

*** Provided for Members of the CBRS Alliance ***



PAL Maps

"A Tale of Many Opportunities for Innovation"

September 9th , 2020

*** Provided for Members of the CBRS Alliance ***

Unofficial Results

Notes:

- Data Source FCC.gov
 - Auction 105 Results
 - ULS Database
 - County Information
- Maps generated using Microsoft Excel
- Price/MHz/Pop and Supply>Demand maps provided by:
 - https://sashajavid.com/FCC_Auction105.php
- Content for informational and discussion purposes to provide a visualization aid of the PAL auction results. Please refer to FCC.gov as the official data source.
- Only Continental US shown in maps

Top Bidders

Notes:

SEAD/JBG Smith licenses not mapped as only in Alexandria and Arlington, VA counties

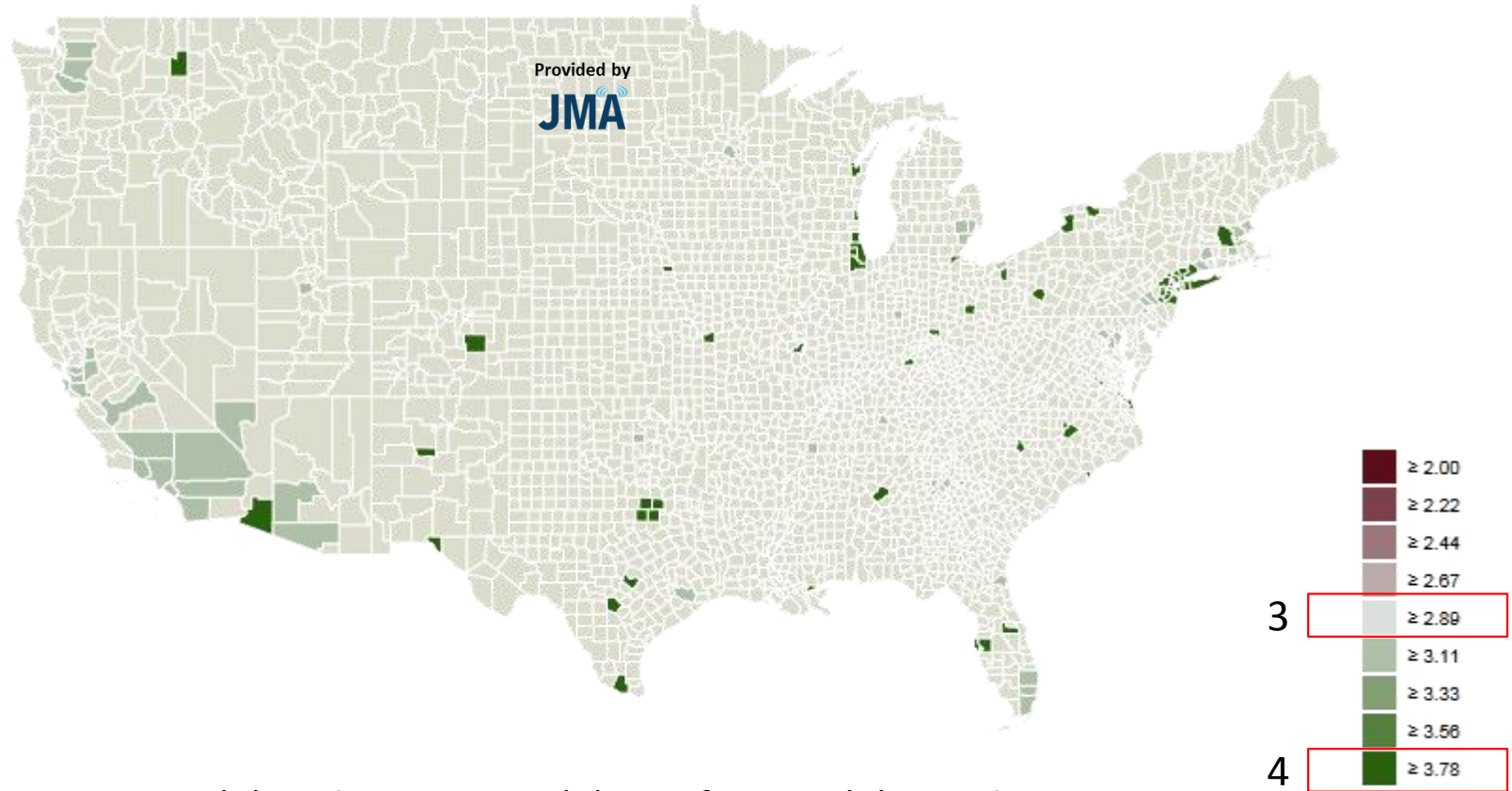
Claro Puerto Rico not mapped.

	Company	Bidding Entity	Number of Licenses Won	Net Payment
1	Verizon	Verizon Wireless Network Procurement	557	\$1,893,791,991
2	Dish Network	Wetterhorn Wireless	5,492	\$912,939,410
3	Charter	Spectrum Wireless Holdings	210	\$464,251,209
4	Comcast	XF Wireless Investment	830	\$458,725,900
5	Cox	Cox Communications	470	\$212,805,412
6	Southern California Edison	Southern California Edison Company	20	\$118,951,433
7	Windstream	Windstream Services	1,014	\$38,534,863
8	Mediacom	Mediacom	576	\$29,478,887
9	Nextlink Internet	AMG Technology Investment Group	1,072	\$28,489,750
10	JBG SMITH	SEAD	7	\$25,274,477
11	Sempra Energy	San Diego Gas and Electric Company	3	\$21,273,340
12	ATN International	SAL Spectrum	1,569	\$20,396,530
13	Claro Puerto Rico	Puerto Rico Telephone Company	231	\$18,887,528
14	Alabama Power	Alabama Power Company	271	\$18,878,280
15	Shentel	Shenandoah Cable Television	262	\$16,118,381
16	VTX1 Companies	VTX Communications	112	\$15,373,263
17	Viaero	NE Colorado Cellular	558	\$15,087,268
18	U.S. Cellular	United States Cellular Corporation	243	\$13,538,232
19	Watch Communications	W.A.T.C.H. TV Company	517	\$10,942,047
20	Cable One	Cable One	547	\$10,544,441



Verizon

	Verizon	
Counties	157	4.9%
Population	115,437,332	37%
Sq Miles	148,317	4.2%
Pop Density	778.31	880%
PALs	557	2.7%
Avg PAL/Cnty	3.55	89%
Spend (\$M)	\$ 1,893	41%



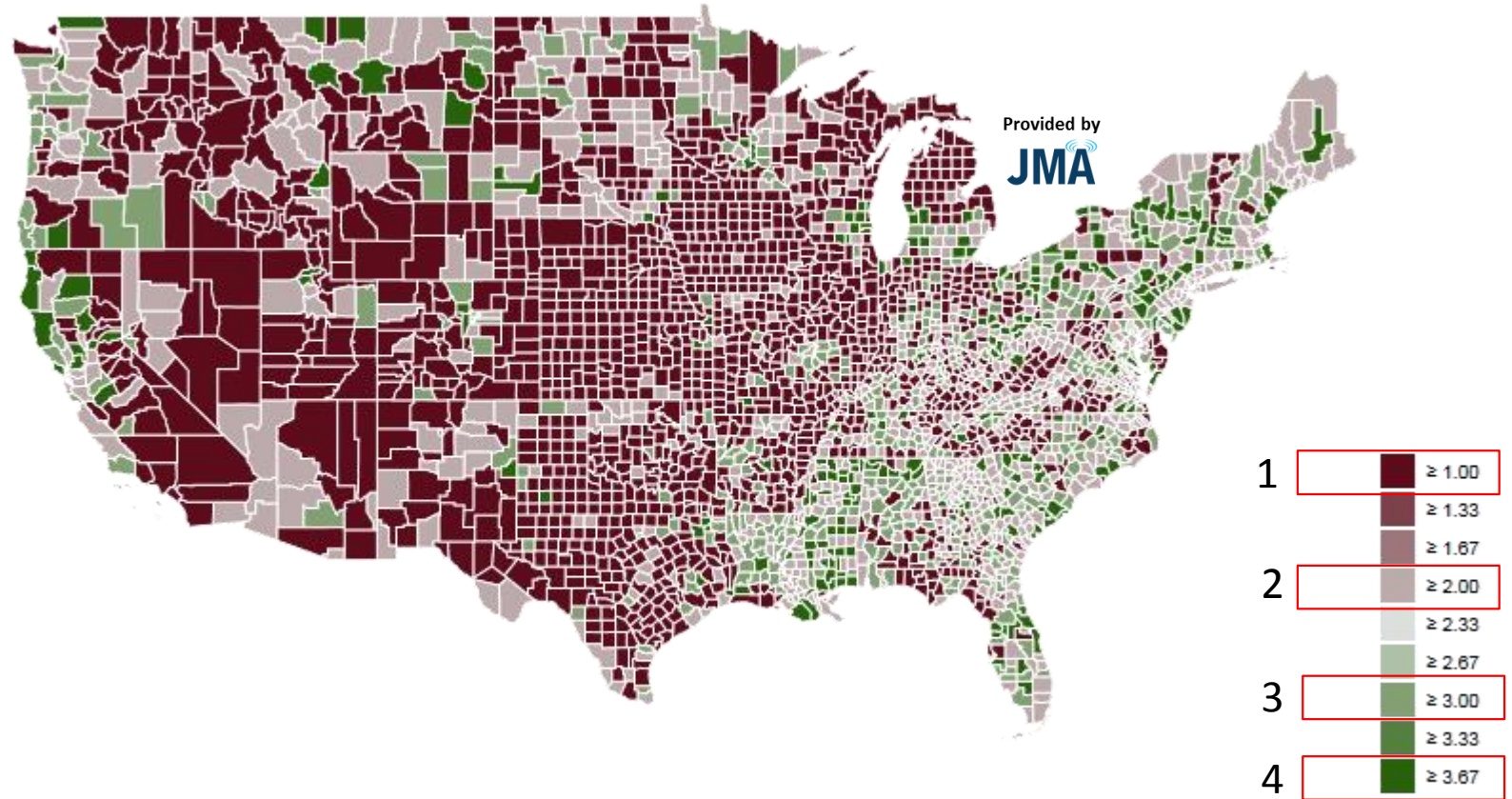
Note: Additional PALs in St Louis City (4), Baltimore City (3), Fairfax City (4) not shown

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DISH (Wetterhorn)

	Dish	
Counties	3,128	97%
Population	278,310,225	89%
Sq Miles	2,986,407	84%
Pop Density	93.19	105%
PALs	5,492	27%
Avg PAL/Cnty	1.76	44%
Spend (\$M)	\$ 912	20%

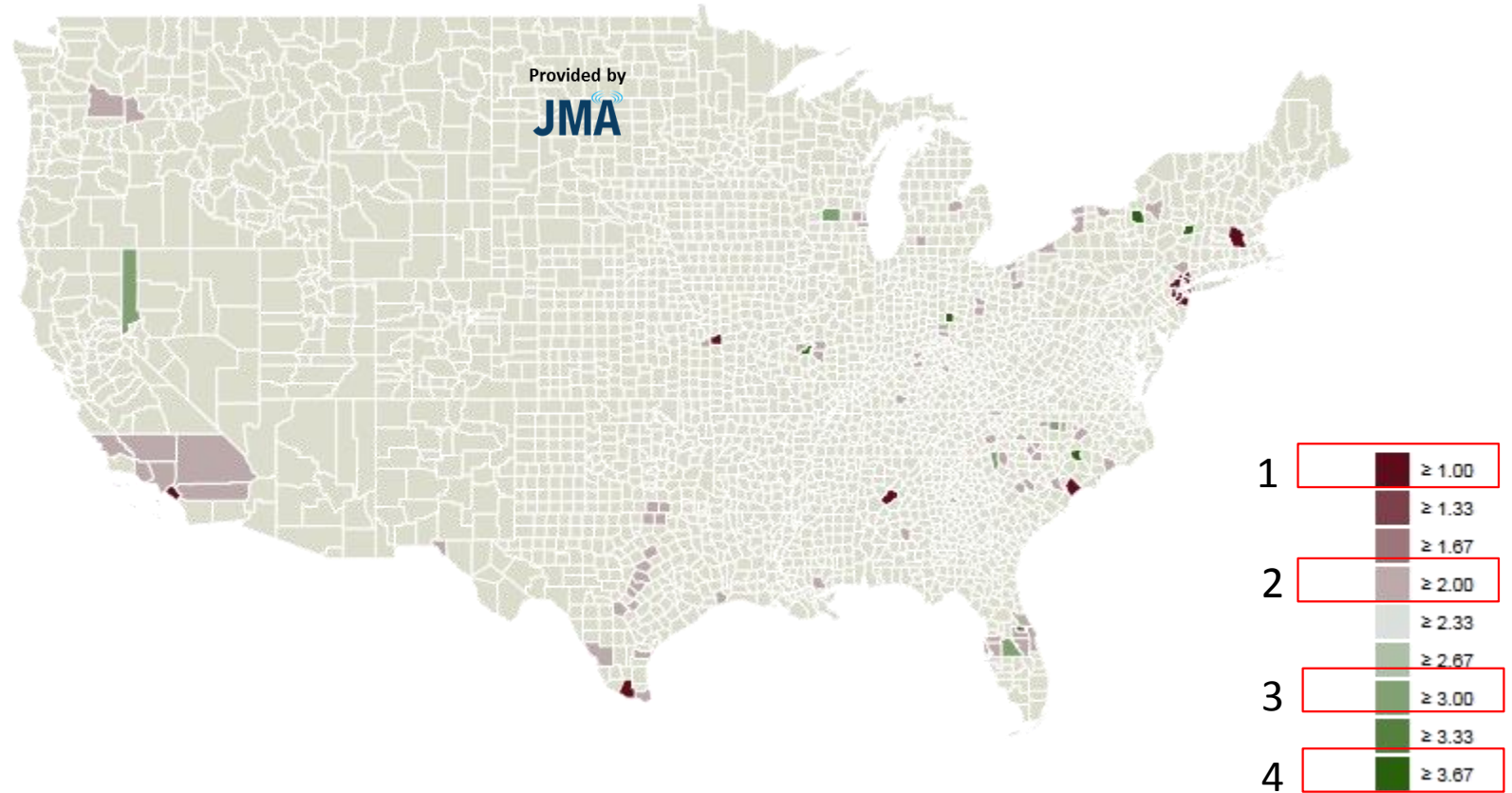


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Charter (Spectrum Wireless)

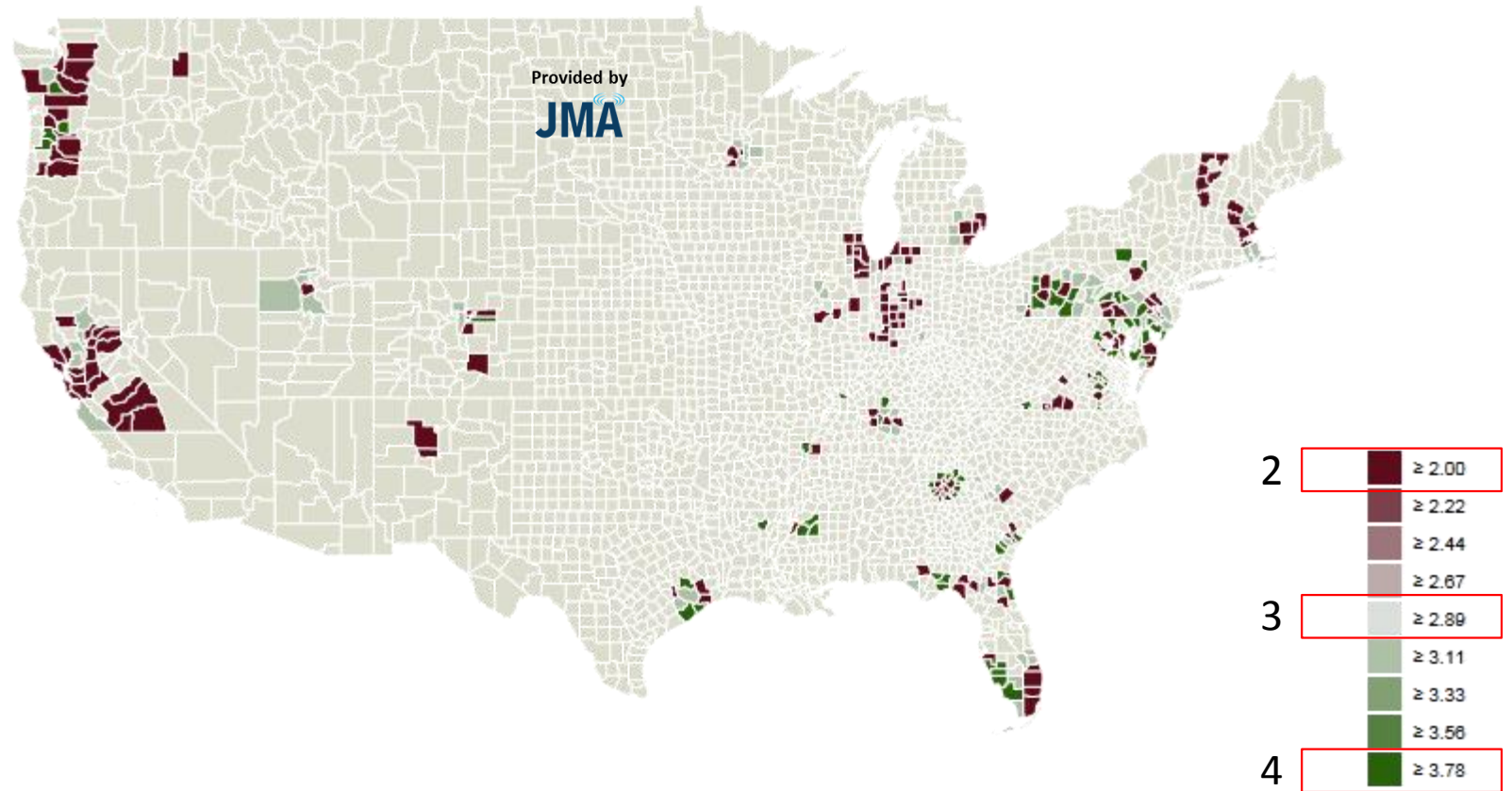
	Charter	
Counties	106	3.3%
Population	54,676,739	17%
Sq Miles	82,705	2%
Pop Density	661.11	747%
PALs	210	1.0%
Avg PAL/Cnty	1.98	50%
Spend (\$M)	\$ 464	10%



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Comcast (XF Wireless)

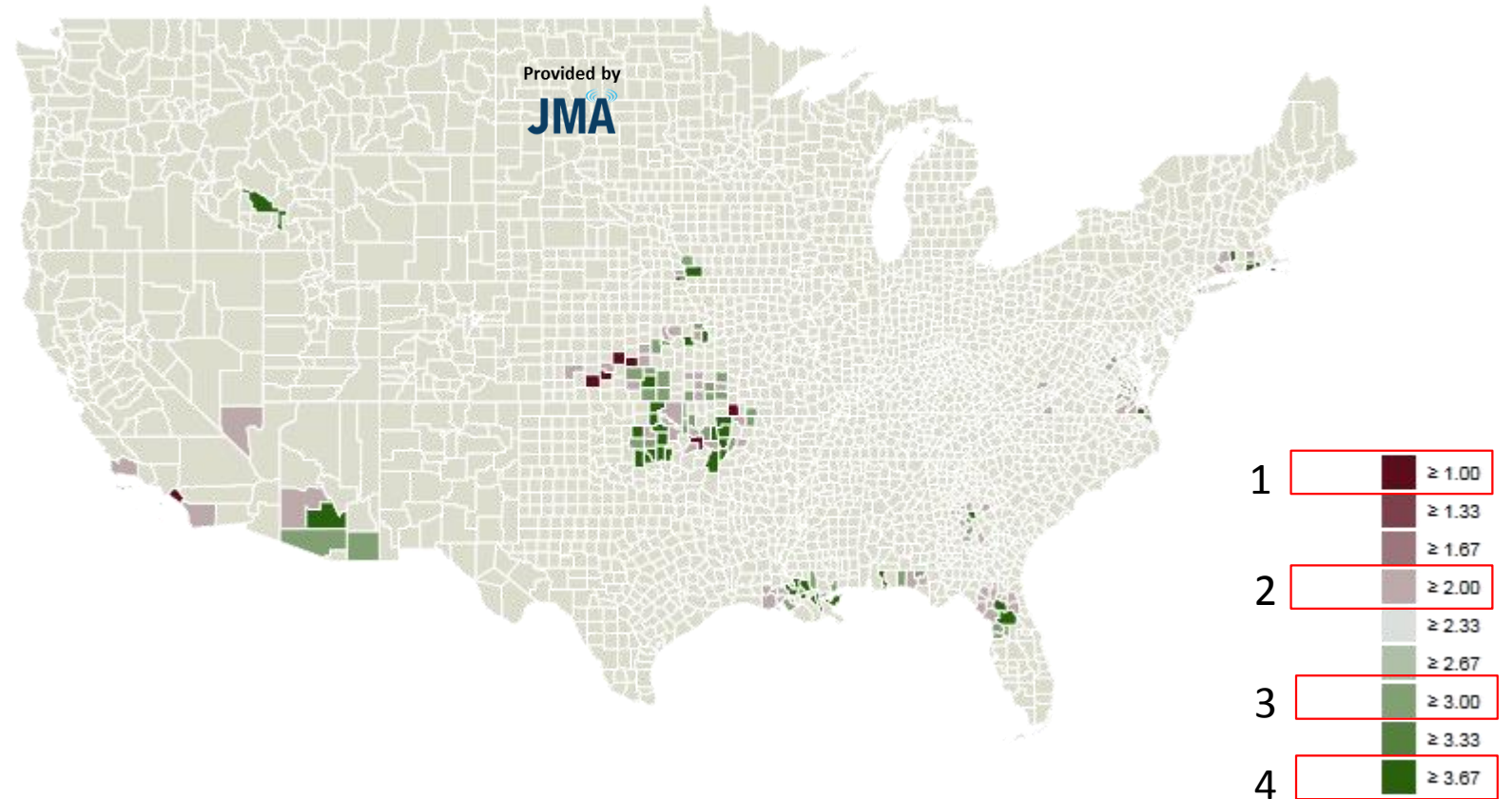
	Comcast	
Counties	306	10%
Population	88,328,648	28%
Sq Miles	221,629	6%
Pop Density	398.54	451%
PALs	830	4.0%
Avg PAL/Cnty	2.71	68%
Spend (\$M)	\$ 458	10%



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Cox

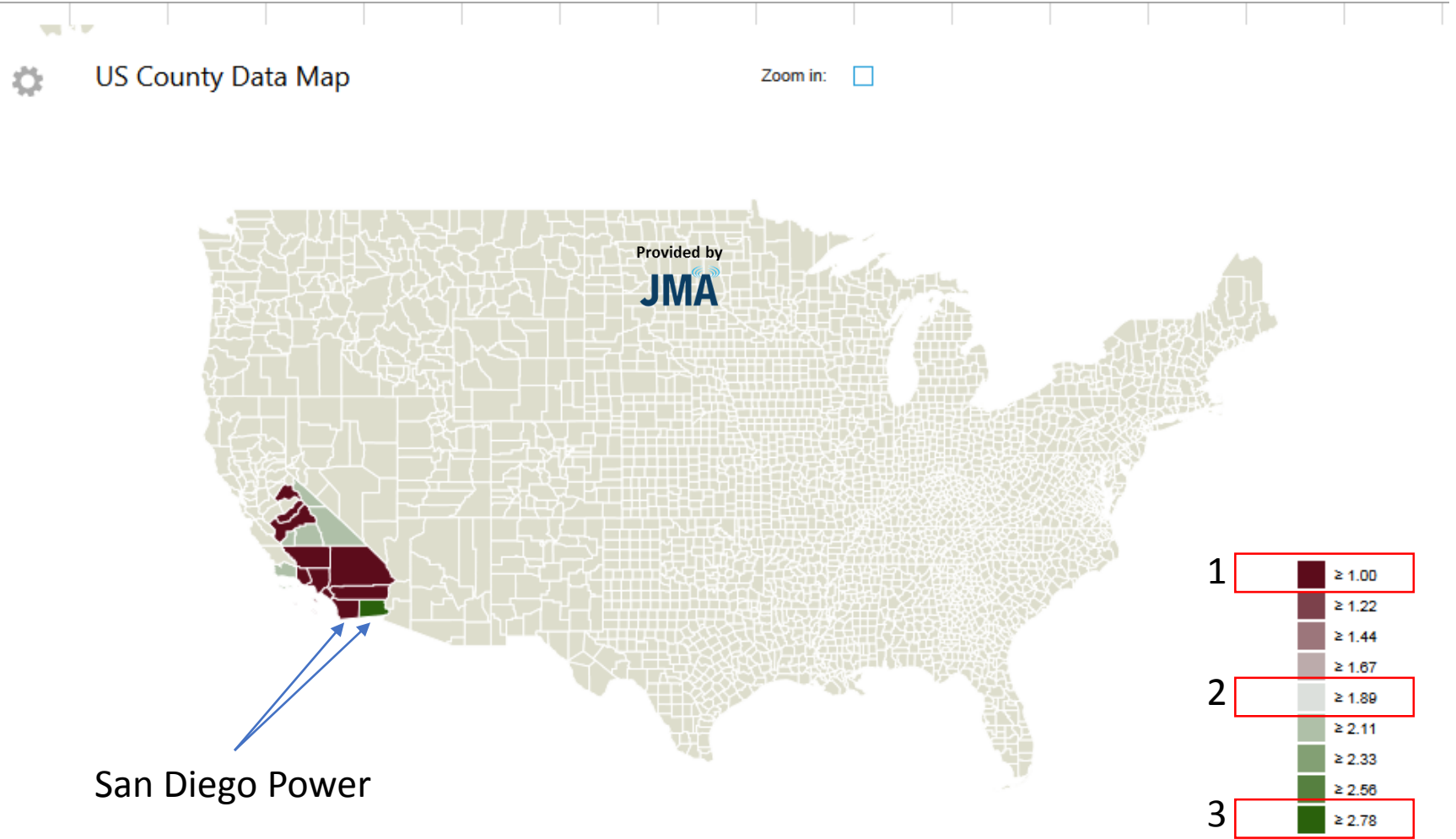
	Cox	
Counties	173	5.4%
Population	30,427,433	10%
Sq Miles	158,032	4.5%
Pop Density	192.54	218%
PALs	470	2.3%
Avg PAL/Cnty	2.72	68%
Spend (\$M)	\$ 212	4.6%



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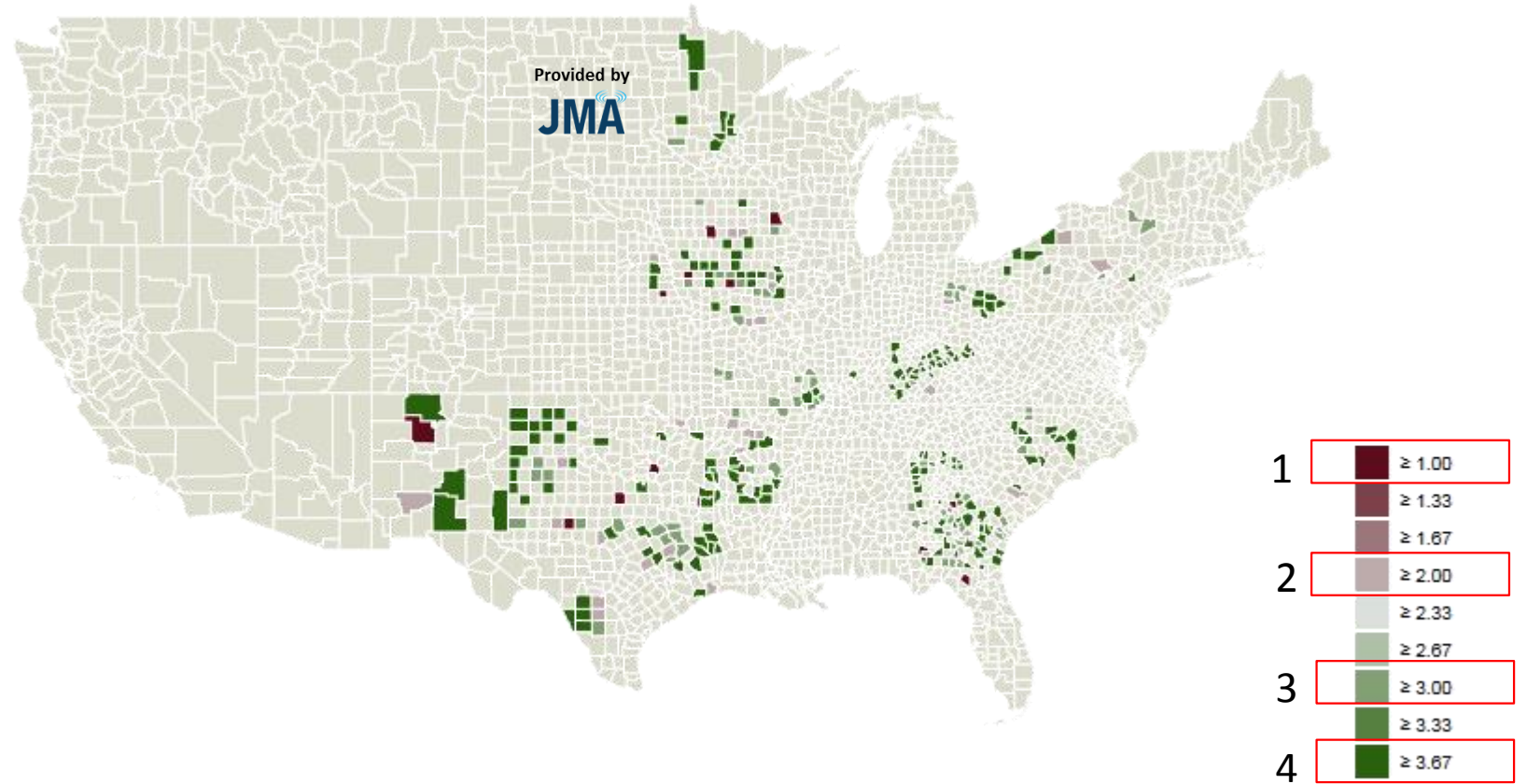
Southern California Edison and Sempra Energy (San Diego Gas & Electric)

County-state	PALs	Pop	SqMi
Los Angeles, CA	1	17,950	109
Orange, CA	1	6,780	1,312
San Diego, CA	1	2,035,210	20,062
Riverside, CA	1	10,449	454
San Bernardino, CA	1	55,269	1,389
Kern, CA	1	10,511	579
Ventura, CA	1	54,984	675
Fresno, CA	1	40,123	9,183
Tulare, CA	2	7,141	419
Santa Barbara, CA	2	27,822	1,588
Tuolumne, CA	1	10,778	455
Kings, CA	2	7,858	864
Imperial, CA	3	16,267	8,485
Madera, CA	1	47,765	864
Inyo, CA	2	280,895	559
Mono, CA	2	630,380	472
		3,260,182	47,468
SoCal Edison	20	1,224,972	27,406
San Diego	3	2,051,477	28,547
Share/Split with 1 PAL for SoCal Edison			



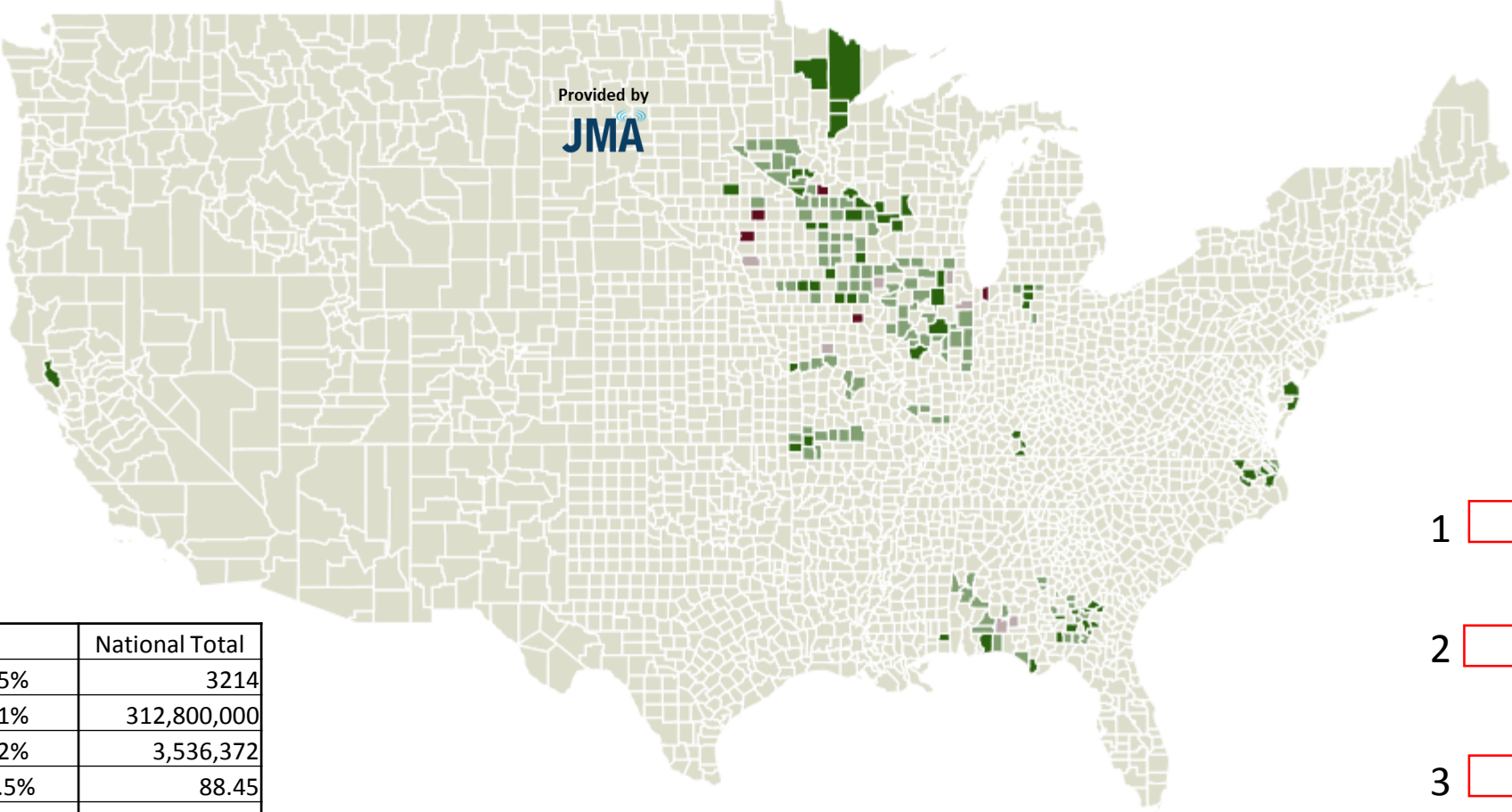
Windstream

	Windstream		National Total
Counties	296	9%	3214
Population	12,113,127	3.9%	312,800,000
Sq Miles	208,048	6%	3,536,372
Pop Density	58.22	66%	88.45
PALs	1,014	4.9%	20,625
Avg PAL/Cnty	3.43	86%	4
Spend (\$M)	\$ 38	0.8%	\$ 4,585

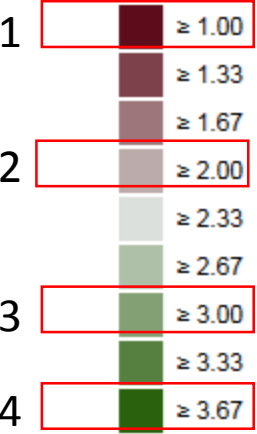


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Mediacom



	Mediacom		National Total
Counties	178	5.5%	3214
Population	9,548,458	3.1%	312,800,000
Sq Miles	113,004	3.2%	3,536,372
Pop Density	84.50	95.5%	88.45
PALs	576	2.8%	20,625
Avg PAL/Cnty	3.24	80.9%	4
Spend (\$M)	\$ 30	0.6%	\$ 4,585

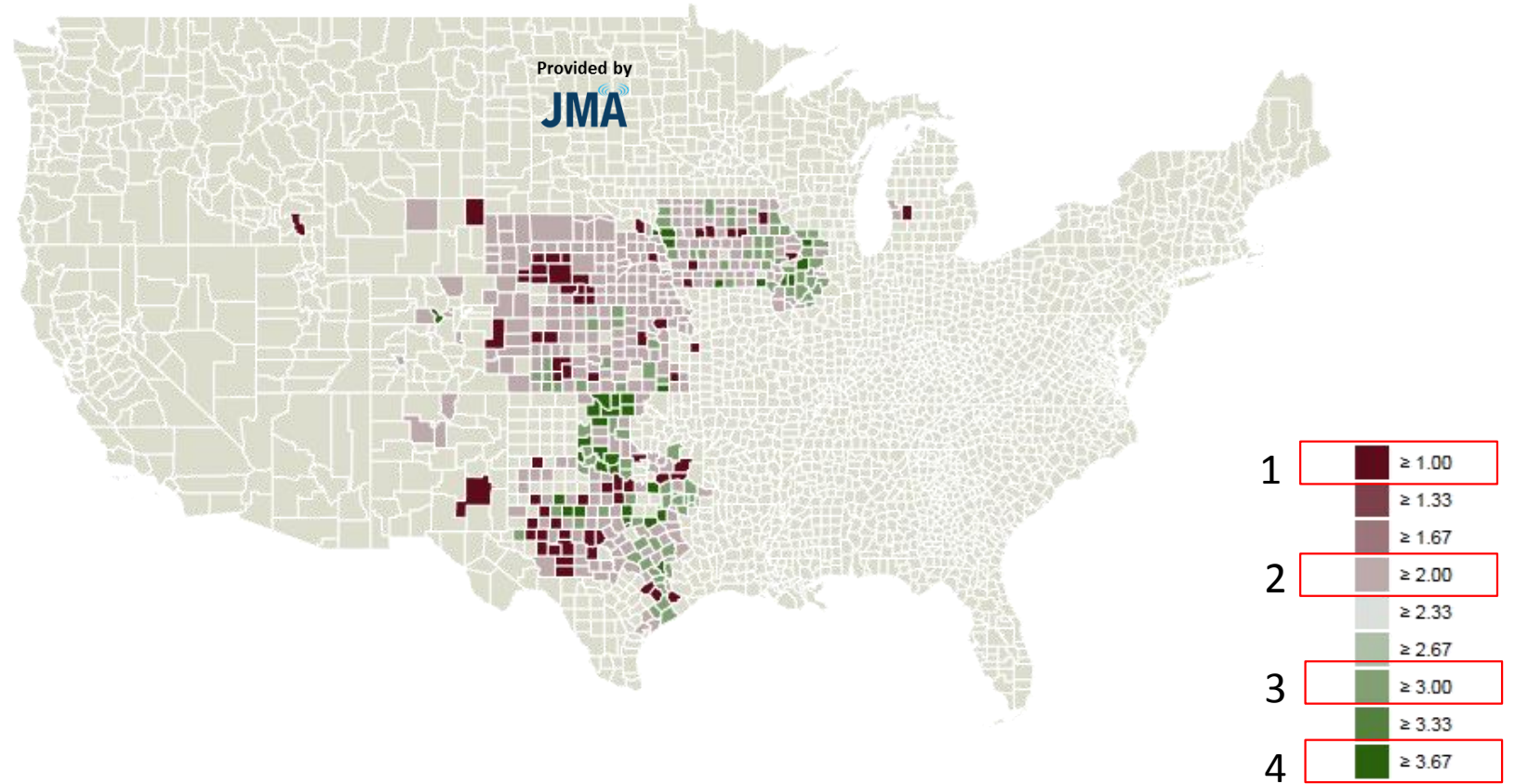


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AMG (Nextlink)

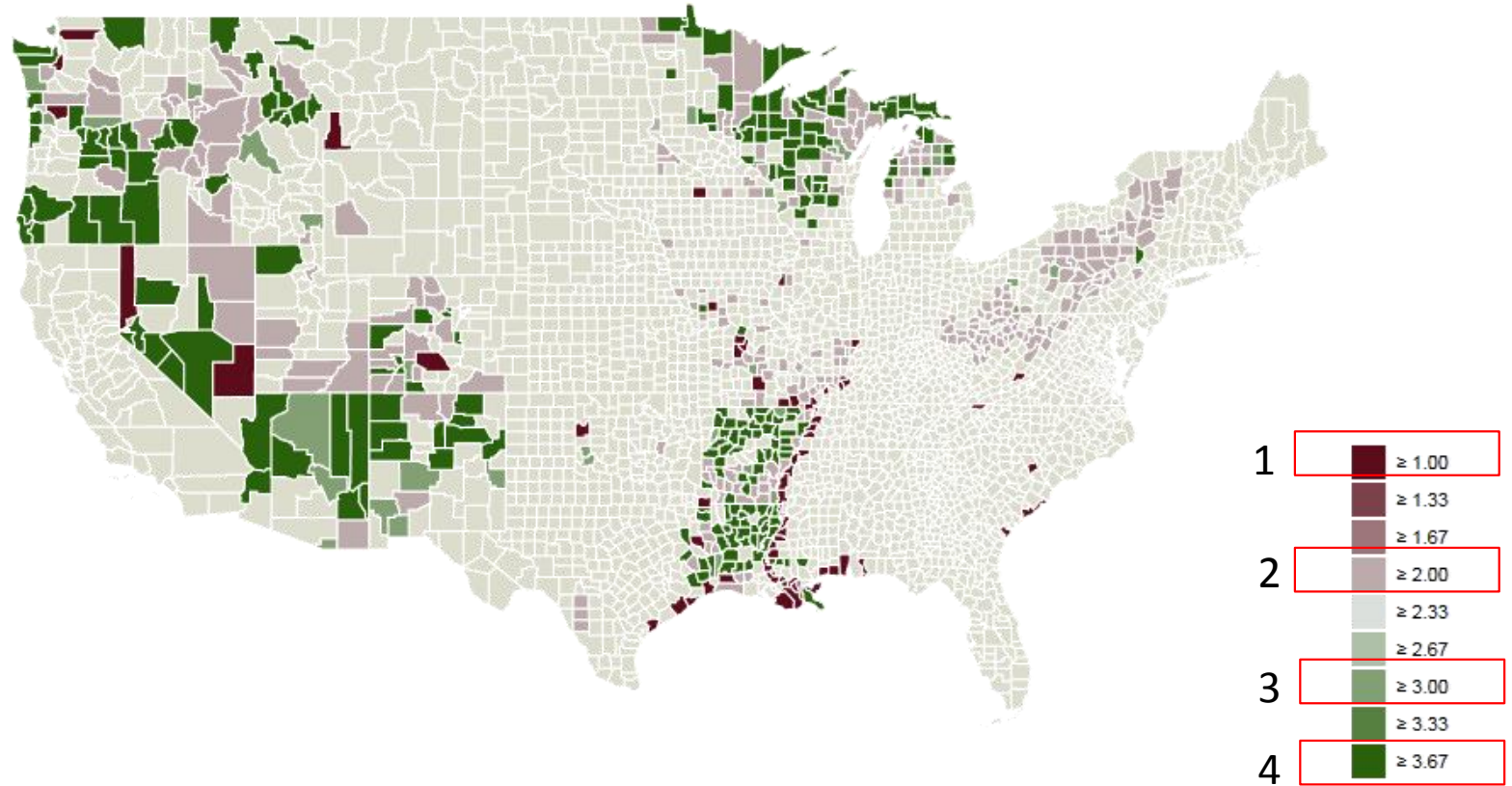
	AMG	
Counties	491	15%
Population	14,624,329	5%
Sq Miles	412,179	12%
Pop Density	35.48	40%
PALs	1,072	5.2%
Avg PAL/Cnty	2.18	55%
Spend (\$M)	\$ 28	0.6%



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ATN (SAL Spectrum)

	ATN	
Counties	590	18%
Population	21,793,277	7%
Sq Miles	847,305	24%
Pop Density	25.72	29%
PALs	1,569	7.6%
Avg PAL/Cnty	2.66	67%
Spend (\$M)	\$ 20	0.4%

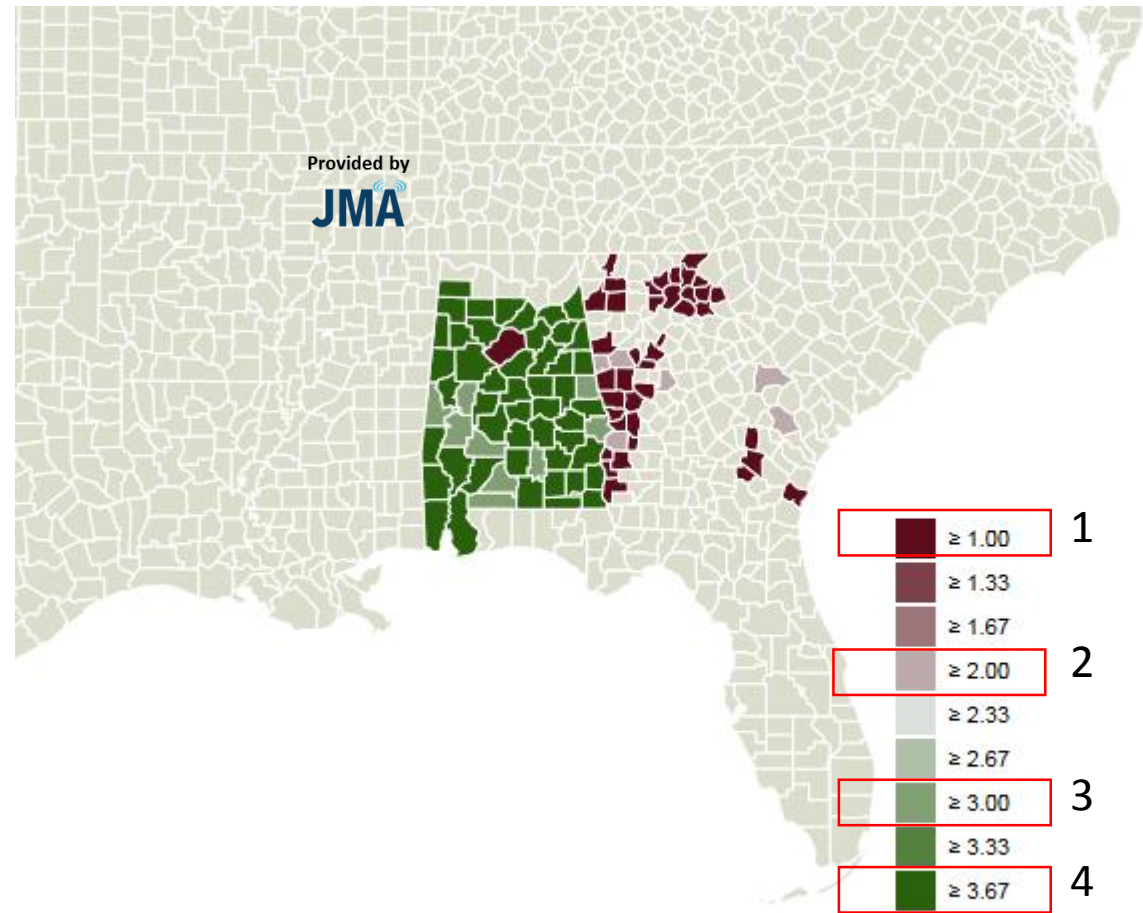


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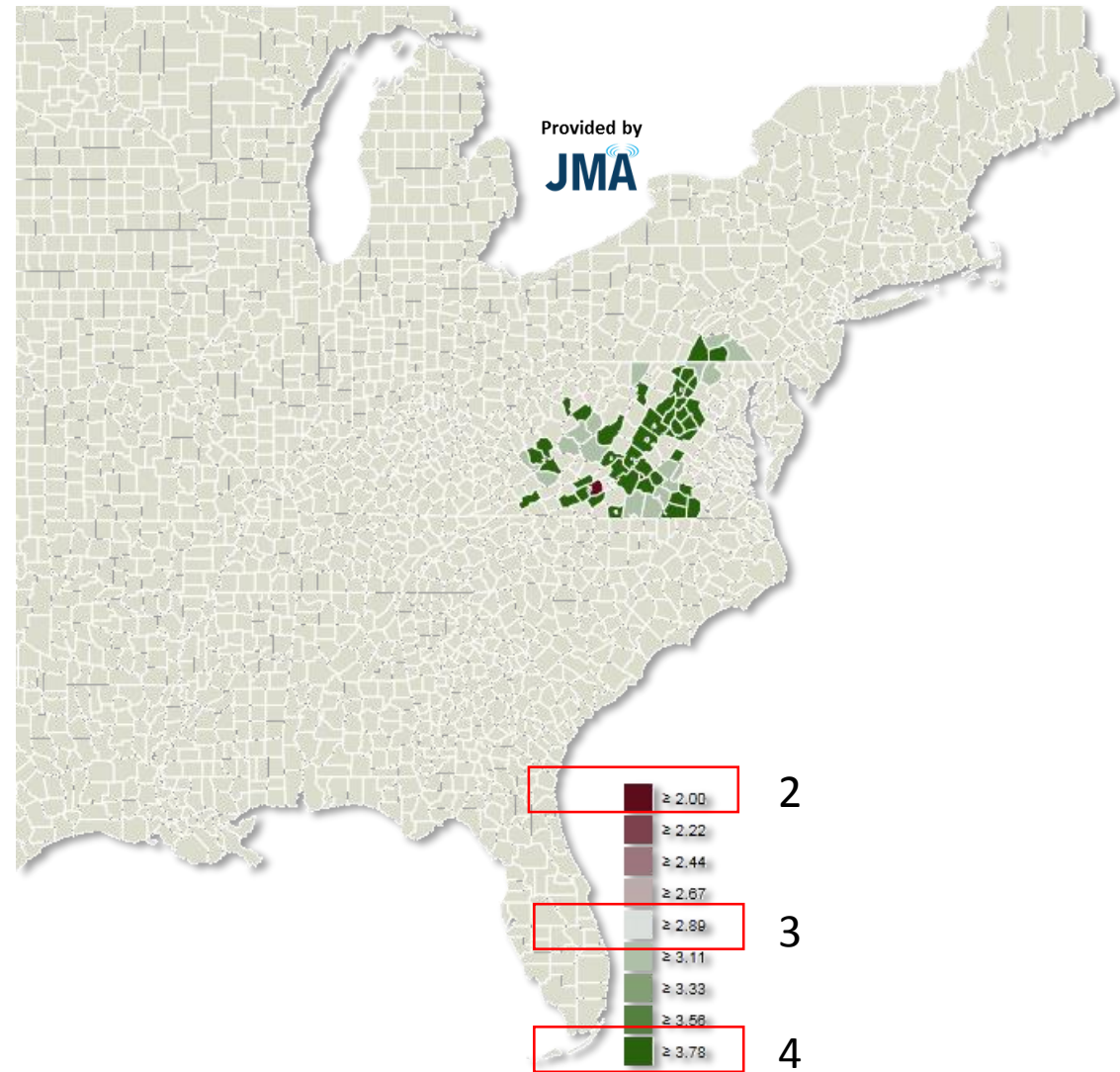
Alabama Power

	Alabama Power		National Total
Counties	103	3.2%	3214
Population	6,236,350	2.0%	312,800,000
Sq Miles	60,040	1.7%	3,536,372
Pop Density	103.87	117.4%	88.45
PALs	271	1.3%	20,625
Avg PAL/Cnty			
	2.63	65.8%	4
Spend (\$M)	\$ 19	0.4%	\$ 4,585



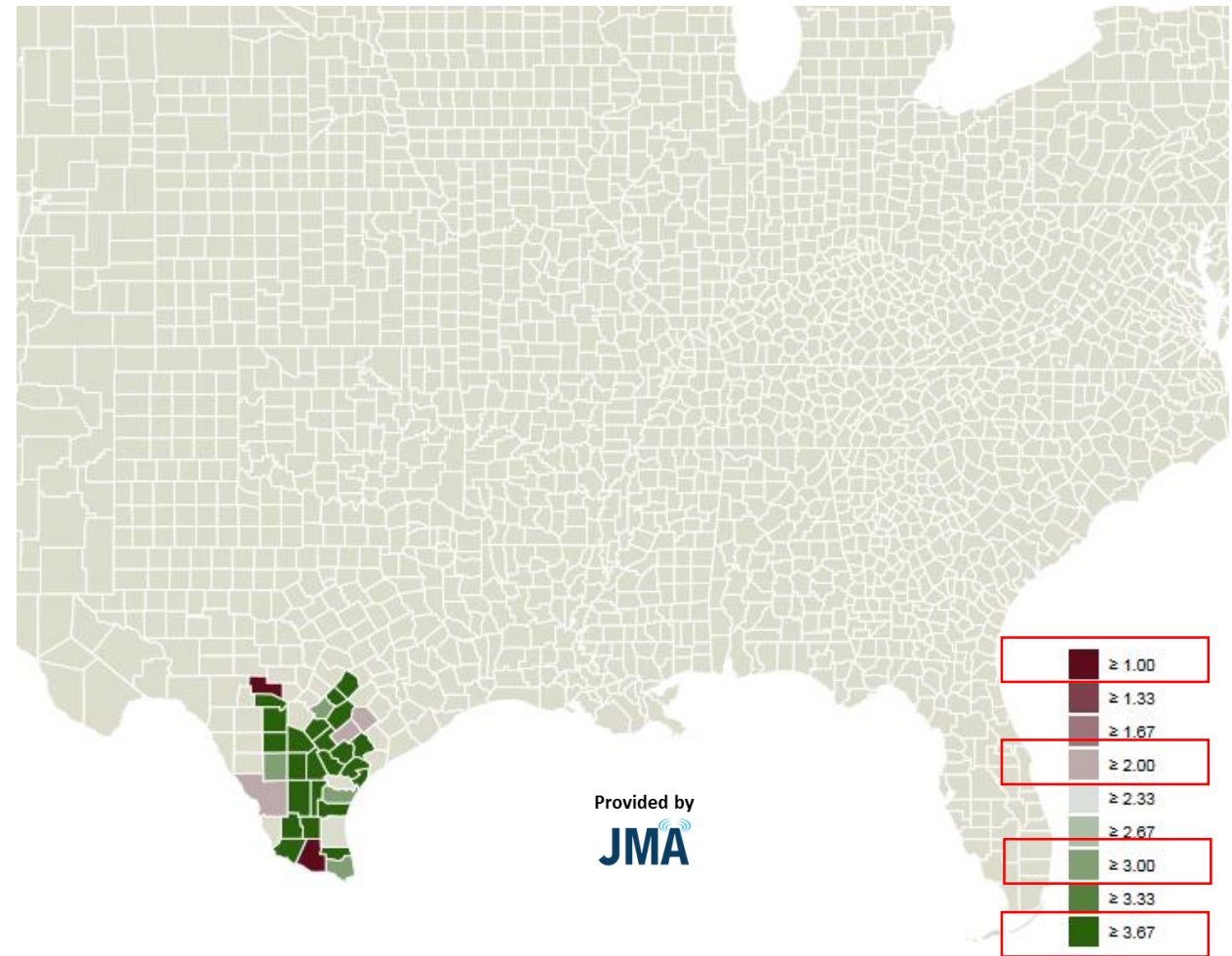
Shentel (Shenandoah Cable)

	Shenandoah		National Total
Counties	74	2.3%	3214
Population	3,639,171	1.2%	312,800,000
Sq Miles	32,947	0.9%	3,536,372
Pop Density	110.46	124.9%	88.45
PALs	262	1.3%	20,625
Avg PAL/Cnty	3.54	88.5%	4
Spend (\$M)	\$ 16	0.3%	\$ 4,585



VTX Communications

	VTX		National Total
Counties	32	1.0%	3214
Population	2,666,274	0.9%	312,800,000
Sq Miles	33,614	1.0%	3,536,372
Pop Density	79.32	89.7%	88.45
PALs	112	0.5%	20,625
Avg PAL/Cnty	3.50	87.5%	4
Spend (\$M)	\$ 15	0.3%	\$ 4,585

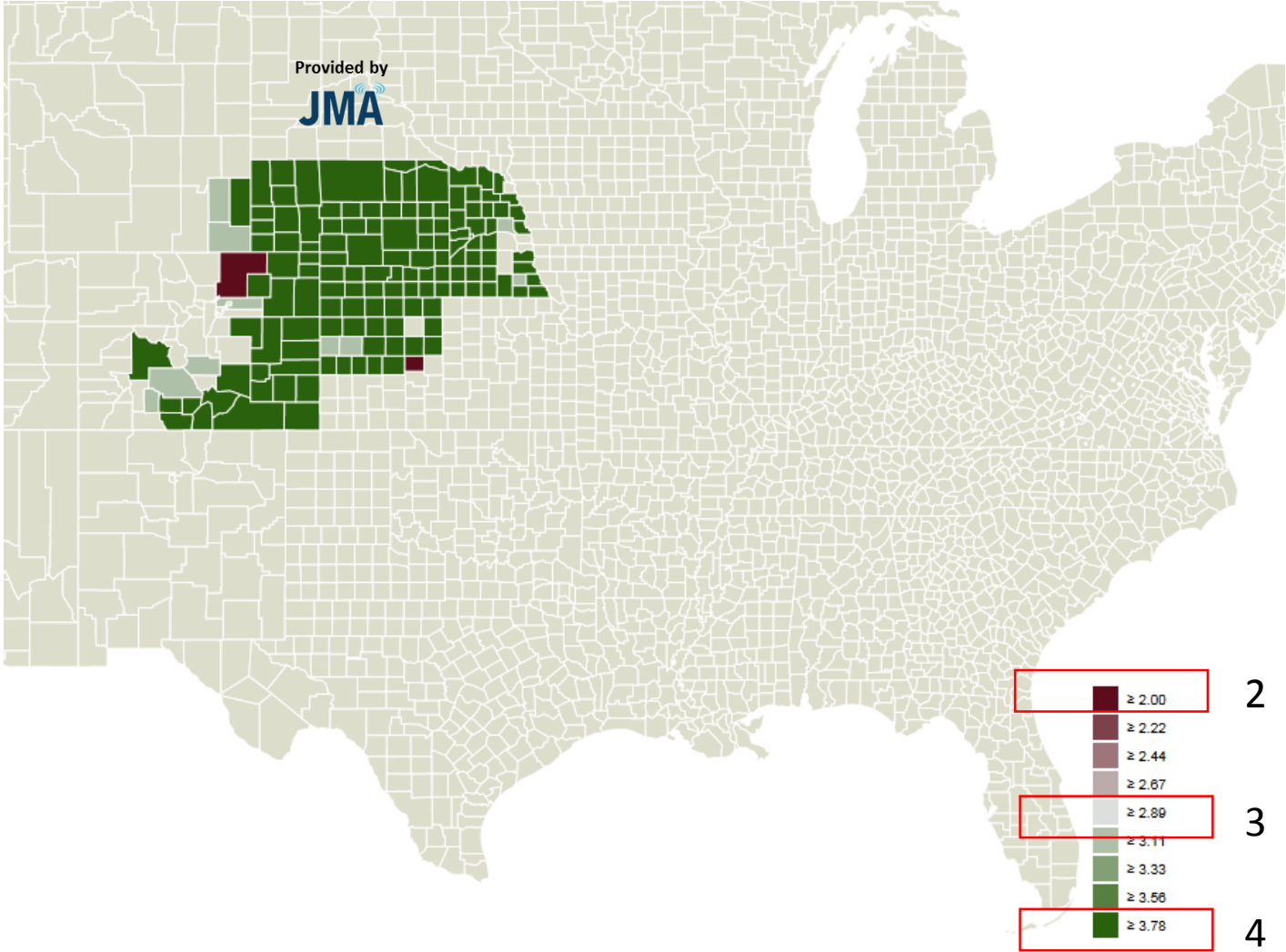


1
2
3
4

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NE Colorado Cellular (Viaero)

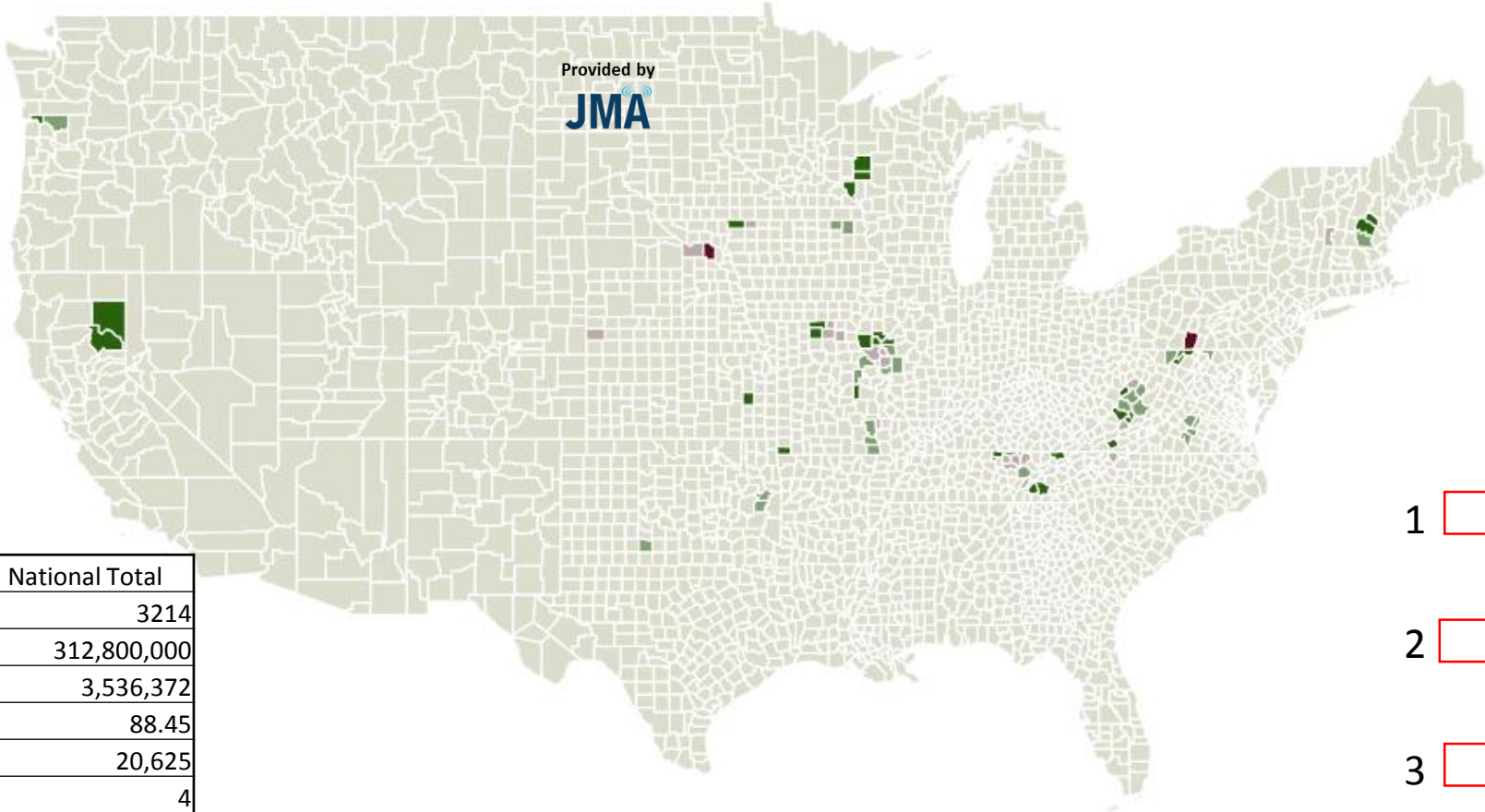
	NE Colorado		National Total
Counties	143	4.4%	3214
Population	2,189,064	0.7%	312,800,000
Sq Miles	156,428	4.4%	3,536,372
Pop Density	13.99	15.8%	88.45
PALs	558	2.7%	20,625
Avg PAL/Cnty	3.90	97.6%	4
Spend (\$M)	\$ 15	0.3%	\$ 4,585



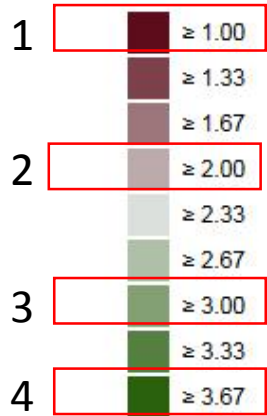
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US Cellular



	US Cellular		National Total
Counties	80	2.5%	3214
Population	2,592,126	0.8%	312,800,000
Sq Miles	43,806	1.2%	3,536,372
Pop Density	59.17	66.9%	88.45
PALs	243	1.2%	20,625
Avg PAL/Cnty	3.04	75.9%	4
Spend (\$M)	\$ 14	0.3%	\$ 4,585

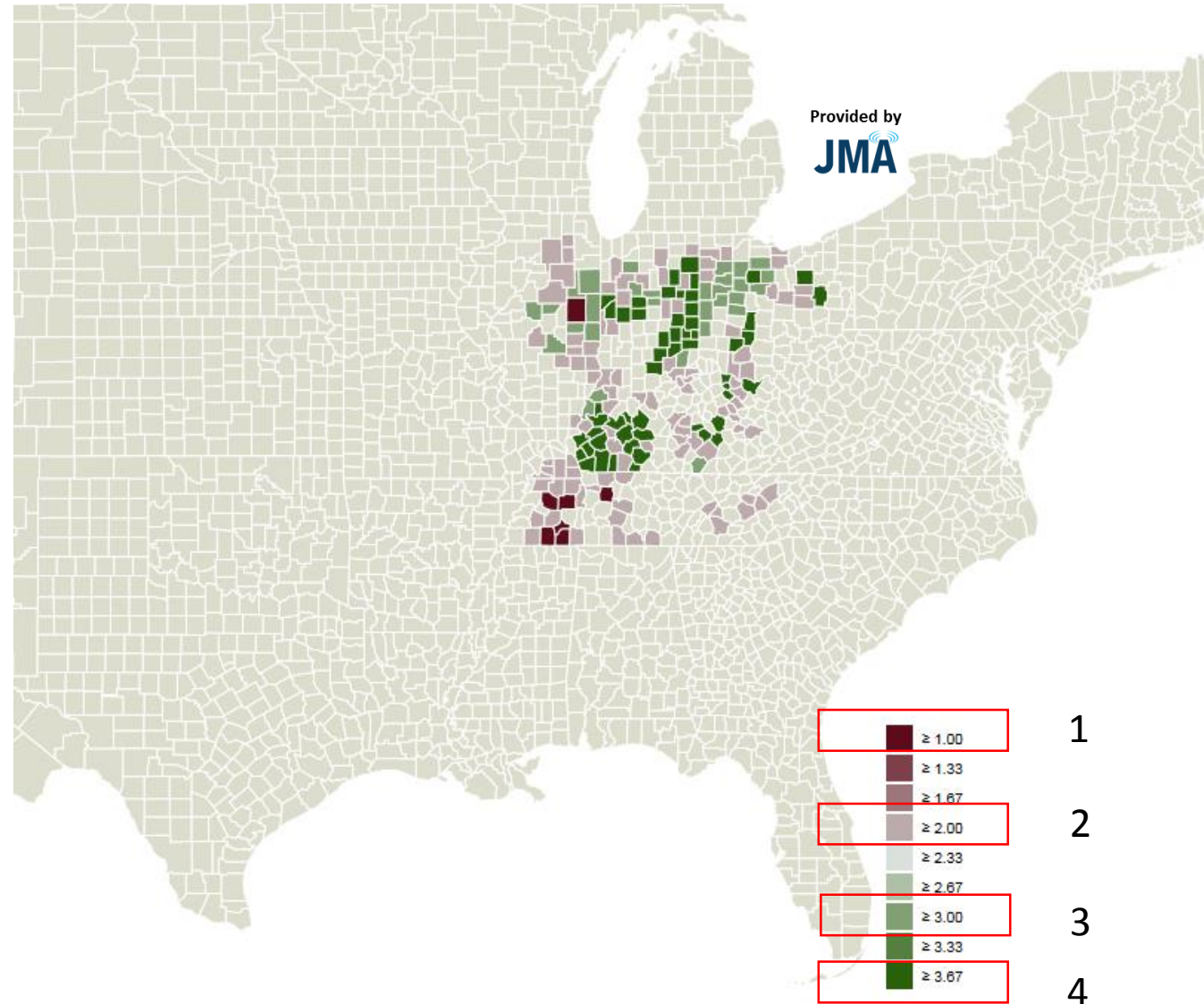


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Watch Communications

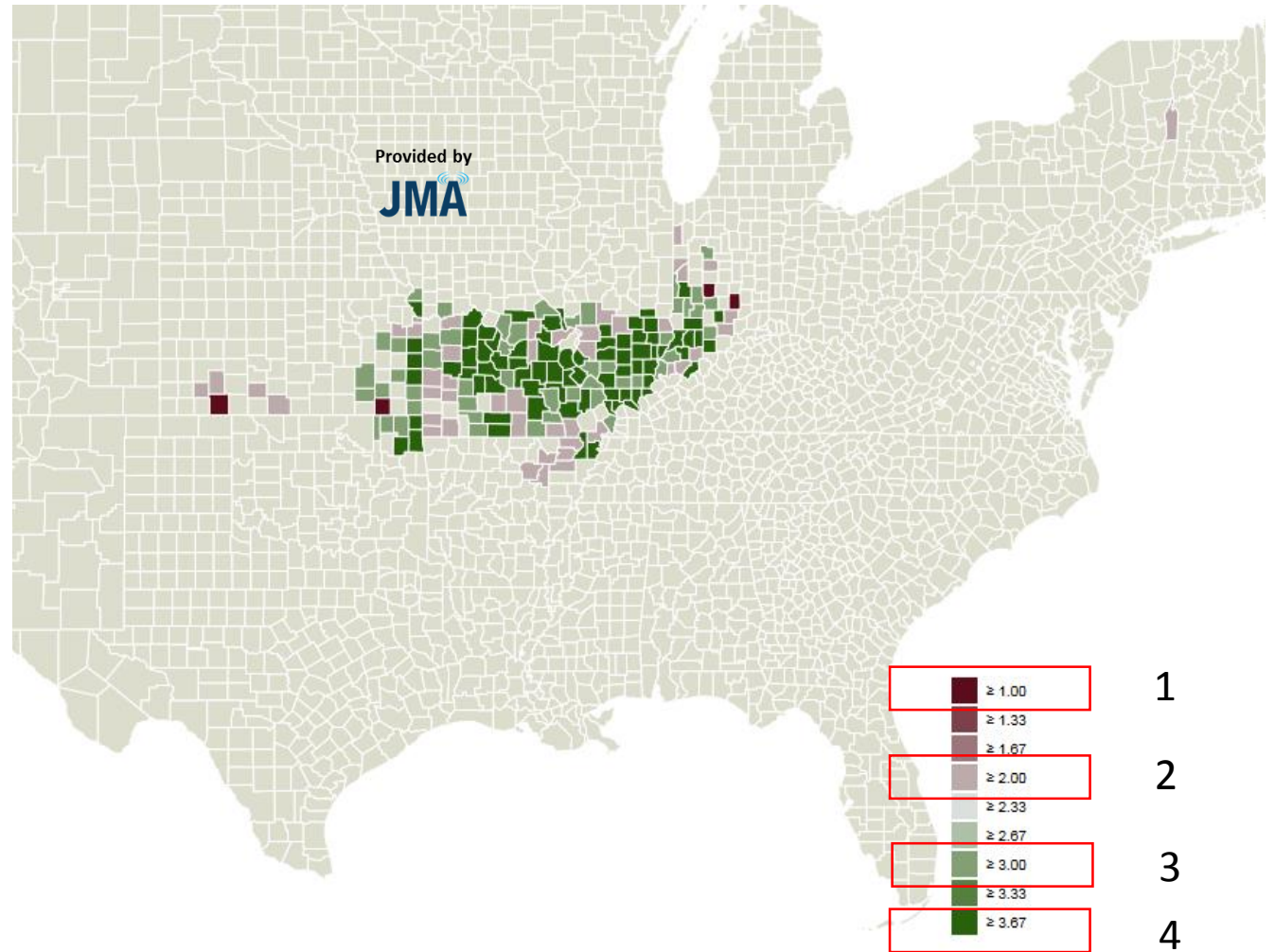
	Watch Communications		National Total
Counties	194	6.0%	3214
Population	8,258,816	2.6%	312,800,000
Sq Miles	85,186	2.4%	3,536,372
Pop Density	96.95	109.6%	88.45
PALs	517	2.5%	20,625
Avg PAL/Cnty	2.66	66.6%	4
Spend (\$M)	\$ 11	0.2%	\$ 4,585



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Cable One

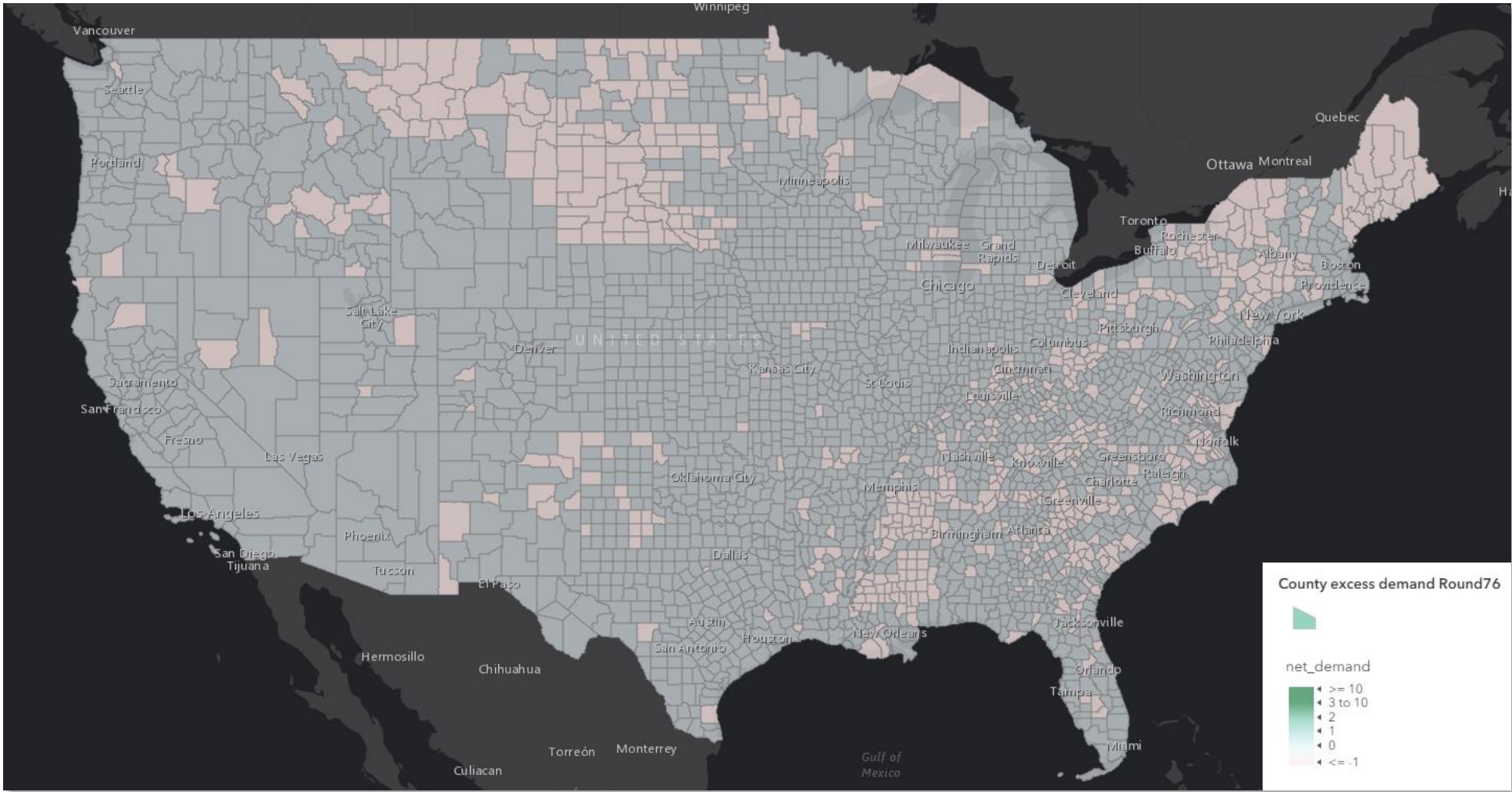
	CableOne		National Total
Counties	175	5.4%	3214
Population	7,291,182	2.3%	312,800,000
Sq Miles	97,845	2.8%	3,536,372
Pop Density	74.52	84.2%	88.45
PALs	547	2.7%	20,625
Avg PAL/Cnty	3.13	78.1%	4
Spend (\$M)	\$ 11	0.2%	\$ 4,585



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Locations with Excess PAL Supply

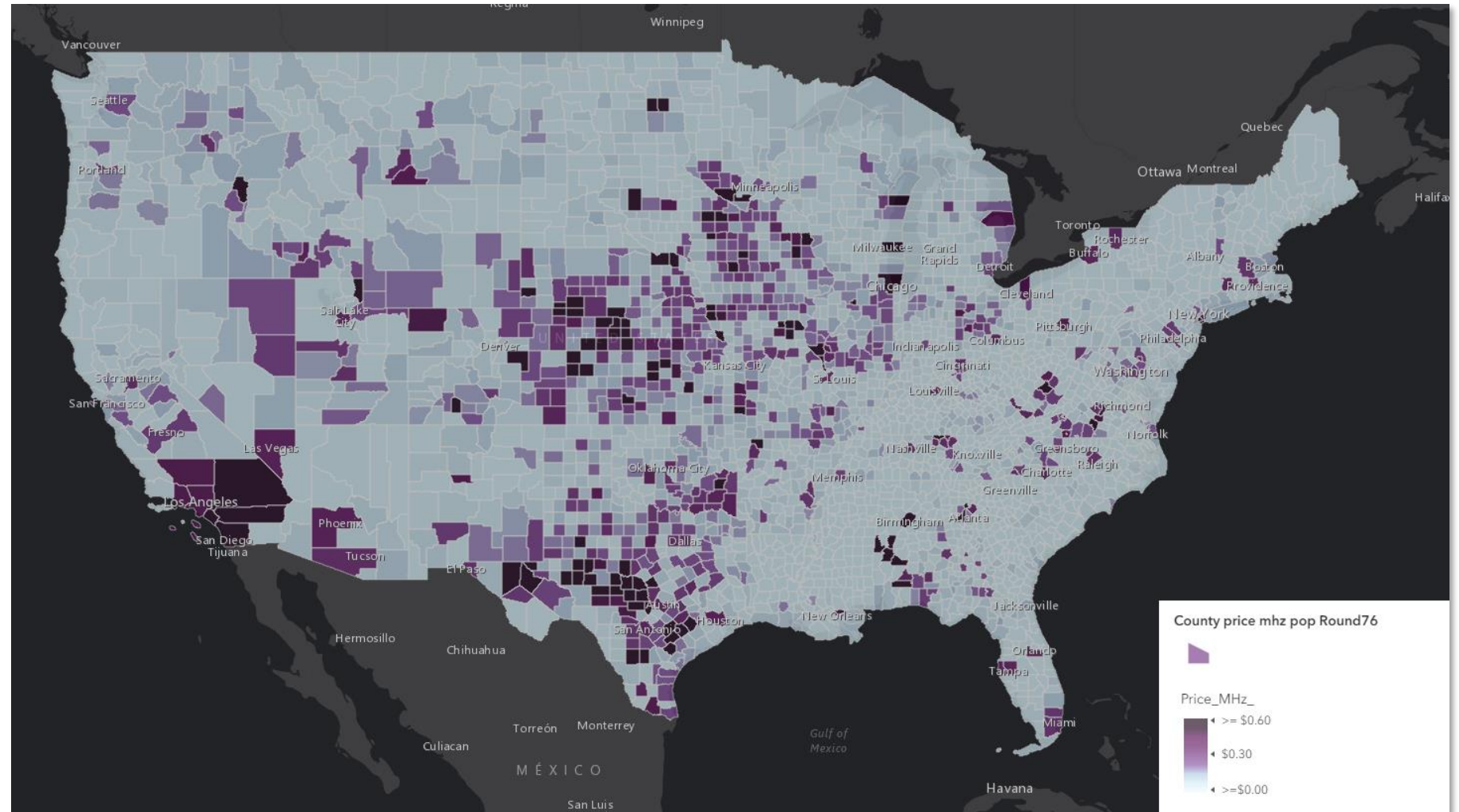
- Excess Supply
- Supply=Demand



https://sashajavid.com/FCC_Auction105.php



Price per MHz per Population



https://sashajavid.com/FCC_Auction105.php

Unofficial Results