

FI 181463 K20NF-D  
Seattle, WA

Minor Modification of License: Change location to ASR 1033248, increase ERP, change antenna make and model, reduce RGCAMSL. This is a controlled access site. Applicant will work with other parties as needed to reduce exposure. No new construction.

tvstudy v2.2.5 (4uoc83)  
Database: localhost, Study: Ch 20 ASR 1033248, Model: Longley-Rice  
Start: 2023.03.22 10:43:57

Study created: 2023.03.22 10:43:57

Study build station data: LMS TV 2023-03-19

Proposal: K20NF-D D20 LD LIC SEATTLE, WA  
File number: Ch 20 ASR 1033248  
Facility ID: 181463  
Station data: User record  
Record ID: 804  
Country: U.S.

Build options:  
Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KBCB	D19	DT	LIC	BELLINGHAM, WA	BLANK0000189329	124.7 km
Yes	KCKA	D19	DT	CP	CENTRALIA, WA	BLANK0000035737	130.9
Yes	KCKA	D19	DT	LIC	CENTRALIA, WA	BLDTE20101217ABA	130.9
No	K19JX-D	D19	LD	LIC	YAKIMA, WA	BLDTL20141016ADC	181.6
No	K20DD-D	D20	LD	LIC	ALBANY, ETC., OR	BLDTL20120524AIN	349.4
No	KQRE-LD	D20	LD	LIC	BEND, OR	BLANK0000189768	368.4
No	K20EH-D	D20	LD	LIC	HOOD RIVER, OR	BLDTL20130311AAW	215.5
No	K40FM-D	D20	LD	LIC	MILTON-FREEWATER, OR	BLANK0000063052	366.6
No	DDK20ES	N20z	TX	APP	PENDLETON, ETC., OR	BLTTL19960301JC	353.0
No	KOXI-CD	D20	DC	LIC	PORTLAND, OR	BLANK0000131008	235.0
No	K20HT-D	D20	LD	LIC	ROCKAWAY BEACH, OR	BLDTT20120514ABZ	242.4
No	K20JL-D	D20	LD	LIC	ELLENSBURG, ETC., WA	BLDTT20090506ACI	162.4
Yes	K20NL-D	D20	LD	LIC	GRAYS RIVER, LEBAM, WA	BLANK0000064254	159.1
No	K20KG-D	D20	LD	LIC	PASCO, WA	BLDTL20140224ABY	273.8
No	KREM	D20	DT	LIC	SPOKANE, WA	BLCDT20050623ABG	375.4
No	K20LQ-D	D20	LD	LIC	YAKIMA, WA	BLDTT20141016ADB	181.6
No	KPTV	D21	DT	CP	PORTLAND, OR	BLANK0000185110	235.1
No	DK51AE	D21-	LD	APP	MONITOR, ETC., WA	BLANK0000054486	140.6
Yes	KTBW-TV	D21	DT	LIC	TACOMA, WA	BLANK0000087359	37.2
No	KYVE	D21	DT	LIC	YAKIMA, WA	BLDTE20030910ACL	181.7

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D20  
Mask: Full Service  
Latitude: 47 36 55.00 N (NAD83)  
Longitude: 122 18 33.00 W  
Height AMSL: 245.8 m  
HAAT: 0.0 m  
Peak ERP: 15.0 kW  
Antenna: K20NF Scala Pattern 180.0 deg  
Elev Pattn: Generic

49.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.101 kW	158.1 m	23.6 km
45.0	0.074	215.6	25.1
90.0	0.094	194.9	25.3
135.0	3.30	201.7	44.1

180.0	15.0	183.2	50.7
225.0	3.31	227.3	45.5
270.0	0.094	241.9	27.6
315.0	0.074	230.9	25.9

Database HAAT does not agree with computed HAAT  
 Database HAAT: 0 m    Computed HAAT: 207 m

Proposal 24.36 dBu contour does not cross Canadian border  
 Distance to Canadian border: 102.1 km

Distance to Mexican border: 1719.2 km

Conditions at FCC monitoring station: Ferndale WA  
 Bearing: 353.1 degrees    Distance: 150.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
 Bearing: 115.1 degrees    Distance: 1593.2 km

No land mobile station failures found

Study cell size: 1.00 km  
 Profile point spacing: 1.00 km

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

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 Interference to BLANK0000035737 CP scenario 1

Distance	Call	Chan	Svc	Status	City, State	File Number	
Desired:	KCKA	D19	DT	CP	CENTRALIA, WA	BLANK0000035737	
Undesireds:	K20NF-D	D20	LD	LIC	SEATTLE, WA	Ch 20 ASR 1033248	130.9
km	KBCB	D19	DT	LIC	BELLINGHAM, WA	BLANK0000189329	236.7
	KOXI-CD	D20	DC	LIC	PORTLAND, OR	BLANK0000131008	117.2
	Service area			Terrain-limited	IX-free, before	IX-free, after	Percent
New IX	25636.4	1,201,666	19670.5	1,008,718	18779.4	820,340	18779.4    820,340    0.00
0.00							
Undesired				Total IX	Unique IX, before	Unique IX, after	
K20NF-D D20 LD LIC		2.0		0		0.0    0	
KBCB D19 DT LIC		755.3		179,837	754.3    179,837	752.2    179,837	
KOXI-CD D20 DC LIC		136.8		8,541	135.8    8,541	135.8    8,541	

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Interference to BLEDT20101217ABA LIC scenario 1

Distance	Call	Chan	Svc	Status	City, State	File Number	
Desired:	KCKA	D19	DT	LIC	CENTRALIA, WA	BLEDT20101217ABA	
Undesireds:	K20NF-D	D20	LD	LIC	SEATTLE, WA	Ch 20 ASR 1033248	130.9
km	KPIC	D19	DT	LIC	ROSEBURG, OR	BLCDT20120423ABP	369.5
	KBCB	D19	DT	LIC	BELLINGHAM, WA	BLANK0000189329	236.7
	KOXI-CD	D20	DC	LIC	PORTLAND, OR	BLANK0000131008	117.2
	Service area			Terrain-limited	IX-free, before	IX-free, after	Percent
New IX	23068.9	951,666	17503.2	798,377	16713.9	642,230	16712.9    642,230    0.01
0.00							

Undesired		Total IX	Unique IX, before	Unique IX, after
K20NF-D D20 LD LIC	13.0	0		1.0
KPIC D19 DT LIC	1.0	0	0.0	0
KBCB D19 DT LIC	689.7	147,323	689.7	147,323
KOXI-CD D20 DC LIC	99.6	8,824	98.6	8,824

Interference to BLANK0000064254 LIC scenario 1

Distance	Call	Chan	Svc	Status	City, State	File Number
Desired:	K20NL-D	D20	LD	LIC	GRAYS RIVER, LEBAM, WA	BLANK0000064254
Undesireds:	K20NF-D	D20	LD	LIC	SEATTLE, WA	Ch 20 ASR 1033248
km	KCKA	D19	DT	CP	CENTRALIA, WA	BLANK0000035737
	KOXI-CD	D20	DC	LIC	PORTLAND, OR	BLANK0000131008
	KPTV	D21	DT	CP	PORTLAND, OR	BLANK0000185110
	K21DE-D	D21	LD	LIC	SEASIDE-ASTORIA, OR	BLDTL20130415ACG

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent
New IX				
5233.4	37,466	4142.4	31,901	3978.8
0.14		31,055	3973.7	31,010
				0.13

Undesired		Total IX	Unique IX, before	Unique IX, after
K20NF-D D20 LD LIC	13.1	45		5.0
KCKA D19 DT CP	16.1	0	14.1	0
KOXI-CD D20 DC LIC	28.3	22	24.3	22
KPTV D21 DT CP	1.0	0	0.0	0
K21DE-D D21 LD LIC	124.3	824	120.2	824

Interference to BLANK0000064254 LIC scenario 2

Distance	Call	Chan	Svc	Status	City, State	File Number
Desired:	K20NL-D	D20	LD	LIC	GRAYS RIVER, LEBAM, WA	BLANK0000064254
Undesireds:	K20NF-D	D20	LD	LIC	SEATTLE, WA	Ch 20 ASR 1033248
km	KCKA	D19	DT	LIC	CENTRALIA, WA	BLEDT20101217ABA
	KOXI-CD	D20	DC	LIC	PORTLAND, OR	BLANK0000131008
	KPTV	D21	DT	CP	PORTLAND, OR	BLANK0000185110
	K21DE-D	D21	LD	LIC	SEASIDE-ASTORIA, OR	BLDTL20130415ACG

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent
New IX				
5233.4	37,466	4142.4	31,901	3984.8
0.14		31,055	3978.8	31,010
				0.15

Undesired		Total IX	Unique IX, before	Unique IX, after
K20NF-D D20 LD LIC	13.1	45		6.0
KCKA D19 DT LIC	10.1	0	8.1	0
KOXI-CD D20 DC LIC	28.3	22	24.3	22
KPTV D21 DT CP	1.0	0	0.0	0
K21DE-D D21 LD LIC	124.3	824	120.2	824

Interference to BLANK0000087359 LIC scenario 1

Distance	Call	Chan	Svc	Status	City, State	File Number
Desired:	KTBW-TV	D21	DT	LIC	TACOMA, WA	BLANK0000087359
Undesireds:	K20NF-D	D20	LD	LIC	SEATTLE, WA	Ch 20 ASR 1033248
km	KPTV	D21	DT	CP	PORTLAND, OR	BLANK0000185110
	KYVE	D21	DT	LIC	YAKIMA, WA	BLEDT20030910ACL

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent
New IX									
25256.4	4,203,211	22030.4	4,113,351	21792.5	4,095,108	21778.4	4,091,671		0.06
0.08									
18.3	0	0.0	0	0.0	0	0.0	0		0.00
0.00	(in Canada)								
Undesired			Total IX		Unique IX, before		Unique IX, after		
K20NF-D D20 LD LIC		14.1	3,437			14.1	3,437		
KPTV D21 DT CP		236.8	18,243		236.8	18,243	236.8	18,243	
KYVE D21 DT LIC		1.0	0		1.0	0	1.0	0	

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Interference to BLANK0000087359 LIC scenario 2

Distance	Call	Chan	Svc	Status	City, State	File Number	
Desired:	KTBW-TV	D21	DT	LIC	TACOMA, WA	BLANK0000087359	
Undesireds:	K20NF-D	D20	LD	LIC	SEATTLE, WA	Ch 20 ASR 1033248	37.2
km	KPTV	D21	DT	BL	PORTLAND, OR	DTVBL50633	225.1
	KYVE	D21	DT	LIC	YAKIMA, WA	BLEDT20030910ACL	206.6

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent
New IX									
25256.4	4,203,211	22030.4	4,113,351	21791.5	4,095,108	21777.4	4,091,671		0.06
0.08									
18.3	0	0.0	0	0.0	0	0.0	0		0.00
0.00	(in Canada)								
Undesired			Total IX		Unique IX, before		Unique IX, after		
K20NF-D D20 LD LIC		14.1	3,437			14.1	3,437		
KPTV D21 DT BL		237.9	18,243		237.9	18,243	237.9	18,243	
KYVE D21 DT LIC		1.0	0		1.0	0	1.0	0	

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Interference to proposal scenario 1  
3.62% interference received

Distance	Call	Chan	Svc	Status	City, State	File Number	
Desired:	K20NF-D	D20	LD	LIC	SEATTLE, WA	Ch 20 ASR 1033248	
Undesireds:	KCKA	D19	DT	CP	CENTRALIA, WA	BLANK0000035737	130.9
km	K20NL-D	D20	LD	LIC	GRAYS RIVER, LEBAM, WA	BLANK0000064254	159.1
	KTBW-TV	D21	DT	LIC	TACOMA, WA	BLANK0000087359	37.2

	Service area		Terrain-limited		IX-free		Percent IX
	3799.1	2,569,084	3399.1	2,433,042	3172.6	2,344,962	6.66 3.62
Undesired			Total IX		Unique IX		Prct Unique IX
K20NL-D D20 LD LIC		2.0	3,699	0.0	0	0.00	0.00
KTBW-TV D21 DT LIC		226.5	88,080	224.5	84,381	6.60	3.47

**K20NF-D**

0000185919

Latitude: 47-37-54 N

Longitude: 122-21-03 W

ERP: 5.00 kW

Channel: 20

Frequency: 509.0 MHz

AMSL Height: 281.2 m

Elevation: 131.2 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 0.75

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

