

TECHNICAL EXHIBIT
MINOR AMENDMENT TO APPLICATION
STATION WTEN-DT (FACILITY ID 74422)
ALBANY, NEW YORK

FEBRUARY 6, 2002

CH 26 746 KW 426 M

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ALBANY, NEW YORK
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Technical Narrative

This Technical Exhibit supports a minor amendment to the application for construction permit for digital television (DTV) station WTEN-DT on channel 26 at Albany, New York. Station WTEN-DT has an application pending to operate with a non-directional antenna effective radiated power (ERP) of 950 kW and an antenna height above average terrain (HAAT) of 310 meters (BPCDT-19991027ABZ).

Proposed Facilities

This amendment proposes to change the transmitter site coordinates, reduce ERP, increase antenna HAAT and employ mechanical beam tilt. The proposed transmitter site coordinates are 42-37-31 N, 74-00-38 W). WTEN-DT proposes to operate non-directionally from the new site with an ERP of 746 kW and antenna HAAT of 426 meters, along with 0.75 degree of electrical beam tilting and 0.25 degree of mechanical beam tilting at 45° True (*FCC tower registration no. 1231728*). The proposed facilities (746 kW, 426 m) comply with Section 73.622(f)(8)(i) of the FCC rules concerning maximum allowable ERP and antenna height for DTV stations.

Canadian Allocation Analysis

As the proposal is located in the U.S./Canada border zone (within 400 km), a Canadian allocation study was conducted to confirm compliance with the Canadian Letter of Understanding (LOU). A study indicates that the proposed operation meets all of the minimum separation requirements to Canadian stations except for 2 DTV stations at Belleville, Ontario and Montreal, Quebec, both on channel 26. The proposal is 27 kilometers “short” of the minimum required separation distance of 344 kilometers for Belleville and 17 kilometers “short” of the minimum required separation distance of 340 kilometers for Montreal.

Since there is predicted contour overlap with the two Canadian stations, Longley-Rice studies (using a 2 km grid spacing) were conducted. The studies indicate new interference of 0.7% towards Belleville and 0.5% towards Montreal (see table below). The map in Figure 4 depicts the unique (masked by FCC’s DTV allotment for WTEN) interference points to both stations, along with the abandoned interference points caused only by the DTV allotment.

	Interference Caused (Population)	
	CAN, DTV-26, Belleville, ON	CAN, DTV-26, Montreal, QU
WTEN FCC DTV Allotment	20,532	60,215
WTEN-DT Proposal	21,691	79,090
Proposed Interference	1,159 (0.7%)	18,875 (0.5%)

If coordination with Canada is required, it is respectfully requested.

The site is more than 2,600 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Canandaigua, New York, approximately 268 kilometers to the west. The closest point of the National Radio Quiet Zone (VA/WV) is more than 500 kilometers to the southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2,600 kilometers to the west. The closest radio astronomy site

operating on TV channel 37 is at Hancock, New Hampshire, approximately 169 kilometers to the east-northeast. These separations are sufficient to not be a concern for coordination purposes.

Allocation Considerations

Interference calculations have been made using the procedures outlined in the FCC's OET-69 bulletin, using a 2 kilometer grid spacing. The proposed WTEN-DT operation does not cause excessive (greater than 2%, up to 10% total) calculated interference to any analog or DTV assignment. Below is the list of stations considered in the OET-69 analysis.

Stations Potentially Affected by Proposed WTEN-DT						
Chan	Call	City/State	Bear (°T)	Dist (km)	Status	App. Ref. No.
18	WUVN	HARTFORD CT	133	137.3	LIC	BLCT-19870304KI
19	WCDC-TV	ADAMS MA	89	68.9	LIC	BLCT-19810105KE
22	WWLP	SPRINGFIELD MA	119	123.0	CP MOD	BPCT-19930826KE
22	WWLP	SPRINGFIELD MA	119	123.0	LIC	BLCT-19841128KJ
23	WXXA-TV	ALBANY NY	191	0.9	LIC	BLCT-19820810KG
23	WXXA-TV	ALBANY NY	189	1.0	CP	BPCT-20010418AAC
24	WEDH	HARTFORD CT	133	137.1	LIC	BLET-341
25	WCNY-DT	SYRACUSE NY	283	168.1	PLN	DTVPLN-DTVP0577
25	WNNE	HARTFORD VT	54	155.5	APP	BPCDT-19991101AEW
25	WNNE-DT	HARTFORD VT	54	155.7	PLN	DTVPLN-DTVP0587
26	WHPX	NEW LONDON CT	131	201.0	LIC	BLCT-19860924KI
26	WMEA-TV	BIDDEFORD ME	70	275.1	LIC	BLET-379
26	KYW-DT	PHILADELPHIA PA	200	304.9	CP	BPCDT-19980408KE
26	KYW-DT	PHILADELPHIA PA	200	304.7	PLN	DTVPLN-DTVP0612
27	WUNI	WORCESTER MA	99	190.8	LIC	BLCT-19991214ABC
27	WTBY	POUGHKEEPSIE NY	178	126.4	CP	BPCDT-19990414KG
27	WTBY-DT	POUGHKEEPSIE NY	179	100.7	PLN	DTVPLN-DTVP0642
27	WFXV-DT	UTICA NY	292	125.5	PLN	DTVPLN-DTVP0643
27	WFXV-DT	UTICA NY	292	125.5	APP	BPCDT-19991029AIE
28	WVER	RUTLAND VT	32	136.3	LIC	BLET-19930715KJ
29	960724KU	SCHENECTADY NY	60	35.9	APP	BPET-19960724KU
30	WVIT	NEW BRITAIN CT	136	141.4	LIC	BLCT-19791113LC
33	WFXV	UTICA NY	292	125.5	CP	BPCT-19960111LM
33	WFXV	UTICA NY	292	125.5	LIC	BLCT-19861210KG

From the above list of stations considered, the table below shows the calculated interference caused to each station. Only stations that are predicted to receive interference from the proposed WTEN-DT operation are shown in the interference table.

Study Station	Baseline	Net Population Change/Interference
23 WXXA-TV ALBANY NY (LIC)	1,343,837	-1,501 (0.1%) Interference Reduction
25 WNNE HARTFORD VT (APP)	367,528	-33 (0.0%) Interference Reduction
26 WHPX NEW LONDON CT (LIC)	3,413,484	18,576 (0.5%) New Interference
26 WMEA-TV BIDDEFORD ME (LIC)	724,324	1,395 (0.2%) New Interference
26 KYW-DT PHILADELPHIA PA (CP)	9,266,772	318 (0.0%) New Interference
26 KYW-DT PHILADELPHIA PA (PLN)	9,266,772	5,106 (0.1%) New Interference
27 WTBY-DT POUGHKEEPSIE NY (CP)	2,061,089	8,215 (0.4%) New Interference
27 WTBY-DT POUGHKEEPSIE NY (PLN)	2,061,089	937 (0.0%) New Interference
27 WFXV-DT UTICA NY (PLN)	711,218	514 (0.1%) New Interference
27 WFXV-DT UTICA NY (APP)	711,218	10,262 (1.4%) New Interference
29 960724KU SCHENECTADY NY (APP)	1,156,021	664 (0.1%) New Interference

The proposed WTEN-DT operation does not cause calculated interference to any other analog or DTV station. Therefore, it is believed the proposal complies with the FCC's "de minimis" interference policy.

With respect to Class A TV station protection, the proposal has been evaluated according to the requirements of Section 73.613 of the FCC Rules. The analysis reveals predicted overlap to station WVBG-LP on channel 25 at Albany. OET-69 interference calculations indicate that new interference will be caused to less than 0.1% of the current service population, in excess of interference already caused by the pending WTEN-DT application (filed prior to the May 1, 2000 DTV/Class A maximization deadline). Furthermore, WVBG-LP does not have a Class A license application on file and is considered a low-power secondary operation. It is therefore believed that it WVBG-LP does not require protection as a Class A station would. No other Class A stations are potentially affected.

Environmental Considerations

The proposed WTEN-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The

radiation center for the proposed DTV antenna is located 139 meters above ground level. The maximum DTV ERP is 746 kW. The worst-case relative field value of 0.113 occurs at 74° downward (see Figure 2B). Therefore, the “worst-case” calculated power density at a point 2 meters above ground level will be 0.0157 mW/cm². This is less than 5% of the FCC's recommended limit of 0.36 mW/cm² for channel 26 for an “uncontrolled” environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this will be a multi-user site, an agreement will control site access. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed WTEN-DT operation appears to be otherwise categorically excluded from environmental processing.

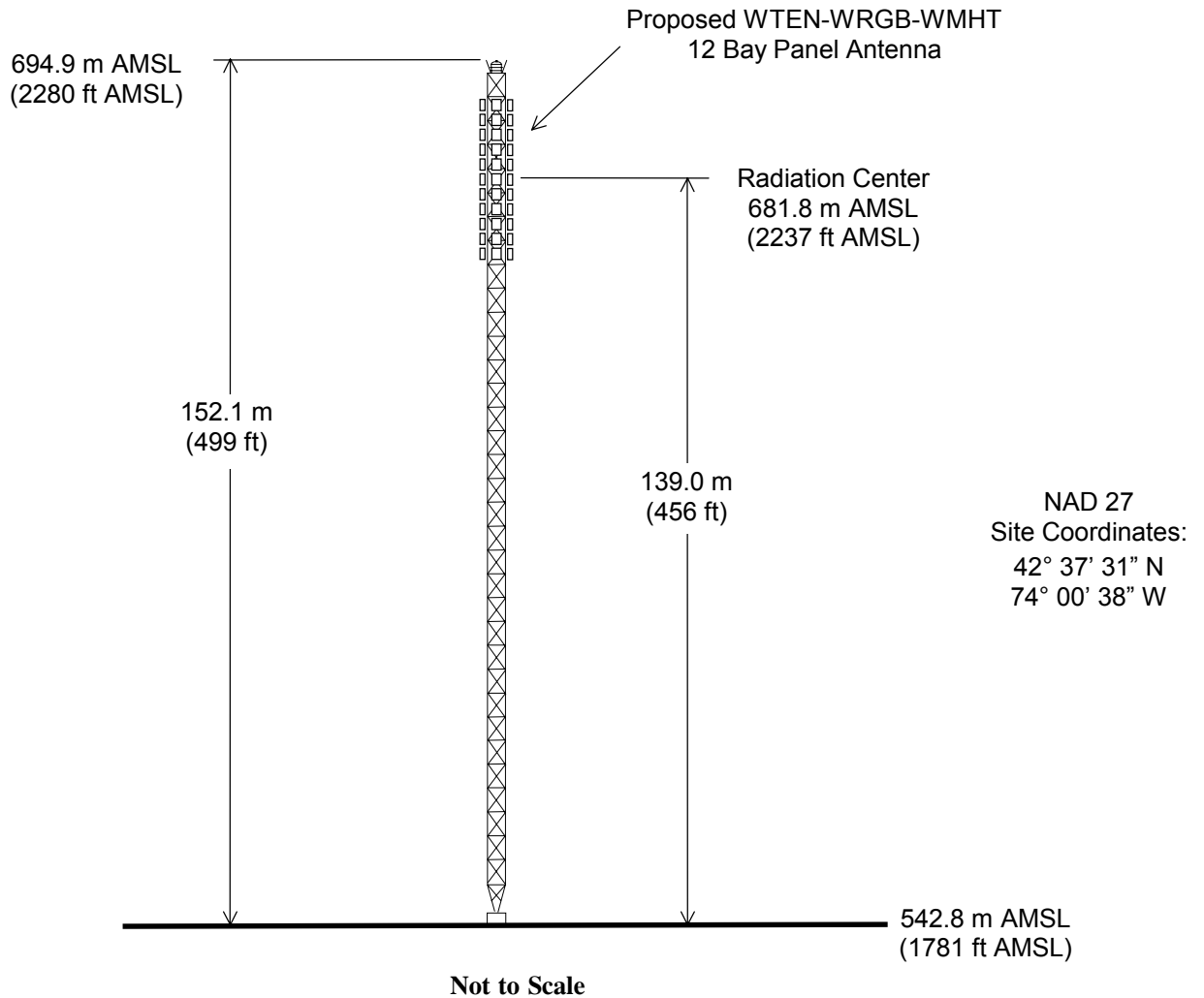
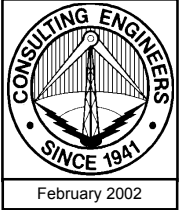
Jonathan N. Edwards

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(941) 329-6000

February 6, 2002

Figure 1

FCC Registration No. 1231728



ANTENNA AND SUPPORTING STRUCTURE

STATION WTEN-DT

ALBANY, NEW YORK

CH 26 746 KW 426 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Proposal Number **DCA-9245**

Date

Revision: **2**

Figure 2A

14-Jun-01

Call Letters

Channel **26**

Location

Albany, NY

Customer

Antenna Type

TUD-O5-12/60H-1-B

ELEVATION PATTERN

RMS Gain at Main Lobe **23.20 (13.65 dB)**

Beam Tilt

D26;
0.75 deg

RMS Gain at Horizontal **14.00 (11.46 dB)**

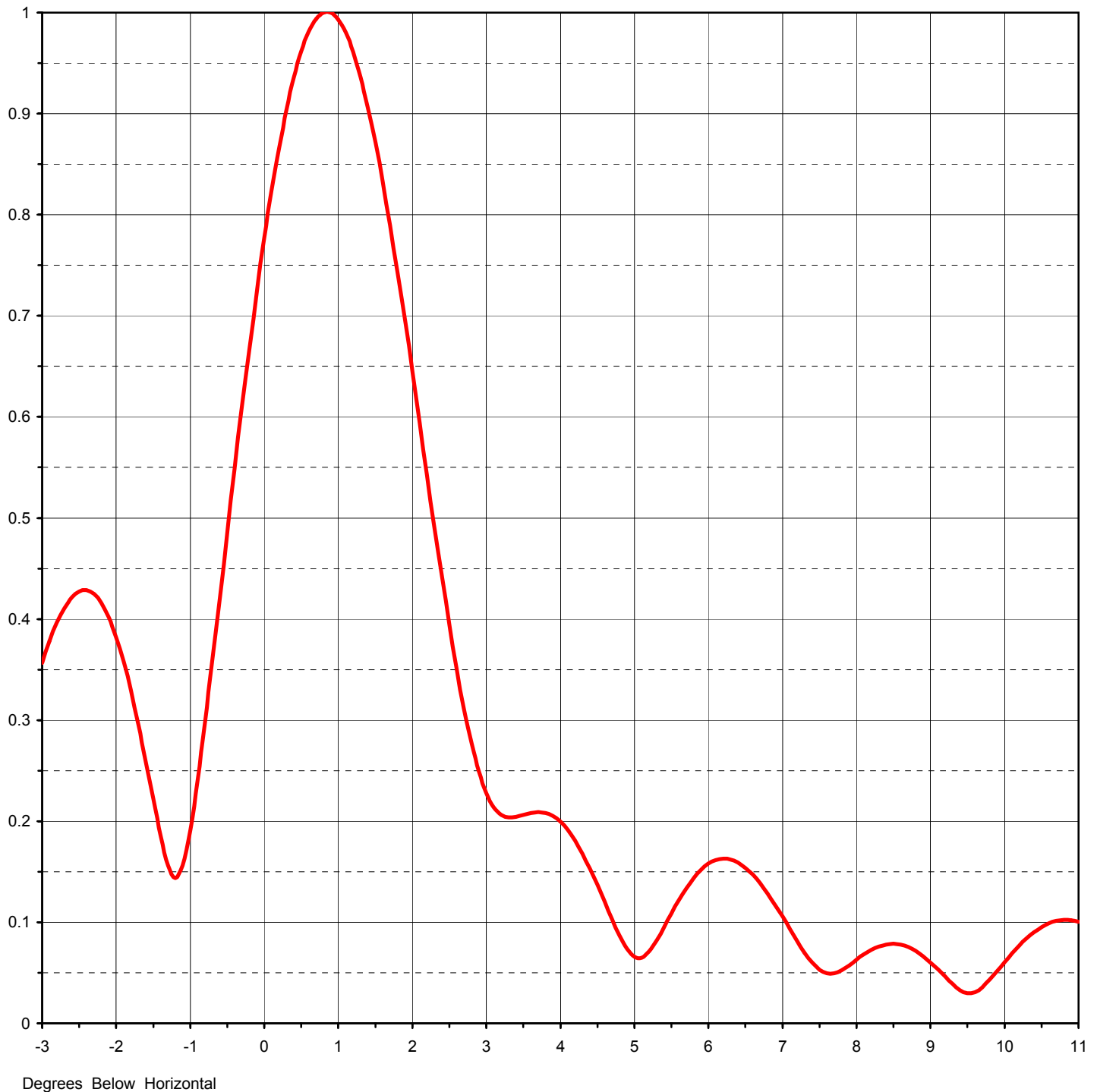
Frequency

545.00 MHz

Calculated / Measured **Calculated**

Drawing #

12U232075



Proposal Number **DCA-9245**
Date
Call Letters
Location
Customer
Antenna Type

Revision: **2**
14-Jun-01
Albany, NY

Figure 2B
Channel **26**

TUD-O5-12/60H-1-B

ELEVATION PATTERN

RMS Gain at Main Lobe **23.20 (13.65 dB)**
RMS Gain at Horizontal **14.00 (11.46 dB)**
Calculated / Measured **Calculated**

Beam Tilt **0.75 deg**
Frequency **545.00 MHz**
Drawing # **12U232075-90**

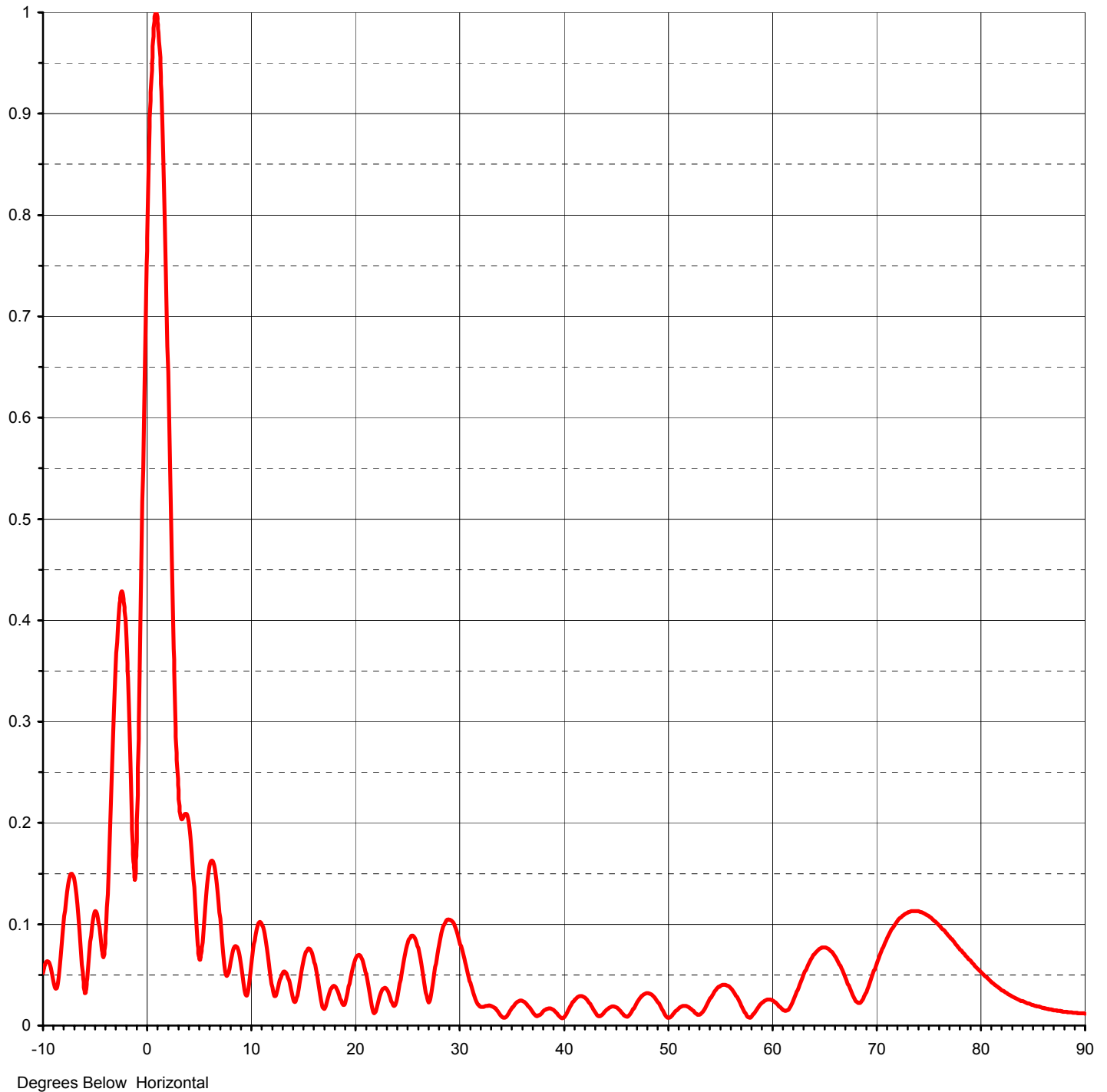
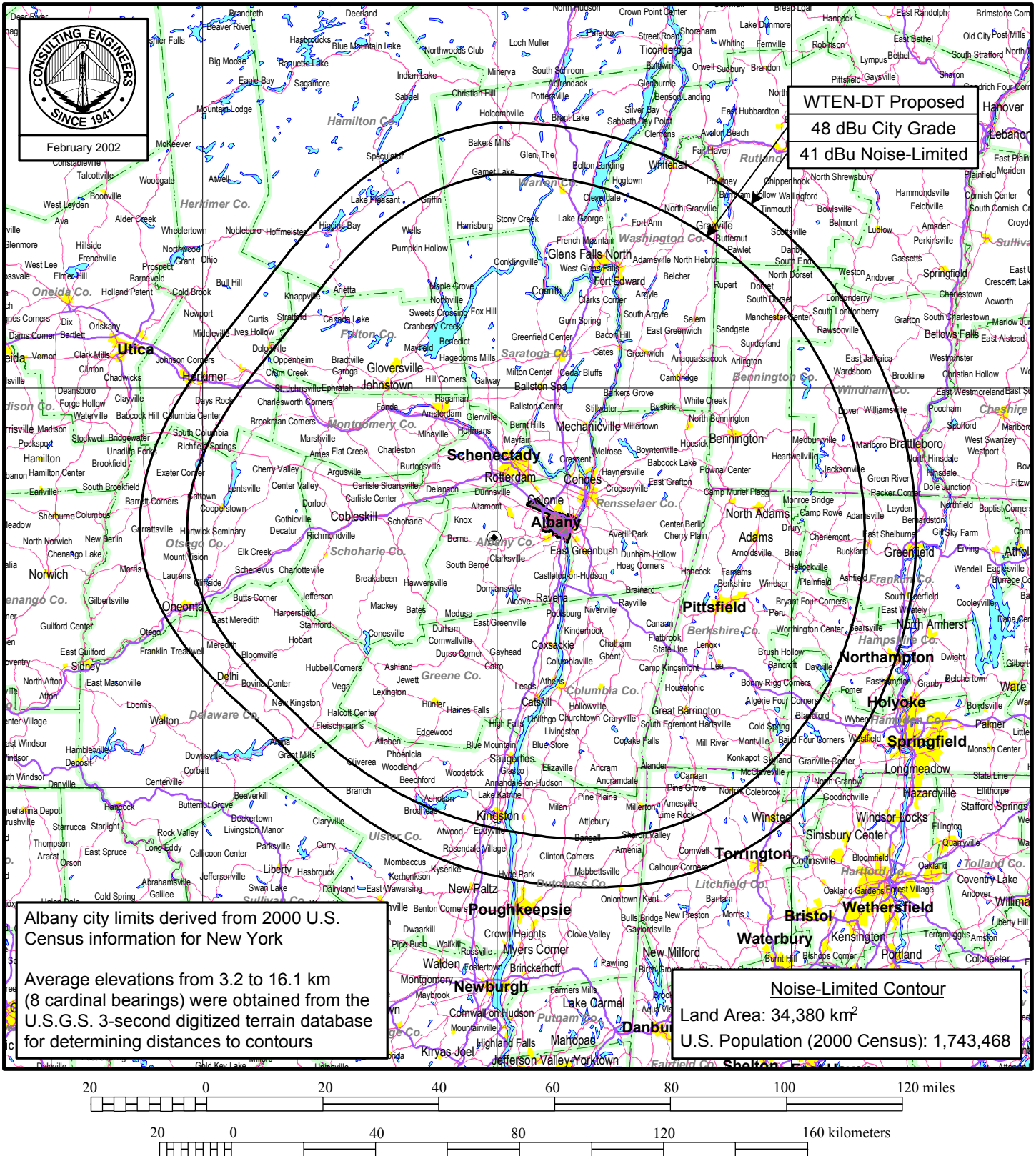


Figure 3

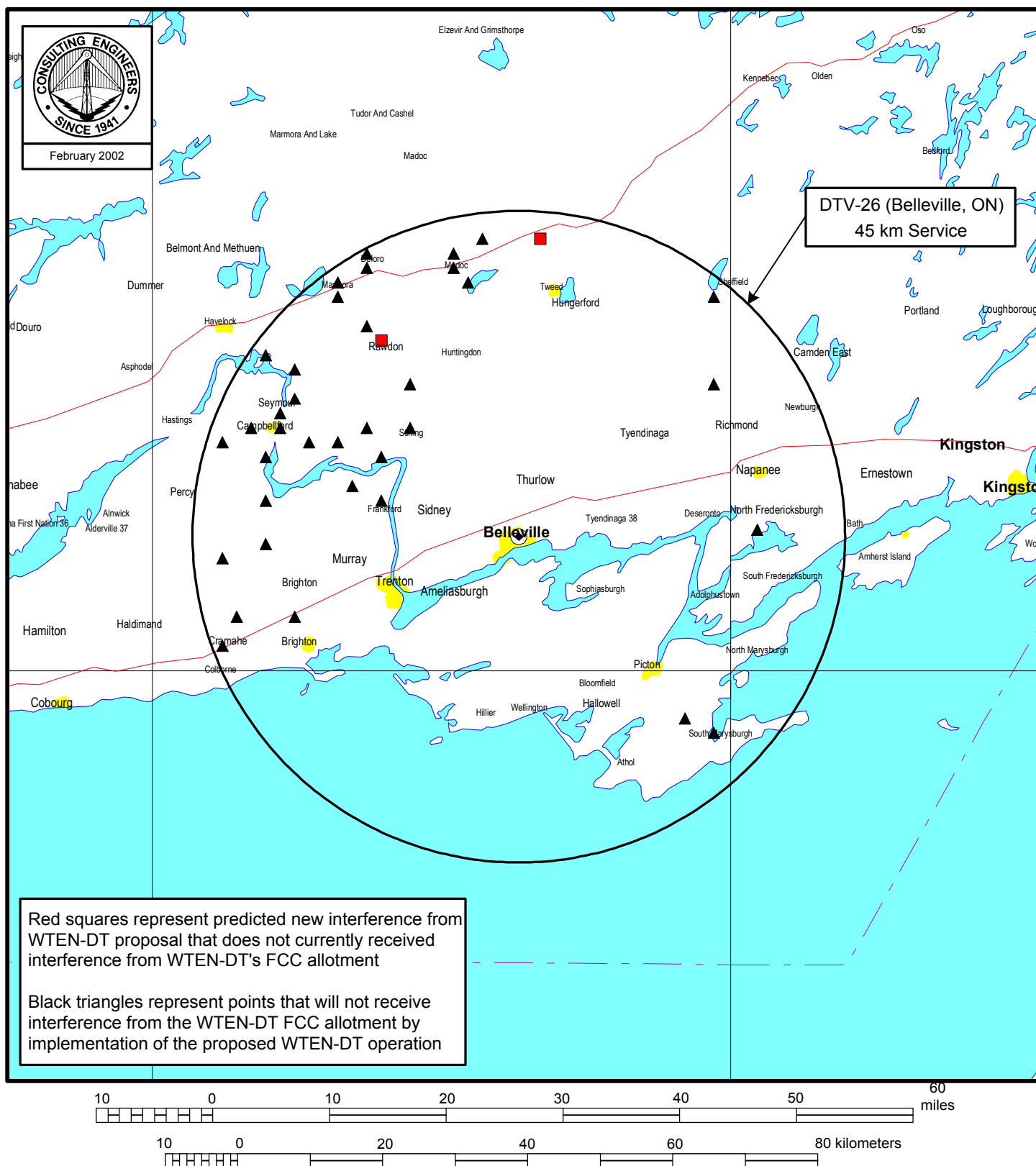


PREDICTED F(50,90) COVERAGE CONTOURS

STATION WTEN-DT
ALBANY, NEW YORK

CH 26 746 KW 426 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida



**POPULATED INTERFERENCE CELLS CAUSED
TO DTV-26 (BELLEVILLE) FROM PROPOSED WTEN-DT**

STATION WTEN-DT
ALBANY, NEW YORK
CH 26 746 KW 426 M
du Treil, Lundin & Rackley, Inc Sarasota, Florida

INTERFERENCE CAUSED TO BELLEVILLE DTV-26 FROM WTEN-DT

CELL SIZE : 2.00
Using DTV->DTV service parameters
Using circles for service area

CAN 44-10-00 077-22-00 26(N) 4.000 kW 248.7 m 90.0 % 39.0 dBu
BELLEVILLE ON
APP BPCDT19991027ABZ CLASS B
Calculated RCAMSL with HAAT of 150
%loc = 90.00 %time = 90.00

Area Pop
within Noise Limited Contour 6320.295 177287
not affected by terrain losses 6120.286 169961

WTENP 42-31-31 074-00-38 26(N) 746.0 kW-DA 681.8 m AMSL 90.0 % 39.0 dBu
ALBANY NY 21162 1290 DTVSERVICE: 1290000 NTSCSERVICE: 1230000
CLASS VU

D/U Baseline: 19.50
%loc = 10.00%time = 10

	Area	Pop
Interference	1564.07	21691 (12.8%)

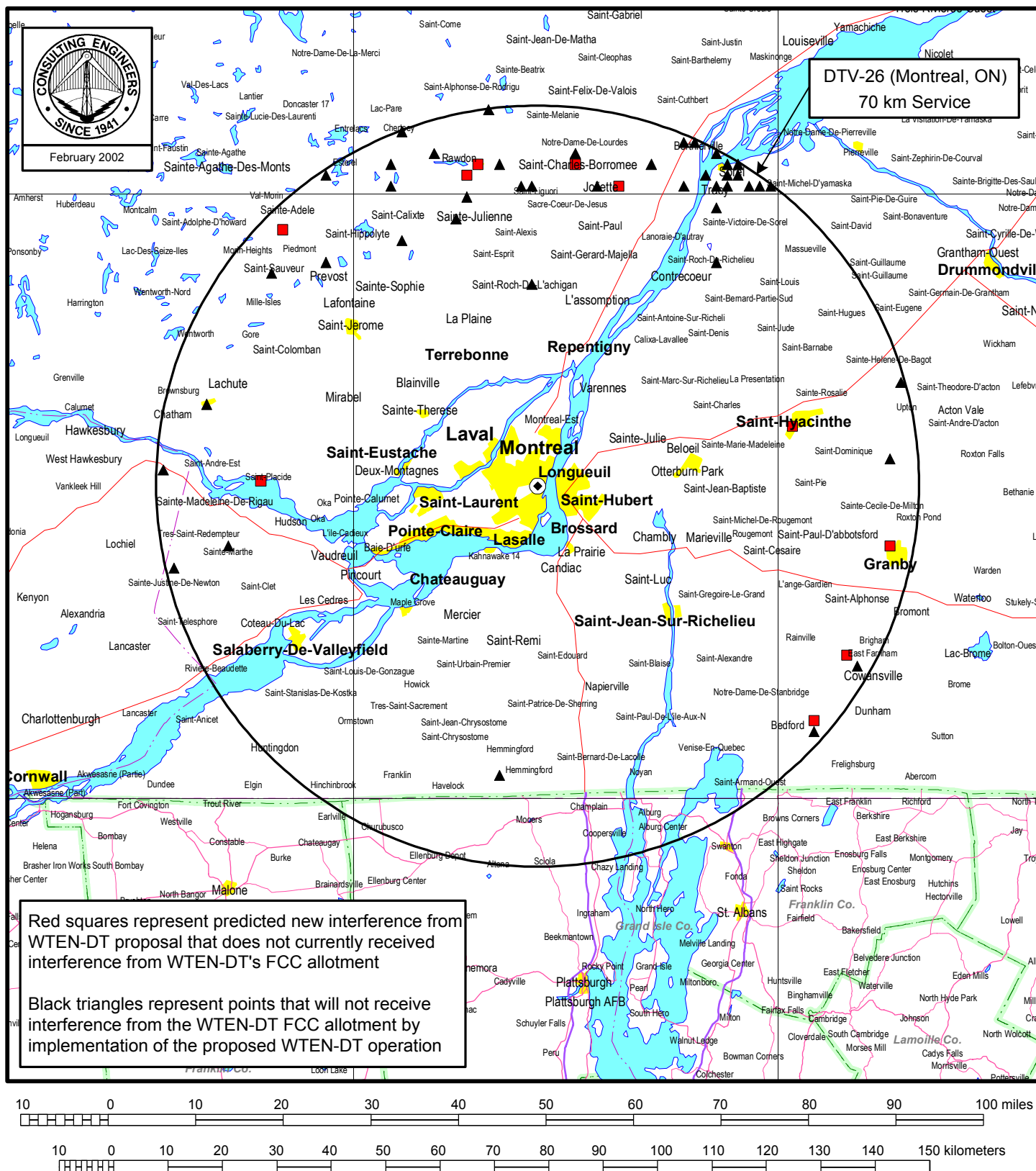
DWTEN 42-38-15 073-59-54 26(0) 1000.0 kW-DA 539 m AMSL 90.0 % 39.0 dBu
ALBANY NY 21162 1290 DTVSERVICE: 1290000 NTSCSERVICE: 1230000
DTVALT DTV ALLOTMENT CLASS VL
0.63 0.57 0.53 0.52 0.52 0.52 0.50 0.45 0.39 0.30 0.24 0.21
0.22 0.27 0.38 0.50 0.62 0.83 0.96 0.96 0.79 0.56 0.45 0.44
0.55 0.74 0.91 1.00 1.00 0.97 0.93 0.89 0.88 0.74 0.69 0.68
Ref Az: 0.0

D/U Baseline: 19.50
%loc = 10.00%time = 10

	Area	Pop
Interference	1496.07	20532 (12.1%)

lost to NTSC IX 0.00 0
lost to additional IX by DTV 1644.08 21691
total lost to DTV IX 1644.08 21691
lost to all IX 1644.08 21691

Total SERVICE 4476.21 148270



POPULATED INTERFERENCE CELLS CAUSED TO DTV-26 (MONTREAL) FROM PROPOSED WTEN-DT

STATION WTEN-DT
ALBANY, NEW YORK

CH 26 746 KW 426 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

INTERFERENCE CAUSED TO MONTREAL DTV-26 FROM WTEN-DT

CELL SIZE : 2.00

Using DTV->DTV service parameters

Using circles for service area

CAN 45-31-00 073-34-00 26(N) 75.0 kW 332.5 m 90.0 % 39.0 dBu
 MONTREAL(51) QU
 CANTAB CLASS C
 Calculated RCAMSL with HAAT of 300
 %loc = 90.00 %time = 90.00

	Area	Pop
within Noise Limited Contour	15426.26	3974381
not affected by terrain losses	14519.53	3928378

WTENP 42-31-31 074-00-38 26(N) 746.0 kW-DA 681.8 m AMSL 90.0 % 39.0 dBu
 ALBANY NY 21162 1290 DTVSERVICE: 1290000 NTSCSERVICE: 1230000
 APP CLASS VU

D/U Baseline: 19.50

%loc = 10.00%time = 10

	Area	Pop
Interference	994.60	79090 (2.0%)

DWTEN 42-38-15 073-59-54 26(0) 1000.0 kW-DA 539 m AMSL 90.0 % 39.0 dBu
 ALBANY NY 21162 1290 DTVSERVICE: 1290000 NTSCSERVICE: 1230000
 DTVALT DTV ALLOTMENT CLASS VL
 0.63 0.57 0.53 0.52 0.52 0.52 0.50 0.45 0.39 0.30 0.24 0.21
 0.22 0.27 0.38 0.50 0.62 0.83 0.96 0.96 0.79 0.56 0.45 0.44
 0.55 0.74 0.91 1.00 1.00 0.97 0.93 0.89 0.88 0.74 0.69 0.68
 Ref Az: 0.0

D/U Baseline: 19.50

%loc = 10.00%time = 10

	Area	Pop
Interference	866.78	60215 (1.5%)

lost to NTSC IX	0.00	0
lost to additional IX by DTV	1094.46	85786
total lost to DTV IX	1094.46	85786
lost to all IX	1094.46	85786
Total SERVICE	13425.08	3842592