NPR Auction Study

Spectrum Availability

“I want to Believe”

They’re out there!

Auction #37

- Auction #37 – FM CPs – 360+ channels
- FCC decides NCE can participate at same level as commercial applicants
- NPR files with Circuit Court for review
- Court rules: FCC violates Balanced Budget Act of 1997
- FCC requests comments on how to proceed

FCC's alternatives

- Exclude NCE stations from commercial auctions
- Allow NCEs to participate without specifying their "educational" structure
- Allocate a portion of the auction channels for NCE use – 50% rule proposed

Purposes of Study

- Determine whether 50% rule would benefit public radio by providing more spectrum opportunities
- Get a better understanding of NCE channel availability
- Get a better understanding of commercial channel availability

Range of Study

- 25 auction markets were selected by NPR for study
- Markets selected were representative of bedroom and rural
- Classes ranged from A to C1
- Charge was to identify markets where a 50% coverage area and population match could be made using NCE or commercial channels

NPR List

Market	State	City	Channel	Class	Latitude				Longitude				Units	MOB	Payment
FM24	AZ	YARNELL	258	A	34	13	18	N	112	44	48	W	5,000	$5,000	$5,000
FM25	CA	ALTURAS	297	C	41	29	34	N	120	31	37	W	25,000	$25,000	$25,000
FM44	CO	CARBONDALE	244	A	39	25	30	N	107	22	43	W	25,000	$25,000	$25,000
FM48	CO	DOVE CREEK	273	C3	37	45	54	N	108	54	18	W	2,500	$2,500	$2,500
FM68	FL	PERRY	228	A	30	7	0	N	83	34	26	W	15,000	$15,000	$15,000
FM93	IA	ROCKFORD	225	A	43	1	55	N	92	57	53	W	50,000	$50,000	$50,000
FM105	ID	TWIN FALLS	269	A	42	33	42	N	114	28	12	W	70,000	$70,000	$70,000
FM114	IL	WATSEKA	240	A	40	48	0	N	87	47	15	W	25,000	$25,000	$25,000
FM124	KS	KIOWA	252	C1	37	1	0	N	98	29	12	W	50,000	$50,000	$50,000
FM150	MI	REPUBLIC	244	A	46	26	9	N	88	7	12	W	20,000	$20,000	$20,000
FM159	MS	FRIARS POINT	254	A	34	24	9	N	90	38	51	W	50,000	$50,000	$50,000
FM176	MT	LOCKWOOD	294	A	45	49	9	N	108	24	51	W	125,000	$125,000	$125,000
FM191	ND	BELFIELD	230	C1	46	53	6	N	103	11	48	W	50,000	$50,000	$50,000
FM212	NE	RAVENNA	276	C2	41	1	36	N	98	54	48	W	125,000	$125,000	$125,000
FM225	NM	TEXICO	243	A	34	23	0	N	103	2	48	W	50,000	$50,000	$50,000
FM230	NV	ELKO	248	C1	40	49	48	N	115	45	36	W	35,000	$35,000	$35,000
FM236	NY	AMHERST	221	A	42	58	42	N	78	48	0	W	200,000	$200,000	$200,000
FM251	OK	HOLLIS	223	A	34	41	0	N	99	54	54	W	2,500	$2,500	$2,500
FM258	OR	ELGIN	290	A	45	33	54	N	117	55	0	W	7,500	$7,500	$7,500
FM272	SD	PRESHO	262	A	43	54	24	N	100	3	36	W	1,500	$1,500	$1,500
FM293	TX	LOVELADY	282	C3	31	9	51	N	95	27	9	W	35,000	$35,000	$35,000
FM294	TX	LUFKIN	230	A	31	20	48	N	94	43	30	W	90,000	$90,000	$90,000
FM310	TX	ZAPATA	274	A	26	54	30	N	99	16	18	W	10,000	$10,000	$10,000
FM312	UT	CASTLE DALE	237	C3	39	12	48	N	111	1	18	W	10,000	$10,000	$10,000
FM347	WY	EVANSTON	252	C2	41	16	0	N	110	57	48	W	20,000	$20,000	$20,000

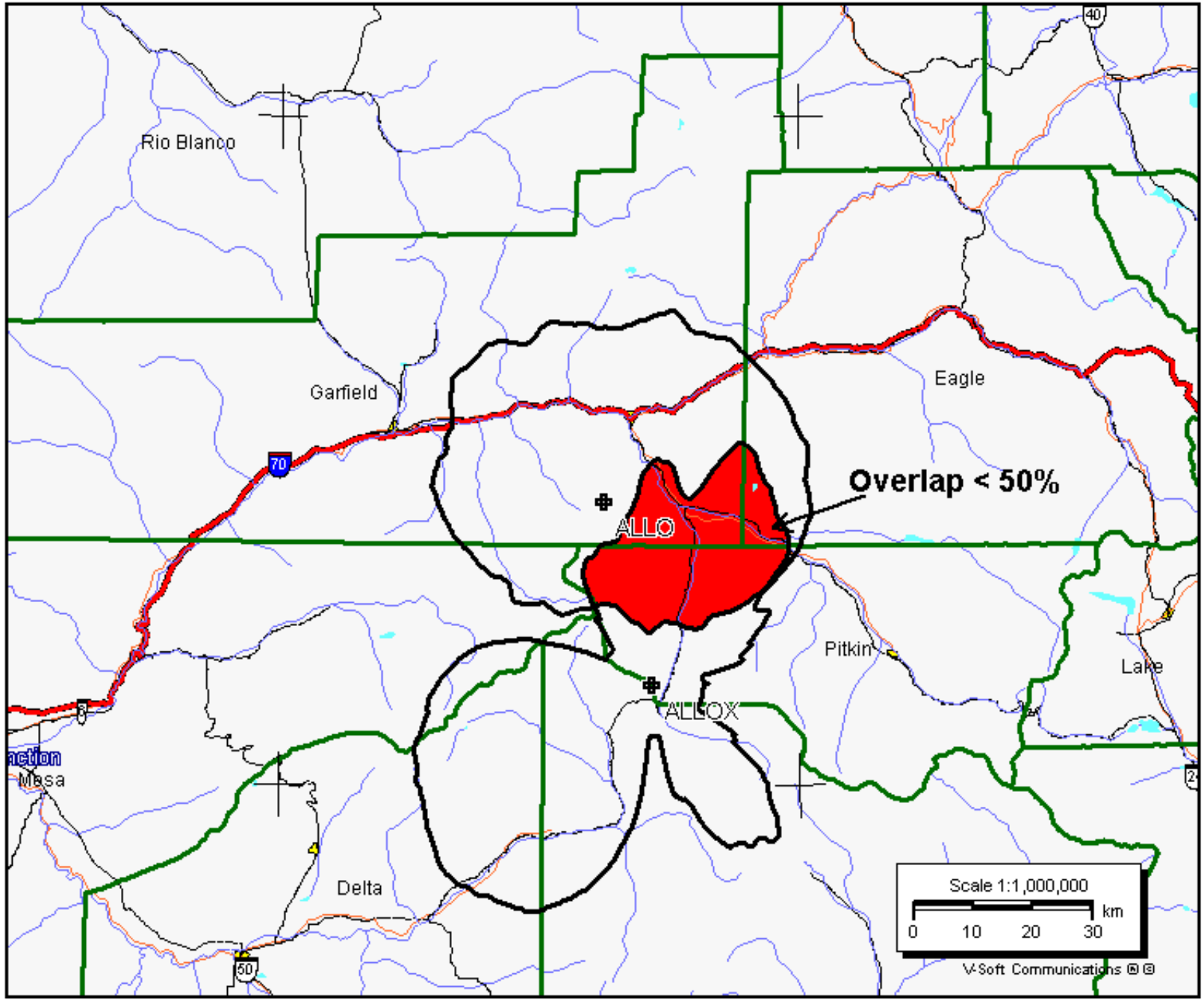
Study Method

- Computer software was used to identify best available matching channel at each market
- Maps were drawn to calculate coverage area and percent match

Carbondale CO - Commercial channel - CH 254

ALLO
RM
Latitude: 39-25-30 N
Longitude: 107-22-43 W
Power: 0.085 kW
Channel: 244
Frequency: 96.7 MHz
AMSL Height: 3222.32 m
Elevation: 3189.32 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 39-09-03 N
Longitude: 107-17-05 W
Power: 0.52 kW
Channel: 254
Frequency: 98.7 MHz
AMSL Height: 3120.32 m
Elevation: 3087.32 m
Horiz. Pattern: Omni
Vert. Pattern: No



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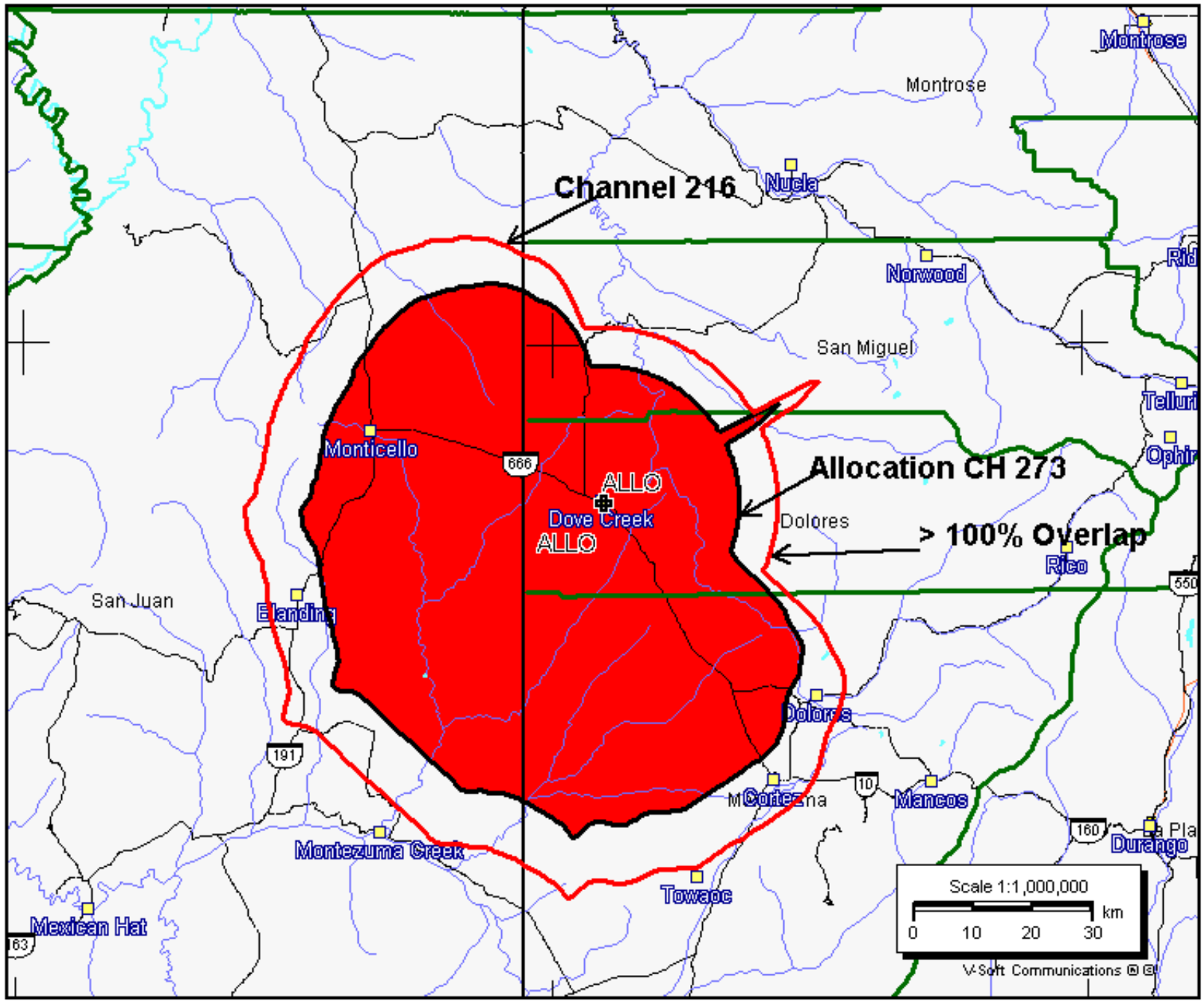
Dove Creek CO - 60 dBu

ALLO
RM9621
Latitude: 37-45-54 N
Longitude: 108-54-18 W
Power: 25.00 kW
EIRP Used: 41.00 kW
Channel: 273
Frequency: 102.5 MHz
AMSL Height: 2209.18 m
Elevation: 2082.18 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 37-45-54 N
Longitude: 108-54-18 W
Power: 75.00 kW
Channel: 216
Frequency: 91.1 MHz
AMSL Height: 2204.0 m
Elevation: 2082.18 m
Horiz. Pattern: Omni
Vert. Pattern: No



ALLO
RM
Latitude: 45-33-54 N
Longitude: 117-55-00 W
Power: 6.00 kW
Channel: 290
Frequency: 105.9 MHz
AMSL Height: 1119.9 m
Elevation: 792.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX NCE
Latitude: 45-33-54 N
Longitude: 117-55-00 W
Power: 6.00 kW
Channel: 207
Frequency: 89.3 MHz
AMSL Height: 1120.0 m
Elevation: 792.0 m
Horiz. Pattern: Directional
Vert. Pattern: No

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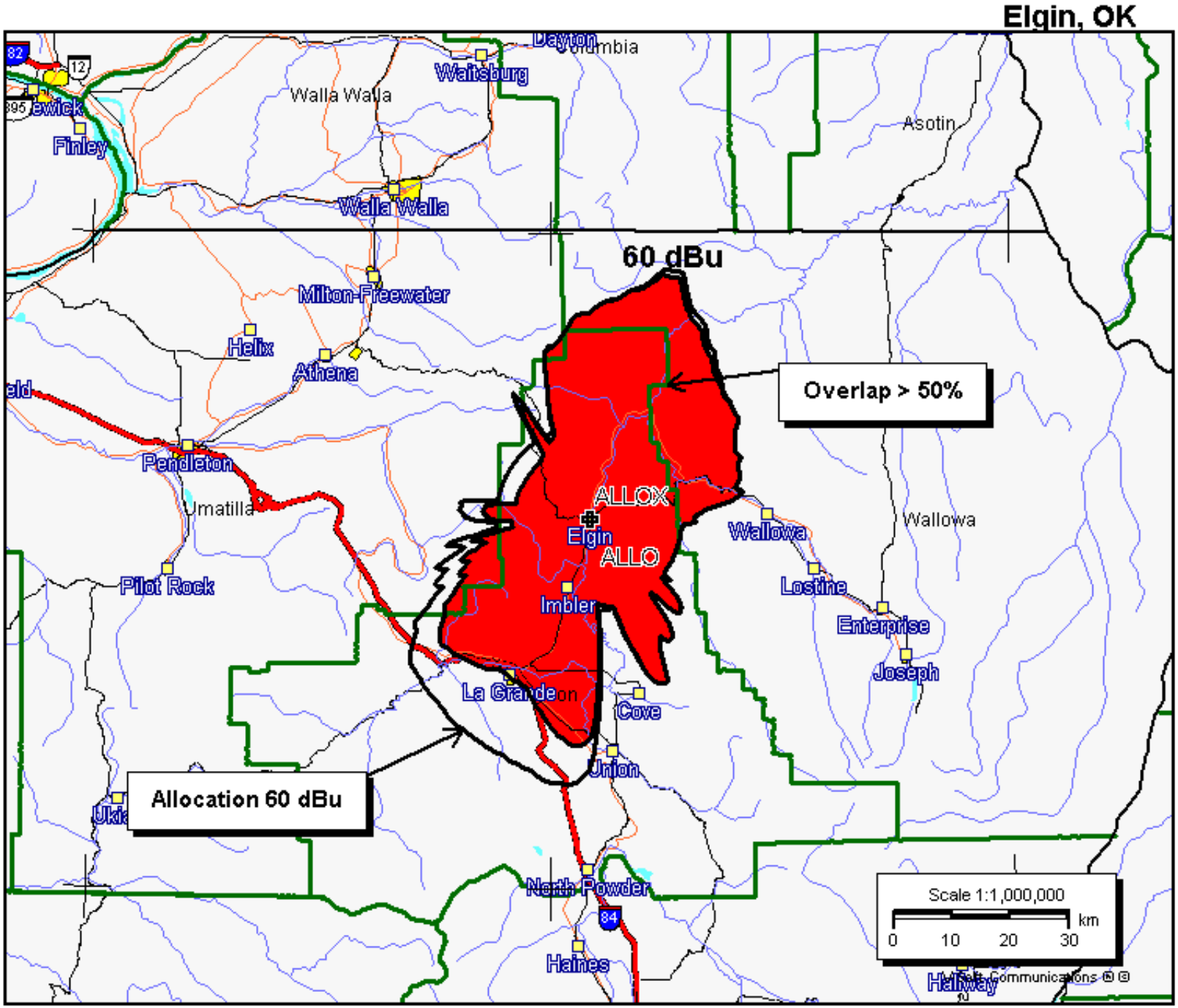

Elgin Commercial Aternative

ALLO
RM
Latitude: 45-33-54 N
Longitude: 117-55-00 W
Power: 6.00 kW
Channel: 290
Frequency: 105.9 MHz
AMSL Height: 1119.9 m
Elevation: 792.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 45-21-10 N
Longitude: 117-50-47 W
Power: 6.00 kW
Channel: 225
Frequency: 92.9 MHz
AMSL Height: 1120.0 m
Elevation: 823.0 m
Horiz. Pattern: Omni
Vert. Pattern: No

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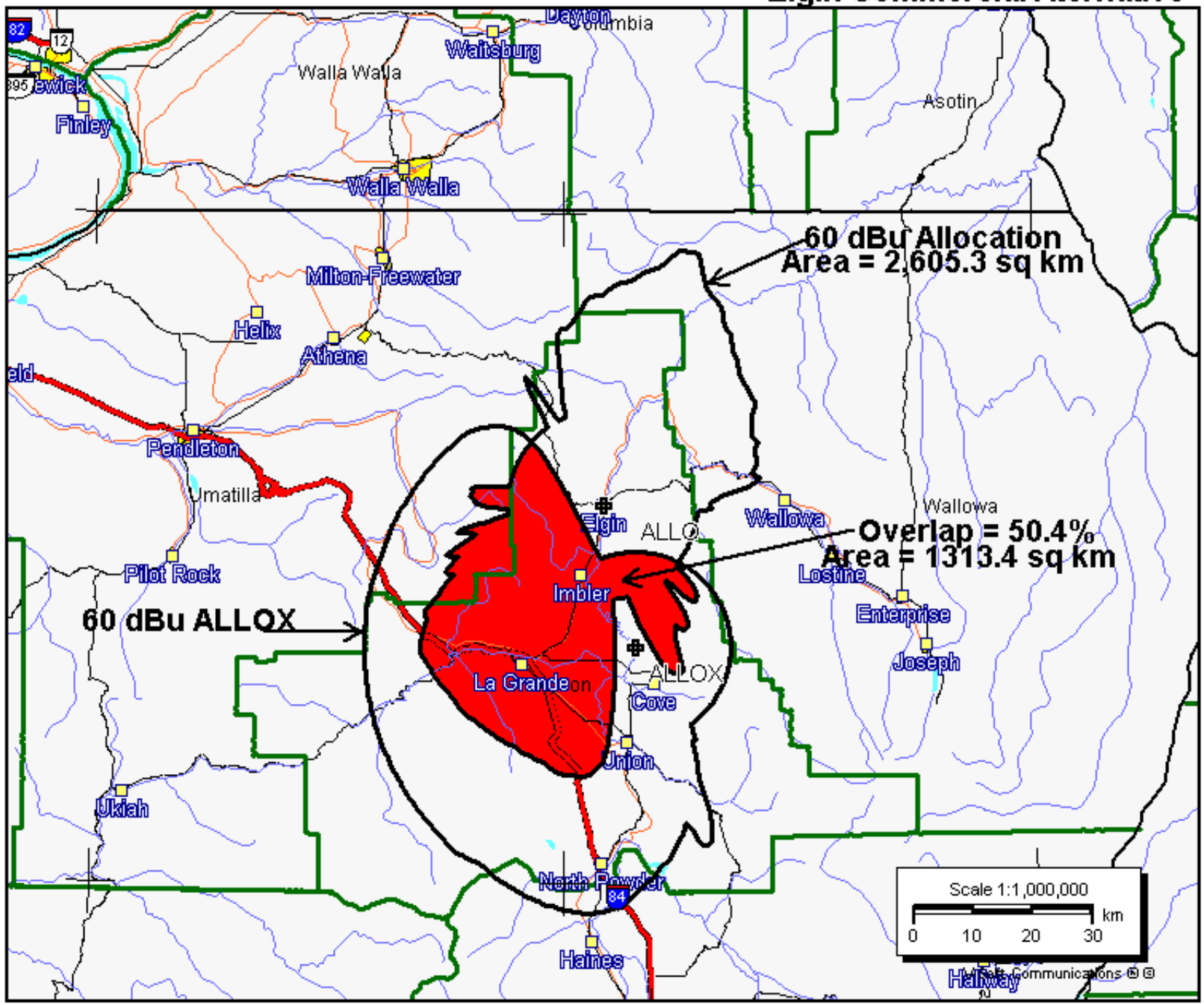

Evanston, WY, 60 dBu

ALLO
RM
Latitude: 41-16-00 N
Longitude: 110-57-48 W
Power: 50.00 kW
Channel: 252
Frequency: 98.3 MHz
AMSL Height: 2287.17 m
Elevation: 2058.19 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 41-00-21 N
Longitude: 110-48-30 W
Power: 50.00 kW
Channel: 229
Frequency: 93.7 MHz
AMSL Height: 2696.286 m
Elevation: 2558.19 m
Horiz. Pattern: Omni
Vert. Pattern: No

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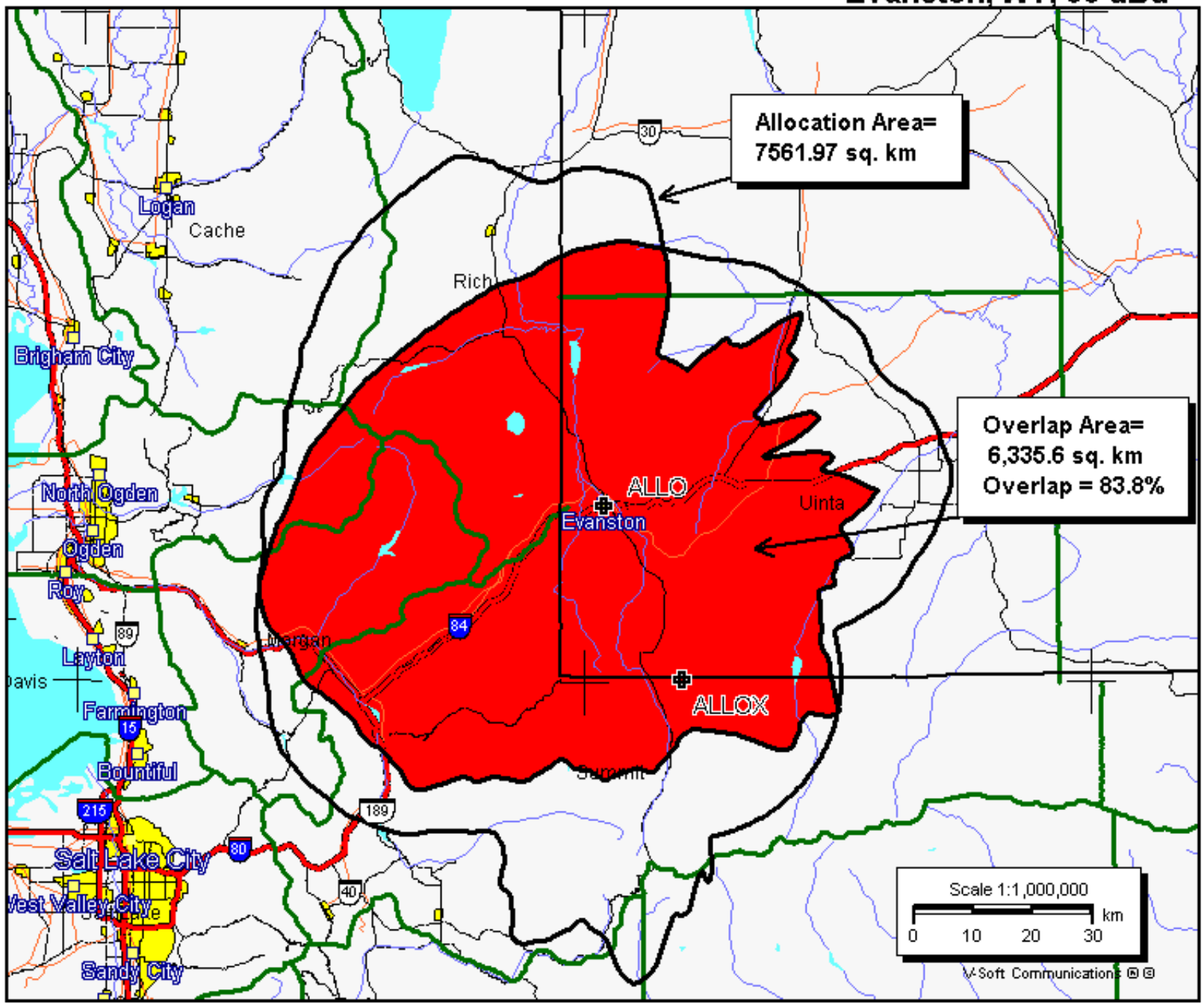

Friars Point, MS - 60 dBu

ALLO
Latitude: 34-24-09 N
Longitude: 090-38-51 W
Power: 6.00 kW
Channel: 236
Frequency: 95.1 MHz
AMSL Height: 151.6 m
Elevation: 53.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 34-24-09 N
Longitude: 090-38-51 W
Power: 6.00 kW
Channel: 209
Frequency: 89.7 MHz
AMSL Height: 153.21 m
Elevation: 53.0 m
Horiz. Pattern: Omni
Vert. Pattern: No

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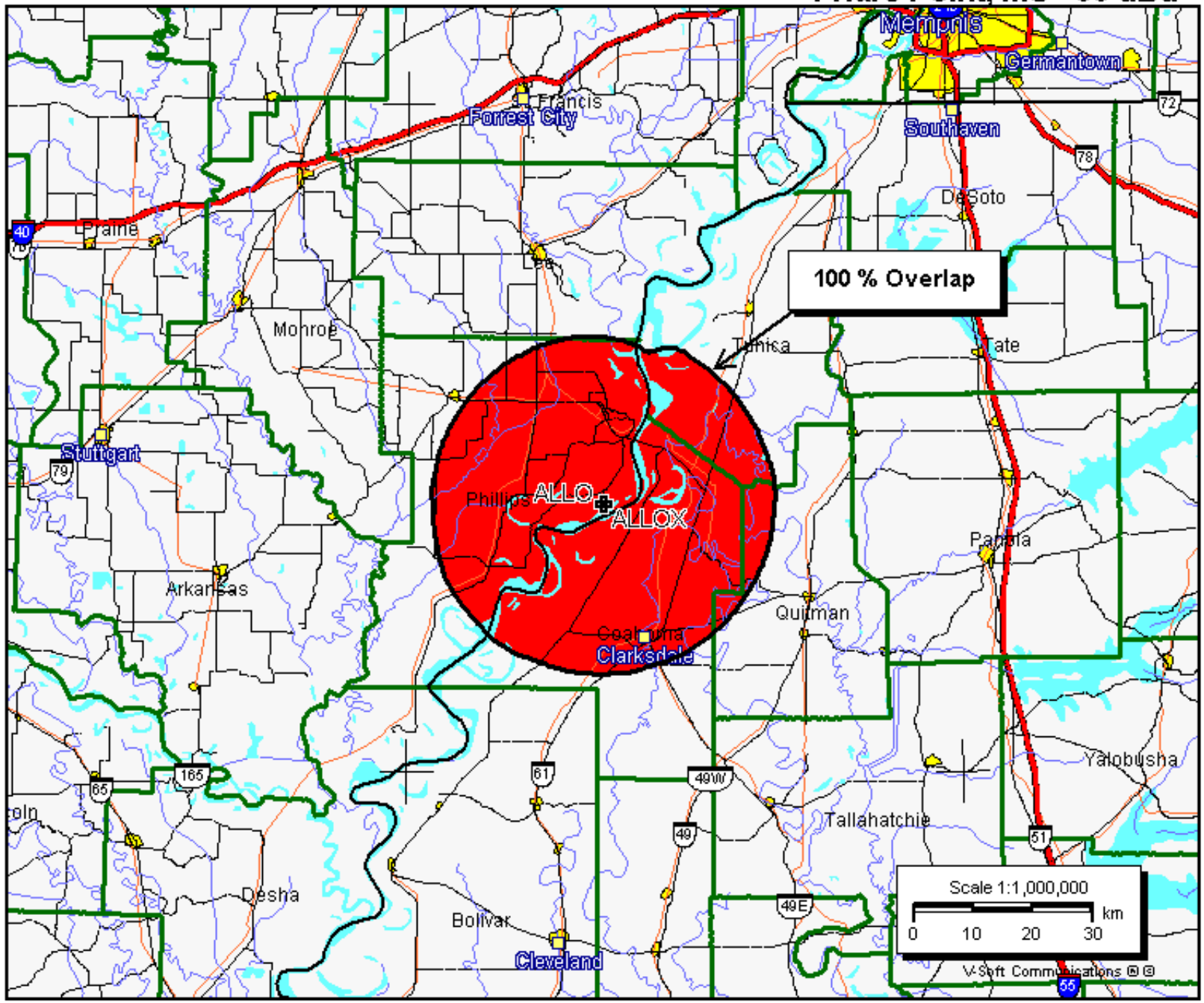


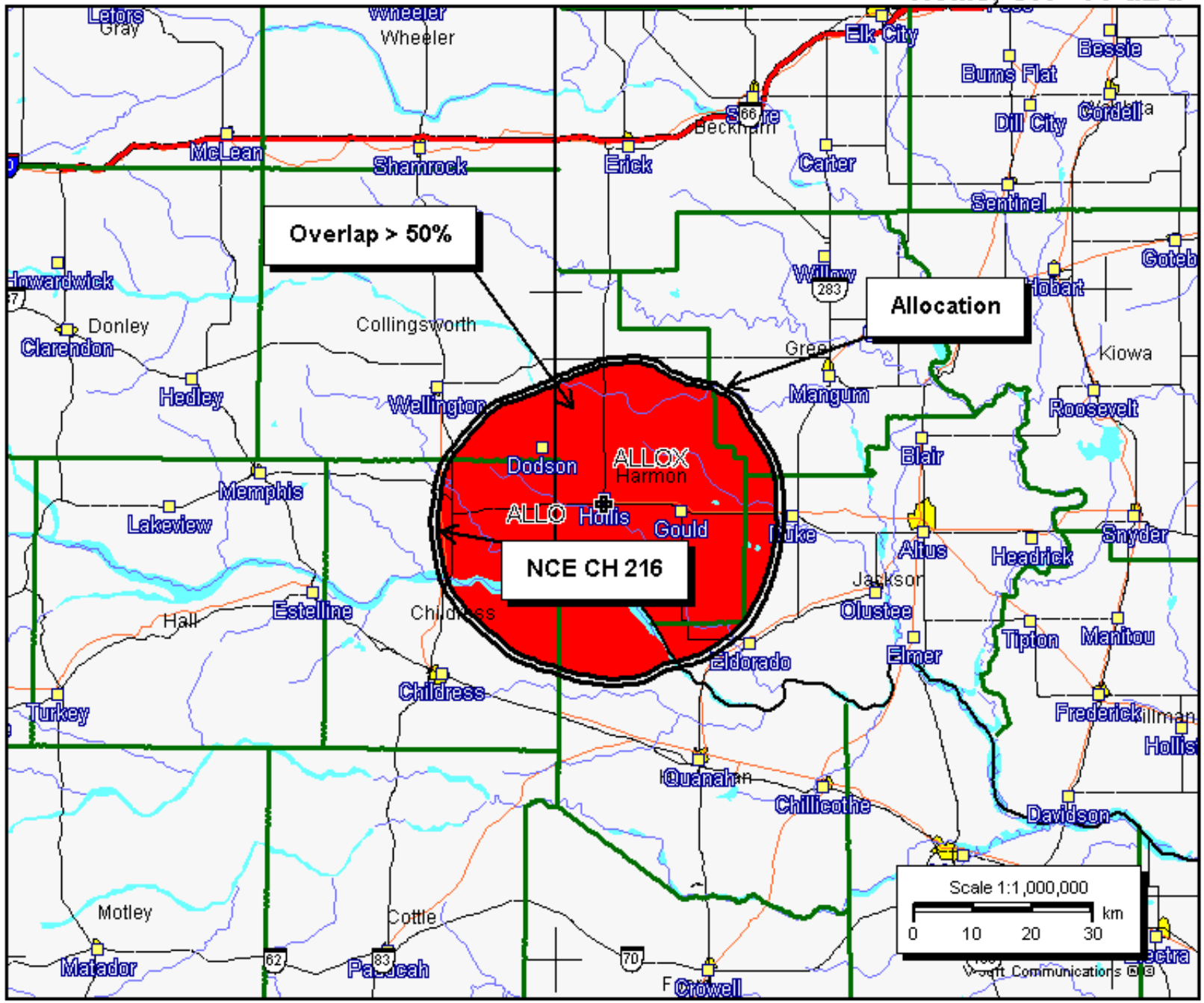
Hollis, OK - 60 dBu

ALLO

Latitude: 34-41-00 N
Longitude: 099-54-54 W
Power: 6.00 kW
Channel: 223
Frequency: 92.5 MHz
AMSL Height: 605.69 m
Elevation: 495.07 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX NCE

Latitude: 34-41-00 N
Longitude: 099-54-54 W
Power: 5.20 kW
Channel: 209
Frequency: 89.7 MHz
AMSL Height: 604.0 m
Elevation: 495.07 m
Horiz. Pattern: Omni
Vert. Pattern: No



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60 dBu Overlap Kiowa, KS

ALLO

Latitude: 37-01-00 N
Longitude: 098-29-12 W
Power: 100.00 kW
Channel: 252
Frequency: 98.3 MHz
AMSL Height: 704.13 m
Elevation: 398.065 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX

Latitude: 37-13-51 N
Longitude: 098-48-32 W
Power: 100.00 kW
Channel: 213
Frequency: 90.5 MHz
AMSL Height: 708.0 m
Elevation: 563.86 m
Horiz. Pattern: Directional
Vert. Pattern: No

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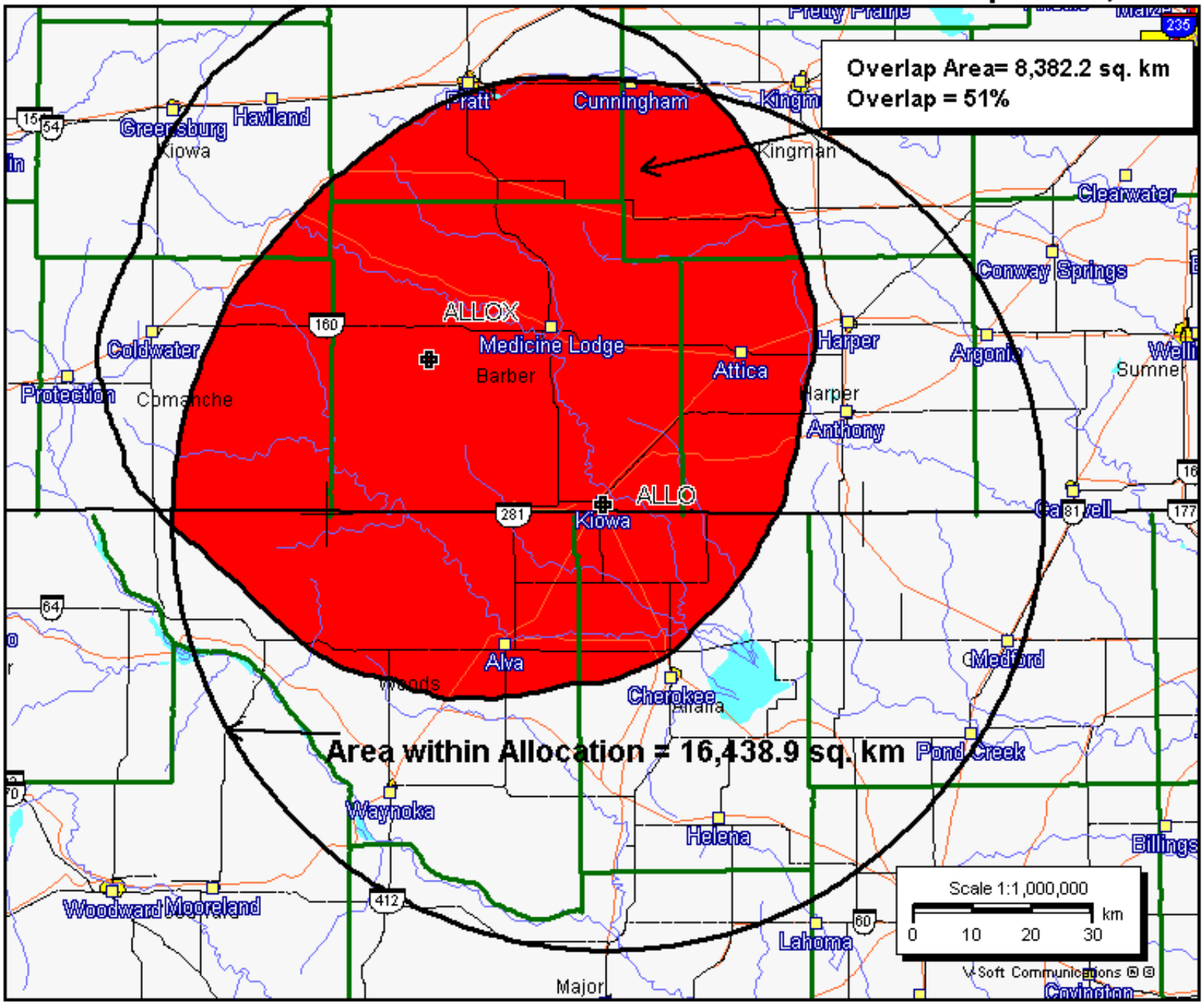

Lovelady, TX 60 dBu

ALLO
RM
Latitude: 31-09-51 N
Longitude: 095-27-09 W
Power: 25.00 kW
Channel: 282
Frequency: 104.3 MHz
AMSL Height: 181.8 m
Elevation: 89.53 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 31-03-34 N
Longitude: 095-26-22 W
Power: 6.00 kW
Channel: 255
Frequency: 98.9 MHz
AMSL Height: 167.983 m
Elevation: 71.04 m
Horiz. Pattern: Omni
Vert. Pattern: No

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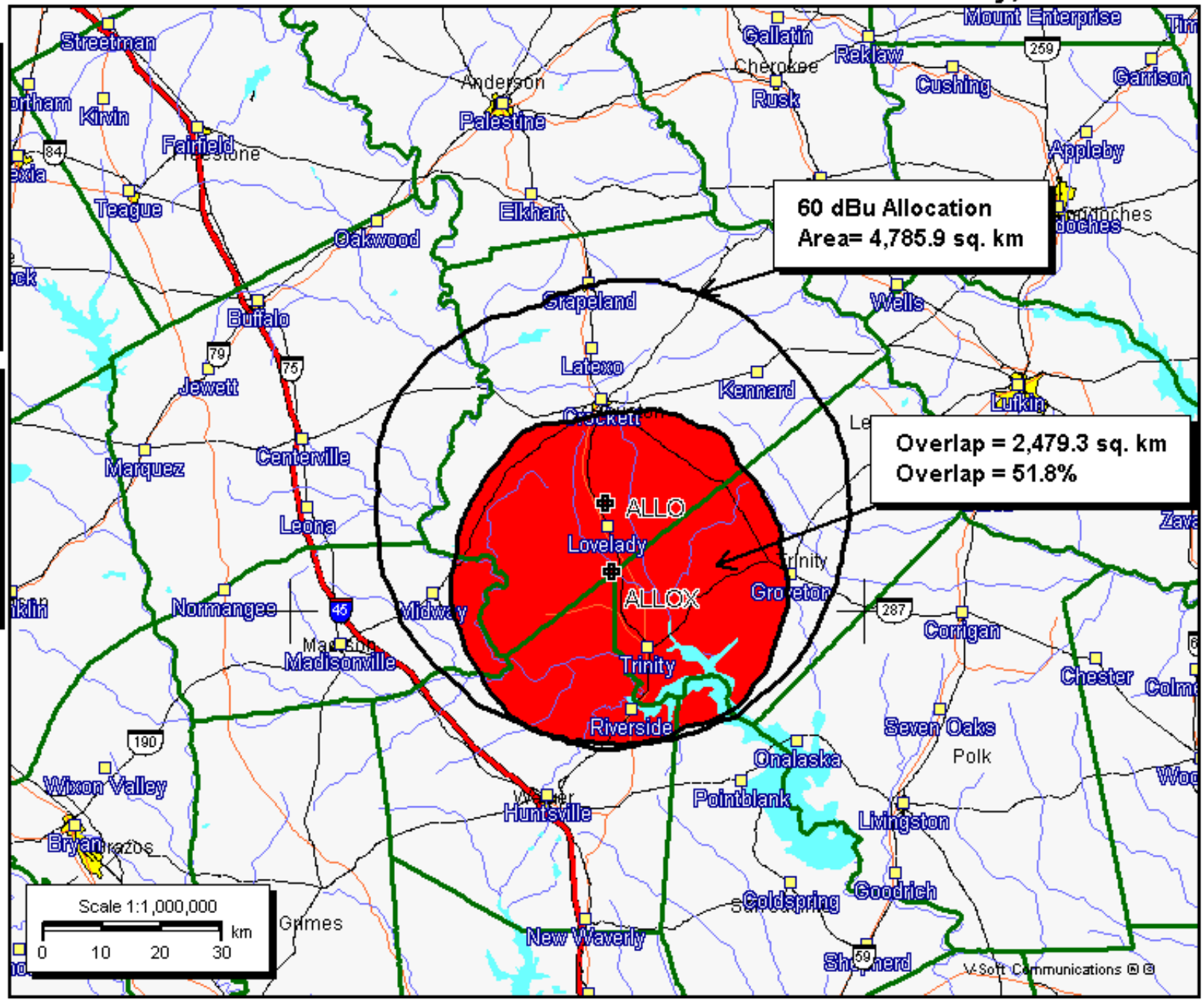

Lufkin, TX 60 dBu

ALLO
RM9677
Latitude: 31-20-48 N
Longitude: 094-43-30 W
Power: 6.00 kW
Channel: 230
Frequency: 93.9 MHz
AMSL Height: 183.13 m
Elevation: 99.44 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 31-19-28 N
Longitude: 094-41-05 W
Power: 6.00 kW
Channel: 209
Frequency: 89.7 MHz
AMSL Height: 181.75 m
Elevation: 100.07 m
Horiz. Pattern: Directional
Vert. Pattern: No

ALLOY
Latitude: 31-29-39 N
Longitude: 094-57-21 W
Power: 6.00 kW
Channel: 254
Frequency: 98.7 MHz
AMSL Height: 181.545 m
Elevation: 106.0 m
Horiz. Pattern: Directional
Vert. Pattern: No

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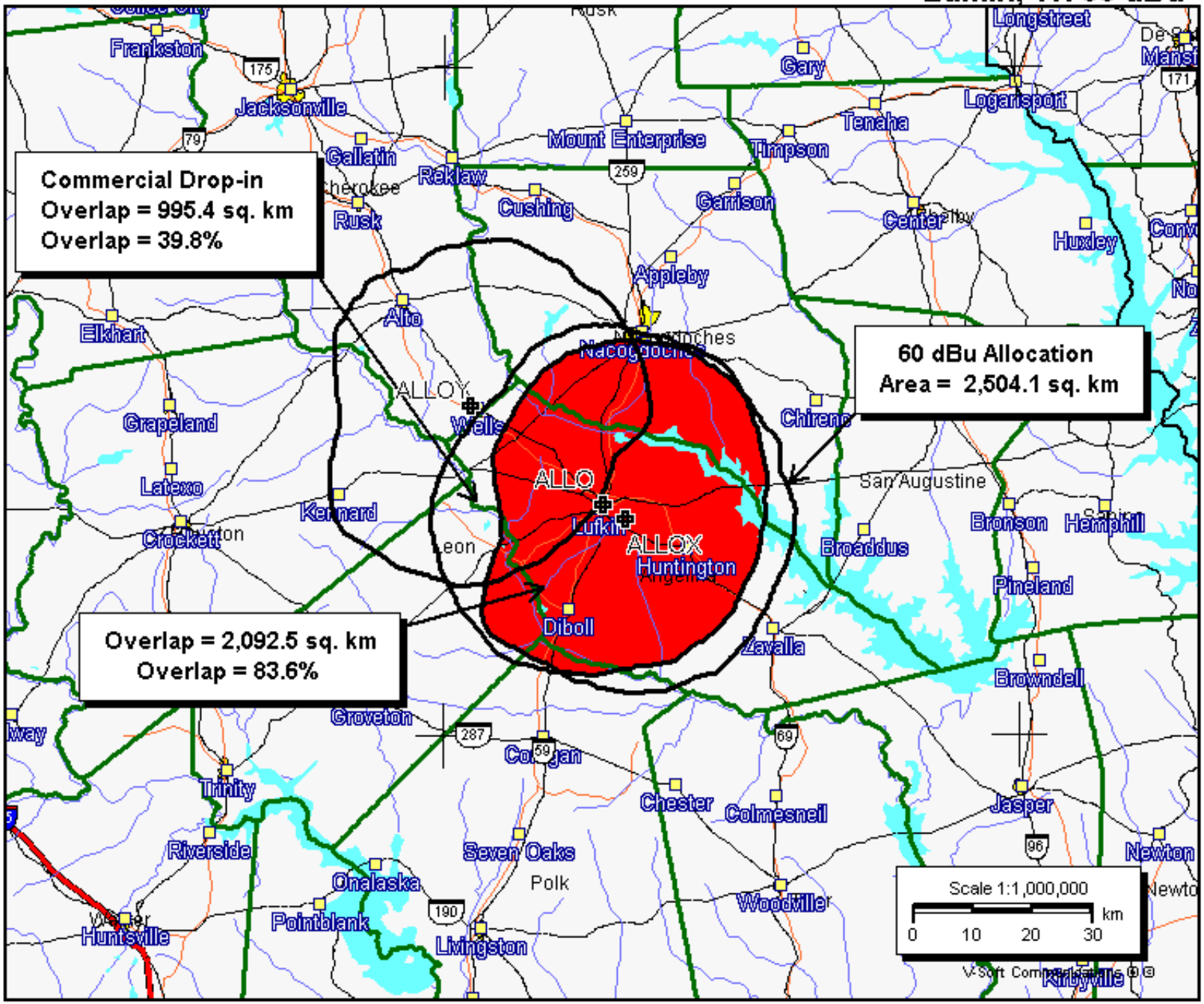
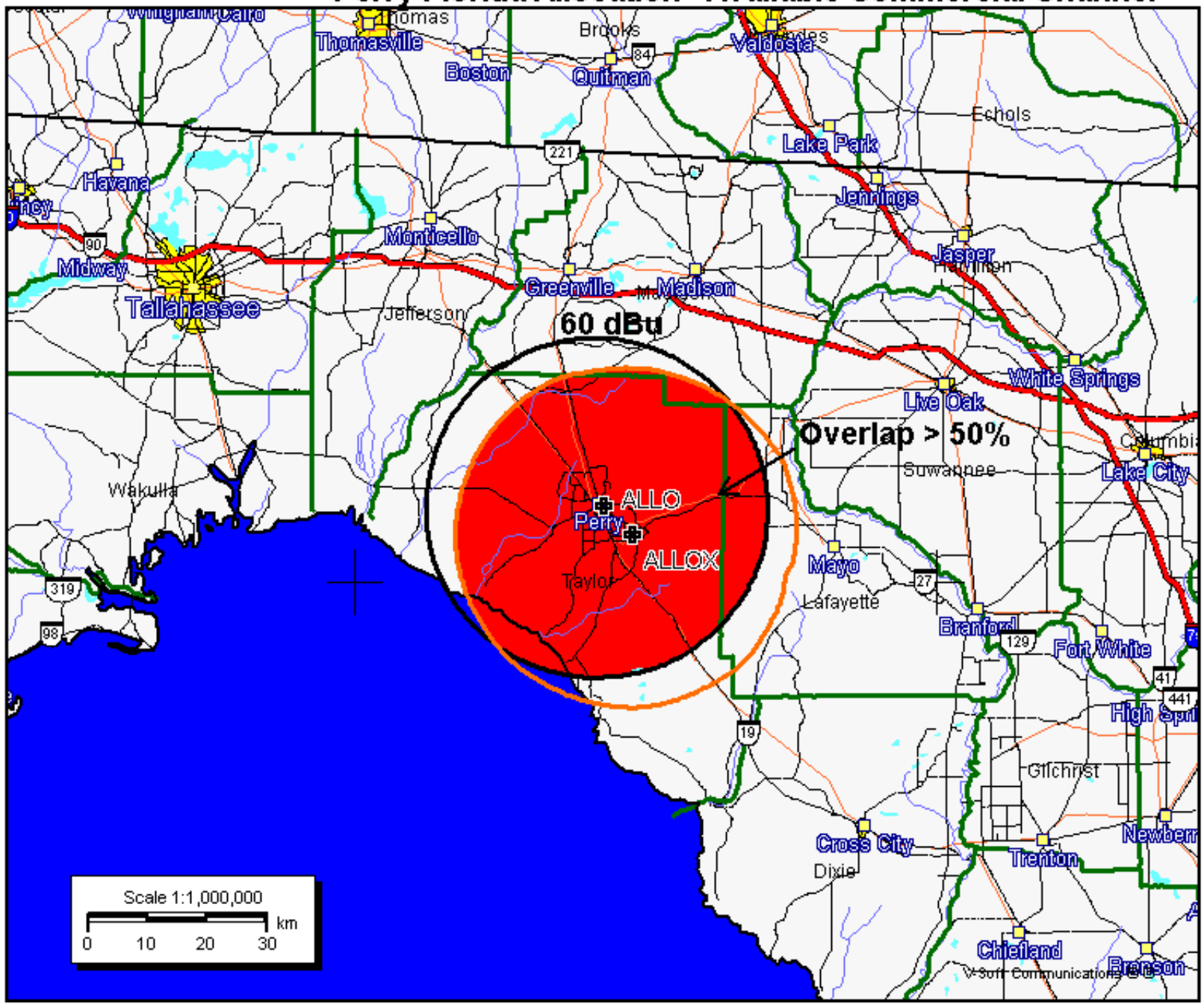


Perry Florida Allocation - Available Commercial Channel

ALLO
RM
Latitude: 30-07-00 N
Longitude: 083-34-26 W
Power: 6.00 kW
Channel: 228
Frequency: 93.5 MHz
AMSL Height: 115.54 m
Elevation: 15.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 30-04-23 N
Longitude: 083-31-24 W
Power: 6.00 kW
Channel: 257
Frequency: 99.3 MHz
AMSL Height: 117.091 m
Elevation: 17.0 m
Horiz. Pattern: Omni
Vert. Pattern: No



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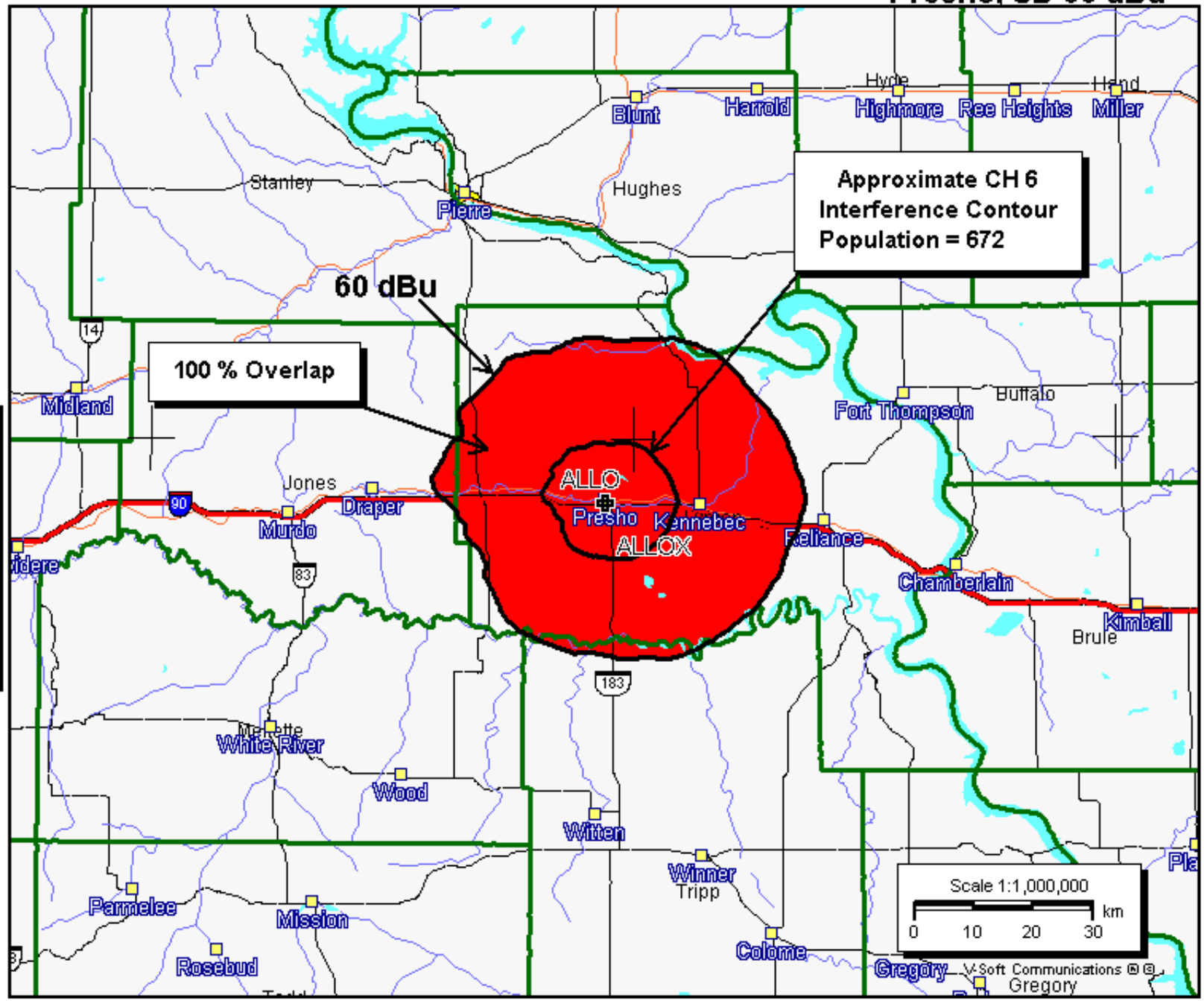
Presho, SD 60 dBu

ALLO

Latitude: 43-54-24 N
Longitude: 100-03-36 W
Power: 6.00 kW
EIRP Used: 9.84 kW
Channel: 262
Frequency: 100.3 MHz
AMSL Height: 671.051 m
Elevation: 557.49 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX - NCE

Latitude: 43-54-24 N
Longitude: 100-03-36 W
Power: 6 kW
Channel: 211
Frequency: 100.3 MHz
AMSL Height: 671.047 m
Elevation: 557.49 m
Horiz. Pattern: Omni
Vert. Pattern: No



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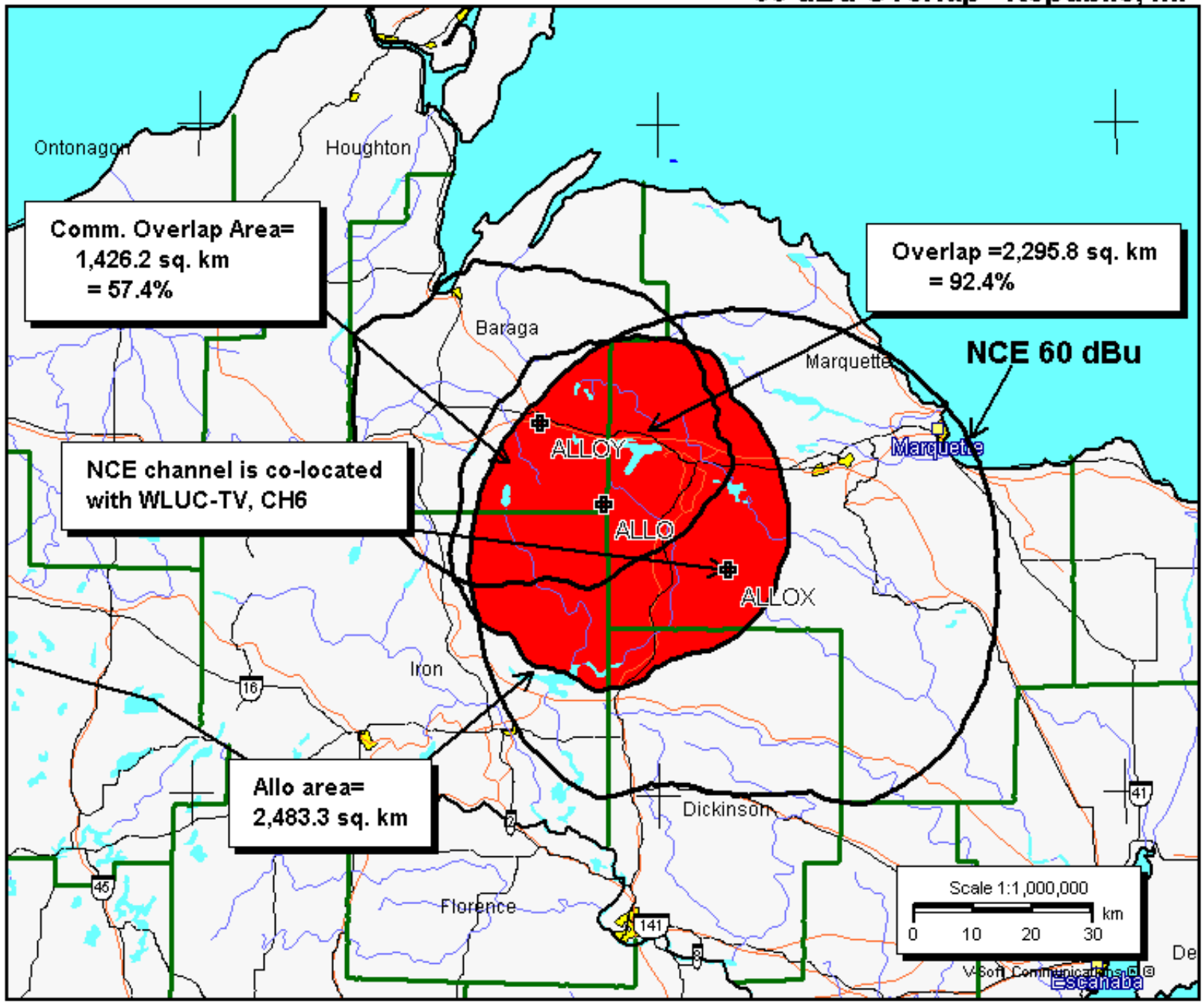
60 dBu Overlap - Republic, MI

ALLO
RM9385
Latitude: 46-26-09 N
Longitude: 088-07-12 W
Power: 6.00 kW
Channel: 244
Frequency: 96.7 MHz
AMSL Height: 599.96 m
Elevation: 504.15 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 46-20-11 N
Longitude: 087-50-55 W
Power: 12.00 kW
Channel: 207
Frequency: 89.3 MHz
AMSL Height: 640.0 m
Elevation: 463.33 m
Horiz. Pattern: Omni
Vert. Pattern: No

ALLOY
Latitude: 46-33-25 N
Longitude: 088-15-27 W
Power: 6.00 kW
Channel: 260
Frequency: 99.9 MHz
AMSL Height: 628.044 m
Elevation: 523.63 m
Horiz. Pattern: Omni
Vert. Pattern: No



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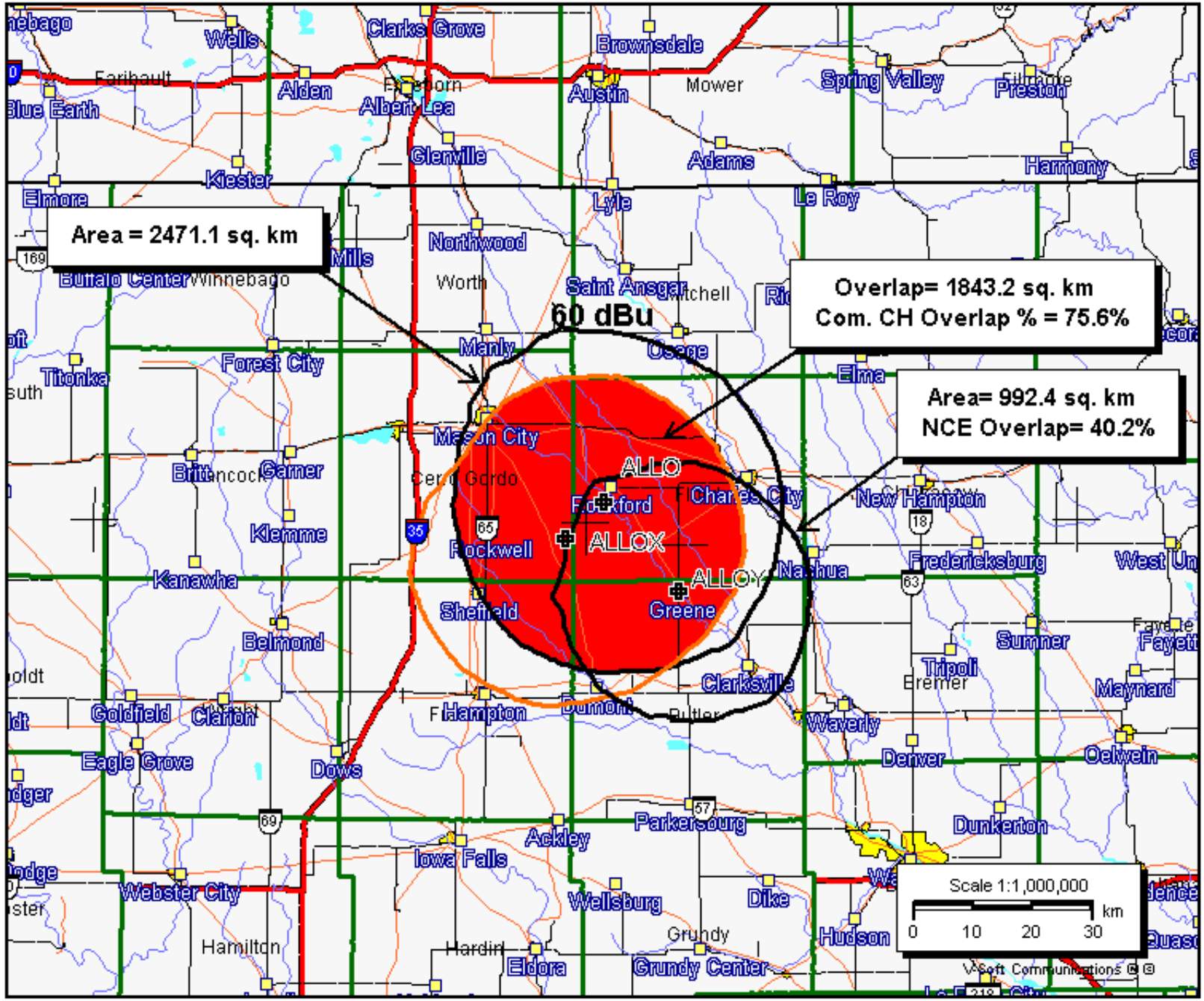
Rockford IA - Available Commercial Channel

ALLO
RM9562
Latitude: 43-01-55 N
Longitude: 092-57-53 W
Power: 6.00 kW
Channel: 225
Frequency: 92.9 MHz
AMSL Height: 427.7 m
Elevation: 320.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX
Latitude: 42-58-37 N
Longitude: 093-02-22 W
Power: 6.00 kW
Channel: 242
Frequency: 96.3 MHz
AMSL Height: 425.0 m
Elevation: 341.17 m
Horiz. Pattern: Omni
Vert. Pattern: No

ALLOY
Latitude: 42-53-49 N
Longitude: 092-48-35 W
Power: 1.80 kW
Channel: 213
Frequency: 90.5 MHz
AMSL Height: 409.203 m
Elevation: 287.63 m
Horiz. Pattern: Omni
Vert. Pattern: No



Zapata, TX 60 dBu

ALLO

Latitude: 26-54-30 N
Longitude: 099-16-18 W
Power: 6.00 kW
Channel: 274
Frequency: 102.7 MHz
AMSL Height: 215.57 m
Elevation: 122.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

ALLOX

Latitude: 26-54-30 N
Longitude: 099-16-18 W
Power: 5.00 kW
Channel: 214
Frequency: 90.7 MHz
AMSL Height: 215.566 m
Elevation: 122.0 m
Horiz. Pattern: Omni
Vert. Pattern: No

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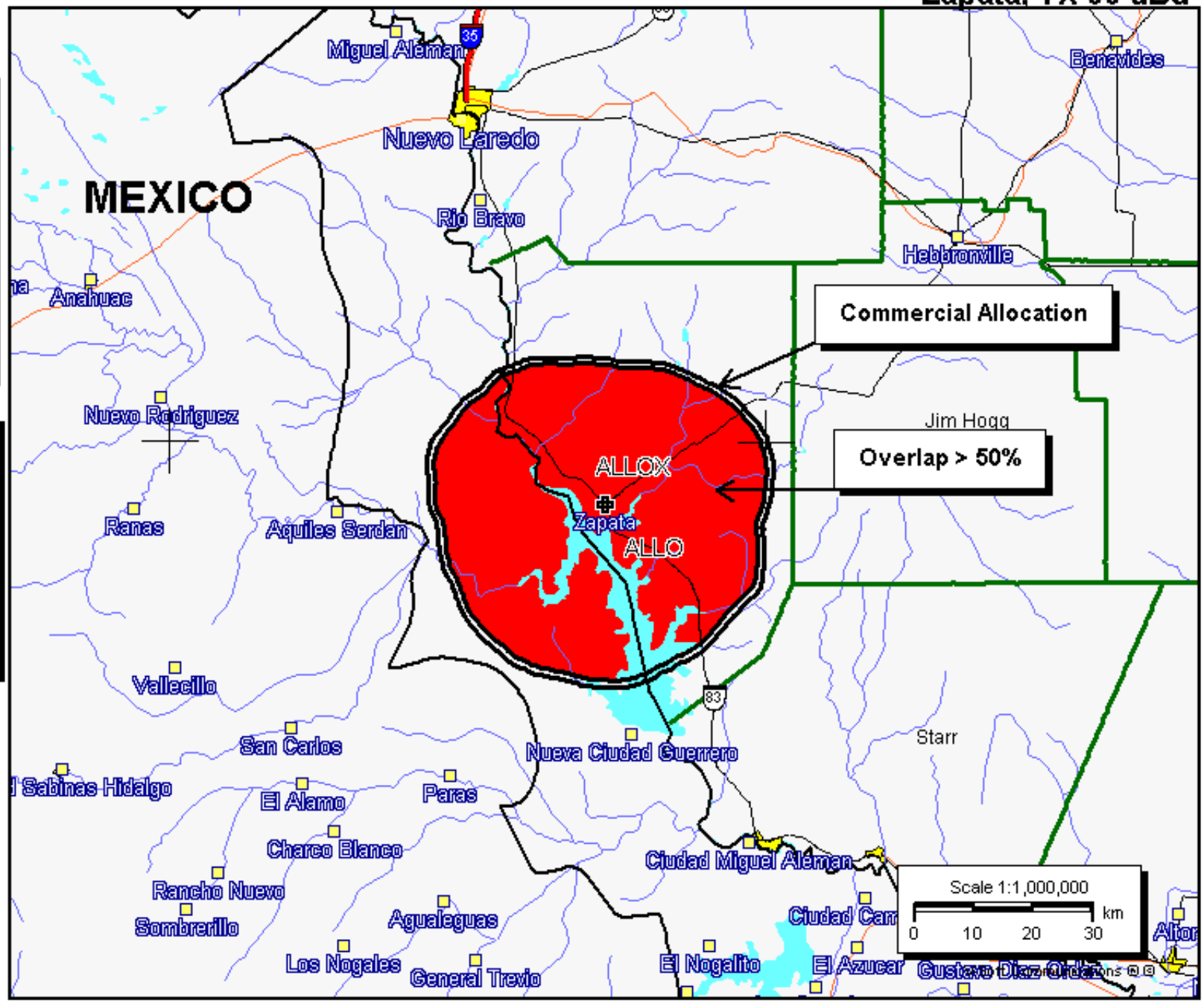

Results

- 68% of the locations provided an NCE channel with a 50% match
- 17 NCE channels were found out of 25 locations
- 64% of the locations provided a commercial channel with a 50% match
- 16 alternate commercial channels were found out of the 25

Combined Results

- 84% of the market allocations provided an alternate channel

Channels Identified

					Coordinates								Biddin		Upfror	NCE	Comm
Market	State	City	Channel	Class	Latitude				Longitude				Units	MOB	Payment	Avail	Avail
FM24	AZ	YARNELL	258	A	34	13	18	N	112	44	48	W	5,000	$5,000	$5,000	No	No
FM25	CA	ALTURAS	297	C	41	29	34	N	120	31	37	W	25,000	$25,000	$25,000	Yes	No
FM44	CO	CARBONDALE	244	A	39	25	30	N	107	22	43	W	25,000	$25,000	$25,000	No	No
FM48	CO	DOVE CREEK	273	C3	37	45	54	N	108	54	18	W	2,500	$2,500	$2,500	Yes	Yes
FM68	FL	PERRY	228	A	30	7	0	N	83	34	26	W	15,000	$15,000	$15,000	No	Yes
FM93	IA	ROCKFORD	225	A	43	1	55	N	92	57	53	W	50,000	$50,000	$50,000	No	Yes
FM105	ID	TWIN FALLS	269	A	42	33	42	N	114	28	12	W	70,000	$70,000	$70,000	No	Yes
FM114	IL	WATSEKA	240	A	40	48	0	N	87	47	15	W	25,000	$25,000	$25,000	No	No
FM124	KS	KIOWA	252	C1	37	1	0	N	98	29	12	W	50,000	$50,000	$50,000	Yes	No
FM150	MI	REPUBLIC	244	A	46	26	9	N	88	7	12	W	20,000	$20,000	$20,000	Yes	Yes
FM159	MS	FRIARS POINT	254	A	34	24	9	N	90	38	51	W	50,000	$50,000	$50,000	Yes	No
FM176	MT	LOCKWOOD	294	A	45	49	9	N	108	24	51	W	125,000	$125,000	$125,000	Yes	Yes
FM191	ND	BELFIELD	230	C1	46	53	6	N	103	11	48	W	50,000	$50,000	$50,000	Yes	Yes
FM212	NE	RAVENNA	276	C2	41	1	36	N	98	54	48	W	125,000	$125,000	$125,000	Yes	Yes
FM225	NM	TEXICO	243	A	34	23	0	N	103	2	48	W	50,000	$50,000	$50,000	Yes	Yes
FM230	NV	ELKO	248	C1	40	49	48	N	115	45	36	W	35,000	$35,000	$35,000	Yes	Yes
FM236	NY	AMHERST	221	A	42	58	42	N	78	48	0	W	200,000	$200,000	$200,000	No	No
FM251	OK	HOLLIS	223	A	34	41	0	N	99	54	54	W	2,500	$2,500	$2,500	Yes	No
FM258	OR	ELGIN	290	A	45	33	54	N	117	55	0	W	7,500	$7,500	$7,500	Yes	No
FM272	SD	PRESHO	262	A	43	54	24	N	100	3	36	W	1,500	$1,500	$1,500	Yes	Yes
FM293	TX	LOVELADY	282	C3	31	9	51	N	95	27	9	W	35,000	$35,000	$35,000	No	Yes
FM294	TX	LUFKIN	230	A	31	20	48	N	94	43	30	W	90,000	$90,000	$90,000	Yes	Yes
FM310	TX	ZAPATA	274	A	26	54	30	N	99	16	18	W	10,000	$10,000	$10,000	Yes	Yes
FM312	UT	CASTLE DALE	237	C3	39	12	48	N	111	1	18	W	10,000	$10,000	$10,000	Yes	Yes
FM347	WY	EVANSTON	252	C2	41	16	0	N	110	57	48	W	20,000	$20,000	$20,000	Yes	Yes

The Facts

- Auction locations are primarily rural
- Little or no new full service channels exist in or near larger urban areas (NCE or Commercial)
- FCC's 2nd adjacent ruling provides upgrade opportunities
- Site moves and channel move upgrades exist
- Channel swap upgrades are very difficult to accomplish for NCE – some exist
- Translator channels are easier to find, especially with 2nd & 3rd adjacent overlap waivers
- Religious networks and stations know these facts and they have the software


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