

KMWE-LD MINOR MOD TO STATION LICENSE CH 17 15 KW DA
SAINT CLOUD, MINNESOTA
ENGINEERING NARRATIVE AND RF RADIATION ENVIRONMENTAL ANALYSIS
November 7, 2022

KMWE-LD is a licensed LPTV facility on CH 17 and authorized for LPTV DTV operation under file number 0000163947 on November 3, 2021. The site proposed herein is a site selected to maximize the efficient use of CH 17. The site is known as the First National Bank Building of St. Paul and located in St. Paul, Minnesota which was completed in 1931. Using Google Earth Professional the ground elevation is 760' (231.7 meters) AMSL. Based on historical records and data provided by the building the main roof of the structure is 400' (122 meters) AGL. A self-supporting tower designed to support a sign is located on the main roof and has a height of 100' (30.5 meters) bringing the total structure height with appurtenances to 500' (152.5 meters) AGL and 1260' (384.2 meters) AMSL. No FAA study data was found on the FAA OEAAA web site and the structure is not registered.

A grant of this application is believed to represent a significant public interest benefit in terms of population served. Population in the licensed 49 dBu F(50,90) noise limited contour contour is 120,153 persons, 2010 census data, while population in the proposed 49 dBu F(50,90) contour is 2,618,480 persons as seen on Figure 1 attached. The proposed site is located 46.8 kilometers from the licensed site and there is 49 dBu contour overlap as depicted on Figure 1 attached.

The proposed antenna system employs an Alive Telecom model ATC C1R UHF, 10 slot antenna, elliptically polarized system with 1.25 degrees of electrical beam tilt. The maximum relative field in the elevation pattern across the depression angle range of 15 to 90 degrees is less than 0.15 with a radiation center 127 meters above ground. Utilizing formula 10 OF OET Bulletin No. 65, Edition 97-01, a value F of 0.15 has been used to calculate the power density 2 meters above ground. The maximum power density is 0.94 uw/cm squared calculated for an ERP of 15,000 watts H. polarization and 4,500 watts V. polarization. This value is 0.29% of the Public Exposure MPE per section 1.1310. Based on this analysis it is believed that the proposed facility is in compliance with OET-65 Guidelines.

The applicant will reduce power or cease transmission as required to meet FCC OET-65 Guidelines.

The proposed structure is an existing site with access and power.

Attached is a copy of the TVStudy report and interference analysis for CH 17 based on the proposed 15 kW ERP and DA antenna described above with an orientation of 275 degrees. The .xml file has been uploaded in the application. As can be seen at the conclusion there is no impermissible ISIX and only 2.65% received interference.

It is believed that the proposed facility provides full protection to other television facilities.

REPORT

Study created: 2022.11.04 15:49:35

Study build station data: LMS TV 2022-11-03

Proposal: KMWE-LD D17 LD CP SAINT CLOUD, MN

File number: BLANK0000158970

Facility ID: 184637

Station data: User record

Record ID: 1176

Country: U.S.

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	K16BQ-D	D16+	LD	LIC	BRAINERD, MN	BLANK0000152329	174.2 km
No	K16BQ-D	N16+	TX	LIC	BRAINERD, MN	BLTT19880608IT	174.2
No	K16MA-D	D16	LD	LIC	FROST, MN	BLANK0000062831	165.3
No	K46FY-D	D16	LD	LIC	REDWOOD FALLS, MN	BLANK0000063425	154.5
Yes	KPXM-TV	D16	DT	LIC	ST. CLOUD, MN	BLANK0000054906	49.3
No	K16CG-D	D16	LD	LIC	ST. JAMES, MN	BLDTL20120625AAQ	151.5
No	K17MH-D	D17	LD	LIC	CEDAR FALLS, IA	BLANK0000177243	247.5
No	KWQC-TV	D17	DT	LIC	DAVENPORT, IA	BLANK0000097891	433.1
No	KDIT-CD	D17-	DC	LIC	Des Moines, IA	BLANK0000199021	349.0
No	KDIT-LD	D17	LD	LIC	FORT DODGE, IA	BLANK0000176977	226.9
No	K47OQ-D	D17	LD	LIC	ALEXANDRIA, MN	BLANK0000063269	214.0
No	K17OV-D	D17	LD	LIC	DULUTH, MN	BLANK0000197132	217.7
No	K17MX-D	D17	LD	LIC	FROST, MN	BLANK0000062750	165.3
No	K17MY-D	D17	LD	LIC	JACKSON, MN	BLANK0000064443	212.6
No	K17BV-D	D17	LD	LIC	REDWOOD FALLS, MN	BLDDT20120604AAY	154.5
No	K17MW-D	D17	LD	LIC	ST. JAMES, MN	BLANK0000064441	151.5
No	K17FE-D	D17+	LD	LIC	WADENA, MN	BLANK0000152352	222.0
No	K17FE-D	N17+	TX	LIC	WADENA, MN	BLTT20021223AAH	222.0
No	K17FA-D	D17	LD	LIC	WILLMAR, MN	BLDDT20100122ABO	155.2
No	KYNE-TV	D17	DT	LIC	OMAHA, NE	BLANK0000123806	469.1
No	KDSD-TV	D17	DT	LIC	ABERDEEN, SD	BLDDT20110816AAM	364.0
No	K17NF-D	D17+	LD	LIC	BROOKINGS, SD	BLANK0000059096	298.5
No	K17NF-D	D17+	LD	CP	BROOKINGS, SD	BLANK0000067617	298.5
No	NEW	D17	LD	CP	SIOUX FALLS, SD	BNPDTL20090825AWE	351.8

No	NEW	D17	LD	APP	SIOUX FALLS, SD	BLANK0000201121	344.4
Yes	WEAU	D17	DT	LIC	EAU CLAIRE, WI	BLANK0000120880	170.9
No	WGBD-LD	D17	LD	LIC	GREEN BAY, WI	BLANK0000068358	407.4
No	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	166.3
No	KQDS-TV	D18	DT	LIC	DULUTH, MN	BLANK0000120640	218.7
No	K18GF-D	D18	LD	LIC	LITTLE FALLS, MN	BLDTL20120523ADD	150.7
Yes	KHVM-LD	D18	LD	CP	MINNEAPOLIS, MN	BLANK0000197038	15.1
Yes	KHVM-LD	D18	LD	APP	MINNEAPOLIS, MN	BLANK0000202614	44.7
No	K18IR-D	D18	LD	LIC	OLIVIA, MN	BLDTT20120213ABO	142.0
No	K18NE-D	D18	LD	LIC	ST. JAMES, MN	BLANK0000088224	151.5
No	WBDL-LD	D18	LD	LIC	ELK MOUND, WI	BLANK0000168884	129.1
No	KKTW-LD	N19-	TX	LIC	Minneapolis, MN	BLTTL19870921IE	109.4

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D17

Mask: Full Service

Latitude: 44 56 47.80 N (NAD83)

Longitude: 93 5 28.50 W

Height AMSL: 358.7 m

HAAT: 0.0 m

Peak ERP: 15.0 kW

Antenna: ATC C1R 275 DEG 275.0 deg

Elev Pattn: ATC 10 SLOT BCE 1.25 DEG

Elec Tilt: 1.25

49.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	14.0 kW	87.2 m	43.0 km
45.0	2.13	69.3	31.1
90.0	0.190	70.5	19.1
135.0	0.513	120.2	29.7
180.0	11.7	69.4	39.5
225.0	14.0	138.1	47.8
270.0	12.2	91.9	42.9
315.0	13.1	71.2	40.3

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m Computed HAAT: 90 m

Distance to Canadian border: 363.4 km

Distance to Mexican border: 1837.1 km

Conditions at FCC monitoring station: Grand Island NE

Bearing: 226.0 degrees Distance: 623.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 246.0 degrees Distance: 1125.8 km

No land mobile station failures found

Proposal is not within the Offshore Radio Service protected area

Study cell size: 0.50 km

Profile point spacing: 0.10 km

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

Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal BLANK0000158970 ----

Proposal receives 2.65% interference from scenario 1
**MX with BLANK0000202614 APP scenario 2, 2.65% interference received

ISIX

tvstudy v2.2.5 (4uoc83)
Database: 127.0.0.1, Study: BLANK0000158970 #1606, Model: Longley-Rice
Start: 2022.11.04 15:49:35

Study created: 2022.11.04 15:49:35

Study build station data: LMS TV 2022-11-03

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File number: BLANK0000158970
Facility ID: 184637
Station data: User record
Record ID: 1176
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No	K46FY-D	D16	LD	LIC	REDWOOD FALLS, MN	BLANK0000063425	154.5
Yes	KPXM-TV	D16	DT	LIC	ST. CLOUD, MN	BLANK0000054906	49.3
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No	K17NF-D	D17+	LD	LIC	BROOKINGS, SD	BLANK0000059096	298.5
No	K17NF-D	D17+	LD	CP	BROOKINGS, SD	BLANK0000067617	298.5
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No	NEW	D17	LD	APP	SIOUX FALLS, SD	BLANK0000201121	344.4
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No	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	166.3
No	KQDS-TV	D18	DT	LIC	DULUTH, MN	BLANK0000120640	218.7
No	K18GF-D	D18	LD	LIC	LITTLE FALLS, MN	BLDTL20120523ADD	150.7
Yes	KHVM-LD	D18	LD	CP	MINNEAPOLIS, MN	BLANK0000197038	15.1
Yes	KHVM-LD	D18	LD	APP	MINNEAPOLIS, MN	BLANK0000202614	44.7
No	K18IR-D	D18	LD	LIC	OLIVIA, MN	BLDTT20120213ABO	142.0

No	K18NE-D	D18	LD	LIC	ST. JAMES, MN	BLANK0000088224	151.5
No	WBDL-LD	D18	LD	LIC	ELK MOUND, WI	BLANK0000168884	129.1
No	KKTW-LD	N19-	TX	LIC	Minneapolis, MN	BLTTTL198709211E	109.4

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D17
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HAAT: 0.0 m
Peak ERP: 15.0 kW
Antenna: ATC C1R 275 DEG 275.0 deg
Elev Pattn: ATC 10 SLOT BCE 1.25 DEG
Elec Tilt: 1.25

49.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	14.0 kW	87.2 m	43.0 km
45.0	2.13	69.3	31.1
90.0	0.190	70.5	19.1
135.0	0.513	120.2	29.7
180.0	11.7	69.4	39.5
225.0	14.0	138.1	47.8
270.0	12.2	91.9	42.9
315.0	13.1	71.2	40.3

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Study cell size: 0.50 km

Profile point spacing: 0.10 km

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

Maximum new IX to LPTV: 2.00%

Interference to BLANK0000054906 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KPXM-TV	D16	DT	LIC	ST. CLOUD, MN	BLANK0000054906	
Undesireds:	KMWE-LD	D17	LD	CP	SAINT CLOUD, MN	BLANK0000158970	49.3 km
	KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	390.2
	WJFW-TV	D16	DT	LIC	RHINELANDER, WI	BLCDT20070222AOP	328.0
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
23059.0 3,506,796		22983.1 3,504,248		22980.6 3,504,248		22971.1 3,493,062	0.04 0.32
Undesired		Total IX		Unique IX, before		Unique IX, after	
KMWE-LD D17 LD CP		9.4 11,186		9.4 11,186			
KDSM-TV D16 DT LIC		1.5 0		1.5 0			
WJFW-TV D16 DT LIC		1.0 0		1.0 0			

Interference to BLANK0000120880 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WEAU	D17	DT	LIC	EAU CLAIRE, WI	BLANK0000120880	
Undesireds:	KMWE-LD	D17	LD	CP	SAINT CLOUD, MN	BLANK0000158970	170.9 km
	WJFW-TV	D16	DT	LIC	RHINELANDER, WI	BLCDT20070222AOP	177.0
	KWQC-TV	D17	DT	LIC	DAVENPORT, IA	BLANK0000097891	348.7
	WBME-CD	D17	DC	LIC	MILWAUKEE, WI	BLANK0000086894	297.8
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
47513.0 1,007,568		46631.0 957,587		46247.1 955,661		46202.6 953,522	0.10 0.22
Undesired		Total IX		Unique IX, before		Unique IX, after	
KMWE-LD D17 LD CP		44.5 2,139		44.5 2,139			
WJFW-TV D16 DT LIC		342.6 602		342.6 602			
KWQC-TV D17 DT LIC		39.9 1,288		37.2 1,233			
WBME-CD D17 DC LIC		4.2 91		1.5 36			

Interference to BLANK0000197038 CP scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KHVM-LD	D18	LD	CP	MINNEAPOLIS, MN	BLANK0000197038	
Undesireds:	KMWE-LD	D17	LD	CP	SAINT CLOUD, MN	BLANK0000158970	15.1 km
	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	180.9
	KQDS-TV	D18	DT	LIC	DULUTH, MN	BLANK0000120640	208.5
	WBDL-LD	D18	LD	LIC	ELK MOUND, WI	BLANK0000168884	137.9
	KKTW-LD	D19	LD	LIC	Minneapolis, MN	BLANK0000156376	22.9
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
2840.2 2,080,495		2823.8 2,076,000		2787.7 2,068,577		2767.4 2,043,603	0.73 1.21
Undesired		Total IX		Unique IX, before		Unique IX, after	
KMWE-LD D17 LD CP		22.4 25,519		20.4 24,974			
KYIN D18 DT LIC		2.0 0		1.2 0			
KQDS-TV D18 DT LIC		12.7 2,545		11.7 2,545			

WBDL-LD D18 LD LIC	0.5	0	0.2	0	0.2	0
KKTW-LD D19 LD LIC	22.1	4,878	21.8	4,878	21.8	4,878

Interference to BLANK0000197038 CP scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KHVM-LD	D18	LD	CP	MINNEAPOLIS, MN	BLANK0000197038	
Undesireds:	KMWE-LD	D17	LD	CP	SAINT CLOUD, MN	BLANK0000158970	15.1 km
	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	180.9
	KQDS-TV	D18	DT	LIC	DULUTH, MN	BLANK0000120640	208.5
	WBDL-LD	D18	LD	LIC	ELK MOUND, WI	BLANK0000168884	137.9
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
2840.2		2,080,495		2823.8		2,076,000	0.73 1.20
				2809.6		2,073,455	
Undesired		Total IX		Unique IX, before		Unique IX, after	
KMWE-LD D17 LD CP		22.4		25,519		20.4	24,974
KYIN D18 DT LIC		2.0		0		1.2	0
KQDS-TV D18 DT LIC		12.7		2,545		10.0	2,000
WBDL-LD D18 LD LIC		0.5		0		0.2	0

Interference to BLANK0000202614 APP scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KHVM-LD	D18	LD	APP	MINNEAPOLIS, MN	BLANK0000202614	
Undesireds:	KMWE-LD	D17	LD	CP	SAINT CLOUD, MN	BLANK0000158970	44.7 km
	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	185.6
	KQDS-TV	D18	DT	LIC	DULUTH, MN	BLANK0000120640	231.9
	KKTW-LD	D19	LD	LIC	Minneapolis, MN	BLANK0000156376	16.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
1883.6		1,487,971		1863.2		1,484,308	0.39 0.65
				1857.5		1,480,631	
Undesired		Total IX		Unique IX, before		Unique IX, after	
KMWE-LD D17 LD CP		10.4		12,763		7.2	9,673
KYIN D18 DT LIC		3.5		2,678		1.0	483
KQDS-TV D18 DT LIC		4.7		3,194		1.0	2

Interference to proposal scenario 1
2.65% interference received

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KMWE-LD	D17	LD	CP	SAINT CLOUD, MN	BLANK0000158970	
Undesireds:	KPXM-TV	D16	DT	LIC	ST. CLOUD, MN	BLANK0000054906	49.3 km
	K17FE-D	D17+	LD	LIC	WADENA, MN	BLANK0000152352	222.0
	K17NF-D	D17+	LD	LIC	BROOKINGS, SD	BLANK0000059096	298.5
	WEAU	D17	DT	LIC	EAU CLAIRE, WI	BLANK0000120880	170.9
	KHVM-LD	D18	LD	CP	MINNEAPOLIS, MN	BLANK0000197038	15.1
Service area		Terrain-limited		IX-free		Percent IX	
4433.7		2,618,109		4423.0		2,617,174	5.62 2.65
				4174.6		2,547,859	

Undesired		Total IX		Unique IX	Prct Unique IX
KPXM-TV D16 DT LIC	71.5	22,335	48.2	20,323	1.09 0.78
WEAU D17 DT LIC	200.2	48,992	176.9	46,980	4.00 1.80

Interference to proposal scenario 2

**MX: 2.65% interference received

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KMWE-LD	D17	LD	CP	SAINT CLOUD, MN	BLANK0000158970	
Undesireds:	KPXM-TV	D16	DT	LIC	ST. CLOUD, MN	BLANK0000054906	49.3 km
	K17FE-D	D17+	LD	LIC	WADENA, MN	BLANK0000152352	222.0
	K17NF-D	D17+	LD	LIC	BROOKINGS, SD	BLANK0000059096	298.5
	WEAU	D17	DT	LIC	EAU CLAIRE, WI	BLANK0000120880	170.9
	KHVM-LD	D18	LD	APP	MINNEAPOLIS, MN	BLANK0000202614	44.7


	Service area		Terrain-limited		IX-free		Percent IX
4433.7	2,618,109	4423.0	2,617,174	4173.9	2,547,821	5.63	2.65

Undesired		Total IX		Unique IX	Prct Unique IX
KPXM-TV D16 DT LIC	71.5	22,335	48.0	20,275	1.08 0.77
WEAU D17 DT LIC	200.2	48,992	170.2	46,357	3.85 1.77
KHVM-LD D18 LD APP	9.2	709	0.7	38	0.02 0.00

CONCLUSION

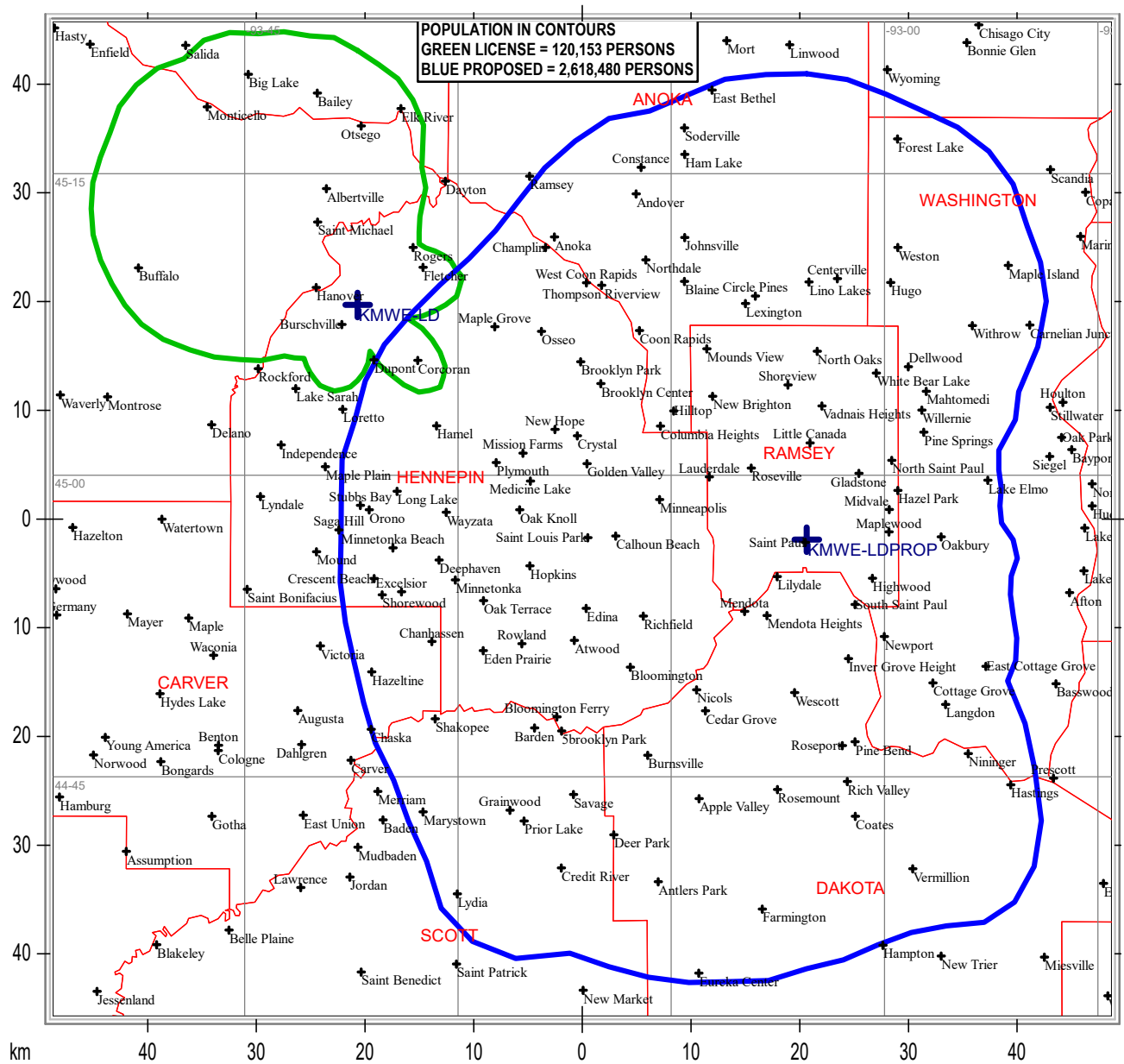
Based on the information supplied herein, and accompanying application for construction permit, it is believed that the proposed facilities meet all applicable FCC requirements for construction permit.

The foregoing was prepared on behalf of SagamoreHill of Minneapolis, LLC by Clarence M. Beverage of Communications Technologies, Inc., Medford, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The undersigned certifies, under penalty of perjury, that the statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.

A handwritten signature in black ink, appearing to read "Clarence M. Beverage".

Clarence M. Beverage
for Communications Technologies, Inc.
Medford, New Jersey
November 7, 2022

KMWE-LD MINOR MOD TO LICENSED FACILITY 15 kW DA @ 358.7 M AMSL



Communications Technologies, Inc. Medford, New Jersey