



ENGINEERING STATEMENT
OF
JOHN F.X. BROWNE, P.E.
IN SUPPORT OF AN APPLICATION FOR
CONSTRUCTION PERMIT FOR POST-TRANSITION DTV
AND FREEZE WAIVER REQUEST
WFUM-DT
FLINT, MI

Background

The Regents of University of Michigan (UOM) is the licensee of television stations WFUM-TV, CH28, (BLET-20030718AFB, Facility ID 69273) at Flint, MI and WFUM-DT, CH52, (BLEDT-20040621ABO) at Flint. UOM now wishes to apply for a Construction Permit for its post-transition DTV facility.

Post-Transition Facility

UOM has elected to operate its post-transition facility on its analog channel 28. The antenna that will be used is the same antenna that is used by the WFUM-TV analog facility. This is a broadband panel antenna that serves both the present CH52 DTV facility and the CH28 analog facility. The Appendix B facility antenna has the same pattern as the broadband panel CH52 pattern. The antenna has a slightly different pattern when used on CH28 from that when used on CH52 (see Figure 1). Because of the pattern differences the two coverage areas do not match exactly (see Figure 2) when the same ERP is used (126 kW). The ERP would need to be reduced to 55 kW in order to bring the pattern inside that of the Appendix B facility (see Figure 3) and the population loss would be 741,000 or 17.2%. If the ERP remains



at 126 kW there will be a population loss of 55,000 or 1.2%. The use of the proposed pattern at 126 kW produces no new predicted interference to any domestic station and, in fact, reduces the predicted interference to WUAB-DT. It is believed that it would be in the public interest to allow the slight variation in antenna pattern with the Appendix B ERP and permit UOM the use of the CH28 pattern at 126 kW.

Site and Tower

The tower is registered (ASRN 1013913). The overall height of the tower will not change, therefore, neither notification to the FAA nor a modification of the ASR are needed.

Antenna and Power

The proposed antenna is a Dielectric TUA-C4-12/48H-1 directional Broadband Panel Array. The proposed radiation center of the antenna is 550m AMSL (HAAT= 258m). The proposed ERP of 126 kW will cause the coverage of the facility to exceed that of the Appendix B facility very slightly in a few directions as discussed above. The 48dBu F(50,90) contour from the proposed facility will completely encompass the City of Flint, MI. The azimuth and elevation patterns for the proposed antenna as well as a relative field/dBk table are attached as Exhibit 1-Exhibit 4 and Table 1.

Interference

There would be no new domestic interference considerations with the proposed operation as discussed above.

Waiver Request

UOM requests a waiver of the "freeze" on applications that would increase a station's DTV service beyond that of the authorized license (released August 3, 2004). The "freeze" order announced that the Bureau would consider (on a case-by-case basis) a request for a



waiver of this “freeze” when a modification application is necessary or otherwise in the public interest for technical or other reasons to maintain quality service to the public. The UOM could not, for structural reasons, place 2 antennas on the WFUM tower; thus UOM utilized a wide-band panel antenna that would cover both CH52 and CH28. However, this antenna has slightly different characteristics on CH52 than on CH28 that result in slightly different radiation patterns. The Commission Appendix B facility has the same pattern as the CH52 pattern. When the CH28 pattern is used, the coverage at 126 kW, as specified in Appendix B, exceeds that of the Appendix B facility slightly (1.4 miles at the maximum) in a few locations (see Table 2). If the “freeze” is adhered-to and the ERP is adjusted to 55 kW so that the coverage does not exceed that of the Appendix B facility antenna pattern (the same pattern the antenna displays on CH52), there would be a population loss of 741,000 (17.2%). If the ERP is not adjusted and remains as specified in Appendix B (126 kW) there would only be a population loss of 55,000 (1.2%). There would be no new predicted interference to any domestic station and, in fact, the predicted interference to WUAB-DT is reduced. UOM hereby requests a waiver of the “freeze” so that it might utilize the 126 kW with its wide-band panel antenna and cover most of the population that it was predicted to cover with the Appendix B facility.

Another consideration is the cable TV carriage of the WFUM signal. In the early years of “must carry”, WFUM found it necessary to take extreme measures to ensure that cable companies, particularly those near its Grade “B” contour would carry its signal. Any diminution of the WFUM signal or its coverage could well result in a re-kindling of these former carriage issues and the potential for a significant loss of viewers.

Environmental/RFR

This construction does not involve any of the conditions that would require preparation an Environmental Assessment as specified in 47 CFR Section 1.1311, therefore, further consideration is not required.

B

The additional ground level RFR contributed to the site by this proposal in public areas is calculated to be 0.000527 mW/cm^2 , which is less than 5% of the MPE for public exposure (0.371333 mW/cm^2) at the proposed frequency.

UOM agrees to comply with the Commission's requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access. Workers will be instructed in the RFR scenario and specific issues regarding avoidance and mitigation; further workers will also be encouraged to wear personal RFR monitors when on the structure. A locked security fence encloses the tower base and appropriate signage warning of RFR hazards is in place.

Certification

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.



John F.X. Browne, P.E.

February 18, 2008

DIRECTIONAL ANTENNA DATA
WFUM-DT
TABLE #1

Actual Bearing	Pattern Azimuth	Relative Field	ERP (dBk)	CONTOURS(km)	
				48 dBu	41 dBu
N000E	0.00	0.947	20.53	68.9	77.8
	10.00	0.848	19.57		
	20.00	0.750	18.50		
	30.00	0.858	19.67		
	40.00	0.970	20.74		
N045E	45.00	0.978	20.81	68.6	77.4
	50.00	0.956	20.61		
	60.00	0.857	19.66		
	70.00	0.723	18.19		
N090E	80.00	0.679	17.64	61.6	69.1
	90.00	0.677	17.62		
	100.00	0.548	15.78		
	110.00	0.419	13.45		
	120.00	0.413	13.32		
N135E	130.00	0.440	13.87	57.5	65.3
	135.00	0.439	13.85		
	140.00	0.426	13.59		
	150.00	0.376	12.51		
	160.00	0.425	13.57		
N180E	170.00	0.572	16.15	62.3	69.8
	180.00	0.662	17.42		
	190.00	0.651	17.28		
	200.00	0.712	18.05		
	210.00	0.869	19.78		
N225E	220.00	0.969	20.73	67.2	75.3
	225.00	0.983	20.85		
	230.00	0.969	20.73		
	240.00	0.866	19.75		
	250.00	0.779	18.83		
N270E	260.00	0.890	19.99	68.0	76.4
	270.00	0.951	20.57		
	280.00	0.781	18.86		
	290.00	0.676	17.60		
	300.00	0.841	19.50		
N315E	310.00	0.985	20.87	69.6	78.8
	315.00	1.000	21.00		
	320.00	0.973	20.77		
	330.00	0.836	19.45		
	340.00	0.706	17.98		
	350.00	0.821	19.29		

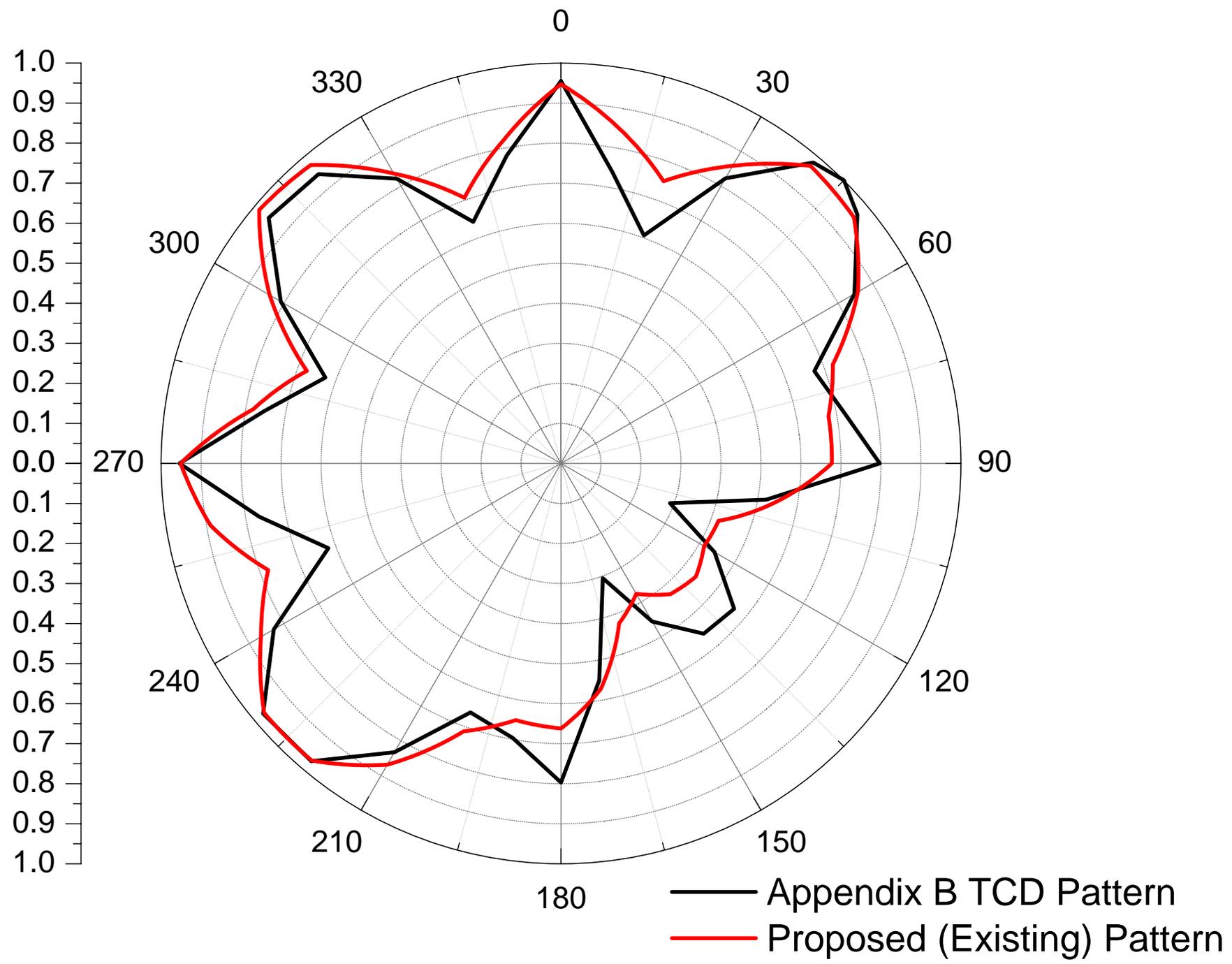
Maximum: N315E 21.00 dBk

Minima: N152E 12.41 dBk

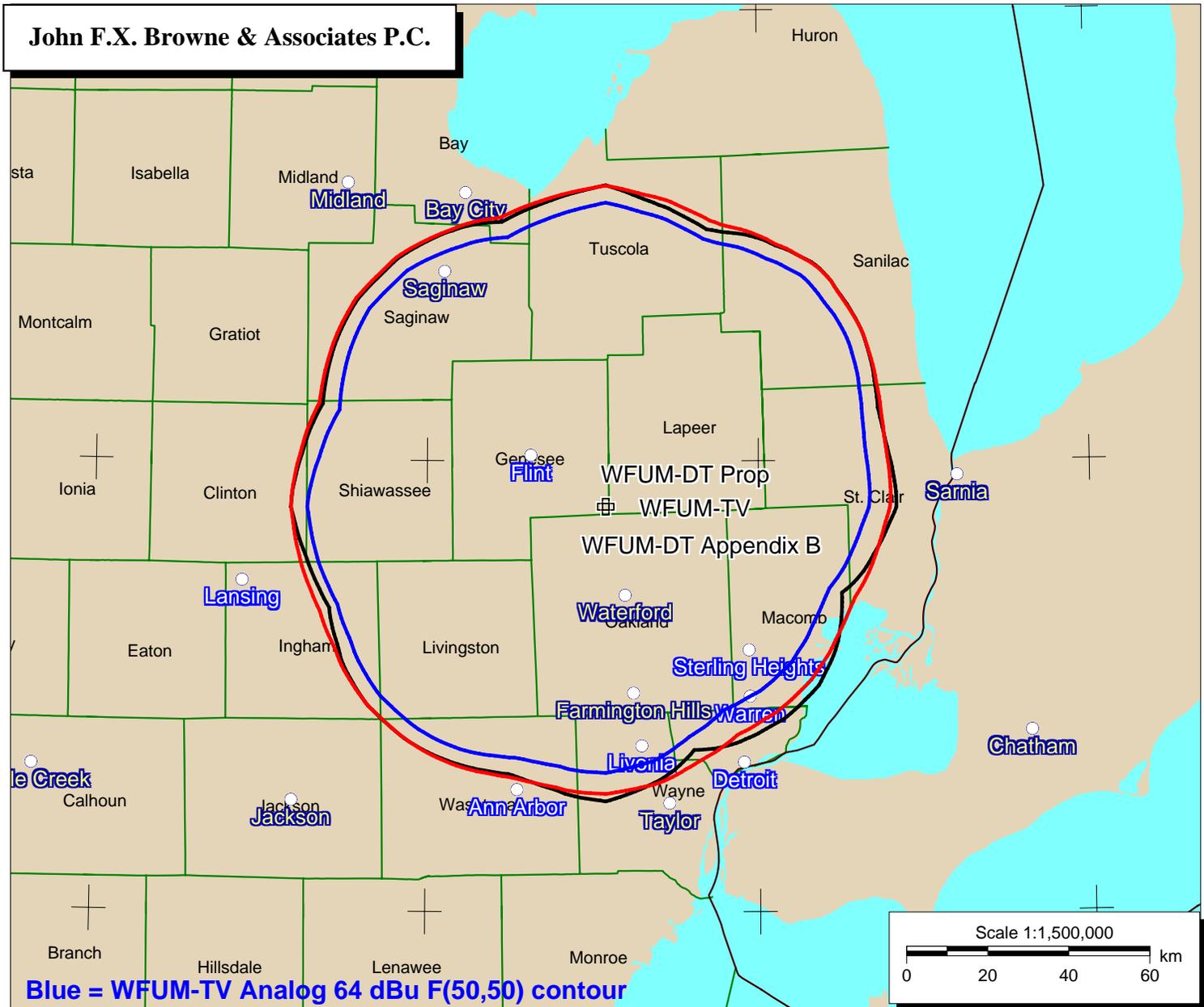
Table 2
WFUM-DT
Appendix B Facility vs. Proposed Facility Contour Distance Table

<u>Degrees</u>	<u>Appendix B Facility ERP 126 kW (DA) Distance (miles)</u>	<u>Proposed Facility ERP 126 kW (DA) Distance (miles)</u>	<u>Difference (miles)</u>
0	49.2	49.2	-0.1
10	46.9	47.9	1.0
20	45.2	46.6	1.4
30	47.4	47.7	0.3
40	48.9	48.8	-0.1
50	48.2	48.2	-0.1
60	46.6	46.7	0.1
70	44.4	44.8	0.4
80	44.2	43.8	-0.4
90	44.6	43.6	-1.0
100	41.7	42.0	0.3
110	38.5	40.6	2.2
120	41.1	40.7	-0.4
130	42.6	41.1	-1.5
140	42.4	41.0	-1.5
150	41.4	40.4	-1.1
160	39.6	41.6	1.9
170	42.9	43.2	0.2
180	45.1	44.0	-1.1
190	44.1	43.6	-0.4
200	43.6	44.0	0.4
210	45.5	45.7	0.2
220	46.9	46.9	0.0
230	47.5	47.5	0.0
240	46.8	47.1	0.3
250	45.1	46.6	1.6
260	46.4	47.5	1.1
270	48.2	48.2	0.0
280	47.2	47.5	0.3
290	46.1	46.7	0.6
300	48.2	48.5	0.3
310	49.5	49.8	0.2
320	49.6	49.8	0.2
330	48.5	48.7	0.1
340	46.4	47.1	0.7
350	47.7	48.0	0.4

WFUM Appendix B TCD Antenna Pattern vs. Proposed (Existing) Antenna Pattern



WFUM-DT



Blue = WFUM-TV Analog 64 dBu F(50,50) contour

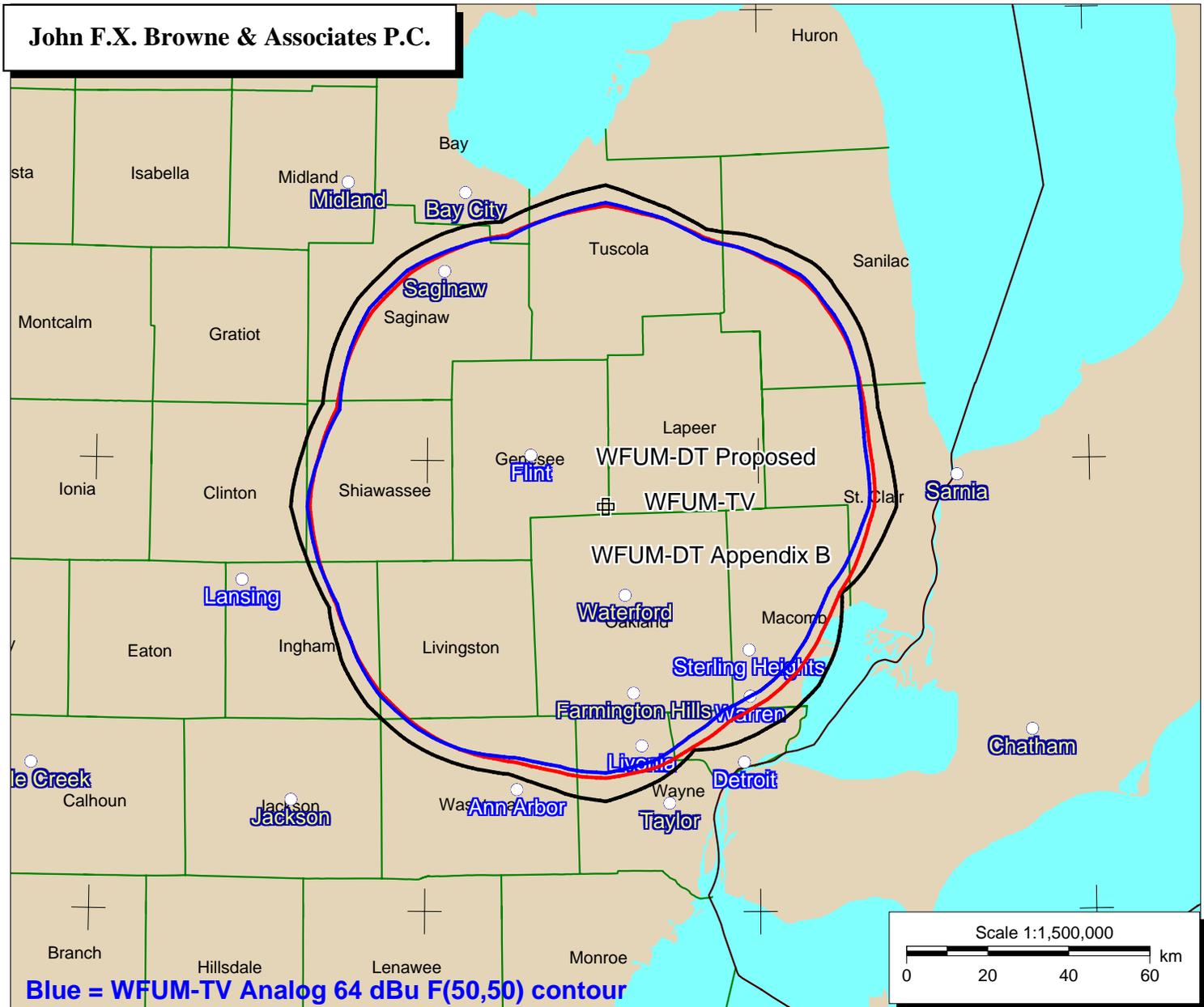
Black = WFUM-DT Appendix B Facility 41 dBu F(50,90) contour

Red = WFUM-DT Proposed Facility 126 kW ERP 41 dBu F(50,90) Contour

Date: 2-13-2008

Fig.2

WFUM-DT



Blue = WFUM-TV Analog 64 dBu F(50,50) contour

Black = WFUM-DT Appendix B Facility 41 dBu F(50,90) contour

Red = WFUM-DT Proposed Facility 55 kW ERP 41 dBu F(50,90) Contour

Date: 2-13-2008

Fig. 3