D.X
-  WDLI-DR.P
-  WDLI-TV-D.C
-  WPXD-DR.P.A
-  WPXD-TV-D.A
-  WTAP-D
-  WTAP-TV-D
-  WTAP-TV-D.C



WNWO-TV-D.X

PROPOSED

Latitude: 41-40-03 N

Longitude: 083-21-22 W

ERP: 118.00 kW

Channel: 49

Frequency: 683.0 MHz

AMSL Height: 587.0 m

Elevation: 176.5 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 0.0

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 301.0

Receiver Ht AG: 10.0 m









Receiver Gain: 0 dB

Time Variability: 10.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

D.L. Markley & Associates, Inc.

-  WNWO-TV-D.X
-  WDLI-DR.P
-  WDLI-TV-D.C
-  WPXD-DR.P.A
-  WPXD-TV-D.A
-  WTAP-D
-  WTAP-TV-D
-  WTAP-TV-D.C

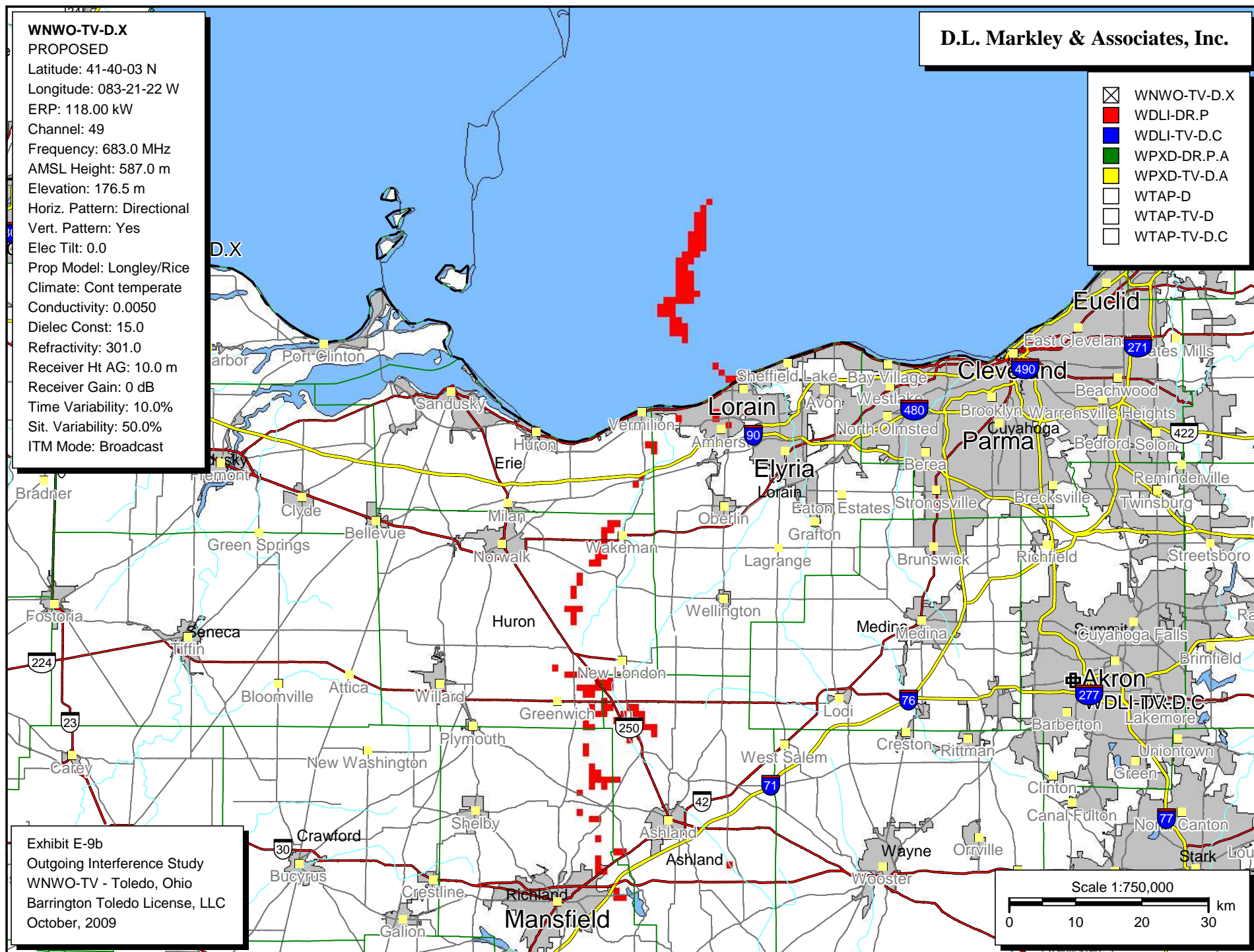


Exhibit E-10

Outgoing Interference Population Report

Based on proposed facility considering masking from licensed facility.

WNWO-TV-D.X (49) Toledo, OH - PROPOSED

Broadcast Type: Digital Service: T

Lat: 41-40-03 N Lng: 083-21-22 W ERP: 118.0 kW AMSL: 587.0 m

TV Outgoing Interference Study

Signal Resolution: 1.0 km

Consider NTSC Taboo: Yes

KWX error points are considered to
be interference free coverage.

Default # of radials computed for contours: 72

Contours calculated using 8 radial HAAT.

LR Profile Spacing Increment: 0.1 km

Masked interference points are being counted
as interference free.

Pop Centroid DB: 2000 US Census (SF1)

Study Date: 10/15/2009

TV Database Date: 10/15/2009

Primary Terrain: V-Soft 3 Second US Terrain

Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Stations Considered:

Call Letters	City	State	Dist	Bear
WDLI-DR.P (49)	Canton	OH	162.4	114.2
WDLI-TV-D.C (49)	Canton	OH	162.4	114.2
WPXD-DR.P.A (50)	Ann Arbor	MI	90.7	2.3
WPXD-TV-D.A (50)	Ann Arbor	MI	90.7	2.3
WTAP-D (49)	PARKERSBURG	WV	298.7	148.9
WTAP-TV-D (49)	Parkersburg	WV	298.7	148.9
WTAP-TV-D.C (49)	Parkersburg	WV	298.7	148.9

Call	Area	HUnits	Contour	Masked Ix	Unmasked Ix	%
WDLI-DR.P (49)	151.7	1,691	4,108,039	59,970	4,309	0.1
WDLI-TV-D.C (49)	150.8	1,684	4,108,039	59,991	4,288	0.1
WPXD-DR.P.A (50)	2.7	17	5,222,635	296	55	0.0
WPXD-TV-D.A (50)	2.7	17	5,222,635	296	55	0.0
WTAP-D (49)	0.0	0	367,959	4	0	0.0
WTAP-TV-D (49)	0.0	0	367,959	4	0	0.0
WTAP-TV-D.C (49)	0.0	0	582,097	61	0	0.0

Housing Units Population

Michigan

Lenawee County

Total	39,769	98,890
WPXD-DR.P.A (50)	17	55
WPXD-TV-D.A (50)	17	55
Ohio		
Ashland County		
Total	20,832	52,523
WDLI-DR.P (49)	108	261
WDLI-TV-D.C (49)	108	261
Carroll County		
Total	13,016	28,836
WDLI-DR.P (49)	26	63
WDLI-TV-D.C (49)	26	63
Columbiana County		
Total	46,083	112,075
WDLI-DR.P (49)	7	21
Erie County		
Total	35,909	79,551
WDLI-DR.P (49)	80	216
WDLI-TV-D.C (49)	80	216
Huron County		
Total	23,594	59,487
WDLI-DR.P (49)	178	483
WDLI-TV-D.C (49)	178	483
Lorain County		
Total	111,368	284,664
WDLI-DR.P (49)	834	2,059
WDLI-TV-D.C (49)	834	2,059
Richland County		
Total	53,062	128,852
WDLI-DR.P (49)	441	1,167
WDLI-TV-D.C (49)	441	1,167
Tuscarawas County		
Total	38,113	90,914
WDLI-DR.P (49)	17	39
WDLI-TV-D.C (49)	17	39